

THE
ARCHITECTS'
JOURNAL
&
Architectural Engineer

With which is incorporated "The Builders' Journal."



FROM AN ARCHITECT'S NOTEBOOK.

THE COLISEUM, ROME

*Arches on arches! as it were that Rome,
Collecting the chief trophies of her line,
Would build up all her triumphs in one dome,
Her Coliseum stands; the moonbeams shine
As 'twere its natural torches, for divine
Should be the light which streams here to illumine
This long-explored but still exhaustless mine
Of contemplation; and the azure gloom
Of an Italian night, where the deep skies assume
Hues which have words, and speak to ye of heaven,
Floats o'er this vast and wondrous monument,
And shadows forth its glory. There is given
Unto the things of earth, which Time hath bent,
A spirit's feeling, and where he hath leant
His hand, but broke his scythe, there is a power
And magic in the ruin'd battlement,
For which the palace of the present hour
Must yield its pomp, and wait till ages are its dower.*

LORD BYRON,

"Childe Harold's Pilgrimage."

9 Queen Anne's Gate. Westminster.

SS. Giovanni e Paolo, Rome



(From a sepia drawing by S. Rowland Pierce.)

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THE ARCHITECTS' JOURNAL

9 Queen Anne's Gate, Westminster.

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Building and Nature

THOSE who recognize a fundamental difference between the old work and the new in building, will perhaps also be disposed to agree that this difference is largely a matter of the relation of buildings to natural surroundings. In the old days builders were able actually to adorn and improve any natural scene with their buildings. Nowadays, though the best we can do is inoffensive, normal building is everywhere a disfigurement to the world of Nature.

In his life of William Morris, Mr. Clutton Brock puts the state of the case in these words: "For us there is a violent contrast between the beauty of Nature and the ugliness of man's work which most past ages have felt little or not at all. We think of a town as spoiling the country, and even of a single modern house as a blot on the face of the earth. But in the past, until the eighteenth century, men have thought that their own handiwork heightened the beauty of Nature, or was at least in perfect harmony with it. And we are aware of this harmony in a village church or an old manor house or a thatched cottage, however plain these may be; and wonder at it as a secret which is lost."

Some time ago I paid a visit to a beautiful part of Surrey, in a land of pines, silver birches, and heather. The road from the station was an unfenced track passing through a pinewood without a house in sight. But on proceeding farther one discovered one by one modern houses hidden in the pinewood on each side of the way. Around these houses some desperate attempts had been made to form appropriate gardens, so that here and there a pine tree might grow in the midst of a bed of geraniums. Each house burst upon one as a nightmare, and seemed to brood malignantly in its inappropriate setting. And these were no ordinary houses, but of a highly artistic character, and so anxious were their occupants to preserve the natural beauty of the wood which their houses had for ever destroyed that they were content to live in a perpetual twilight which seemed aptly to symbolize their own conception of the situation. One early comer had appropriated the obvious title of "The Pines" for his dwelling, thus driving the rest to invent the usual series of curious names one is familiar with. Now in the old days no such dreadful doings as these could have happened. The pines would have been cleared, because the builders would know that the houses they were going to build would be more beautiful than they, and instead of a nightmare a delightful dream would have been realized. This would have been done easily, and it would have been taken quite as a matter of course, for then it was happening all over the country. Moreover, these same houses would have been furnished with nothing that was not suitable and beautiful, instead of the flashy rubbish with which the modern house is usually filled.

Confronted with such a state of affairs there seems but one thing for the modern architect to do: to try to rediscover the lost art of building and to adorn the country instead of disfiguring it. To this end architecture should

not be studied merely as an isolated and artificial art, nor should buildings be judged merely for their intrinsic merits according to the accepted standards. Buildings should be judged mainly, in the country at least, by an entirely different scale of values, which will consider chiefly their relation to the trees and flowers which surround them. And since the beauty of a country building should be of the same kind which trees and flowers have, some study of Nature itself seems a necessary part of an architect's training.

"I could not love thee, Art, so much
Loved I not Nature more"

might be a useful motto. Think of a spring woodland set with primroses and bluebells, and starting from such surrounding consider what kind of building you would dare to put in such a frame without offending the local deities. Almost any old cottage would be quite at home there, but any modern equivalent from the latest housing scheme would cast a withering blight on the scene. The architect perhaps is naturally inclined, like the shoemaker, who thinks there is nothing like leather, to think too much of his building, and not enough of its natural setting. Because he does not "love Nature more" he is averse even to creepers, which might cover his "spirit of heaviness" with their "garment of praise." It may be said that while a good building deserves creepers, a bad building needs them. Ivy seems at present the most unpopular—"Ivy never sere," but few creepers are more becoming to a country house, providing it is kept within bounds. If it were only to hear the bees humming in its October blossoms it would be worth having. Few of us can afford to have architectural adornment in our houses, which is perhaps as well, therefore we should at least retain the natural adornment that creepers will give us. If we really desire to build in proper relation to Nature we must bear in mind that the design is only half the battle, if it is as much. It is in the actual processes of building that the main difference lies between the old work and the new. The workmanship must be natural and not mechanical. Just as a painter does not try to make his picture look like a coloured photograph, so the workman must realize that his work should not look as if it were done by a machine. Building is no one-man art. Such beauty as it may possess must be built up, touch by touch, in the laying of every brick and the shaping of every bit of timber.

If we consider how the natural beauty of the English country is gradually and surely being destroyed by the inroads of modern building, it is surely time that this particular aspect of building in relation to Nature should be earnestly considered. That there is some desire to preserve the beauty of scenery is evident by the protest against advertisements there. But this is a comparatively trivial matter. Hoardings are temporary, transitory things, but much modern building permanently degrades and pollutes everything it touches.

BAILLIE SCOTT.

Notes and Comments

A New Bridge Proposal

Sir Reginald Blomfield's scheme for a new bridge between Waterloo and Charing Cross bridges has many excellent points and some palpable disadvantages. Its great merits are: (1) That it would relieve Waterloo Bridge of present congestion, and thus (assuming that the engineers are able to underpin that sinking pier) ensure the preservation of Rennie's masterpiece; and (2) that by starting from St. Martin's Place and crossing over the Strand the new bridge would give uninterrupted access to the south side of the river for a great volume of central London traffic. Whether it would form a satisfactory work from the point of view of appearance is doubtful. For the bridge to cross the Strand at a height sufficient to afford headroom for traffic would mean a fairly stiff gradient on both sides of the crossing, which would produce the appearance, and, to travellers in fast-moving taxicabs, the sensation, of a switchback. Then the building of the proposed bridge would involve the demolition of some excellent stucco architecture, both in the Strand and on the north side of St. Martin's Church. We should be especially sorry to lose that severely classical elevation that faces St. Martin's, stucco though it be. A further drawback to the scheme is that it would mean the removal of Inigo Jones's York Water Gate. Sir Reginald points out that the gate now has the appearance of being half buried, but at least it stands where it was built; the half-buried effect is the responsibility of the builders of the Embankment. To take it down and rebuild it elsewhere would be to deprive it of all historical interest and sentimental value. The vital objection to Sir Reginald's scheme is, however, that it would leave us with Charing Cross railway bridge. All the reformers seem to agree that ultimately Charing Cross Station will have to go to the south side of the river. There can be no doubt that that desirable reform would be indefinitely postponed if a new bridge, such as Sir Reginald suggests, were to be erected. The good Londoner would go bridgeless rather than face the alternative of permanency for old Behemoth.

Schools and their Equipment

"The school building should express the ideas of unity, order, and repose. Not only should all its parts be harmoniously inter-related, but the school should accord with the best architectural traditions of the locality. As the highest qualities of building are not dependent upon expenditure on costly materials, but upon the arrangement of simple architectural elements to form a good composition, it is possible to give due weight to considerations of economy without sacrificing any of the essentials of art." These words appear in the introductory note to building regulations for elementary schools in Wales, and come from Sir Alfred T. Davies, the retiring Permanent-Secretary of the Welsh Department of the Board of Education. In other parts of his introduction Sir Alfred dwells upon the importance of good design from the psychological point of view. Schools perhaps more than any other type of building should be impeccable in this respect, for "in them the children receive impressions and develop tastes which will influence them throughout the whole of their lives." Schools are often very dismal buildings, though of late years there has been a notable improvement in the character of their architecture. Generally speaking, there is still room for improvement, and nowhere are the possibilities in this respect greater than on this side the border of the Principality. One word of advice to the educationists. The psychological effect of a good building can be entirely nullified by bad equipment. It is little use having a well-designed building, carefully decorated (and much can be done by good colour decora-

tion) if the walls are to be hung with ugly varnished maps, depressing tonic-sol-fa modulators, and third-rate reproductions of bad pictorial art. The internal equipment must be as carefully studied as the architecture if we are to get the right environment for the training of the youthful mind.

"No Longer Arrested Motion"

Members of the Architecture Club who recently visited St. Paul's were allowed, by kind permission of the Dean, to see something of the operations which are now going forward and the models and plans in use. Varying opinions were expressed as to the efficiency of the Commission's scheme of preservation, but on one point there seemed to be unanimity. Upon everyone knowing something of the action of arched and vaulted elements, there comes a peculiar tensivity of feeling when standing under the dome of St. Paul's and looking up. J. B. has exactly conveyed this feeling in an article in "The Manchester Guardian." "One became conscious," he writes, "gazing up at the perceptible bulging over the pier capitals at the springing of the arches, of the terrible thing that was happening to the great structure. It was coming to life again; it was no longer arrested motion." Nor will the motion ever be arrested while the present policy is pursued.

Sadler's Wells

It is good hearing that Sadler's Wells Theatre is likely to be re-opened for the production of classical drama and opera in English, on the lines of the "Old Vic." It has been closed these many years, "its dirty stucco" (to quote Besant) "peeling off the frontage in patches, and the bricks of the body of the house showing a leprosy of damp and old age." Sadler's Wells is the oldest theatre in London, deriving its name from a well of mineral water which became celebrated for its curative properties. Some time before 1683 a wooden building called Sadler's Music House stood on the north side of the New River about this spot. In 1765 a Mr. Rosoman pulled down this old wooden building and erected the theatre on an enlarged scale, and much in its present form, at a cost of £4,225. In 1778 the whole interior of the theatre was rebuilt. Since then many changes have taken place. Architecturally undistinguished, the building is in a lamentably decrepit condition, both inside and out, and the cost of acquiring and reconditioning it is likely to be somewhere about £60,000. We hope that the public will nerve itself to provide this rather formidable sum, for, with the example of the "Old Vic" in mind, the investment is likely to be a sound one; while sentimentally it will be a pleasure to know that the old house, with its famous associations, is in active service once again.

The Best Street Frontage

Our congratulations to Messrs. Greenaway and Newberry on the award to their Auctioneers' and Estate Agents' Institute of the R.I.B.A. medal for the best street frontage completed in 1924. The building is one of uncommon distinction, and, moreover, is thoroughly English in character—almost domestic, in fact, the green outside shutters to the second-floor windows emphasizing this effect, which is one that is really demanded in Lincoln's Inn if the character of this noble square is to be preserved. Some of the recent rebuildings have not been very happy; the west side, indeed, is merely an internal echo of Kingsway, disturbing the harmony of the square. It is a real pleasure to encounter a rebuilding that, as in the case of the Auctioneers' and Estate Agents' Institute, accords so well with its surroundings, while having a distinctive character of its own.

A MONTHLY CAUSERIE

Joking Apart

Buttons

TWO years ago, in his memorable address at the Architectural Association, Mr. Hilaire Belloc showed that an early mark of the decay of civilizations had always been leadership by the wrong men. I am reminded of his suggestion that the wrong men lead in England to-day when I observe men, whose only claim to importance is wealth acquired in business, enthroned at the R.I.B.A. to inform architects that they ought to advertise; that all education, except technical training directed to the gaining of money, is waste; and that it is a leading privilege of architecture to brag the shopkeeper into notoriety. The impudence with which business men press the commercial code, in which they and their kind struggle and suffocate, upon professional men whose very existence has always depended on organized discipline in opposition to it, is not only forgiven but is fostered by us. No voice is ever raised in protest against these shoddy conceptions, although it is open to anyone to discredit alike both the retrogressive maxims and the motives underlying them, by merely exhibiting to the meeting a cake of reputed scented soap, a copy of a popular magazine, or a pair of cheap bathing drawers designed—in conformity with the proclamation "We wish to serve you"—to unravel at a touch and leave the swimmer naked on the beach and at the mercy of the police. I am reminded of the truth of Mr. Belloc's dictum also when I read Lord Birkenhead's cynical disparagement of ideals, and—to my regret—when I find our Prime Minister informing this generation that the ideal which finds expression in the submarine, the motor car, and the fifteen-inch gun, is the same that inspired the builders of our Gothic cathedrals.

I have a great respect for Mr. Baldwin, but I cannot excuse as mere confusion of mind what is so obviously due to a radical obtuseness of perception. Ignorance of facts is a small matter; but insensibility is irremediable. Had the utterance been that of an obscure person we should attribute to him either a mind of common texture or the perverted intelligence of the engineer who is unconscious of any qualities in material things which cannot be weighed, measured, reduced to an equation, solved with a pair of spectacles and a slide rule to six places of decimals and plotted in a diagram. The world of the Gothic builders and of the makers of submarines are poles removed; to compare the two is to bring opposites into contrast—empiricism with science; fancy with fact; joy with routine; freedom with organization; taste with expediency; versatility with specialization; inspiration with calculation; aspiration with greed; aesthetics with necessity; spiritual exaltation with material aggrandisement; worship with funk:—the contradictions seem endless. When we turn from abstractions and compare the actual circumstances of building, then, and engineering, now—the conditions under which it would have been possible for the cathedral builders, if they had had the knowledge and the tools, to construct motor cars and submarines, and under which it is impossible for us with wider knowledge and better tools than they had to build cathedrals, but only to make inferior imitations of them (although no Gothic builder ever imitated his own or anyone else's work)—the contrast is just as emphatic, although less obvious. I will try to display those opposing conditions, and I do so as a special mark of respect for Mr. Baldwin, for if the provocation had come from a much less exalted source it might not have seemed worth while so to insist. The fact that I find it impossible to trace an unbroken line of connection between a cathedral and a motor car is only another instance of the radical falsity of Mr. Baldwin's pronouncement; the actual gulf can, however, be shown at its narrowest dimensions, and the remoteness of the two worlds demonstrated. I will begin with a button.

In the fourteenth century the maker of buttons was

obviously a person of attainments. He not only had to know how a button was made, but he had also to know how to make a button; and besides this he had to know where to get his material, what kind of material was suitable for his purposes, how to recognize the suitability of the material when he saw it, and how much its value was in money. Then, when he had made his buttons, he had to know how to sell them, and, as we now know, "selling is the big end of business." It is clear, therefore, that the mediæval button-maker, who got a livelihood in competition with other button-makers, must have had good general capacity and been a complete and competent person. If we pass to the middle of the eighteenth century, when the individual button-maker had been pushed out of existence by the manufacturer of buttons, we find a different state of affairs. Instead of one man making a button, it now takes a dozen men to make one; each of whom does a small part of the work by which a button is created. All these men may know how a button is made, but none of them will know how to make a button, or how to buy the material, or what material to buy; and none of them will know how to sell buttons. The work they do calls for little skill, and still less intelligence; by the intervention of industry a button is no longer made by a man who can make a button, but by twelve men who cannot.

Passing on to our own times we find buttons flowing forth in streams, by the bushel and the ton, from automatic mechanisms, several of which may be in charge of one girl who has no idea of a button beyond its uses; and now there is no one in the whole world who can make a button, and hardly anyone, except the inventors of the machines, who knows how a button is made. This so-called principle of mass production has been applied to watches and to boots, with the result that there is scarcely any boot or watch maker in existence; and the same principle is being applied to motor cars, so that of the majority of motor cars produced it may be said that very few of the men employed in making them know how they are made. Mr. Henry Ford, the leading exponent of mass production of motor cars—claiming a philanthropic motive for a system which was organized with a very different purpose—actually takes credit to himself as a benefactor of the human race because he employs thousands of men performing unintelligent and purely mechanical acts; men who, so far as their work is concerned, need have neither knowledge, judgment, nor skill. Mr. Ford even takes pride in the fact that he has made it unnecessary for his employees to use their heads or even to think what they are doing; and he indicates that it is his ideal that they should become actually unconscious of the acts they perform as, no doubt, many of them, for certain intervals of time, often are. It is not now my point that such a system cheats mankind of the birthright of humanity—the instinct to create, to make things—but only to display the fact and to ask the reader to reflect on the contrast between the personal equipment of one of Ford's "hands," whose work consists in putting one size of nut on a particular bolt for someone else to tighten up, and of the fourteenth-century maker of buttons; and then to make the stride from the humble button-maker to the craftsman at work on the cathedral scaffold.

It is remarkable that this incongruous pronouncement of Mr. Baldwin's should coincide with the activity of his Government to re-establish the decaying apprenticeship system. It is remarkable, too, that Germany has realized that the ideal which gives us the submarine, the motor, and the big gun, is *not* the ideal which inspired the cathedral builders, and that the newer ideal, as recommended and exemplified by Mr. Ford, is not salutary to progress, but inimical to it. We in England are increasingly aware of impend-

ing reactions against industrialism, but I was astonished lately to learn on the best authority that that reaction has so far asserted itself in Germany as to be a policy—a policy of renouncing specialization and discouraging industrial exploitations of the community. The universities which formerly inculcated specialization now frown upon it and foster the “humanities.” The professors are appointed by the Government—are, in fact, Government officials.

For some time preference has been given to men identified with the trend of thought there called “Mediævalism”; and Herr Hittler, who was recently concerned in the abortive Bavarian revolution, is also using his influence to re-establish mankind at the cost of the machine, in opposition to the current principle of glorifying the machine at the cost of humanity.

KARSHISH.

The Best Street Frontage of 1924

THE jury appointed by the R.I.B.A. to award a medal to the architect who has designed the best street frontage completed during the year 1924 within a radius of four miles from Charing Cross has announced its decision.

After careful examination of drawings and photographs of all the buildings which were nominated for the honour, the jury has given its award in favour of—

The Auctioneers' and Estate Agents' Institute,
29 Lincoln's Inn Fields, W.C.,
designed by Messrs. Greenaway and Newberry, FF.R.I.B.A.,
of Parliament Mansions, Victoria Street, S.W.1.

The jury consisted of:—

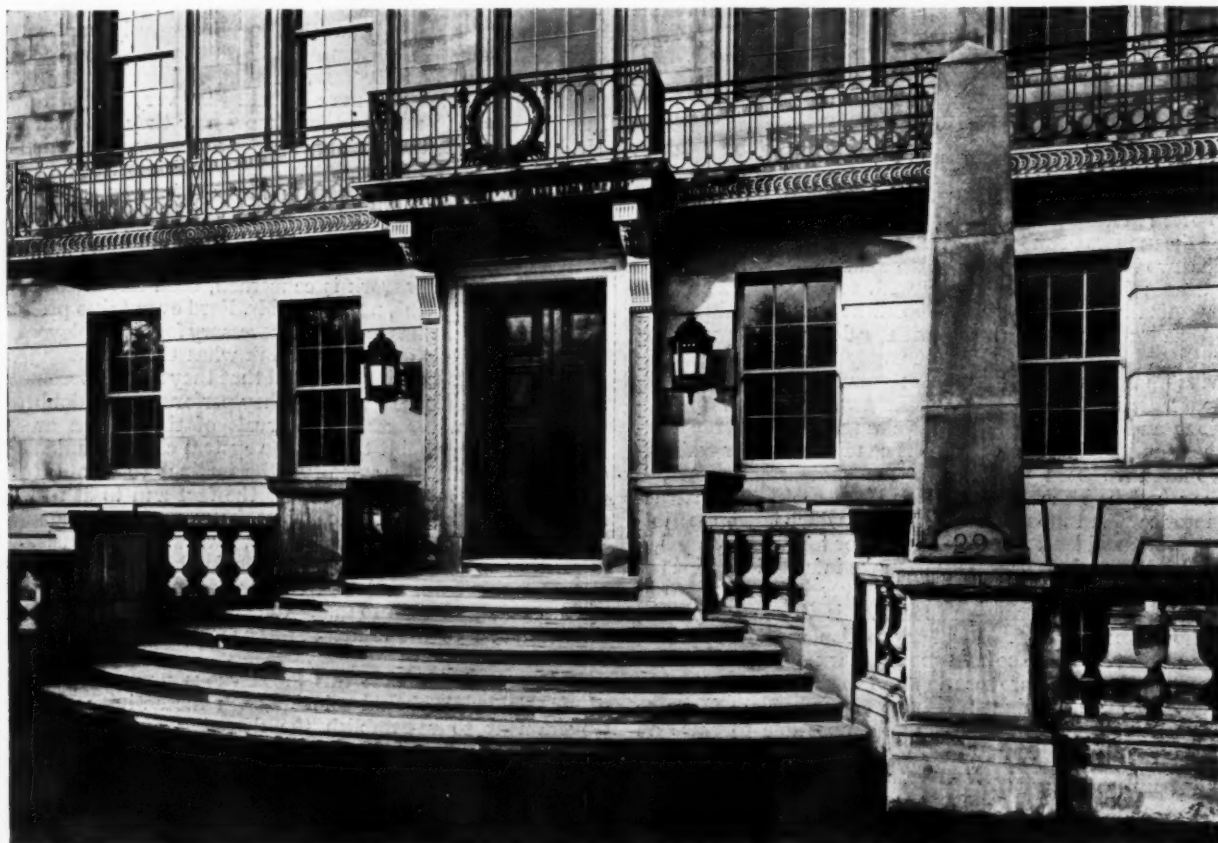
The Earl of Crawford and Balcarres, K.T., P.C.,
Hon. F.R.I.B.A. (chairman); Mr. J. Alfred Gotch, F.S.A.,
President of the Royal Institute of British Architects;
Sir Edwin Lutyens, R.A., F.R.I.B.A.; Mr. E. Guy Dawber,
F.S.A., F.R.I.B.A.; Mr. Walter Tapper, F.R.I.B.A.

The building was fully illustrated in the March issue of “The Architectural Review.” In reviewing the building in that issue Mr. Maurice E. Webb says: It is a great treat in modern London to find a new building which looks what it is, and does not attempt to ape something it is not. The plan is a model of what can be done with a small site; no

space is wasted, but a great deal of dignity is obtained by a simple sub-division of the space available. The sub-division decided upon is adhered to throughout. No false tricks or subtle use of steelwork are resorted to, to do what planning failed to do. Walls carry walls, and voids come above voids. The result is obvious. There is simplicity throughout, and one feels that one is in a building which (like Topsy) grew naturally and was inevitable when once the plan of the main floor was settled. Students of modern architecture may well study this building, not for any unexpected outbreak of originality in design, but for a thoroughly sane and sensible use of the space available, and thought for the purposes for which the building is required.

Mr. Francis Hugh Greenaway is an old pupil of Sir Aston Webb, P.R.A. He started practice in 1897.

Mr. John E. Newberry was for some years an assistant to the late John L. Pearson, R.A. He became a partner to Mr. Greenaway in 1904, since when they have worked together, first in Queen Anne's Gate, and then in Parliament Mansions, Orchard Street. They have designed, among other work, a large number of churches, hospitals, and schools, though it is with ecclesiastical work that their names are chiefly associated.



THE AUCTIONEERS' AND ESTATE AGENTS' INSTITUTE: A DETAIL OF THE ENTRANCE.

The Auctioneers' and Estate Agents' Institute, Lincoln's Inn Fields

Greenaway and Newberry, FF.R.I.B.A., Architects



The jury appointed by the R.I.B.A. to award a medal to the architect who has designed the best street frontage of the year has given its award in favour of the above building.

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From Bruges to Antwerp

By ALWYN R. DENT, A.R.I.B.A.

NO town in Europe, perhaps, is more redolent of the past than Bruges—"the Venice of the North"; and none provides more picturesque and unexpected vistas than are found along its silent canals and cobblestoned quays. So happily and so naturally are these varied groupings of buildings formed almost at every passing alley and bend of the water, that perhaps there is some excuse for the theory advanced by Camillo Sitte (the German town planner), that these effects are due in reality to the most elaborate art—*Ars est celare artem*. But it is difficult to conceive that the mediæval builders did more than build in an entirely unconscious fashion, adapting their winding streets to the natural conformation of the ground; other than forming a main "place" and disposing subsidiary features in picturesque relation thereto.

But over all dominates the great belfry. No one entering the main square at dusk can behold its dim silhouette towering against the sky, whilst the solemn clamour of the carillon echoes through the evening air, without realizing that here is struck, as it were, the keynote to the heart of the "Low Countries." These great towers, from which a vast expanse of plain is visible, and their clamouring bells, are the natural expression of the plain dwellers, just as they are foreign to the surroundings and character of the hill dwellers. Viewed by daylight the texture of the old belfry is of piquant interest. The very mellowed old brickwork and the sparing use of stone window dressing below; the severity of the external elevations of the "Halles"; and the contrast of the arcaded courtyard with the great steep

roof, are a few of the things noticed in the process of mounting to the belfry itself—the cry of the gigantic bells, whose ineluctable clamour seems to the climber to fill the whole circumambient atmosphere.

Though the mediæval remains are, of course, the chief glory of Bruges, there are many houses along the canals, belonging to the late seventeenth and eighteenth centuries, which well repay a careful study. Whether gabled or pedimented, there is generally visible in the doorway or other features that Baroque influence which may be traced to the Spanish occupation of the Low Countries. Nothing could be more austere simple than the façades of some of the houses, the simplicity of the well-proportioned fenestration being only relieved by the elegantly wrought iron fanlight and doorway, contrasting with its white colour against the grey of the walls.

But we may not linger in Bruges on such a short expedition; suffice it to add that, after all, "Bruges la Morte" no longer conveys the truth; not at least while a municipal fair occupies the Hôtel de Ville, and a loud-speaker in the market place gives forth from "2 LO" and Paris. Bruges awakens; and again reaches the sea via Zeebrugge.

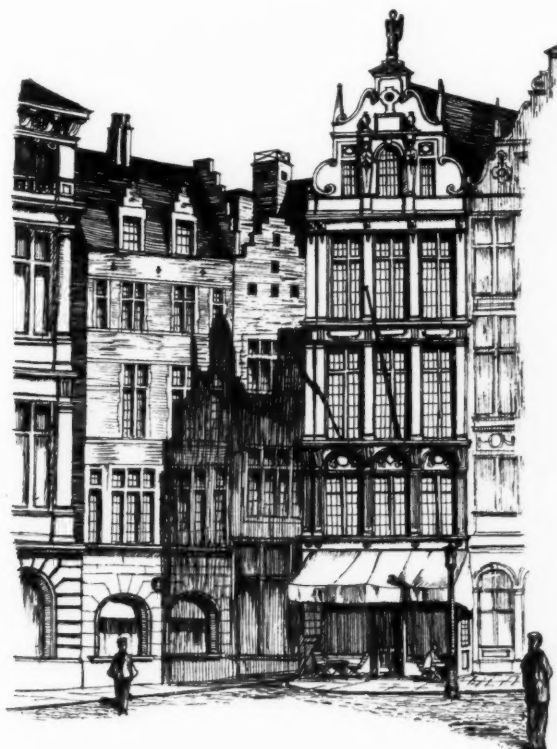
Ghent has a certain similarity to Bruges in its situation amongst its winding canals; though it is on a larger scale, and more industrialized. The belfry at Ghent is surmounted by a huge gilt dragon, the size of an ox. The original mediæval dragon, which was erected about the fourteenth century, is preserved below, together with some measured drawings of it made by the city architect, who, some forty years ago, mounted to the summit to take notes



Brussels Aug 22

A.R.Dent

"LE CYGNE" OR "BUTCHERS' HALL," AND THE MANSION DE L'ETOILE, BRUSSELS.



Antwerp Aug 24

A.R.Dent

THE ANGEL HOUSE, ANTWERP (1579).



ANTWERP: THE GATE OF THE SCHELDT.



ANTWERP: GRAND PLACE, FONTAINE DE BRABO.



BRUGES: COURTYARD OF THE BELFRY.



BRUGES: HOUSE ALONG CANAL.

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for a new one. There is also a very vivid "caricature," by a Flemish artist, of the hoisting of the said dragon to the top of the spire. The château of the Comtes de Flandres has a sufficiently sombre and menacing aspect to please the most ardent mediævalist.

Brussels.—One could hardly imagine grouped within the quadrilateral of one square a more fascinating collection of buildings than are to be found in the old "Grand Place"; the slender filigree Gothic Hôtel de Ville and Maison du Roi balancing each other, whilst the fantasies of the "Corporation Houses" fill the remaining sides. Each of these is a gem of northern Baroque art; some more sober in conception, others quite fantastic, such as the *Maison des Bateliers* (also known as *Le Cornet* or *La Frégate*)—it is a seventeenth-century ornate and gilded frigate in full sail along the market place, did not its more sober neighbours—*Le Renard* (the Mercers' Guild), and *La Louve* (or Archers' Hall)—restrain it. As a personal preference, the writer inclines to *Le Cygne* (the Butchers' Hall), most pleasing in its composition, more elegant than exuberant. The distinctive note of gilding the ornamental features—flutes in pilasters, etc.—imparts a richness and floridity to these old façades, which seems perfectly in character with the pristine opulence of the ancient guilds.

The Palais de Justice is one of those imposing creations which inspire respect rather than affection. Dominating as a mass, fascinating as a display of intellectual geometry; nevertheless, the mechanical repetition of its somewhat arid detail, and the over-emphasis of its subsidiary features destroy the feeling of repose, and seem to create a lack of that humanistic character which is nearly always linked with the most powerful conceptions of the great Renaissance architects.

Antwerp is, of course, more distinctively Flemish in character than Brussels. In the old Grand Place, we find the same ornately designed "Corporation Houses" adjoining the Hôtel de Ville, which, however, here, is a Renaissance design of Spanish influence, designed by one Cornelius Floris, in 1561. In the middle of the square is an elaborate naturalistic fountain of wrought-iron, known as the "Fontaine de Brabo," erected in 1887. According to the legend, which dates from the times of Cæsar's Gallic campaigns, in ancient times a giant named *Antigon* levied toll upon all craft using the Scheldt, and had the objectionable habit of cutting off the right hand of all mariners who refused to pay the toll. At length one *Silvius Brabo* arose and slew the giant, cutting off his right hand, which he threw into the river as a token of delivery from the giant's oppression. Surmounted on a pedestal of sea-monsters, amongst which reposes the headless body of the giant, the figure of Brabo is seen hurling the giant's hand into the Scheldt. The Gate of the Scheldt is the only ancient gate of the town now existing. Erected in 1624 in honour of Philip IV of Spain, it was designed by Rubens (whose statue adorns the Place Verte near by). On the reverse side is the reclining figure of the River Scheldt, supported by rusticated pilasters, bearing an inscription in Latin in adulation of the king and the prosperity of the town; which was practically ruined not long afterwards by the Treaty of Munster, which caused the closing of the Scheldt. During the eighteenth century Antwerp had fallen very low, until revived by the ambitious schemes of Napoleon, and subsequently by the freeing of the navigation of the Scheldt from toll (1863); since when the docks and quays of the city have increased immensely in size and prosperity.

Additions to the United University Club, Pall Mall

SIR REGINALD BLOMFIELD, R.A., Architect

THE earlier portion of the United University Club in Suffolk Street, Pall Mall, were designed and carried out by Sir Reginald Blomfield in 1905. The present additions were made under difficult conditions, owing to the contracted site. In order to avoid interfering with the lights of adjoining owners, the back part of the building had to be "pitched" at an angle of 60 degrees, giving a roof about 40 ft. high, which started about 30 ft. from the ground line.

The details of the elevation follow, as far as possible, those of the original building. The extra accommodation provided by the additions includes an entrance hall, dining-room, and drawing-room. Messrs. Carmichael, Ltd., were the general contractors.

The older portion of the club had itself been rebuilt upon the same site and the same area as the old club-house. The old club-house followed the usual practice of devoting the centre third of the building to a grand staircase, which took up a great deal of room, and wasted more by separating the club into two halves. Such a plan was out of the question in the 1905 building, and in order to provide the requisite accommodation it was necessary to place the hall and main staircase at the north end of the building facing west down Suffolk Place.

The following accommodation was also provided: Kitchen and offices and cellars in the basement; smoking-room, reading-room, entrance hall, main and back stairs, and lavatories on the ground floor; club dining-rooms, *en suite* and occupying the whole of the fronts to Suffolk Street and Pall Mall, coffee-room, main and back stairs, lavatories, on the first floor; library, smoking library, billiard-room, card-room, secondary main stairs and back

stairs, lavatories, etc., on the second floor; billiard-room, card-room, three members' bedrooms, bathrooms, lavatories, etc., on the third floor; seven members' bedrooms, steward's room, and boys' bedroom, bathroom, etc., on the fourth floor. A passenger lift was provided to run up to the third floor, and a double-service lift from the basement to the fourth floor, with service rooms on every floor and double-service lifts from the basement to the dining-rooms on the first floor.

The façades of the entire building are faced with Portland stone, and the roof is covered with Westmorland slates; the building throughout is of fire-resisting construction.



THE ENTRANCE HALL.



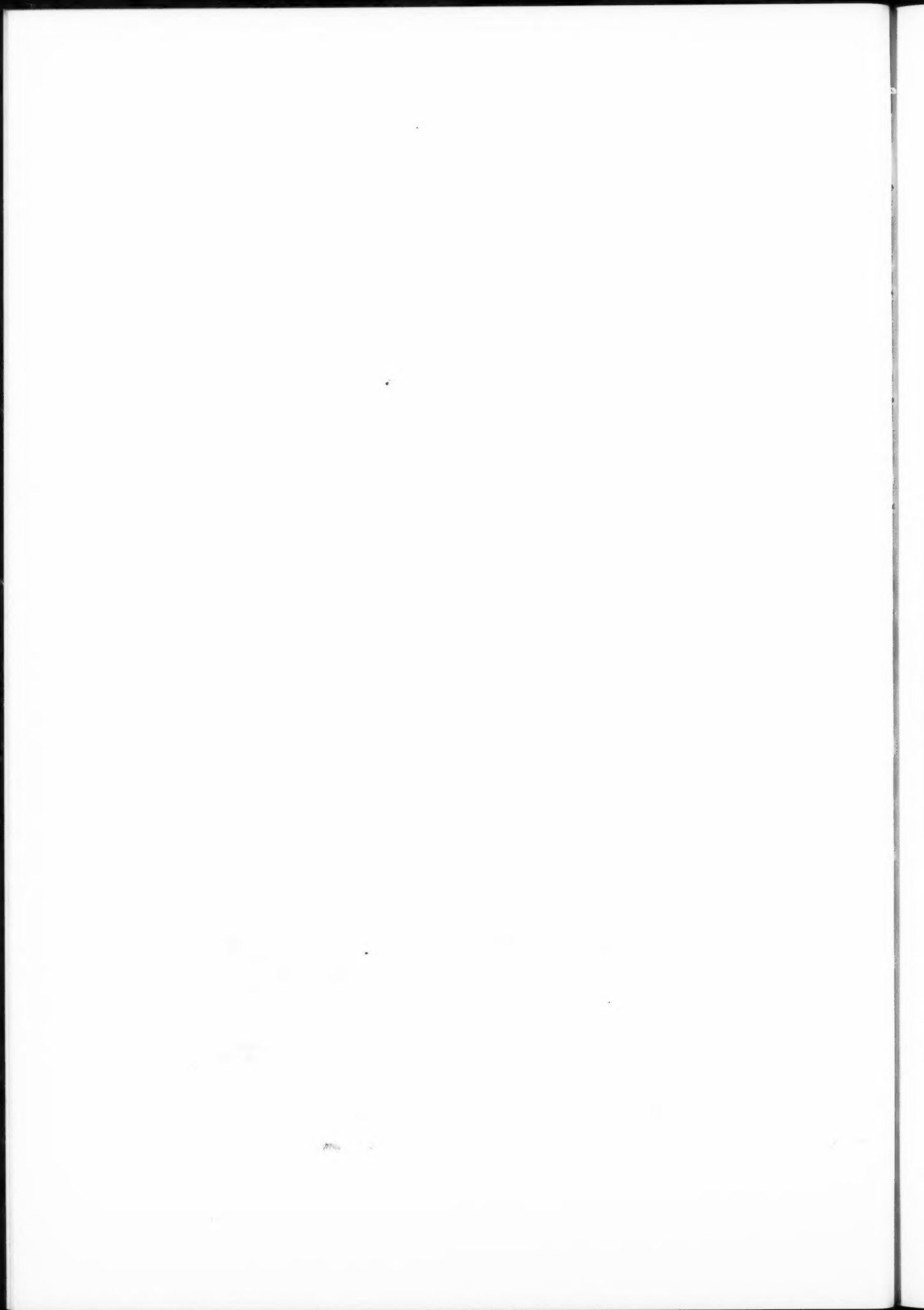
THE UNITED UNIVERSITY CLUB, PALL MALL: A DETAIL OF THE ENTRANCE.
SIR REGINALD BLOMFIELD, R.A., ARCHITECT.

Current Architecture. 267.—The United University Club, Pall Mall

Sir Reginald Blomfield, R.A., Architect



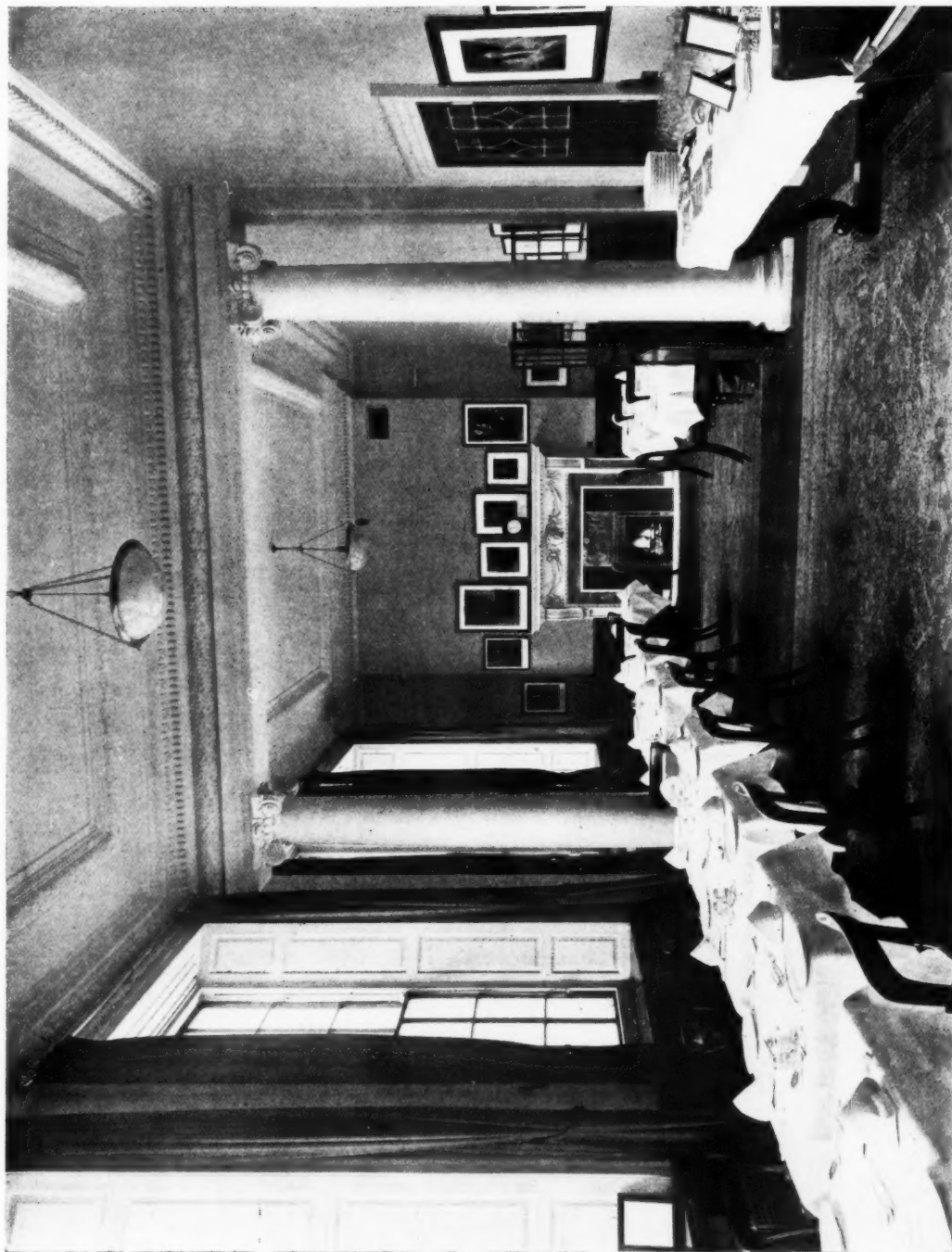
The recent additions to this club follow in detail, as far as possible, those of the original building designed by Sir Reginald Blomfield in 1905.



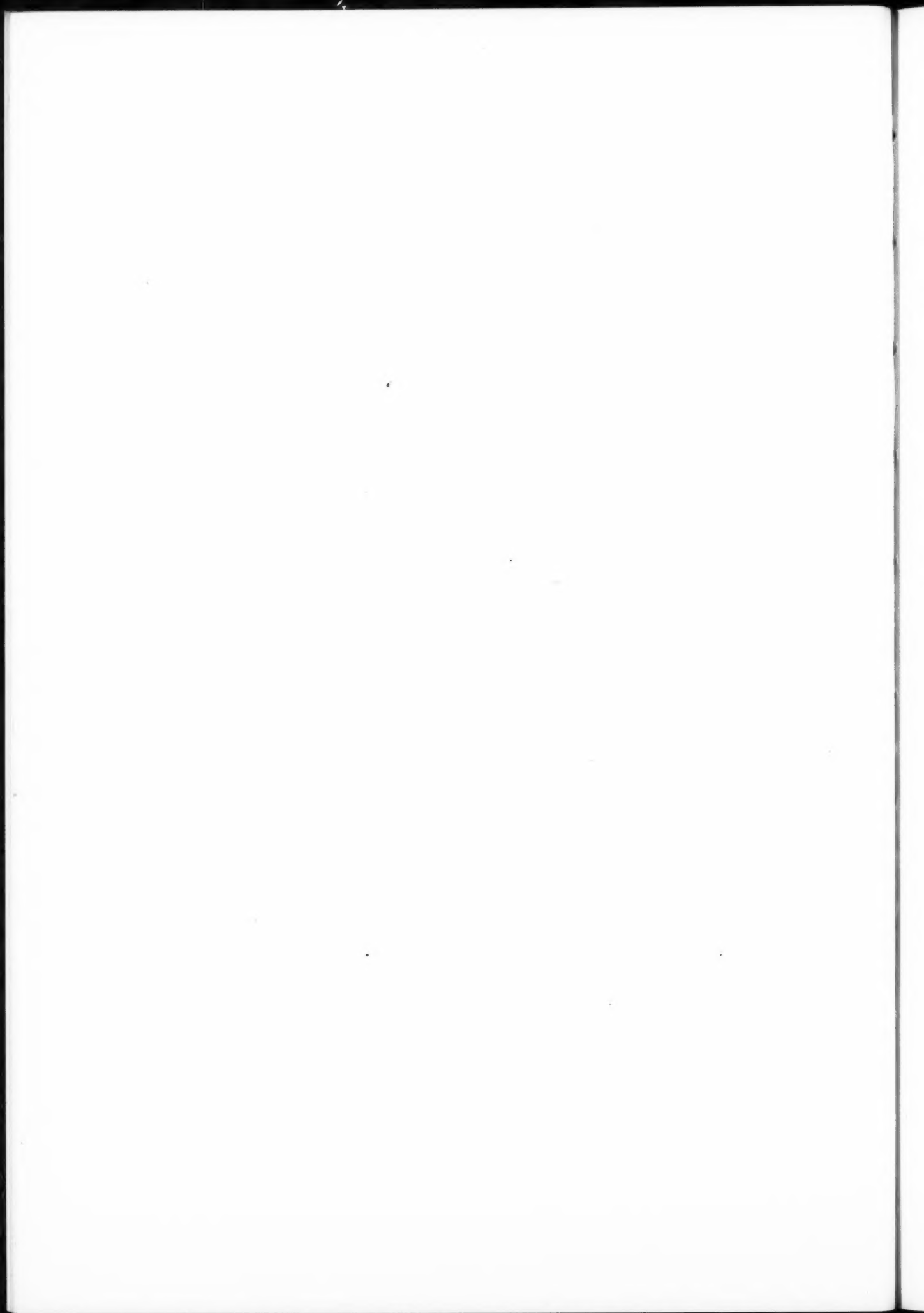


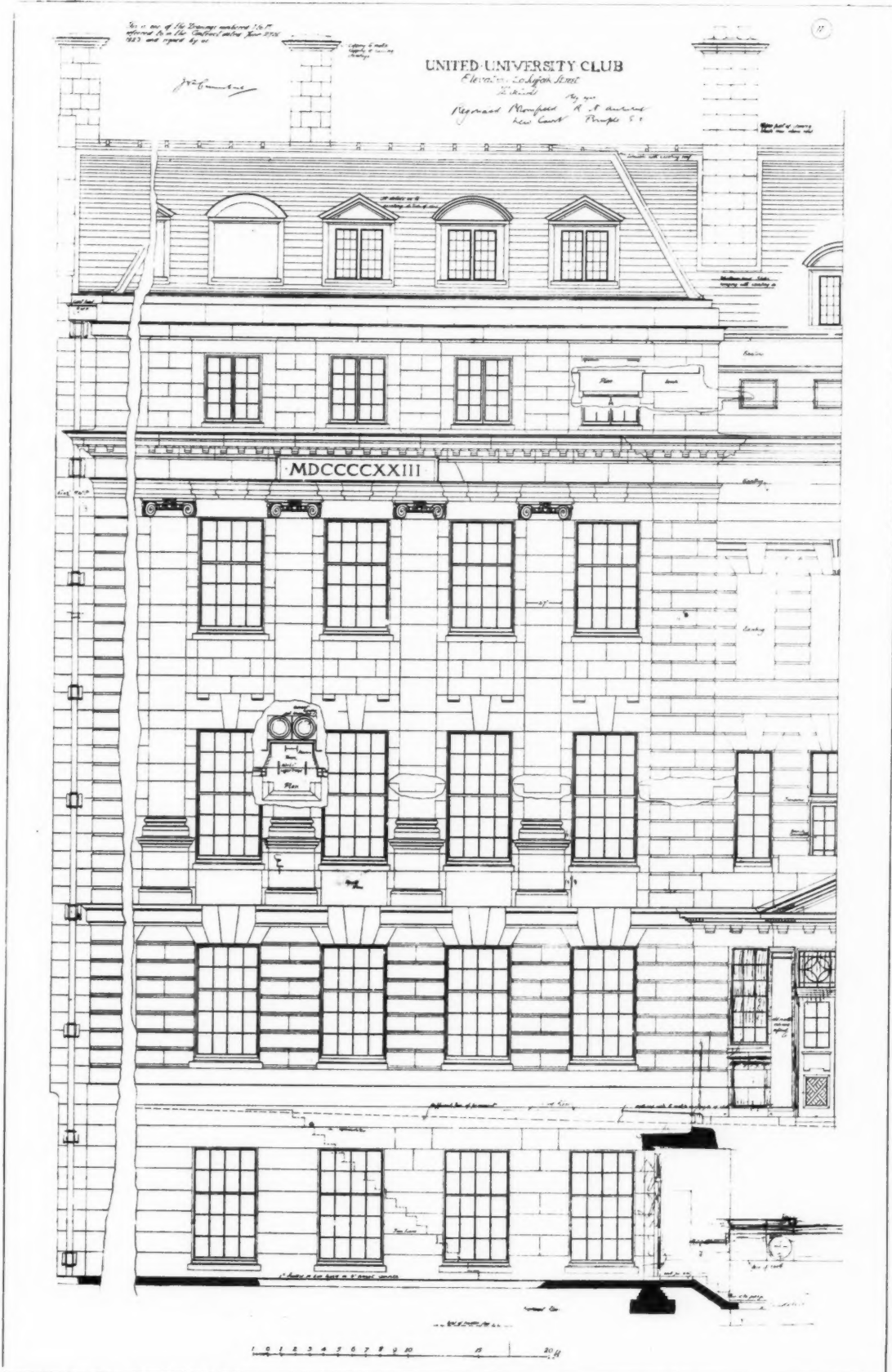
THE UNITED UNIVERSITY CLUB, PALL MALL: A FIREPLACE IN THE STRANGERS' ROOM.
SIR REGINALD BLOMFIELD, R.A., ARCHITECT.

Current Architecture. 268.—The United University Club, Pall Mall: The Strangers' Room
Sir Reginald Blomfield, R.A., Architect

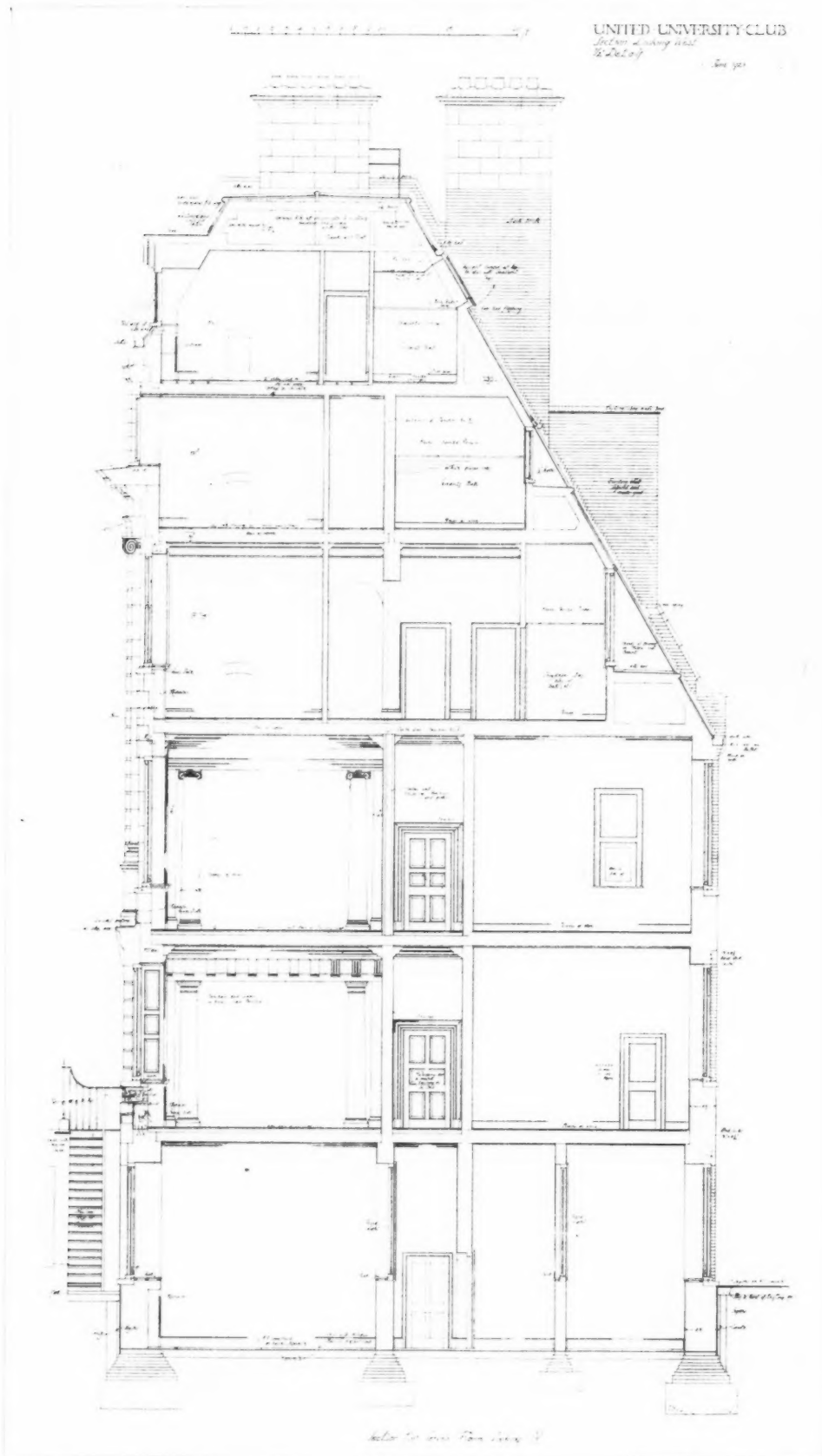


A detail of one of the fireplaces in the Strangers' Room, appears on the facing page.

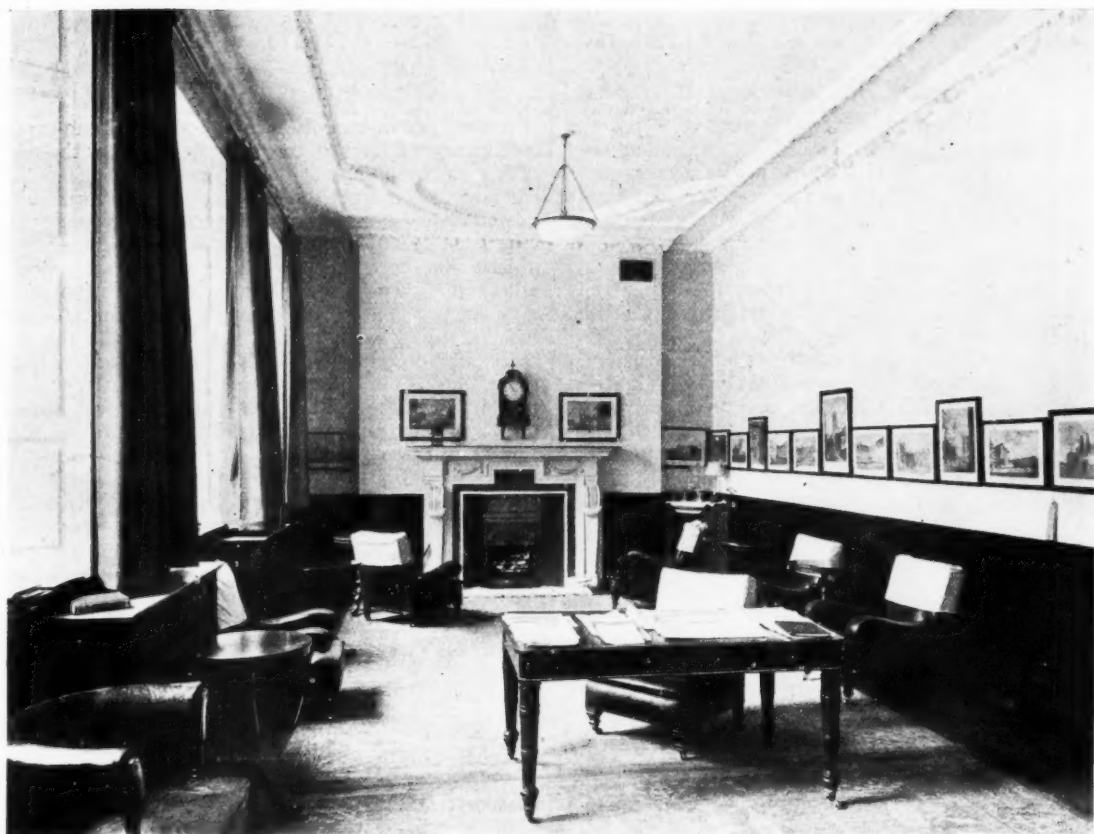




THE UNITED UNIVERSITY CLUB, PALL MALL: ELEVATION TO SUFFOLK STREET.
SIR REGINALD BLOMFIELD, R.A., ARCHITECT.



THE UNITED UNIVERSITY CLUB, PALL MALL: SECTION LOOKING WEST.
SIR REGINALD BLOMFIELD, R.A., ARCHITECT.



THE UNITED UNIVERSITY CLUB, PALL MALL: THE DRAWING-ROOM.

The Architecture Club at St. Paul's

THE Architecture Club paid a visit last week to St. Paul's Cathedral to inspect the present restoration work and the models and plans in use. Mr. Mervyn Macartney, the architect, was unable to be present, but the assistant clerk of works conducted the party, and explained the position with skill and knowledge to the many distinguished architects who were present. Writing in "The Manchester Guardian," J. B. says: So much has already been said about the cause of the subsidence and cracking, and so many different views have been given of the right way to preserve it, that the layman is mainly conscious of his ignorance of the stresses and the vast finesse of weight distribution and thrust and counter-thrust, and the enormous warring bodies of arrested motion which make a great structure. Two points seemed particularly to impress Wren's professional brethren—the audacity of his design and the poverty of his material. The audacity of his eight-legged dome with all the problems involved by the pressure on eight piers and arches, and the poverty of his material in the rubble-filled, stone-cased piers, and in so many other parts. In a chamber in the upper floor, over the transept domes, for instance, one inside wall had been built of clunch, and this had given way in Wren's lifetime and had been cased in a veneering of 3-in. Portland stone.

One became conscious, gazing up at the perceptible bulging over the pier capitals at the springing of the arches of the terrible thing that was happening to the great structure. It was coming to life again; it was no longer arrested motion. We did not see the great opiates in the form of liquid grouting that are being pumped into the

piers, but it was clear from the conversation around one that the doctors differed very much about the treatment. One view strongly expressed was that while the piers might be turned into monoliths the problem of tying back the spread of the drum would still remain and threaten. The possibility of getting the grouting not only into all the fissures and cavities in the rubble, but to saturate the crumbling cheese-like substance inside the piers was also canvassed.

But one thing that particularly impressed the layman who had read much criticism of Wren as "jerry-builder" was the boundless admiration for his ingenuity and skill and unending genius of his modern brethren as they studied the plans and models, thinking of the scanty data on which Wren had to base his calculations, and his Gothic workmen just learning the classic style of building, and their own sources of knowledge prepared and scheduled in libraries and all the consulting engineers for tight corners.

The wanderings of the party brought them into parts of St. Paul's that very few Londoners have seen. It is not generally known that you can go right round St. Paul's by passages in the lining of the walls and over the small domes in the aisles and transepts, and that there are dozens of great chambers in which are housed models of the cathedral, from Wren's original "warrant" design to the models made for Sir William Richmond when he was designing his unesteemed mosaics for the cathedral. None of these models, however, ingenious and beautiful as they are, excelled the mahogany model of the great pier and superstructure which had recently been completed by the assistant clerk of works and his brother.

The Architecture of Concrete*

PROFESSOR BERESFORD PITE at the R.I.B.A.

THE architecture of concrete is that of a material dealt with in a fluid state, poured into and allowed to harden in moulds, which in the process are a temporary part of the fabric. The forms into which it ultimately hardens are created when it is plastic and possessing a freedom new to building processes, unknown to stonework and beyond the scale and scope of any moulded brick or terra-cotta. Its possibilities of entirely novel form are therefore new, and really terrify the tradition-loving imagination of the architect.

Combined with this initial plasticity, and consistently secreted within, lie the reinforcements of steel rods, gathering up the tensile and shearing strains that rend the built-up wall of masonry or brickwork, and thus dispense with thickening piers and buttresses. Walls, even when not mere panels between piers, have a thinness that is unusual and which baffles the ordinary architectural conception of a wall like boiler plate building.

The reinforcement does not dispense with articulation. Though it is not bare, as it may be in steel framework, it exists clothed with the concrete of the composite material.

It is not the least useful of the qualities of the combination of steel and concrete that an essential unity of structure results from the mixture of minerals and metal. The advent of concealed steel framing into walls used to be justified by the analogy of the human skeleton, and answered by the purists with the retort that the flesh had no structural relation to its bones. But the simile will now hold good if perhaps carried further into the analogy of muscle and tendon which yield the beauty of form to the animal figure.

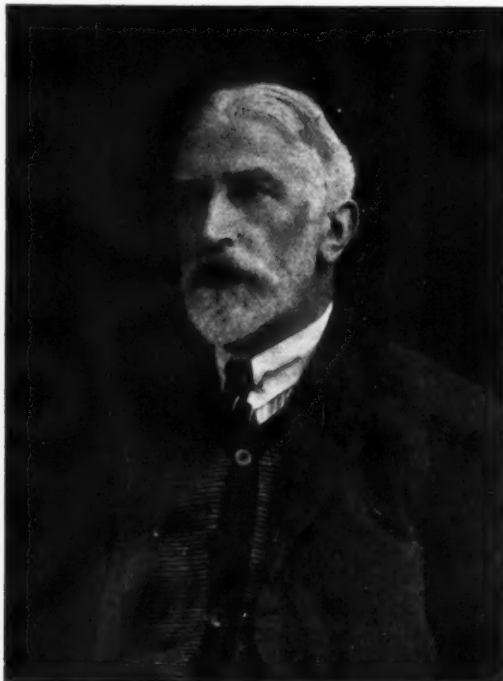
Ultimately, of course, the static result of the building is identical with that of the older forms of construction, though the architectural expression which depends so largely upon tradition is very different. The column and lintel of ferro-concrete still exercise the functions of those of the Doric Order, but with greatly extended range. Imagination and sympathy with Greek thought should not be alarmed by the suggestion that the Parthenon, if con-

structed of ferro-concrete, would only need one supporting column at each angle of the peristyle, and that the subtleties of intercolumniation may be dispensed with. The cantilever can now be constructed and employed with a certainty that opens fresh possibilities of adventure beyond those so laboriously and wonderfully developed in Indian Dravidic architecture. As in bridge construction, it replaces the arch and dispenses with buttresses. Again, the emotions may be perplexed by a dream of the vaults of Rheims, Amiens, or Beauvais carried aloft without the external scaffolding of flying buttresses, as graceful and necessary to our minds as the peristyles of Greece, but it is evidently not only possible but as proper to employ the resources of ferro-concrete for imaginative architecture as masonry. The arch in ferro-concrete alters its nature; to the Greeks it was probably but a subterfuge, to the Romans a constructional wonder known only in its semi-circular form with its regular elliptical intersections, but developed in mass concrete with brick reinforcements with an energy and success that may be considered as one of the most potent illustrations of an empire's character supplied by architectural history. But what would not the builders of the Pantheon and of the vaults of Maxentius and Caracalla have achieved if ferro-concrete had relieved them from the enormous burden of abutment! The Roman genius that had established a new architectural beauty in sheer construction effect, with proportions of strength and dignity undreamt of by the Greeks, can well be credited with revelations of the possibilities of ferro-concrete construction exceeding anything that even now has been attempted, either in the old world or in the new.

The effect of the difference in constructional method of ferro-concrete upon architectural expression appears to be cruelly destructive of the materials upon which architectural imagination and invention operate by destroying the *raison d'être* of the most characteristic features and their proportional relation. The new conception of substance as fluid when handled, slowly coagulating around muscular rods, reduces to absurdity the construction of obelisks or carved pinnacles. The evolutionary processes of building up and craftsmanship which underlie the interest of most architectural features having been replaced, all relation to an historic past ceases, and historic forms originating in historic workmanship of solid materials become the material of the anthropologist rather than of the architect.

Together with the structural revolution of architectural idea involved in the new method is the entire alteration of surface or texture, which plays such a subtle and valuable part in the harmony of artistic effect. Without the conception of masonry, with its interesting surface and intelligent jointing, a pyramid, a temple, or a cathedral becomes a lifeless mass; one of the most considerable elements both of natural and human interest in the walls would be absent and the monuments of past art might seem only to have the interest of full size models of forms incapable of material analysis.

But we shall have to conceive a concrete architecture without joints or their adventitious imitation as in the stucco palaces of West London, and we must honestly brace ourselves for the effort. Imitation of technique can only be occasionally justified as a decorative expedient when deception is impossible—as in the painted masonry of Gothic decoration or the rustications of Renaissance precious metal-work. In cement concrete it is a confession of weakness by the architect that its mere absurdity cannot dignify even if designed with humorous intent. The plea for the quality of scale afforded by the sub-divisions of jointing must be satisfied by other less invidious means than by imputing to a liquid the properties of a solid. The affectation of age and antiquity, such a besetting sin with



PROFESSOR BERESFORD PITE, F.R.I.B.A.

* Extracts from a paper read at the R.I.B.A. on Monday, March 30.

architects to-day, is comparatively venial to such a contradiction of essence as relying upon the effect of masonry in a ferro-concrete wall.

The results of the discussion have up to the present been mainly negative. What are the more positive results of this revolution in constructional architecture? The losses seem ominous. Are there not compensating gains, is not the freedom from an age-long bondage to be welcomed, cannot artistic imagination conceive new delight in the expression of construction in which the increased strength of slender pier, long-bearing lintel, and wonder-working cantilever shall be employed?

One of the first positive observations is that concrete building is economical only in the largest structures. The new material is proving its value in the competition with traditions in big rather than small examples. At first with the great retaining walls of wharves and docks, then in embankments and bridges, and in the latter developing shapeliness that suggests architectural purpose. The erection in concrete of great warehouses and factories ensues and ultimately buildings that claim attention in important places, and, therefore, a fuller consideration of appearance and harmony with public feeling. In these works, up to the last class mentioned, there has been no occasion to avoid the simple expression of purpose and in warehouse and factory building, on the whole, the honest pride of proving successfully that the experiment of the new material solves unaffectedly the modern requirements of commercial building. The attainment of mass without the adventitious aid of stories of orders or mammoth cornices has been achieved as directly as in a Gothic castle of stonework. The keep and bailey are as direct and grim in their expression of purpose as the many-storied mill or small arms factory with its daylight-saving fronts.

The accomplishment of considerable buildings in concrete without any resort to the paraphernalia of stonework architecture is a step forward that we should pause to recognize. It is to be realized that our civil and ecclesiastical architecture, heavily labouring in the endeavour to revivify the dead, cannot be reckoned as the most characteristic building expression of our age. It only suggests that architects minister to the prejudices of unperceptive clients—but in our midst, upon a scale far exceeding in volume houses, churches, and municipal halls, commercial building is marking our epoch with the factories and storehouses of imperial industry and wealth.

A further element is the advent to architecture, through ferro-concrete, of an originality that is consequent to the unusual material. The long drawn out desire for a new style may thus find its fulfilment safely and reasonably in the novelty of the substance and method of building. This originality is necessarily natural and unforced. It lies not only in perceiving the architecturalness of big commercial buildings and in obviousness of purpose, but in the new conception of proportion that ferro-concrete involves. The factors of architectural safety are no longer resident in the classic tradition of a stonework "order," originally based on the possible bearing of a marble lintel, with its column, architrave and intercolumniation, or upon the apparent balancing of an arch. These have passed away, at all events the logic of their application to concrete building has ceased. We are now accustomed, or becoming so, to any length of span, and, therefore, the relation of voids to solid, once a doctrine of design, is freed from stonework precedents—"the case is altered," and we must readjust our canons of design. It will be clear that if the conception of satisfactory proportion based upon stonework building is relative to precedent and not absolute ferro-concrete must create its own standards. It is, in fact, doing so by every example that frankly employs its resources. A novel proportion is not of necessity bad, a lesson that Mr. Butterfield strove to teach the Gothic revivalists; if the new relation of dimensions is constructively sound justification must ensue. The sentiments of the artistic heart will submit, in architecture, at all events, to the judgments of the head.

A final positive gain to architecture in the advent of ferro-concrete is the new spirit of artistic and constructional adventure which the elasticity of the material and the novelty of its applications reveal. The inventive genius of designers has always striven to bend the columns of its masonry prison and over-balance its walls. Apparently, that is, to old-fashioned sight, ferro-concrete laughs at the laws of gravity, just as the architects of the baroque rejoiced in an exuberance of fancy that playfully but unnaturally twisted the members of the classical orders into acrobatical energy. What would not Bernini have done in ferro-concrete? is a question that may be mated with. What would not Brunneteschi have achieved? Examples are already at hand of first steps on the upward or downward road of freedom or dissipation; on these we do not at present dwell, but the door is opened, the designer is no longer in a stonework prison; the first freedom should be dedicated to exploring and exemplifying frankly the new characteristics of virility and adaptability which lie in the material. It will be a service demanding courage as well as clear-sightedness, but it is demanded in order to pave the way for the recognition and establishment of the new conceptions of architectural proportion which the use of ferro-concrete has introduced. The dead hand of the past has been lifted from architecture, Renaissance is no longer its aim; like the philosophers and artists of Italy in the Cinquecento we are marching to a dawn, but it is not of the long-set sun of classical precedent, it is in the light of an entirely new science of building that glorious adventure is to be sought.

Sir E. Owen Williams moved a vote of thanks to the reader of the paper. He said that if he might be permitted to summarize the paper its desire was not to dogmatize but simply to ventilate, through discussion, the architecture of a new material. He had seen the paper described elsewhere as "The Architectural Treatment of Reinforced Concrete," but preferred the author's own title, "The Architecture of Concrete." The introduction of the word "treatment" seemed to him to indicate that concrete itself could not be architectural, and required some sort of treatment in the hands of a doctor. He was quite prepared to admit that reinforced concrete, as it was commonly known, justly deserved the stigma, but it was interesting to follow the path by which the material had, to a large extent, fallen into disrepute architecturally.

He considered that had the ancients been in possession of concrete they would have constructed their buildings of concrete without reinforcement, relying solely upon weight for stability in the one structural element that permitted of this, namely, the arch. He was referring, of course, to monumental structures, i.e., buildings requiring to last more than one hundred years. The lecturer drew no distinction between buildings of the monumental category and buildings of the lesser permanent character, although the distinction was one of the utmost importance.

The lecturer had, he thought, in his paper become so enthusiastic about reinforced concrete that he pictured it as the materials the ancients would have used for their monumental buildings, and he ruled out the arch as a structural idea no longer of any value. He was afraid he must depart from him in this respect, as he held a definite opinion that the arch was the only structure that could be permanent in any sense of permanency, and that any design allowing tensile stresses calling for steel reinforcement had necessarily within them the elements of destruction and ultimate failure.

Professor William Rothenstein, Principal of the Royal College of Art, seconded the vote of thanks.

Professor Lionel Budden stated that the lecturer had mentioned that the function of constructional teachers was limited by the examination of the Royal Institute; he submitted, however, that was not the case. He rather thought that the lecturer had caricatured the teaching of construction as given in the schools. There must, however, be a great deal in the old methods.

Magazines of the Month*

A Literary and Pictorial Digest

A VIEW of Old London Bridge, painted in 1650 by the Dutchman Claude de Jongh, forms the frontispiece to the April issue of THE ARCHITECTURAL REVIEW. The least superstitious of sailors would be shocked nowadays by the sight of two rows of tall houses built full across the width of the Thames, and even from the architect's—the landsman's—point of view, the feat is sufficiently arresting. There follows, in this number, an article on "Old Bridges" by Mr. Basil Long, in which we note the mild surprise of one Peter Munday on crossing such an overbuilt bridge in Paris: "wee went to see the Cittie, and first wee sawe one of the Bridges over which wee passed, not knowinge then but it was a streete, having shoppes and dwellings on either side from end to end, lyeing with the rest of the Cittie." A structure called Old London Bridge delighted many visitors to the Wembley Exhibition, and it is in the exhibition, or the museum, that such bridges nowadays have their proper place.

Sir Edwin Lutyens's architectural gem, the Midland Bank building in Piccadilly, is illustrated in this number. It is a thing of which Wren himself might have been proud.

The "Garden Design" series reaches its ninth article, and, as examples of modern English work, gardens by Mr. Guy Dawber, Mr. Walter Cave, Mr. Clough Williams-Ellis, Mr. Oliver Hill, Messrs. Romaine-Walker and Jenkins,

Messrs. Blow and Billerey, and Messrs. Forbes and Tate are shown.

The "Temple of Humanity" at Liverpool (also illustrated in this number) by Mr. W. H. Ansell is an outstanding piece of work. Designed as the headquarters of the Positivist Community, the building was influenced in its plan by the ritual of the Religion of Humanity as practised by the followers of the founder of the faith, Auguste Comte, and the exterior merely expresses the plan as simply as possible. The constructional features are arranged to produce their own effect, having no conscious "period" mouldings or enrichments of any kind. For the uncompromising effect of its appearance, the building might be placed side by side with the late Sir Ernest George's crematorium at Golders Green—both buildings a little terrible by their denial of all sentiment and emotion and their acceptance of reason alone.

PENCIL POINTS for March devotes pride of place, and twenty pages of its issue, to the draftsmanship of Harold Van Buren Magonigle. "As with his designs his drawing is marked by an individuality much more easily detected than explained," says Mr. Francis S. Swales. "Such influences as other men have exerted upon his work are to be found only in a collective sense. They may be said to be French and Roman but not of any individual Frenchman or Roman, nor of any particular style. He has selected his own path and created and developed a style of his own. One that

*All the above magazines and many others may be seen in the Reading Room at 9 Queen Anne's Gate, Westminster.



THE MIDLAND BANK, PICCADILLY. SIR EDWIN LUTYENS, R.A., ARCHITECT FOR THE EXTERIOR, WHINNEY, SON, AND AUSTEN HALL, ARCHITECTS FOR THE INTERIOR.

(From "The Architectural Review.")



A GARDEN HOUSE, EYFORD PARK, GLOUCESTER. E. GUY DAWBER, ARCHITECT.

(From "The Architectural Review.")

holds to high scholarship and thoroughness of workmanship and achieves originality in spite of itself rather than on purpose of seeking it." "The more drawing the designer can do the better the result will be," adds Mr. Swales, "provided, of course, that the designer or architect is as able as such assistants as he can employ. Mr. Magonigle carries this principle very far; and of his designs, not only are the *general masses* and *general ideas* of the plans his, but also the complete working out of every important detail. Here we find an architect of the kind that produced the great works of the Renaissance in Italy, skilled in the contributory decorative arts of painting and ornamental sculpture and able to show by clear, forceful draftsmanship whether by line, brush, or modelling tool—just what it is that he desires to bring into existence."

MODERNE BAUFORMEN (Stuttgart) for March is, as its title indicates, a magazine devoted to modern domestic work. Much of that illustrated is very good—and some of it is very bad. Work by Professor Paul Bonatz, Hans Volkart, F. E. Scholer, W. Körte, and Hanns Hübbers, is illustrated.

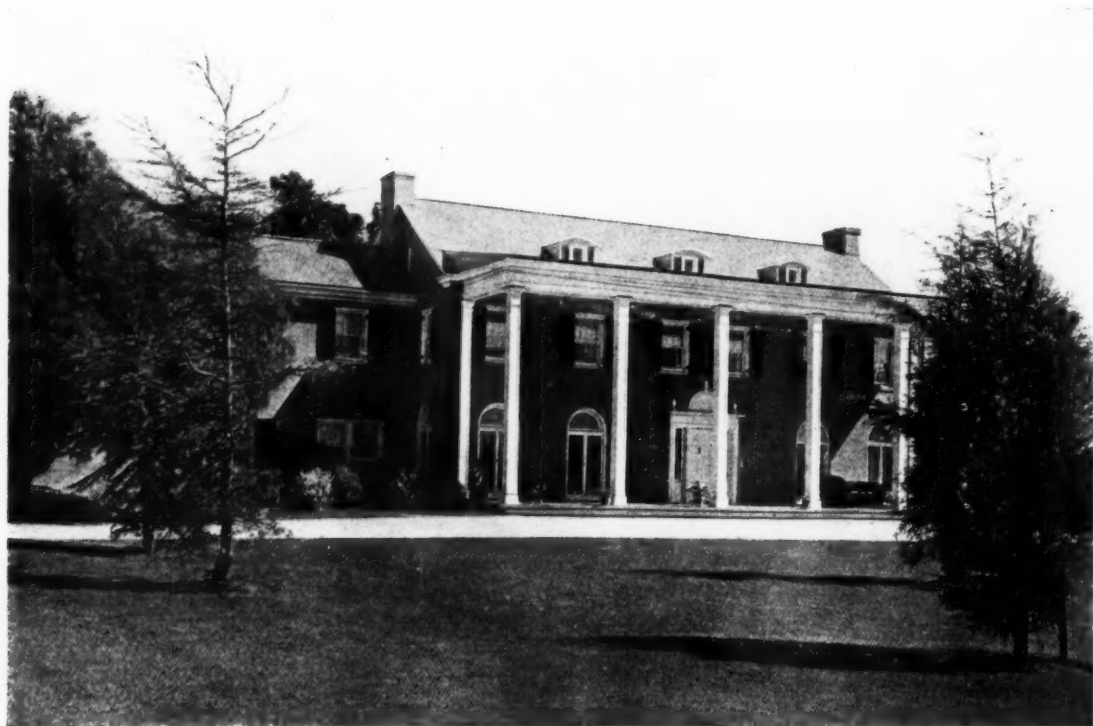
THE ARCHITECTURAL RECORD for March illustrates the Cornell Crescent, the new athletic stadium recently erected at Cornell University, Ithaca, New York.

The most distinctive feature of the general design is, of course, the rather unusual sky-line curve produced by the combination of the circular curve in plan with the logarithmic curve in cross-section. Geometrically, this curve may be approximately defined as the intersection of a logarithmic horizontal cylindrical surface with a circular vertical

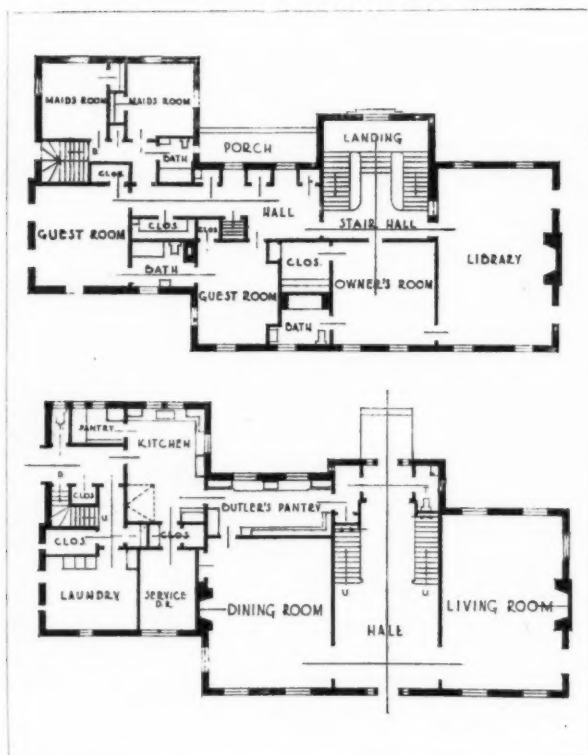
cylindrical surface. This sky-line curve is, however, merely incidental to the design, resulting from practical logic in its development. In fact, every detail of the design was arrived at through the logical process of adaptability to the best fulfilment of its purposes, with the belief that the proper development of this principle would in itself assure a suitable and satisfactory appearance.

The vertical curve of the cross-section follows what is now generally accepted as the best practice in the design of important structures of this kind. The principle of continuously increasing the slope of tiers of seats as they rise upward from the arena has been followed frequently since the day the Coliseum was designed in Rome, and even the design of that very early structure shows some indication of it. By so doing, the clearance of the lines of sight is maintained at a constant average, and the total height of the structure is restricted to the minimum. Whereas, however, in some of the early classical structures and also in some few modern structures of the twentieth century, this increase in slope was attained by varying the dimensions of *both treads and risers*, the best modern practice, for uniformity of comfort, in the usual case keeps the tread dimensions constant and confines the variations entirely to the riser dimensions.

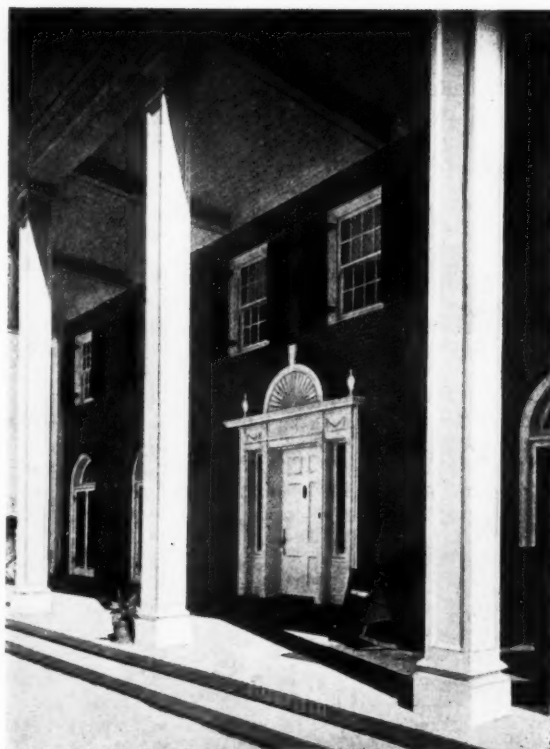
The circular curve of the plan follows naturally and logically from efforts to develop the design so as to place all the new seats as advantageously as possible for viewing the football field. From the very beginning of the American game of football it has been the universal wish of practically all football spectators to sit as nearly as possible on a



THE VERANDAH FRONT.



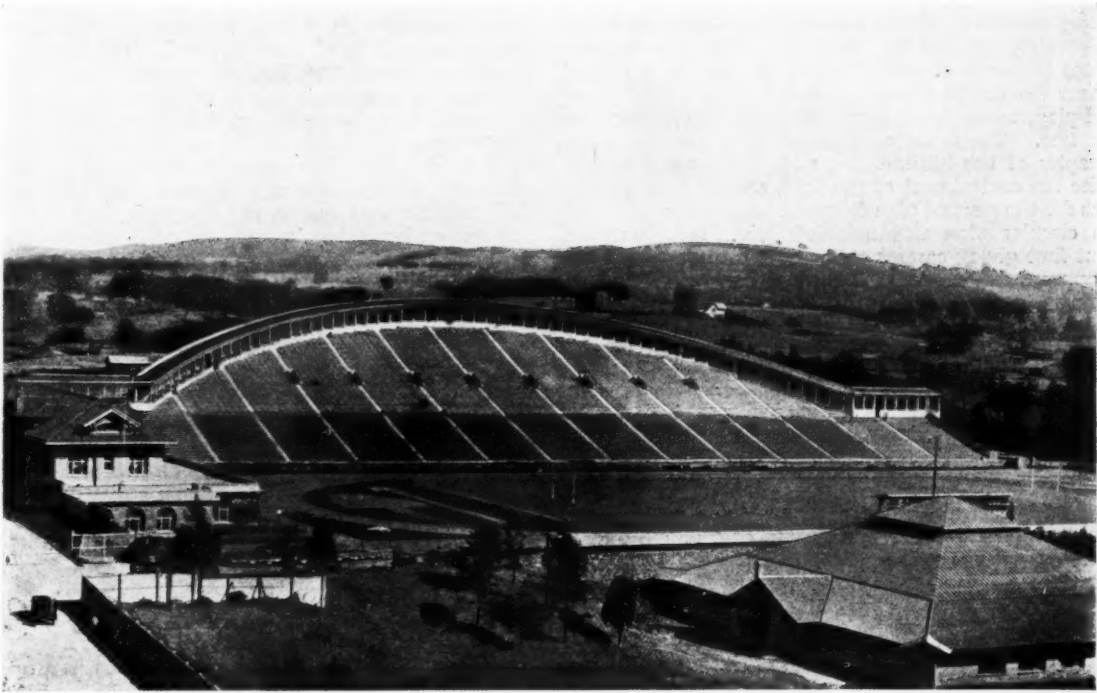
PLAN OF GROUND AND FIRST FLOORS.



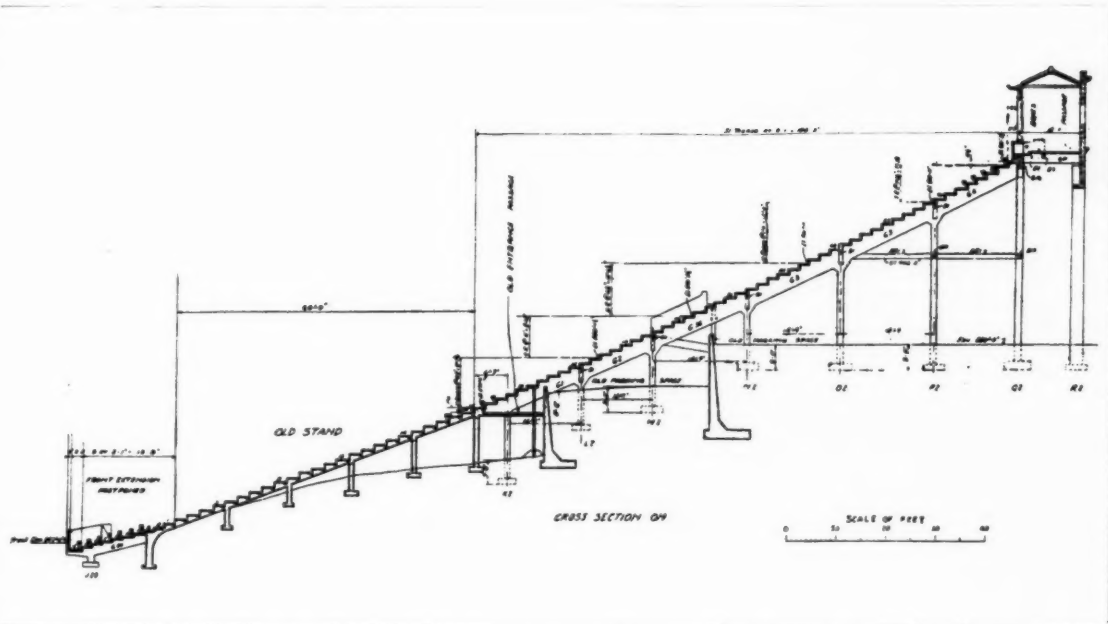
A DETAIL OF THE VERANDAH FRONT.

A HOUSE AT PALMS, CALIFORNIA. MARSTON, VAN PELT, AND MAYBURY, ARCHITECTS.

(From "The American Architect.")



GENERAL VIEW FROM THE WEST.



CROSS-SECTION ON CENTRE LINE.
THE CORNELL CRESCENT. GAVIN HADDEN, DESIGNER.
(From "The Architectural Record.")

line with the centre of the field. With the development, particularly during the last decade, of the more open style of play as influenced by the revised rules of the game, and with the increased size and consequent increased height of seating structures all over the country, it has been found and definitely proved by experience that the modern spectator prefers a seat high up in the stands, provided it is near the centre line and not too far away from the field of play, to one lower down but farther away from the centre line. These facts, together with the fortunate topography of the hillside site, with the highest ground opposite the central part of the field, are the fundamental reasons for the general plan followed.

The circular plan was not definitely fixed, however, without first giving careful consideration to various alternate approximations, following the same general line of reasoning. Tentative plans were drawn up and approximate estimates were made of two alternates, termed for identification the "Rectangular Plan" and the "Semi-Octagonal Plan." The first of these consisted of simple rectangles giving the very roughest approximation to the circle. The second, formed by two long side diagonals, and a long rear wall parallel to the seats, approximated the circle reasonably closely. In both of these designs the colonnaded ramp was omitted, and the private boxes were located on the straight line at the topmost rear of the structure. A small tower was located at each end of the boxes to enclose the stairways to the box passage and also

to serve as suitable terminations to the long, straight outside walls.

THE AMERICAN ARCHITECT'S issue for March 11 contains much good domestic work (we reproduce an example in the Colonial manner at Palms, California), and there is a restaurant interior of some interest. The inside of this restaurant, in fact, looks like the outside. Mrs. Alice Foote MacDougall, in opening a new branch of her coffee-house in West Forty-seventh Street, New York City, conceived a new idea, which the architects, Baker and Cromwell, have carried out. The ensemble represents a *piacetta* in an Italian village. Façades of small village houses, with their rough stucco fronts, red tile roofs, iron balustrades and gabled hooded doorways, vie with one another. A good-sized section of the floor-space is set with a pergola, with wood rafters roughly cut and shaped in characteristic fashion, over which vines and flowers are profusely trailed. Openings, hung with bright-coloured striped awnings, have been easily converted into service counters, and the ceiling, tinted an azure blue, further carries out the illusion of out of doors. Romantic atmosphere—and that is what fascinates here most—is added by a vendor's push-cart, filled with his wares, while an old barrel and a patched packing-box support a wood plank on which other saleable articles are spread. Brilliant Italian costumes and head-dresses of the waitresses add colour to the scene, and a Neapolitan orchestra makes one almost forget that Fifth Avenue is only a few feet distant.

A Suggested New Bridge to Save Waterloo

Sir Reginald Blomfield's Proposal

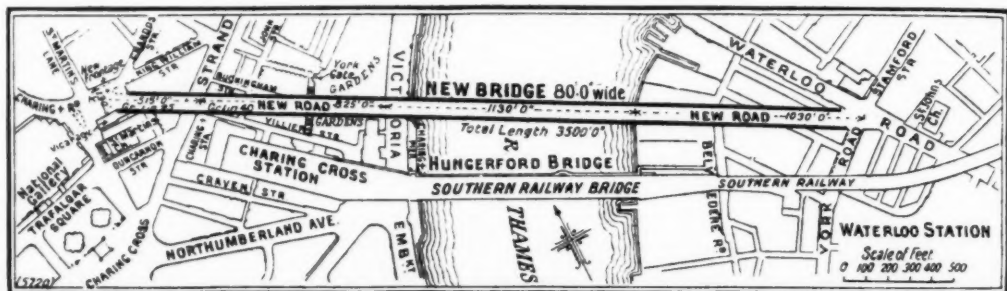
SIR REGINALD BLOMFIELD, R.A., writing in "The Times," states that the preservation of Waterloo Bridge becomes a difficult matter unless some method can be found of relieving the traffic at present passing over it. With this object in view he puts forward a new scheme for the erection of a bridge at Charing Cross. He says: The necessary conditions of a new bridge and roadway in the neighbourhood of Charing Cross seem to be that at the south-eastern end the roadway must leave Waterloo Road at an easy angle, with plenty of room for crossing traffic, that it must cross the river at a high level, clear of the Southern Railway property, that it must avoid bringing cross traffic into the Strand, and that at the north-western end it must land from the higher level in a space wide enough to admit of easy turning. As cost has to be closely considered, compensation must be reduced to a minimum. To meet these conditions I venture to make the following suggestion:—

Starting from the point at which Stamford Street and York Road intersect Waterloo Road at the south-eastern end, the roadway would pass between the Lion Brewery and the Shot Tower, rising by an easy ramp to a high-level bridge, carried across the river and the Embankment. The roadway would continue in a straight line to the Strand, at a gradient of 1 in 40, and would cross the Strand by a bridge immediately to the west of Coutts Bank. Thence it would descend at a gradient of 1 in 25 to a "Place" measuring about 240 ft. by 130 ft., formed at the intersection of Charing Cross Road, and St. Martin's Lane, opposite the Cavell Memorial. From this centre traffic could go north-west and south-west, and Waterloo

Bridge would be relieved of all traffic except from the east and north-east. York Gate, which is at present half buried, could be removed and re-erected further east, on the higher ground in the gardens at the end of York Buildings, where, for the first time, it would be properly seen. The bridge and roadway would be 80 ft. wide, the length from Waterloo Road to the bridge over the Strand would be about 2,985 ft., the total length end to end would be about 3,500 ft. The advantages of this scheme are:—

- (1) That it relieves the new bridge of the great cost of compensation to the Southern Railway, and brings it within the range of practical politics.
- (2) That it will relieve Waterloo Bridge of a great part of the traffic and enable the bridge to be preserved in its present form.
- (3) That it provides as direct a transit as is possible for long range traffic, say from the New Kent Road by Waterloo Road, the new bridge and road, and Charing Cross Road to Tottenham Court Road.
- (4) That it involves a minimum of interference with important buildings; and
- (5) That it brings no cross traffic into the Strand.

The fate of Waterloo Bridge seems to me to depend on the decision arrived at in regard to a new bridge in its neighbourhood, and the problem of the old bridge and the new should be regarded as one. I venture to put forward this suggestion in the hope that the old bridge may be preserved if it can be shown that a new bridge will answer all purposes of traffic, and can be built at a figure that is not absolutely prohibitive.



Foundation Problems—4

By BURNARD GEEN, M.Inst.C.E.

Distribution of Pressures Below Foundations.

Pressure below foundations is far from uniform, as an examination of the accompanying diagram (Fig. 9) will show.

While this particular diagram is true only in respect of a footing of one given diameter, it is sufficient to show generally the lines upon which pressure may be expected to vary.

The variation will generally be to a parabolic curve from the centre to the edge in footings of moderate size; and approaching two parabolas tangential to a horizontal line at the centre in the case of large footings.

In soil of a weak nature a distribution such as that shown may only be true at the initial application of the load.

The variations may be taken to be from a rectangle in the case of rock, through the various figures described above for weaker soils, and then to a rectangle for viscous materials where practically the equivalent of hydraulic pressure is obtained.

As under average conditions the resistance of the soil under the centre of a footing is considerably in excess of the pressure at the edge (though this ratio varies with the depth at which the foundation is set), it will be seen that it is not safe to take the total load and divide it by the total area, and equate that with the maximum bearing power of the soil.

It is usual to divide the bearing power of the soil by two, for this reason, and to take that reduced amount over the whole area of the footing.

This will, in part, depend upon the precise nature of the footing in the case of large footings, as it is quite clear that the stiffness of the footing itself to resist deflection in relation to the centre of the footing must have an effect upon the distribution of pressure under the footing.

Generally speaking, soil acts in exactly the same manner as most elastic bodies in the early stages of compression.

The allowable pressure on a foundation should, generally speaking, be determined by the amount of settlement produced by such load, and by the amount of settlement which may be allowed without damage to the proposed structure.

For example, it is quite clear that settlement on independent piers of such a structure as a crane gantry, or a light building of small height, may safely be allowed to exceed

that in the case of a tall building heavily loaded and connecting to an existing building.

With a building of heavy character, possibly faced in stone, unequal settlement might produce disfigurement and injury by reason of the stone being cracked or spalled.

A further very important point to watch in the case of foundations which are dry when excavated, is the possibility of water reaching the soils upon which the foundations rest.

Soils in the nature of sand and gravel may not be materially affected by saturation, provided they are prevented from spreading, but will not withstand the effect of flowing water.

Hard clay, on the other hand, is not eroded by flowing water, but the surface is readily softened, and when so softened is plastic, and yields under continual pressure.

A case in point is marl, which is of a clayish character and extremely hard when dry. Foundations laid in marl and clay should always be drained.

The expression "bearing capacity" used in these notes is taken to indicate the ultimate pressure per unit of area which the soil will bear without displacement, and is not intended to be limited to initial compression.

It is always desirable to examine a sample of soil in its natural condition as taken from the trial pit, and then immersed in water to observe the effect of water upon it.

Some materials will require a considerable time to be affected by water, and others will show the effect immediately, and for that reason it is therefore well to saturate the sample thoroughly by exposing it to water for a period of from twenty-four to forty-eight hours.

Piling.

The design of appropriate foundations to ensure safety, with economy in cost and rapidity of construction, requires wide and special experience.

It is a mistake to take it for granted that where the ground to be built upon is good, piles are unnecessary or are extravagant.

They may in such circumstances prove to be the most economical form of foundation.

In cases where the required ground is not good, piling may be the best means of providing the necessary support.

There are numbers of different methods of piling in use, and for all of them some special advantage is claimed. The principal disadvantage of most methods is that they lack adaptability; and to obtain the best results it is necessary to select those methods most suited to the needs of the case.

Timber piles are open to the objection that they may be attacked by wood-boring animals and insects, and are susceptible to rot where a portion of the pile is in water and a portion of the pile out of water. They are readily lengthened, and foundations are often built upon timber piles completely submerged, under which conditions the life of the piles is considerable.

With modern developments, however, there is always danger that by drainage, pumping, or the like, the water level may be lowered, in which case the timber piles will lose strength very rapidly, and become unsafe.

Precast concrete piles possess a certain advantage over timber piles on this account, but are more expensive. They possess disadvantages resulting from their required length not being known before driving.

It is necessary to obtain such information as is possible from a test pile, borings, or the like, and to arrange the

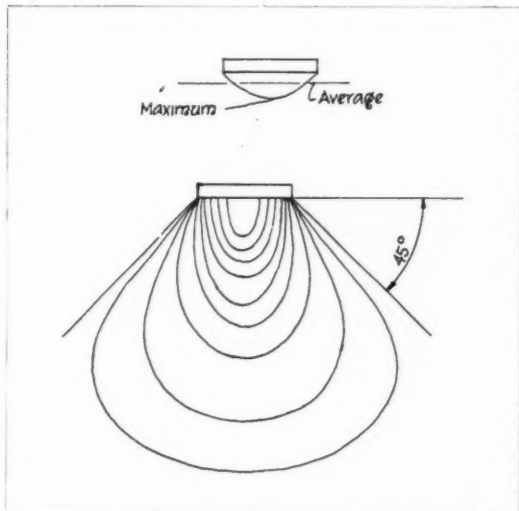


FIGURE 9.

length of piles to be cast. It then often happens that piles are found to be too long when driven, in which case unnecessary cost of manufacture has been incurred.

The heads must then be cut off, and the surplus pile wasted, and this cost must be added to the cost of the useful pile in the ground.

Should the piles not have been made long enough to meet exceptional circumstances it is necessary to drive them down with a "dolly" to some reasonable depth in the hope that the necessary set may be obtained.

If a suitable set can be thus obtained it is necessary to excavate to about 2 ft. below the head, cut away the concrete, bare the bars, and build up to the required level with a reinforced concrete column.

If, on the other hand, the necessary set cannot be obtained by "dollying," it is necessary to proceed as last described, and lengthen the pile by an estimated amount, wait for the concrete to harden, and then bring back the pile frame (which has moved on in the meantime), and re-drive until the required set is obtained.

The recent introduction of Portland cements with a slow initial set and a rapid gain of strength thereafter has radically changed the comparison between *in situ* and precast concrete piles which formerly applied.

Long delays to permit precast piles to harden are now unnecessary, and though there is not now much advantage in favour of *in situ* piles on this one point, there is still an advantage in price, as the special cement is comparatively expensive, and adds materially to the cost per foot of driven pile. This position, however, is likely to change in time as increased demand permits the price of the special cement to be reduced.

As it is not always possible to estimate accurately the required additional length, the pile may need a great deal of hammering to get it down, or again it may require to be cut and a further portion of made pile wasted.

In any case, these operations add enormously to the cost of useful piles actually in place, and it is very unusual to come across work where precast concrete piles are used and heavy extras on this account do not occur.

In situ concrete piles have the decided advantage that driving can commence immediately the pile-driving plant is erected on the site, with the further advantage that the driving tube automatically acts as a test pile in every position.

It has been found from experience that *in situ* piles can be driven alongside one another as close as 36 in. to 48 in. centre to centre, without risk of damage to the newly-made pile.

Important savings of time can generally be secured with *in situ* piles as compared with precast piles. Since in building construction so large a part of the money invested generally represents borrowed money, it is an important point to complete foundation works as soon as possible in order to limit the period during which money invested is without earning capacity.

The use of hollow cast-iron and solid steel screw piles is generally confined to structures supported over water, in wharves, piers, bridges, and the like, but there is no reason why they should not be used for other purposes where conditions require it. They possess the advantage that heavy vibration from driving is avoided.

They are generally considered as bearing piles, the diameter of screw being varied to suit the bearing power of the substratum in which they are designed to come to rest, and are more expensive than other forms of piles.

Modern methods of screwing by mechanical means permit them to be screwed rapidly and very exactly in position.

In a case where the safe ground pressure is too low to meet the requirements of the building by ordinary methods, and piling is unsuitable, it is sometimes possible to employ hollow foundations.

If carefully designed they may be so proportioned as to impose upon the soil below them the same pressure as that caused by the soil above before it was excavated.

Such a case needs great care and efficient close timbering to maintain the soil at the sides, but it is one way of overcoming what may appear at first sight to be an insuperable difficulty, and has been employed by the author with success on more than one occasion.

It is a method which is deserving of study where water is not present, and as a principle is capable of wide application.

[The previous articles in this series appeared in our issues for February 25, March 11 and 25.]

Correspondence

The Westminster Waxworks

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—With reference to the note on the Westminster waxworks, published in your issue for March 25, I enclose a picture post card (reproduced) of the wax figure of Queen Elizabeth mentioned therein. It is a colour reproduction from a water-colour painted some twelve or fifteen years ago by Miss Ida Lovering, who painted and published in post card form a set of six of the Abbey waxworks. I believe the cards are still in existence, but owing to some difficulty with the firm holding the sale rights of picture post cards of Westminster Abbey, they were never displayed or sold there. Several of the original water-colours are at present in my keeping. They are about 12 in. x 6 in., and form an interesting record of these little known or visited waxworks.

London.

TRENWITH WILLS.



From a postcard reproduction of a painting by Miss Ida Lovering. The original water-colour is in the possession of Mr. Trenwith Wills.

Enquiries Answered

Enquiries from readers on points of architectural, constructional, and legal interest, etc., are cordially invited. They will be dealt with by a staff of experts, whose services are specially retained for this purpose. If desired, answers will be sent direct through the post. In no case is any charge made for this service. Whenever diagrams accompany an enquiry, they should be clearly drawn and lettered and inked in.

FUMES FROM GAS STOVE.

"H. T." writes: "I want to disperse the fumes of a gas cooker. I suggest that a pipe should be run into the open air, but the gasfitter points out that if this is done there is a possibility of down-blow, and the consequent likelihood of the gas jets being blown out, so that at present the window has to be opened for the fumes to escape. I understand that many new buildings have a channel formed up the wall to take the fumes from a gas stove or cooker. This channel, I understand, terminates under the roof of the house. Are the fumes expected to disappear between the slates of the roof, or do they disperse themselves in the house? Can you tell me what effect gas fumes have upon the health of the inhabitants, and upon metal work in the house?"

—When a gas cooker is fitted in a recess beneath a chimney, there is, of course, no need for a flue pipe of any sort, but it may be desirable to fix a register plate, with a suitable opening, or preferably a tapered hood, discharging into the chimney above it. Either of these alternatives will protect the stove from dust and pieces of parging which may fall down the chimney from time to time.

When a cooker is not fixed in a recess, however, and is in a confined space, a flue, if desired, must *never* be fitted to the oven and carried directly into the open air, nor preferably even *directly* into a chimney. The former method involves the risk of the oven flames being blown out, and the latter, the possibility of an excessive draught through the oven. The best method of ventilation is to have a hood over the cooker, which will remove the smell of cooking from the apartment.

A sheet-metal hood of suitable shape, such as those usually fitted over hotel or restaurant kitchen apparatus, should be made and fitted above the cooker. It should be slightly wider and deeper than the stove, and should preferably have a flue outlet taken from the top into a chimney. If this is not possible, one may be carried into the open air, though in the latter event suitable provision must be made to prevent down-draught blowing back into the room. A short flue should be carried upwards from the oven, in such cases, to discharge into the hood (which is really a collecting chamber) from whence it will pass into the chimney or the open air.

With regard to the point made by your correspondent that "he notices that many new buildings have a channel up the wall to take the fumes from the gas stove or cooker," I have the following comments to make:

It is correct that in some cases suitable flues or ventilating shafts are provided in new houses for the removal of the products of combustion from gas-fired wash coppers, and very frequently so for the accommodation of what are known as "built-in" gas fires, but it is not usual to construct such flues for use in connection with gas cookers, as the latter type of apparatus is usually dealt with on the lines set out above.

The flues or ventilating shafts mentioned should always be constructed in the same manner as those for coal stoves, terminating *above* and *not under* the roof in the usual manner, the only difference between them and coal-fire flues being a reduction in their area, because the products of combustion from a gas fire, being light and vaporous in character, do not need such a large flue area as those from coal, which contain a large proportion of solid matter (soot).

The installation of these "economy" gas-fire flues effects a material reduction in building costs, and provides more floor space on the same ground area, because the flues may be built either in the thickness of the wall, or into a very slight chimney breast.

If flues for any kind of gas appliances are dealt with in the manner set out in these notes, there can be no possible danger to the health of the inhabitants—much to the contrary—because not only are the products of gas combustion removed, but an additional ventilating effect is produced upon the apartment in which they are placed.

Metal work also cannot be affected by the products of gas combustion, but it must be borne in mind that the air of all large towns contains a large proportion of sulphur, which always has a detrimental effect on all metal work. H. H. C.

A REINFORCED CONCRETE COOLING TANK.

"Architect" writes: "Please give me an expert opinion upon the advisability of erecting a large reinforced concrete cooling tank, measuring approximately 30 ft. × 30 ft. × 4 ft., finished inside with cement or special asphalt. It is expected that the temperature of the water will be approximately 150° F."

—The construction of concrete cooling tanks to contain liquids heated up to the boiling point of water has been successfully performed, and the proposed erection of a tank to be filled with water at a temperature of 150° F. is feasible, provided that the special temperature stresses to which it will be exposed are taken into account in its design.

Reinforced concrete tanks tend to fail by bursting pressure from their contents; and the alternate expansion and contraction of their material under changes of temperature supplies an additional impetus to the bursting pressures by encouraging the formation of cracks that may be ascribed to the joint action of structure and temperature.

While expansion cracks may form at any point in the material, they are most likely to occur at the corners of the tank, or at positions of convex curvature in the walls where they tend to bulge under pressure of their contents.

For this reason tanks to contain liquids, particularly hot or corrosive liquids, are often made circular on plan, and if the shape of the tank is a matter of indifference, a circular form presents advantages from the point of view of resistance to bursting pressures and the avoidance of cracks.

If the rectangular form is essential, the corners should be rounded and well reinforced; the reinforcement in wall and floor slabs should be placed with special reference to the avoidance of deflections, and to this end ample allowance of shear members must be provided.

The continual alternation of expansion and contraction to which a cooling tank is exposed affects the question of its duration in an efficient condition, and if it is anticipated that repairs will be difficult to execute, or will involve serious disturbance to the operations carried on in connection with the tank, special care must be exercised to give it as long a lease of life as possible.

A high factor of safety must be employed in the calculation both of the steel and the concrete, the allowable unit stresses being taken at one-half or one-third the value assumed for ordinary structural works. In addition, special reinforcement may be introduced to minimize the tendency to produce temperature cracks, and all steel must be protected with a good layer of concrete.

In tank construction the quality of the mixture and the manner of its deposition in the moulds is of the first importance, and every effort should be made to achieve homogeneity in the final work by attention to thorough tamping of the concrete around the steel.

The concrete may with advantage be made waterproof throughout its substance by the addition of a suitable compound in mixing in order to guard against seepage and the disintegration of the steelwork by rust. To the same end the finished tank is sometimes lined with asphalt specially prepared to resist the high temperature.

Tanks finished internally with Portland cement rendering brought up to a smooth surface by means of a steel float have been known to last in an efficient condition for periods of two to six years, but this finish is tentative. W. H.

TIMBER FOR SHOP FRONT.

"H. M." writes: "What timber do you recommend should be specified for a small shop front? It will be somewhat eighteenth-century in character, and is to be finished painted."

—For clean working there is probably no timber commonly obtainable so suitable as well-seasoned pine, which should be quite suitable if selected of good joinery quality free from knots. If the members are very slight and greater strength is needed teak could be used, at some increase in cost both for material and labour.

Parliamentary Notes

BY OUR SPECIAL REPRESENTATIVE.

The following four Consolidation Bills have passed the House of Lords, and will now come before the Commons: Housing Bill, Housing (Scotland) Bill, Town Planning Bill, Town Planning (Scotland) Bill. The measures consolidate the enactments relating to the housing of the working classes and to town-planning in England and Wales and Scotland respectively.

Houses Completed under the Housing Acts.

Mr. N. Chamberlain informed Mr. Day that the numbers of houses completed under the Housing Acts during the twelve months ended March 1, 1925, and the numbers under construction at the end of this period, were:—

Local authority schemes:—	
Completed	19,544
Under construction	24,488
Private enterprise schemes:—	
Completed	43,223
Under construction	39,015

The latest particulars available in regard to houses erected by private enterprise are for the twelve months ended September 30, 1924. During that period 73,932 houses were completed, and on October 1, 37,218 were under construction.

Houses under Construction in Scotland.

Sir J. Gilmour, Secretary for Scotland, in reply to Sir A. Sinclair, gave the following figures with regard to the number of houses under construction with State assistance in Scotland:—

	January 31, 1924.	October 31, 1924.	February 28, 1925.
Housing, Town Planning, etc. (Scotland) Act, 1919.	2,918	2,457	1,679
Housing, etc., Act, 1923:—			
(1) Additional houses being built:—			
(a) By local authorities	319	1,900	2,171
(b) By private enterprise	641	3,109	3,388
(2) Under slum clearance schemes	1,116	2,004	2,504
Housing (Financial Provisions) Act, 1924:—			
(a) By local authorities	—	232	821
(b) By private enterprise	—	—	—
Totals	5,024	9,702	10,563

Housing in Agricultural Areas and by Direct Labour.

Mr. N. Chamberlain informed Mr. Montague that the number of houses authorized under the Act of 1924 for erection in agricultural parishes was 1,408, 1,241 to be erected by local authorities and 167 by private enterprise. Of these 285 were under construction, and 104 had been completed.

Mr. N. Chamberlain, replying to Mr. Couper, said that up to March 1, 1925, 53 local authorities in England and Wales had commenced work by direct labour on schemes approved under the Housing Acts of 1923 and 1924. The total number of houses in these schemes was 4,531. The total number of houses included in contracts let by local authorities on March 1 was 57,612.

Mr. N. Chamberlain informed Mr. MacLaren that he hoped to introduce legislation dealing with the town-planning of built-up areas when a favourable opportunity occurred.

Sir K. Wood, the Parliamentary Secretary to the Ministry of Health, informed Mr. Lougher that there were 1,709 local authorities who were empowered to grant subsidies for existing private enterprise under the Housing Act, 1923, and of these 1,436 had undertaken schemes for this purpose. With few exceptions these schemes provided for a lump sum subsidy. The majority of the 333 authorities who had no schemes were the councils of small urban districts or rural districts. In the case of 375 of the 1,436 local authorities who had undertaken schemes the subsidy granted was in excess of the Exchequer contribution.

New Methods of Construction.

Sir K. Wood informed Mr. Couper that about one hundred proposals in regard to new methods of housing construction had been received during the last three months. Many of them, however, involved only modifications of methods already used or submitted. It rested with local authorities to approve buildings for purposes of State subsidy, and they

were only required to obtain the Minister's special approval in cases where the method of construction was not one for which a sixty years' loan would normally be allowed. Consequently it would be misleading to single out for mention those firms whose special methods had been approved for subsidy by him.

The Supply of Timber, Bricks, and Stone.

Answering Mr. H. Williams, Sir K. Wood said the Ministry had no reason to believe that sufficient supplies of timber would not be available for the erection of workmen's houses during the present year.

Sir K. Wood informed Mr. N. Maclean that the Ministry placed no restrictions on the use of bricks or stone in house building, but his view was that the building of houses by alternative methods should be considered in all cases where sufficient numbers of brick houses could not for any reason be supplied.

Law Report

Acquisition of Land—Question of Condition Precedent

Reddaway v. Lancashire County Council.

Chancery Division. Before Mr. Justice Romer.

This was a motion for an interim injunction restraining the defendants from proceeding upon an order dated November 19, 1924, purporting to be made by the defendants under the Small Holdings and Allotments Acts, 1908 to 1919, to enforce the compulsory powers of hiring land conferred by those Acts in respect of part of a farm known as New House Farm, Winmarleigh, Lancashire, and in particular from entering upon the premises or authorizing any person to take or remain in possession thereof under colour of the said order or otherwise.

Mr. Hughes, K.C., and Mr. Vaisey, K.C., appeared for the plaintiff; Mr. Farwell, K.C., and Mr. E. G. Eardley-Wilmot for the defendant Council.

The facts are fully set out in the judgment.

His lordship, in giving his decision, said that it was a condition precedent to the acquisition of land compulsorily by the Council that they should be unable to acquire suitable land elsewhere. In the present case the plaintiff was approached by the Council, and it was suggested that he should let this land to the occupants of the farm. He said that it was not suitable, and on November 19, 1924, without any further communication with him, the County Council made an order for the hiring of this land. In due course the order was advertised and the Board of Agriculture appointed someone to conduct the inquiry, which had in fact been partly held. It had been adjourned to see whether the parties could come to some amicable arrangement. Meanwhile the plaintiff issued a writ and served a notice of motion. The only part of that motion upon which he could grant relief would be in respect of "proceeding upon the order of November 19, 1924"—i.e., proceeding to get the order confirmed by the Board of Agriculture. It appeared to him, on the evidence, that the condition precedent to which he had referred had never been fulfilled. The Council had never attempted to obtain suitable land, nor had they shown that they were unable to acquire suitable land on reasonable terms. They said that the land in question was more suitable for the occupants than some alternative land belonging to the plaintiff, which was obtainable, but they did not say that that alternative land was not suitable, especially having regard to the fact that the plaintiff had offered to construct suitable dwellings on it. If the County Council had proposed to make an order he (his lordship) would have had no hesitation in restraining them from doing so on the ground that they had not complied with the condition precedent. In the present case, however, the Board of Agriculture already had seisin of the matter and an inquiry by them was in progress. In his view it was impossible for the court to interfere in view of the provisions of section 39 of the statute, and he was, therefore, unable to grant the injunction. He could not, however, conceive that the person conducting the inquiry would fail to observe that the defendants had not complied with the condition precedent and that the order had not been properly made by the County Council.

Law and the Architect

THIS is a valuable and interesting work, discussing the authority and duty of the architect, defining and explaining his rights and liabilities. It is particularly as the adviser, designer, and agent of the owner that his status and obligations are considered by the author.

Mr. Brice summarizes the chief duties and obligations towards the employer as follows:—

1. The consideration of all possible limitations on the use of a proposed site and character of the projected building.
2. Examination of the site and soil.
3. Preparation of drawings and specifications.
4. The estimate of the cost of their execution.
5. The obtaining of tenders.
6. Preparation of the building contract.
7. Supervision of the work, and the performance of duties imposed by the contract.

Several pages are devoted to consideration of these heads, and many reported cases are mentioned and references supplied. The portions of the work which we consider most interesting are those which state the duties and authority of the architect in relation to the building owner, the contractor, public authority or authorities, and adjoining owners. The duties of the architect are probably well before the minds of our readers, and it is hardly necessary to discuss them here, notwithstanding that in one or two instances, we feel that points against the architect are a little strained. The relation of the architect to the contractor is complicated, and liability may be incurred by the architect personally in circumstances which would not prejudicially affect members of other professions, as, say, lawyers or doctors. Particular and unusual obligations and liabilities have, with regard to every profession, grown up in the course of centuries, and are made clear to us by the records preserved by the professions, and by the decision of disputes in the courts of law. Upon this subject the chapter on the duty of an architect in relation to adjoining owners is well worth careful consideration. He is shown to be personally responsible, together with his client, and with all other persons who assist or assent, for any damage arising through trespass, or from water, filth, fire, or any noxious thing which he has caused or allowed to pass from his land on to another's; for any damage to another's right to support caused by the excavation of his own site; for any damage arising from the improper use of a natural stream; and similar or other rights. The author quotes an old Latin legal maxim translated by Coke: "So use your own as not to injure the property of another"; a subtranslation or explanation by Blagdon is: "So use your own property, as not to cause a nuisance or injury to others." It seems to an ordinary person, engaged in the ordinary work of the world, a strange and almost incomprehensible doctrine to apply the quoted maxim, not alone to the owner of the property, but to an agent employed by him for an especial and limited purpose.

The duties of architects as valuers or as dispute-preventers, or mediators, or as arbitrators, are very carefully and closely examined. We like the description "dispute-preventer"; we do not remember seeing it previously used. It is true, homely, and very useful.

A very important chapter upon the authority of the architect is, as the writer intended it to be, helpful. The most experienced architect will read with advantage the maxims and directions which are contained in the authorities considered. Cases where authority is implied are dwelt upon with more insistence than where it is expressed, and much careful and necessary advice is tendered. Duties and obligations of the architect as the agent of the employer are discussed at length, and many reported cases are referred to. A quotation from Evans on Principal and Agent men-

tions two rules of construction illustrated by the case of *Sharpe v. San Paulo Railway* noticed below. The two rules are:—

1. The meaning of general words in an instrument will be restricted by the context and construed accordingly.
2. The authority will be construed strictly so as to exclude the exercise of any power which is not warranted either by actual terms used, or as a necessary means of exercising the authority with effect.

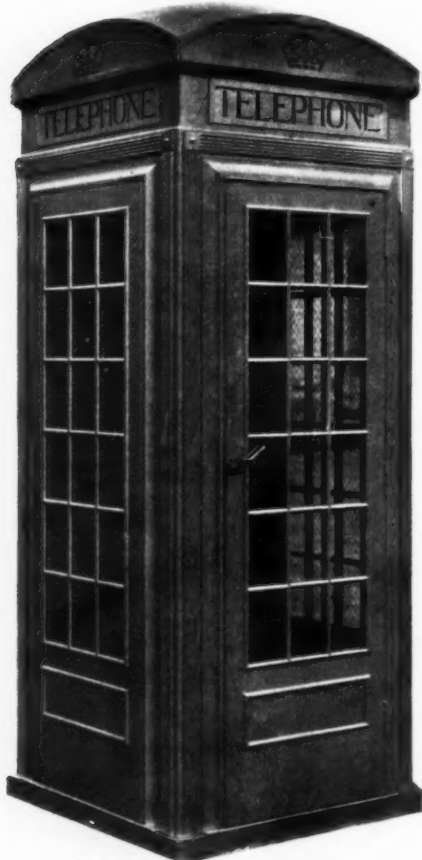
The above-mentioned case is a leading authority reported in the *Law Reports 8 Chancery*, in 1873, but even at that time was not new law. When one considers ordinary business relationships, and the undesirability of constant insistence upon rules and regulations and the minor provision of contracts because of the tendency of such particularity to interfere with business relationships, one may well regret that the law is rightly stated in *Sharpe v. San Paulo Railway*. However, that case does fairly and wisely settle the law—no doubt, in the long run, to the advantage of client, architect, and contractor. It was held, among other things, that the contractors could not, on mere verbal promises by the engineer of the company (which were unauthorized), maintain against the company a claim to be paid sums beyond the sums specified in the contract, even though the amount of work to be executed might have been underestimated by the company's engineer, and that as the contract had provided that the certificate of the engineer should be made a condition precedent to payment, such certificate must be held conclusive between the parties in the absence of fraud. In another case it was held that where there is a provision that there is to be no alteration or deviation from the agreed specification or claim made for extras without the written sanction of the agent, work so ordered must be within the scope of the agent's authority to order. Every practising professional man has been confronted with cases similar to those described or which are in the same category. Whatever hardship, occasionally seeming grossly unfair, may have to be borne by a careless person or one deceived by erroneous belief, it is in the long run in the interest of good business that strict provisions should be observed and maintained. Thus, in *Tharsis Sulphur and Copper Co. v. McElroy and Sons* and others, where there was a contract for construction for a lump sum, and a clause that no extras should be done without a written order from the employers' engineer, it was held that the certificates of the engineer, though they referred to work done of a more expensive character than that specified for, were not to be regarded as written orders, and that the claim of the contractors was excluded by the contract. Other illustrations are supplied showing the extent and limitations of the implied authority of the architect in reference to all details and terms of the contract and the execution of its provisions. The whole chapter dealing with the authority of the architect requires careful reading and consideration. The complexity of his duties and obligations must be mastered by intending practitioners; and very much is explained and dilated upon in the text, which is necessary and helpful even to the very experienced.

A long and important chapter deals with "certificates." With reference to final certificates, which it may become the architect's duty to give, Lord Collins said: "the architect is clothed with the duty of exercising an important judgment." But it is a condition precedent to the validity of his certificates that he shall act *bona fide* in an independent and impartial manner, and the decision of the architect is not binding upon the builder if there be "the smallest speck" or circumstance calculated to bias his judgment, and unknown to the builder.

"The Law Relating to the Architect." by A. H. M. Brice, Barrister-at-Law. London: Stevens and Sons, Limited. Price 10s. net.

The Telephone Kiosk Competition

The design of Sir Giles Gilbert Scott, R.A., has been placed first in the Telephone Kiosk competition. Some time ago the G.P.O. itself produced a design for a concrete telephone box which met with general disfavour. The Post Office then



THE TELEPHONE KIOSK COMPETITION: THE WINNING DESIGN. SIR GILES GILBERT SCOTT, R.A., ARCHITECT.

turned the matter over to the Royal Fine Art Commission, which organized the competition. The new kiosk will be made of cast-iron in sections, giving a structure of over a yard square inside, and 8 ft. 6 in. high over all. The door will be of teak, and the window openings in the sides of the door will be divided into eighteen square panels, glazed with 32-ounce sheet-glass. The interior is designed with a flush surface; angles and projections being avoided as far as possible. The floor will be of granolithic. Ventilation is provided by means of the pierced crowns at the top, but the air passes in through a pierced inner ceiling.

Coming Events

Thursday, April 9.

British Museum.—Lecture XX: "The Evolution of Typical Roman Construction, etc." By Miss Claire Gaudet. 4.30 p.m.

Monday, April 13.

Association of Architects', Surveyors', and Technical Assistants, Metropolitan Branch.—Charabanc trip to St. Albans. Leave Lost Property Office, New Scotland Yard, 10.30 a.m. Return via Hatfield, arriving Westminster 7.30 p.m.

Birmingham Advisory Art Committee

Following the precedent established by last year's report, record of the work of the Birmingham Advisory Art Committee during the past year is confined to a schedule of submissions, the location of proposed works, and the name of the department or other authority responsible for the deposit of designs. The report points out that all details of the extent to which the committee's recommendations have been adopted are reserved, in accordance with the constitution. It need scarcely be said, however, that much time and care have been required for an adequate consideration of the fifty-two submissions made; and the committee are confident that the results achieved are a sufficient testimony to the amount of work that has been accomplished. The procedure to facilitate clearance of urgent submissions adopted last year was modified at a meeting of the committee held in March, when it was agreed that, in order to facilitate the clearance of submissions made at times inconvenient for summoning a meeting of the Advisory Art Committee, power to make a provisional report upon such works should be vested in a quorum of not less than three of the following members: The representative of the Education Department, the Director of the School of Art, the Director of the School of Architecture, the City Engineer, the president of the Architectural Association, the hon. secretary of the Civic Society, and the co-opted members of the committee, such reports being subject to confirmation at the next meeting of the main committee. By this procedure—employed during the past year with excellent results—the work of the committee was simplified, its capacity increased, and reports on submissions were made possible at short notice. The committee recognizes the cordial co-operation of the City departments during the period under review.

It is important to note that while the submissions maintain the average their character has varied somewhat from previous experience, with the result that the effectiveness of the work of the committee has been put to a much higher test than usual. The work done was definitely municipal. On the committee are the Lord Mayor, the chairman of the Public Works Committee, a representative of the Education Committee, and the City Engineer, and they could only deal with matters which developed on municipal property. They have had under consideration the possibility of dealing with submissions in regard to other areas, but that would involve an Act of Parliament, and the committee found plenty to do in dealing with submissions from the city departments. The architect members of the committee include Messrs. G. Drysdale, F.R.I.B.A., Arthur McKewan, A.R.I.B.A., Holland W. Hobbess, A.R.I.B.A., and William Haywood (the honorary secretary).

The Birmingham Advisory Art Committee holds the distinction of being the first of its kind to be formed in the British Empire. It was inaugurated in 1922, eighteen months before the British Fine Arts Commission, and its example has been followed by the cities of Leicester and Manchester. The formation of the National Commission was due, no doubt, largely to the valuable work done at Birmingham, and it is to be hoped that the lead given by that city will be followed immediately in other parts of the country.

Building Research Laboratory, Watford

Plans are now being made for the extension of building research into alternative methods of house construction, as was foreshadowed recently by the Minister of Health. Following the example of the Research Association, the Government have obtained possession of an old country house in the neighbourhood of Watford, where ample accommodation will be available for laboratories and research work. This extension will give an impetus to building research, and may save the country millions of pounds. As at least 120,000 working-class houses are needed each year in England and Wales in order to meet the present deficit, it is obvious that if research can discover some means of saving even £1 on each house for which Government financial assistance is being given, it will save £120,000, and also decrease the capital sum to be raised and the amount of interest to be paid. There are various directions in which, it is believed, economies may be effected. For example, if more use can be made of natural and local resources, substantial savings in cost will result. Chalk used in the West country, in place of brick carried many miles, means a cheaper house.

Societies and Institutions

The R.I.B.A. Intermediate Examination, May 1925.

The centres for this examination will be London and Leeds. At both centres the examination will be held on May 22, 23, 25, and 26. At the London centre the oral examination will be held on May 28; at the Leeds centre on May 27.

R.I.B.A. Council Meeting.

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

The City Churches.—On the recommendation of the Art Standing Committee it was decided to take special steps to direct public attention to the threat to the City churches.

The Bombay Architectural Association.—The Bombay Architectural Association was admitted as an allied society of the R.I.B.A. under the provisions of by-laws 81 to 85.

The Registration Committee.—Mr. C. McArthur Butler was appointed secretary of the Registration Committee.

Reinstatement.—Mr. Dodgshun was reinstated as a Licentiate.

Exhibition of Countryside Sketches at the R.I.B.A.

Pen, pencil, and pastel sketches from the countryside by Mr. T. Raffles Davison, Hon. A.R.I.B.A., will be exhibited in the galleries of the R.I.B.A., 9 Conduit Street, W.1, from April 16 to 28. Altogether about one thousand sketches will be shown, forming a small part of the artist's output during some forty years. They illustrate a great variety of subjects, including studies of pastoral landscape. The artist's chief wish in the exhibition is that they may convey some share of that pleasure and interest to others which he has enjoyed in their production. The exhibition will be open free to the public between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.)

R.I.B.A. Registration of Probationers.

Attention is drawn to the fact that the Council of the R.I.B.A., on the recommendation of the Board of Architectural Education, have decided that except in very special cases a headmaster's certificate shall not be accepted after October 1, 1927, and that no one shall be registered as a probationer unless that person has passed one of the recognized examinations in the required subjects.

The following are the recognized examinations :—

- The matriculation examination at any university in the British Empire.
- The senior or junior (honours) local examinations conducted under the authority of any university in the British Empire.
- The school or leaving certificate of the Oxford and Cambridge Schools Examination Board.
- The examinations held under the Central Welsh Board.
- The examinations for the first-class certificate of the College of Preceptors.
- The senior or junior school examination or the matriculation examination of the University of London.
- The senior school certificate or the school certificate of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham.
- The school certificate of the University of Bristol.
- The higher school certificate examination of the Oxford and Cambridge Schools Examination Board.
- The higher school certificate examination of the Oxford Delegacy for local examinations.
- The higher school certificate examination of the Cambridge Local Examinations and Lectures Syndicate.
- The higher school certificate examination of the University of Bristol.
- The higher certificate examination of the University of Durham.
- The higher school certificate examination of the University of London.
- The higher school certificate examination of the Northern Universities Joint Matriculation Board.
- The higher certificate examination of the Central Welsh Board.
- The senior certificate examination of the Ministry of Education, Northern Ireland.

Or such other examinations as may be satisfactory to the Board of Architectural Education.

R.I.B.A. Final Examination: Problems in Design. Alternative Subject to No. LXXXIV(A) (A Design for a Garage).

The attention of candidates is drawn to the following alternative subject No. LXXXIV(A) (2) :—

A local authority wish to carry out a housing scheme on a site of 12½ acres, having a frontage of 600 ft. to a main road on the south-east side of the site, leading out of the town. The road has a slight curve giving a concave frontage, and the land rises from the road at an even slope of about 1 in 25.

Sites are to be arranged for 100 cottages, eight shops, a small institute, and a church. A recreation ground of appropriate size should be provided.

The site may be developed with light roads not providing for any through traffic to the land beyond.

Drawings required :—

A block plan to a scale of 1/500 showing the intended position of all buildings, roads, recreation grounds, etc.

Complete plans, elevations, sections of one of the groups of cottages, shown on the block plan, containing not less than three or not more than four dwellings, to ½ in. scale.

All the dwellings to be of such sizes and accommodation as would be eligible for the grants under the 1924 Housing Act.

Plans of the ground and first floors only of three other types of cottage, indicating the aspects for which they are intended, to ½ in. scale.

Architectural Education.

Mr. Howard Robertson, S.A.D.G., Principal of the Architectural Association School of Architecture (London), gave the students of the Department of Architecture and Civic Design at the Technical College, Cardiff, an address on architectural education with special reference to the methods adopted in the School of the Architectural Association. An exhibition of work done in the London school had been arranged in the Assembly Hall, and this Mr. Robertson discussed critically with the Cardiff students, afterwards dealing similarly with an exhibition of the work of the Cardiff students. Mr. Robertson was heartily thanked for his address on the motion of Mr. W. S. Purchon, M.A., A.R.I.B.A., head of the Department of Architecture and Civic Design at the Technical College, Cardiff.

The Association of Architects, Surveyors, and Technical Assistants.

The Association of Architects, Surveyors, and Technical Assistants, Metropolitan Branch, have arranged the following visits :—

Monday, April 13.—Charabanc trip to St. Albans. Pick-up outside Lost Property Office, New Scotland Yard, at 10.30 a.m. Tea and lunch at St. Albans. Return via Hatfield, arriving Westminster 7.30 p.m. Inclusive fare for day 10s. 6d. Ladies and friends most welcome.

Saturday, April 25.—Visit to the works of Messrs. Pinchin, Johnson & Co. Meet at General Buildings, Aldwych, W.C., at 2.15 p.m. A charabanc will convey the party to the works and return to General Buildings about 5.30 p.m., when refreshments will be served. Ladies welcome and interested friends. (No charges.) Members must let the secretary know on or before April 12 how many seats they require reserved.

Other places proposed to be visited include the "Star and Garter," Wembley, Crittalls, Beckton, John Knowles, Ltd., Hatfield House. Further particulars can be obtained from Mr. C. Adamson, the hon. branch secretary, 26 Buckingham Gate, Westminster, S.W.1.

Rhineland Churches.

In a lecture at the Central School of Arts and Crafts, Sir Banister Fletcher, F.R.I.B.A., showed how the chief track of the arts in the mediæval period of Germany's history lay along the Rhine. The romance of the Rhineland, he said, was not confined to its legendary lore, but it was applied also to the wonderful churches which were erected in the Romanesque style in the eleventh and twelfth centuries. A special variant of the style was created, which lingered on and retarded the Gothic style, while a mixed transitional style was also evolved. Sir Banister illustrated and described the tomb-house of Charlemagne at Aix-la-Chapelle, the cathedral and Liebfrauenkirche at Treves, and other fine buildings, with their great square towers, their treatment of pilasters and corbel-tables, and their triple apses.

The Charm of Brickwork.

Sir Banister Fletcher, F.R.I.B.A., in the last of the present session's lectures on mediæval architecture at the Central School of Arts and Crafts, London, dealt with Belgian and Dutch architecture. He referred first to the very varied history of the two countries, Holland and Belgium, and the influences which differentiated their architecture. He said that Catholic Belgium had evolved a rich and sometimes effusive style of brick and of stone, in which the prosperous-looking civic buildings of Belgium's cities were erected. In Protestant Holland, on the other hand, a barer and more solid style became common; in both countries the characteristic brick of varied hues was used, and produced the picturesque

groups of buildings which had become familiar to English people, and had much influenced our architecture in the seventeenth century. Many interesting lantern slides showed the most important buildings of the two countries, with all their elaboration of traceried windows, pinnacled buttresses, and lace-like spires. Some of these enchanting monuments had become dear to the English traveller, and were yet more precious now that some of the gems were sadly mutilated as a result of the recent war.

A.A. New Members.

At the last meeting of the A.A. one member was elected and one reinstated. They were as follows: Elected, Mr. O. W. M. Law. Reinstated, Mr. E. A. Boyle (1903).

Conference of Public Lighting Engineers at Leeds.

The annual conference of the Institution of Public Lighting Engineers will be held at Leeds from September 14 to 16 inclusive. The members and delegates will be received by the Lord Mayor, and entertained by the chairman and the Lighting Committee of Leeds. In addition to the address by the incoming president (Mr. C. S. Shapley, of the City of Leeds Corporation), several papers will be read dealing with important problems of public lighting. Inspection will be made of local systems; and an exhibition of some of the most modern street lighting appliances will be on view. Further particulars can be obtained from the hon. secretary of the Institution, Captain W. J. Liberty, City of London Public Lighting Superintendent, Guildhall, E.C.2.

Architects at Dinner at Liverpool

Forty-two architects were entertained at dinner at Liverpool by the partners of Messrs. W. H. Smith and Son. Mr. C. H. St. John Hornby, F.S.A., senior partner of the firm, presided, and he was supported by Mr. A. D. Power, another partner, and by Mr. F. C. Bayliss, F.R.I.B.A., the architect to the firm and head of its estate department.

Mr. C. H. St. John Hornby, F.S.A., in proposing "The Architectural Profession," said that the buildings of the firm were an honest attempt to show that the useful need not necessarily be ugly. He thanked the architects for their valued help and sympathetic assistance. He paid a glowing tribute to Mr. Bayliss, and referred to his efforts in connection with a scheme in which two hundred shops were taken over and fitted up in ten weeks.

Professor C. H. Reilly, F.R.I.B.A., in responding, said that one of the most hopeful things about architecture was that the layman was at last grasping its importance. The happiness they got in designing architecture was a happiness which brought its own reward. At that moment they were trying to close their profession and register it, and make themselves into chartered architects. They were doing that with the best intentions, because at the moment they felt that any uneducated, thoughtless person could call himself an architect. The question was how could they ensure they did not shut the door against good men? It was a sign of the times that a firm like Messrs. Smiths should appreciate the architect's art.

Mr. C. T. Marshall, F.R.I.B.A., said he proposed the toast of the estate department of Messrs. W. H. Smith and Son with more than ordinary pleasure, because it afforded him the opportunity, on behalf of his firm, of saying how honoured they were in having designed and carried out, in conjunction with Mr. F. C. Bayliss, four of their largest provincial wholesale houses. He was proud that his firm had been associated with the buildings at Newcastle, Hull, Sheffield, and Liverpool. He also tendered to Mr. F. C. Bayliss their sincere thanks for the great help he had given them. The architectural treatment of the retail shops of Messrs. W. H. Smith and Son showed an individuality of design which was dignified and pleasing, and was particularly suitable for showing goods to the best advantage.

Obituary

Mr. F. Stuart Sage.

We regret to record the sudden death of Mr. F. Stuart Sage, a director of Messrs. Fredk. Sage & Co., Ltd., of 58-62 Grays Inn Road, London, W.C.1, the specialists in shop fitting, bank and office fitting, and electric lighting. He was grandson of the founder of the company, and he died from heart failure following an operation. The funeral took place at Thames Ditton Church.

List of Competitions Open

Date of Delivery.	COMPETITION.
April 27	Lay-out of Jackey Bakers Farm, Ramsgate. A portion of the land will be used for a Recreation Ground, another portion for Allotments, and the remainder for an Elementary School with Playground and Playing-field near. The Corporation are offering as a prize £100. Apply, with deposit of £1 1s., to Mr. A. Blasdale Clarke, Town Clerk, Albion House, Ramsgate.
*May 1	The United Grand Lodge of England invite designs for rebuilding the Freemasons' Hall in Great Queen Street, Kingsway, London.
*May 15	Technical College for the Middlesbrough Education Committee. Assessor, Mr. Percy Thomas, F.R.I.B.A. Premiums £200, £100, and £50.
May 31	The best and most economical system of shuttering or equivalent suitable for use in connection with poured or <i>in situ</i> cottages. First prize £250; £250 may be awarded in additional prizes. Methods which are already in use or for which patent rights had been applied for before January 1 will not be considered. Apply Mr. H. H. George, Ministry of Health, Whitehall, S.W.1, not later than May 24.
June 11	National Commemorative War Monument, to cost one hundred thousand dollars, for the Government of Canada. Apply Office of the Secretary, Department of Public Works, Hunter Buildings, Ottawa. A few copies of the conditions, together with declaration forms, can be obtained from the R.I.B.A.
*June 30	Lay-out of open spaces and fortifications between Valletta and Floriana and those encircling Floriana. Premiums £1,000 and £500. An indemnity of £100 will be awarded to three other designs showing conspicuous merit. Assessors, Mr. E. P. Warren, F.S.A., and Professor Patrick Abercrombie, A.R.I.B.A.
July 1	An extension building adjacent to the Shirehouse, Norwich, for the Norfolk County Council. Premiums £150, £100, and £50. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A., on the whole of the designs submitted, and to make the award. Apply Mr. H. C. Davies, Clerk of the Council, The Shirehouse, Norwich.
Sept. 1	High bridge over Copenhagen Harbour. Three prizes to the value of Kroner 35,000. Apply City Engineer's Office, Town Hall, Copenhagen. Deposit of Kroner 100 (returnable).
Dec. 31	The Argentine Government offer prizes of 10,000, 5,000, 4,000, 3,000, and 2,000 Argentine gold pesos for the best architectural designs for a National Institute for the Blind. Apply Enquiry Room, Department of Overseas Trade, 35 Old Queen Street, Westminster, S.W.1.
No date	New Secondary School in Perth Road, Dundee. For the Education Authority. The Competition is limited to architects in practice in Scotland and carrying on business on their own account. Application for the conditions of the competition and instructions had to be made to Mr. John E. Williams, Executive Officer, Education Offices, Dundee, not later than February 18. Mr. J. A. Carfrae, Licentiate R.I.B.A., is the Assessor.
No date	Proposed Presbyterian Church at Cheam, Surrey. In the first instance rough sketches only will be required and therefrom the committee will select the architects to be paid for the preparation of more finished drawings. Apply Mr. George Tweddle, Jr., Secretary to the Building Committee, "Southdown," Burdon Road, Cheam, Surrey.

* Date of application passed.

Competition News

Competition for the National Institute for the Blind, Argentina.

A booklet containing the full text of the conditions, with other information (translated from the Spanish), and a plan of the ground on which the Institution is to be erected, has now been received and is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

The Northern Polytechnic

The annual speech night of the Department of Architecture, Surveying, and Building was held under the presidency of Mr. R. L. Roberts, M.A., chairman of the governing body and of the general purposes committee. The chairman opened the proceedings in a brief speech, and called upon the principal, Dr. R. S. Clay, B.A., who outlined the curriculum of the junior trade school, and gave some particulars of the method of training. Mr. T. P. Bennett, F.R.I.B.A., head of the department, gave a *résumé* of the activities of the department during the session, commenting upon the excellent progress that had been made in all sections. He drew attention to the fact that the number of individual evening students was 620 as against 500 during the previous session, the respective class entries being 1,700 and 1,450. The results that had been achieved had been due to the whole-hearted support he had received from the staff. Sir Kingsley Wood, M.P., Parliamentary Secretary to the Ministry of Health, drew attention to the great advantages which a school of building offered at a time when there was such a shortage of skilled workers, and to the importance of technical training when there were so many changes and improvements in the method of building construction. Mr. Maurice E. Webb, D.S.O., M.C., M.A., F.R.I.B.A., gave a criticism of the work of the architectural students, and a criticism of the work of the students of building was given by Mr. W. F. Wallis. A vote of thanks to the speakers was moved by Mr. George Hicks, general secretary of the Amalgamated Union of Building Trade Workers.

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The Week's News

Rugby's Housing Needs.

At Rugby there is an urgent need of 400 houses.

Housing at Luton.

The Luton Town Council have decided to build by contract 100 parlour houses at an estimated cost of £60,500.

Preston Electricity Scheme.

The Preston Corporation have resolved to spend a further £150,000 on the completion of the electricity undertaking.

A New School for Putney.

A Roman Catholic elementary school for 200 children is to be built in West Putney.

Trees for Mitcham Streets.

At a cost of £200, 480 trees are to be planted in Mitcham streets.

Housing at Wood Green.

The Wood Green Urban District Council are to erect thirty brick houses as the first instalment of 226.

New Wesleyan Church for Brampton Bierlow.

It is proposed to build a new Wesleyan chapel at Brampton Bierlow, near Sheffield. A colliery company have given a site.

Brigg to Have More Houses.

The Brigg Urban District Council have resolved to erect forty-six houses, including ten of the parlour type.

Vapour Baths for Plumstead.

The Woolwich Borough Council are to build Turkish and Russian vapour baths at Plumstead.

Cheadle Road Improvements.

The Cheadle and Gatley Urban District Council have decided to apply for sanction to borrow £9,422 for road improvements.

A New Bridge over the Ouse.

The cost of the proposed new bridge at Boothferry, over the Ouse, is estimated at £112,000.

A Roman Catholic Church for Rossington.

It is proposed to build a new Roman Catholic church at Rossington.

A New Hospital for Malton.

The new hospital at Malton is estimated to cost £16,000, of which £12,000 has already been raised. It is hoped to begin building operations this spring.

Housing at Methley.

Sanction has been given by the Ministry of Health for the erection of thirty more houses by the Methley Urban District Council.

Concrete Houses Proposed for Manchester.

The Manchester City Housing Committee are considering a scheme to acquire Sandywell estate as a site for 500 concrete houses.

The Shuttering Competition.

It is reported that the entries for the Ministry of Health shuttering competition in connection with concrete house building already number well over a hundred.

A Thousand Houses for Newport.

The proposal of a private building firm to erect 1,000 houses in the parishes of Malpas and Bettws has been approved by the Newport Town Council.

Big Housing Scheme for Hendon.

The Ministry of Health have confirmed the order for the acquisition by the London County Council of land at Hendon, Little Stanmore, and Kingsbury for a big housing scheme, on condition that thirty acres are reserved for an open space.

Housing at Foleshill.

The Ministry of Health have approved a proposal of the Foleshill Rural District Council to erect thirty-four houses at Bedworth, Hall Green Road, Grange Road, and Walsgrave-on-Sowe.

A New Pleasure Ground for West London.

The Acton and Ealing Town Councils are negotiating for the purchase of Gunnersbury Park from the Rothschild family as a public pleasure ground. It is 200 acres in extent, and is one of the most beautiful gardens in London.

The Roman Defences of York.

It is proposed to make excavations in York with the object of throwing light upon the ancient Roman defences, uncovering the remains of another multangular tower, and the recovery of a Roman gateway.

Matlock's Water Supply.

The Matlock's Urban District Council are considering the question of improving the water supply of their Cromford area. Messrs. W. H. Radford and Son, of Nottingham, are the engineers.

Dodworth Sewerage Works.

A Ministry of Health inquiry is to be held into the application of the Dodworth Urban District Council to borrow £8,000 to bring their sewerage disposal up to date. Messrs. W. H. Radford and Son, of Nottingham, are the Council's engineers.

Architectural Partnerships.

Mr. Harold E. Davies, F.R.I.B.A., has taken into partnership his son, Mr. H. Hinchcliffe Davies, A.R.I.B.A. The style of the firm will be Harold E. Davies and Son, and the address Wellington Buildings, Strand, Liverpool. The telephone number will remain unaltered, viz., Bank 21.

The Condition of Lincoln Cathedral.

Further ravages of the death-watch beetle, and fifty more cracks, have been discovered in the Rood Tower of Lincoln Cathedral. Up to date 23,000 gallons of cement grouting, 5,000 deltabronze cramps, 600 tons of sand and cement, and 1,600 new stones have been used in the restoration work.

A New Home for Freeman's Orphan School.

Ashted Park, Surrey, has been purchased by the City Corporation for the Freeman's Orphan School. The institution is being removed from the site at Brixton, which it has occupied for over seventy years. The building at Ashted Park is being altered and adapted for its new purpose.

Nottingham Buys Aston Hall.

The Nottingham Corporation have purchased Aston Hall, the fine building at Aston-on-Trent, and propose to adapt it for the accommodation of mentally defective patients. The Nottingham Corporation is one of the first municipal bodies to set up such an institution.

The Sydney Harbour Bridge.

The foundation-stone of the Sydney Harbour bridge was laid by Sir Arthur Dorman. Mr. R. T. Ball, the New South Wales Minister for Works, said the bridge would not only be the largest of the arch type, but it would be the widest in the world, measuring 159 ft. 9 in. in width, including space for four railway tracks. In many important features it was the greatest engineering enterprise ever attempted. Messrs. Dorman, Long, the contractors, would use Australian material and perform constructional processes in Australia.

The Restoration of St. Paul's Cathedral.

The St. Paul's Cathedral Representative Committee have approved the following proposal of the Dean and Chapter with regard to the appointments to be made for carrying out the work: of preservation: Colonel Sankey, R.E., to be resident engineer, with Mr. B. H. Broadbent as his assistant; and Mr. Mervyn Macartney to retain his present appointment as architect to the cathedral, receiving the help of an assistant. Mr. W. G. Allen has been invited to assist Mr. Macartney, but his reply to the invitation has been delayed owing to his absence abroad.

The Archbishop of Canterbury proposed, and the Lord Mayor seconded, that a sub-committee of works be appointed, and the following are the names of those who will serve on it: Mr. Basil Mott (chairman), Sir Aston Webb, Sir Charles Morgan, Mr. G. W. Humphreys, Captain Peach, and Mr. F. C. Trench. It was also agreed that the resident engineer should work in consultation with this body.

Trade and Craft

Bell's United Asbestos Co., Ltd.

The report of the directors shows that the result of the year's operations is a net profit of £46,314 8s. 7d., to which has to be added the amount brought forward, £31,483 1s. 4d., a total of £77,797 9s. 11d. Deducting interim dividends paid on the preference and ordinary shares, £9,138 6s., leaves for appropriation £68,659 3s. 11d. Deducting from this the sum of £1,800 for balance of dividend at the rate of 6 per cent. per annum due on the cumulative preference shares to December 31 (paid on February 2 last), there remains £66,859 3s. 11d. The directors recommend: (1) the payment of a dividend on the ordinary shares of 1s. 6d. per share, which, with the interim dividend paid on October 20 last, makes a total distribution at the rate of 10 per cent. for the year; (2) that £10,000 be placed to reserve, increasing that fund to £193,445 19s.; (3) that £34,844 5s. 11d. be carried forward. The indications of improvement referred to by the directors in their report to the shareholders last year are reflected in the accounts now presented, nearly all departments of the company's operations, including its Associated Companies, having participated therein. Nevertheless, while taking a hopeful view of the general situation, the directors do not consider that they would be justified in departing from the policy which in the past has materially contributed to the stabilization of the company's position, and they propose, as stated above, to place £10,000 to reserve. After payment of a dividend at the same rate as in the past three years, namely, 10 per cent. per annum, the amount carried forward will be increased by £3,361 4s. 7d.

Experimental Floodlighting at Cardiff.

One of the latest buildings in this country to be illuminated by floodlights is the City Hall, Cardiff. The building stands in Cathays Park, and is one of the city's landmarks. An offer to illuminate it experimentally was made by the General Electric Company, Ltd., and accepted by the General Purposes Committee of the City Council. The success of the experiment is apparent from the illustration, which shows the building bathed in an evenly distributed flood of light. In the illumination of the clock tower, which is approximately 154 ft. high, the energy expenditure was only 3,000 watts. This was made possible by the use of a new type of narrow angle floodlight, which has recently been designed by the illuminating engineering department of the company, in order to deal with special problems of this nature. The face of the City Hall called for an entirely different method of illumination. Here the excellent



THE CITY HALL, CARDIFF, ILLUMINATED
BY FLOODLIGHTS

results seen in the illustration were attained by the use of a special wide-angle flood designed to give the maximum covering power with the least possible projection from the building face. In this case the energy consumption is only 4,000 watts, making a total of 7,000 watts for the illumination of the whole building.

Rhodes' Pulleys and Sash Chains.

An illustrated leaflet has been issued by Messrs. Rhodes' Chains, Ltd., of 178 Charing Cross Road, W.C.2, to explain the construction of the firm's patent pulleys and sash chains, and the advantages to be obtained by their use. The 2 in. pulleys are constructed with solid brass face plates, rustproof steel frames, and brass or gunmetal square grooved wheels, which run on a hardened steel sleeve axle $\frac{1}{2}$ in. in diameter. The $1\frac{1}{2}$ in. size pulleys are constructed in a similar manner, but with a rustproof steel face plate and a $\frac{3}{8}$ in. steel sleeve axle. The chains are manufactured of the best hard bright British rustproof steel. A feature of Rhodes' sleeve-bearing pulley is that the wheel revolves round the patent sleeve axle thus, it is claimed, giving the wheel an everlasting true rotary movement. It is also claimed that Rhodes' patent pulleys do not rust and do not break, and by not rusting—jamming—a frequent trouble experienced in opening and closing windows is avoided. Particulars are given in the leaflet to assist architects in specifying their requirements for sashes up to 70 lbs. in weight. Rhodes' patent pulleys and chains have been adopted and fitted in all buildings under the control of H.M. Office of Works, H.M. War Office, H.M. Admiralty, the principal hospitals, municipal buildings, banks, schools, hotels, and all the Metropolitan Police Stations. They are also in use by thousands of owners of private property.

Anderson's Belfast Roofs.

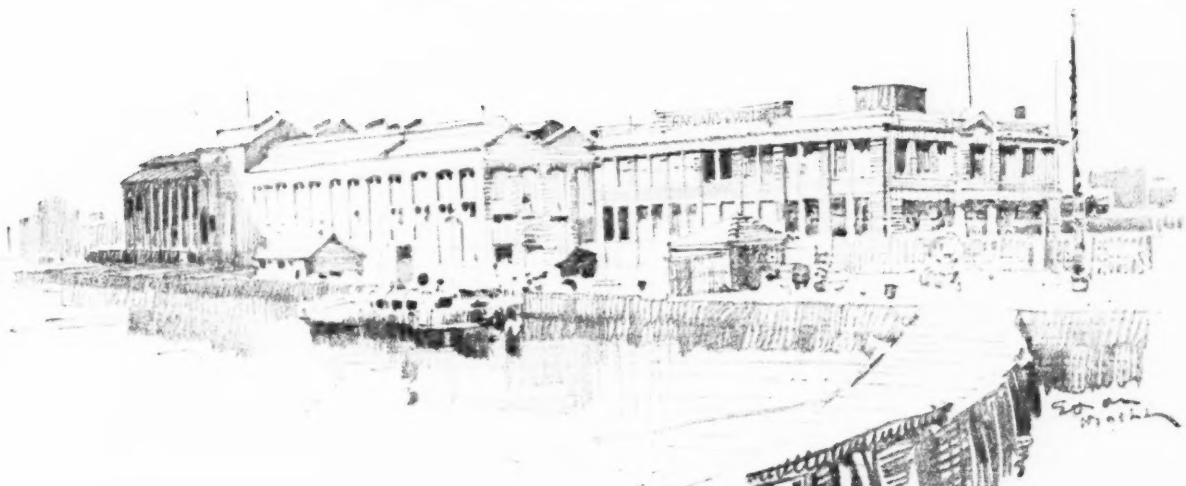
In a new booklet, just issued, illustrations are given of some of the many Belfast roofs built by Messrs. D. Anderson and Son, Ltd., of Park Road Works, Stretford, Manchester. Roofs have been built for the Government on aeroplane sheds; and for many important railway companies, including the London and North Eastern, the London, Brighton and South Coast, the Great Southern and Western of Ireland, the Taff Vale, and the London, Midland and Scottish. In addition, many important engineering works, foundries, chemical works, warehouses, garages, and other buildings, numbering over a thousand, have been roofed by the firm. Any span up to 120 ft. can be constructed clear of intermediate supports, with the result that wide, clear floor spaces are obtainable. Belfast roofs are light in weight, and owing to their small rise there is a saving in cost of building up gables or cross walls. Among the many other advantages claimed for the roofs are that there is no thrust on the walls of the building, that there is the minimum wind resistance owing to the low curve and smooth surface of the roof, that there is ease of anchorage to the walls or steelwork, that there are facilities for attaching shafting in machine shops to the roof trusses, and that gutters are effectively formed in the roof, lined with double thickness bitumen roofing, and can discharge in long stretches without overflowing. It is also claimed that roofs covered with the firm's self-finished bituminous roofings are permanent and require no upkeep beyond a very occasional coat of the company's dressing solution, such as every five or six years, to keep the material in perfect condition.

Blinded Soldiers as Telephone Operators

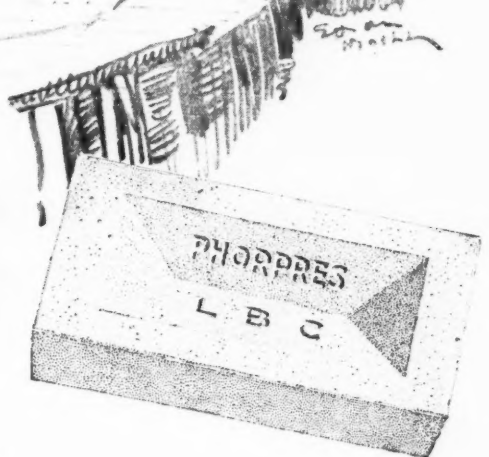
It may not be generally known that one of the most successful occupations taught to the blinded soldiers at St. Dunstan's is telephone operating. A large number of these men have found employment with important business firms and organizations in London and the provinces, and not a few employers state that their board has never been so well and efficiently managed as by their blinded soldier operator.

St. Dunstan's has several fully-trained men ready for work, and the authorities at St. Dunstan's headquarters (Inner Circle, Regent's Park, London, N.W.1) will gladly supply full particulars.

A point to bear in mind is that the employer's liability for his blinded soldier operator is no more than for an ordinary employee. His special needs as a blinded ex-Service man are the permanent and sole responsibility of St. Dunstan's After-care Organization



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New Inventions

Latest Patent Applications.

- 6242.—Akeroyd, H.—House building, etc. March 7.
 5776.—National Lime Association.—Manufacture of building units. March 3.
 5980.—Bruckshaw, H. S.—Reinforced concrete. March 4.
 6018.—Cook, R. F.—Gutter for roofs. March 5.
 6304.—Expanded Metal Co., Ltd.—Manufacture of wall ties, etc. March 7.
 6057.—Galke, M.—Reinforced concrete ceilings. March 5.
 6567.—Adair, W.—Erection of concrete, etc., buildings. March 10.
 6936.—Adam, A.—Concrete shuttering for cavity walls. March 14.
 6833.—Aytoun, R.—Wall tie. March 13.
 6732.—Bailes, T. F.—Construction of walls. March 12.
 6863.—Boughey, G. A.—Standard for scaffolding and shuttering. March 13.
 6864.—Boughey, G. A.—Concrete shuttering. March 13.
 6866.—Boughey, G. A.—Scaffold bracket. March 13.
 6637.—Clare, G. E.—Damp-proof wall lining. March 11.
 6880.—Grisenthwaite, T. C.—Building construction. March 13.

Specifications Published.

- 229364.—Boot, C.—Buildings.
 229368.—Savory, E. W.—Slab building-construction.
 229466.—Pitou, E., and Jones, D. Palmer.—Suspended scaffolds.
 229554.—Edwards, H.—Flues in buildings and bricks therefor.
 220646.—International Copperclad Co.—Roofing element, and method of making the same.
 220647.—International Copperclad Co.—Process and apparatus for making roofing-material.
 229743.—Baines, J. S.—Methods of building construction.
 229890.—Bron, A.—Method for moulding and erecting walls, floors, roofs, and the like, or slabs.
 226480.—Lampel, Dr. A.—Walls.
 229829.—Thomson, R.—Walling.

Abstracts Published.

- 227736.—Wood, T., The Bungalow, Amesbury, Wiltshire.—Moulding walls *in situ*.
 227898.—McCaughan, W., 39 Bedford Street, Belfast.—Walls.

The above particulars are specially prepared by Messrs. Rayner & Co., registered patent agents, of 5 Chancery Lane, London, W.C.2, from whom readers of the JOURNAL may obtain all information free on matters relating to patents, trade marks, and designs. Messrs. Rayner & Co. will obtain printed copies of the published specifications and abstract only, and forward on post free for the price of 1/6 each.

Municipal Contracts

The Ministry of Health have issued the following circular to local authorities to call attention to the following resolution passed at the Imperial Economic Conference in 1923:—

"(1) That this Imperial Economic Conference reaffirms the principle that in all Government contracts effective preference be given to goods made and materials produced within the Empire, except where undertakings entered into prior to this Conference preclude such a course or special circumstances render it undesirable or unnecessary.

"(2) That, so far as practicable, efforts be made to ensure that the materials used in carrying out contracts be of Empire production.

"(3) That State, provincial and local government authorities should be encouraged to take note of the foregoing resolutions."

The Government, the circular states, will be glad if the matter is considered by local authorities with a view to giving effect to this resolution, subject to the condition that, in view of the present special circumstances with regard to unemployment, no alteration should be made in the policy laid down in Circular 400 of May 15, 1923, with regard to the placing of contracts in this country.

British Legion Appointments Department

The Officers' Benevolent Department of the British Legion (The Officers' Association) have agreed to take over from the Ministry of Labour as from April 1 the responsibility of resettling in civil life ex-officers and ex-other ranks of similar educational qualifications. The Officers' Association on its inception in 1920 absorbed the ex-officer employment bureau of Dashwood House, but at the request of the Ministry ceased to register non-disabled officers early in 1921, so as to avoid all overlapping. Since that date it has continued its employment bureau for disabled officers at 48 Grosvenor Square, working in close co-operation with the Ministry, and has been the means of placing in employment an annual average of over 400 disabled ex-officers. Further, it has nominated representatives to assist on the committees of the Appointments Branch at Clements Inn, and by permission of the Minister initiated a panel to help those ex-officers who obtained a commission after serving in the ranks of the Regular Army. Hence the Department in undertaking the responsibility has already a large experience of the difficulties. These it hopes to overcome with the help of those influential business men who have hitherto been giving their invaluable assistance either at Grosvenor Square or to the Appointments Department. Accommodation has been secured at No. 4 Clements Inn, Strand, W.C.2, and all communications should be sent to the Secretary of the Employment Bureau at that address.

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