THE ARCHITECTURAL REVIEW
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1.—GATE OF THE SUWA TEMPLE, NAGASAKI

(*From a Water-colour Drawing by A. C. Conrade*)

2—DAIBUTSU TEMPLE, NARA

(From a Water-colour Drawing by A. C. Conrade)

JAPANESE ARCHITECTURE

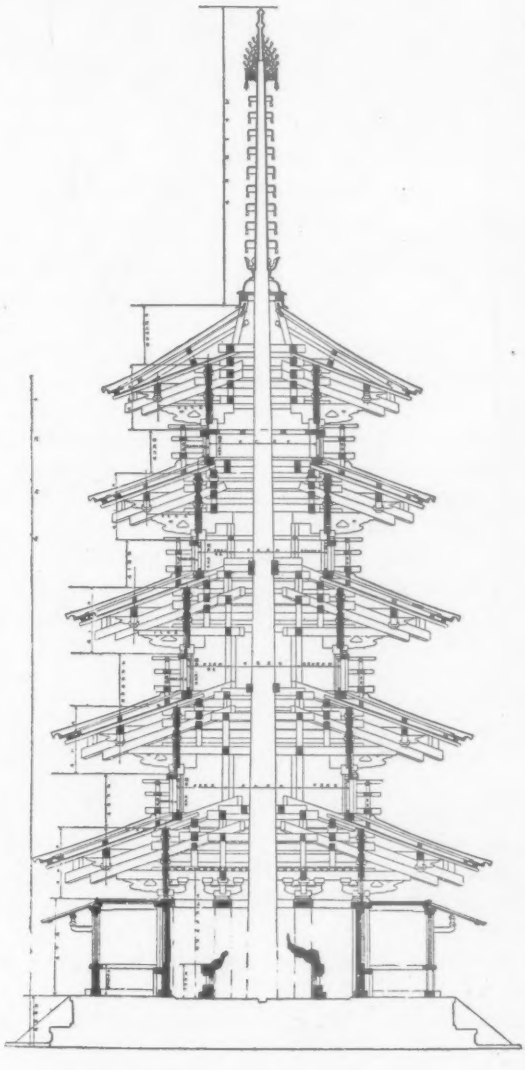
BY H. H. STATHAM, F.R.I.B.A.

With Drawings by A. C. Conrade.

WHETHER Japanese building has properly a claim to be called "architecture" is a question which may be debated. The word is usually associated in our minds with monumental erections composed of solid and durable materials—granite, marble, stone, and brick, put together in masses, which afford the opportunity, in Ruskin's picturesque expression, for contrasts of "broad sunshine and starless shade," and for composition which is characterised by severity and restraint of line. When we think of such massive constructions as the Pantheon at Rome and Hagia Sophia at Constantinople, it seems difficult to include in the same category with these the picturesque eccentricities, as they seem to us, of the timber buildings of Japan. In the admirable article on "Japanese Architecture" contributed by an American architect, Mr. Cram, to Russell Sturgis's "Dictionary of Architecture" it is nevertheless claimed for Japanese architecture that it is "the most logical and completely developed wooden style that the world has known, and in its system and details it is as perfect an outgrowth of its medium, as scientific and elaborately developed, as is any of the stone styles of Europe." Though the writer's enthusiasm has rather run away with his grammar here, it is worth while to record the impression made on the mind of an able Western architect by a close study of these structures.

We are all apt, however, to get up a little extra enthusiasm over a subject of special study, and we must regard Mr. Cram's attribution of scientific construction and logical design to Japanese architecture as somewhat exaggerated. Logical it is certainly not, as an architectural treatment of timber, for it runs all into curved lines, and it is not the natural structural use of timber to treat it in curves; a material with a prevalent grain in one direction is much more naturally used in straight pieces, and, in fact, some of the curved lines so dear to the Japanese architect are artificially produced by planting thin curved pieces on to the straight lines of the structural timber. As to its scientific character, it is in some instances a little more scientific in construction than is generally supposed, as Mr. Cram has shown in the section of a pagoda at Horiuji, which is given as an illustration to his article in the Dictionary. Here we see that the decorative spike which appears as the finial to many pagodas, and is seen in one or two of Mr. Conrade's drawings, is really the termination of a central mast, which forms the structural stiffener to the whole edifice. A reproduction of the section from the Dictionary is here given, and the exterior termination of this central mast is seen in Mr. Conrade's drawing of the entrance-gate of the Hyamidzu Temple (Fig. 4), where the pagoda, with its central mast worked into a finial, is seen behind the gate.

As to the general effect of this architecture of curves and superimposed roofs, to appreciate it fairly one has to get rid, for the moment, of Western ideas in architecture, and endeavour to get, as it were, into the Oriental atmosphere. Western architecture appeals mainly to the intellect, Oriental architecture to the fancy. Even in Venice we feel the difference; the multitudinous



3.—SECTION OF PAGODA AT HORIUJI

4.—HYAMIDZU TEMPLE, KIOTO: ENTRANCE-GATE
(From a Water-colour Drawing by A. C. Conrade)

picturesqueness of St. Mark's has the stamp of Orientalism all over it; and the farther we go east, the nearer we get to Oriental architecture uninfluenced by Western ideals, the more we find the architecture characterised by exuberant and fanciful forms and combinations. We see this in stone in the abnormal forms of the strange varieties of Hindu architecture, some of which appear to European taste as simply grotesque; yet they were no doubt considered beautiful and attractive by those who designed them. Fantasies of this kind in wood, such as those of Japan, are, however, less alien to Western taste than those which are carried out in monumental materials; we recognise that wooden construction can be more playfully treated than stone, without doing so much violence to our æsthetic convictions. And Japanese architecture has more of a consistent style about it than we find in the vagaries of Hindu architecture. It is the work of a people who had settled on a certain manner and spirit in the treatment of timber architecture and adhered to it. The origin of the style is undoubtedly Chinese, though the contemporary architecture of China has perished, and the structure at Horiuji, which is believed to date from the end of the sixth century, probably shows us Chinese architecture as erected (and perhaps somewhat modified) in Japan. To quote Mr. Cram again: "It is a system of concentrated loads, the entire structure being supported on a number of columns tied together with massive girders, and mortised in such a way that neither pins nor nails are necessary." In a structural sense, that is the best point about it; such a method of putting timber together is analogous to the system of bonding in masonry; it is the form of structure suggested by the material; and we respect it for its absence of mere fastenings, just as we respect the French and English Gothic buildings, which stand by the balance of pressures, much more than the Italian arcaded structures which can only be made safe by tie-rods. Every building material should be put together so as to have a stability inherent in its very manner of putting together; and in this sense the timber architecture of Japan was erected on sound principles.

But with this, and with the employment of the central mast, the claim of Japanese structure to be scientific seems to end. Truly scientific construction is that which promises the greatest stability with the least waste of material. In the typical Japanese structure there is a great deal of waste of material. After the sloping rafters of each roof are placed and tied in, there seems to be an accepted custom of planting another and shorter rafter on the top of it and projecting a little beyond; this addition has no proper structural function, and in fact is structurally injurious, as weighting

5.—BUDDHIST TEMPLE, OSAKA

(From a Water-colour Drawing by A. C. Conrade)

6.—BUDDHIST IMAGES IN THE GREAT GATE, KIOTO

(*From a Water-colour Drawing by A. C. Conrade*)

7.—DAIBUTSU BELL, NARA

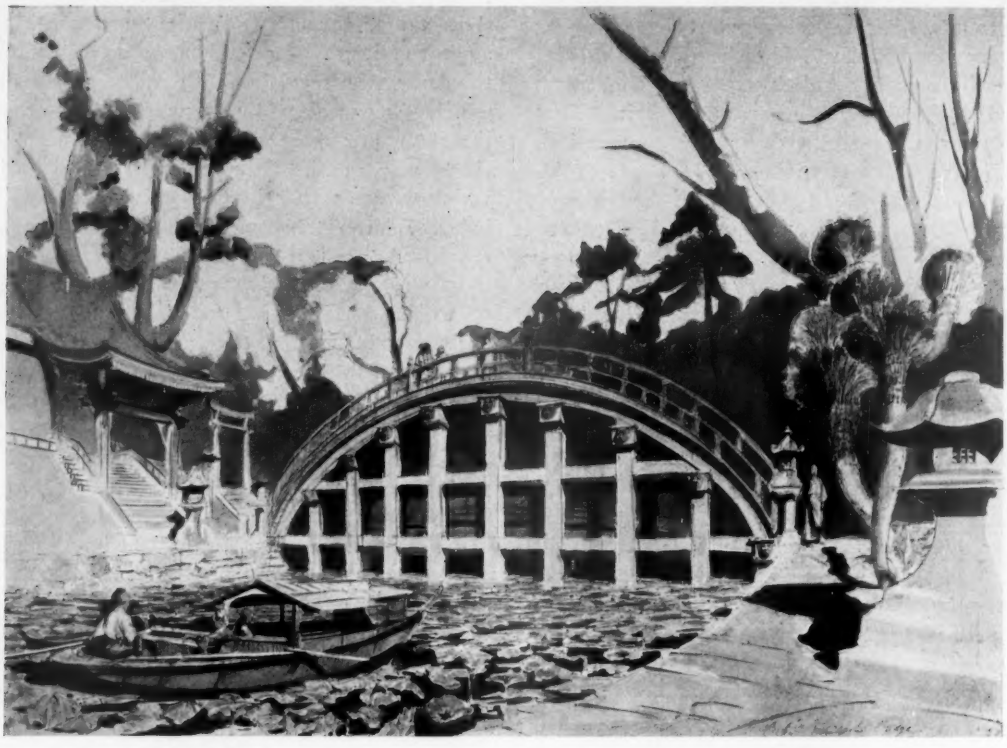
(From a Water-colour Drawing by A. C. Conrade)

the end of the main structural rafter. There seems to have been a persuasion that this was necessary for the effect; it rather gives the idea of something done from habit and as a traditional method, without any other reason for it. That it does produce a characteristic effect was obvious from the fine series of models of Japanese architecture shown at the Japan-British Exhibition; but it is a very clumsy effect, and gives the impression of material piled on for no obvious purpose. It certainly cannot be called scientific carpentry, and even its appearance is bad.

Unscientific timber construction, however, may be picturesque and pleasing enough in effect, as with the typical form of Japanese bridge, of which Mr. Conrade's drawing, Fig. 9, shows us one of the best examples, as it is also one of the best and most effective of his drawings. Nothing could be more picturesque than this, and nothing more absolutely childish in regard to the principle of construction. It is impossible, indeed, to understand why a bridge should be constructed at all with this preposterous gradient, except for the mere reason that the Japanese like the look of it; it is no question of headway, for between the posts and the transoms no passage for a boat is left, and the bridge seems to be practically a bar to farther progress on the stream or canal, whichever it is. Fig. 10, also a most effective drawing, shows a stone bridge in which the arches are of practicable size for the passage of boats (provided they can get through the water vegetation). Here again the desire for a good curve in the skyline of the bridge is seen, and there is a balustrade which looks rather like a wooden construction translated into stone; it may afford a hint for something new in the balustrades of stone bridges, which we are rather in need of, the conventional baluster having become rather monotonous by repetition.

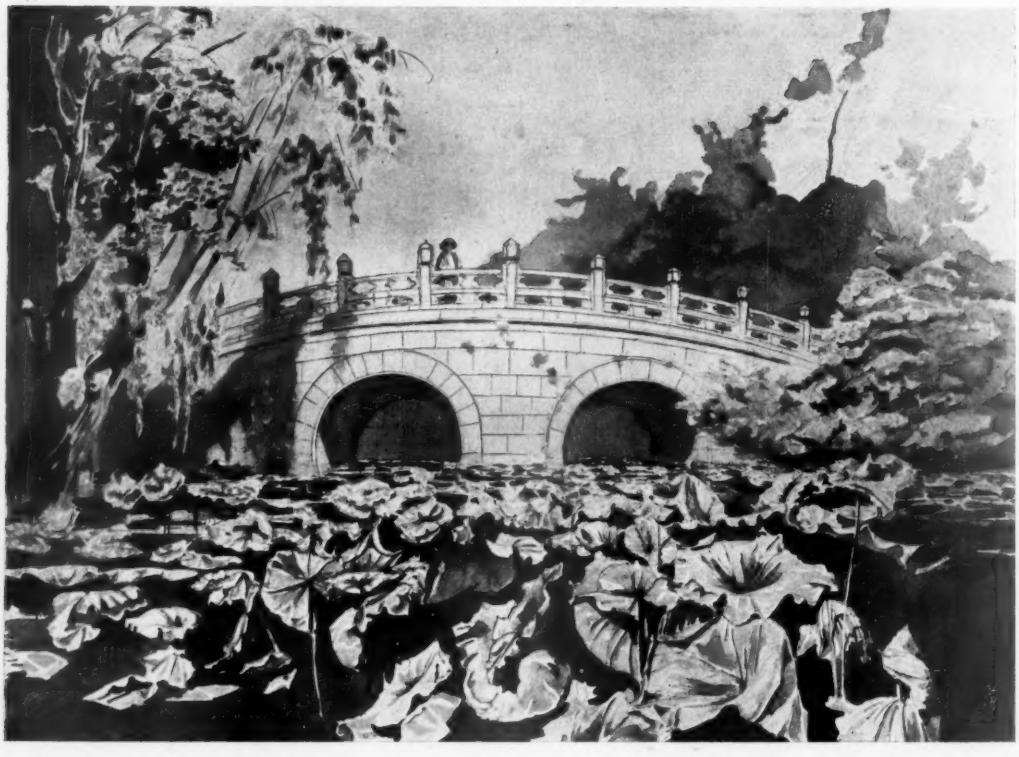
It is a theory advanced by Mr. Cram that something of Greek influence had penetrated in early days into China (as it undoubtedly did into India), and thence into Japan, and he adduces in proof of it the one example of a column with entasis, found in another building, the Kondo, at Horiuji. But it can hardly be called a column with entasis; it is a column small at the top and bottom and with a bulge in the middle, having some resemblance to a Saxon baluster, and about as far as possible in appearance from anything Greek. There is no need to look farther for the origin of it than the fancy of some Japanese architect. But in the structure of the timber bell-screen at Nara, Fig. 7, we certainly are reminded, not of Greece, but of Asia Minor, for we at once think of the Lycian tomb in the British Museum, with its stone imitation of timber structure. Here, in an actual timber structure, we see the same treatment of the mortised horizontal pieces

8.—GATE TO HONGANJI TEMPLE, KIOTO
(From a Water-colour Drawing by A. C. Conrade)



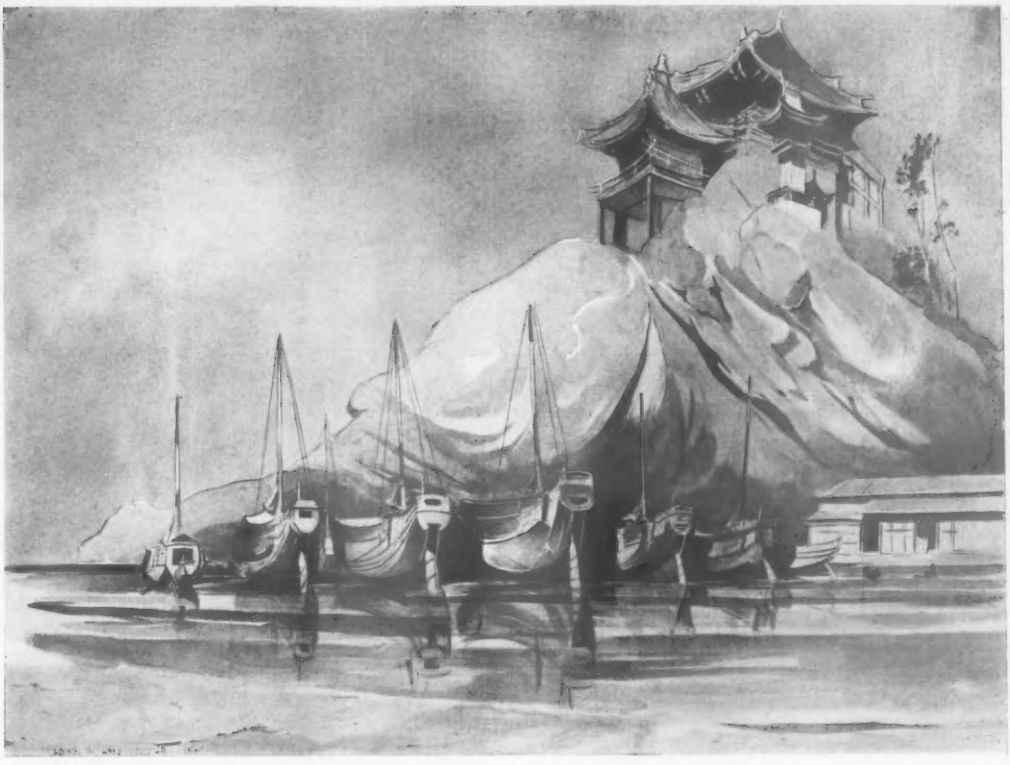
9.—SAMYOSHI BRIDGE, OSAKA

(From a Water-colour Drawing by A. C. Conrade)



10.—BRIDGE AT OTAMA

(From a Water-colour Drawing by A. C. Conrade)



11.—BUILDINGS ON LAKE TOMUTSO, BINGO
(From a Water-colour Drawing by A. C. Conrade)

12.—KUMAMOT CASTLE
(From a Water-colour Drawing by A. C. Conrade)

projecting out beyond the uprights. But this may be only a case of the same causes producing the same effects.

The picturesque outline of the Japanese wooden structure comes rather well on a stone basis, as is seen in Fig. 12, Kumamot Castle, where it will be noticed that the passion for curved lines prevails also in the structure of the wall of random masonry, which curves outwards to a marked extent. Fig. 8 shows also the curved roof line in connection with a masonry sub-structure; the thick, heavy roof, with its double curve, looks very ungainly here, though it is just the kind of thing that the Germans are doing with some of the gables and dormer lights of their modern buildings. The projecting brackets from the top of the square column have rather a Hindu stamp about them. Fig. 11, "Buildings on Lake Tomutso," shows the effect of Japanese architecture on the top of a rocky hill, with which it contrasts rather effectively, and the ships below give another example of the picturesqueness of wrong construction; how characteristic they are in form, and how utterly bad and unseaworthy (for anything but calm weather) as ships. That kind of beauty which is called the beauty of "fitness" (for its purpose) does not recommend itself to the Oriental mind.

Fig. 6, "Buddhist Images in the Great Gate, Kioto," seems to be a piece of Japanese architecture on entirely different lines from anything we have hitherto considered; the horizontal line rules here. It would be rather interesting to know what is the construction of those large horizontal beams.

Fig. 1, the Gate of the Suwa Temple at Nagasaki, is perhaps the most interesting and characteristic of all the accompanying illustrations. Nothing could be imagined more essentially Eastern than this curious erection. Why are the columns built sloping? Why is it that the heavy curved beam which they carry cannot rest directly on them, instead of having a thinner piece introduced between it and the columns? To the Japanese eye, we suppose, it seems better, just as it seems better, in a temple roof, to plant a sham rafter on the top of the real constructional one. It is a curious and puzzling erection, at all events.

Perhaps the special note of Orientalism could hardly be better exemplified than in the Buddhist temple at Osaka, Fig. 5—a group so delightfully incongruous and illogical, according to Western ideas. The two blocks of building seem to have no reference to one another in point of design; they are planted together in juxtaposition, but for any architectural relation they might be miles apart. The taller erection at the back shows again the head of the structural mast, treated as a decorative finial. Oriental, too, is the absence of any attempt to diversify the successive storeys of the building. With us, to build a succession of storeys all just alike, with no grouping or variation in their importance, would be an architectural naïveté which would be thought commonplace. To the Oriental, apparently, repetition is sufficient in itself, without any attempt at varying proportion or treatment; one could imagine the Tower of Babel started on the same kind of programme, only with a more monumental construction; there seems no particular reason why there should not be five more storeys. The only purely utilitarian feature of the buildings is the simple square panelling of the containing wall (if one can use the word "wall" for such a structure); here for once the passion for curved lines gives way, and everything is straight and rectangular. It almost gives the idea that it is a modern reconstruction of the outer fence partition, on Europeanised lines; or else, perhaps, some of the original painted ornament from it has disappeared. At all events, its plain squares seem oddly out of keeping with the curvilinear character of the roof lines.

The nondescript animal on the pedestal to the right of the picture, which impresses one as a lion translated into Japanese, may be taken as a type of the curious treatment of animal figure in Japanese art. Japanese artists are masterly in the drawing of fish and birds: when they come to the larger forms of vertebrate animals they seem to lose their feeling for realism, and paint creatures of Japanesque type. That they can on occasion do otherwise was evident from the wonderful picture of a tiger in the snow which was at one of the exhibitions at the White City, and cannot have been forgotten by any one who saw it. But in general the higher animals in Japanese art are treated in an exaggerated and semi-grotesque manner.

In the temple at Nara, Fig. 2, it will be seen that the filling of the enclosing wall is much more decorative and less simply treated than the bare panelling of the Osaka temple, which rather tends to confirm the idea that the latter may be modern. There is a great deal more character in this part of the building, but what we might call the pediment over the doorway is very clumsily worked in, and the effect of this building as a whole seems to show that the picturesque element in Japanese architecture is much better realised in high narrow buildings than in those of long and low proportions.

The national Japanese style is, we are told, practically a thing of the past, except for some small private houses. All public architecture is becoming Europeanised. It is inevitable that it should be so. We may regret the decay of an interesting national style, but we can do nothing to prevent it.

THE GARDEN AT BRAMHAM

THE garden of Bramham, the nearest parallel to Versailles in England, was laid out, at a time when Le Nôtre was still the leading influence in garden design, for a person of importance in his day, Robert Benson (1676–1731). He was a comparatively new man, and, succeeding to a fortune which his father, Robert Benson, had built up, increased it in spite of very "handsome living." He was successively Commissioner, Under-Treasurer, and Chancellor of the Exchequer under Queen Anne, who raised him to the peerage as Lord Bingley in 1713 (when his want of a coat-of-arms aroused some pleasantries), and visited him at Bramham, which he had built for himself by Leoni. He is said to have taken a great interest in architecture, and indeed his choice of Leoni as architect, and the gardens of Bramham, are the proof of a fine and sure taste.

The garden is pre-eminent in England as an example of the full style of Le Nôtre.* Whether that designer came to England or not, his principles crossed the Channel, and these, as given in "The Theory and Practice of Gardening," became the text-book of design in Europe for the first half of the eighteenth century. The author Blondel gives us four fundamental *maximes* of the design of the garden—to correct excessive irregularities of the ground, to prolong vistas as far as possible, to avoid showing the whole of the design at once, and to rely on grass and foliage for effect rather than on an excessive use of sculpture. On a smaller scale than Le Nôtre's designs, Bramham is like these in its grand manner. There is no visible wall within the garden, for this stands slightly above the level of the surrounding park; the wall thus has the effect of a sunk fence, and the eye ranges without interruption through the avenues into the "undressed" woods. It is actually an enclosure, but does not appear so from within; and the park is drawn into the scheme as a completion of these vistas, though the garden is not yet, as in the time of the landscapists, "set free from prim regularity that it might assort with the wilder country without."

The flower gardens are inconspicuous, as they are enclosed, and in most aspects there is nothing to detract from the sober magnificence of the tree architecture. Here are *cabinets de verdure*, long straight avenues clipped up to a certain height and feathering at the top, and trim beech hedges. Immediately before the garden front of the house the ground rises, and there is a sunk stone-walled parterre which is now a rose garden. The chief points of interest are the Classic chapel at the

* Grillet, Le Nôtre's assistant at Versailles, was at work on the waterworks of Chatsworth in 1679 and at Bretby (also in Derbyshire) in 1702.

THE T-SHAPED CANAL

THE GARGOYLE HEADS

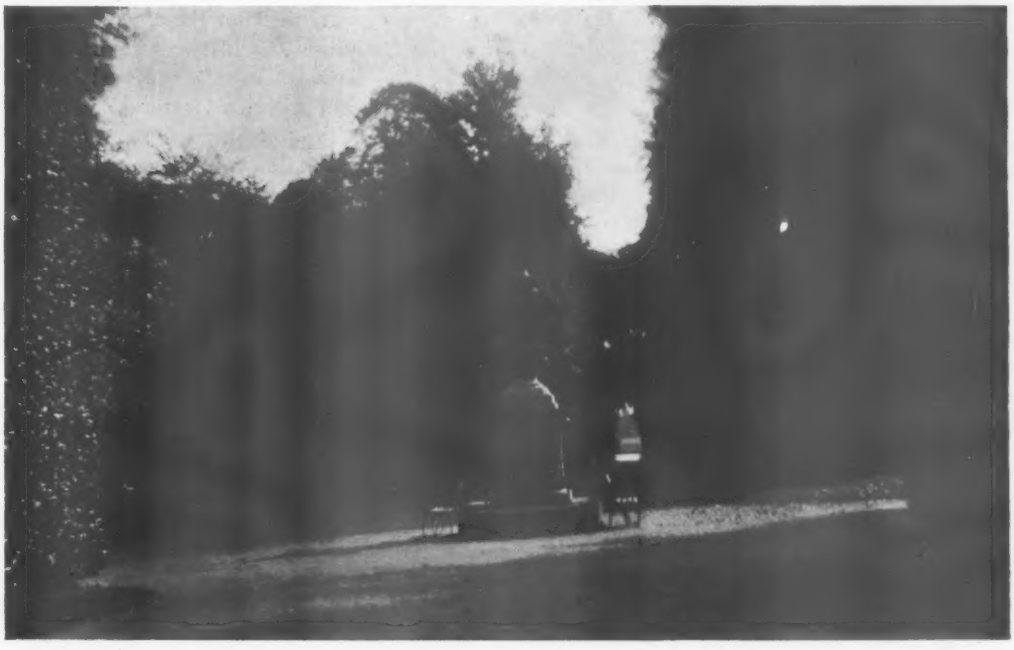
north end of the long avenue which runs parallel with the front, the basins of water at the south end, and the T-shaped canal at the western limit of the garden. In the north-west quarter are long hedges of clipped beech leading to some point of view, not, as might be expected, to some piece of statuary or monument. The fine stone urn at the meeting-point of five paths is, however, an exception. It is a four-sided urn standing on a rusticated plinth. From this urn one of these avenues gains an added beauty from its reflection in the still canal. So far Lord Percival's description * of Lord Orford's place (in 1724), Chippenham, near Newmarket, would pass for Bramham word for word :—

> The gardens have a good deal of variety, a fine bowling-green, very high hedgerows cut into vistas, long shaded walks, from which you see several miles into the country through well-grown avenues. There is a canal in the shape of a T.

* Quoted in "A History of Gardening in England." Alicia Amherst.

THE LARGE BASIN

But Bramham has other features, such as the "cascades" at the south end of the long avenue, once studded with *jets d'eau*. This is a system of basins from which the water flows in cascades. That nearest the house is a square basin set with vases. At the southern side, through a double flight of steps, the water runs into a shaped basin. At the southern end, again, is a second shaped basin, into which the water gushes through two grotesque winged gargoyle heads in the rusticated wall, which also has a flight of steps. A fourth outfall passes over semi-circular steps. These



THE URN AT THE "AVENUE WITH FOUR FACES"

with their water jets must have been like the similar waterworks at Boughton of which Morton writes in the early eighteenth century as "a very agreeable and charming entertainment both to the eye and ear, and a lovely refreshment to the standers-by in a hot and sultry air."

Additions to the garden were made from time to time, but these were inconsiderable; such as the obelisk (to the memory of Robert Lane Fox, son of Fox Lane, Lord Bingley) in the park, which closes the vista of the long avenue to the south, and the "Gothic" garden-house not quite finished when Dr. Pococke visited the place in 1750, at a time when Kent had leapt the fence and a certain rusticity was permitted in garden-houses. He writes that behind the handsome house of hewn stone "are walks with very high hedges on each side, and a terrace goes round a great part of the improvement, fenced with a ha-ha wall; one comes round to a Dorick building like the front of a temple and then to a Gothic building not quite finished; so one descends to the water, from which there is an avenue to the house, and another to a round Ionic temple, something in imitation of the Temple of Hercules at Tivoli. There is a considerable ascent to the temple, and from that there are three or four vistos, one of which is terminated by a Dorick building something like the portico of Covent Garden church; and to the west of the garden, in the park, is a thatched house, to which the family go for variety and take some refreshments."

It is fortunate that at a time when old gardens in every part of England were disappearing before the landscapists, and the house was (in Walpole's phrase) frequently left gazing by itself in the middle of a park, the taste for romance at Bramham went no further than the Gothic garden-house, and has left intact the formal tree architecture to which these moss-grown balusters, *termes*, statues, and fountains are really but accessories.

THE ROYAL COMMISSION ON HISTORICAL MONUMENTS

THE first volume issued by the Royal Commission on Historical Monuments in England was, we surmise, something in the nature of an experiment. When it appeared with its full list and description of the antiquities of Hertfordshire, tastefully printed on quarto sheets and interleaved with numerous photographic illustrations, it created no small sensation among those who had not only despaired of such work being ever undertaken by an English Government, but were even more sceptical of its being able to produce a document outside the lines of the familiar Blue-book. That the Royal Commission entrusted with so profoundly interesting an inquiry had risen to the occasion was at once quite evident; and if we may number the Commissioners among those ordinary people who desire to see their efforts appreciated, we may be sure they were gratified by the instant demand for a second edition of their book. And now, fortified by this measure of public approval, they have published the second volume of what promises to be one of the most useful works of reference that could find its way into an architect's library.

The book before us includes the southern part of Buckinghamshire, that is to say the parishes in the hundreds of Aylesbury, Desborough, Burnham, Stoke, all but ten of Ashendon, and three detached parishes of Cottesloe. The total number of parishes investigated is 102, and in these there were found 1,535 buildings and other monuments accredited to an earlier date than the year 1700. These figures speak for the industry and thoroughness of the investigators chosen by the Commission, and it is a satisfaction to know that the identification and technical description of what are in the main architectural monuments is in the hands of a staff which possesses a sound architectural knowledge.

From a perusal of this first part of the report on Buckinghamshire it is evident that no pains have been spared, not only to carry out fully the terms of the Commission, but also to make the volume as useful as possible to the expert and at the same time attractive to the general public.

The main part of the book (329 pp.) contains a careful, if condensed, description of every building recorded, including all internal fixtures and fittings, an approximate date being invariably added. The description is in sufficiently technical language to give it precision and uniformity, and such subjects as heraldry, costume, plate, etc., are adequately recorded. Although the letterpress is complete in itself, it is merely a summary of the very much fuller records in manuscript which are all inscribed on cards of uniform pattern, and which we are told will be deposited for reference in the Record Office. The photographs—to the number of over 100—dispersed throughout the book, are only a small proportion of those taken by the Commission; but they serve the purpose of illustration. A certain number of plans of churches and houses are given, and there are useful key-plans of towns in addition. The plans of Eton College, Burnham Abbey, and Notley Abbey are perhaps the most interesting in the volume.

This constitutes the bulk of the book, but there are other features that multiply its usefulness very greatly. After the citation of the terms of the Commission and the formal report, there follows a Sectional Preface of some ten pages which picks out the salient features of the inventory, and tells us in a few paragraphs of the most interesting and unusual buildings contained in the county. This preface deals with the character of the district and the materials used in the churches and secular buildings, and proves an excellent introduction to the whole subject. Further remarks are grouped under the names of separate features, and in this way local objects of special importance—such, for instance, as the well-known "Aylesbury" fonts—are easily brought into prominence; and the resources of the county in relation to any special detail are immediately seen.

But it is at the close of the book that both the lay reader and the architect will find the greatest aid to reference. After a list of some ninety-eight buildings worthy of special preservation (Schedule B) a very exhaustive glossary of architectural and archæological terms is given. Considerable care has been exercised in compiling this, and we understand it is to be printed anew with each volume. After the glossary comes the index, and here we must express our admiration of the arrangement by which every detail is indexed under its own special heading and in chronological order. Thus, to take a few features at random, we find references to forty-four barns, thirty-one Communion tables, sixty-seven fonts, eighty-five piscinas, and so on, even building materials and cottages being placed in separate lists. In the future our studies are not likely to lack comprehensiveness when we have such indexes to refer to, and we can already see in the work of the Royal Commission a great step towards the advancement of architectural knowledge.

"Royal Commission on Historical Monuments (England)." Buckinghamshire—Vol. I. London: His Majesty's Stationery Office. Price 15*s.* 6*d. Linen boards* 1*s.* 6*d. extra.*

ARCHITECTURAL EDUCATION FROM THE AMERICAN STANDPOINT

BY LLOYD WARREN

HOW interesting it would be could we follow the phases of architectural training through the Middle Ages! How inspiring it would be to us, who seek to perfect this training at the present day, if we knew the influences which raised the art from the crude barrel-vault and block capital of the early Romanesque to the tenuous stone construction and the florid carving of Troyes and Notre Dame de Brou!

Nothing, however, is left to give us a hint as to how the science of the builders was transmitted from generation to generation in those days. The mediæval master-builder has passed away and has taken his secret with him; scarcely a document has remained, and nothing to inform us of his educational system. The builders before the Renaissance were a vast secret association, living and working apart from the rest of the world, migrating in companies when one cathedral was finished to the site of another which was beginning, guarding their secrets jealously, mystic and tenebrous as was the age wherein they lived, and with that age they melted away before the brilliant rays of the Reformation and the Renaissance.

Then came the age of the despots, the *literati*, and the precious; the pagan worship of the purely beautiful, which thrust aside the expression of construction as a thing inelegant and barbarous, and summoned the artist of pure form to build its temple. Æneas Sylvius and Filippo Strozzi thus called for the services of the sculptors Rossellino and Benedetto da Majano, and for nearly a century after only sculptors and painters occupy themselves with the design of monumental edifices. Then Palladio and Serlio codify the science of building design in such a way as to put its technique within reach even of the inartistic constructor; unfold, as it were by machinery, the secrets of the artist's magic of form and proportion, and create that phase of architectural education which, with little change, has come down to the present day.

Thus we may describe these phases from the time of the downfall of Rome—traditional through the Middle Ages; purely artistic through the Renaissance; and codified or systematised thereafter.

That this last phase still exists throughout Europe I believe, but in America a new one is being rapidly developed which we cannot but recognise; it is that of intensive specialisation. The elements which now enter into the profession of architecture are so vastly complex that it is virtually impossible for one man to master them all. Think of them for a moment. Is it only necessary that one be a man of general culture, a man of affairs and a gentleman, for the public to hasten automatically to one's office? If we would not have important work slip through our fingers we must be so eminently men of affairs that affairs must occupy the larger part of our time to the neglect of many other things, and those chiefly artistic. I think you will not cavil if some one insists that we must also be scientific, and you know how absorbing is the science of modern construction. Then what place in all this is left for art? Shall architectural design never be anything but Palladian colonnades? Shall decoration and ornament be ever at the mercy of some clay-puddler in a modeller's shop?

In short, what part is art playing in our profession? Is it merely one of those confounded things after another of which it is said the life of to-day is composed? Is it for ever to consist of different copies of the splendid motives which Letarouilly has put within our reach, or in touched-up reproductions of the rather mediocre designs of modern European publications? Do you suppose that this great land of ours which has produced eminent statesmen, writers, orators, and soldiers, cannot also bring forth its Albertis and its Sansovinos? And if they come along, what are we going to do with them?—give them their pay by the week, and, as Mr. Cram has said, "force them to sketch themselves into a grave of watery deliquescence"? What part shall the artist play? Shall it be a chief and honourable part, or shall it be that of the salaried, and therefore not independent, draughtsman? There can be but one answer to this: the place of the artist in the practice of architecture should be second to no other, and to this artist should be opened an education which will enable him to assume that place.

Our architectural schools up to the present have refused to accept this phase of intensive specialisation. Twenty years ago they differentiated themselves very little from the schools of civil engineering; to-day they will decline not to differentiate the scientific from the artistic in the profession itself, and though in the scientific branch the instruction is excellent, in the artistic it still leaves much to be desired, and students are not encouraged to choose one or the other on which to concentrate.

The realisation that we had unavoidably passed into this educational phase of intensive specialisation came to me only very recently. It had been my fond notion that all draughtsmen had the ambition to become all-round architects, and ten

years ago I had urged Columbia University to open a night-school with that end in view. Being unable to pass this measure through at that time, it was with great interest that I saw Columbia last year, at the instigation of our Commission on Education, establish extension courses, which, taken in conjunction with the problems in design of the Society of Beaux-Arts Architects, would give a complete course in architecture. Imagine my surprise, then, when I found that, though the extension courses were well filled, only two of this Society's students were enrolled in them. All these boys were studying to specialise, each one in some one branch of architectural practice.

And, after all, is not this quite right? Do we not need in our offices men highly trained in each of the widely differentiated branches—the sanitary and ventilating experts, each up-to-date with the ever-improving apparatus; the writer of specifications, keenly alive to every new vice for good and economical construction; the landscape gardener with a minute knowledge of plants and trees to protect the client from the florists' extravagances?

All this we are producing, but what is *horrible* is that we are rapidly producing, too, an artisan designer who in knowledge of plan and of composition excels the architect, his employer! Just stop a moment to realise what this means: the architect, that is, the man of culture, of affairs, and the gentleman, is ceasing to be the artistic inspiration of the work signed by his name, and soon the architect's office will be the mill, run by a business man, where art occupies a nameless and salaried position. The result of such a condition may have the quality of opportunism; but surely, where the artist is not in authority, his work can never rise to genius.

To my mind there can be but one escape from this condition, and that is, to give the man who bears the promise, and has the chance of being an architect, advantages of artistic training which the night-school man does not get. At present his training in this is vastly inferior.

We cannot manufacture geniuses, but we can give them opportunity to develop. We cannot develop the genius simply by the T square and triangle; his every æsthetic instinct must be aroused and given play. Rossellino and Benedetto did not produce the marvels in Pienza and Florence because they had technique in architectural drawing, but because they were *artists*, primarily sculptors, and who knows whether they were either gentlemen or men of affairs?

The technique of architectural drawing is all very well, the principles of planning and the composition of façade are essential; but what is of overwhelming importance is to offer to the genius who may arise the possibilities of developing himself by practice in the three allied arts. Our universities must admit plastic art in their curricula; they must realise that the artistic side of our profession can only be developed in an art school; or America to the end of time will unfeelingly, and without understanding, reproduce Palladian colonnades and eighteenth-century ornament *ad nauseam*.

CHENEY COURT, WINCHESTER

THE MONUMENTAL QUALITIES IN ARCHITECTURE

BY PROFESSOR C. H. REILLY, M.A.

ON all sides we seem agreed that the chief weakness of our modern architecture lies in its lack of the qualities we somewhat vaguely sum up in the word "monumental." We all are ready to admit that whatever success we have attained during the past fifty years lies in domestic and ecclesiastical architecture, and that we have very obviously failed in our public buildings. This admission, first made only by architects, has now passed on to the general public, so that we have *The Times*, in commenting on the recent foundation-stone laying by the King of the London County Hall, making this statement: "If anyone wishes to see the best of our modern architecture, he must look for it in private houses, in restaurants, in flats, in theatres, in offices—in fact, anywhere except in those public buildings where he would expect to find it." I am afraid the explanation which *The Times* then goes on to offer hardly strikes deep enough. The reason suggested for such a state of affairs is "that in England an almost complete estrangement exists between the mass of our best architects and most public and official bodies." While architects may feel that this remark in its individual application to themselves is near the truth, I fear the root of the matter lies much deeper. If anyone had at the present moment to choose an English architect for a first-class public building, could we feel sure that the result would compare, for instance, with the Dublin Customs House or the Four Courts? Personally I am quite sure it would not. Our whole conception of the knowledge necessary to the making of such a building as the Customs House has altered since Gandon's day. Putting aside the mechanical skill and inventiveness necessary for the construction of such a building, for the possession of which I think we can still take pride to ourselves (though whether we have it in a greater degree than Gandon, who is said to have invented for this building the first foundation raft, I am not so sure), what is it that Gandon had that none of us have to-day? We cannot say that it is an artistic ability to conceive a grand and simple building and that no one now is born with such ability. To say that is mere pessimism and leads nowhere. We have plenty of evidence of such ability, but it does not produce Dublin Customs Houses. The real answer lies, I think, in the difference in outlook and equipment of a Gandon and a modern architect. Gandon belonged to a united and homogeneous school of thought extending over the whole continent of Europe; the modern architect belongs to a small coterie of architects who believe in the same sort of brick jointing or the same kind of curly gable. The school to which Gandon belonged consisted of all those cultivated men and women, not merely architects, painters, and sculptors, but the great mass of educated people, who looked to Greece, and Greece as amplified by Rome, for inspiration, guidance, and the very meaning of their civilisation.

Gandon, therefore, one may safely assume, had no hesitation—no other thought entered his head—than that his building, while satisfying all the modern requirements of his day, should be in the best antique manner; that is to say, it was to conform to the modes of architectural expression founded by the Greeks and expanded by the Romans and their successors, the Italians of the sixteenth and seventeenth centuries. In this way, no doubt, his choice was circumscribed, but it was not a limitation he felt as a handicap. Classical architecture, as he understood it, was capable of satisfying all needs, material and spiritual; everything that was noble could be expressed by it. What in comparison had the immature styles—the half understood Classic of Elizabeth and James—to offer as an aid to the expression of fine feeling and abstract beauty? Gothic he probably put aside as sheer barbarism. With all this, however, we must remember that in Gandon's day—in the third quarter of the eighteenth century — Greek architecture was hardly known except through Roman work; its chief delicacies and refinements, its subtleties of form and expression, had not yet been discovered. If, therefore, we care to-day to take up classical architecture where Gandon left it, we have a vastly richer field to work in. But no amount of scholarship, no minute knowledge of Greek detail and adjustments, will help us if we have not the clear grasp he obviously had of those ideas of the monument which are at the base of all classical architecture.

The Four Essential Qualities.

If we consider what we mean by the word monumental as applied to a building, we see at once that we mean some quality in it which isolates it from its practical and immediate uses and gives it a peculiar appeal to our imagination. The quality of this appeal is, however, of a special kind. The building must make that single blow upon the mind Sir Joshua Reynolds proclaimed as a necessary condition to any work in the grand manner. The building must appeal to you as a whole—as a unity—not by any special colour,

texture of materials, conceit of detail, or even by association of ideas. The essence of a monument is that, however large, it is a single object—a complete unity from which nothing can be taken and to which nothing can be added. Unity of conception, therefore, we may take as the first necessary quality in any monumental work.

The second quality is, I think, mass. A minimum of mass is required for impressiveness. The Customs House reduced to the size of a model ceases to be impressive. There must be, too, the suggestion, not only of immovability, but of accumulated toil, of labour skilfully directed, but still of labour. For this reason you very rarely get the illusion of monumental effects on the stage. Everything seems to have been done too easily; a stage building has the appearance of having grown like a mushroom in the night.

The third quality is the quality of scale. A large scale is necessary for monumental effect. When a building, however large, is really an accumulation of small parts, like the exterior of Milan Cathedral, it can never give that effect of grandeur—that remoteness from fussy human occupations—which the great scale of a Doric temple at once suggests.

Lastly, there is that complement of scale, refinement. The mere enlargements of parts will not give satisfaction. We must have the delicacy which comes from restrained power, from forces held in check. Stonehenge has a big scale, but compared even with Pæstum it has the strength of a savage rather than the well-directed energy of a fully developed man. If these, then—unity, mass, scale, and refinement—are the distinguishing marks of monumental architecture, it may be well to examine how they were exhibited in the great formative phases of classical art—Egyptian, Greek, Roman, and Italian—and note what each contributed towards the solution of our own problem of giving these monumental qualities to a modern building.

If we take any of the Egyptian temples of the Middle Empire, we find the whole complex scheme laid out on a central axis. That axis is the unifying idea. You approach the temple along it, through an avenue of sphinxes. You pass between the enormous pylons forming the gateway to the first court, to see in front of you along the same axis a similar pair leading to the second court. The scale is everywhere enormous. You pass on again up a flight of steps to the hypostyle hall from sunshine to semi-gloom, but the axis is still strongly marked by the larger columns and the clerestory windows flanking it. Finally you

THE CUSTOMS HOUSE, DUBLIN. JAMES GANDON, ARCHITECT

Photo: "Architectural Review."

approach the sanctuary and the mysterious chambers of the priests surrounding it. All the while, however, you have travelled along the same straight line, from sunlight to gloom, and eventually to utter darkness. The unifying idea of the building is this long-drawn-out axis, just as the unifying idea of Egyptian religion is the slow, Nile-like flight of time to eternity. The building, therefore, is monumental in this aspect. It has unity, scale, and refinement of its kind from one particular point of view. Turn, however, in any other direction, and it has neither symmetry nor architectural meaning. Its external walls are of all heights, blank and expressionless.

To pass from Egypt of the Middle Empire to Greece of the fifth century is to pass from the dim light of a railway tunnel into sunshine. On the Acropolis at Athens buildings were displayed very much as statues; commemorative monuments to be viewed from all sides. Individual unity from every external point of view was aimed at and achieved. Hence the simple outlines of the buildings and their bold masses. The one stumbling block, the Erechtheum, has at last been removed. Professor Dörpfeld has proved beyond contradiction that this, too, was designed as a symmetrical structure, and, like the Propylæa, was only waiting for the buying out of certain rights to attain completion.

Until one has seen the ruins of the Parthenon, it is difficult to appreciate all that has been said about its perfection, but once it has been seen no praise is too extravagant, or rather all praise is impertinence. The very fragments scattered on the ground are not the crumbled stones of an ordinary ruin; they are pieces from some china vase, broken limbs from some antique statue. One can only explain this feeling that one has of a perfect whole that has been shattered at a blow by those difficult refinements in which the text-books delight. These subtle curves, which pervaded every line of the building, seem to have given the structure absolute vitality. Refinement in this case is more than the complement of strength—it is the revelation of it.

Here, then, we have all the qualities that go to making the complete monument. Perfect unity, mass, great scale, and absolute refinement. Within certain self-imposed limits, then, the problem has been solved. It should be remembered, however, that these limits were very narrow. As in their sculptures, so in their buildings the Greeks sought to perfect a few simple types. The temple form contains and expresses on the exterior what is after all but a single compartment with vestibules. In essence there could be no simpler building problem. Very rarely do we moderns get a chance of designing a single-roomed isolated structure. If we did more often, we, too, might make some progress towards perfection of form and proportion.

Roman Work and the Complexities of Modern Building.

It is not till we pass to Roman work that we find all the complexities of the modern building, and that on a scale which has not yet been equalled, unless it be by some American railway station. Apart from their absolute size, the plans of the central blocks of the various great Thermæ might be the plans for any great modern public building, such as law courts, in which a stately procession of halls is required. Indeed, all the finest plans in the world trace their origin to these Roman Thermæ. Internal unity, not on one axis only, as the Egyptians achieved it, but in both directions and over vastly more complex structures, is the Roman contribution to the problem of monumental building. This internal unity was in its way as remarkable an achievement as the Greeks' external unity, and if the same absolute perfection of adjustment was not attained, the governing ideas developed had in them more life for the use of future generations. Such absolute perfection as the Parthenon produces sterility; in that direction no further progress is possible. Such is the vitality, however, of Roman planning that the world has lived by it ever since, and probably will do so to the end. For not only did the Romans adjust the relations of one chamber to another within the building until a unity was brought about that embraced the most remote, but they adjusted the relations of one building to another within the town till that, too, attained an architectural unity of its own. No town planning yet accomplished in France or America is comparable to that of the Roman fora and their groups of connected buildings.

Where the Romans seem to have failed is in the façades of their complex structures, and, of course, in their detail. The internal unity of the great central building of the Baths was not expressed on the exterior. Looking at the plans of the Baths of Caracalla, it is impossible to conceive for them, as they exist, satisfactory elevations. It has been left to Messrs. McKim, Mead, and White in the new Pennsylvania railway station at New York, while maintaining certain main features of the plan, to execute its first satisfactory façades.

The Total Solution.

It is not, then, until we come to the Italian Renaissance that the total modern problem is solved; façades complete, plans complete, the whole building a unity both within and without. The

creation of the façade is the Italian contribution. In the work of San Michele and Peruzzi we have not only great scale, combined in Peruzzi's case with almost Greek refinement, but we have for the first time perfect unity of exterior and interior. Here, then, at last we have the problem of the modern monumental building completely solved. But that is not all that the Italians have done for us. To them we owe, in its perfected form, the most sublime feature in architecture—the dome raised on a drum. After that there was only left the great staircase for the Frenchmen to develop, and all the elements of the problem were in Gandon's hands.

We can now imagine something of the mental equipment with which Gandon sat down to his design. He was the pupil of the great scholar, artist, and gentleman, Sir William Chambers. He was familiar, therefore, with the plans of the Thermæ as given in the various editions of the Palladio. He possessed or had access to "Vitruvius Britannicus" and the other great seventeenth and eighteenth century folios. He had obviously, and I think a little unfortunately, seen Wren's domes at Greenwich. The point, however, which I would make is, that his books kept him in the great tradition. When surrounded by them no little tricks of design such as disfigure our modern buildings would occur to him. His attention would be concentrated on such fundamental matters as the simplicity of his main and subsidiary masses, the nobility and proportion of his order, the just character of his detail to emphasise but not to conflict with his main conception. How different the result would have been if his drawing-board had been surrounded, as I fear ours often are, with the plates from the modern building papers. It is this practice of living on the tricks of the fashionable draughtsman and competition expert, in semi-ignorance of the great achievements of the past, that has been the ruin of our modern English architecture. As a candid American architect has said, it has reduced many of our public buildings to the condition of scrambled eggs.

The Remedy.

What, then, is the remedy? The remedy is, I think, as simple to state as it is difficult to execute. I conceive it as nothing less than a return to Gandon's methods of education. The great strides American architecture has recently taken are due to such a return. Not only is the young American architect rigorously trained in his school in the elements of the great classical tradition, just as we may assume Gandon was in the office of Sir William Chambers, but when he reaches his modern American office he finds there a similar library to his school library, and is expected to make a similar use of it. So great is the American demand for fine books that all the big folios, like Durand, Letarouilly, and Canina, are being exported, and unless we have already got them in our libraries it will soon be impossible to obtain them.

But, it may fairly be argued, all this is very well for countries like America and Canada, which have still vast numbers of public buildings to erect. In England, and I suppose in Ireland, too, the practice of the average architect contains very little work of this kind. If his nearest approach to it is a free library or a bank in a country town, of what use is a training in what is somewhat unfortunately called the grand manner? The answer is two-fold. First, that a training in any manner is of value, and at the present time the majority of us do not even get that. No one style is known thoroughly, with the consequence that, judged from our work, very few of us seem to have any real sense of style. We find the greatest incongruities everywhere. Take the fashionable modern Georgian. It is the commonest thing to find fluted Greek columns used with the coarse plaster wreaths and ceiling enrichments of the time of Wren. Style has been well defined as crystallised character, and until the character of one style is perfectly understood no sense of style can be acquired. One style, however, may well be the key to several. If one knows the detail of the Empire period, by contrast one has an immediate knowledge of that of Louis Seize, and so on. Therefore, from the point of view of the mere gymnastic of training, it probably does not much matter what convention is chosen. If we cannot agree that all our schools should found their training on Greek work, let us have some Greek, some Gothic, some Byzantine, in their outlook. But let us at all costs have done with the false catholicism of taste which sees good in everything and arrives at nothing in the end. The eclecticism of the last twenty years in England has not led architecture forward. What progress has been made has been in France and America, where there exists a much more positive spirit. But, apart from the question of training, the second reason for a definite architectural faith is that we see from the past that no good work has ever been done without it. Except on the hypothesis of a consistent belief widely held, how else can we explain the fact that we see no really bad Georgian work, no really bad Early English, and no really bad Louis Seize? The character is everywhere maintained. The average man, when once a standard of taste is established, is only too anxious not to go outside it and betray himself. When there has been little cohesion among architects, the average man, on the other hand, is tempted to think himself a

genius and to turn things upside down for the mere fun of it.

If, therefore, the argument holds, we must be prepared to relate the cottage, the church, and the country house to the methods of Greece and Rome, as much as the bank and the town hall. This seems to me the peculiar problem of the moment for English architects. We must do for these classes of buildings what the Italians of the great period did, and the Americans to-day are doing, for larger structures. There is no reason why the ordinary dwelling-house should not have rooms of exact and simple proportions, simply related to one another, any more than the public building. If one has lived or had offices in an old Georgian house with simple rectangular rooms, nothing is more worrying than modern bay windows jutting out in all directions. Why, for our houses, should we go back to the immature Elizabethan styles? Why cannot they belong to our own times as much as our warehouses and offices? In no past period of architecture did we have one style for cottages and another for mansions. The charm of the former—their character—often lies in their implicit relation to larger buildings. If you take a town which is predominantly eighteenth-century, like St. Ives, Cornwall, you will find there the same square proportions, the same square sash windows and low-pitched roofs in all the houses, from the fishermen's cottages (of which the town mainly consists) to the squire's mansion. Even the smallest cottages have a definitely eighteenth-century character and yet remain cottages—ideal cottages, as the present population of painters seems to think. It may well be maintained that the architect trained in what is called the grand manner is more likely to build a really good cottage than the man who has only considered cottages. If he is an artist, or has any taste at all, he will not make the elementary mistake of building a pretentious cottage, but at the same time he will not build one affecting to belong to some other century—really a subtler form of pretentiousness. His cottage should have the same sort of relation to larger work that country clothes by a good tailor have to town clothes by the same man. We know that a trellis porch by suggestion may add an indefinable sense of style to the squarest, simplest cottage. There is no reason therefore why, in the pursuit of a more monumental and more worthy architecture for our public buildings, all classes of buildings should not profit. Good architecture is not a trick nor the result of a recipe; like any other art, it has its origin in emotion sincerely felt. All that training can do is to facilitate its expression.

FRENCH PARQUET FLOORS

BY ALBERT E. BULLOCK, A.R.I.B.A.

FRENCH parquet floors are chiefly of two kinds, namely, the veneer and the block. In the former case the thickness rarely exceeds a quarter of an inch, whereas the blocks vary from one and a quarter to two and a quarter inches.

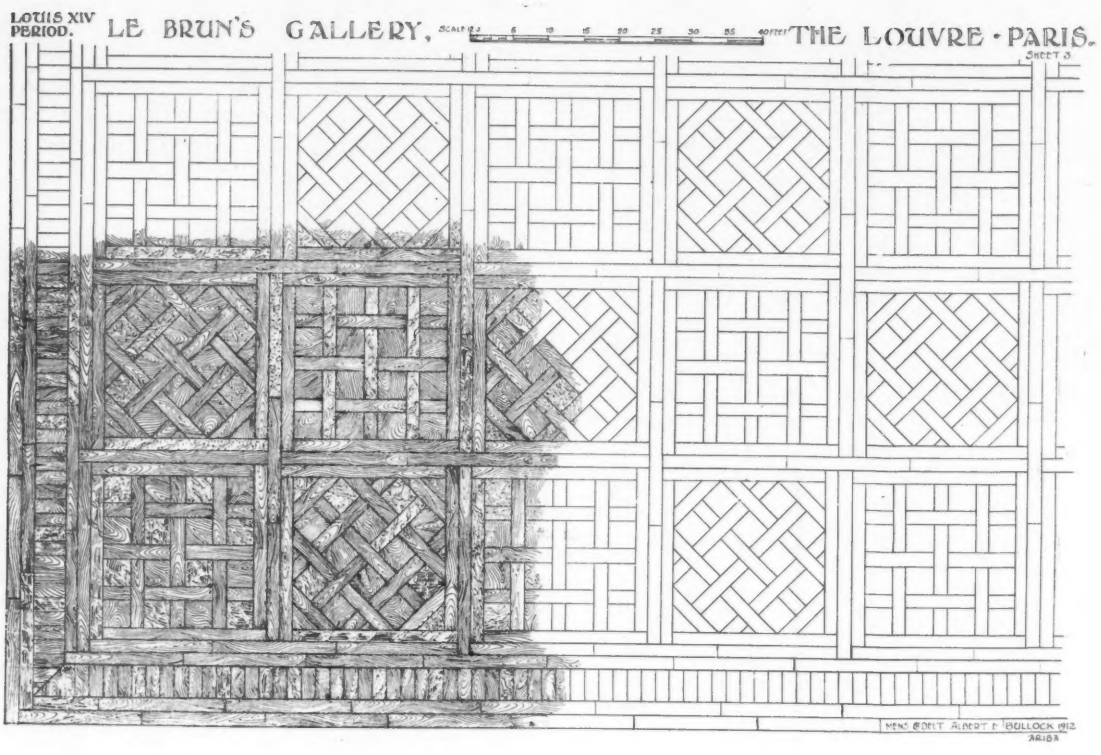
The early floors were in walnut, an example of which exists at South Kensington Museum, in the Henry IV room, from a farmhouse near Alençon. Some floors are battened on the underside previous to laying, taking in an entire repeat—this is known as *plate parquet*. The principal seventeenth-century workmen who practised this form of joinery in France were Jean Guelder Oppenord and Jacques Somer.

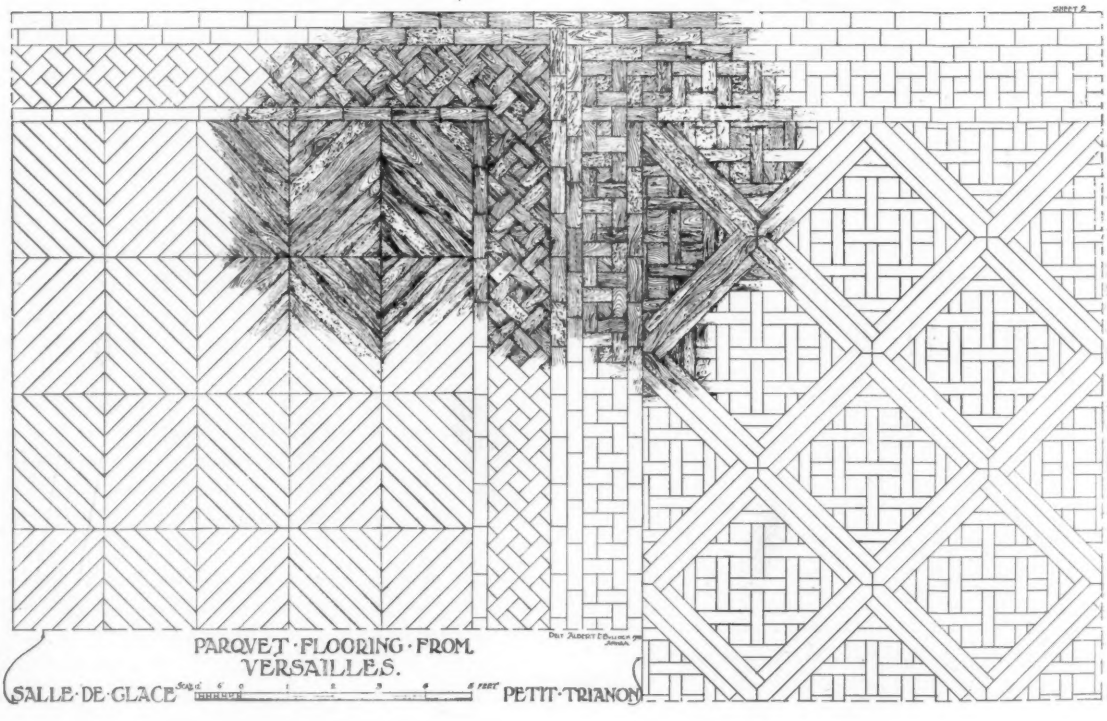
Marquetry is the name given to the inlay of furniture as practised by André Charles Boule (1642-1732) and his assistants, Denizot, Dubois, J. J. Caffieri, Orben, and Riesener. This was nearly always fixed upon a ground of parquetry laid on the reverse diagonal in order to prevent shrinkage. The marquetry was occasionally combined with various designs cut in metals, tortoiseshell, ivory, or mother-of-pearl, the metalwork being on the *niello** system. These designs were cut in pairs, and counter-changed in application. Boule was assisted by many workmen, and was furnished with designs by the younger Jean Berain and Daniel Marot, who was afterwards architect to our William III.

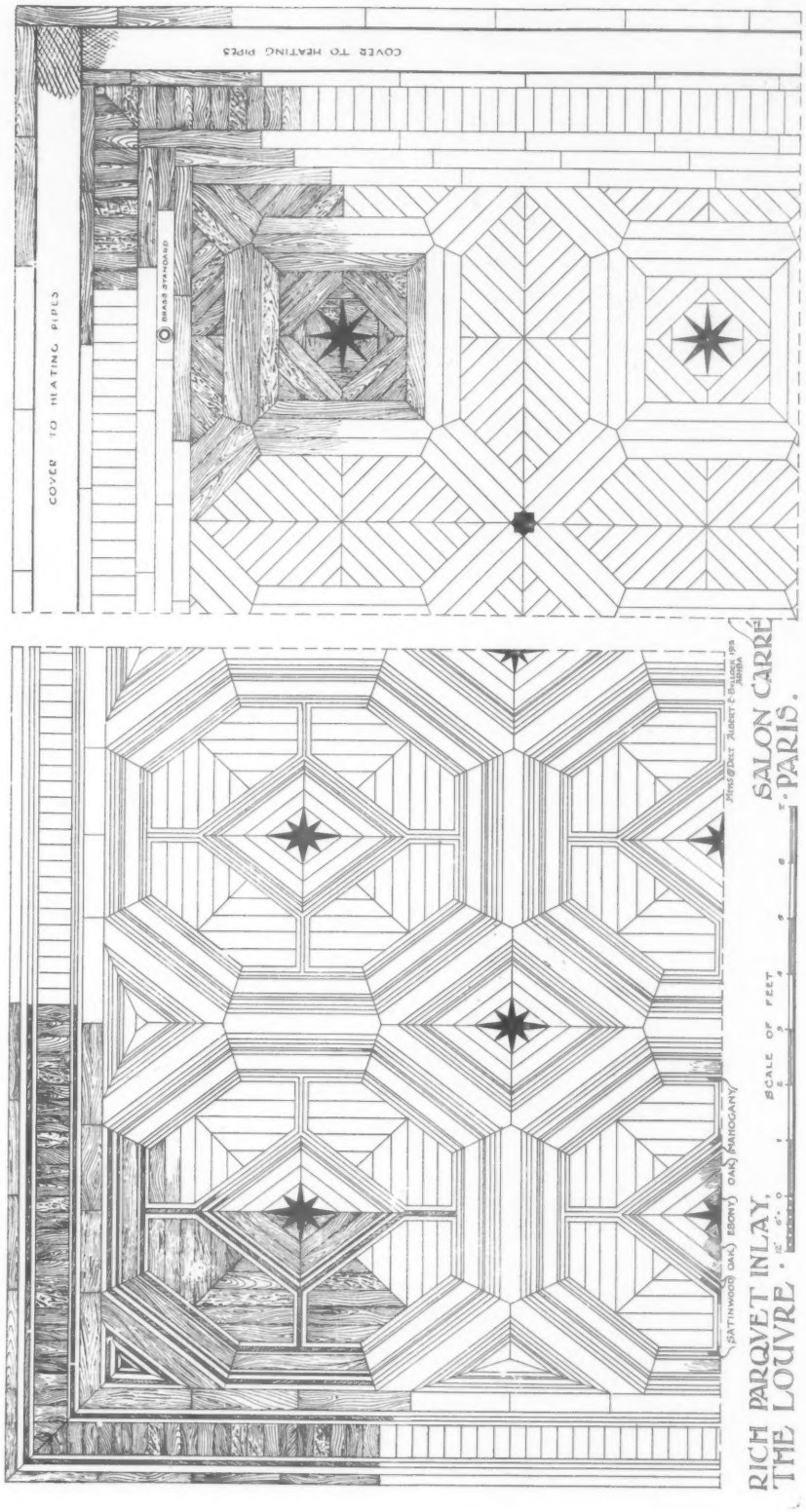
The state rooms at Chatsworth have panels over the mantelpiece treated in coloured woods in geometrical patterns, mostly of star-shaped patterns and triangles worked into octagonal frames. The work was superintended by Samuel Watson, who worked in the Grinling Gibbons manner. He had studied in London under C. Oakley. The names of his assistants are Joel Lobb, William Davis, Young, and Thomas. In the chapel is some fine cedar panelling in large squares, having an edging veneered in a narrow width flush with the panel face about two inches wide. The pieces are cross-cut, and about one and a half inches deep, the whole giving a very effective finish. The long vertical panels between have applied carvings in limewood, said to be the actual work of Gibbons. Samuel Watson worked at Chatsworth for more than twenty-two years.

In the floors here illustrated the woods used are mahogany, satinwood, ebony, and oak (some cross-grained). The floor to Le Brun's Gallery is

* A kind of black enamel.


LOUIS XIV PERIOD.
LE BRUN'S GALLERY.
THE LOUVRE · PARIS.
SHEET 3
MEMS. DELT. ALBERT E. BULLOCK 1912 ARIBA


SHEET 2
PARQVET · FLOORING · FROM VERSAILLES.
SALLE · DE · GLACE
PETIT · TRIANON


COVER TO HEATING PIPES
BRASS STANCHION
COVER TO HEATING PIPES
RICH PARQUET INLAY,
THE LOUVRE.
SATINWOOD OAK EBONY OAK MAHOGANY
SCALE OF FEET
SALON CARRÉ
PARIS.

in woodblock, and the pattern is used in several other galleries at the Louvre. The examples from Versailles * and the Petit Trianon have recently become familiar to Londoners, especially the latter, having been obviously the motif taken for the new floors at the Tate Gallery; there is, however, a difference in the size and the meeting at the angles of each square. But this pattern is exactly reproduced at Boughton House, near Kettering in Northamptonshire, in the portion of the house which was built after the fire that destroyed Robert Hooke's work in 1686, and before 1694, for Ralph, Lord Montagu, by French artisans. The house is known as "Little Versailles," and seems originally to have had many of the attributes of the sumptuous palace upon which it was based. Whether Pouget, the architect of Montagu House, London, and his assistants La Fausse, Rousseau, and Baptist had any hand in the work at Boughton has not transpired, but much of the work is undoubtedly French.

The chief decorator who assisted Gabriel at the Petit Trianon was Vernet's brother-in-law Honoré Guibert, the sculptor of the marble chimneypiece in the *salle à manger* of Marie Antoinette. He worked here from 1755.

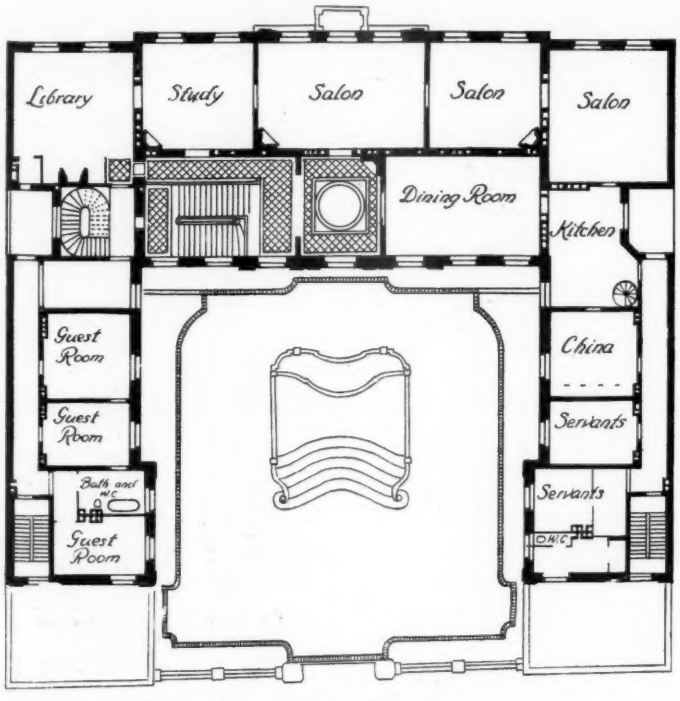
* The Salle de Glace was built in 1680 from designs by Sebastien Leclerc.

A COPENHAGEN TOWN HOUSE

MANY fine buildings have been erected within recent years in the modern quarter of Copenhagen, the new house for Baron von Plessen, designed by M. Gotfred Trede, being among the more notable examples. Situated in a very fashionable part of the city, this house, both in plan and architectural treatment, is somewhat reminiscent of the large houses of the baroque period.

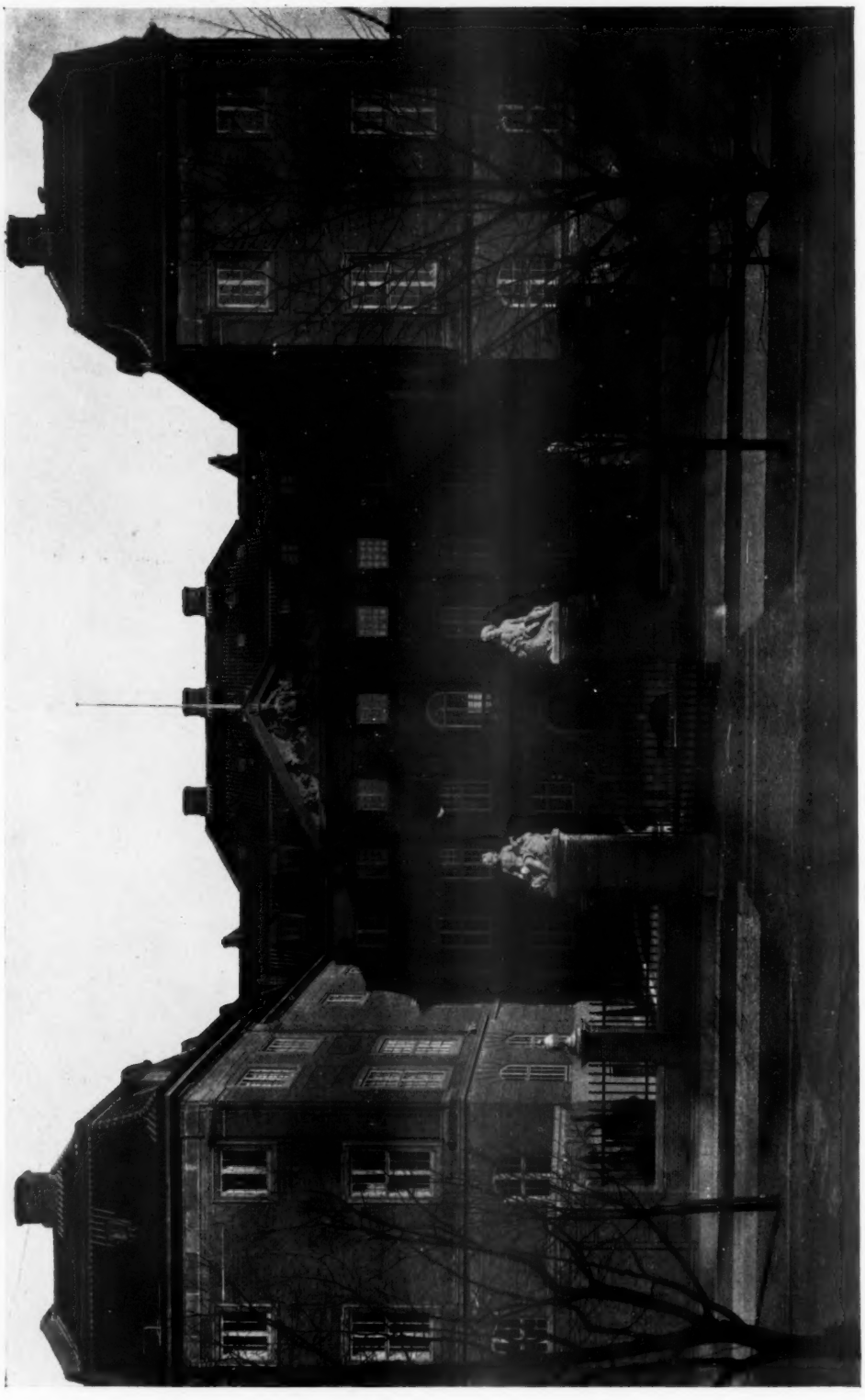
The plan is perfectly symmetrical, an open courtyard forming an effective feature of the design. This courtyard, which is shut off from the street by iron gates and railings, faces towards Christianiagade, the main front of the building overlooking Throndhjemsgade. The first and second floors are set apart exclusively for the use of Baron von Plessen; but the ground floor, which consists of two residential flats, is available for letting purposes. The grand staircase to the Baron's apartments is quite independent of the ground-floor accommodation.

The house is built of red bricks, the roof being covered with glazed tiles and copper. The exterior architectural decorations, and also the figures on the gate-piers to the courtyard, are modelled in cement, being the work of M. Lamberg-Petersen.



FIRST-FLOOR PLAN OF THE BARON VON PLESSEN'S TOWN HOUSE, COPENHAGEN

BARON VON PLESSEN'S TOWN HOUSE, COPENHAGEN: GARDEN FRONT
GOTFRED TREDE, ARCHITECT



BARON VON PLESSEN'S TOWN HOUSE, COPENHAGEN: ENTRANCE FRONT
GOTFRED TREDE, ARCHITECT

THE ORIGIN OF STRUCTURAL FORMS

BY L. MARCH PHILLIPPS

IN dealing with the derivation or origin of structural forms, the usual practice is to assign their invention to the race whose use of them appears to be most ancient. The custom is, of course, of great advantage to a country like Egypt, which can date its history back to a very remote antiquity. Most of the simpler features of construction were, so far as our knowledge of their use extends, first used in Egypt, and we readily assume, therefore, that they were first used there in the sense of being there originated. According to this method of reasoning, Egypt comes to be the "mother," or "cradle," or "nursery" of the arts, which, we assume, first grew out of its rich prolific mud. They were, with so much else, "the gift of the Nile." Hence, Professor Lethaby, after pointing out the necessity of "searching out origins," observes that it is in Egypt "we shall best find the origins of architecture as a whole"; and Professor Petrie asserts that we know more "of the origins of the arts in Egypt than in any other land"; and other authorities might be quoted to the same effect. It seems almost to be taken for granted, because Egyptian civilisation happens to be the oldest on record, that it must have been the originator or inventor of the forms used there. Thus, a bunch of papyrus stems of an Egyptian shaft becomes the original idea of the shaft in architecture, the lotus-bud the original idea of the capital, and so on. But it is very doubtful whether Egyptian architecture deserves all this honour. That it gave to the structural forms it used characteristics of its own, derived from Nile scenery and associations, is certain; but that is not to originate structural forms.

What do we mean by originating forms? Do we mean merely using things in accordance with their nature? Is the first savage who lays his tent-pole across two cleft sticks the inventor of the lintel and the column? If not, why not? He is using uprights to support horizontals, and that is an exercise in trabeated construction. A Doric peristyle contents itself with the same principle. Or is he who creeps under the lee of a bank to shelter from the weather, and afterwards makes other banks like it for the same purpose, the inventor of the wall? The truth is that there is a kind of use of material which is inherent in material itself, which requires no inventing whatever, if by invention we signify any intellectual, rational exertion of the human faculties. It is impossible to manipulate and use in any way the matter of which earth is formed without throwing off such "inventions" at every step. Birds and animals are just as inventive in this respect as man. Why should the Egyptian have the credit of inventing walls when the swallow that built its nest under the first carved cornice had acted on the principle for a million years? And why should the swallows have the credit of it when the beavers of the Potomac had at an early date, and quite independently of the swallows, practised the same usage in the construction of their lodges? A search like this will evidently take us some distance. It will not be a question how and when Man evolved structural forms, but how and when Man was evolved; for long before he became fully Man—are we to say ten, twenty, or two hundred millions of years ago?—he must have been in advance of beavers and swallows, and well versed in the simpler principles of construction which are contained in the nature of things. We cannot verify the conjecture, because the early history of our race is so obscure; but, in all probability, the originator of features like the column and the wall was the Missing Link!

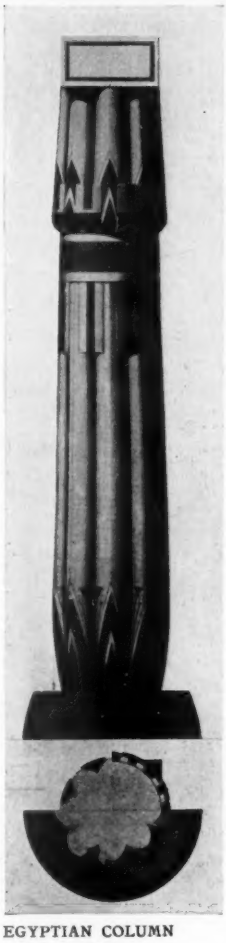
But there is another sense in which the origin of forms becomes an intelligible phrase, and that is when the dimensions and shape of such forms are consciously designed to suit the structural purpose they fulfil. For instance, the purpose of a column is to afford support. This support, however, can be offered in various rough and ready ways. Fragments of rock plunged point down-

STONEHENGE

wards into the peat of many an English moorland still uphold the altar-slabs of doubtful deities. If it is sufficient that a stone supports another for it to be called a column, then these fragments enter the competition for the origin of columns, a competition which, as has been pointed out, has no solution this side of the origin of Man. But if we shift the test and say that a column to be a column must be the shape of a column, then we escape the danger of being led into that hopeless quest, for it is obvious that these fragments under such a qualification cannot claim to be columns at all. They afford support, but they are not the shape of the support they afford. Their base, which should be the strongest part of them, is usually more or less attenuated for convenience in driving into the ground, and is, therefore, their weakest part; indeed, no attempt has been made to give them the form of the function they fulfil, nor is there the least inkling perceptible that this would be a desirable thing to do. They are the merest shapeless fragments, used for a certain purpose, certainly, but in no way expressing that purpose in their form.

It will be seen that the distinction here drawn, and on which the writer desires to lay stress, is concerned with the word "form." It is in the form of the thing that Man's relation to it is indicated. It is its form that matters. If you ask who invented columns, meaning who first supported one thing by another, the only rational answer is that Nature invented them. But if you ask who invented the form of the column, meaning who first conceived the idea of shaping the column appropriately, as the embodiment of its function, then you raise a question in which Man is interested. You are, in fact, considering the point at issue not relatively to Nature, but relatively to Man. For the function of the thing was Nature's contribution, and was there from the first; but the clothing of the function in perfect and appropriate form is Man's contribution, and belongs to his history.

Let us, therefore, use the latter formula, since it alone has any meaning, and let us ask who discovered the *form* of the column? Unfortunately, space being limited, I cannot, even so, treat the subject with the fullness it deserves. I must be content with a suggestion or two. Let the reader consider the accompanying illustration of an Egyptian column. It is of the form most common in that country, and prevails among the Nile temples for several thousands of years. Its shape speaks for itself. Its chief peculiarity, that which most inevitably catches the eye, is the contraction of the base. In speaking of prehistoric dolmens, I made reference above to the obvious fact that a pointed base breaks the first law of



EGYPTIAN COLUMN FROM THEBES

column formation. That the Egyptian architects persistently and systematically violated this law, without having the excuse of the dolmen-builders that the contraction was useful for driving into the ground, is an indication of what is made sure by a little further examination, namely, that the notion of form expressing function had never so much as occurred to them. For it seems quite impossible that a people who had, however vaguely and imperfectly, grasped the idea of the unity of the two, who had ever thought of the evolution of form under the guidance and control of function, and of the kind of beauty flowing from fitness which such forms would possess—it seems impossible that such a people could ever, by undermining the column's strength in the Egyptian manner, have so wantonly extinguished its hope of expressing its vigour and power. Referring to this very point in a recent book, I ventured to suggest, of the columns of Karnak, that their proportions, "in the dim obscurity of the place, suggest nothing more structural than a crop of extravagant fungi, in growth commensurate to the damp depths of Nile soil and the forcing capacity of an Egyptian sun, but not calculated in obedience to any architectural purpose." And I added that "to find the form of the columns in these masses of matter we should have to dig for it. Somewhere concealed within the imitation of the lotus lie the proportions which correspond with the column's function of support and which constitute its intellectual form, but they are not apparent."

As nearly as possible one likes, in conducting an inquiry of this sort, to base one's case on evidence so certain and obvious as not to admit of misapprehension or even of argument. In this I have so far been lucky, because whether the views here expressed are orthodox or unorthodox, the facts they are based on are at any rate incontrovertible. No amount of rhetoric lavished on the great columns of Karnak can alter their shape.

It is a fact, as solid as stone can make it, that the pinched-in bases of these columns renders a certain proportion of their bulk superfluous, since only so much of the column as rests on earth can really be acting as support. It is a fact, not an artistic but an engineering fact, that a good deal of the matter an Egyptian column is composed of is totally irrelevant to its function, and only serves to conceal it. It is a fact that an engineer, if we asked him to make the column like what it was doing, would at once start hacking off the masses of superfluous substance which conceal its real self. In short, it is a fact that the Egyptian column is not, and was never intended to be, a realisation of the column's true form at all.

Now, from this brief glance at the column as understood by the Egyptians, let us for a moment turn to examine the same feature as realised by the Greeks. The accompanying illustration explains so clearly of itself the Greek contribution to art in this matter, that all it is necessary to do is to specify its obvious characteristics. The reader is in possession already of the theory of the only genuine origin of structural forms, namely, that form must embody function. The function of a column is to support, and that function the Egyptian column entirely fails to embody. But can he imagine a more perfect embodiment of it than is offered by the Doric column? Is there, in this vigorous, clean-cut shaft of stone, an ounce of matter that is redundant, that is not devoted to the column's duty and purpose, that does not go to the embodiment of function? Here we have Man co-operating with Nature, Man carrying out and bringing to perfection an idea which Nature was charged with, yet could not deliver herself of. For weight and support are forces which operate in all natural undertakings. They hold the earth's crust together. They guide the growth of every plant and tree. The rocks of our cliffs and coasts in their rough jumble are obeying those laws. But Nature of herself cannot express these laws as intellectual ideas freed from all accident and irrelevancies. She cannot give form to her idea. It seems she must look to Man to do that for her. She looks to the Egyptian, and he responds by building an arrangement shaped exactly like a fat sausage and surmounted by a capital in the likeness of a monstrous bud, a capital which, far from adapting support to weight by judicious expansion, is more contracted at the summit than the base. I can imagine poor Nature's sigh of disappointment over her baffled expectations in that quarter. Then she looks to the Greek (I keep to these two only for force of contrast), and he responds by giving her the image of her thought. Himself intellectual, he is able to sympathise with thought, with an idea. It is not enough for him that his column can support. It must express that purpose. It must not only act like a column, it must be a column. This is what the Greek column achieves. It comes as a consummation. May we not imagine Nature heartily rejoicing over it, and her rocks and trees joining in acclamation of the spectacle? For such architecture is like the greatest of poetry, in that it seems to give outward form and expression to thoughts else inarticulate.

DORIC ORDER
FROM PÆSTUM

There is one word more in explanation of the Doric column I would wish to add. Readers of THE ARCHITECTURAL REVIEW do not need to have the meaning of the word *entasis* explained to them. They are aware of the nature of that subtle and invisible curvature the outline of which the Greeks studied with such extraordinary care. For the benefit of the uninitiated it will be sufficient to state here that *entasis* represents the slight swelling which is imparted to all Greek columns, the object of which apparently is to counteract and correct the skinny and shrunken appearance which shafts have when their sides are perfectly straight in outline. The curve of the *entasis* is so slight as to amount to no more than two-thirds of an inch in a height of thirty feet. It is, therefore, practically invisible: nevertheless its formation has been a matter of profound calculation. It is not a simple curve, but a parabola; that is to say, it begins some way down the column, and after gradually attaining its maximum at about a third of the column's height from the ground is again gradually reduced. It will be perceived that this is technically an infringement of the law of form, since this added bulk is not functional and does not do any active supporting. It is a very slight, an almost impalpable deviation from strict rectitude; but still, if we are to insist on the letter of our law, it is a deviation. Only, however, for as long as we insist on the letter at the expense of the spirit. The Greeks, in thus infringing the law, have really rendered to it a peculiar homage. What I have called the

skinniness of a straight-sided shaft is due to the optical illusion according to which parallel vertical lines converge or bend inwards in the middle. Such a shaft, presenting to the eye a shrunken or concave appearance, conveys to the mind an instant sense of weakness and insecurity. Really, as a matter of mere physical science, it is a perfectly efficient form of support, but it does not look it; and since it does not look it, it does not produce that effect upon our consciousness. We are none the richer for a solution of that kind. What does it profit us if the form of support is discovered or not so long as we are not made to see and feel and know that it is discovered? It was to this end the Greek artists devoted their ingenuity. The discovery of the column's form, as a matter of science, must have been a very simple matter for so intelligent a people as the Greeks. It was its re-discovery as a matter of art which took the time. In any book on architecture the reader chooses to pick up he will find the buoyancy, the elasticity, the vigour of the Doric shaft extolled, and he will find the fact universally admitted that this appearance of elastic vigour the shaft owes to its *entasis* or the invisible curve imparted to it. So that really it is its departure from strictly correct form which sets off its form to most advantage. I know of no more delicate concession than this from science to art. Something, just a shade, of scientific truth is deliberately sacrificed in order that the scientific truth may be made apparent and accessible to Man. The final form of support was not, after all, to be the form which actually gave most support, but the form which communicated the idea of support most eloquently. The two were almost identical, but not quite. The difference between science and art lay between them, a difference in which art had the last word.

Fluting, it need scarcely be pointed out, is another device directed to the same end; that is to say, its business is not with actual form, but with the appearance of form. It does not add vigour, but it adds the look of vigour. The vertical grooves and arrises carry the eye up the shaft, just as the vertical lines of Gothic carry the eye from pavement to roof, adding greatly to that appearance of intentional and consciously exerted strength in which the law of support finds in Doric hands its final and perfect expression.

It was my wish to say something here of the two main tendencies in art for which Egyptian and Greek art stand. For both are typical. Egyptian architecture, in its constant hankering after forms not dictated by function at all, is typical of Eastern art; while Greek architecture, sternly mindful of the law of its own being, is typical of Western art. That instant apprehension we have of something abnormal and eccentric in the forms of Oriental architecture, which declares their Orientalism even before we have identified their style, is due to the fact that the East never has seized the idea which is at the root of all rational architecture, that form should embody function. These, however, are considerations too extensive to be handled at present. Perhaps on a future occasion I may have further opportunity of dealing with them.

I would conclude by making clear one point. If structural forms have their true origin in the endeavour to reconcile form with function, it follows that every step, or every act, which removes redundant matter from any structural feature and discloses its real purpose is a step in the direction of the discovery of form. If the Greeks hit upon the most perfect form of column known to us it does not mean that many had not worked at the problem before them. The prehistoric builder who broke off an unnecessary corner or excrescence from his supporting boulder was on the right road. He was guided by the endeavour to reveal structural form. But not all builders have been guided by that motive. Some have been guided by quite other motives. It is by this that we are to judge them. Were they, however rough and rude in their work, endeavouring to realise form, or were they not on that quest at all? The Egyptian column is an imitation of a Nilotic vegetable. It does not attempt nor wish to discover the real form of the column. To Nature's inquiry, "Can you invest my theory of support with visible form?" the Egyptian answers, "I have not the least idea what you are talking about, but I intend to amuse myself for the next five thousand years by making columns in imitation of lotuses." How can such a feature be in any rational sense the origin of true form? It has no wish to be such. It sets itself to be something else. And if the Egyptian motive had prevailed we should be further from the desired end than ever. We should not to this day know what structural form meant.

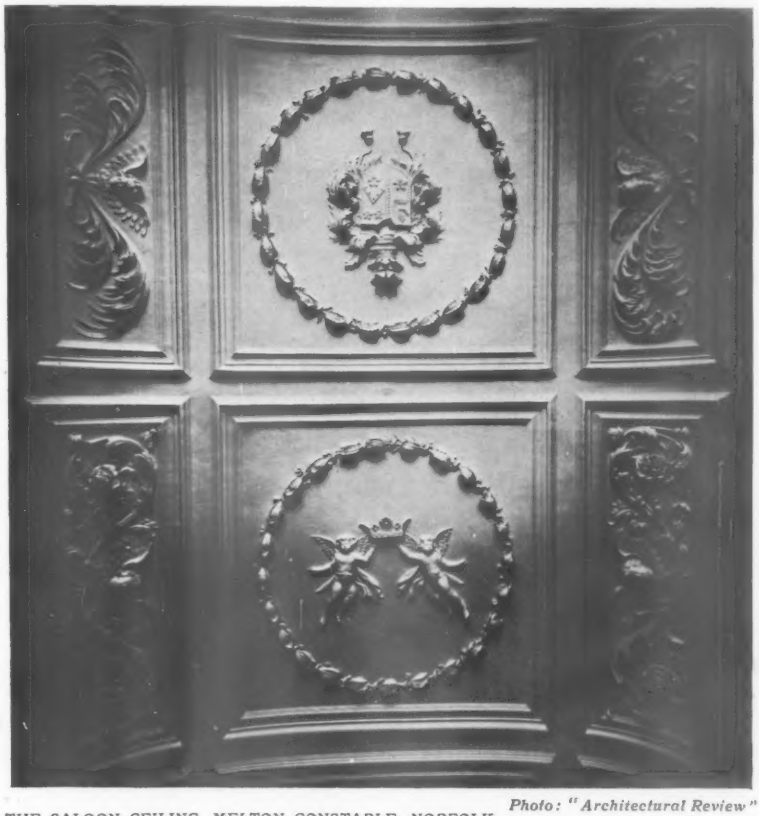
INTERIOR DECORATION, 1660-1715

BY M. JOURDAIN

(*Continued from p. 142, No. 190*)

DECORATIVE plaster-work, which had been a feature of English decoration from the time of Henry VIII, had like other forms of decoration undergone a complete change under Inigo Jones. It is curious, considering the extremely beautiful and scholarly ceilings of Inigo Jones, that plaster as a material was slighted by Evelyn, who compares the English ceilings of "poor plaster" with the carved wooden work of Audley End (begun in 1603 and finished in 1616), on his visit in 1660, seven years later notes his dissatisfaction with them, as they are "nothing so well wrought as My Lord Chancellor's house," in St. James's.*

Wren, as a young man, had been much influenced by French plasterwork during his short stay in France in 1665, and mentions by name Von Ostal and Arnoldini as the foremost French plasterers. Like the French Louis XIV ornament, there is almost too much of it, and there is in addition the tendency to realism and elaboration noticeable in the wood sculpture of the Gibbons school.



THE SALOON CEILING, MELTON CONSTABLE, NORFOLK *Photo: "Architectural Review"*

Italy, to the disadvantage of the former. In place of the flatter and more intricate ceilings of the Elizabethan tradition, Inigo Jones introduced a simplification and emphasis of the geometrical setting out, and substituted Classic ornament. His panels are of much larger size, and full value is given to empty spaces, while the ornament is concentrated—especially on the soffits of the main ribs, which are enriched with fruit and leafage, conventionally rendered in high relief, and Classic ornament. His new manner superseded the old, and Pepys, who had admired the ceilings at

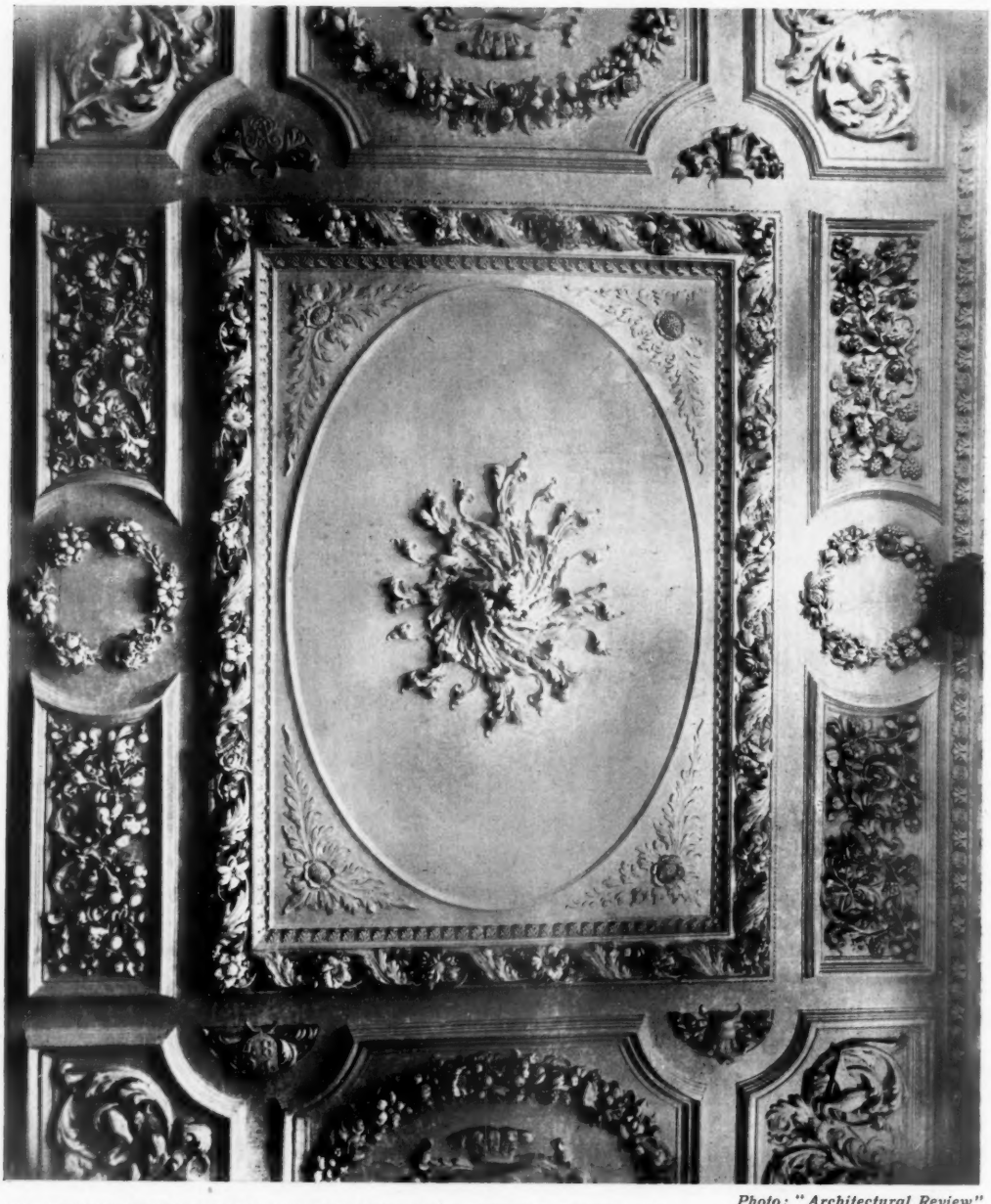
The division of the ceiling by ribs is not so emphatic as under Inigo Jones; indeed, the great ribs are often superseded by moulded frames of little projection. In spite of the richness of the ornament, plain surfaces were often left in the centre of the ceiling, which sometimes received a painted panel. The ornament is partly conventional and partly naturalistic in the treatment of foliage and flowers, which are used freely in crossed sprays, swags, and wreaths. In foliage,

* Clarendon House, built 1665.

the natural bay, the oak, the palm, and the acanthus are most freely used, while the close-set wreaths contain skilfully modelled presentments of every kind of fruit and flower. Motifs familiar in the woodwork of this period, such as cherubs' heads and birds, are used; as also the armorial bearings, badge, and initials of the owners or builders of the houses in which the plasterwork finds place. The rudely-modelled landscape panels in low relief on the fine ceiling in the New River Company's offices are extremely unusual.

In order to obtain the delicacy and openwork necessary in this naturalistic treatment of flowers and foliage it became the custom at this time to use lead piping or strips of sheet lead for the stalks and thin leaves. The fine quality of the plaster also permitted a high degree of finish and "thinness." Mr. Bankart has described this plaster as being composed of "carefully selected lime which had been slaked for many years, mixed with finely-sieved marble dust and various ingredients to regulate the setting as required." Of freedom of the ornament there is a good example in the ceiling of the saloon at Holme Lacy, where the swags of foliage and flowers hang free from the lowest member of the cornice.

The inventiveness and brilliant realism of these



THE DRAWING-ROOM CEILING, MELTON CONSTABLE, NORFOLK (DATED 1687)

Photo: "Architectural Review"

Detail of Drawing-room Ceiling

Detail of Saloon Ceiling

Detail of Drawing-room Ceiling

Detail of Drawing-room Ceiling

PLASTERWORK AT MELTON CONSTABLE, NORFOLK

English plasterworkers can be well studied in two Norfolk houses, Felbrigge and Melton Constable, which possess plasterwork dated the same year (1687) and from the same hands. The setting out of the red drawing-room at Melton Constable and the drawing-room at Felbrigge is exactly alike, and there is considerable likeness in the treatment of the panels. The ceiling at Melton Constable has an enriched cornice; the panels are of the plain moulded variety enclosing finely-modelled sprays of fruit and flowers, acanthus scrolls, and the arms of the builder, Sir Jacob Astley, surrounded by a close wreath.

The saloon ceiling, a wagon vault, is somewhat different in character. The central portion is occupied by three large square panels with plain mouldings enclosing a light wreath. The central panel contains two amorini supporting a crown; while heraldic achievements occupy those on either side. The smaller oblong panels that make out the width are ornamented with crossed sprays of palm or acanthus, with or without a cherub's head, of similar workmanship to the plasterwork at Belton. In the saloon at Holme Lacy the deep cove is ornamented with shields and crests of the Scudamores, framed in wreaths or crossed sprays of oak and bay. Above, all round the upper portion of the cove, hang swags remarkable for their freedom. Similar freely hanging swags appear on the ceiling of the north hall at Sudbury, a house which contains close parallels to the Holme Lacy plasterwork.

The plasterwork of this date is characterised by profusion, intricacy, and technical dexterity; and the very richness prevented a successful combination of decorative painting with the material, which was possible with the more severe plasterwork of Inigo Jones, as in the case of the Banqueting House in Whitehall. This profusion gave way before the sobriety of the early years of the eighteenth century; and the invasion of Italian stuccoists of the reign of George I brought in an entirely new and questionable element.

Interiors.

The particular type of interior decoration which arose at the Restoration and continued until the Palladian reaction is considered by many to be the most English as well as the most attractive of any period. Whether it is to be preferred to the Early Georgian is an open question; the latter has certainly greater refinement, but the former, with its employment of wainscot in its natural colour, and its peculiar suitability to small rooms, has always been sympathetic to English taste. That it is English in the sense of being eminently suited to English houses and English taste is true enough, but its Dutch derivation is evident from a study of the designs of Daniel Marot for the interiors of Dutch houses, such as de Voorst, Middachten, and Amerongen. A feature of such houses was the designing of rooms *en suite*—"The State apartments of divers rooms in file," such as Sir Dudley North provided in his London house—giving the "vistoes" in which their owners delighted. At Chatsworth the vista through the state rooms is closed at the end of the dining-room by what Celia Fiennes describes as "a large door all of looking-glass. This is just opposite to ye doores that runs into ye drawing roome and bed chamber and closet, so it shews ye roomes to look all double." The "great panells all diamond cut," to which she refers, have given place to one sheet of glass, so that the prolongation of the vista is even more deceptive. There was in great houses a pleasant variety in the size of the rooms. Small rooms were a feature of the late seventeenth century; and when opening out of a larger room were called, in the language of the old inventories, "closets."* These were sometimes decorated with greater richness than the larger rooms, with lacquer or looking-glass.

At Hampton Court Celia Fiennes notices in the Water Gallery, "At the four corners were little roomes like closets or drawing roomes, one panell'd all with japan, another with looking glass, and two with fine work under panels of glass."

In houses of this period we have the beautifully proportioned panelling, the broad window-seats, the deep doorways, the variety of design in the apparently plain chimney-pieces. It is possible that the personal taste of Queen Mary may have had something to do with the pleasantly informal appearance of rooms in this reign, which contrasted with the symmetry of the Louis XIV style, as Burnet tells us that she had "a richness of invention with a happiness of contrivance that had airs in it that were freer and nobler than what was more stiff, though it might be more regular."

People were keenly appreciative of the details of house planning and furnishing, from the Queen and the Duke of Marlborough to Samuel Pepys, who personally superintended the fixing of presses for his library, and records with pleasure the arrival of a new chimney-piece for his wife's closet. Lady Wentworth, describing a good house in St. James's Square, which she hoped her son might take, enumerated the features that were considered necessary for a well-furnished house in the late seventeenth and early eighteenth century—marble chimney-pieces and hearths in all the

* The State apartments at Ham House are five in number, and three of them are connected with smaller rooms.

THE HALL, STOKE EDITH

best rooms, "pretty closets with chimneys and glass over them, brass locks to all the doors, wenscot at bottom and top, and slips of board for the hangings."

The impression of sober richness was increased by the ornamentation of the architraves of the doors and overmantels, though the sash windows introduced from Holland in the middle of Charles II's reign were usually plain in treatment. Aubrey speaks of them as chasse windows, and first made by Dutchmen in England—probably the two excellent joiners of that nationality who were engaged by the Duke of Lauderdale in 1673 and made the "double chasse for the windows" of his palace of Ham. In certain very rich interiors, such as the State dining-room at Chatsworth, the windows are highly ornamented. In the reign of William III the sash window was well established.

The richness of these late seventeenth-century interiors can be pictured from the notices of Evelyn of the palaces built in his lifetime, and such surviving houses as Ham House, Dalkeith, Belton, Dyrham, Stoke Edith, and Boughton, which preserve intact much of the original furniture and decoration. Of the demolished Duke of Monmouth's house in Soho, J. T. Smith gives the following interesting description in "Nollekens and His Times":—

"There were eight rooms on the ground floor; the principal one was a dining-room towards the south, the carved and gilt panels of which had contained whole-length pictures. At the corners of the ornamented ceiling, which was of plaster, and over the chimney-piece, the Duke of Monmouth's arms were displayed. . . . The staircase was of oak, the steps very low, and the landing-places were tesselated with woods of light and dark colours, similar to those now remaining on the staircase of Lord Russell's house, late Lowe's Hotel, Covent Garden, and in several rooms of the British Museum.

"As we ascended I remember Mr. Nollekens noticing the busts of Seneca, Caracalla, Trajan, Adrian, and several others upon ornamented brackets.

"The principal room on the first floor, which had not been disturbed by the workmen, was lined with blue satin, superbly decorated with pheasants and other birds in gold. The chimney-piece was richly ornamented with fruit and foliage, similar to the carvings which surround the altar of St. James's Church, Piccadilly, so beautifully executed by Grinling Gibbons. In the centre over this chimney-piece, within a wreath of oak-leaves, there was a circular recess which evidently had been designed for the reception of a bust. The beads of the panels of the brown window-shutters, which were very lofty, were gilt; and the piers between the windows, from stains upon the silk, had probably been filled with looking-glasses."

The rooms decorated for Queen Mary in 1690 in the Water Gallery at Hampton Court were, in Defoe's words, "the pleasantest little thing within doors that could possibly be made, with all the neat curious things that suited her convenience." The decoration was superintended by Wren. In one room, the Looking Glass Closet, she engaged James Bogdane, whose excellence was in fruit, flowers, and especially birds,* to work for her, while the Marble Closet in the same suite was also finely painted.†

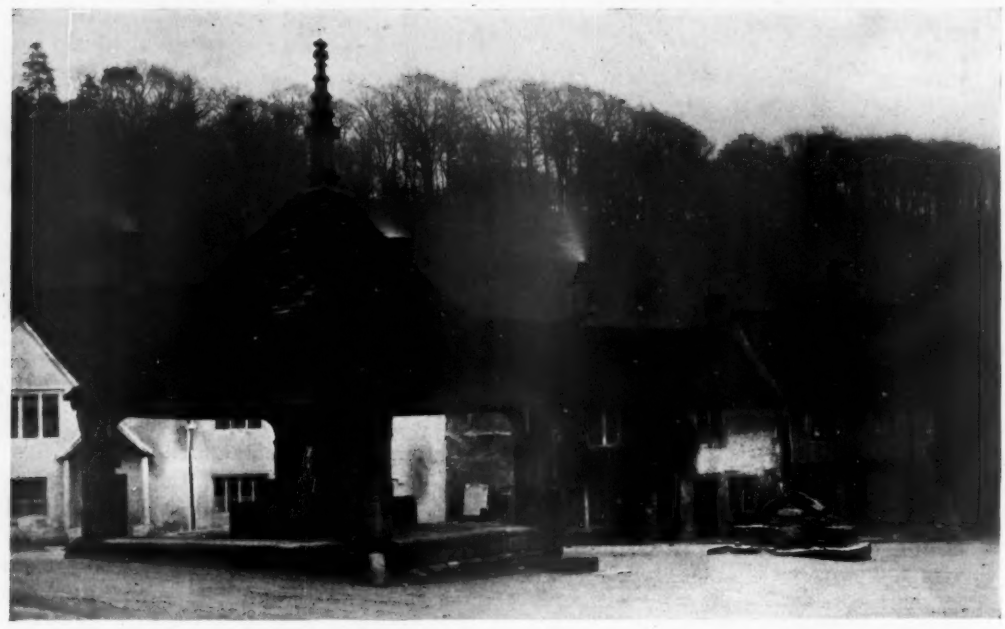
There is a marked change in the disposition of rooms from the Jacobean house. The long gallery and great chamber had gone out of fashion, their place having been taken by files of rooms opening out of each other without a corridor. These rooms were not differentiated, and received the same treatment of the wall by wainscot or hangings; though in the early eighteenth century a recess was arranged in the dining-room, furnished with a tap. Law's "Hampton Court" contains an entry, "For a marble Bason in ye Eating Room with pipes and brass cock £20."

At Buckingham House (built by Wynne), the parlour had "a niche 15 ft. broad for a buffette, paved with white marble, and placed within an arch with pilasters of divers colours."‡

(To be continued.)

* Walpole's "Anecdotes of Painting."
† Law's "Hampton Court," Vol. III, pp. 28, 29.
‡ "Works of Sheffield, Duke of Buckingham," Vol. II, p. 299.

THE PRACTICAL EXEMPLAR OF ARCHITECTURE—LXXIV



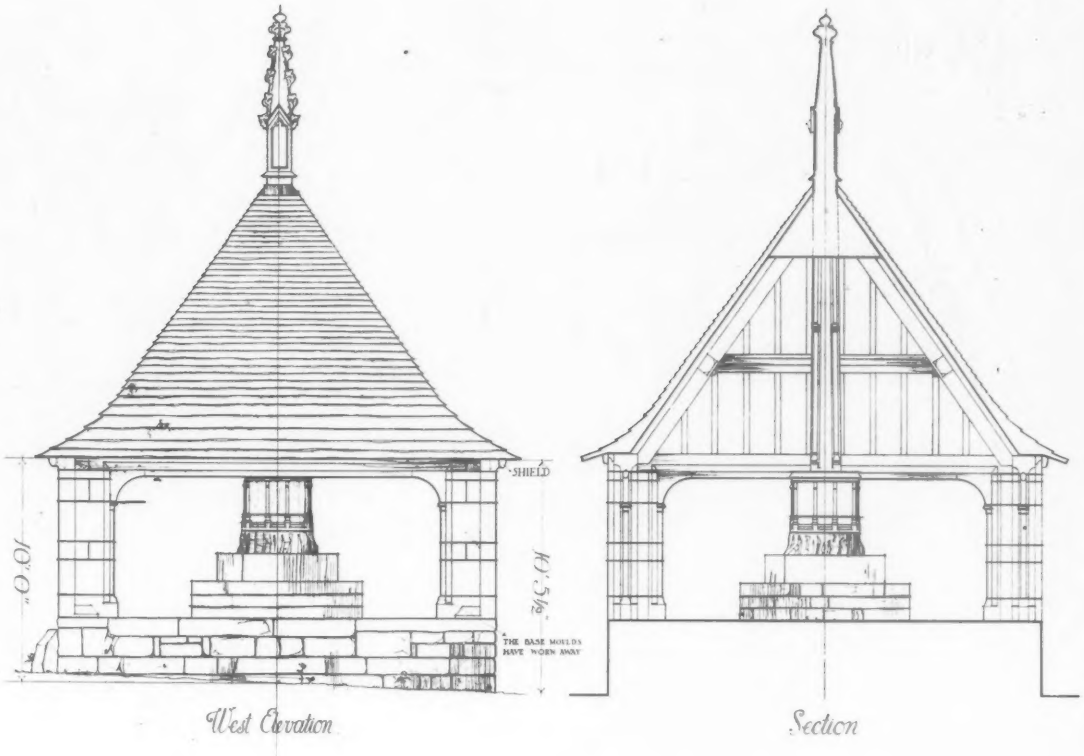
MARKET CROSS, CASTLE COMBE, WILTS

THE market cross at Castle Combe, in Wiltshire, is of very unusual type as it stands to-day, forming a delightful shelter in the midst of the old village street. Indeed the cross, if it can be called such, is a small matter, being now nothing more than the centre supporting pillar of the roof of the shelter. But Mr. John Britton, F.S.A., writing in 1814, describes it as if it were nothing but a cross. He writes: "The cross, which served as a collecting nucleus for the market people, is still standing in the midst of the village. It consists of a column or shaft elevated on two high steps and having quatrefoil ornaments round the base, with roses between." Now, this does not seem to suggest the square shelter as it stands to-day. Britton was a perspicacious critic as far as these things are concerned, and would scarcely have been capable of so inaccurate a description. Yet, on the other hand, the slate roof appears to be old; and the corner supporting piers seem almost too decrepit and worn to admit of so youthful an age as only one hundred years. And if it were done at the beginning of the nineteenth century it is a curious survival of the late Gothic tradition, for it is very beautifully designed and worked out.

The village of Castle Combe is situated about six miles to the north-west of Chippenham. The cross stands at the junction of three roads, so that it forms a centre to the little community. The design of the shelter is very pleasing, and would serve well for a *gazebo* or summer-house. It is this fact which makes so many old buildings interesting; that while they please the eye by their rightness, the mind glances off with new ideas for other perhaps quite dissimilar things. Mediæval architecture, indeed, is often full of ideas for the neo-Classic designer who brings with him the "seeing eye."

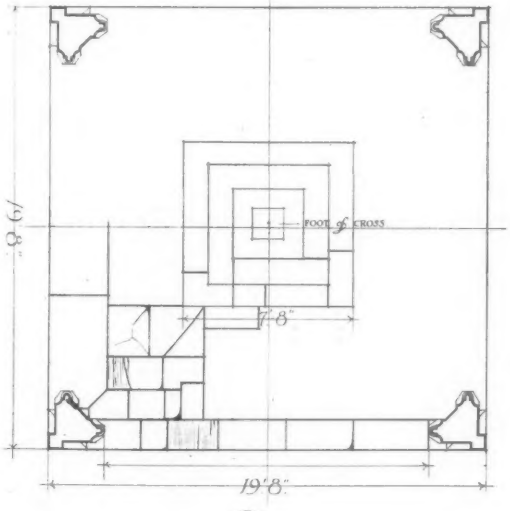
AN ORIGINAL STUCCO-DURO CEILING

THE plaster ceiling shown by the illustrations on p. 221 was discovered in a house in Lamb's Conduit Alley, London, W.C., which has now been demolished. The ceiling, which is about fifteen feet square, is a fine original example of stucco-duro work of the seventeenth century, the date to which it may be attributed, approximately 1685, having been ascertained from information supplied by the owners of the house from which it was removed. The fruit and flower wreath, the mouldings, and the foliage in the spandrels are all beautifully modelled by hand in stucco-duro, the work being well undercut and bold in relief. Acquired by Messrs. G. Jackson and Sons, Ltd., the ceiling has now been thoroughly cleaned from many coats of distemper, and strengthened and backed up for refixing in a suitable position. The somewhat patchy appearance of the larger illustration is due to the fact that the ceiling was photographed in sections, the several parts being afterwards mounted in symmetrically.



West Elevation

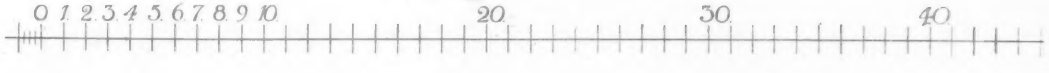
Section



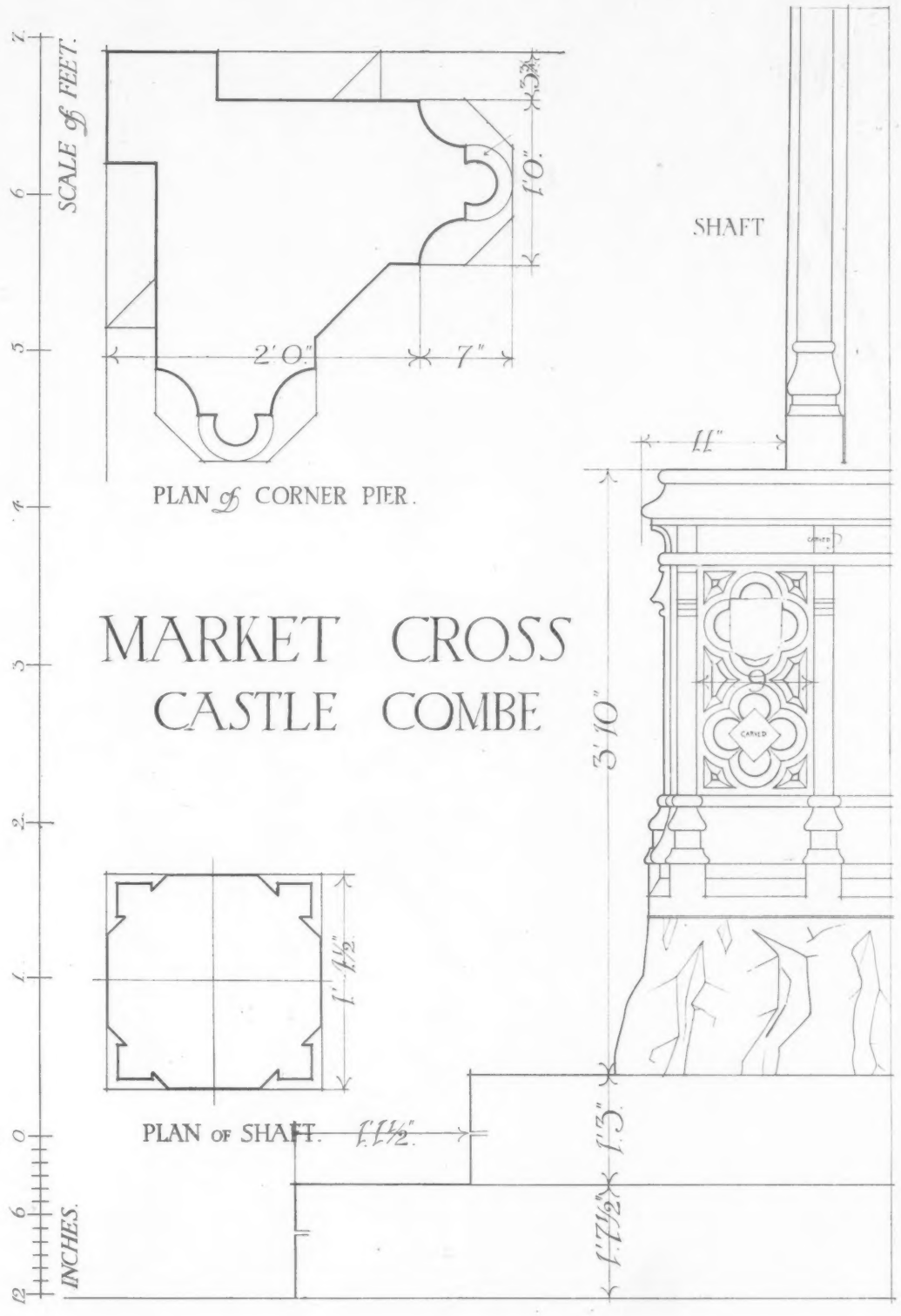
Plan

MARKET CROSS.
CASTLE COMBE.
WILTS

SCALE of FEET.



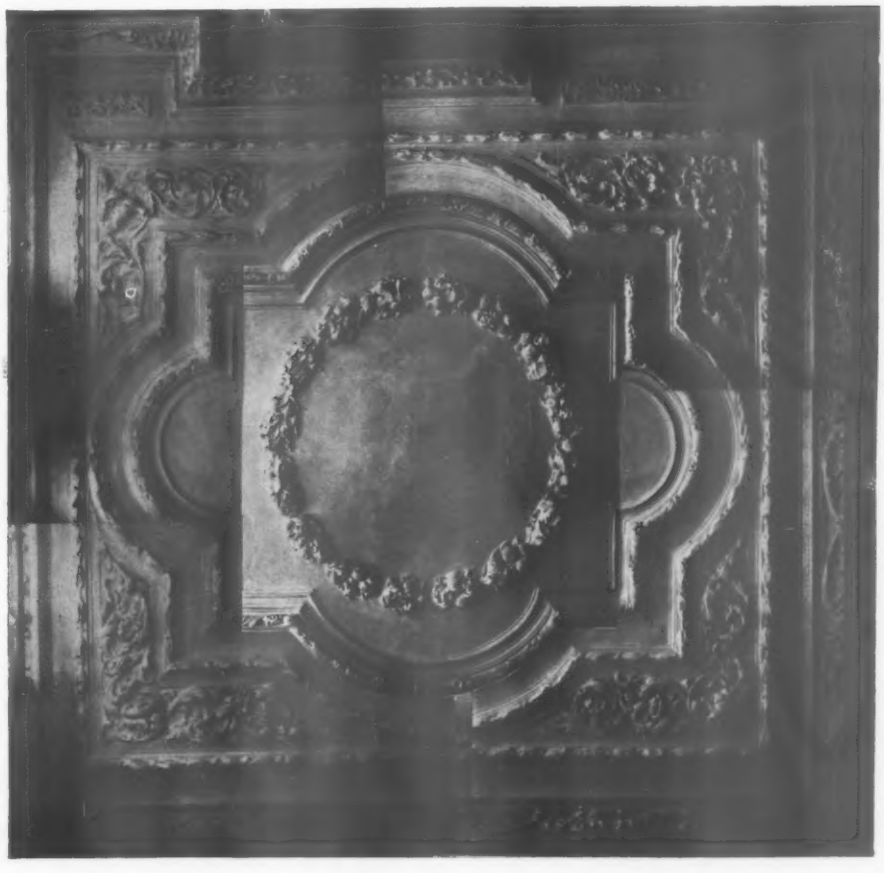
MEASURED AND DRAWN BY W. GODFREY ALLEN



MARKET CROSS
CASTLE COMBE

MEASURED AND DRAWN BY W. GODFREY ALLEN

PORTION OF CEILING AFTER THE REMOVAL OF DISTEMPER, BUT NOT REPAIRED



STUCCO-DURO CEILING FROM A HOUSE IN LAMB'S CONDUIT ALLEY, NOW DEMOLISHED

(*For description see page 216*)

TOWN-PLANNING NOTES

Proposed New Schemes

Local authorities continue to show considerable activity in preparing applications to the Local Government Board for permission to draw up town-planning schemes. During the month of September the Board's inspector has held inquiries at Stoke-on-Trent, Luton, Sutton Coldfield, and Twickenham, into schemes having a combined area of 13,106 acres, or over twenty square miles. The Luton scheme comprises an area of 4,345 acres, of which two-thirds are outside the borough. The town has doubled itself in a few years, and now has a population of 50,000. The area proposed to be town-planned makes provision for an anticipated population of 200,000. The Luton Rural District Council and the Bedfordshire County Council object to the Luton Council obtaining powers over the two-thirds of the area within the rural district, but they are not opposed to the preparation of a scheme. The Rural District Council suggested at the inquiry that a joint authority should be made responsible for the scheme. The whole of the houses in the villages of Leagrave, Limbury, and Stopsley are proposed to be included in the area, and among other proposals shown on Map No. 2 is the construction of a new arterial road which will provide more direct means of communication between Dunstable and Hitchin.

The Sutton Coldfield area is 6,400 acres, all of which is in the borough. Many new roads are proposed to be made to link up different parts of the district, and it is hoped to frame provisions for controlling the number and character of buildings to be erected.

The Twickenham scheme is likely to be of special interest to architects. It deals with an area which is well known to all Londoners as having features of an unusually attractive kind. Of the 2,278 acres comprised in the proposed scheme, 1,862 acres are in the Urban District of Twickenham, 130 acres are in Isleworth, 108 in Richmond, and 178 in Ham. Practically all the undeveloped land in Twickenham is included, and encircles about 600 acres of land which is entirely built upon. The Council complain that development in the past has been on unsatisfactory lines, and they want powers to limit the number of buildings to be erected on each acre, and to prescribe the height and character of buildings. The area includes considerable depths of land on both sides of the Thames between Richmond and Teddington, where Eel Pie Island is situated. This land forms the foreground of the view from Richmond Hill, and possesses great natural beauties. It is hoped to preserve the river and the adjacent lands in their present condition and to avoid the spoliation of the river banks which would result from the erection of factories.

* * *

An interesting inquiry is to be held during October into an application to the Local Government Board under Section 61 of the Town Planing Act. This section enables a representation to the Board to be made to the effect that a Local Authority is not taking steps to town-plan an area which ought to be town-planned. In this instance the Horley Parish Council has made a representation that the Reigate Rural District Council has refused to apply for authority to prepare a scheme in respect of an area in Horley which, in the opinion of the Parish Council, should be the subject of a scheme. This is the first application under this section of the Act, and in view of the attitude of the two authorities concerned is of especial interest.

* * *

First Schemes Prepared

The city of Birmingham, which succeeded in sending in the first two applications to the Local Government Board for authority to prepare schemes, has also been successful in submitting the two first completed schemes for the Board's approval. Both the Quinton-Harborne and the East Birmingham schemes have been approved by the Corporation and are now under the consideration of the Board.

Both schemes include important provisions for the construction of main arterial roads, some of which are proposed to be from 80 ft. to 100 ft. wide. The Quinton-Harborne scheme includes two main radial thoroughfares running longitudinally through the area and part of a ring road starting from King's Head Inn on Hagley Road and terminating at California on the south, where it is contemplated that provision will be made in a future scheme for its continuance round the southern fringe of the city.

The Corporation propose to construct these main arteries themselves and to charge the frontage owners from £2 10s. to £3 18s. per lineal yard of frontage if and when the land is developed for building purposes. The roads will first be constructed in accordance with primary sections which are annexed to the scheme. These show that the immediate intention is to make up the roads to satisfy existing needs, and thereafter to gradually widen the carriageways or lay down tramway tracks when the demand for the extended use of the roads makes this desirable. For the present the unused part of the roads will be laid down in grass, so that the 100 ft. roads will really be lines of park-ways intersecting the area while retaining the partial rural character. Even when

they are fully developed the roads will retain much of the greenery introduced in the primary arrangement. For instance, the intention appears to be to lay down the tramway tracks in greensward, as has been successfully done in Berlin.

Apart from the arterial road, the Corporation have not prepared any plan of development for owners' estates, and have left these to be laid out by the owners themselves. They have, however, taken power to exercise greater control over estate planning than was possible under by-laws, and to permit a different and more varied form of construction for owners' roads than has hitherto been allowable.

The secondary streets to be constructed by owners will vary from 20 ft. to 50 ft. in width, the wider roads including space for grass and trees. The 20 ft. streets will only be permissible where they do not exceed 100 ft. in length. They will have 8 ft. of carriageway and two footpaths 6 ft. wide. The wider roads may be any length, and need only have 18 ft. of carriageway as against the previous minimum of 24 ft.

Building lines are fixed by the sections and maps. On the main roads to be constructed by the Corporation they vary from 15 to 30 ft. from the boundary line. Thus on the 100 ft. roads the full width between the buildings will be from 130 to 150 ft. On the proposed secondary streets the minimum width between the buildings will be 72 ft.

No power is taken in the scheme to exercise control over the character or height of buildings. Probably it is expected that the proposed limitation in the number of houses which may be erected to the acre will have the effect of improving the character of buildings, by reason of the necessity of attaching a larger area of land to each. But the effect of omitting power of control over "character" in some schemes, and of including that power in other schemes, should be watched by those who are interested in the architectural aspects of town planning.

The regulations of the Local Government Board provide for the inspection and criticism of schemes by representatives of architectural and other societies, and we understand that the Town Planning Committee of the Royal Institute is arranging for each scheme to be examined. That examination should of course take place prior to the Inquiry, so that any architectural question can be raised before the Inspector. We observe, however, that in this case no architectural question was raised, although the scheme introduces several new principles which should have been carefully considered from the architectural point of view.

For instance, some suggestions might have been made as to the treatment of the wide arterial roads. Undoubtedly these will have a fine park-like effect in the form in which they are proposed to be laid out, but the question remains as to whether any provisions could have been inserted in the scheme to control the character and grouping of the buildings to be erected on their frontages.

There was no opposition to the scheme as a whole, and very little opposition to details. Mr. J. S. Nettlefold, ex-Chairman of the Corporation Town Planning Committee, proposed an important modification in the position and width of one of the main arterial roads, and was supported by Colonel Crompton, C.B., and other witnesses. He suggested that instead of the north bend roads, 65 and 45 ft. wide, numbered 17 and 18 on the map, and connecting with Hagley Road over a valley which necessitated a 20 ft. embankment, a south bend road 100 ft. wide should be constructed to the railway embankment, ultimately leading under the railway to St. George's Church, Edgbaston, from which Calthorpe Road would provide a direct connection to Five-Ways, a central point in the city.

The scheme includes provisions to restrict the number of houses to be erected to the acre to an average of 12 and a maximum on any particular acre of 20. The definition of a house is a dwelling occupied by one family, so that the chances of any tenements being erected in the area are very remote. These restrictions establish a new and untried principle in connection with the development of land, and it will be interesting to see how they work out in practice. They seem to have been included in the Town-Planning Act with a view to securing the amenity of the area, but it is difficult to understand how far this term is meant to apply to merely æsthetic effect, and how far it is meant to include questions of health, such as provision of air-space. With the cheaper form of construction of roads permitted by the scheme, the proposed limitation should not cause loss to the owners, and there can be no question that from several points of view it will secure better health conditions for the area than would be possible under what has come to be termed "by-law" development.

The estimated cost of the scheme seems high, but it is not really so considering the great width and length of the main arteries to be constructed by the Corporation. The total cost is over £109,000, after allowing for owners' contributions, and only about a tenth part of this is proposed to be expended in the immediate future. Birmingham's policy in this matter is no doubt due to the heavy expenditure it has had to incur in the past for widening existing roads. It is hoped to avoid this expense in future on all undeveloped areas by

making the main arteries wide enough for all requirements before development begins, and before vested interests have become established. Looked at in this light the estimates are not high, but they must not be taken as a criterion of what a scheme for 2,300 acres will cost. It would be just as easy for Birmingham to carry out its scheme for a total cost of less than the tenth it proposes to spend immediately, but its Corporation have convinced themselves that the expenditure of the other nine-tenths will be a good investment for posterity. The total expenditure may not be incurred for twenty or thirty years to come, and its effect may not be felt for fully half a century. But it is from making provision for the future that the benefits of town-planning are to be derived.

The East Birmingham scheme has not yet been submitted to inquiry. It also includes important proposals for constructing main arteries, and in many respects compares with the Quinton scheme. The Ruislip scheme should be completed at an early date. When a few more schemes are prepared it will be possible to make some interesting comparisons, and to learn some lessons from the mistakes of those who have been bold enough to be pioneers.

SOME LUGANO CAMPANILES

BY M. F. A. TENCH, F.R.A.I.

THERE are very many campaniles to be seen in Lugano and its vicinity; indeed, in the country around they seem out of all proportion to the number of the inhabitants, for no village, however tiny, is without its place of worship, notwithstanding that the neighbouring hamlet, with its own church and lofty tower, may lie but a short distance away. But though no doubt the cost of the upkeep of so many religious buildings falls heavily on the inhabitants, the visitor, at least, has no reason to complain, since these high and slender towers, besides being interesting in themselves, do much to enhance the charm of scenery in itself most beautiful. The church architecture in this neighbourhood is purely Italian, though Ticino is now a Swiss canton; but before the change of rulers took place, some hundreds of years ago, the towers which we see to-day were already in existence.

No other country of equal importance in the world of art has remained so strictly conservative in its church architecture as rural Italy. In other lands Romanesque has merged into Norman, Norman into Gothic, Gothic into Renaissance, or some of the other many styles adapted to sacred buildings; and even in Italian towns something of the same kind has occurred. But churches and towers as seen in the country are almost identical with those built in the earlier days of Christianity; to quote Fergusson, "no improvement and scarcely any change having taken place between the first and the last, as if the form were the old and established one when we find it first adopted."

These towers are often spoken of as Romanesque, but, as Fergusson states, "they are as unclassical in form and detail as anything that can well be conceived; nor, consequently, can the very name Romanesque be considered appropriate." The illustration given in Laborde's "Monuments de la France" of the Roman tomb at St. Remi shows, however, a somewhat similar form. Tyrrell Green, notwithstanding this similarity, is of opinion that since its tower-like form is attained by the piling up of disconnected stages it should not be regarded as the prototype of Christian church towers.

All campaniles, with the exception of the Ravenna group and the famous Leaning Tower at Pisa, are square in shape, of great height in comparison to their width, looking all the taller from the fact that—as in Saxon architecture—they are unsupported by buttresses, and are carried upward without break or offset. In olden days the roofs were flat, or of low pyramidal form, and covered with tiles, the spire or cupola which now adorns so many of them being an idea borrowed from other lands, and giving an impression of modernity which, as a rule, is by no means correct, since these additions are frequently many years, sometimes many centuries, later than the towers which they surmount. Perhaps the greatest proof of antiquity is in the position of the apertures. In the older examples the lower portion of the tower shows one round-headed window with a single light in each face, increasing as the storeys ascend until sometimes, as in the Duomo at Siena, as many as six lights may be found in the topmost one; but this is rare, only occurring in towers of unusual height. These lights, being merely separated one from the other by slender columns, render the highest storey in many instances simply an open loggia.

All the campaniles here illustrated have this form of lighting or some modification of it, with the exception of that at Tesserete, which shows another difference from the usual style, in that it is an integral part of the church, instead of being only an adjunct or even entirely separated from it, as are the round towers of Scotland and Ireland. To this rule Fergusson gives Novara as the only exception amongst Italian campaniles; but that at Tesserete—if it be regarded as Italian, as it

Photo: M. F. A. Tench

MORCOTE, LUGANO

undoubtedly is, though in a Swiss canton—is here shown to be another; and this fact, as well as the position of the windows, goes far to prove that its date is later than that of the church to which it belongs. The church itself is remarkable for its choir, which is much higher than the nave, a form not unknown elsewhere, even in England (for instance at Stone, near Dartford, in Kent); but probably no other church has this peculiarity in so marked a degree as that of Tesserete. The interior contains a very old and quaint fresco of the baptism of Christ.

None of the campaniles illustrated adhere more closely to the canons of church-tower architecture than does that of the picturesque church of Sureggio (see page 228), on the direct road from Lugano to Tesserete. It stands at a short distance from a very small picturesque village, lying amid charming scenery, and with a distant view of the lovely lake of Lugano. The height of the tower, which is a mere adjunct of the church, is quite out of proportion to the size of so remarkably small a building; its roof is of tiles, stained and weather-worn by the passing of the centuries, whilst its windows conform to the almost universal rule.

The same may be said of the old tile-roofed tower of Lugaggio, lying about midway between Sureggio and Tesserete; only that in this instance the height is not so great, possibly because it stands on elevated ground, and for that reason is more conspicuous; whereas Sureggio, being in a valley, requires a lofty tower. The tower at Gandria, which it is impossible to photograph successfully at close quarters, is another good example of this the oldest style of campanile. That at Castagnola, which is a conspicuous object from the lake, also has a tiled roof, but in this case it is gabled.

The towers of Morcote and the cathedral of Lugano both show cupolas, evidently additions of later years.

The campaniles illustrated are but a few amongst the examples to be seen on all sides in this lovely neighbourhood. Some still bear the old-time roof of weather-stained tiles; to others the more modern cupola or spire has been added; but all are interesting as survivals of a class of architecture only to be found in Italy, or what was once Italian land.

For the general method of lighting campaniles,

TESSERETE, NEAR LUGANO

Photo: M. F. A. Tench

antiquarians have assigned two reasons, of which one is that the sound of the bells, which were always hung in the topmost storey, could thus more easily reach the ears of the congregation. Fergusson, however, tells us that though towers were built as early as the reign of Justinian (A.D. 527–564), bells were unknown until about two hundred years later. This takes us no further back than the eighth century, and would render the above theory absurd and untenable. But then, on the other hand, the Venerable Bede mentions that such a call to prayer was in use in England in 680; nor does he allude to it as a late innovation. Italy being the country into which bells were first introduced, they were probably known there at a still earlier date. The second theory is that campaniles, like Peel and Round Towers, were places

THE CAMPANILE, LUGANO CATHEDRAL

Photos: M. F. A. Tench

GANDRIA: CAMPANILE IN MIDDLE DISTANCE

THE CAMPANILE AT SUREGGIO

Photo: M. F. A. Tench

of refuge in time of danger, and their being apart from the main structure gives colour to the supposition; while the apertures of the lower storey, being small both in size and number, would on that account render the tower less accessible to an attacking foe. This view receives additional confirmation from the fact of the lower part of the campanile being solid, only attaining a hollow form when it has increased considerably in height.

LONDON STREET ARCHITECTURE

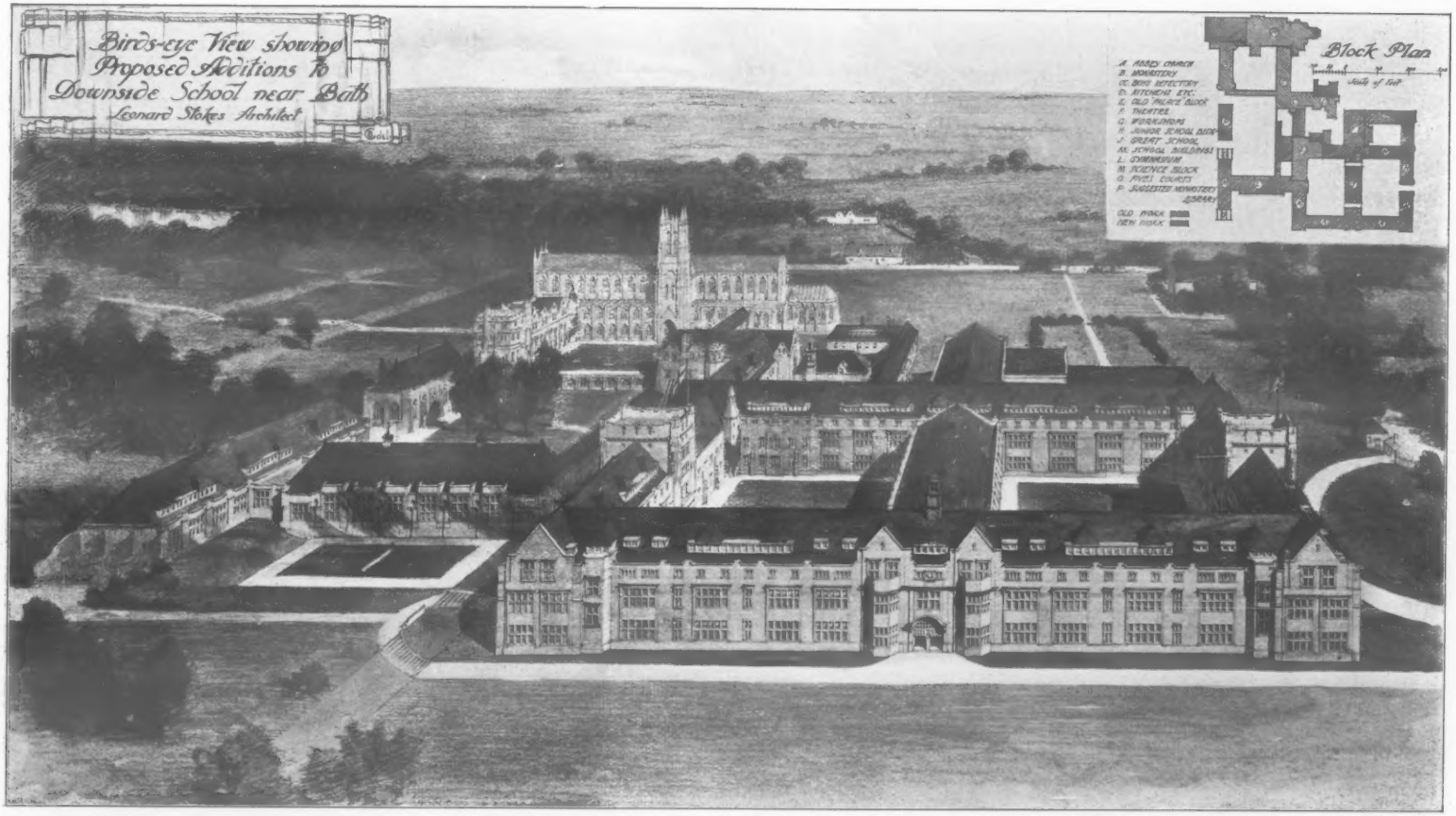
EVERYONE is aware, says the *Architects' and Builders' Journal*, in a recent article on the above subject, of the feeling of disappointment, even dismay, which the drive from Charing Cross or Victoria inevitably calls up on the return from a visit to any Continental capital. Can these mean and narrow streets, this provincial atmosphere of fussy activity and advertisement, envisage the heart of a boasted empire? Have we not instead by some inexplicable mistake reached Liverpool, Birmingham, or Glasgow? At any rate, after these towns London wears a very familiar look. Oxford Street, Bond Street, and even the historic Strand, only require their motor omnibuses to give place to trolley-cars in order to make the resemblance complete. St. James's Street, in spite of its few remaining clubs, requires but one or two more terra-cotta buildings, and its transformation into Corporation Street, Birmingham, or Lord Street, Liverpool, is finished. Newgate Street, Cheapside, and indeed most of the rebuilt portions of the City, with the exception of its small banking area, if only we could see it as it really is and apart from the glamour of its ancient names, might be in Manchester or Birmingham. At the other end of the town new residential streets of expensive houses, like Pont Street or Hans Crescent, but for their huddled appearance might have been transplanted entire from Bournemouth or Folkestone.

Even the Bloomsbury squares, which still receive the visitor from the north with the resigned but dignified mien of some old family butler, are showing signs of change. Here and there a tile roof or a red-brick building obtrudes itself like a country cousin walking the town in knickerbockers, but we do not meet the new provincial note in all its cinematic brilliance till Russell Square and Southampton Row are reached. Here the new hotels vie with one another in the facetiousness of their façades, and a sort of Neo-Nuremberg Gothic competes with the latest adaptation of German rococo Renaissance. All thought of London, the metropolitan city, has disappeared.

CURRENT ARCHITECTURE

DOWNSIDE SCHOOL, NEAR BATH.

THE rebuilding and extension of the school in connection with Downside Abbey, near Bath—a Catholic foundation of the last century—are embodied in a scheme which, when carried out, will make the new school one of the best in the country. As yet only a portion of the scheme has been carried out, and from the photographs here given it will be seen to be an excellent piece of work, on which the architect, Mr. Leonard Stokes, is to be congratulated. To understand the entire project it is necessary to


Birds-eye View showing
Proposed Additions to
Downside School near Bath
Leonard Stokes Architect
Block Plan
A. ABBEY CHURCH
B. MONASTERY
C. BOYS REFECTORY
D. KITCHENS ETC.
E. OLD PALACE BLOCK
F. THEATRE
G. WORKSHOPS
H. JUNIOR SCHOOL BLOCK
J. GREAT SCHOOL
K. SCHOOL BUILDINGS
L. GYMNASIUM
M. SCIENCE BLOCK
O. FIVES COURTS
P. SUGGESTED MONASTERY
OLD WORK
NEW WORK

turn to the perspective view and block plan on the preceding page. In the background of this view is seen the abbey church, a nineteenth-century Gothic building, wherein the dull work of Mr. Hanson is juxtaposed with the brilliant achievement of Mr. Garner; while further variety is added by Mr. Walters and Mr. Comper, the last-named having recently completed a triptych in the Lady Chapel which is a perfect feast of colour.

From the block plan in one corner of the perspective view it will be noticed that south of the abbey church come the monastery and the boys' refectory, with kitchens adjoining; to which irregular block the school buildings are connected. The old block is marked E, all the rest being the new scheme. This will be seen to consist of a rectangular block divided by the school hall, with a smaller rectangle on one side embracing the theatre, workshops, and junior school. Jutting from the main block is the gymnasium; and beyond this the science block, with a suggested monastery library building adjacent.

The portion of the scheme at present carried out includes two sides of one of the main quadrangles, these portions being marked KK on the block plan; they are quite complete in themselves. The buildings are of three storeys, the ground floor being devoted to purposes of recreation, the first floor to teaching, and the top floor to sleeping. The corridors are of a most generous width (12 ft.), and everything throughout the building is arranged to give abundance of light and fresh air. The ventilation of the classrooms is quite perfect, and one can imagine under what excellent conditions the boys work.

In the recreation halls on the ground floor each boy has a good-sized locker, numbered, and this number carries him throughout the whole building—his desk, bed, school-book locker in the first-floor corridor, washing-place, and other accommodation being all similarly numbered. On the top floor one is astounded at the size of the dormitories, which are about 60 ft. by 35 ft., and have only twenty-four beds in each. The floors are laid with wood blocks, the walls are finished with Keene's cement, and at the side of each bed is arranged a very neat chest of drawers with mirror, the latter forming quite an architectural feature in the room. Adjoining the dormitories are clothes rooms, slipper-bath rooms, and spray-bath rooms accommodating eight boys at a time (so that the whole twenty-four boys in each dormitory can be dealt with in three batches). The bathrooms and the lavatories have glazed brick walls and asphalt floors covered with wood gratings. In the lavatories a wire screen divides the room into two parts, and around this screen are arranged some lines of hot-water piping for drying the towels. When towels, however, are put over round pipes there is a tendency for them to drop off. To overcome this defect a strip of iron about an inch wide is fixed upright on the iron piping, and this simple device effectually grips the towels and prevents them falling on the floor. Details of this kind are noticeable throughout the school, showing what careful thought has been given to the whole scheme.

The woodwork used for panelling, &c., is of African walnut, which gives a very comfortable effect to the rooms.

The contractors were Messrs. J. Long & Sons, Ltd., of Bath. Stone was supplied by Mr. Herbert Jones from the Combe Down Quarries, the carving having been executed by Mr. A. Broadbent, of London. Casements and lead glazing were executed by Messrs. R. E. Pearse & Co., and wood-block flooring by the Acme Flooring and Paving Co. Messrs. William Sugg & Co., Ltd., of Westminster, supplied special low-pressure inverted incandescent gas lights of a type now extensively adopted in schools, where a soft diffused light without glare is required. The plasterwork was executed by Messrs. G. Jackson & Sons, Ltd., of London; door furniture by Messrs. N. F. Ramsay & Co.; sanitary fittings by Messrs. John Bolding & Sons; and heating and ventilation by Messrs. Haden & Sons, of Trowbridge.

Photo: "Architectural Review"

DOWNSIDE SCHOOL: LAVATORY, SECOND FLOOR

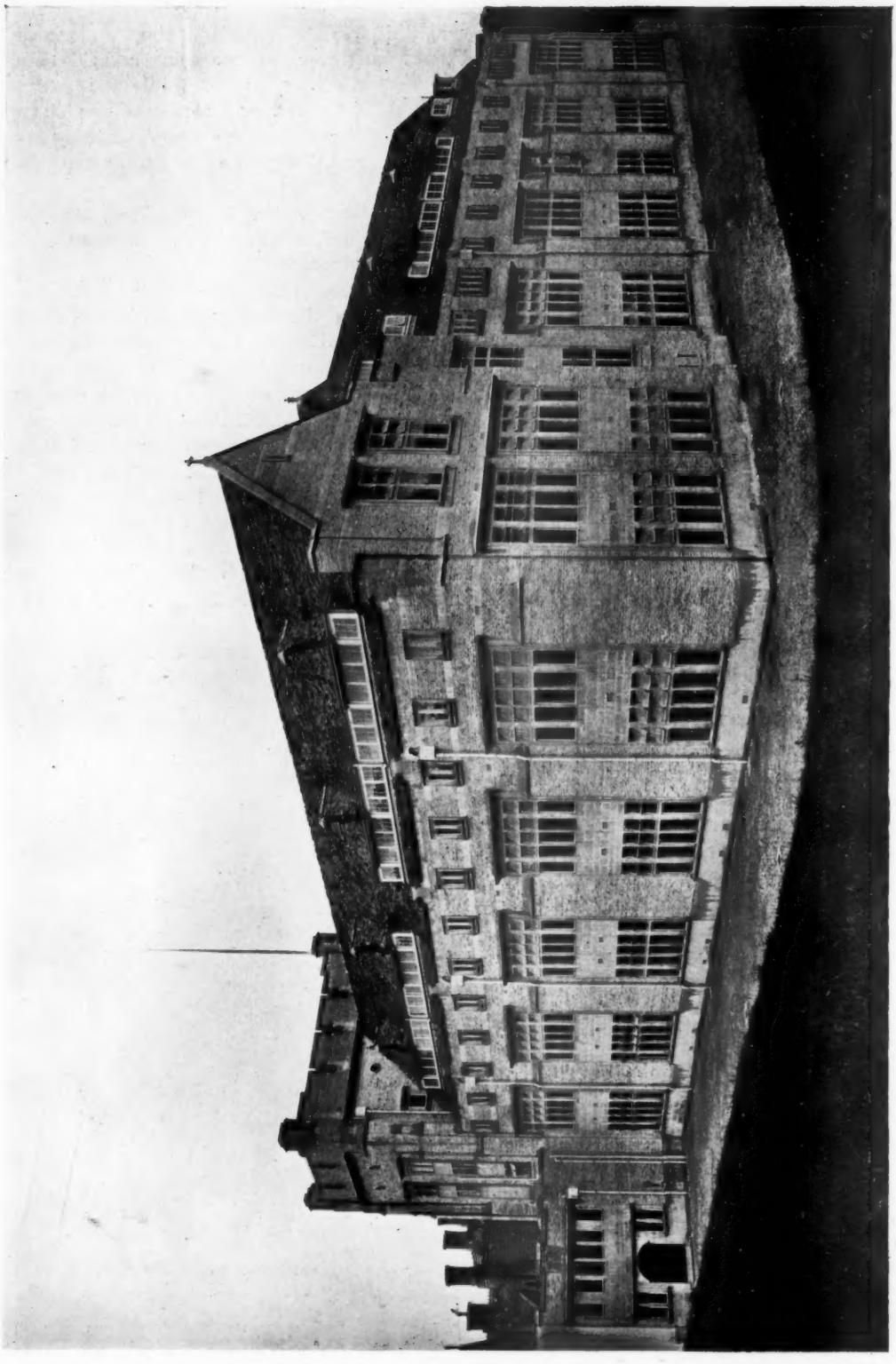


Photo: "Architectural Review"

DOWNSIDE SCHOOL, NEAR BATH: GENERAL VIEW OF FIRST COMPLETED PORTION OF NEW BUILDINGS
LEONARD STOKES, F.R.I.B.A., ARCHITECT

Photo: "Architectural Review"

DOWNSIDE SCHOOL, NEAR BATH: VIEW OF NEW BUILDING FROM QUADRANGLE
LEONARD STOKES, F.R.I.B.A., ARCHITECT

Classroom, First Floor

Photos: "Architectural Review"

Corridor and Staircase, Ground Floor

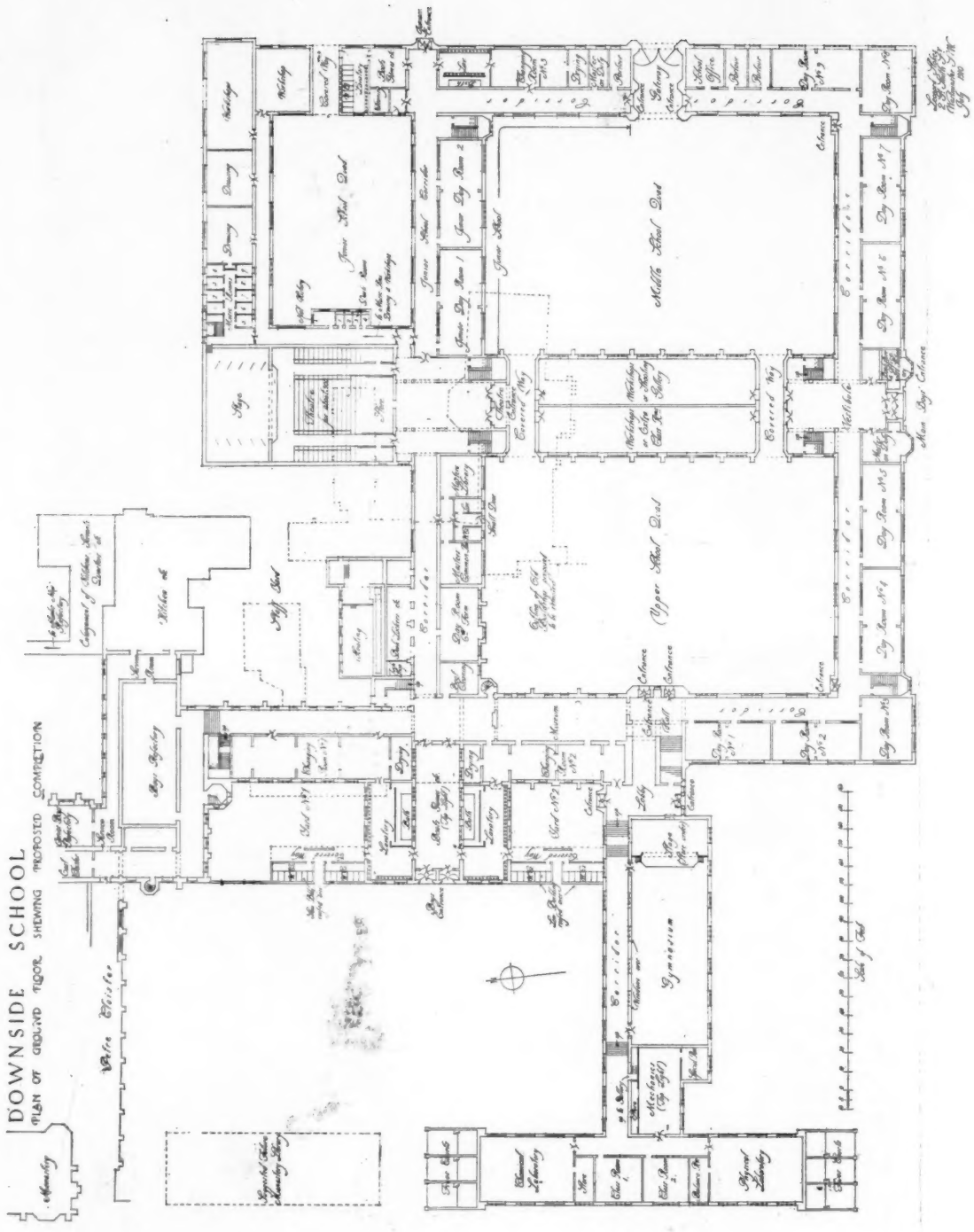
DOWNSIDE SCHOOL, NEAR BATH
LEONARD STOKES, F.R.I.B.A., ARCHITECT

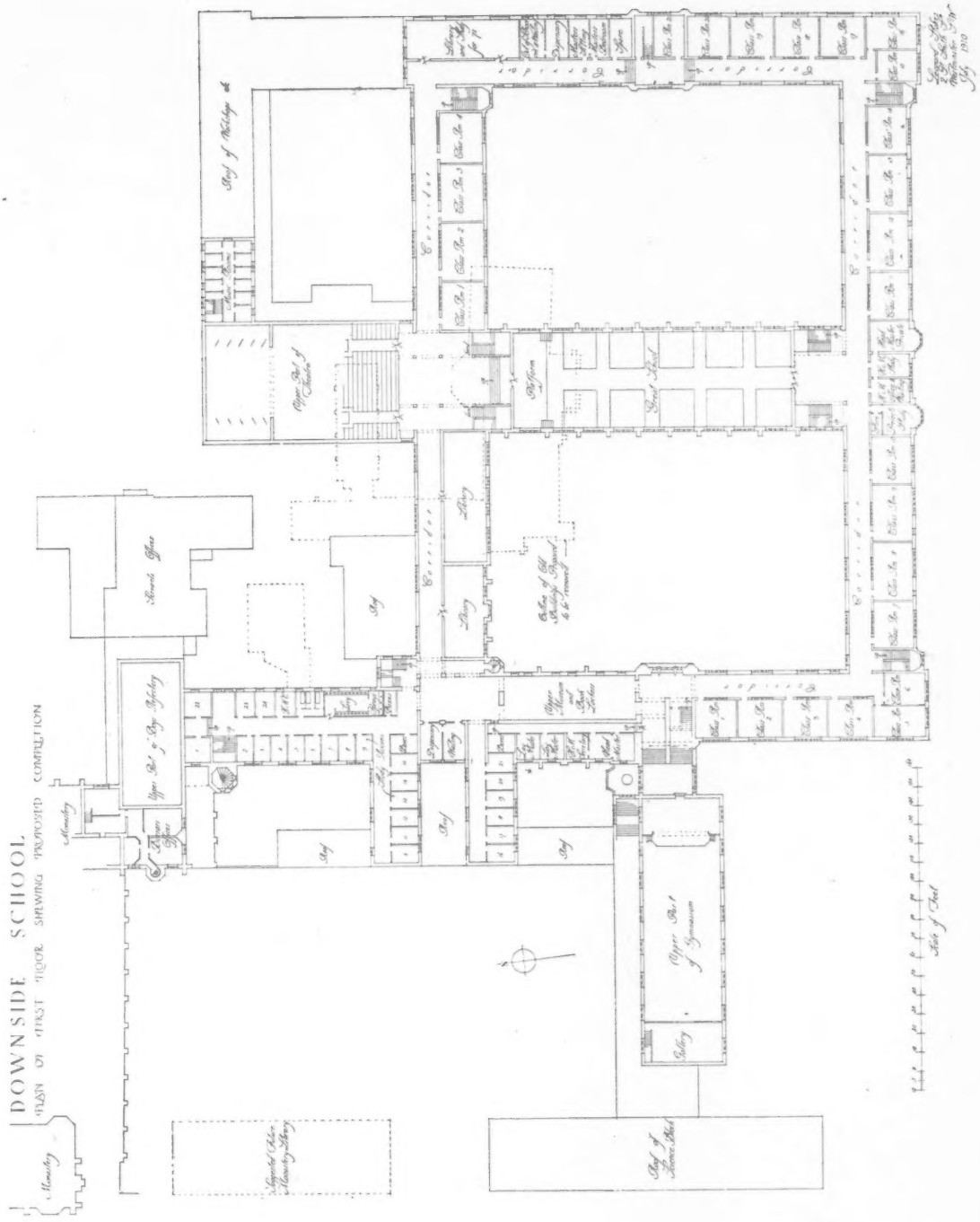
Dormitory, Second Floor

Day Room, Ground Floor

Photos: "Architectural Review"

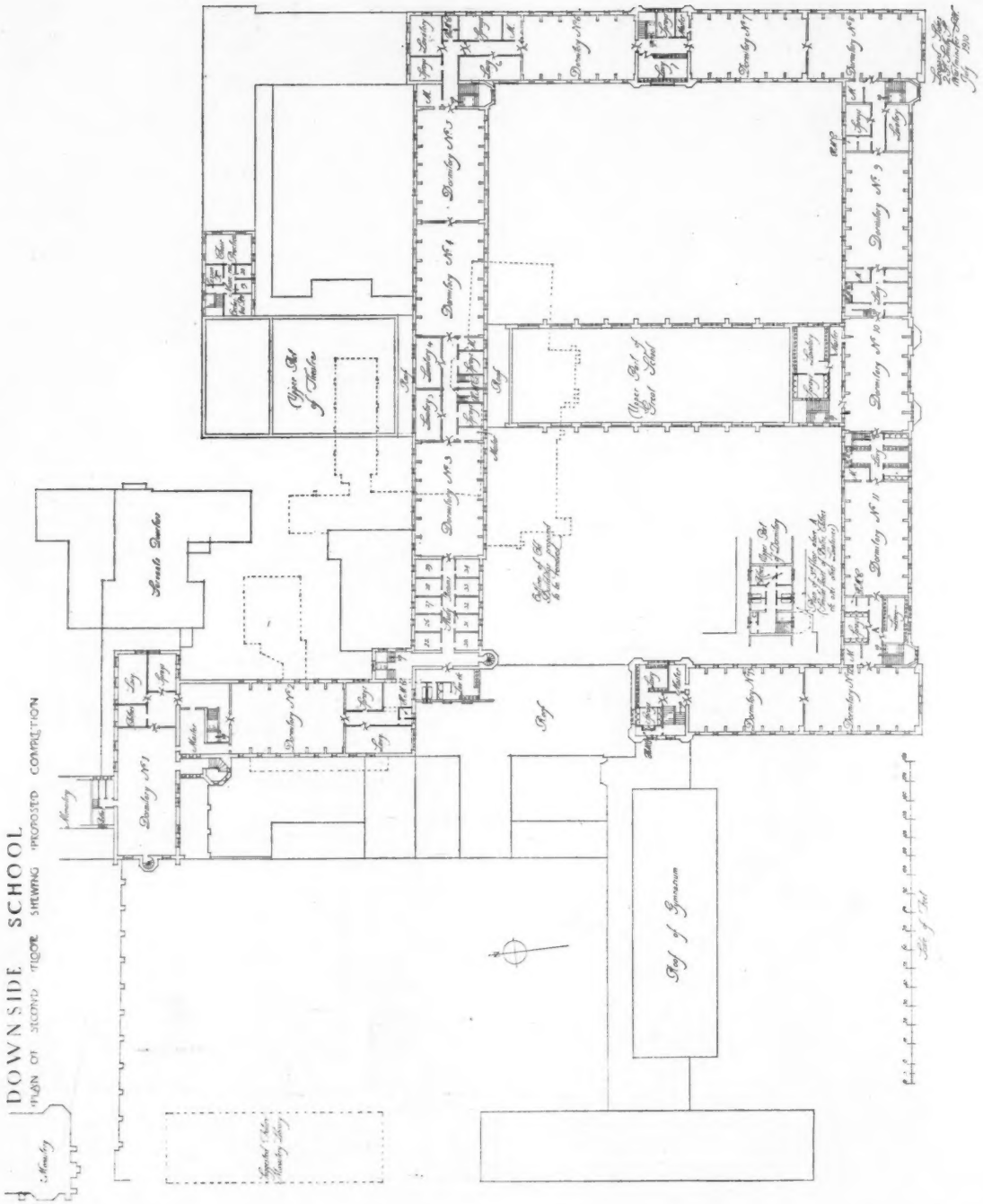
DOWNSIDE SCHOOL, NEAR BATH
LEONARD STOKES, F.R.I.B.A., ARCHITECT


DOWNSIDE SCHOOL
PLAN OF GROUND FLOOR SHEWING PROPOSED EXTENSION
Middle School Dept
Upper School Dept
Gymnasium



DOWNSIDE SCHOOL

PLAN OF FIRST FLOOR, SHEWING PROPOSED EXTENSION


DOWNSIDE SCHOOL
PLAN OF SECOND FLOOR SHEWING PROPOSED COMPLETION
Dormitory No 1
Dormitory No 2
Dormitory No 3
Dormitory No 4
Dormitory No 5
Dormitory No 6
Dormitory No 7
Dormitory No 8
Dormitory No 9
Dormitory No 10
Dormitory No 11
Roof
Roof of Gymnasium