

Wednesday, February 25, 1925

Vol. LXI. No. 1573.

THE ARCHITECTS' JOURNAL & *Architectural Engineer*

With which is incorporated "The Builders' Journal."



FROM AN ARCHITECT'S NOTEBOOK.

We do not judge works of art: they judge us.

9 Queen Anne's Gate, Westminster.

The Church of S. Giacomo, Venice



The church of S. Giacomo di Rialto is in a part of Venice near the Ponte Rialto, and lying to the west of the Grand Canal. It is the oldest church in Venice, a basilica said to have been founded about 520. The present edifice was built in the eleventh and sixteenth centuries. The fruit and vegetable markets are adjacent.

THE ARCHITECTS' JOURNAL

9 Queen Anne's Gate, Westminster

Wednesday, February 25, 1925.

Volume LXI. No. 1573

"The Keeping of the Bridge"

THE question whether Waterloo Bridge should be maintained or no comes conveniently under three heads: (1) Is the bridge of such beauty and of so great merit that it is desirable to make sacrifices, if required, in order to maintain it? (2) Do the requirements of modern traffic make a change there desirable or necessary? And (3) is the structural condition such that it must be pulled down in the interests of public safety? It might be held that a fourth question arises, namely, does the report made by the Thames Bridges Committee to the London County Council recommend a course which will be satisfactory?

I propose in this article to give answers to these questions, which, I believe, are just and conclusive.

With regard, then, to the first—the beauty and merit of Waterloo Bridge. There can be little need in an architects' journal to point out where the beauty of the bridge lies. A sensitive man cannot fail to feel it. But the public, like a flock of sheep, must have a leader, and for many years it has had none with regard to Waterloo Bridge. It has not been written up by the guide-books; children have not been taught that it is one of the sights of London. The pleasures to be had from contemplation of the bridge have been enjoyed privately by artists in the same way as the enjoyment of some country village is shared by a few who will not add to their number lest the place should become hackneyed and vulgarized by mere lip worship. It is the same with books; our favourites we enjoy only with our intimate friends. Of protection of Waterloo Bridge in this sense there has been none; for not knowing its momentous value, the commoner sort of man is lightly talking of demolishing it and of altering it as though changes to it were only a matter of money, like alterations to those big ships which cross the Atlantic. There are those, of course, who believe what these folk say, believe that the bridge cannot be made permanently stable; believe that the needs of traffic demand a change—on hearsay are willing to surrender this work. We have failed in our duty; and the poets have failed us in leaving the public uninformed. And now we suffer a grave risk that the bridge may go for ever, and with it the very fine view which, with Somerset House and the more distant Bush building, is reflected in the waters of the Thames.

This great bridge, like the mediæval cathedrals and barns, is the natural expression of the best thought of its day; it is the right solution constructionally and aesthetically of the conditions upon which the designer had to work. It is almost as though Rennie had acted as a medium through whom the spirit of the inanimate materials he used and the inarticulate civilization in which he lived spoke; rather than that he was a man of great intellectual genius giving to Londoners an expression of his own thoughts. I do not

suggest that too much weight should be put on a notion so psychic, but the idea is one which may have more in it than our superficial materialism is inclined to let us admit; in any case, it is one which suitably indicates the truth and beauty of the group—Waterloo Bridge, Somerset House, and the broad Thames.

Each member of this trio is enhanced by the unifying instinct of Rennie's mind. Elsewhere the sweep of the arches, the span of each bay, the width of each granite bow, lighted by the glimmer of passing wavelets, have been praised; while the noble façade has held the architects in such admirable wonder that they have been inclined to forget that its beauty is closely related to the mass of the bridge that bears it. The bridge is so great a work that only the sorest need of the inhabitants of London should be held to justify any alteration.

What are the needs which are now stated to outweigh the value of these qualities? It is said that we cannot get across the river quickly enough at this point. That we can cross in safety we all know. And at the same time the Thames Committee states a fact that must be clear to all, that it is not the width of bridges that matters nearly so much as the convenience of the approaches to them. This is the answer to the second question: there is no need to build a wider bridge at this point for the sake of traffic. It may be desirable to improve the approaches and there is nothing in the form of the bridge which will at all hinder such improvement. The question of increased roadway upon the bridge would never have been raised had not one pier sunk rapidly about a year ago, sunk, be it remembered, with accelerating speed when the L.C.C. were engaged on works about the foot of that very pier. Had the pier never sunk we should never have had to spend time and money in the defence of this magnificent work of art—a work that is so little valued for the very reason that it is a living thing taking its daily share in London's life, and is not hidden in some colossal museum. In itself this is a reason which in reality adds enormously to its worth.

Then as to the structural condition. The public is not aware that engineers and architects know very well that the bridge can be permanently repaired. It is confused by the weight of the reports issued by the engineers employed by the London County Council, and in this respect the duty of all the members of our profession is to dispel the notion that repair is impossible. This is an important matter, and one which affects the well-being of London. It is not one on which the silence demanded by professional etiquette can for a moment be tolerated. We must not betray the public in this matter.

In a brief article it is impossible to marshal all the arguments that *should* be ordered in overwhelming array. Conclusions, and hardly aught else, can be brought to-

gether. The fourth question, then, relating to the value of the report of the Bridges Committee can barely be touched on. It is a good and sincere report, excellently drawn up, but it reads as though it were written by the tools of those powers which had already determined on the destruction of this great monument of London. It is the defence of a mistaken policy rather than the recommendations of an impartial body.

A. R. POWYS.

The New Architect-R.A.

The election of Sir John Burnet as Royal Academician comes appropriately enough upon the completion of that remarkable modern work, Adelaide House—proving, incidentally, that though the elect of the Academy may look unfavourably upon the modern trend of painting and sculpture, they have no sort of prejudice against the development of architecture. Sir John courageously showed the way of progress more than twelve years ago in his Kodak building in Kingsway, since when he has continued steadily and surely to work out his logical theories of design. The riper he becomes in years (he is sixty-eight) the more youthful his outlook seems to grow—a remarkable reversal of the usual order of things. Sir John will receive universal congratulations upon his election, which is a just recognition not only of his qualities as an architect, but of the fine work he has done for the development of modern British architecture. Sir John, who received his knighthood in 1914, already holds the Bronze and Gold Medals of the Salon, as well as the Royal Gold Medal, which was awarded to him in 1923, when we took the opportunity of publishing a special issue dealing with his work, an appreciation being contributed by Mr. H. S. Goodhart-Rendel. The son of a Glasgow architect, Sir John was trained in the Ecole des Beaux-Arts, Paris, and

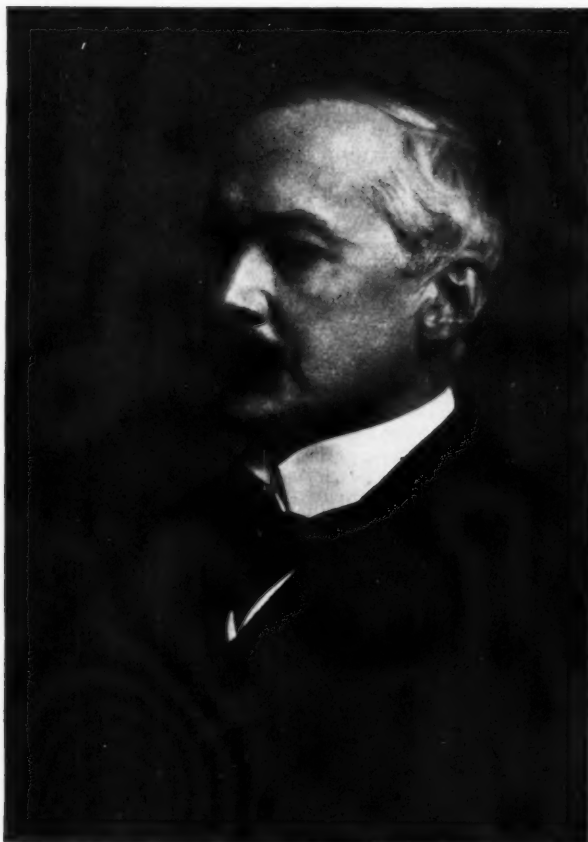
in the study of architecture has travelled widely, notably in Italy and America. His works in this country are very numerous, including in London (besides those already mentioned) the King Edward VII Galleries of the British Museum, the Institute of Chemistry in Russell Square, the Insurance Buildings at the end of the eastward arm of Aldwych, and a great block of buildings now in course of erection in Regent Street. Sir John is the principal architect for the Imperial War Graves Commission for Palestine and Gallipoli, in which places he has erected some very striking monuments.

Modern Working Drawings

The exhibition of architects' working drawings at the R.I.B.A., though of somewhat restricted scope is, nevertheless, of very great interest. Sir Edwin Lutyens's office is represented by the working drawings for Britannic House; Sir John Burnet's office by the drawings for Adelaide House; Messrs. Helmle and Corbett's office by those for Bush House; and there are also the drawings of a residence in Somerset by Mr. H. S. Goodhart-Rendel. How many sets of drawings large buildings nowadays demand is seen by looking at those for Adelaide House, where there are piles of blue prints for the granite work, the stonework, the electrical installation, the hot water and heating installation, the lifts and vacuum cleaner installation, the metal work, the steelwork, the windows, the automatic sprinklers, the engineer, the contractor, the sub-contractors, in addition to the usual sheaves of survey plans, eighth scale, quarter scale, half-inch, one inch, quarter-size, half-size, and full-size drawings, as to amaze the mind and bury the body by their sheer number and weight. $\frac{1}{2}$ $\frac{1}{4}$

Lions

Perhaps it is because the lion has become a popular national symbol that we so often find the handsome beast introduced as a decorative adjunct to buildings and monuments. His fabulous heraldic friend, the unicorn, is by no means so popular, and seldom has separate existence. As a dramatic decorative gesture there is nothing to equal the lion. This fact was obviously appreciated by the architect of the Lion Brewery, who caused a magnificent specimen of the tribe to be set on top of the building that flanks the Surrey end of Hungerford footbridge. When this building, a decorous example of early-nineteenth-century classical design, is demolished (as unfortunately it soon will be), the southern shore will lose one of its best buildings, not to mention its silhouetted lion—of which, by the way, there are replicas over the entrances to the brewery in Belvedere Road. After Landseer's very human lions in Trafalgar Square, few, perhaps, are better known than the Wembley animals, which, however, are found more on paper than in the round. In Westminster the very timid brute that crouches at the foot of Oliver Cromwell is put to shame by the red and rampant monster that clamours outside a tavern in Whitehall. Sir George Frampton's conventionalized specimens guarding the approach to the rear façade of the British Museum are not so well known as they should be. Alfred Stevens's lions, intended for the railings at the front of the museum, are not, unhappily, to be found there, but some very creditable reproductions of the design (which, incidentally, is repeated on the Wellington Monument in St. Paul's) are to be seen on the railings in front of the Law Society's premises in Chancery Lane, and of the building occupied by Spicer Brothers in New Bridge Street, City. Among modern examples used as decorative features of a façade none are more effective than those which are found above the main entrance to Africa House in Kingsway. At one time the lion's head was a favourite device for door knockers, but, as we find in Boz's sketch, these were passing away years ago, though numbers are still to be found in the older residential parts of London and in country districts.



SIR JOHN BURNET, R.A.



THE DESCENT FROM THE CROSS. BY A. BOURDELLE.

Notre-Dame du Raincy

By H. BARTLE COX, A.R.I.B.A. (S.A.D.G.), Paris

AN inexpensive building and an effective application of the elementary principles of design to a comparatively new method of construction; such, in few words, is the key-note of this much-discussed modern church, entirely fashioned in unfaced reinforced concrete by Messieurs Perret Frères, architects and builders.

Rational in composition, but uncommon in aspect, Notre-Dame du Raincy seems to herald a *new style*. It is greatly visited by architects of all nationalities, and in France, public interest in this ingenuous exponent of the *modern movement* has been aroused through the influence of the daily Press. Many architects of the "Ancien Régime," disquieted at the immense publicity of a building, the import of which is not flattering to their status, have, in consequence, felt the necessity to discourse upon what they consider to be its merits and defects, with the result that most of the technical papers in Europe and America have published articles, more or less valuable, on the significance of this church.

Though beauty cannot be gauged upon arbitrary precedent, yet criticism, unfortunately, is often debased to a mere statement of individual likes and dislikes. The church in question, however, whether good or bad, is undoubtedly the most thorough, frank, and courageous example in France of the purely architectural use of visible reinforced concrete. The material was chosen on account of the slenderness of the budget, and the design should be judged from that point of view.

An unbiased inquiry into the important rôle played by industrial enterprise in the complex realization of large modern buildings would go further in a comprehension of the popularity of this building than anything that could be obtained from the peaceful knowledge acquired by merely doing pleasant water-colours of Roman remains or even measured drawings of mediæval cathedrals. We are here up against a principle, at present, dear to the profession, viz., that an architect should not be a builder. This is no digression. It bears directly upon the church, for it is the real reason of its being what it is! Had Messieurs Perret Frères not been both builders and architects, neither this church nor any other, in the circumstances, would have been erected at Le Raincy. The principle has influenced the design and is the cause of much bitter controversy. The main issue is generally avoided out of respect for our temporary magnates, who do not care to take into open consideration the forces that bring an inevitably new movement into being. In this awkward period of architectural transition the leading lights belong to a new school.

La Sainte-Chapelle of Reinforced Concrete.

In the hands of these modern constructors reinforced concrete architecture is no longer based on the principles of a building-up of a series of layers: thick walls with deep reveals disappear. Neither Renaissance columns nor Gothic buttresses, nor meaningless applied ornament, consecrated by a too long-lived fashion, are characteristics of this church. It is situated in the somewhat inaccessible residential suburb of Le Raincy, about nine miles N.E. of Paris. This suburb has grown up like a mushroom. Thirty years ago it did not exist, so to speak, and to-day has a population of some 12,000 inhabitants, chiefly employees who for the most part have settled there in houses of their own. Through the indefatigable energy of Monsieur l'Abbé Nègre, the church was built to commemorate the departure of the taxis under the order of General Gallieni which enabled General Maunory to win the battle of L'Ourcq (September, 1914), leading to the famous victory on the Marne. L'Abbé Nègre only had 300,000 francs at his disposal, and after consulting several architects, found no one could offer more satisfactory proposals than Messieurs Perret Frères, who eventually executed this votive memorial as a veritable landmark to the scenery of Le Raincy, as well as to the history of architecture.

The church was consecrated 17 June, 1923, by Monseigneur Gibier, Bishop of Versailles. It took only thirteen months to construct, and covers an area of nearly 13,000 sq. ft. It is about 180 ft. long by some 66 ft. wide, interior dimensions, and the tower is roughly 140 ft. high. The church contains comfortable seating for 1,500 worshippers, and has been known on special occasions to accommodate a congregation of between three and four thousand people. The total cost was between 300,000 and 400,000 francs, but the heating apparatus and the bells, etc. etc., were gifts. In reality the church is worth between 6 and 7 hundred thousand francs, say about £8,000 roughly, a little over £5 per seat of present money.*

Many technical and cultured people admire this church, but irrespective of its beauty, the above figures are significant. Taste, of course, is personal, but the first general impression on ordinarily educated people is one of surprise and respect mixed with doubt, but upon repeated visits the building grows upon one. With a knowledge of the "programme" the logic of the building seems to impose itself upon the beholder as an artistic solution of the requirements.

The tower (page 323) is of agreeable proportions and

* The cost of building in France is now (1924-25) slightly over four times pre-war rates.

gives a better effect than one might suppose from the photographs. On entering the church we are struck by the cheerfulness and feeling of space. The black and white illustrations give no idea of the brilliant coloured lights in the windows. The altar is raised on a platform, underneath which is a crypt containing the heating apparatus, a sacristy, offices, and a chapel. The site is of calcareous soil, and the foundations in certain parts had to go down to the unexpected depth of some 30 ft. The surface has a natural declivity from the tower towards what we in England call the East End, which, in this particular case, is due west. To level the site would have increased the expense considerably; Monsieur Perret took advantage of this difficulty, and out of an obstacle produced an element of beauty. The nave has, therefore, a gentle slope of about 1 in. in 3 ft. towards the altar. The effect is so satisfactory that the architects would adopt this method in another church if the site or the expense permitted. (See section, page 332.)

In the majority of contemporary buildings the construction is subservient to what is popularly called the architecture (in other words, the conventional decoration), but at this church the architecture is pure, being the expression of the construction, which, in the hands of an architect (as distinguished from a mere builder) constitutes its own ornament. The building is not arranged as a mere engineer would have designed a factory. If we notice the system of vaulting we shall see that the attention is drawn towards the altar. There is one longitudinal vault counterbalanced by several transversal vaults, thus the opposing lines are more numerous and give more grandeur to the edifice than if the cheaper system of a series of transversal vaults had been adopted. In the words of Monsieur Perret: "c'est le nombre et non la dimension qui fait la grandeur." A notable feature of the plan (page 325) is the fact that the enclosing walls do not support the vaults, and, though the thrust is considerable, there are no buttresses. There are four (not two) rows of posts supporting the vaulting and roofing, which, by certain ingenious devices between the vault and the roof, are handled in such a way that there is no outward thrust. Such is one of the advantages of reinforced concrete. The main vaulting is less than 1½ in. thick, and the roofing is only 1 in. thick; comparatively speaking, less than the thickness of an eggshell. From the longitudinal section (page 332) it will be seen that the roofing, invisible from the road, is constructed something like corrugated iron, so to speak. Expansion and contraction, the great enemy of reinforced concrete, is thus accounted for by the rising and falling of the small segments and, in this instance, doing away with the necessity for expansion joints.

Had the exterior posts been embedded in the walls the architects would have felt the necessity to emphasize their position by some ornamentation, but they preferred to show them entirely. If one had had the impression of two rows of posts instead of four the church would have appeared much smaller. Those who might feel inclined to criticize the form of the vaults should not forget that without economy there would have been no church. The builders responsible for the design therefore used shuttering already in their possession. No mere paper architect is so advantageously placed. All the posts, of whatever height, interior and exterior, are of the same diameter, another matter of economy for reinforced concrete, they are about 1 ft. 5 in. at the base and 1 ft. 3 in. at the top, parallel for a third of their height, and then tapered, giving a kind of entasis, which if carried out on classic principles, would have been too costly; this imperfection has been attenuated by the use of reeding, increasing the elegance of the posts and emphasizing their character, an indispensable condition of beauty. The vertical joints of the shuttering blend into the reeding. The posts, which go from the foundation right up through the vaulting to the underside of the roof, have neither base nor cap. It is not an architecture of superposition.

The edifice is essentially a framed skeleton with filling,

the latter composed of three elements: (1) *Solid blocks* (bottom of the walls, for example); (2) *pierced panels*, designed on the principle of the square, replacing windows; (3) *ribs*, uniting the open panels. There are five models of primitive simplicity but capable of almost infinite variety for the treatment of the fenestration; they are: the cross, the circle, the triangle, the rectangle, the square. A square is the quarter of a panel, and a rectangle is the half.

On the side walls projection is given to the ribs on the interior, the exterior being sacrificed on account of party walls, only a metre and a half from the building. For the main façade the builders have done the reverse; the interior, however, does not suffer on account of the movement given by the tower, whose interior effect is most captivating. The tower might have been supported on four big concrete pillars, the heavy appearance of which would have demanded some ornament, but the designers preferred to use the shuttering of the posts for the nave and put four groups of five posts each. They have thus obtained a decorative effect: the element of construction serving as ornament. See further on the precept of Fénelon!

Notre-Dame du Raincy is a vessel without transepts, and has been aptly termed "La Sainte-Chapelle" of reinforced concrete. The impression made by the interior is one of an amazing slender aerial effect and a flood of light. Mystery is perhaps connected with darkness, but piety is not necessarily a sorrowful state of mind, and in our epoch, at least, it is necessary for worshippers to be able to follow the services on their prayer books. The dim so-called religious light belongs to the Dark Ages. It appears that churches began to become better lighted about the time of the invention of printing. The "claustra" or windows are brilliantly coloured, the pictorial designs are the work of the celebrated artist, Monsieur Maurice Denis, who also executed the paintings in the cupola of the Théâtre des Champs-Élysées. There are five equal-sized bays, each with its own appropriate colour scheme. The first bay near the tower is mainly white, the four following bays on each side have respectively the predominating colours of yellow, orange, red, violet, and the whole of the end behind the altar is of a vivid blue, these colours blend well together, and are all in the same scale; they are rich, and the way the eye is drawn to the intense blue (colour of the Holy Virgin) in the Lady Chapel, is decidedly impressive. All this blaze of colour is merely varnish painted on cathedral glass; the life of this temporary decoration is considered to be about ten years. Light filtering through the varnish is effective, but somewhat cold and thin. It is hoped to replace it later by stained glass, when the roughness of the reinforced concrete will take on warmer hues.

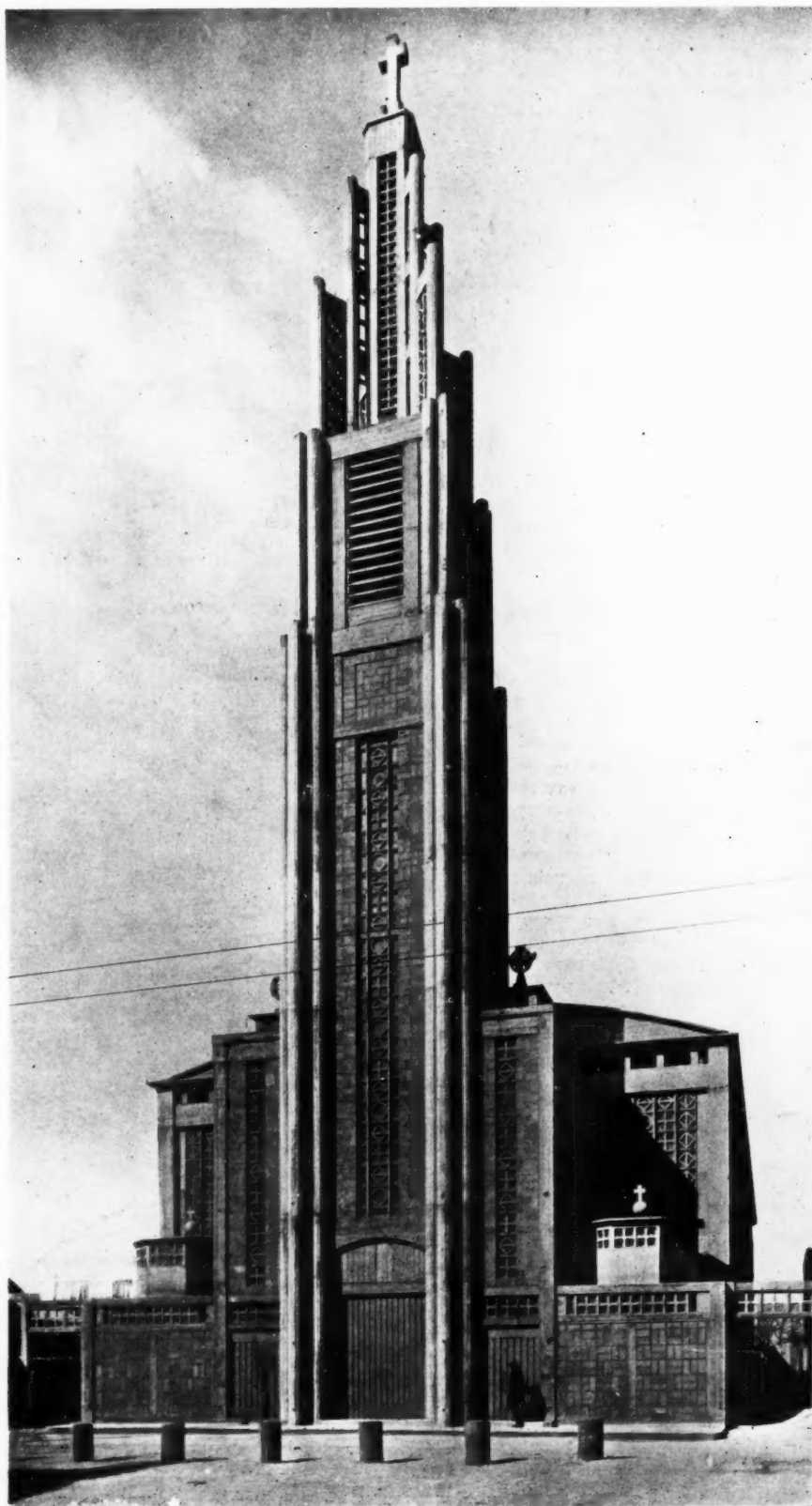
The openwork design in the centre of the main vaulting is for ventilation, the vitiated atmosphere finding its way out of the apertures as seen over the windows in the front elevation (page 323).

By reason of the site and the fact that adjacent proprietors have the right to build on the party walls, the church, recessed from the road, relies for its exterior effect mainly on the tower, the silhouette of which, as seen in perspective, is very successful. In the middle of the façade is a simple door to be accompanied later by a bas-relief, a descent from the cross, by the eminent sculptor, A. E. Bourdelle. This motif is greatly needed for the completion of the design. Further up the tower there will eventually be a clock. The two small cupolas on the right and left of the entrance are over the baptistry and the chapel to the Souls in Purgatory, or, as it will be commonly called, the chapel to those fallen at the war. Between these octagonal chapels and the central tower are two subsidiary towers uniting the whole and producing an harmonious effect agreeable to the eye (page 323).

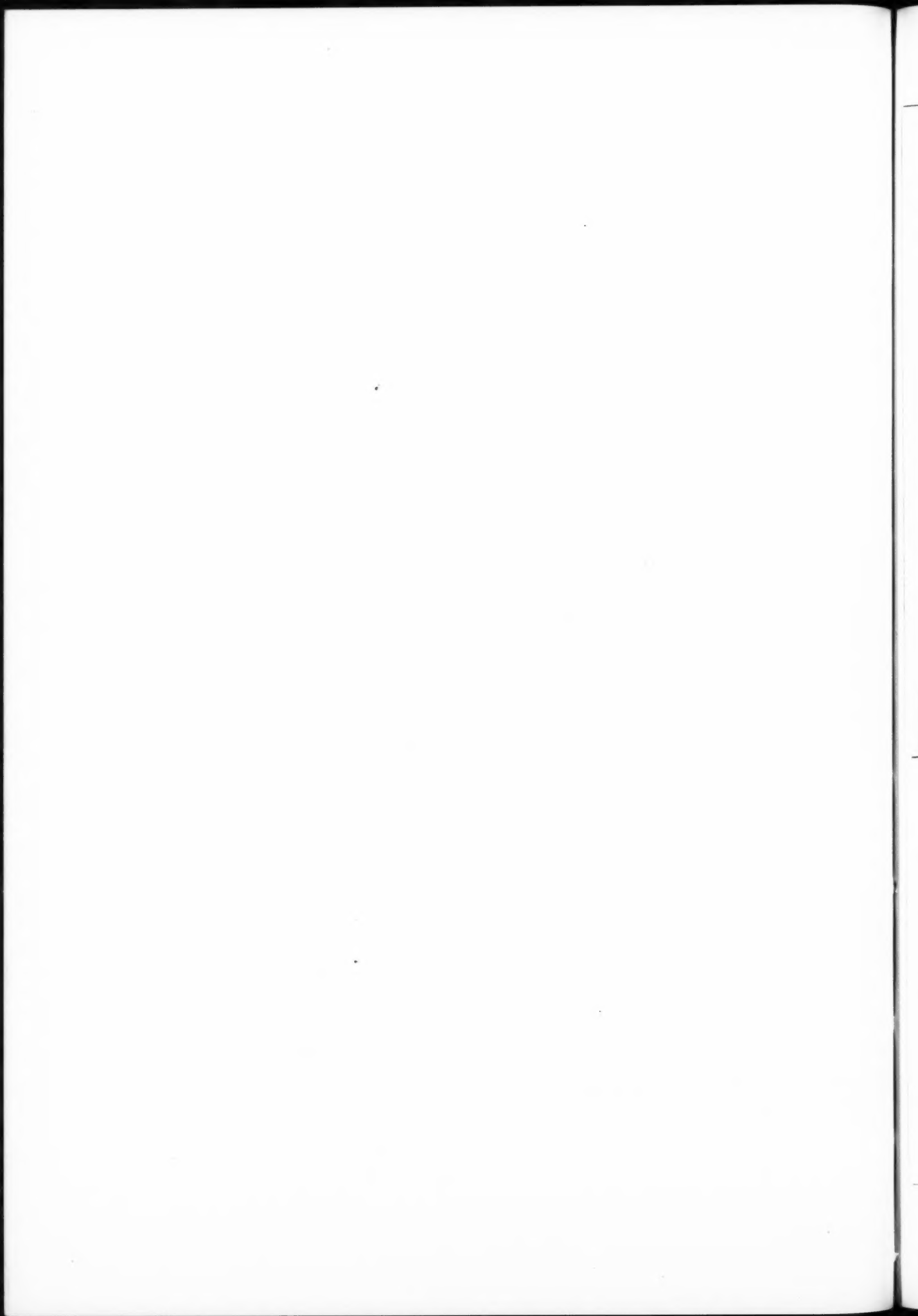
When the author of this article visited the church for the first time he was accompanied by a few architects of distinction from England. The sacristan, after showing us the crypt, volunteered the information that the "engineers" who designed the church lived at Paris.

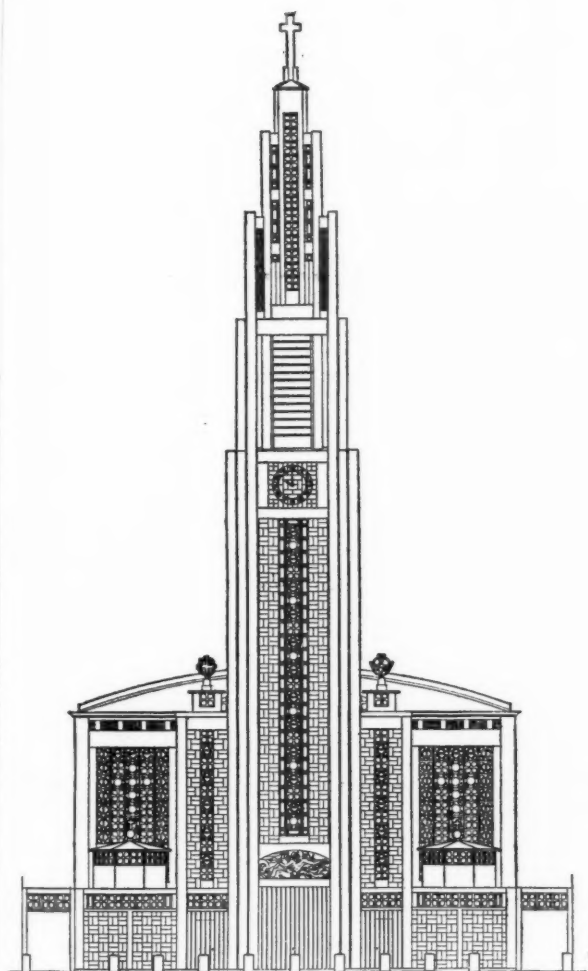
Modern Ecclesiastical Architecture. 32.—Notre-Dame du Raincy

A. and G. Perret, Architects

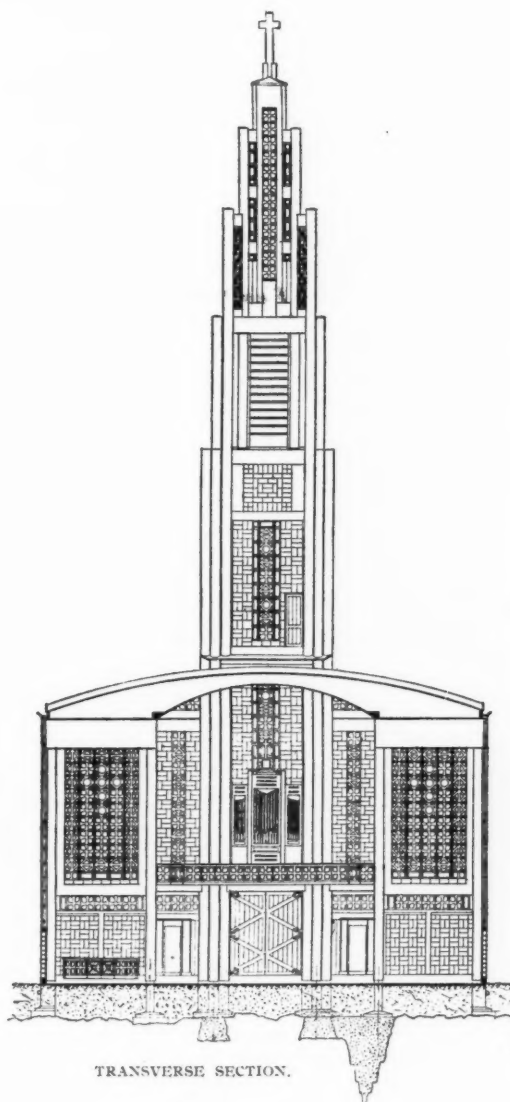


The church of Notre-Dame du Raincy is situated in the somewhat inaccessible residential suburb of Le Raincy, about nine miles north-east of Paris. It was erected to commemorate the departure of the taxis under the order of General Gallieni which enabled General Maunory to win the battle of L'Ourcq in September, 1914. It is built of reinforced concrete throughout.

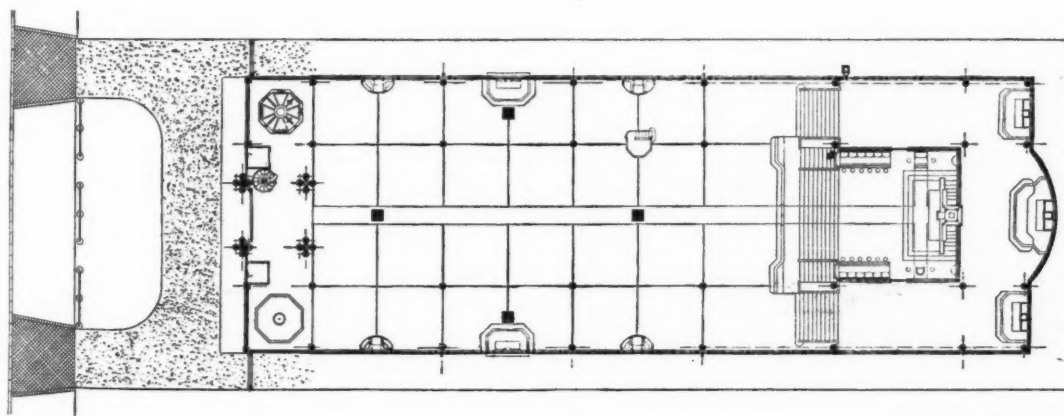




PRINCIPAL ELEVATION.



TRANSVERSE SECTION.



GROUND-FLOOR PLAN.

NOTRE-DAME DU RAINCY. A. AND G. PERRET, ARCHITECTS.

Architectes-Entrepreneurs.

The two senior partners, Auguste and Gustave, of the firm Perret Frères, were both brilliant students at the Ecole des Beaux-Arts, Paris. They won several prizes, and had a complete architectural training, according to the methods of the day, in the atelier of the well-known professor, Monsieur Julien Guadet. Some seventeen years ago they directed the construction of the Cathedral of Oran in accordance with the plans of Monsieur Albert Ballu. Being builders as well as architects, in conjunction with their brother Claude, they are intimately in touch with their speciality: the scientific and artistic possibilities of reinforced concrete construction. They have designed and executed a vast number of notable buildings, including the famous Théâtre des Champs-Élysées.* As builders and architects they are debarred from membership of the principal architectural societies of France, which to them is a matter of complete indifference. They have a very large practice, and their work is greatly appreciated for its economy of cost, soundness of construction, and artistic handling. The status of the ordinary architect suffers by comparison. What consequence to Perret Frères if they are designated as builders, engineers, architects, designers, *maîtres d'œuvre*, or what not? To pretend that a business man has no soul is as much an exaggeration as to assume that all accredited architects are immune from commercial benefits. This point alone explains the success of Notre-Dame du Raincy. Drawing-room architects are a creation of a moribund régime in which paper designs are made with only a superficial knowledge of construction, the result on the development of art has been deplorable. The architect in France was formerly the builder of his works. Not only our ancestors, the *maîtres de l'Œuvre* of the Middle Ages, but our grandfathers, and our great grandfathers the Du Cerceau, the Mansards, the Perrault, and the Gabriel never

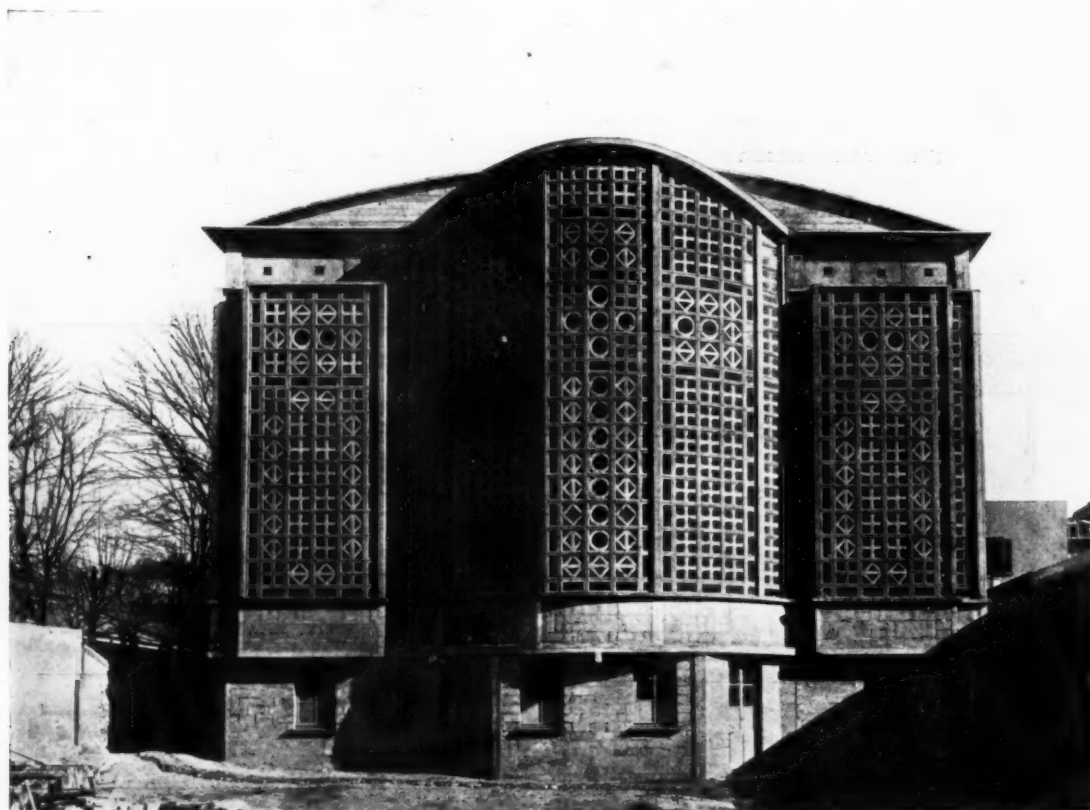
* An illustrated description of this building appears in THE ARCHITECTS' JOURNAL, December 13 and 20, 1922.



DESIGN FOR STAINED GLASS, REPRESENTING THE BATTLE OF L'OURCQ, 1914. BY MAURICE DENIS.

blushed to be both artists and constructors "dans la plus large acception du mot."†

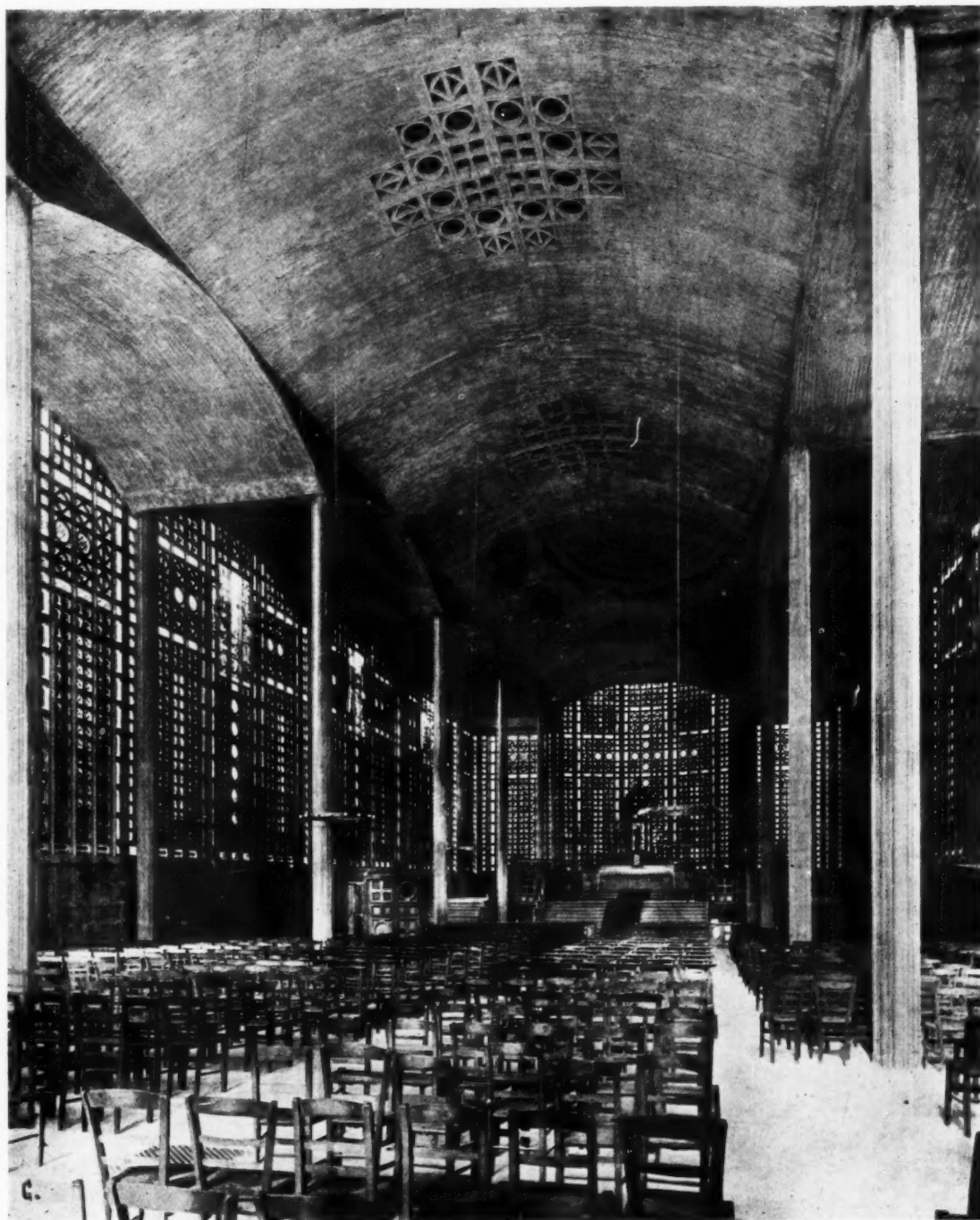
† See report (Annuaire, 1914) by Monsieur Louis Bonnier, in the name of the S.A.D.G., at the Fourth International Congress of Architects, held at Brussels in 1912.



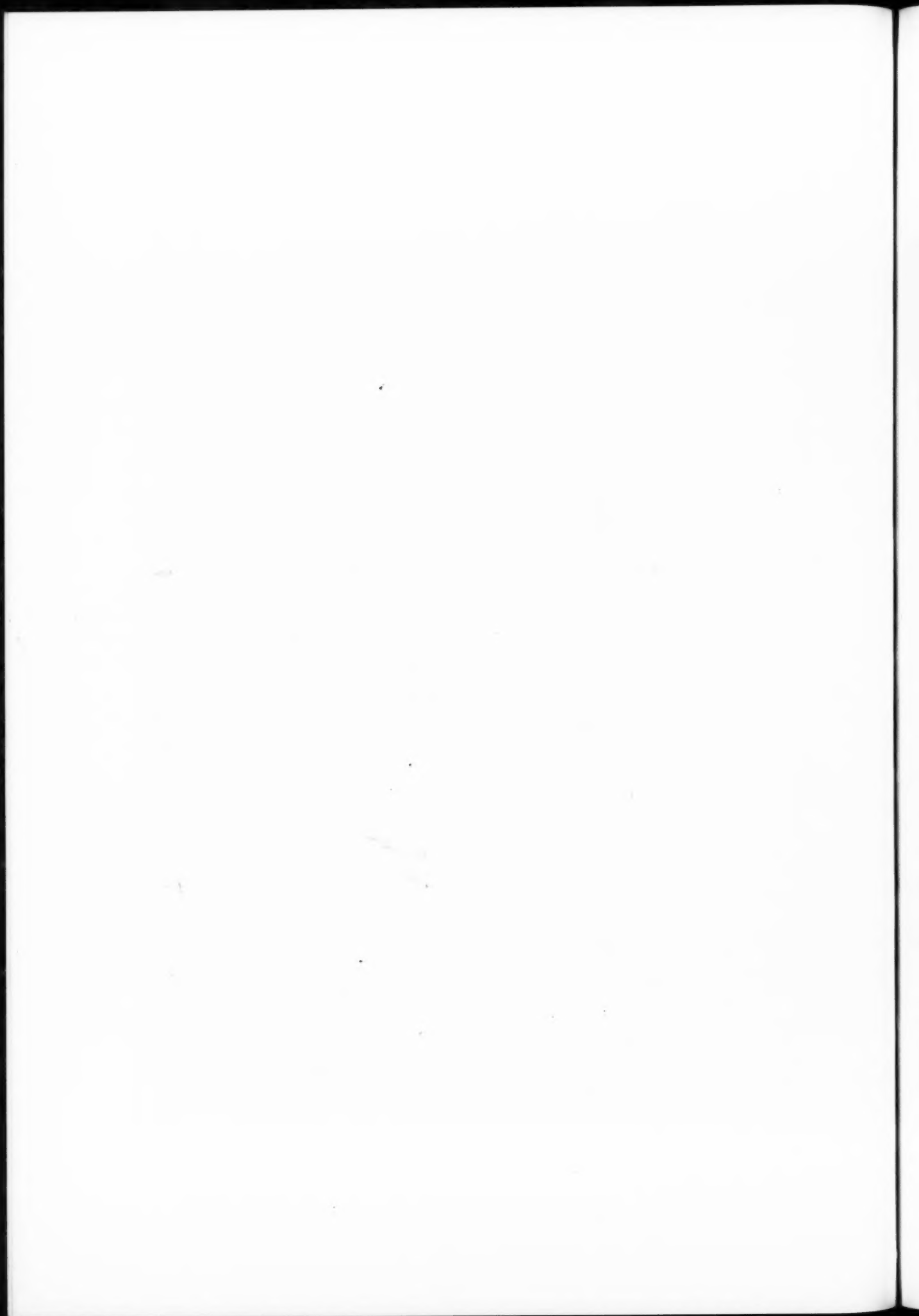
EXTERIOR OF THE APSIDAL END.

Modern Ecclesiastical Architecture. 33.—Notre-Dame du Raincy : The Interior

A. and G. Perret, Architects



The view is looking towards the altar, showing the posts and vaults, and the claustra, or windows. The interior dimensions are about 180 feet long by 66 feet wide. The edifice covers an area of nearly 13,000 square feet.

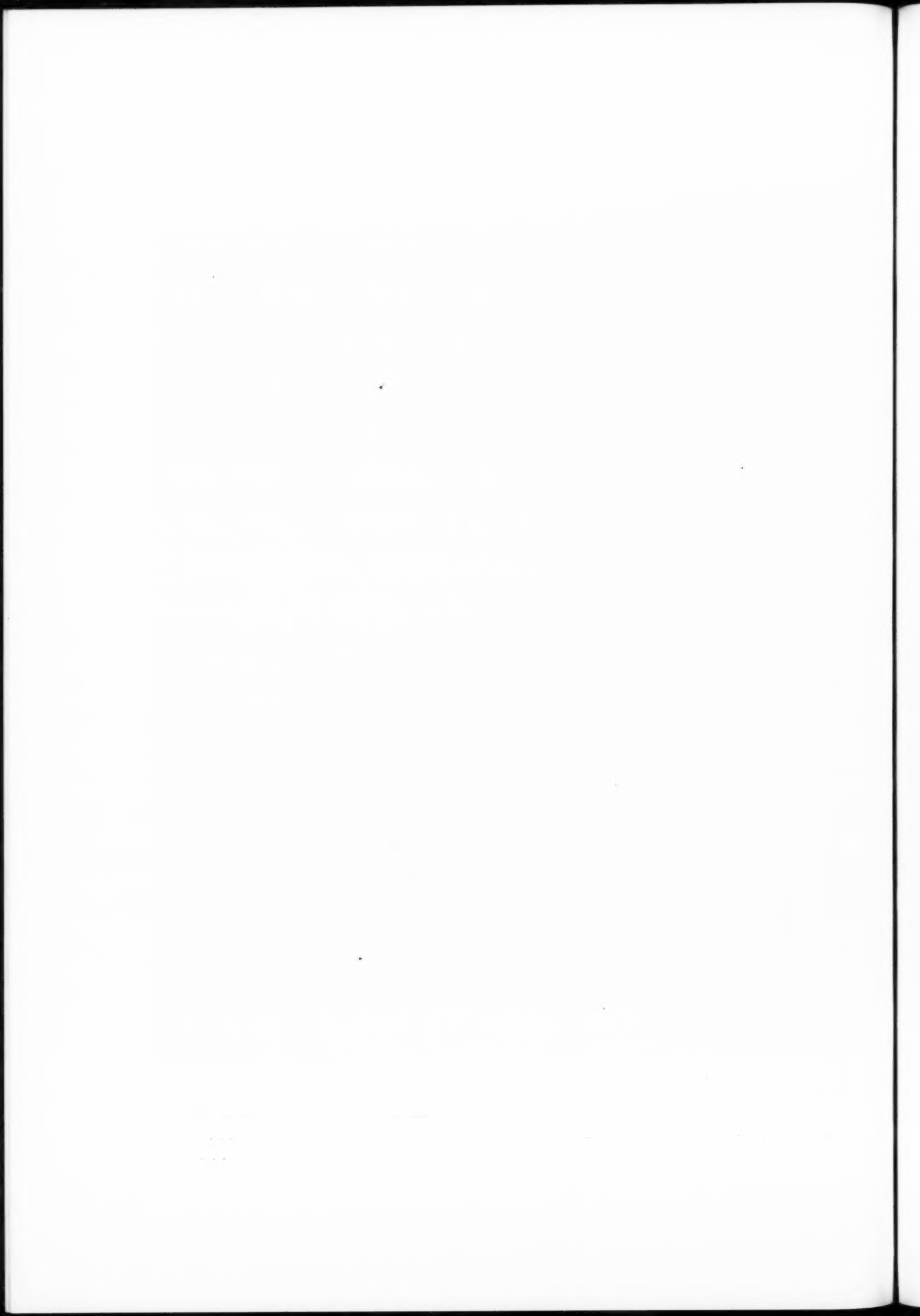


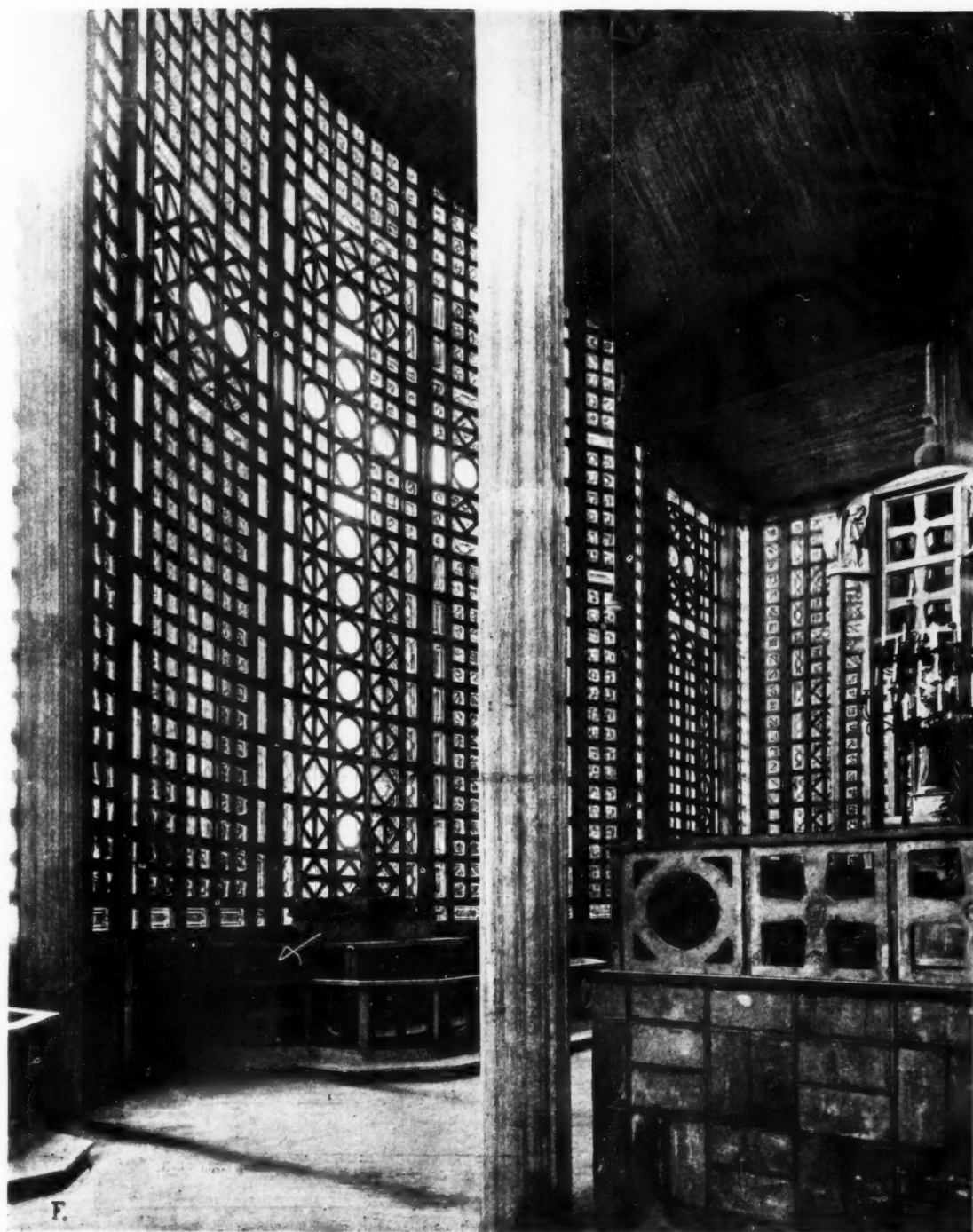
Modern Ecclesiastical Architecture. 34.—Notre-Dame du Raincy :
An Interior View

A. and G. Perret, Architects

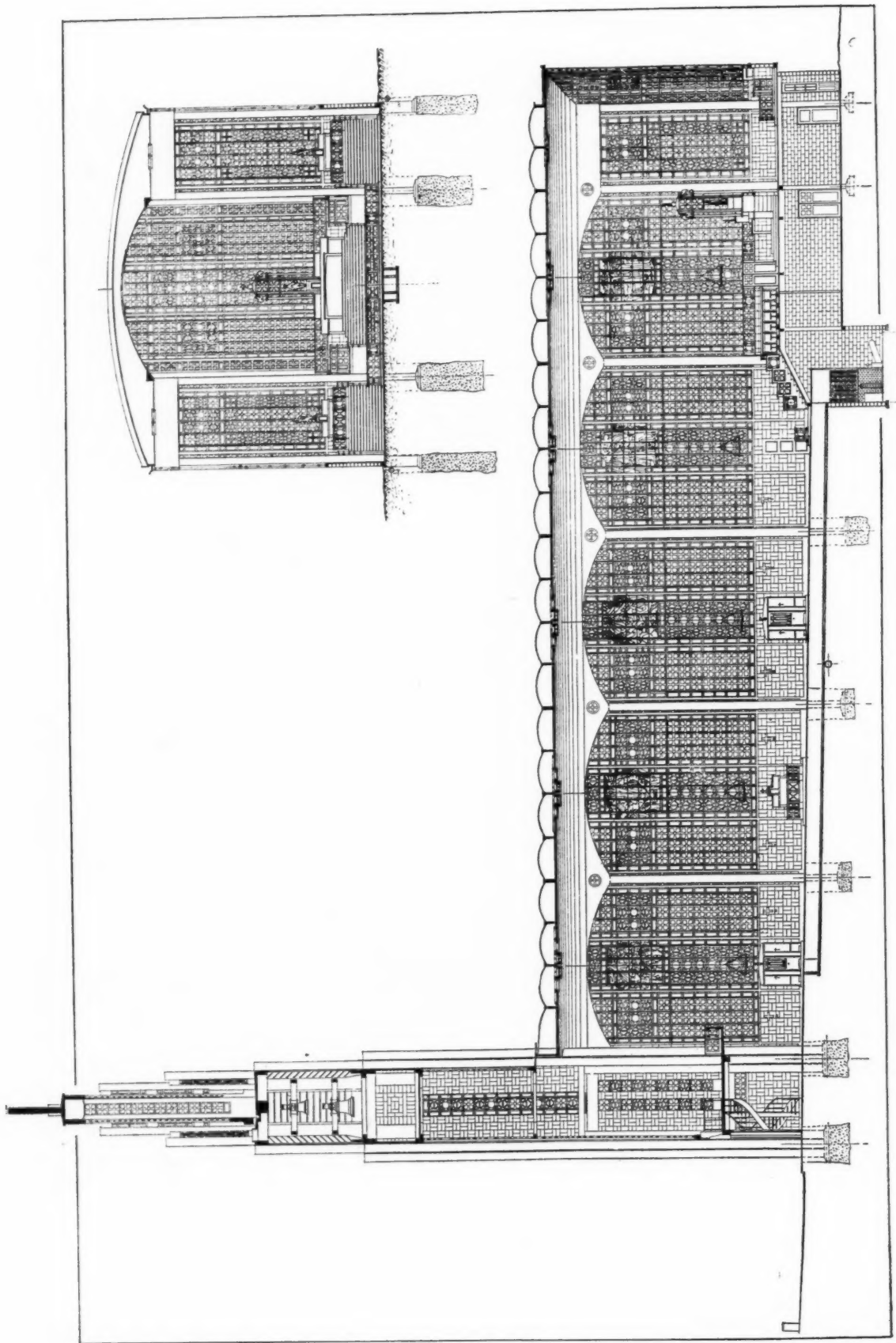


The church contains comfortable seating for 1,500 worshippers, but has been known on special occasions to accommodate a congregation of between three and four thousand people. The tower is just seen in the centre of this view.





NOTRE-DAME DU RAINCY: THE LADY CHAPEL BEHIND THE ALTAR.
A. AND G. PERRET, ARCHITECTS.



NOTRE-DAME DU RAINCY; LONGITUDINAL AND TRANSVERSE SECTIONS. A. AND G. PERRET ARCHITECTS.

It w
took
practi
attach
the th
doubt
better
Engla
and n
better
if the
acqu
prise
Cham
archi
out a
do, a
Perre
taste
work
conc
of ci
A
Paris
clerg
comm
vale
atten
forc
pati
thou

rest
cat
rep
me
un
att
det
stil
it
in
to
ev
an

"p
mi
wi
of
qu

an
iss
ac

be
co
re
m
p

It was only in the nineteenth century that the scission took place. It is questionable whether certain corrupt practices which had grown to enormous proportions were attacked in the right way. It appears to have divorced the theory of design from the theory of building, while it is doubtful if the financial interests of the client are really better protected. At any rate the Brothers Adam in England were no worse architects because they were builders, and many of our modern practitioners would certainly be better equipped to win the confidence of prospective clients if they could give more definite assurance of a practical acquaintance with the technical side of industrial enterprise. This is the profitable lesson of the Théâtre des Champs-Élysées and of Notre-Dame du Raincy. Many architects might think themselves more capable of carrying out a more beautiful building, but they did not get it to do, and in both cases, let it be remembered, others than Perret Frères were approached in the first instance. Future taste will not be developed upon paper designs, but upon works realized in the present. This modern reinforced concrete church of Le Raincy, brought about by the force of circumstances, is of historical interest.

A number of new churches have recently sprung up in Paris and its suburbs, and it is refreshing to note that the clergy no longer impose Gothic or Romanesque styles and commercial church furniture, so irreligious and yet so prevalent a few years ago, is now attracting more earnest attention on the part of benefactors. Not long since, reinforced concrete and religion would have seemed as incompatible terms; but now it is the material the most used, though still often hidden or treated in a faint-hearted

manner, the architecture being false to the construction, instead of being handled in a way characteristic of the material. Inexpensive architecture is a difficult problem demanding a triple experience of industrial enterprise, engineering technique, and architectural composition. Messieurs Perret Frères, *architectes-entrepreneurs*, have added another pioneer example to their long list of important buildings in the shape of this religious monument.

Le Raincy is proud of its church, many of the inhabitants preferring it to the cinema. Several practitioners, and not a few art critics regard it as a masterpiece. Monsieur Auguste Perret is very fond of stating his principle of design in quoting from Fénelon's "Discours de réception à l'Académie Française," in which the Archbishop of Cambrai (1651-1715) points out that it is recognized that the beauties of speech resemble those of architecture. The most daring and the most ornate works of the Gothic are not the best, and he then adds the following: "Il ne faut admettre dans un édifice aucune partie destinée au *seul ornement*; mais, visant toujours aux belles proportions, on doit *tourner en ornement* toutes les parties nécessaires à soutenir un édifice." The principle is at the base of the real modern movement. This passage is quoted by Monsieur Remy de Gourmont in his work entitled "Le Style." The lesson is classical, and though once more modern has nothing new about it. Monsieur Perret in the design of his church at Le Raincy has merely put this *Reformation* into practice.

Le Théâtre des Champs-Élysées and Notre-Dame du Raincy are world-famed examples of reinforced concrete *architecture* which, however far they fall short of perfection, no serious student of art can afford to ignore.

St. Paul's Cathedral

The Commission's Final Report

By WILLIAM HARVEY

THE final report recently published by the commission of experts appointed in 1921 to investigate the structural condition of the dome of St. Paul's will do rather less than nothing to restore public confidence either in the present state of the cathedral or in the prospect of its receiving adequate repair at the hands of the commission.

Like the second interim report, the present pronouncement contains abundant evidence of the commission's unfamiliarity with the class of problem with which it has attempted to grapple, but the greater length and more detailed character of the new document makes the fact still more startlingly clear. Surprisingly clear, indeed, for it might have been expected that investigations carried on in the building for a prolonged period would have served to introduce the subject and familiarize its main aspects even to persons formerly unacquainted with the survey and analysis of buildings in a state of decay.

Whether the use of a pseudo-scientific jargon concerning "precision instruments" and measurements taken in minute decimals of a foot is meant to impress the reader with a sense of profound study, or is the genuine outcome of the commission's naïve outlook upon the subject, it is quite out of place in the present instance.

A plain statement of the building's condition is required, and researches into contributory causes only obscure the issue, however interesting they may be from a purely academic point of view.

It is well to remember that the greatest buildings have been created without such "precision instruments" as the commission has at its disposal, and that, while the utmost refinement and accuracy of measurement is desirable, the mental equipment of the observer should be acute in proportion to the means of investigation.

The text of the report gives unmistakable signs that this has not been so in the present case, for where any deduction is made from the ascertained facts, it is of a most inconclusive character. Perhaps the most valuable result that can be hoped for from the publication of the report will be a public recognition of the fact that the statistical analysis of historical buildings is a special branch of constructional science for which a special and intensive training is necessary.

A patient whose leg is broken does not go out of his way to call in the services of a heart specialist, but though in medicine the principle is recognized that special training is necessary for the acquirement of particular skill, this principle has not been applied to architecture.

It will be quite sufficiently difficult to estimate the extent of the danger and damage at St. Paul's even when the best of knowledge and experience is applied to the case, and without these special qualifications the task will be altogether insuperable.

The state of St. Paul's is not such as will warrant indefinite procrastination, for, whether the commission can see them or not, signs exist of serious movement which cannot be disregarded if the destruction of the building is to be avoided.

In spite of the recent assertions that the proposals contained in the second interim report would amply suffice to meet all the needs of the case, the commission now proposes to augment its grouting and patching scheme by reinforcing the piers and by banding the drums of the dome. These concessions to criticism may be viewed in one of two lights, for they may indicate a genuine change of mind upon the dangers and necessities of the case, though it seems far more probable that they should be attributed to an attempt to satisfy the opposition

that was very properly stirred up by the patching scheme. In either case the vacillation of the commission in eating its words and changing face at the eleventh hour would give very little cause for increased confidence, even were the proposed additional measures themselves acceptable on structural grounds.

On the subject of the reinforcement to be threaded into the boreholes made for applying grout to the piers, I feel privileged to speak, for I invented this special method in 1916 in connection with a proposal to strengthen the north-west pier of the crossing at Tintern Abbey.

The method was not adopted in that particular instance on account of the difficulty anticipated in obtaining complete unity of action between the metal and the rubble core of the piers, although my proposal had been to make the boreholes large enough to tamp in cement around the rods by means of a sleeve device slipped over each rod in turn.

The danger of this use of reinforcement inserted under conditions which make its action highly uncertain is that, like the other recommendations of the commission, it is likely to inspire false and wholly unwarranted confidence.

To this objection must be added the equally important consideration that, until the building has been properly analysed as a whole, neither the commission nor anyone else can possibly know how much, or how little, reinforcement will be needed, and, in a word, the additional strength will be altogether an affair of guesswork. As the originator of the method, I am probably as favourably inclined to the use of this form of reinforcement as anyone can reasonably be, but I should certainly hesitate to experiment in the first instance upon St. Paul's Cathedral.

The commission has also adopted the "tension ring" suggested in my article of January 21 in *THE ARCHITECTS' JOURNAL*, though it is not proposed to make use of it in such a way as would effectively strengthen the thirty-two shattered counterforts, though it will be seen, on reflection, that a hoop which encircles the counterforts and assists in making them perfect and rigid will be a good way of restraining the bulges and permanent enlargement of the drums.

The commission still does not understand or appreciate Wren's weight-spreading counterforts, and asserts that "these buttresses do not play an important part in transmitting weight to the bastions, nor, in your commission's judgment, is it desirable that they should." Although not intended as such, this expression of opinion is really an acknowledgment of bewilderment in face of an unfamiliar problem.

The "buttresses" are admittedly in a state of advanced disintegration, but they are still exercising highly important functions in minimizing the intensity of the eccentric loading on the piers, and they have probably saved them—and are saving them at this moment—from still more advanced dilapidation and even collapse.

The commission's inability to agree with me on this point could easily be removed if these gentlemen would take the trouble to make a few experiments in the effects of eccentric loading of masonry structures of arched and vaulted character. By far the most interesting part of the report is that which deals with the commission's investigations in regard to the periodic movements of the cathedral under temperature changes. This study is a real contribution to the science of conservation, for although it was known that buildings moved and drifted towards a point from which they would collapse, the part played by temperature changes in this result had not received the attention it deserved. The particulars given in the report should be read in full; though it is not possible to agree with the nomenclature which ascribes the total permanent movement in the building to the "cumulative effect of temperature changes."

Here, again, the unfamiliarity of the problem has permitted the commission to confuse the thermal with the gravitational aspect of natural forces, for, while it is eminently proper to recognize the seasonal expansion and contraction of the building as being possibly due to

changes of temperature, the permanent expansion in the drums of the dome is due to the interaction of the shape and weight of the building.

That this is so can be recognized without difficulty by persons acquainted with arch and buttress action, or who will make and test models to destruction. Increase of size in the upper parts of a building, whether due to heat expansion or to any other form of pressure implies adjustments in the arch and buttress masses. Contraction due to the removal of the expanding force cannot entirely annul the effects of gravitation upon an imperfectly balanced structure such as are all buildings of ordinary shape, and particularly all masonry structures with arches raised upon vertical supports not chained across the springing.

The commission's attribution of effects of gravitation to temperature would be merely laughable were it not for the fact that the whole object of the inquiry is to determine a question of weights and pressures such as have been hitherto, by common consent, expressed in terms of gravitational units. And if the commission is to be allowed to substitute a reference to "the cumulative effect of temperature changes" for a reference to the yielding of material in response to gravitation acting upon imperfectly-buttressed masses, the greater part of the theory of mechanics will have to be re-written.

What really happens is that gravitation is constantly seeking to pull the building down, and accepts the aid of heat expansion, or frost-and-moisture expansion, or any other forces that produce rocking movements. If the dome expands with heat it should contract with cold, and to explain permanent increase of size one has to look to the ordinary effects of pressure on material. If this were not so, and temperature changes were alone responsible for permanent alterations in shape, why should not these alterations take place in the opposite direction, and knit the building together into an ever closer, stronger, and more united state instead of lowering, loosening, and ultimately destroying it?

The subject cannot be dismissed as a mere question of nomenclature, for the bulges in the drums which occur over the four great open arches can be attributed to the comparative ease with which the light vaults can be spread, while the lesser movements of the drums in the direction of the bastions indicate the more efficient buttressing action of these massive bodies.

Practically all of the deductions from observed facts throughout the report are vitiated by the commission's failure to appreciate the gravitational and structural reason for the direction of the permanent movements.

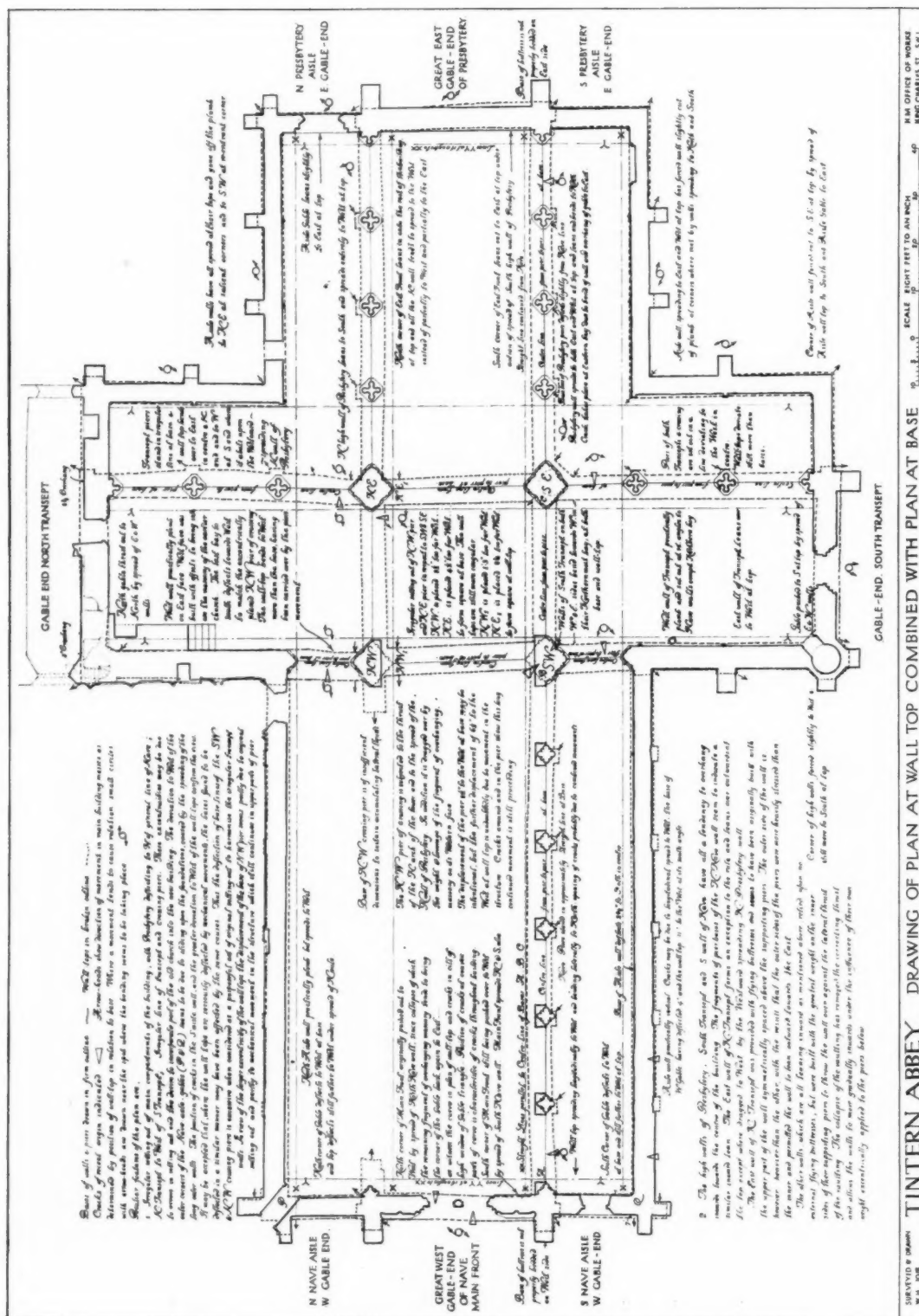
Thus the question of the building sliding towards the south is shelved unsolved by the temperature change hypothesis. "The north to south diameter of the drum was 6½ in. greater than that from E.N.E. to W.S.W., and it may be reasonably inferred from this and the general shape of the whispering gallery that the expansion between the north and south has been greater than that between east and west, the movement having been towards the south."

This is the sort of reasoning from which Wren and his fellow members of the Royal Society strove so hard to free genuine science, and the analysis of possible settlements in the masonry of the building is similarly defective from the same cause, aided by the tendency to which most inexperienced surveyors yield when confronted with an historical building to investigate. Far too much importance is attributed to historical adjustments in accounting for any deviations from true alignment or from the vertical. "The original builder's made it so" is the exclamation that comes naturally, but incorrectly, in such cases. To quote the report: "In short, the greater part of the tilting observable to-day occurred during construction, and was rectified from stage to stage: the true measure of the subsidence and tilting that has taken place since the completion of the building is the deviation of the base and axis of the lantern from the horizontal and the vertical respectively, and there is no such deviation."

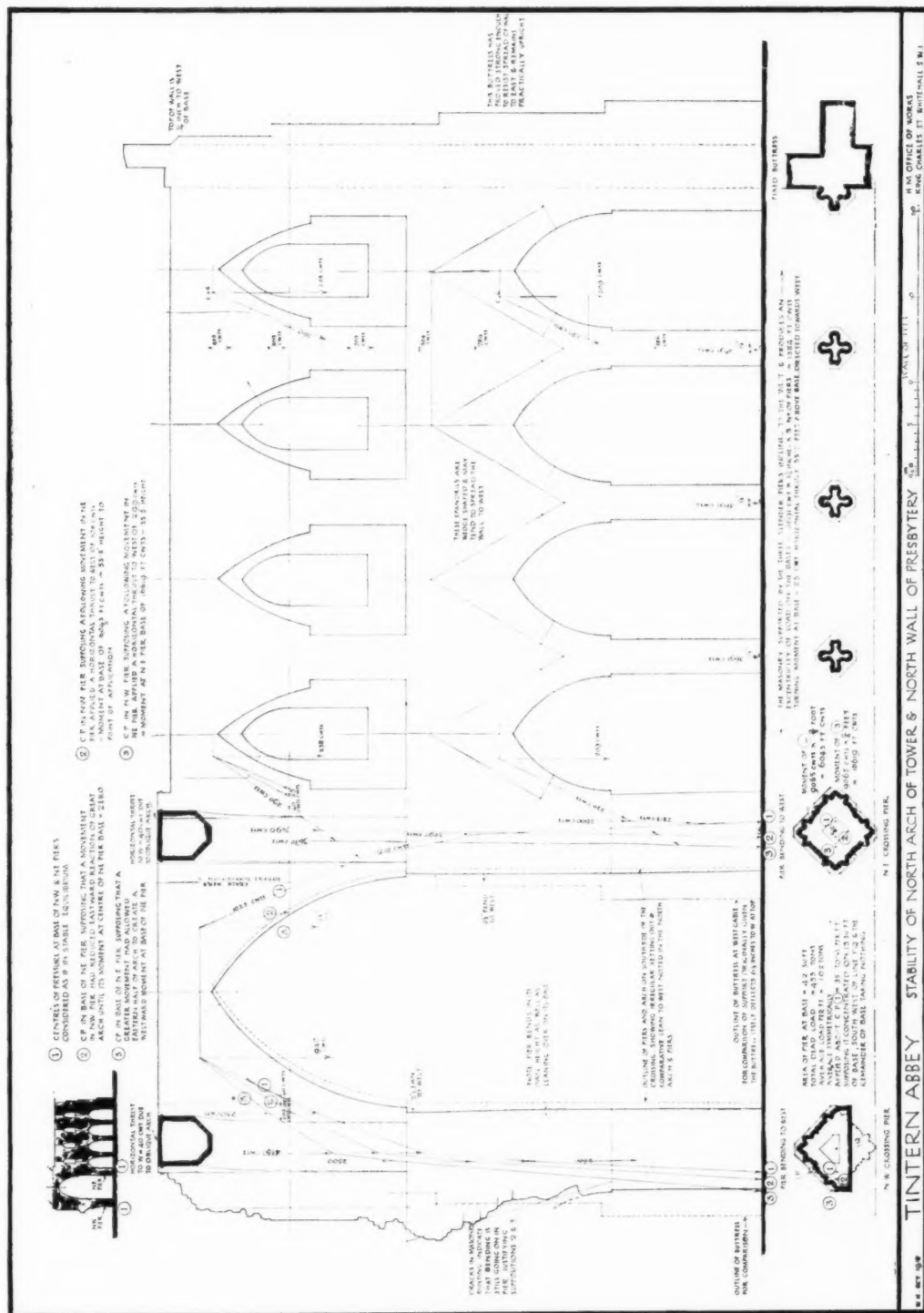


TINTERN ABBEY.

Mr. Harvey's device of metal bars threaded through holes and grouted in was applied to this bending pier.



(Reproduced by courtesy of I.I.M. Office of Works.)



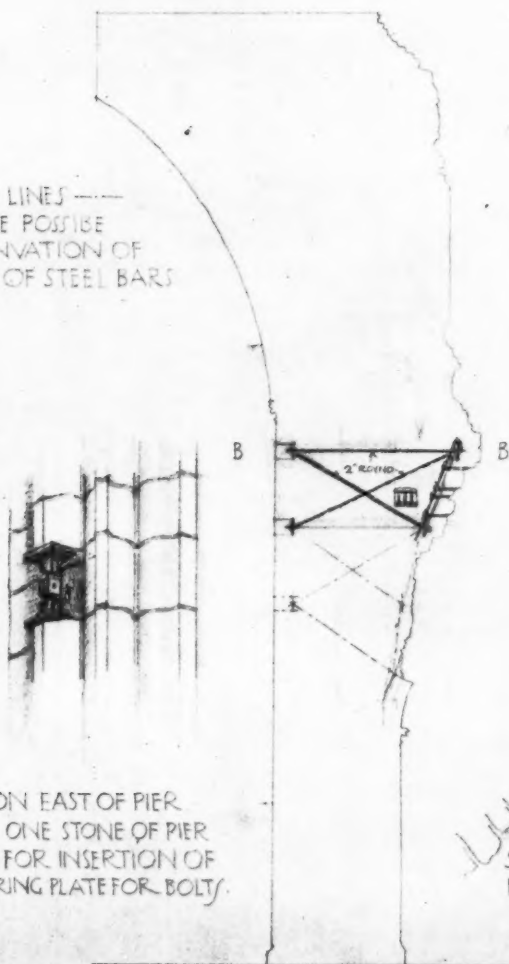
(Reproduced by courtesy of H.M. Office of Works.)

TINTERN ABBEY MON

SUPPORT OF OVERHANGING MASONRY
ON WEST OF NORTH-WEST CROSSING PIER

NOTE: ALL MASONRY
DEALT WITH IS TO BE
CAREFULLY WASHED &
WHEN THOROUGHLY
CLEAN TO BE GROUTED
SOLID IN CEMENT, THIS
BEING ESSENTIAL TO THE
PROPER EFFECTIVENESS
OF THE TIE RODS.
STEEL IS TO BE KEPT BACK
6" FROM FACE OF WORK
DUE TO IMPURITIES IN
CONNECTION WITH THE
STEEL FRAMEWORK.

BROKEN LINES ———
INDICATE POSSIBLE
CONTINUATION OF
SYSTEM OF STEEL BARS

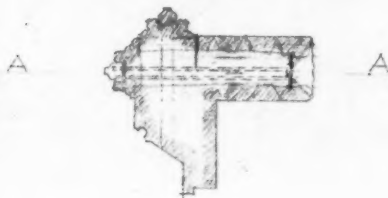


SKETCH ON EAST OF PIER
SHOWING ONE STONE OF PIER
REMOVED FOR INSERTION OF
STEEL BEARING PLATE FOR BOLT.

SKETCH ON WEST
SHOWING METHOD OF
SUPPORTING EACH SEVERAL STONE
NB. CORE REMOVED TO BE REBUILT.

SECTION AA

PLAN AT LEVEL BB



H.M. OFFICE OF WORKS
WESTMINSTER, J. W.

(Reproduced by courtesy of H.M. Office of Works.)

This is a gratuitous assumption that is not necessarily true, for several parts of the building can tilt without the dome and the upper parts of the building being immediately affected. The commission's own measurements indicate that movements are going on in the drums with a special tendency towards the south, and if the base of the lantern does not tilt for this, why should other movements in the substructures tilt it? How long it takes for a movement of masonry in the foundations to produce its maximum effect at the base of the lantern is altogether unknown, and for a considerable period the reinforced cone of brickwork would continue to act as a rigid support to the lantern, even though one or other of the piers or arches were to settle, slide, or tilt.

The mass of material between the summit of the pier and the base of the lantern would disguise the movement by sharing it imperceptibly among the great number of intervening masonry courses.

A much more complete, exhaustive, and impartial inquiry will be needed before a sound pronouncement can be made in respect of the causes of movement present, recent and historical, and the periods at which they have taken place.

The history of Dr. Wren's survey of old St. Paul's in connection with proposed repairs, before the fire of London, indicates the manner of commencing such a survey. It also points out the danger of harbouring fixed ideas about the "original builders" and their ways of adjusting matters.

John Evelyn wrote in August 27, 1666: "Finding the main building to recede outwards, it was the opinion of Mr. Chichley and Mr. Prat that it had been so built *ab origine* for an effect in perspective in regard of the height; but I was, with Dr. Wren, quite of another judgment, and so we entered it; we plumb'd the uprights in several places."

In the survey of an historical building investigation should proceed from the general to the particular, and to come to the task pinning one's faith upon "precision instruments" is quite on a par with Mr. Chichley and Mr. Prat, who were merely being up to date in attributing to Gothic builders the tricks that Palladio and Bernini had just made famous and fashionable.

A little general knowledge gained by actual personal inspection of many vaulted buildings and their natural gravitational drifts would have prevented the ludicrous

allusion to the cumulative effects of temperature changes, and so saved the commission from placing itself in an unfavourable light before the public. When once the general aspect of things has been visualized the more detailed information can be obtained without encumbrance. As it is, the Commission has shown total inability to read the signs of danger in the building or to realize that unless the outward drift of the extremities of the building are controlled by the insertion of reinforcement the buttress action of the walls and bastions will be progressively reduced. The eight main piers are already exhibiting signs of overturning for lack of efficient buttress action, and in view of their comparatively feeble substance and the conditions of application of their excessive load even the slightest increase in rocking action will dangerously increase their tendency to disintegrate and fail.

The commission is optimistic, but the optimism seems to be founded upon an inability to understand the language in which the great building expresses its appeal for help. This inability is not surprising; the language of an arched and vaulted building in decay resembles other foreign languages, in that it is a matter for persistent and continued study.

Some drawings of Tintern Abbey accompany these notes in illustration of the suggested method of attack upon the analysis of an arched structure. The ground plan was first taken in reference to straight setting-out lines, and then the wall tops were measured and drawn in position above it in true relation as determined by a great number of plumb-readings.

The bends and drifts of the upper part of the building were then found to be readable without great difficulty. They conform to a simple definite rule that drifts and movements take place from a strong towards a weak, or from a stable to a less stable part of the building. The most noticeable drift at Tintern is towards the west along the north chancel wall, but this is not because the setting sun, shining down the Wye Valley, has attracted this part of the masonry, but because the north nave wall has left the great north-west pier of the tower without its proper original buttressing support. The fragment of west gable is pulled over to the east by an outcorbelled fragment of some 60 tons weight, so that drifts to the west are not universal or thermal in origin!

London County Council Nine-story Flats

Mr. Topham Forrest's Proposals

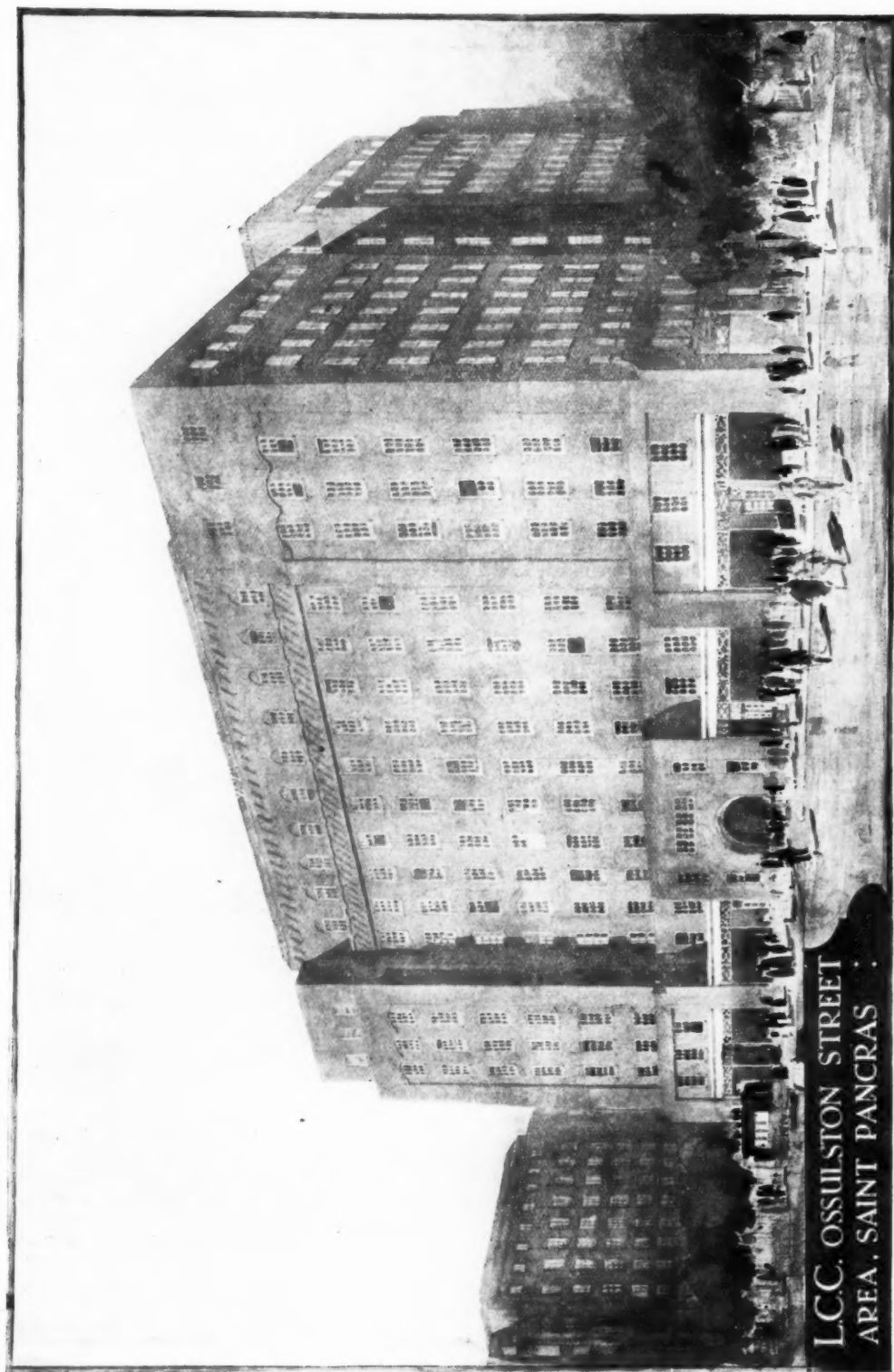
A PROPOSAL to provide in the borough of St. Pancras five blocks of flats of nine stories, with quickly moving lifts and other amenities, is at present under the consideration of the L.C.C.

The proposal primarily arises owing to the existence of an unhealthy area within the borough of St. Pancras, bounded by Hampden Street on the north, Ossulston Street on the east, Chalton Street on the west, and the Euston Road on the south. The Housing Committee, after a personal inspection of this area, are satisfied that the existing evils can only be remedied by its clearance and reconstruction. As regards its re-development, it is suggested that the site offers an exceptionally favourable opportunity for the L.C.C. to adopt a scheme for the erection of dwellings within the provisions of the London Building Acts which will be higher than anything hitherto attempted in the way of clearance schemes.

To clear the area will mean the displacement of about 2,700 persons, and re-housing accommodation for these will have to be provided. It is estimated that the cost of acquisition and clearance will be approximately £150,000. The loss involved in the provision of the new accommodation is given tentatively at £10,000. Should the scheme

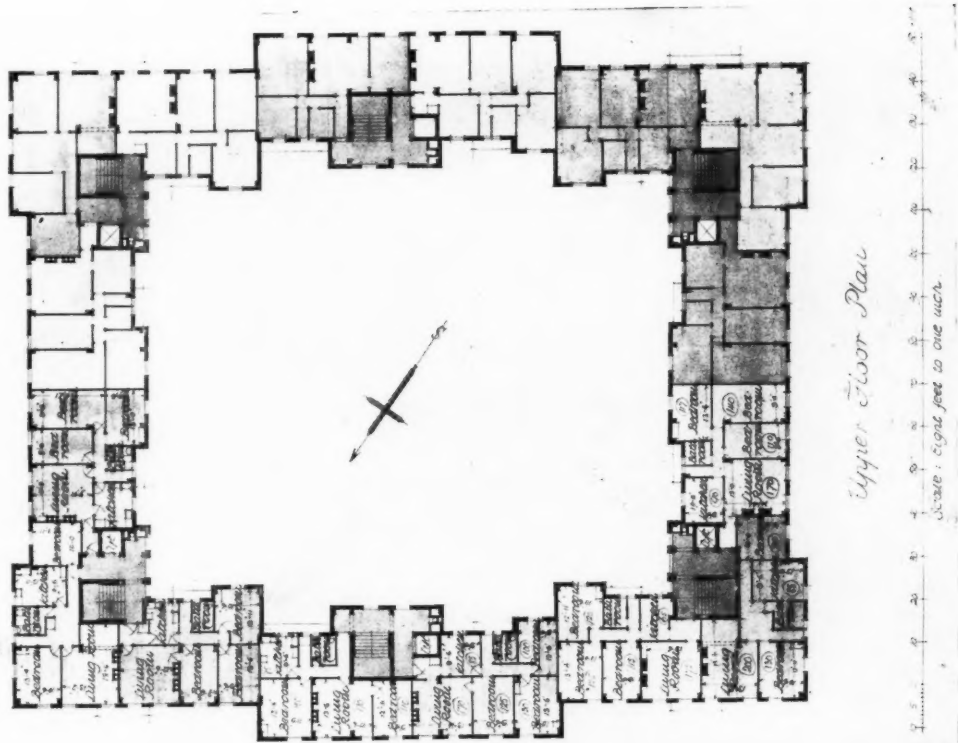
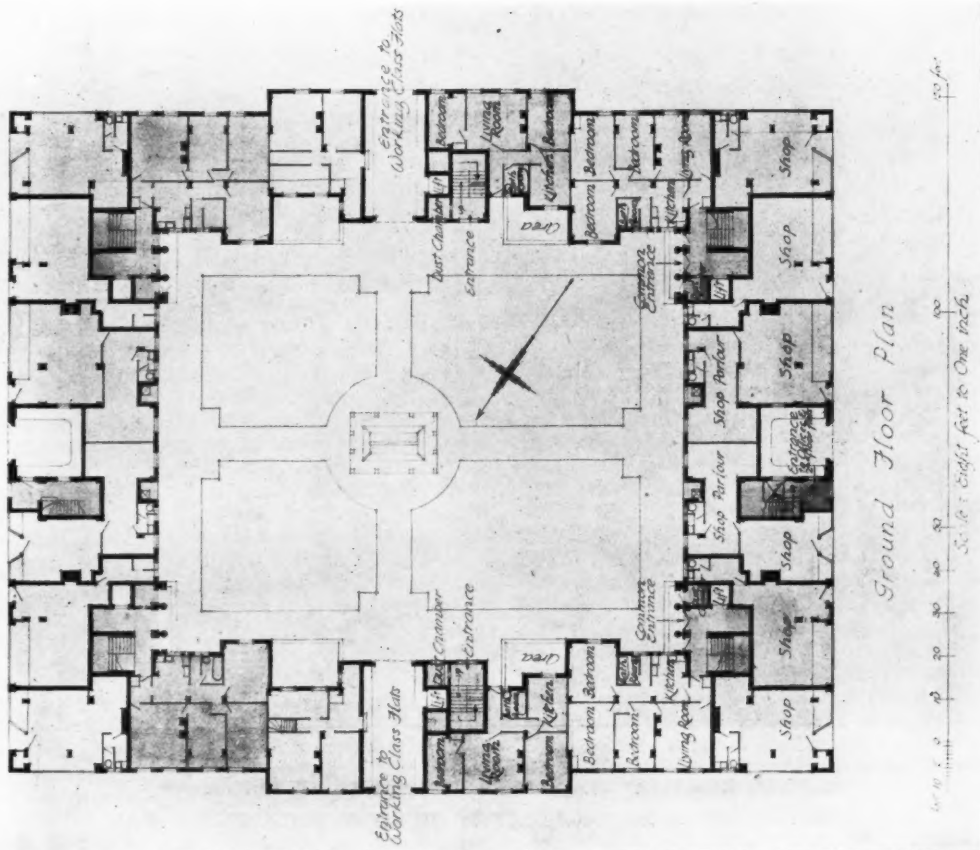
be confirmed by the Minister of Health, a State grant of 50 per cent. would be made towards this out of the annual sum allocated for assisting in the clearance of London slum areas.

It should be understood that this proposal is not intended to supersede any of the existing methods of housing, either by buildings of two, three, four, or five stories. It is intended as a supplemental method for limited use on the housing sites in central areas, where the local conditions are such that the sites can be used to the best advantage only by the erection of high buildings. It is put forward as a suggestion for the utilization of the cleared site of the Ossulston Street area to an extent commensurate with its value. Due regard has been paid to the effect of sunlight and air upon health, and to the fact that in all probability in the future the valuable sites that adjoin the area will be used for offices, factories, or warehouses that will be erected to the full height allowed by the London Building Acts. In such circumstances, if the normal two or three story flats were erected on this site, the tenants would be cut off largely from sunlight. The scheme before the L.C.C. recognizes this danger to health, and provides for the setting back of the buildings to a distance of 40 ft. from the

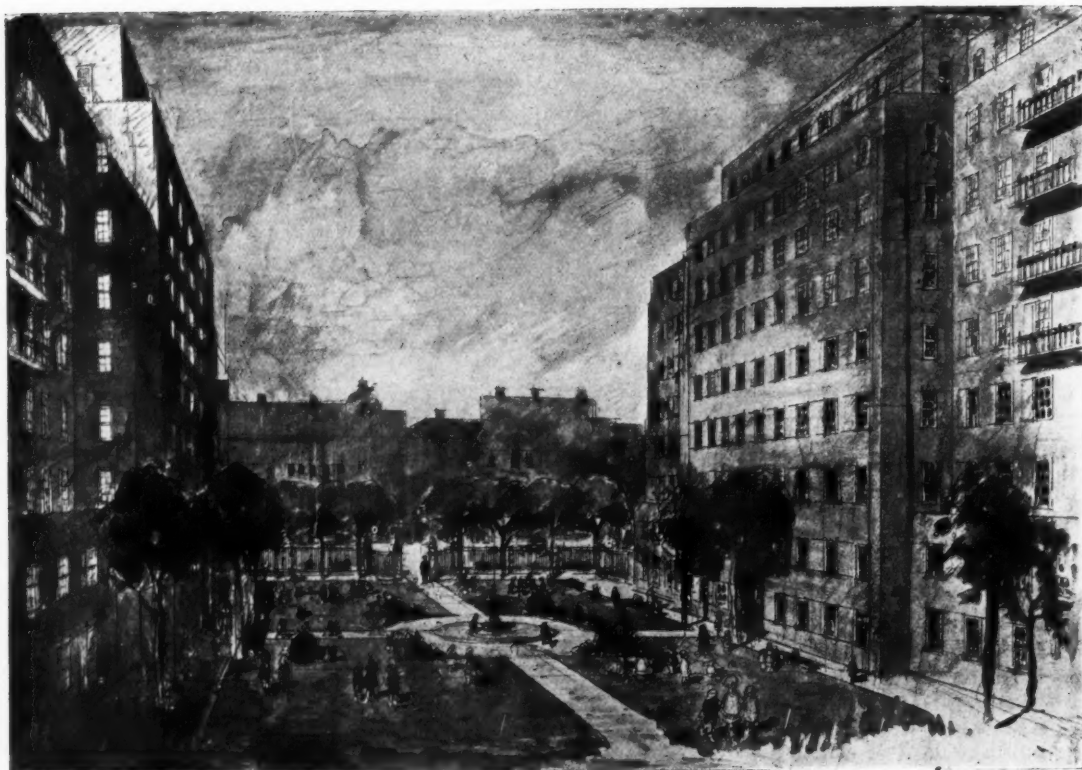


PROPOSED NINE-STORY FLATS, OSSULSTON STREET, ST. PANCRAS.

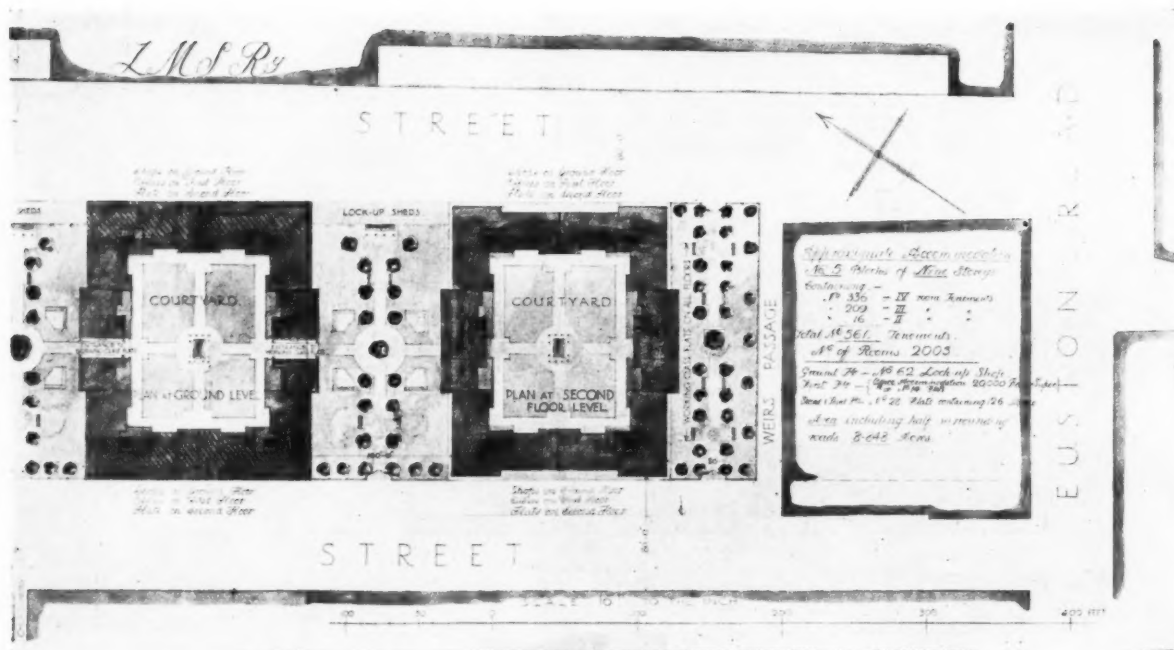
G. TOPHAM FORREST, F.R.I.B.A., ARCHITECT TO THE LONDON COUNTY COUNCIL.



PROPOSED NINE-STORY FLATS, OSSULSTON STREET, ST. PANCAS: GROUND- AND UPPER-FLOOR PLANS. G. TOPHAM FORREST, F.R.I.B.A., ARCHITECT TO THE L.C.C.



GARDEN SPACE BETWEEN THE BLOCKS.



present roadways, so that the rooms on the lower floors may not be overshadowed at some future date.

With a view to compensating for the reduction thus caused in the area of land available for building, the Housing Committee put forward as a suggestion the erection of five nine-story buildings, four of which would enclose a spacious quadrangle. Mr. G. Topham Forrest, F.R.I.B.A., the architect of the Council, by applying the study of American architecture which he made during his visit last autumn to the United States, has developed the design for these blocks. It is contemplated that light steel framing will be used as the basis of construction. The use of brickwork will be limited to the external facings, and in order to save bricklayers' work, concrete panels are likely to be adopted for the remainder of the walls and the partitions.

On the principal fronts the ground floor under the scheme outlined would contain about sixty-two lock-up shops. Above this there would be a floor providing 20,000 sq. ft. of office accommodation. The whole of the remaining floors would be arranged into 589 flats. There would be a variety of the amenities on certain of the lower floors which would carry corresponding variations in rent. The shops, offices, and flats of the various kinds would have entirely separate entrances. The rents obtainable from the lower floors

would, it is expected, assist the scheme financially. The architectural design relies for its effect on its dignified proportions. Should the blocks be built, there will be some slight resemblance to Bush House, although, as reddish-coloured bricks will be used, the exterior would be warmer in appearance. Many amenities not usually found in small houses would be provided. Quick-running lifts would be installed, and central heating and hot water supplies would also be provided for these flats, a convenience and also an economy, for this would cut out the cost of flues. But, in addition to the radiators, each flat would contain an open fireplace. Dust shoots for refuse are provided in the lobbies. Direct light will be provided to every room and lobby, and also through ventilation. Another convenience would be a private balcony attached to each flat, where a baby could be placed to sleep in the open air. In addition to the open spaces made available in the quadrangles and on the ground, there would be a roof playground on each block.

Should the experiment be approved by the L.C.C. and carried into effect, it will be historical, for it will be the first time that valuable sites in this country have been utilized on the American plan and made available for housing purposes in the centre of a congested industrial area.

Correspondence

The Styles of the Schools

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—In Mr. Maurice Webb's admirable review of the designs submitted for the R.I.B.A. prizes this year, he remarks that, "At any exhibition of students' drawings to-day, it is possible to walk round the room and pick out the drawings that come from particular schools by the manner of their design and draughtsmanship."

So far from being a matter for regret, as I think he suggests, this is surely a thing greatly to be desired. A similarity in design argues a common standard amongst the students. They are presumably agreed as to the method of approach to any subject set. An infinite play of individual taste and fancy is possible within the agreed limits of what is essential, and it is to be hoped that the habit of mind acquired in sinking a little their individuality, when at the schools, may in later life give them more respect for the works of their contemporaries, and perhaps engender in them that spirit of co-operation which is so obviously lacking in present-day street architecture.

Some degree of uniformity in the works of individual schools might in time lead to a more general agreement between all our schools, if they could be brought into closer touch. A consensus of opinion amongst our schools would perhaps finally lead to that unity of purpose in architectural design which has invariably marked the great periods of the past.

H. LEWIS CURTIS.

Westminster.

"A Fable"

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—With reference to the letter in your issue for February 11 from Mr. W. A. Willox, I think Mr. Willox views the financing of housing from a very slightly different angle to that from which Sijmmnu saw it. He appears to apply the theory of social credit to the whole of industry, and not to a part only (housing). Probably Sijmmnu would not disagree with Mr. Willox in this.

In the "Fable" he was endeavouring to show that under the present system of loan finance the purchasing power distributed in wages and salaries in the process of building houses is never sufficient to buy those houses; and this

principle applies throughout industry. Probably he noticed that in most industries a so-called "surplus" is thus created, which has to be sold abroad, but as houses cannot be exported, builders will only build when there is a reasonable probability of their being able to sell quickly.

The remedy he suggested, in order to bring production up to demand, is the principle of financing purchasers, not builders, with national credit, based on production and bearing no interest, in order to fill in the gap between cost and selling prices. In this case purchasing power would be increased with the object of stimulating production, and would only be distributed as and when the houses were produced. The money issued, after it had done its work in getting houses built, would be gradually drawn back through the purchaser and destroyed, over a period of twenty-five years or less, after which period the houses would be free of all first cost to the owners.

As an alternative to the subsidizing of iron bungalows by the taxpayer at £200 apiece in out-of-pocket cash, the suggestion seems worth consideration.

ARTHUR WELFORD.

London.

"Bring back the Amateur"

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—Mr. Sacheverell Sitwell has honoured us with an extremely enlightening article. Of course he must be right! The period we now live in will never permit an architect to glorify it by another Versailles or Blenheim, but little bits of architecture like Britannic House, or Adelaide House, or some of Sir Edwin Lutyens's larger domestic achievements would not interest an amateur.

The present age cannot be judged proportionately with other periods. There was, a few years ago, a slightly unpleasant disturbance which has strangely enough affected the affairs of most men. I hope Mr. Sitwell has not forgotten this period; it may have slipped his memory, but it has been handicapping the present generation, although the majority of us have been doing our best to equalize things.

All things considered, there is no great "cessation of religious employment." The Ecclesiastical Dilapidations Measure of 1923 is some small proof. Mr. Sitwell graciously excepts Brooklyn Cathedral, America, and our own Liverpool Cathedral, but qualifies his statement by saying that they (and Liverpool Cathedral is included, mark you) are

"Archæological revivals peculiarly inappropriate to our age." He further adds that they are "freakish for their purpose." I presume, being an amateur, he *must* be correct. Now, sir, if there is one building of this age which is appropriate to modern needs, modern construction, and typical of modern art, it is Liverpool Cathedral, and it typifies our modern *national* architecture.

Another enlightening fact I extracted from this article was that Westminster Cathedral "has the double advantage of being unfamiliar in style and more calculated by its structure to conceal deficiencies of modern ornament by a profession of austerity." Now this is valuable information, but surely Mr. Sitwell forgets that the Roman religion is exotic to this land to-day, and that a most important event in Christian church history was connected with Byzantium. It would be natural, therefore, to erect for the Romish church in England a building bearing some symbolic relation to this. I never knew before that Byzantine architecture is more calculated to conceal deficiencies of ornament. There is little of austerity in St. Mark's, Venice.

For his remarks on the Selfridge building I would like to ask him to consider buildings like Heal's shop in the Tottenham Court Road, and the Kodak building in Kingsway. Are not these better illustrations of truth in architecture?

For the rest of this illuminating article I would point out that, having headed it "Bring Back the Amateur," he advises public opinion to be "willing to trust themselves to expert and original hands." Will Mr. Sitwell explain himself?

A. ARCHER-BETHAM.

London, S.W.

The Cost of Italian Tiling

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—In your issue for February 4 an enquiry is printed as to cost of "Italian Tiling." It is there stated that the tiles would have to be imported, and workmen are unfamiliar with them. A good deal of Italian tiling is being done here now, and tiles called "Lombardic" are made for Messrs. Ames and Finnis by Messrs. Collier, of Reading. Though other tiles may be available, of which I know nothing, I should like to say that those supplied and laid by Messrs. Ames and Finnis make a perfectly charming roof, which is very solid, comfortable, and warm, and the workmanship of the tilers is most beautiful. The cost, I believe, is much less than you state. The pitch can be as low as 30°. The roof should be kept as unbroken as possible, so as to avoid cutting. Hips and valleys at main angles present no difficulties, but with such tiles a lot of small features, like dormers, are best avoided. Lead, except for gutters behind chimneys, is not required, so skilfully have Messrs. Ames and Finnis's tilers learned their technique. If "F. C." wishes to write to me as to any points, I shall be glad to reply privately. I may add that I have no interest in Messrs. Ames and Finnis's firm, nor in that of Messrs. Collier, but that of a hearty appreciation of their workmanship, business methods, and material.

W. B. HOPKINS, A.R.I.B.A.

Dudswell Rise,
Near Berkhamstead, Herts.

The R.I.B.A. and Housing Schemes

It was resolved at a special general meeting of the Royal Institute of British Architects, held on Monday night last week, to adopt a reduced scale of charges for architects' services in connection with housing schemes for local authorities and public utility societies. The resolution was in the following terms:—

"With the object of assisting in the solution of the national housing problem, and having in view the necessity for the employment of qualified architects on housing work, the members of the Royal Institute of British Architects, assembled in general meeting, resolve to modify their

charges in connection with housing schemes for local authorities and public utility societies, and agree to accept a reduced scale of charges for such work."

Mr. Herbert T. Buckland, who proposed the resolution, said there was evidence that local authorities would be disinclined to employ architects in the future if the old scale of fees was retained. Architects were willing to make a big concession to assist in the solution of the housing problem, and he hoped that the fact would be recognized by the public.

Mr. Herbert A. Welch, seconding, remarked that if housing work got into the hands of other than properly qualified architects it would be a bad thing for housing and for the profession as well.

The following resolution was also carried: "That all public buildings paid for out of the rates or other public funds should be technically and architecturally worthy of the locality. To achieve this end, the design of such buildings should either be the subject of competition or entrusted to a qualified architect; and, further, that this resolution be forwarded to the appropriate authorities."

The honorary secretary, Mr. Arthur Keen, announced the deaths of the following members: Mr. Barr Ferree, B.Sc., of New York, elected H.C.M. 1894; Mr. Walter Thomas Cressall, elected Associate 1891; Mr. Jordan Green, elected Associate 1903; Mr. William Mackay, elected Licentiate 1911.

A special and business general meeting will be held on Monday, March 2, 1925, at 8 p.m., when the election of the Royal Gold Medallist for 1925 will take place, also an election of candidates for membership. Mr. Owen Fleming, A.R.I.B.A., has given notice that at this meeting he will invite attention to recent and impending architectural changes in the neighbourhood of Charing Cross Station, and will move a resolution.

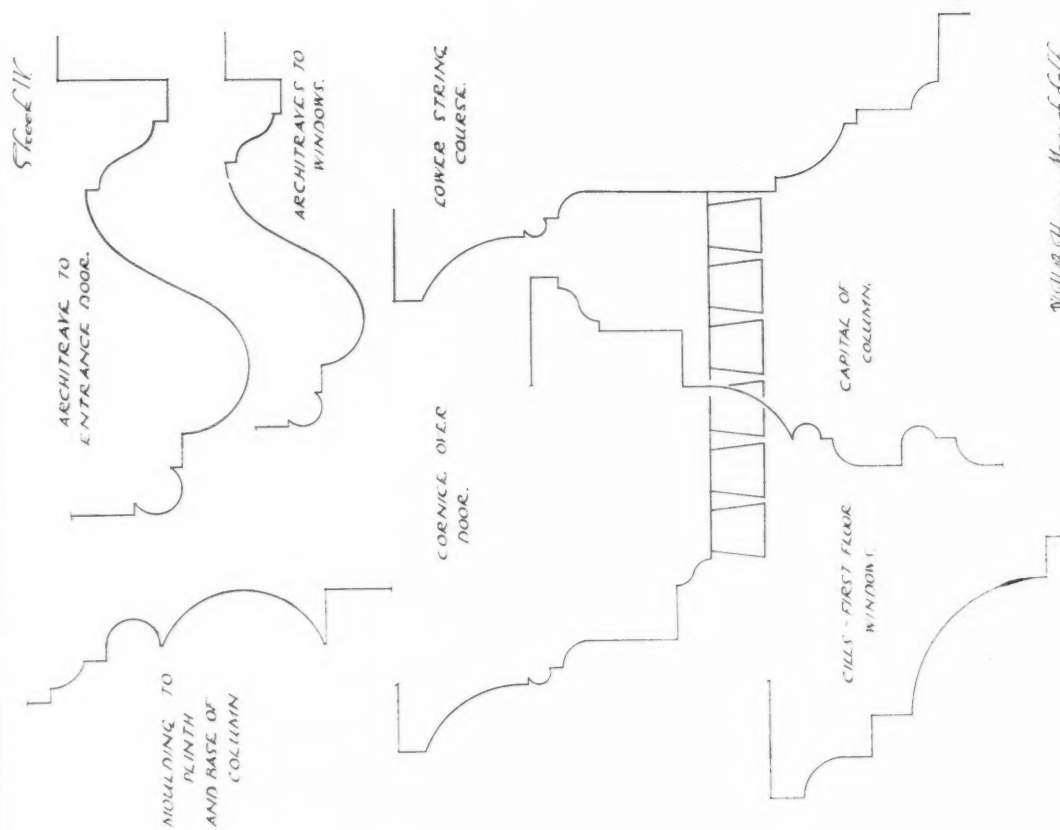
Waterloo Bridge

On Thursday a conference took place on the subject of Waterloo Bridge, at the Royal Institute of British Architects, which was attended by representatives of the R.I.B.A., the Town Planning Institute, the London Society, the Society for the Protection of Ancient Buildings, and the Architecture Club. Mr. Arthur Keen, hon. secretary R.I.B.A., presided.

The report of the Special Bridges Committee of the London County Council was discussed, and the following resolution was passed unanimously:—

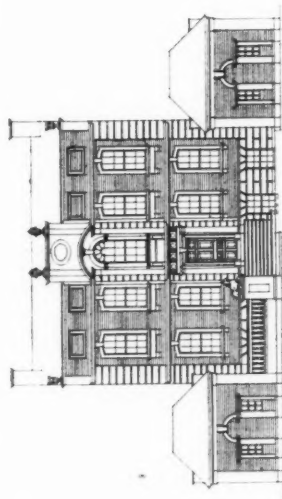
"This conference is not satisfied that Waterloo Bridge is worn out and should be destroyed. It, therefore, recommends that the question should be referred to an independent expert committee to determine (after hearing evidence and taking such advice as they may require) whether the bridge can be underpinned and made strong enough for modern traffic for many years to come. In the event of such independent expert committee reporting that underpinning is practicable, this conference is of opinion that the underpinning should be proceeded with and provision for the increasing cross-river traffic made elsewhere, as would have been done if the sinking of one of the piers of Waterloo Bridge had not occurred."

A group of paintings, drawings, and prints, showing views of Waterloo Bridge from its opening in 1817 to the present day, has been placed on exhibition in Room 71 of the Victoria and Albert Museum. The exhibits, which are mainly from the museum collection, include two sketches by Constable, of the Thames-side showing Waterloo Bridge, and his brilliant oil study, based on one of the sketches, for his large picture of "The Opening of Waterloo Bridge." Among other exhibits are a water-colour drawing by Clarkson Stanfield, R.A., which was engraved by George Cooke in 1832, and several drawings and prints showing different aspects of the bridge and its surroundings. Special interest attaches to four designs made by Thomas Sandby, R.A. (1721-1798), the architect, brother of Paul Sandby, for a proposed bridge at Somerset House.

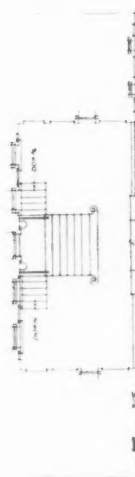


W. H. B. Harris, Somerset

The Lions, Bridgwater, Somerset



The Lions, Bridgwater, Somerset

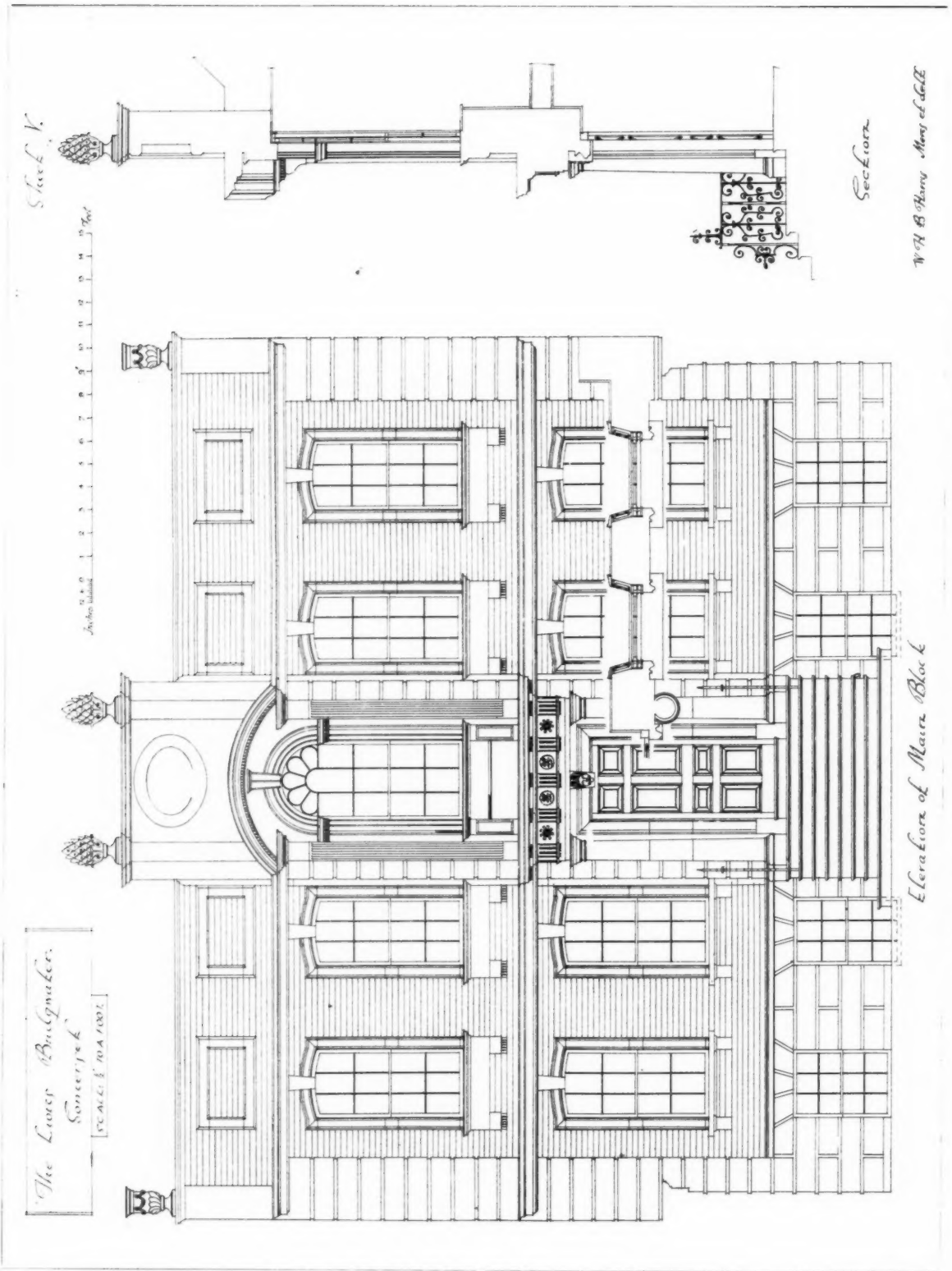


The Lions, Bridgwater, Somerset

Scale: English feet equals one inch

THE LIONS, BRIDGWATER, SOMERSET. MEASURED AND DRAWN BY W. H. B. HARRIS.

(For particulars see page 348.)



THE LIONS, BRIDGWATER, SOMERSET. MEASURED AND DRAWN BY W. H. B. HARRIS.

(For particulars see page 348.)

Foundation Problems—I

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

IN these notes the word foundation is used in its widest sense, and is allowed to mean all that portion of any structure which serves as a base on which to erect the superstructure and not merely the ground (prepared or otherwise) upon which it sits.

It is not possible in these articles to refer to unusual methods of making foundations, and only the most general cases occurring in the average architect's practice are touched upon.

Cases outside those described require expert knowledge and skill, and are matters for the attention of people with exceptional experience in such work.

The main requirement in dealing with foundations is to ascertain as fully as possible the nature of the subsoil, and then to distribute the weight to be carried over the necessary area of bearing surface and at the same time prevent the subsoil from spreading.

In broad terms soils may be said to fail from any or several of the following causes: (1) unequal loading within the elastic limit of the soil; (2) loss of cohesion of the particles; (3) crushing of the particles; (4) shrinking of organic matter; (5) loss of water content; (6) saturation; (7) flowing; (8) sliding; (9) erosion; (10) chemical changes.

To determine the nature of the subsoil it is generally necessary to make either trial holes or borings in positions on the site most likely to be helpful in determining the best method of foundation work to employ.

Trial holes in this respect are to be preferred if they can be put down at reasonable cost, as they allow a much more complete examination of the exposed soil passed through. Deep trial holes are, however, an expensive matter, and where a suitable bottom is not found at a moderate depth, say, 12 ft. to 14 ft., it is generally preferable to resort to borings.

The known geological facts relating to the district in the vicinity of the site should always be obtained if available, and personal description from reliable workmen who have worked in a district as labourers may often prove of value.

A point in the design of foundations which should be very carefully examined, is the acceptance at its face value of pressure alleged to exist in existing foundations.

For example, if one were to accept the statement that a building of several floors carrying certain calculated floor loads produced a pressure of a given amount per square foot on the subsoil, let us say, for example, two tons per square foot, one might make a serious error in erecting a new structure with such a ground pressure in the immediate vicinity where the same soil conditions applied, and where the loads coming on the new structure were accurately determinable, being of measurable dead load.

Referring back to the assumed case, the pressure there might be calculated pressure based upon the assumption that all the floors of the building were loaded with some accepted standard load per square foot.

The amount of load coming on this foundation from these assumed floor loads might form a very considerable part of the total load.

In actual fact these assumed floor loads might never have occurred, and although floors had been provided to carry a load of 1 cwt. per square foot on a number of floors, the loads existing might never have exceeded 10 lb. or 20 lb. per square foot, due to the special use to which the building was put. In such a case the actual soil pressure would, in fact, be very considerably lower than that commonly assumed to exist.

The statement that the building was reported to be carried by ground pressure of 2 tons per square foot would not

form reliable evidence, though a pressure of 2 tons per square foot on the soil might be a safe pressure.

This is a further illustration of the fact that all foundation questions require something beyond the mere ability to make the component parts similarly strong, and show that knowledge and judgment are required.

The latter commodity cannot be obtained from textbooks, but can only be obtained as the result of cultivating what may be described as a building sense.

By digging trial pits the stratification of the soil is exposed, and one obtains a better understanding of the true relations of the various soils to be met in actual building operations.

Amongst other things the water content, the tendency of the soil to slip, and the extent to which timbering is needed is made more evident.

Examination should be made from the materials as they lie, and should not be made up entirely from an examination of the excavated material after it has been taken out of the pit.

An examination of the material taken out from the pit, however, does give valuable information, as it gives some idea of the behaviour of the material when exposed to air.

In some cases this consideration is of importance, and it may show that it is very necessary to place concrete as soon as possible after the excavation has been carried to the correct level.

If the work involves large quantities of excavation and no information of the stratification of the soil is available, test pits are very valuable if supplemented by sounding or boring.

For making ordinary sounding tests a rod about 1 in. diameter can be formed into a solid bar tool, the bottom being jointed and threaded at the top for an outside coupling.

After being worked down as far as possible by hand, the rods can be driven additional distance by a hammer.

It is quite impossible to determine with any degree of accuracy the nature of the material penetrated, but samples can sometimes be obtained by using a short piece of gas pipe on the bottom of the rod.

The nature of the hard soil may, to some extent, be judged by the action of the rod in driving.

Where rock is met there will be generally a sharp rebound to the hammer without further penetration, whereas in the case of the sand, gravel, or hard clay, the blow will be more or less dead, with only small additional penetration for each blow.

It is necessary to be careful to ascertain that great resistance is not produced by random boulders, which can easily be confused with a regular and hard stone bed.

If great resistance is met with further soundings should be made in the immediate vicinity.

Probably the most reliable method of making borings for the ordinary building problem is with the earth auger, but its application is limited to such materials as will remain in the auger until brought to the surface.

It is especially applicable for dry earth, clay, and other combinations in which there is sufficient cohesion of the particles to permit a sample to be brought up.

If the conditions are more complicated than can be met by the foregoing rough methods, it is advisable to call in the assistance of some well-known boring firm experienced in such matters, and the information obtained by them will generally be found to be entirely reliable.

Such work is, as a rule, considered to be expensive, and the expenditure of a few hundred pounds on a site is very often sufficient to prevent it being undertaken. This decision is in many cases quite wrong, as the money would be well expended.

Having obtained information as to the nature of the sub-soil, the next step is to determine the safe pressure which may be put upon it.

Where variations in the nature of the soil occurs it may be necessary to decide whether it will be most economical to start foundation work at a shallow depth with a low ground pressure, or at a greater depth with a higher ground pressure. This must be determined by trial comparative estimates.

To determine the bearing capacity of the soil one may, in a simple case, sink a small pit, level off the soil, and then place in position in it, and almost completely occupying the whole area of the pit, a flat, stiff plate, upon which load can be added and left in position as long as possible.

On clay and other soils containing appreciable water content the load should, if possible, be left in position for three or four weeks at least, as subsidence will often occur with the same pressure after a lapse of a month, where nothing was shown after a few days.

In testing the safe pressure of a foundation it is not necessary to test appreciably in excess of the pressure to be employed, and a 20 per cent. excess of load over the correct gross calculated load on the footing is sufficient.

To determine subsidence with any reasonable accuracy will require most careful test loads, and it may be advisable in some cases to arrange the building programme that the making-up piece to the old work can be completed when the bulk of the new load is in position.

There are many methods of measuring approximately the subsidence caused by any unit load, but one convenient method may be of interest.

A hole having been excavated and a stiff plate placed upon the bottom of the pit, a post is then securely connected to it and passed through the load (whether bricks, iron or other means), and a small pin may be driven into this post.

At one side of the post a gauge board may be fixed to the firm ground, to which is affixed a lever or pointer.

This lever should be so arranged that the distance between the fulcrum, or point of attachment, to the lever is distanced from the pin on the post a short distance, and the opposite end of the lever is, say, five or six times as long.

When the post descends the pin will engage the short end of the lever and cause the long end of the lever to sweep through a relatively large angle.

By this means, the displacement of the long end of the lever having been measured on the gauge board, the actual subsidence of the weighted and tested area can be calculated by dividing this measured length by the mechanical advantage of the lever.

For example, if the long end of the lever has travelled through 6 in., and the respective lever arms are 18 in. and 3 in., then the actual subsidence is $6 \times \frac{3}{18} = 1$ in.

Provided a considerable reaction can be obtained on firm ground, levers may be employed to reduce the amount of dead weight to be handled. If, for example, it is desired to apply to a footing a load of 50 tons, the same effect may be obtained if only 10 tons dead weight is used, provided it is applied through a system of levers with a mechanical advantage of 5:1.

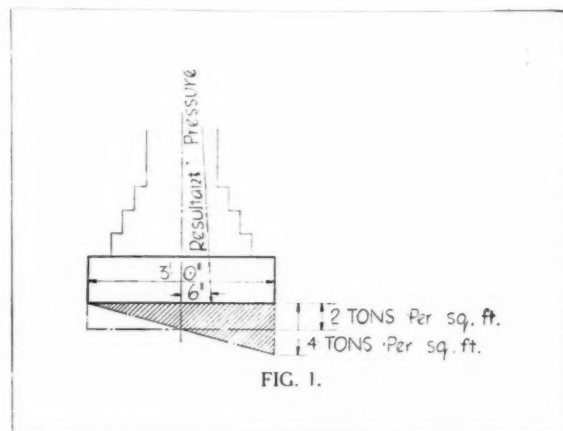
In calculating the loads upon footings one must always allow for everything coming upon the footing, including the structure itself, the actual foundation itself, and any superimposed earth or load from the ground above which can cause pressure on the footing through the earth, and any increment due to wind or other external forces.

The effect of external forces which may cause inequality of pressure upon a footing must be taken carefully into account; and where inequality of pressure exists it is the maximum pressure which must be compared with the safe ground pressure.

Failure to take into account inequality of pressure on foundations in simple buildings probably explains more failures than any other single fact.

To illustrate this point, suppose that in the case of a wall

to a shed carrying a roof, with the roof truss sitting on a plate out of centre with the wall, and with wind blowing on the outside towards the centre of the building, that the resultant line of thrust came only 6 in. out of the centre, as shown in Fig. 1.



The effect of this is to double the average pressure on one side and reduce it to nothing on the other, and if the mistake were made of simply dividing the total load per foot run of wall, 6 tons by the safe pressure of 2 tons (as tested) to arrive at the width of 3 ft., the footing would probably fail in time.

Having combined all vertical and horizontal forces, and found the line of resultant pressure, the varying ground pressures can be determined in the following way:—

Let P = the resultant total load.

p = unit pressure per square foot.

b = breadth of footing.

e = eccentricity of resultant pressure.

l = length of footing.

$$\text{then } p = \frac{P}{b \times l} \left\{ 1 \pm \frac{6e}{b} \right\}$$

or, in the example above,

$$p = \frac{6}{3 \times 1} \left\{ 1 \pm \frac{6 \times 0.5}{3} \right\}$$

$\therefore p = 4$ tons square foot on inside edge, or twice the average assumed.

0 tons per square foot on outside edge.

(To be continued.)

“The Lions,” Bridgwater

“The Lions,” Bridgwater, Somerset, situated on the West Quay, fronting the River Parret, is a town house erected about the early part of the eighteenth century.

It consists of a central block in two stories above a basement, the principal floor is approached by an external flight of steps, with projecting side wings in one story on the same level as the forecourt. The rusticated portions, central feature, and the window architraves are of free-stone, the remainder of the walls being of brickwork in Flemish bond, with white headers and red stretchers.

The forecourt is enclosed by a stone balustrade with a gateway in the centre flanked by pedestals, on which are crouching lions, from which the building derives its present name.

The wrought-iron work flanking the entrance is contemporary with the building.

Situated in Castle Street, near by, is a house with very similar detail, which in all probability is the work of the same architect. Our drawings are by Mr. W. H. B. Harris.

Architectural Societies—7

Northamptonshire Association of Architects

IN 1911 a few of the practising architects of Northampton, who had as assistants in larger towns experienced the advantages to be derived from being members of allied societies, met together and inaugurated what is now known as the Northamptonshire Association of Architects, which is allied to the R.I.B.A.

The Association was particularly fortunate in being able to persuade Mr. J. Alfred Gotch, P.R.I.B.A., F.S.A., of Kettering, to become the first President, and Mr. H. Norman, the Hon. Secretary (the latter resigned in 1921, and Mr. C. Croft was appointed as his successor). The usual initial enthusiasm was shown by the Council and the Members; the meetings, and visits to places of interest, being well attended. The venture was just succeeding when the declaration of war threw it, like many other societies, into a comatose condition, and the Association remained practically dormant until peace was proclaimed, when a vigorous campaign was initiated with the happiest results.

Until this time the Association received very little support from architects in the county, owing chiefly to the peculiar geographical position of the county town, and the difficulty of getting to and from the meetings. Peterborough, for instance, some forty miles distant, means a two-hour railway journey. Architects from Kettering and Wellingborough, near neighbours, also found it very inconvenient to attend the meetings on account of the difficulty of returning home the same evening. With the introduction of omnibus services matters have improved, and now practically all the architects in the town and county are members. An effort was made to increase the area covered



MR. C. CROFT, F.S.I., HON. SECRETARY,
NORTHAMPTONSHIRE ASSOCIATION OF ARCHITECTS



Photo: Elliott and Fry.
MR. SYDNEY F. HARRIS, F.R.I.B.A., PRESIDENT,
NORTHAMPTONSHIRE ASSOCIATION OF ARCHITECTS.

by the Association, and the architects of Bedfordshire and Huntingdonshire were invited to come in, but this has not fully matured, chiefly on account of the above reasons. Mr. Gotch, who had been President since the inception, and to whom the Association owes a deep debt of gratitude, expressed his opinion that a change of President was advisable, so at the last annual meeting Mr. S. F. Harris, F.R.I.B.A., was elected President, and Mr. J. W. Fisher, F.R.I.B.A., Vice-President.

The other officers of the Association are as follows:—

Council: Messrs. John Brown, D.S.O., A.R.I.B.A.; J. Alfred Gotch, P.R.I.B.A., F.S.A.; H. Norman; W. Shaw; and R. J. Williams, F.R.I.B.A.

Hon. Secretary: Mr. C. Croft, F.S.I.

Hon. Auditor: Mr. F. H. Allen, A.R.I.B.A.

The President, Vice-President, and Hon. Secretary are ex-officio members of the Council. The Council is responsible for the management of the Association, and all the funds and the property of the Association are vested in it.

According to the rules, the Association consists of Members, who must be practising architects; Associates, who are assistants or students; and Hon. Members. Only Members are eligible to vote or hold office. Frequent lectures and visits to old buildings and those in course of construction are arranged.

The President, Mr. Sidney F. Harris, F.R.I.B.A., was born in Warwickshire, and articled to Messrs. Osborn and Reading, F.R.I.B.A., of Bennett's Hill, Birmingham. He left Birmingham in 1892 for Northampton, and was taken into partnership, in 1897, by the late Mr. Edmund Law, architect and county surveyor. He passed the qualifying examination of the R.I.B.A. in 1893, and was

elected a Fellow in 1904. His designs were accepted in competition by the late School Board for Northampton for the Barry Road School, which accommodates 1,380 children, and later for the Kingsthorpe Grove School, accommodating 1,180 children. He was responsible for the first school swimming bath to be erected in the borough for the special school for defective children, and for most of the cookery centres in Northampton. In 1903 he was appointed by the County Council to inspect and report upon half of the elementary schools in the county, and in the same year by the Town Council to do similar work in connection with the borough schools. Among the works erected from his designs are the County Police Station at Rushden, several public elementary and church schools, business premises, and domestic work in its higher branches, including a new wing and extensive interior alterations at Blakesley Hall. During the war Mr. Harris was appointed by the Admiralty as an Inspector of Mines and Mine Sinkers, and he holds the appointments of consulting architect to St. Andrew's Hospital, and surveyor to the trustees of the Northampton Church Charities.

Mr. J. A. Gotch, J.P., F.S.A., President of the R.I.B.A., was the first President of the Association. Particulars of his career were published in the JOURNAL for June 20, 1923.

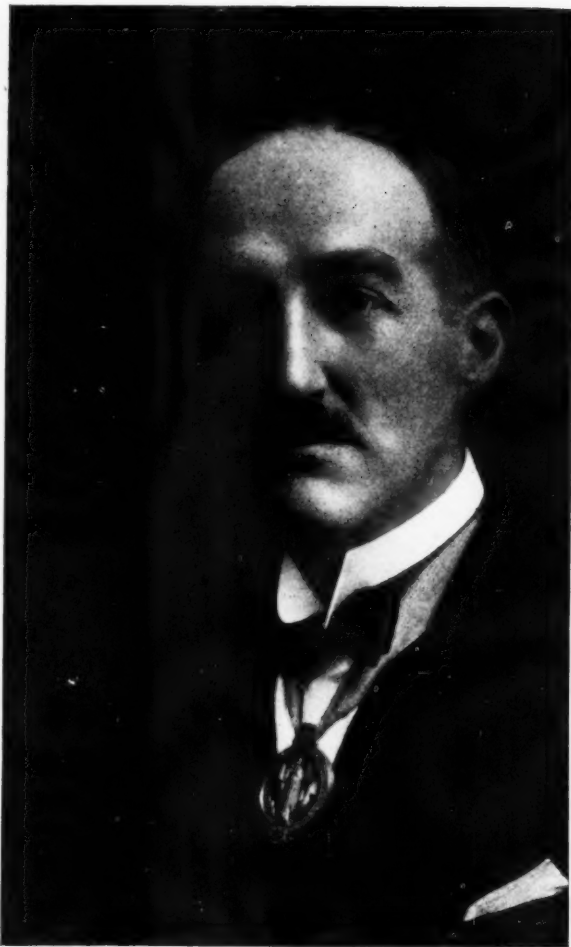
Mr. J. W. Fisher, F.R.I.B.A., the Vice-President, is in partnership with Mr. W. Talbot Brown, F.R.I.B.A., at Wellingborough, where they carried out the Grammar School, St. Barnabas Church, and the Silver Cinema. They were also responsible for schools at Bishop's Stortford and Daventry, a church at Rushden, the Exchange Cinema, Northampton, 300 houses under the housing schemes at Rushden, Higham Ferrers, Wellingborough, and Irthlingborough; over thirty war memorials in different parts of the country, and drill halls at Northampton, Kettering, and Wellingborough. During the war Mr. Fisher served with the 4th Batt. Northamptonshire Regiment, returning after the armistice as Lieut.-Colonel.

Mr. Herbert Norman, Licentiate R.I.B.A., was Hon. Secretary of the Association from its inception to January 25, 1921. He was educated at Waterloo College and Northampton Grammar School, and was articled to the late Mr. Matthew H. Holding, A.R.I.B.A., with whom he continued as assistant; after several years' service in Birmingham offices, he returned to Northampton, his native town, and commenced to practise in 1896, winning and carrying out several competitions, the chief of which are: The Northampton Municipal Cemetery, Chapel, and Lodge; the Northampton Town and County School for Boys; and the Northampton Public Library—one of the Carnegie group. During the war he acted as Hon. Secretary to the Red Cross Association.

Mr. C. Croft, F.S.I. (quantities), the present Hon. Secretary, was educated at Northampton Grammar School, and served his articles with the late Mr. John Ingman, of Northampton. After spending a number of years in various public and private offices he started practice in 1910 in Northampton. Early in the war he joined the Royal Engineers, and was demobilized with the rank of Captain. After the war he joined practice with Mr. S. F. Harris, F.R.I.B.A., under the style of Law, Harris and Croft, of Northampton.

The Liverpool Architectural Society Makes History

By architects in the north-west of England, 1924 will be chiefly remembered as the year in which the Liverpool Architectural Society (Incorporated) attained the distinction of a Presidential badge. A description and illustration of this badge appear in the calendar and annual report of the proceedings of the society for the seventy-sixth session. It is of silver gilt, and was made by Mr. H. Tyson Smith, of Liverpool, the sculptor. It consists of a draped and helmeted figure of Athene, 2 in. high, holding in outstretched hands a figure of Victory on the one side, and a symbol of Architecture in the form of Lysicrates' monument on the other side. Surrounding the figure is a



MR. E. BERTRAM KIRBY, O.B.E., F.R.I.B.A., PRESIDENT, LIVERPOOL ARCHITECTURAL SOCIETY.

moulded band on which are inscribed the words, "The Liverpool Architectural Society, founded 1848, incorporated 1901." This moulded band is enriched on the outer edge with a bead and reel ornament, and on the inner edge with a pierced and fretted wave moulding, symbolizing the sea. Within this latter moulding, and serving the same purpose, are two dolphins. The figure of Athene stands on a pedestal, to which the band is joined on either side by a scroll. The pedestal is enriched on the face by a relief of a lamp, symbolizing truth and learning, and is finished below with a baluster motive. The link for the ribbon is in a form to balance the pedestal, and is enriched on the face with a relief of a liver bird, and supported at the side by conventional sea-horses, the top of the link being finished by the same baluster motive as the bottom of the pedestal. The cost of the badge is being met by donations from the members.

Some outspoken remarks are made with regard to the final report of the Ministry of Health inspector on the inquiry into the Garston Housing Contract. The findings of the inspector were to the effect that the staff of the Liverpool Housing Department had not the qualifications nor the experience for dealing with the whole of the assisted housing scheme of the corporation. To this the Council add that they are opposed to architectural work of the Corporation being carried out by architectural staffs under the control of civil engineers, and are satisfied that such an arrangement can never be satisfactory. We hope that these remarks will have due influence on local public opinion.

It is to be hoped that the unfortunate experiences of the society in dealing with local authorities in connection with town planning are exceptional. During the past year a circular letter was received by the society from the R.I.B.A., advocating that greater interest should be taken by architects in town planning, and urging the society to engage in propaganda work with a view to the employment of architects on all local



THE PRESIDENTIAL BADGE OF THE LIVERPOOL ARCHITECTURAL SOCIETY. BY H. TYSON SMITH.

schemes. The Council are in full agreement with the views of the Institute, but found that local authorities are generally averse to the expense of employing expert assistance to confer with their own surveyor. Thus, the immense advantages to be obtained by co-operation with the architect are obscured by the question of cost. The only, and perhaps the best thing, the Council could do in the circumstances, was to suggest to the R.I.B.A. the preparation of a set scale of fees for consultative work of this nature.

Once again the problem of further organizing the province of the Society comes to the fore. The province is a big one, and includes the whole of Carnarvonshire, Denbighshire, Flintshire, Merionethshire, and Montgomeryshire, and parts of Lancashire and Cheshire. The neighbours of the Society are the Manchester Society of Architects, the Birmingham Architectural Association, and the South Wales Institute of Architects. This subject of organization was discussed many years ago and it presents many difficulties. The province contains but one large community and several small towns, in which there are some architects of repute, who are not associated with the Society. It is to rope in these architects that the efforts of the Council are directed.

A portrait of Mr. E. Bertram Kirby, O.B.E., F.R.I.B.A., to whom, presumably, falls the distinction of being the first president to wear the presidential badge—appears as the frontispiece.

The Liverpool Architectural Society (Incorporated) Seventy-sixth Session, 1923-1924. Calendar and Annual Report of Proceedings, 13 Harrington Street, Liverpool.

Parliamentary Notes

[BY OUR SPECIAL REPRESENTATIVE.]

During a debate on "steel houses" in the House of Commons, Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, said that the cost of the erection of demonstration steel houses in various parts of the country would not exceed £50,000. It was proposed that the local authorities should erect three kinds of specimen houses: first, the Weir house, made by Messrs. G. and J. Weir, Ltd., of Glasgow; secondly, the Telford type of house, made by Messrs. Braithwaite & Co., Ltd., of West Bromwich; and the third by Messrs. James Wild & Company, of Manchester. The cost to the local authorities of these arrangements had been fixed at a flat price. The price for Weir houses to each local authority was £400,

the local authority providing the foundations, paths, drainage, roads, etc.; the price for the Telford house was £450; and the price of the Wild house had yet to be fixed. These prices bore no relation to the prices when manufacture was begun in earnest. The Ministry of Health would contribute £200 towards the cost of each house, the "all-in" cost to local authorities being £525.

Labour members severely criticized the proposals, contending that the houses would be unsatisfactory and that the men engaged on them should receive the trade union rate of wages.

Mr. Chamberlain, the Minister of Health, in reply, said he was giving no preference to the Weir type of house as compared with other steel houses. He had never pretended that these houses would become a permanent part of the housing features of the country, but they were designed to meet a national emergency. He agreed that there was a further opportunity for research, and he was considering whether the activities of the Department of Building Research should not be extended. Concrete had been favourably commented on in connection with the building of houses, but although in many districts there was material suitable for making concrete houses available in considerable quantities close to the site where houses were being built, it was not being used because there was not on the spot the necessary technical knowledge as to how it should be used. That was a matter in which the Health Department might be of assistance. Stressing the importance of increasing the housing supply, he said that it would be a national misfortune if houses were held up and hampered because of the dispute of one small section of the community. He also mentioned that he was having an inquiry made into the action of the Light Castings Association in raising prices by 12½ per cent.

At question time Mr. N. Chamberlain informed Sir H. Brittain that in the last few years many thousands of houses had been built of concrete, and there was no reason to doubt the suitability of concrete for house building.

Sir K. Wood informed Mr. T. Thomson that the following table showed the number of houses in course of construction under State-aided schemes on January 1, 1924 and 1925:—

| Scheme. | January 1. | |
|--|------------|--------|
| | 1924. | 1925. |
| Housing, Town Planning, etc., Act, 1919 | 4,873 | 1,658 |
| Housing, etc., Act, 1923 | 14,102 | 49,196 |
| Housing (Financial Provisions) Act, 1924 | — | 3,173 |
| Totals | 18,975 | 54,027 |

Sir K. Wood informed Mr. T. Williams that the average prices of non-parlour houses included in contracts let by local authorities were: £386 in January, 1924; £418 in March; £421 in June; £438 in September; £450 in October; £436 in November; and £440 in December. There had been no material increase in the last few months.

Sir K. Wood informed Mr. T. Williams that the Government had given the local authorities every opportunity to work the 1924 Act, and fair play would be given to them; 28,446 had been authorized under that Act—27,568 to be built by local authorities and 878 by private enterprise.

In reply to Lt.-Commander Kenworthy, Sir K. Wood said that on January 1 last there were 54,027 houses in course of construction in connection with State-aided schemes. On October 1 last there were 18,512 houses of five rooms or less under construction without subsidy.

Asked by Mr. Montague what had been the increased rate of wages per hour obtained by the building trade employees since February, 1924, and how much this increase would represent in additional cost of an average working-class house, Sir K. Wood said, that including the increase which took place in February, 1924, the total increase had varied, according to districts and grades, from 3d. to 2d. per hour. Twopence applied to London; and the most general increase has been 1d. The effect on the cost of the house varied according to the character of the building and the output of work; but, assuming reasonable conditions, a general variation of 3d. per hour would represent between £4 and £5 variation in the cost of erecting the house.

Mr. March and a number of Labour members have introduced a Bill to prevent excessive charges being made for building materials.

Contemporary Art

Decorative Flower Painting.

The art of H. Davis Richter is essentially decorative. The first and inevitable impression on looking round the Leicester Galleries is that the rich colour sense allied to a definite feeling for form are eminently suited to architectural application. These flower pieces and flower and still-life studies seem to find a perfect satisfaction in a place on a wall, whether isolated in frames or inserted into spaces in the wall itself.

They have another virtue in their adherence to natural forms. They are not realistic, but yet they are true studies, both in form and in colour. They are saved from realism by their author's inherent ornamental predilection, and although many of them are ostensible flower studies and are obviously painted from the life, the composition of each picture is so admirable that it is lifted out of mere naturalistic representation into a more functional sphere.

The large canvas called "Phlox" is decidedly a perfect design for a wall space; that called "The Bauble" even more so, with its added brilliancy of reflection from the lustre sphere which the artist understands so well and renders with so much virtuosity of brushwork, as he does also the lustre bowl in "Gladiolus." The heavy colour and form of the pumpkin is very effective in "Abundance," and "Playtime" is a still-life of fine quality. For pure rendering of flower texture "Ivory and Black" is the best example with its very tender gladiolus and other delicate petal substances.

At the same galleries the works of Odilon Redon, the French artist, who died in 1916, are displayed. He has been called a mystic, but he was not an artistic mystic as we understand the phrase when used of William Blake, who had real vision. Redon had no more than fantasy and weirdness, qualities which he cultivated, as Poe cultivated them in poetry. His fantastical drawings and paintings are interesting, but they do not thrill nor even frighten; they are remarkable for their mildness. But Redon was a master in lithography, and a pupil of Fautin-Latour in flower painting. He had hosts of admiring friends, and was greatly appreciated in Holland. During his life he had many exhibitions of his works, which have continued after his death.

Royal Society of Portrait Painters.

At the thirty-fifth annual exhibition at the Royal Academy Galleries there are some brilliant things, and a few only that are really dismal. The standard is a high one, and several of the exhibitors reach their highest level. In addition, a new departure has been made, and sculpture in the form of portrait busts appears, greatly to the advantage of the show; and it is moreover admirably placed. No exhibitor displays more signs of development than George Coates, whose colour has clarified,



FIRE: A MODELLED PANEL FOR WALL DECORATION.
BY HAIG PATIGIAN.

and in the study in blues and greens, "Miss Edith Urquhart," he achieves some brilliant work. Sound portraiture is exhibited in his portrait of Elioth Grüner.

Another Australian who gains in distinction is James Quinn. His portrait of "Miss Lillias Hamilton, M.D., the late Warden of Studley Agricultural College," although it does not reach the fine characterization of his "Miss Brough," which was really the portrait of the year at the 1918 Royal Academy, is marked by careful observation and thoroughly sound painting. It will be the more appreciated as the subject has unfortunately just died, only a few weeks after the portrait was completed. The same artist's "Thomas Senior Townend" has great interest to his old friends in the journalistic world, as he was for half a century London editor of "The Manchester Guardian," and later of "The Melbourne Argus." It is a characteristic painting.

In the same class of character portrait is Ambrose McEvoy's painting of his mother, a grey study with much of interest in it, especially as the work of an artist so much engaged in the production of an infinite variety of butterfly-coloured society beauties. Richard Jack has a very honestly-painted portrait of "Miss Nancy Neale," and John St. Helier Lander depicts his brother-in-law, the Lord Chief Justice, in the glory of all his robes, in his well-known fashion. A very striking portrait of the Dean of Chichester is by Alfred Wolmark. The artist has subdued his appetite for colour to his subject, and in its form I should say has made a remarkable success; while Alfred Priest, in quite a different way, has produced a telling likeness of another weighty subject in "G. K. Chesterton." Standing alone in its individual style is A. Stuart Hill's "Lieutenant J. H. Morten," and a striking work is the "Mrs. Eugene Goossens" of Bernard Adams. Glyn Philpot's painted portrait is not so good as is usual with this artist, but his two sculptured masks are quite admirable. Among the busts, which are in bronze for the most part, are portraits by Frampton, Goscombe John, Tweed, and Drury, and Leonard Jennings contributes his interesting statuette of the Prince of Wales.

The living painters are confronted in this exhibition by Frank Holl. It is a handicap, for that great portrait painter wears well, as may be seen in the "Captain Alex. Sim," particularly. It has not the verve of Sargent's "Duke of Connaught" or the facile cleverness of Orpen's Self-Portrait—both works are on exhibition—but it has steadiness and feeling which few modern portraits attain. There are three other examples of Holl's work, and a charming female portrait by Millais.

KINETON PARKES.



AN OVERMANTEL PANEL PAINTING IN OIL. BY H. DAVIS RICHTER.

The British Industries Fair, Birmingham

IT has been the practice in past years to divide the British Industries Fair into two parts, one of which has been held at the White City, in London, and the other in Birmingham. In view of the decision to repeat the British Empire Exhibition at Wembley there will be no London Fair this winter, but several of the more important London sections have been transferred to the Birmingham Fair, which will be opened on Monday at Castle Bromwich. The Fair is the largest exhibition of its specialized type ever held in this country. With the exception of two industries which have never taken part in the Fair—those engaged in the production of textiles and motor-cars—every substantial kind of British manufacture is for the first time shown under one roof. No fewer than 170,000 sq. ft. of space has been placed at the disposal of exhibitors, and the area is fully occupied. The following are descriptive notices of the principal exhibits likely to be of interest to the profession:—

Art Metal-work and Fittings.

Mathews and Timmings, Eagle Works, Hospital Street, Birmingham. Metal hearth furniture, curbs, screens, mirrors, lamp standards, electric table lamps, etc.

James Smellie, Ltd., Dudley. Gas and electric light fittings, wrought-iron gates and railings, architectural and ecclesiastical art metal-work. The work on view at this stand is of very fine craftsmanship.

I. Woodall and Sons, Ltd., Town Works, Dudley. Hearth furniture, mirrors, gongs, art metal-work in oxydized silver, copper, antique brass, and old pewter.

Allied Arts and Crafts Guild, Brook Street, Birmingham. "Guildcraft" mantels, fire surrounds, dog grates in rustless steel, furniture in hardwood, and other fittings of fine craftsmanship.

Concrete Slabs and Tiles.

Thomas Fathers, Ltd., 39 Newhall Street, Birmingham. Breeze concrete slabs for walls and partitions.

Minton Hollins & Co., Stoke-on-Trent. All kinds of tiles in special finishes, especially suited to fireplace work and wall tiling in public buildings and decoration.

The Cambell Tile Co., Stoke-on-Trent. Tiles of every description. Glazed, bright, and dull enamels, mottles, etc., tile and faience fireplace surrounds and curbs.

Marsden Tiles, Ltd., Fairfield Works, Dale Street, Burslem. Tiles in special finishes, glazed and dull.

Godwin and Thynne, Ltd., Victoria Works, Hereford. Tiles of all kinds for walls, shop fronts, and fireplaces.

Door and Window Furniture.

W. G. Macnamara, Ltd., Aston Brook Street, Birmingham. All kinds of door plates and furniture, also memorial and engraved plates.

John Harper & Co., Ltd., Willenhall, Staffordshire. Builders' ironmongery and hardware of every description. Door bolts, bathroom requisites, shelf brackets, oil stoves, and oil lamps.

Walsall Locks and Cart Gear, Ltd., Neale Street, Walsall. All kinds of locks, padlocks, rimlocks, mortise-locks, etc., night latches, and cabinet locks.

Fireplaces and Mantelpieces.

Callender Iron Co., Ltd., Falkirk. Fireplaces of refined design in iron.

Gordon & Co., Bradford Street, Birmingham. Wood chimney-pieces in oak and mahogany of original design.

Scotswood, Ltd., Mosely Road, Birmingham. Mantelpieces in hardwoods and pine, also oak and mahogany bedsteads and sanitary seats.

Astral Manufacturing Co., Ltd., Kedleston Road, Derby. Period mantelpieces in hardwoods and whitewood.

The Falkirk Iron Co., Ltd. All kinds of mantelpieces, fireplaces, hearths, and fittings in hardwoods, cast iron, tiles, armour bright, and copper. The craftsmanship of these exhibits is excellent.

Brookes and Markes, Kingston Road, Birmingham. Mantelpieces in all hardwoods. Period designs to suit any scheme.

Joinery and Shop Fitting.

William Street and Sons, Bristol Street, Birmingham

Joinery for public buildings, houses, and factories; interior fittings in woodwork.

A. Edmonds & Co., Ltd., Constitution Hill, Birmingham. A wide range of shop fittings and equipment is shown on this stand. Display cases, sectional fittings, and stands. Modern office furniture, advertisement devices, etc. This firm are also makers of high-class shop fronts.

Heating, Cooking, and Lighting.

Premier Electric Heaters, Ltd., Keeley Street, Birmingham. This firm exhibit a great variety of electric heating and cooking apparatus, including electric irons, kettles, urns for water heating, glue pots, and radiators.

Stoves, Ltd., Rainhill, Lancashire. Gas cookers, gas fires, geysers, and other gas heating apparatus.

The Hurry Water Heater Co., Broad Street, Birmingham. The No. 10 patent Hurry cylinder for delivering hot water to bath, lavatory basin, and kitchen sink. Gas and coal heating appliances, coppers, and canteen boilers.

The Falkirk Iron Co., Falkirk, N.B. The "Smoothtop" range of gas cookers for economical working.

Samuel Smith and Sons, Ltd., Beehive Foundry, Smethwick. This firm show their well-known "Foresight" combination range, which provides economical cooking and heating, and can be converted into a cheerful open fire.

Triplex Foundry, Ltd., Great Bridge, Staffordshire. Combination grates for which special economical features are claimed, a low coal consumption and elimination of nearly all smoke and waste products. This fire has been extensively adopted by the Birmingham Corporation.

The Vono Co., Dudley Port, Staffordshire. An improved combination grate giving free access to oven and boiler flues for cleaning.

Ruston and Hornsby, Ltd., Sheaf Iron Works, Lincoln. Lighting sets driven by paraffin or petrol engines, coupled to dynamo. Features of the engine are easy and quick starting and low running cost.

Floors and Flooring.

Minton Hollins & Co., Stoke-on-Trent. All kinds of floor tiles and mosaics for plain effects or richly decorative schemes.

Carter & Co., Poole, Dorset. A large variety of floor tiles and mosaic flooring.

The Malkin Tile Works, Stoke-on-Trent. Tessellated and mosaic art floorings.

Paints, Stains, Preservatives, and Decoration.

Mond Tar By-Products Syndicate, Ltd., Victoria Street, London, S.W.1. Bituminous paints in twenty grades of colours for the preservation of wood and iron. "Zulite" wood preservative—a preservative of excellent penetrating quality, supplied in nineteen shades of colour, proof against insects, vermin, dry and wet rot.

Arthur Holden and Sons, Bradford Street, Birmingham. Paints and enamels for fine decorative purposes.

Uriah Clark and Nephew, Ltd., Hellingly, Sussex. Manufacturers of coloured glazed hand-made art pottery. Special articles made to order.

Atlas Preservative Co., Ltd., Deptford, London, S.E.8. "Atlas Ruskilla" iron and steel paint for structural steelwork, bridges, etc.; "Atlas A" wood preservative for the destruction of vermin and prevention of dry and wet rot.

William Street and Sons, Bristol Street, Birmingham. Invite inquiries for decorating houses, offices, public buildings, etc.

Housing.

City of Birmingham Public Works Dept. exhibit a pair of semi-detached steel houses, as erected for the Corporation housing schemes by Messrs. Braithwaite & Co., Great Bridge, Staffordshire. These specimen houses are structurally as sound as brick, quite pleasing in appearance, both inside and out, and the cavity walls maintain an equable temperature in all weathers. There is an interesting illustration of a cast-iron house at Tipton, Staffordshire, which was erected over a hundred years ago and is still inhabited. This should dispel any fears that steel houses have a short life. The department

also exhibit scale models of their housing schemes and proposed new roads.

Sanitary Fittings.

The Collos Co., 161 Tennant Street, Birmingham. Bath-room fittings, sanitary seats, and lavatory fittings.

Callender Iron Co., Ltd., Falkirk. Porcelain enamelled baths.

The Hurry Water Heater Co., 39 Broad Street, Birmingham. A patent tip-up bath, hot water supplied by the "Hurry" heater. Specially suited to confined spaces.

Societies and Institutions

York and East Yorkshire Architects at Dinner.

The York and East Yorkshire Architectural Society held their annual dinner at York, under the chairmanship of Mr. Stephen Wilkinson, the President. Among the guests were Messrs. J. Alfred Gotch, P.R.I.B.A.; W. T. Jones, President of the Northern Architectural Association, and W. Alban Jones, President of the Leeds and West Yorkshire Architectural Society.

Mr. J. M. Dossor, in proposing the R.I.B.A., raised the question whether architects should advertise. He said there was great danger in resorting to advertisement without judicious handling. They could, however, advertise the Institute by every proper and legitimate means, and build up a reputation for a society which had served them well. He thought that in the courts preference was nearly always given to the evidence of professional men who were in some recognized society.

Mr. Gotch, in responding, said that the Institute was endeavouring to establish a certain number of maintenance scholarships, so that lads not blessed with large means, but who had a distinct inclination towards architecture, might be able to start on the arduous task of training, which every architect must master, with a reasonable amount of comfort.

Mr. W. Alban Jones proposed the "York and East Yorkshire Architectural Society," and Mr. Stephen Wilkinson responded. Mr. W. T. Jones proposed "The Yorkshire Group," and Mr. W. H. Brierley responded.

Church Ornamental Art.

Sir Banister Fletcher, F.R.I.B.A., gave a lecture on the roof drainage, ornament, and fittings of mediæval England, at the Central School of Arts and Crafts. Churches, he said, supplied the place of social life in such institutions as schools, libraries, museums, galleries, and concert halls. Through the ever-open door people passed in and out, and the sculptures inside, and sometimes out, set forth the Bible story and, with the aid of stained-glass windows, proclaimed the lives of saints, the heroism of knights, and the valour of kings, and embodied the best craftsmanship of the age, symbolizing often the virtues and vices. The intricate delicacy of the carved chancel screen was eloquent of the sacredness of the sanctuary beyond; while the rood, lifted high on the rood-loft above, proclaimed the sacrifice of the Saviour of the world. The richness of ornament concentrated on the reredos was a background for the holy sacrament of the Church, and it was flanked on either side by the delicate tabernacled work of the sedilia, piscina, and choir stalls.

The Institution of Heating and Ventilating Engineers.

Mr. A. H. Barker, B.A., B.Sc., in a paper read at the annual general meeting of the Institution of Heating and Ventilating Engineers, entitled "Unknown Factors in Heating and Ventilation," stated that in attempting a general survey of the unexplored or unmapped region of their profession it was difficult to decide where to begin, and he feared to the commercial engineer there did not appear to be any particular reason why it should be explored or why anyone should spend time or money in the effort to map it out. This point of view he had little sympathy with. It was a cant phrase that knowledge was worth pursuing for its own sake, but few people really believed it, though he was quite sure no hobby in the world yielded such sustained interest to its devotees as scientific research. However that might be, he was there to talk of what appeared to be the most important portions of the unexplored field of heating and ventilation, which might be broadly divided into two parts: the first related to the working

properties of the materials and plant employed, such as building materials, radiators, boilers, pipes, fittings, fans, air ducts, and the like. The second, which was much more difficult, related to the results produced by the plant. Mr. Barker outlined what had already been done in the way of research as regards heat losses through building materials, heat transmission from radiators, effect of different paints and coverings, and the analysis of the emission by radiation and convection. Turning to ventilation, he emphasized the necessity of investigation as to the friction of air in ducts and fittings, as he ventured to say no one ever found the actual deliveries anywhere near the calculated values. So far as heating and ventilating engineers were concerned, the grand object of all research was to solve the central problem of determining the effect in a building of certain combinations of heating and ventilating appliances which could be precisely specified. In general terms the essence of the problem was to determine the physical effect of different heating appliances on the thermal conditions of a room, and of the latter in turn on the comfort of the human being in the room. Until they had arrived at the stage when they could define the thermal condition of a room accurately they certainly could not say how much radiated or convected heat was wanted, even if they could measure it. This was, in his view, the very root problem underlying the whole science of heating and ventilation, and until it was solved one couldn't call heating engineering a real science, nor could anybody call himself a real expert in either the one or the other.

Monks and Canons and Their Buildings.

Sir Banister Fletcher, F.R.I.B.A., lecturing on English Architecture at the Central School of Arts and Crafts, dealt with the rise of monasticism and its relation to England, the monasteries and cathedrals, and parish churches. He said that the most striking trait of English monastic history was the effect it had on the evolution of English monasteries and cathedrals. A monastery was complete in itself, much like a model village, with the addition of an enclosing wall and great entrance gates. It contained buildings providing for the daily life of the inmates, from chapter house, library, and sacristy to refectory, dormitory, guest house, kitchen, and infirmary; while there was usually the mill stream for the grinding of corn, and fish-ponds. Above all, towered the monastic church, upon which all the art of the time was usually lavished; and this was the feature which remained, often when the domestic buildings had gone. On the dissolution of the monasteries by Henry VIII, some were reconstructed as chapters for secular canons, when the abbot became a bishop and the monastic church a national cathedral.

The Institution of Structural Engineers.

It having been found by the Science Committee of the Institution of Structural Engineers that time rendered it impossible for the members to deal with the very large number of scientific problems upon which it is felt that reports would benefit the profession, it has been decided to form sectional committees of the Science Committee, to include representatives of the general body of members. Sectional committees have already been formed to deal (a) with concrete, and (b) steel. Mr. R. H. H. Stanger is chairman of the Concrete Committee, and is assisted so far by Messrs. A. C. Davis, Arthur E. Evans, Dr. Faber, Messrs. H. Gardiner Lloyd, H. E. Steinberg, and J. T. Saunders. The Steel Committee has Mr. S. Bylander as chairman, with the assistance of Messrs. E. S. Andrews, H. Kempton Dyson, E. Fiander Etchells, J. Mitchell Moncrieff, H. J. Collins, and W. A. Green. Further committees to deal with timber (chairman, Mr. H. D. Searles-Wood), and brickwork and masonry (chairman, Mr. E. Fiander Etchells) are in process of formation. The Science Committee would be pleased to receive applications to serve on any of these committees from the general body of members. Amongst the programme of matters awaiting report are such questions as: Adhesion of and friction between concrete and steel; reinforced concrete piles; effect of sewage upon concrete; effect of oils and fats upon concrete; effect of the presence of sulphur and its compounds in aggregates; grading of aggregates; data regarding elastic moduli of concrete for stresses within breaking limits; microscopic examination of minerals; prevention of dust from concrete floors; electrolytic action in reinforced concrete; economic spacing of beams and supports in warehouses; girderless floors; co-ordination of standard specification for structural steels of all kinds; and co-ordination of building regulations for the whole kingdom.

Law Report

City Light and Air Dispute

Reeves v. Charles.

February 15-20. Chancery Division. Before Mr. Justice Rmer.

This was an action in which Messrs. Herbert Kempson Reeves and Hugh William Reeves, solicitors, lessees of 42 Old Broad Street, E.C., claimed an injunction restraining Mr. Richard Stafford Charles, of Pinners Hall, Great Winchester Street, E.C., and his contractors, servants, and agents from erecting or continuing to erect on the site of Nos. 40 and 41 Old Broad Street, and Nos. 1 and 2 Union Court, any building so as to cause a nuisance to the plaintiffs and to obstruct the access of light and air to the windows of the plaintiffs' premises.

Mr. T. R. Hughes, K.C., and Mr. Hall appeared for the plaintiffs, and Mr. W. Manning, K.C., and Mr. Fowell for the defendant.

Mr. Hughes said the action was in respect of ancient lights, and there was no dispute as to the lights being ancient. The two questions to be tried were:—

1. Whether if the defendant's building was completed as proposed there would be an injury to the plaintiffs' legal rights.

2. Whether the proper remedy was an injunction or damages.

The plaintiffs, he said, paid £25,000 for the leasehold interest in the building, 42 Old Broad Street, which also had frontages to Wormwood Street and Union Court. Three years ago they surrendered their interest and took a lease for ninety-nine years from the Skinners' Company at an annual rent of £2,300, and they were under a covenant to rebuild the whole building within fifteen years. The area of the site was 3,000 sq. ft. The defendant's building, of which complaint was made, was on the opposite side of Union Court. The old building, No. 41 Old Broad Street, was 58 ft. high, so that there was always great obstruction of light in that direction. No. 1 Union Court was 37 ft. high, and 32 ft. 3 in. from the plaintiffs' building, and No. 2 Union Court was 41 ft. high.

The defendant proposed to carry the new building to a height of 57 ft. to the coping on the side facing Union Court, with a steep mansard roof with dormer windows running up a further 21 ft. 6 in. It was therefore really the same thing as having a wall 78 ft. 6 in. high. On the Old Broad Street side the building was to be 67 ft. high, with 11 ft. 6 in. for the roof. Even under the old conditions there was hardly any superfluity of light to the plaintiffs' rooms.

Mr. T. H. Smith, architect and surveyor, of 17 and 18 Basinghall Street, E.C., the first witness for the plaintiffs, said he had done his best to compare the light in the plaintiffs' rooms when the defendant's old buildings were up and what it would be when the new building was completed according to the plans. In his view, with the exception of the second floor, where the diminution of light would not be very serious, the rest of the building would be seriously affected.

In cross-examination he said there could only be adequate light for working purposes in that part of a room from which the sky could be seen.

Mr. Percy J. Waldram, civil engineer, architect and surveyor, said he had made a special study of lighting questions, and he had arrived at the same conclusion as Mr. Smith, but by a different method.

Mr. Herbert Kempson Reeves, one of the plaintiffs, gave evidence on Thursday as to the accommodation of his offices. In cross-examination he said he had been concerned in building operations in the City for a number of years, and he was therefore well acquainted with the matters that had to be considered in rebuilding. He agreed that one could not build in the City as a commercial proposition unless the building reached a certain height. Mr. Charles offered to sell the site now in question to him at a premium of £15,000, and if he had accepted it he should have taken off the two top stories and still have made it pay. He should not have built much higher than the old building in Union Court. If the parapet of the new building had been left at 57 ft. and nothing had been put above that, he should still have objected. The proposed building would do him very serious damage.

Mr. Manning: Do you claim that you are entitled to all the light that previously passed to your premises over 1 and 2 Union Court?

Mr. Reeves: That is a very nice question. If I am entitled to damages I am entitled to full damages.

When he rebuilt, said Mr. Reeves, he did not propose to go any higher than at present, because he was bound by agreement with Winchester House.

Mr. Manning suggested to plaintiff that there was a high building in Wormwood Street which, however, did not affect the letting value of the buildings opposite.

His lordship asked if he contended that badly-lit premises let as well as well-lit premises.

Mr. Manning said he should have thought that in this district it did not make much difference.

His lordship said the evidence was that it made a difference of 25 per cent.

Mr. Manning said that was for rooms chiefly on the ground floor.

His lordship: Does not your contention amount to this: That there is no such thing as ancient lights in the City of London?

Mr. Manning said it tended in that direction, but he thought his lordship's assumption was rather extreme.

Mr. Frank Wainwright, land agent and valuer, said he managed a great deal of City property and had had thirty years' experience in the City. In his view the question of light was of vital importance in City offices. Dealing with the southern section of the plaintiffs' building he said that the defendant's proposed building would substantially injure the plaintiffs' light. There would certainly be a loss of 25 per cent. on the ground and first floors, and 10 per cent. on certain parts of the second floor. His estimate of the reduction in the value of the plaintiffs' property that would be caused by defendant's building was about £6,300.

This completed the evidence for the plaintiffs.

Mr. Manning submitted for the defence, first, that the plaintiff's legal rights would not be interfered with by the proposed building; and, second, assuming that there was something of which the plaintiff was entitled to complain, the case was not one for an injunction, but for damages. With regard to the first question, a very important matter to be considered was the locality, because it had been said that a man who carried on his business in a populous town could not expect to have the same amount of light as a business man in the country. After defendant's premises were built the plaintiffs, he submitted, would still have enough light for any ordinary business.

His lordship: You say they will have the ordinary enjoyment of premises in the City of London?

Mr. Manning: Yes.

Sir Banister Fletcher, architect and surveyor, of King's Bench Walk, said the plaintiffs' premises were exceptionally well lighted, and in his opinion, after the defendant's building was up, business could, for all practical purposes, be carried on as conveniently as at present. He had inspected the rooms, and found that although in some cases the light would be less, they would still have enough left for ordinary purposes.

He did not agree with the statement that it was impossible to do clerical work in a room where one could not see the sky. He had often done so himself. The plaintiffs' experts dealt with a standard of light that obtained only in isolated buildings, such as schools. It was an ideal state of existence which everybody wanted, but it could not be applied to the City of London.

Mr. Hughes (cross-examining): Have you tested Mr. Waldram's contention that where you cannot see the sky from table-level you will not have a satisfactory light?

Witness said it depended upon the meaning of the word "satisfactory." If that was applied to City offices you would rule out a large proportion of offices as not being satisfactory.

Mr. Claude Francis Goddard, of King Street, St. James's, who had had thirty years' experience of selling and letting properties in the City, said the loss of light in this case would be so little as not to affect the selling and letting of any of the shops and offices in the plaintiffs' building. In his view the first thing people asked for when inquiring about premises in the City was position. It was the address that mattered rather than the light. He would anticipate no difficulty in getting tenants for plaintiffs' building, even if the defendant's building was erected as proposed. Indeed, he thought it would enhance the letting value of plaintiffs' premises.

Mr. Paul Hoffman, of 62 New Broad Street, said he prepared the plans for the defendant's new building, and he had in mind at the time the plaintiffs' right to light. If it had not

been for that he would have carried the building still higher. As it was it would not interfere materially with the light coming to the plaintiffs' building or cause any nuisance.

Mr. Wm. Edward Riley, architect and surveyor, of Gray's Inn, said he could not remember a case during the twenty years that he was architect to the London County Council, of a large hotel or middle-class flats which did not more than comply with the $63\frac{1}{2}$ deg. angle.

Mr. Fawell: If the defendant's building is erected according to plan will the plaintiffs' be able to carry on business as comfortably as before?—They will not be materially prejudiced.

To Mr. Hughes (cross-examining), witness said the $63\frac{1}{2}$ deg. angle meant a height twice the width of the street.

Do you say that in an internal area or well, like Union Court, the plaintiffs' premises will be adequately lighted?—They will be sufficiently lighted.

Hearing adjourned.

The Institute of Builders' Annual Dinner

The annual dinner of the Institute of Builders was held last week at the Hotel Victoria, under the chairmanship of Mr. H. Willcock, F.I.O.B., the President. Among those present were Sir Frank Baines, Sir Walter Lawrence, and Messrs. T. P. Bennett, R. B. Chessum, F. L. Dove, W. W. Dove, J. E. Drower, A. J. Forsdike, F. J. Gayer, H. S. Goodhart-Rendel, J. Alfred Gotch, P.R.I.B.A., E. Stanley Hall, Stanley Hamp, H. H. Holliday, R. J. Holliday, E. C. Holloway, H. T. Holloway, H. Matthews, A. Roome, E. J. Savory, E. G. W. Souster, Sydney Tatchell, A. J. Taylor (President of the Society of Architects), F. Wall, and A. G. White.

Mr. F. L. Dove, D.L., L.C.C., F.I.O.B., Past-President, in proposing "The Architects and Surveyors" said that builders

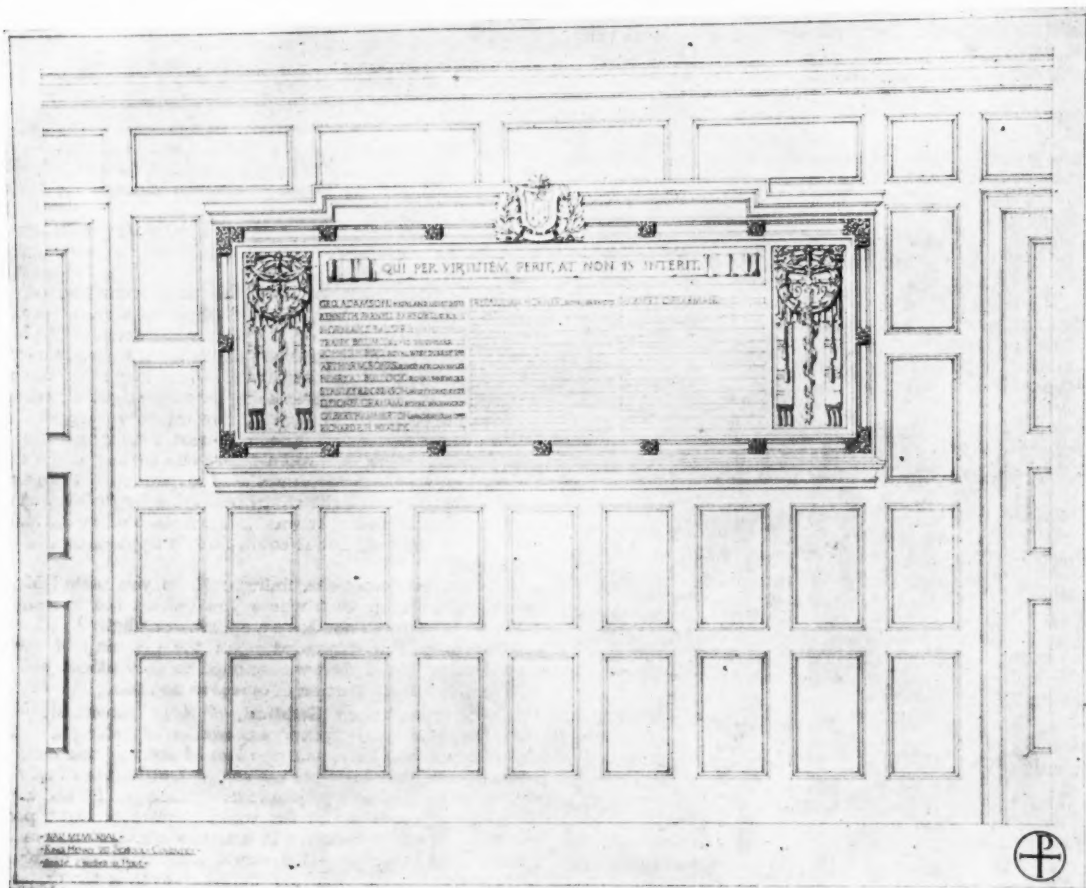
were not machines, and liked to be associated with fine buildings which would go down to future generations. A surveyor was generally looked upon as a man who had a good time, and who scored off the architect and the builder. He suggested that from some of the quantities he had seen the remuneration of the surveyor was none too good.

Mr. Gotch, in responding to the toast, said he was proud to call himself architect and surveyor. It was an old and honourable combination. Inigo Jones was always called a surveyor, and seldom an architect. He thought that the more the architect could take out his own quantities the better it was for his own sake, the client, and the builder.

Mr. E. J. Strange, J.P., F.I.O.B., in proposing the "Institute of Builders and Its President," said builders and operatives should realize that they were together in giving to the community a much-needed service. The community looked to the builder to give a great service. The duty devolved upon the builder to see to the personnel of the industry; that its numbers were increased and quality improved—that the reproaches which rested on the industry should be removed. In order to give the country these things it was necessary that the operatives should agree with the employers that there should be an increase in the number of craftsmen.

The President, in responding, said that the past year would go down as an important milestone in the history of the Institute. It was the year in which the Institute had applied the principle that ordinary admission to membership should be by examination, and in which it had completed the revision of its Articles of Association to coincide with the spirit and letter of that principle. During the year the Institute had continued its educational efforts and had launched some new ventures, ranging from the encouragement of the future craftsman to the university education of the future leaders of the industry.

"Our Guests" was proposed by Mr. A. J. Forsdike, F.I.O.B., Vice-President. Sir Frank Baines responded.



KING HENRY VIII SCHOOL, COVENTRY, WAR MEMORIAL TABLET COMPETITION: THE WINNING DESIGN.

H. JOHNSTONE, ARCHITECT

(For Assessors' Awards see page xxiv.)

e
s
e
a
s
l
t
e
o
e
e
l
es
at
ts
s,
to
y.
p