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SUMMARY:—

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WE wish to disarm criticism, so far as possible, by at once acknowledging that the manner in which the designs for the Cathedral of St. John the Divine are illustrated in this issue is unsatisfactory, the results being about half as good as they would have been could the negatives have been made in our own gallery. Instead of this we have had to put up with such light as the galleries of the Academy of Design in New York afforded on a number of successive Sundays, and in consequence have had to endure vexatious delay and unnecessary cost, resulting finally in disappointing plates.

SOME of our readers may have wondered why we have made no comments upon this competition and the second set of designs submitted. Our reasons have been twofold: first, because of the undesirability of forestalling with criticism the intended publication of these revised schemes; and, second, because the entire undertaking, from first to last, has been attended by so many unpleasant features, reference to which ought not to be avoided, that we have put off the disagreeable task to the last moment. Instead of being one of the pleasantest professional events that have occurred in this generation, this great competition has been one of the most disagreeable. The original scheme, which was generally understood to foresee the building of a great Protestant cathedral, by and with the joint assistance of all Protestant communions and for their joint occupation and enjoyment is now, as generally, understood to have changed in character to an endeavor to procure a great Episcopal cathedral. Yet the contributions of other sects are invited and are to be accepted. A Board of Trustees was formed and they, without the needed professional advice, prepared the programme for the first competition, and when the drawings, made in supposed conformity with it, were submitted, these Trustees endeavored, for weeks, to make a choice. Finding that in some ways the task was beyond their capacity they then appointed a board of expert advisers, but later, reverting to their first belief as to the superiority of their own judgment, they exhibited their appreciation of professional

advice by including in the designs to which were finally awarded the first places only one-third of the designs recommended by the expert advisers, adding to the list others which the experts had advised against. The loose manner in which the programme for the first competition was drawn by the Trustees may be known from the fact that, though it was supposed to call for "sketches," the experts found themselves unable, under its terms, to throw out the fully rendered design submitted by Mr. Gibson—which could hardly be thought by any one to be a "sketch."

THE authors of the four selected designs were paid a modest sum for their work, and were asked to elaborate their schemes for a final competition, but as there was no satisfactory assurance given that the successful design in the second competition would be carried into execution, these architects naturally desired to know what was to be their compensation, and for nearly two years they were unable to get from the Trustees a reply to this pertinent question. What was the result? Two competitors let the matter rest and awaited the decision of the Trustees; the other two spent the intervening time in working up their schemes. Finally the Trustees answered the question asked so long before, and at the same time required that the revised designs be submitted in two weeks' time. Think of it, to restudy a cathedral design, make two perspectives at sixteenth scale, a colored interior view showing decoration, plans, elevations and sections in two weeks!—the Trustees consented to waive the matter of estimates. One design—elaborate with the work of months—was delivered at the appointed time. The protests of the other competitors procured an extension of five weeks, but how inadequate a relief that was is shown by the fact that one firm, in place of making new drawings, found themselves obliged to send in their first drawings embellished with "flaps" showing the proposed changes. In extenuation of the singular dilatoriness of the Trustees in informing the competitors what was to be the business footing for the final competition, it must be remembered that their plans were slightly disarranged by the suggestion that the Cathedral site might be needed for the temporary use of the World's Fair. But as it was obvious that funds and working-drawings would not be ready till after the exhibition had been again distributed into its original particles, there was really no excuse to be found in it for keeping the architects in suspense. Besides these disagreeabilities of a general nature, there are special ones which concern each competitor. In a final competition of this kind the competitors could, and should, have agreed to a common interpretation of the programme, and for lack of it one of the competitors submits to the unguided and unguarded Trustees drawings at one-tenth scale, in place of the one-sixteenth-scale drawings understood by the other competitors to be called for and adhered to by them, and adds a highly-colored perspective to the black-and-white ones required, but finds an excuse for his action in the loose wording of the programme. Another competitor has the fortune to be connected by ties of blood with the supposedly most influential Trustee, who, to protect himself from any possible charge of nepotism has, according to the newspaper reporters, most unnecessarily done all in his power to prevent his relative from being allowed to enter the second competition, though he won the honor fairly as an unknown competitor in the first competition. A third firm are now being sued for ten thousand dollars, and have been compelled to defend their right to use their design against an injunction suit, which vainly endeavored to prevent the exhibition of their design, all because they decline to add to their own names the name of a third architect who claims an interest in the design. Against the fourth competitor nothing is lodged save a charge of plagiarism, which few can hope to escape.

WE do not think that this is a pleasant record for such an undertaking, and, more than this, these facts have so impressed us, that we cannot feel that there is any real meaning in this second competition, and hence that any discussion of the designs submitted in it would be barren of effect so far as the future building is concerned. It seems to us to be enough to lay before our readers the designs (poorly reproduced, we again admit) and the explanatory notes of the authors. One thing, however, seems to be plain, and that is that the

Trustees, or the working members of that board, excellent and effective as they may be in those walks of life with which they are really familiar, have in this matter shown a kind and amount of incapacity that may warrant intending subscribers in doubting whether men who have so bungled the preliminaries have any proper claim to be continued in control of this important undertaking. As to the action of the competing architects, it is equally plain that their conduct in face of the disagreeable conditions that confronted them stands out, on the whole, in gratifying contrast with that of their would-be employers. This action does not greatly fall short of all desirable earnestness of purpose and dignity and propriety of conduct. More than this, the designs submitted are, without exception, worthy of attentive study and consideration, for all are purposeful, conscientious and practicable solutions of the problem.

EVER since the project for a cathedral in New York began to take tangible shape, the Trustees have had the benefit of the abundant suggestion and criticism which the secular, religious and technical journals have placed within their reach. Much of this matter was quite immaterial to the main issue, some of it was the work of unbalanced hobby-riders and some of it was incubated by unquestionable cranks. Some of the secular editorials were doubtless inspired by architects and, of course, professional criticism is the most to be desired, though whether the Trustees have been, or can be, influenced is a doubtful question, for, like building-committees generally, they are likely to have made up their minds already on every point, and are to be moved by no arguments any one can advance. Nevertheless, it occurs to us that something like an authoritative expression of professional opinion may be of assistance to the Trustees, and we therefore invite the subscribers to the International Edition, who now have placed before them the data for forming a fair comparative judgment, to notify us, before June 1, which of these four designs is, in their opinion, most worthy of the first place.

WE were led, by trusting to the daily papers, into an error last week in speaking of the plans for the new shower-bath houses in New York as having been made by Messrs. Brunner & Tryon. It appears that they were made by Messrs. J. C. Cady & Co. for the Association for Improving the Condition of the Poor, and are now being carried into execution, the first being in process of erection in Centre Market Place, near Broome Street, on the east side of the city, in the midst of a poor and crowded population. The building is twenty-five feet wide, being planned for the ordinary New York lot. The walls are lined with white enamelled brick, and the floors are of slate, on iron beams and brick arches. The divisions between the baths are of metal. Eighteen shower-baths are arranged on the first floor, and seven in the basement, and there are five ordinary baths for those who do not like the shower. Under the sidewalk are the boilers, besides an engine, which drives the laundry-machinery, and the pumps and electric-light apparatus, and a fan for ventilation. Water is taken from an artesian well, in addition to the Croton supply, and it is estimated that five hundred baths can be given per day. The baths for men and women are separate, with separate entrances and reception-rooms. The cost of the building and lot will be nearly twenty-five thousand dollars, a part of which has been contributed, while the rest has been advanced, in order that the work might not be delayed. A portion of the bath-house is to be reserved for persons who can afford to pay a moderate charge, and it is proposed to require a nominal fee from bathers who use the other portions, but to distribute tickets gratuitously, through proper agencies, to those who need them, so that, at least for a time, the baths will be practically free to well-disposed persons.

THE investigation into the causes of the fall of certain stair-landings in Mr. Morton's hotel, the "Shoreham," in Washington, has brought to light the fact that a considerable part of the main floors, which were, like the stair-landings, laid with wooden beams, filled-in with blocks of some sort of fireproof composition, apparently made of cinders and plaster, and covered with a tile floor, are so rotten that they will have to be taken out and rebuilt. According to Mr. Entwistle, the Inspector of Buildings for the City of Washington, the beams over which wood-flooring was laid are in good condition, the exclusion of the air by the tiles being, apparently, the cause of

the rotting of the timber in the tiled portions. By the owner's direction, the building is to be at once thoroughly repaired; but the cost of the necessary changes is fifty thousand dollars, while, as the hotel must be closed during the operations, there will be a serious loss of rent in addition. With some clients, an occurrence of this kind would be followed by an interesting discussion as to whether the owner or the architect should pay all this expense. Apart from such considerations as the part which the architect and owner respectively took in deciding upon the construction to be employed, the decision would depend upon whether the architect ought reasonably to have known that a floor constructed in that way would rot. In regard to this, we should say, at present, that he could hardly have been expected to do so, as constructions of this sort are rather extensively used, and still more extensively advocated, by people interested in fireproof buildings; but this experience is not the first of the kind, and, before long, the stock of technical knowledge which every architect is presumed to possess is likely to be enriched by the observation that fireproof blocks in mortar, or heavy masses of mortar or concrete between wooden beams, are objectionable, and, if the floor above and the ceiling below should be at any time made nearly impervious to air, are likely to cause the beams to decay. If this conclusion should be established, architects will thenceforward plan or specify, or suffer to be constructed without protest under their supervision, such floors only at their own peril. Naturally, owners, who wish to save money, will prefer such a construction where it is safe; but architects ought, in honesty to their employers, as well as for protection to themselves, to explain, before it is adopted, that there are chances against it, and that it must be distinctly understood that it is used at the owner's risk, and not at theirs.

M. EDOUARD MARIETTE, in *La Semaine des Constructeurs*, gives a little account of what is to be done by the French Government at Delphi. The Government has already increased its original appropriation, so that one hundred thousand dollars are at the disposal of the French School at Athens, for paying the cost of removing the villagers of Castri, and excavating the rich mass of antique debris on which their houses are built. M. Mariette has not much hope of finding objects of intrinsic value in the ruins. Rich as Delphi once was, it has been too often and too thoroughly plundered to retain many objects that it would have been worth any one's while to carry off. Including Xerxes, twenty generals or invaders have successively ransacked the place at their leisure, in search of booty. Sylla collected all the gold and silver he could find, and melted it, to coin into money for his troops, while Nero, with more taste, carried off five hundred statues at once. Finally, in some savage incursion, the whole place, including temples and houses, was burned. In one way, the final fire was an advantage to the archaeologists of the present generation, as it buried in ruins the lower portions of the buildings, preserving them, perhaps, better than they would have been preserved if they had remained exposed to the depredations of the local lime-burners. It is to be hoped, M. Mariette thinks, on this account, that the substructure of the temples, and, possibly of the great *Lesche*, or conversation-hall, which was adorned with paintings by Polygnotus, may be found in sufficiently good condition to admit of restoring their forms, and some of their details. Besides these, it is almost certain that inscriptions of historical value, will be discovered in abundance. Even Theseus, when he cut off his golden curls, and hung them up in the temple, as the only thing he could offer to Apollo, probably scrawled on the wall beside them a dedicatory inscription, and there must have been thousands of tablets, or inscribed stones, which no one would have cared to take away.

THE "prize of the Americans," in the Paris School of Fine Arts, has this year been awarded to M. Chaussemiche, a pupil of MM. André and Laloux. The subject was an Archæological Museum. Curiously enough, the subject of the competition for the Achille Leclère prize, which was held at the same time, was a Museum of Sculpture, and the first prize was awarded to M. Belest, a pupil in the same *atelier* with M. Chaussemiche. The programme for the American competition, a model of clearness and good judgment, is said to have been written by M. Ginain. How many competitors there were we are not informed, but the number appears to have been very small, perhaps only two or three.

FRENCH ARCHITECTURE.¹—V.

TRANSFORMATION OF THE SOCIAL STATE IN THE MIDDLE AGES.



IN the second half of the twelfth century the Gothic style had freed itself wholly from its Romanesque sources; it reached full maturity in the thirteenth century, which witnessed the erection of our noblest cathedrals. The type was created, its special proportions were

determined and its decorative principle clearly defined: was it destined to live and to force itself upon coming generations?

The respective styles of Egypt, Greece and Imperial Rome, once fixed within immutable lines, were perpetuated for centuries without undergoing any perceptible alteration. Nothing of the kind, however, is true of Gothic art; it unquestionably possessed characteristic forms—the more or less elevated pointed arch, and especially the groined vault, flying-buttress and buttress, which survived for a long period—but the very proportions of these constituent parts of the new architecture varied within extraordinarily wide limits; the pillars supporting the vaults, which were short, squat columns at the end of the Romanesque age, were soon transformed into clusters of light colonnettes, and later their primitive character was completely lost and they became mere sheaves of ribs springing from the ground and shooting up in a single stem to the summit of the vaults. As time went on, the vaults, which were originally formed of two simple intersecting barrel-vaults borne on the arches of intersection, were cut up in all directions; the diagonal arches branched out into *liernes* and *tiercerons*, and, at the point of intersection of the manifold ribs, stalactite-like keys were introduced. The flying-buttresses soared higher and higher in superimposed stages, while at the same time they grew continually lighter and more airy. The decoration, which was at first sober, assumed a more and more complicated character; the mouldings became more and more ornate; the gables developed gradually into veritable aerial edifices carved over with trefoils and roses; and pinnacles, finials and crossettes appeared in profusion. *Ensemble* and details, everything was so transformed that, but for a constructive disposition whose principle at least was maintained throughout, the productions of the thirteenth, fourteenth and fifteenth centuries would seem to belong to radically different styles.

We find that the farther down the centuries we move, and the more complex the beginnings of each new style are, the more intimately blended the races have become; the more fluctuating and transient likewise are the social institutions, manners and artistic tendencies of the generations formed and transformed in the bosom of this ever increasing complexity. Egypt preserved her theocratic and despotic constitution for thousands of years; for centuries Greece maintained her republican organization of small rival and hostile cities, which united but once, and that in the golden age of her history; and we know how long Imperial Rome guarded her centralized power, both administrative and military, and that Byzantium, though much weakened, prolonged the same for some centuries after the downfall of Roman supremacy in the west.

The Middle Ages offer no analogous conditions. Scarcely had the barbarian conquerors set about their social task, namely, the establishment of the feudal régime, before feudalism was assailed by a rising power which was destined to found, after a long and violent struggle, the French monarchy and at the same time create French national unity. Hardly had the feudal institutions been endowed with life before they were shaken and enfeebled and began to give way to totally dissimilar institutions. It is this process of transformation which we will now trace as briefly as possible.

At the beginning of the eleventh century the kingdom embraced five great territorial divisions in the north and two in the south; namely: the duchy of France, which carried with it the royal prerogative, the duchies of Normandy and Burgundy, and the counties of Flanders and Champagne, on the one hand; on the other, the duchy of Aquitaine and the county

of Toulouse. Each of these great fiefs was divided into secondary holdings which were themselves very powerful, as for example, the counties of Maine, Anjou, Hainault and Brabant, the duchy of Gascony, the county of Auvergne and the viscounties of Narbonne and Béziers. These last were in turn subdivided into city viscounties, baronies or chatellanies, each comprising a large number of parishes and villages; and finally there were still lesser mesne-feuds held by feudatories, or simple proprietors of castles, whose subjects were confined to the peasantry and the serfs.

"As yet no tie adequate to bind these various territorial divisions together existed; anarchy was at its height. There being no recognized central authority, constant warfare was waged between province and province, city and city, château and château." For several centuries the royal power was occupied in the work of evolving unity out of this chaos. We will briefly note the various steps of the transformation, century by century.

The eleventh century was devoted to the task of bringing the barons of the Duchy of France into subjection to the king; and establishing throughout the royal domains a formal and recognized code of laws fixing the relationship of all the members of the new society, from the simple castellan to the king himself. For a money consideration the cities and communes purchased partial independence; the right to elect their mayors and councillors was granted them, while they were to recognize the supreme sovereignty of the king; their soldiers marched under the royal banner, in the general wars, and furnished the firmest and most reliable support to the incipient monarchy.

During the twelfth century the king, since the royal authority was thenceforth assured within his original territorial holdings, sought to extend his sway to neighboring divisions. The conquest of England by the Normans had just raised up for him a powerful and dangerous rival; the conquerors, strengthened by the possession of a foreign kingdom, retained in France, Anjou, Maine and Touraine; Aquitaine, Poitou, Bordelais and Gascony; and Brittany. As the French king was not yet strong enough to assail such an adversary openly, he worked indefatigably to stir up feudal insurrections on the enemy's territory and turn these to the profit of royalty. He, in fact, succeeded in conquering some of the provinces, but this menacing extension of kingly rule roused the feudal lords at home, and they turned against the monarchy.

The thirteenth century found the north and east allied; the coalition suffered defeat at Bouvines, but was soon after reformed, with still greater power and numerical strength; this time it was supported by the South and by the kings of England and Aragon. The alliance was once more vanquished at Taillebourg. Then through inheritances and skillfully drawn treaties the royal authority was consolidated and extended; from that time it was clear that it would fall heir to the various local powers—that it was destined to outlive and supplant them all.

Formidable obstacles still remained to be surmounted, and the work was fraught with the greatest dangers. Feudal tradition made it incumbent upon the king to divide his possession among his heirs, and create vast appanages for them. By this means the kingdom, after having been painfully welded together, was soon parcelled out once more, and the princes holding these great fiefs became the redoubtable chiefs of feudal coalitions that brought the monarchy to the brink of ruin.

Nevertheless, the work of internal unification went on. Louis IX joined more closely to the crown the three classes—ecclesiastics, bourgeois and feudatories—whose independent legislation tended too strongly to isolation, and he prepared the way for their early consolidation into the States-general. He made the clergy national by a pragmatic sanction which set bounds to the authority exercised over them and to the taxes imposed upon them by the court of Rome, and which made the king their temporal head and support. Though not interfering with the right of the towns to the free election of their magistrates and the administration of their internal affairs, the king nevertheless made them subject to his officers in all judiciary and military matters. To bring the feudal nobility into greater dependence upon the crown, their tribunals were subordinated to the royal jurisdiction.

For judicial combats St. Louis substituted inquests and the custom of summoning witnesses; he established the right of appeal from the feudal courts to his own jurisdiction; for this

¹ From the French of P. Planat, in Planat's "Encyclopédie de l'Architecture et de la Construction." Continued from page 65, No. 801.

purpose the bailiwicks of Sens, Amiens, Mâcon, and Saint-Pierre-le-Moutiers were instituted; he likewise created a right of appeal from the courts attached to the great fiefs, and from the bailiwicks themselves, to the royal Parliament.

He organized the administration of the crown lands and regulated the raising of the revenues, by the appointment of seneschals, bailiffs and provosts, who were also empowered to lead the troops on the battlefield. It was not long before the authority of these officers assumed considerable importance, and that contributed powerfully to the overthrow of the petty feudatories. The creation of these offices was one of the hardest blows dealt against feudalism.

The fourteenth century was the period in which the long and disastrous wars against the English and the Flemish were waged; in spite of the havoc which ensued, it witnessed the enfranchisement of the country regions, the establishment of the indirect tax by the States-general, and the definitive suppression of the independence of such cities as had clung to their republican traditions. In Parliament various chambers were founded whose powers corresponded to the different functions which they were henceforth to exercise.

Owing to the reverses experienced in the war against the English and to the absence of King John who had been taken prisoner, the extension of the royal power was at first checked, and then a retrograde movement began. The States-general of 1356 took advantage of the circumstances to attempt to recover a part of the authority which the crown had arrogated to itself. They dismissed the royal officers and assumed all the duties of the tax-collectors. But the frightful excesses resulting from the existing conditions of anarchy caused the clergy, the nobility and the bourgeoisie to rally in turn around the Dauphin, who promptly restored the old order of things.

During the insanity of Charles VI the members of the royal household, who were possessed of powerful appanages, excited violent internal discords, which the English made use of to promote their interests in the kingdom and to occupy Paris.

In the fifteenth century the evils had assumed such proportions that the entire country ranged itself with the king. Hatred of the invading foreigner, his spoliation and his outrages, called forth a great popular movement and, with Joan of Arc, the war became national.

The internal transformation was accomplished—military men were compelled to quit Parliament, while the legists were raised from the rank of mere reporters, which they had formerly occupied, to that of judges, and their influence became preponderant in the councils. The ecclesiastical graduates henceforth furnished the clerical councillors and took the place of the aristocracy of the prelates; the lay councillors supplanted the barons. Thereafter all the crown courts, from the highest to the lowest, were officered by men chosen and paid by the crown; and there were no longer crown vassals.

The administration of justice was entirely removed from the feudal power, which was by thus much weakened; its definitive organization under royal authority was completed by the creation of the parliaments of Poitiers, Toulouse, Bordeaux, Dijon, Rouen and Aix; and by the establishment of the different degrees of jurisdiction; first instance in the Provostships and Chatellanies; second instance in the Bailiwicks and Seneschalships; and jurisdiction of last resort in the Parliament.

The financial organization was also perfected by the institution of Elections and Generalities, the systematic levying of customs duties and excises and the suppression of the unlimited tax, which the castellan could impose *à merci et miséricorde*. The formation of the first regular and permanent army also dates from this period.

Lastly, the clergy was removed from the exclusive domination of the Holy See; it became national and independent, though at the same time it recognized the power of the French monarchy as supreme.

To recapitulate: During the Middle Ages a complete social transformation had been wrought, with the support and to the profit of royalty: "The abolition of serfdom in the country regions during the fourteenth century had completed the enfranchisement which had begun in the twelfth with the emancipation of the towns. The nobility was no longer sovereign; it had ceased to oppress the country. At this period the separation of the provincial dynasties, by diminishing the number of independent States, diminished the causes of war, which, after the reunion of the provinces held from the crown, was transferred from the interior of the kingdom to its frontiers. The overthrow of the particular government of the different classes

prepared the way for their reconciliation and consolidation. The isolation of the independent States was succeeded by the less complete isolation of the provinces; the diversion of government, by a less marked distinction of the classes.

"In a word, by the reunion of the provinces and the foundation of a general government, the royal authority brought about the triumph of the social principle, which was peculiarly its own, over the principle of individuality, which was inherent in feudalism and was consequently the rule of force. These results were attained only gradually. But tribunals established justice; the permanency of the army led to discipline; the stability of the administration to order, and the omnipotence of the crown to the homogeneity of the nation. Out of the débris of the old classes, a new people was formed which moved from that time slowly, but surely, toward the era of public liberty and civil equality."¹

At the moment which we have now reached, at the dawn of the Renaissance of the sixteenth century, which was about to revolutionize the existing order of things, the foundations of the nation were being laid; a distinct unity was forming whose ties would strengthen daily and whose external characteristics would become more and more marked. Up to that time, the French soil had received successively the agglomerated or disseminated deposits of races which were hostile to one another in origin, character, manners and interests. The deep stratum of the primitive race had been in ancient times covered over with Greek and Roman alluvia which rapidly entered into it and became one with it. Such was not the case when the barbarian invaders came; their occupation of the land was dependent upon force; for a long period they kept aloof from the subjugated and sometimes turbulent people around them, jealously guarding the purity of their blood, the tokens of their superiority and their domination.

The time came, however, when the heads of important families, holders of fiefs powerful enough to assure their independence, could no longer maintain themselves in this wild and scornful isolation. Gradually, the descendants of the men who had formerly been their comrades in arms dropped down to more precarious positions and were, ere long, lost in the mass of the conquered people. Outside of a few families, who were directly descended from the conquerors, diversities of origin were soon effaced. This is an important fact, which must be taken into account in the analysis of the complex elements which enter into the composition of the French nationality. By the mixture of the races, incongruities of character and temperament were slowly blended into a new whole.

The same process of unification went on in the social and political state. For centuries the royal authority, relying upon the municipalities and the communes, which it at length succeeded in attaching to its interests, had worked steadily toward the establishment of a central government, undermining the feudal institutions and overthrowing their dangerous independence; it summoned the religious power to its aid, supported and strengthened it, then, having used it to subserve its own ends, reduced the clergy to the rank of faithful allies of the crown. Feudalism, which long retained its military character, came gradually to furnish the king his officers and army leaders; its primitive independence was in time wholly lost and it became merely a docile instrument in the hands of the monarch. At the same time that the great fiefs of the centre and north were subjugated, the independent principalities of the south were brought under the domination of the king.

But the all-important fact for us to consider is this. The royal authority in choosing its auxiliaries from the communes and municipalities—remnants of the old Gallo-Roman institutions—and making use of the juridical and administrative institutions which it filled with men from among the common people, relied for support on the conquered people, as opposed to the conquerors, whom it was desirous of overpowering and subjugating. In fact, the triumph of the monarchy meant at first the uplifting of the original inhabitants of the country: they now had a place in the councils of the king and in the government; they furnished him his troops; and, taking advantage of a comparatively peaceful period, they built up the public fortune and thereby acquired social influence. It was this regenerated race which, as it represented the majority, was to supply the deepest, firmest and most permanent stratum of the French nation.

It is true that at the end of the Middle Ages stability was

¹ Mignet: "Formation territoriale et politique de la France."

not yet definitively assured; wars were incessant, and existence was still very precarious. In the fourteenth and fifteenth centuries the country underwent long and painful trials; but the nature of warfare had completely changed. The intestine struggles of province against province, fief against fief, and of cities or communes against the local sovereign had gradually ceased; in the presence of a common enemy — the invaders who carried ravage, spoliation and violence everywhere — social prejudices and race antagonisms had been forced into the background. Before the mighty danger with which all were threatened, before the sufferings which fell indiscriminately upon all, it was necessary that harmony should be secured.

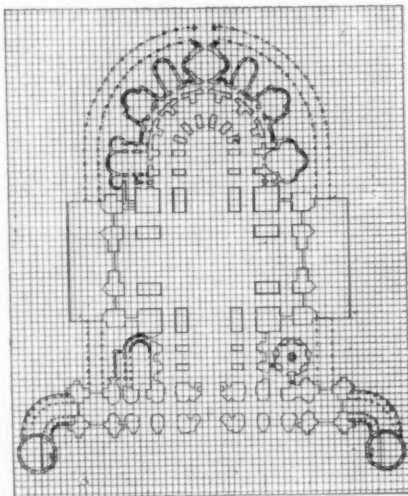
"The last half of the fourteenth century and the first half of the fifteenth were occupied in the wars against the English, the great national wars of France. This was the period of the struggle for the independence of the territory and the French name against foreign domination. . . . Even if there had been only the story of Joan of Arc, that would have furnished sufficient proof of the popular character of the event. Joan of Arc sprang from the people; it was the sentiments, the beliefs and the passions of the people that inspired and sustained her. She was always regarded with distrust, scorn and even hatred by the court and by the leaders of the army; the soldiers and the people were always on her side. It was the peasants of Lorraine who sent her to succor the bourgeois of Orleans. No circumstance indicates more clearly the popular character of this war and the feeling which the entire country brought to it.

"It was thus that the foundations of French nationality were laid. Down to the reign of the Valois monarchs the feudal character was predominant in France; the French nation, the French spirit and French patriotism did not as yet exist. With the Valois rulers, France, properly so-called, came into being; it was in the course of their wars and amid the hazards of their fortunes that the nobility, the bourgeois and the peasants were for the first time united by a moral bond, by the bond of a common name, a common honor and a common desire to vanquish the foreigner."¹

[To be continued.]

THE CATHEDRAL OF ST. JOHN THE DIVINE.

THE SECOND COMPETITION.



The Ten Commandments The Tithe

Each Square represents Ten feet.

Ground Plan

With his design Mr. William Halsey Wood furnished the following description:—

In presenting the accompanying studies for the projected Cathedral of St. John the Divine, to be erected in the city of New York, it may not seem amiss if I touch upon certain considerations which have prevailed with me in the conception and development, thus far,

¹ Guizot: "Histoire de la civilisation en Europe."

of the commanding subject which, by the favor of the Building-Committee, I am invited to consider.

1. The inception is unique:—to provide a Cathedral for the Metropolitan City and Diocese of the United States—a city at no distant date to rank or out-rank in population, material resources, social and political consequences the great cities of the old world—which shall impressively represent the faith and spirit of Anglo-Catholic Christianity, not only in its historic and æsthetic relations with the past, but in the greatness of its hopes and possibilities for the present and future, here in this new world.

2. The site is a bold, commanding elevation, overlooking an uninterrupted area of city, park, and outlying landscape, bounded by Long Island on the east, and the Palisades on the west.

The coming cathedral must rest on this most imposing coign of vantage, possibly, on Manhattan Island. Its distinction, therefore, is intensely localized, and must have perpetual significance for the multiplied millions of the coming ages.

It cannot be ignored; it should not be over-topped, nor obscured by any conceivable structure. Its identity must be secure. In illustration of this vital point, let me remind you that twenty years ago the great spire of Trinity Church was the sole dominant feature of lower New York. It was a landmark for the great outlying harbor. It was read and known of all men. Now it is almost extinguished by the vast structures which the skill of the modern builder has lifted high in the air, in all directions round about it. The stranger approaching the city must now hunt up and identify Trinity spire, which has lost its structural significance and commanding importance.

The conviction was irresistible, therefore, that the new conditions of construction in secular and civil architecture compelled a correlative development along ecclesiologic and ecclesiastical lines. The new and difficult element I recognize is one of altitude. Under the crush of population and rapidly enhancing value of land, construction is driven upward with an irresistible impulse, and with a growing force and daring.

3. Again, the site is the curved summit of a rock-ledge looking abruptly down into the lap of Harlem plain, while sloping gracefully in other directions. The compelling corollary follows that the Cathedral must be firmly and securely anchored on this rock; and that its solidity and integrity of construction should be, even as an outgrowth of its granite foundation of mother rock: and that its prevailing contour and outlines should involve the idea of pyramidal solidity and permanency.

4. While the landscape, the magnitude of the metropolis, and the very rocky nature of the site itself were big with suggestions, in the evolution of style or manner, other elements were at work.

There should be a great cathedral, so fashioned that its individuality and distinction should continue uninterrupted as a mountain eminence. The spire alone, as a characteristic feature, seemed too feeble and too easily merged, among challenging and competing masses of upraised structures that menace. And yet the spire is the accepted symbol of spiritual aspiration the world over. The question of style then became pressing and dominant.

It cannot ignore modern problems and growth in the designers' and builders' art. It cannot break with the past, any more than the culture and teaching of the Church itself. Plainly here was room for no generically new thing or thought. Something that should bind past and present in one, that should incorporate the ethnic types of civilization, the pyramid of Egypt, the circle that girdles the landscape, the square of the ancient Temple, the oblong of the Basilica, the Cross of Basilica Church and Cathedral, even the dome itself—type of over-reaching heavens—why should not each and all of these ancient, historic types meet in a spirit of devout eclecticism in the general expression and final elaboration of the coming cathedral?

Here became conceivable a mass with an indestructible identity and distinction, quickened with each and all of the great structural energies in turn, all brought together, at one, in a Gothic relationship—a style which enters into the spiritual and ecclesiastical heredity of all English-derived Churchmanship.

The early Gothic, then, most catholic and comprehensive of its stages, should be chosen as the medium of this eclectic impression. Its simplicity, its friendliness to the Roman arch, its inexhaustible capacity for enrichment, as well as its breadth and largeness of effect, and its special adaptation to granite as the material pointed out by the very logic of the site, together with a confidence of its adaptability for the geometric evolution of a true Gothic dome as the crowning central theme of the pile; all these and other lesser considerations determined the style of expression.

In the general outlines of the study submitted, will be observed, then, the prevalence of the pyramidal lines, from the apex of the central tower—dome—spire to each descending angle incident of the structure. This impression is accentuated by two lesser towers flanking the two spires, the uses of which are to be mentioned. A reference to the ground-plan points out the concurrence of the Square, the Circle and the Cross, in the general outline of the plan.

The central mass is raised to a great height, is monumental in suggestion, and with such symmetrical lines and well-defined stages that, under no conjunction of conceivable conditions can it be ignored, or its distinction jeopardized. Its solid stateliness culminates in a distinctly Gothic dome which harmonizes with the lines and motives of the general plan, while securing the dignity and importance of the general mass. It will be seen that the two spires

assimilate with the dominant central spire; which, as will appear is in and of itself the embodiment of the central idea of the edifice.

The apparent contrarities involved in this style-problem, readily and almost insensibly gave way before the plastic Gothic as it grew into relation, form and outline. New wants and contingencies, unknown to the Gothic, were recognized and provided for. The possibilities of iron in architectural development solved many difficulties hitherto inexplicable, especially in the modelling of the central dome-spire.

The *ensemble*, therefore, is not a plagiarism nor a transplanted exotic, nor is it the echo or reflection of any foreign creation; neither is it a concession to any aggressive radicalism in architectural art. It is nothing more or less than a spontaneous and general outgrowth of the writer's structural conceptions as nurtured at the altar within recognized lines of artistic and æsthetic propriety.

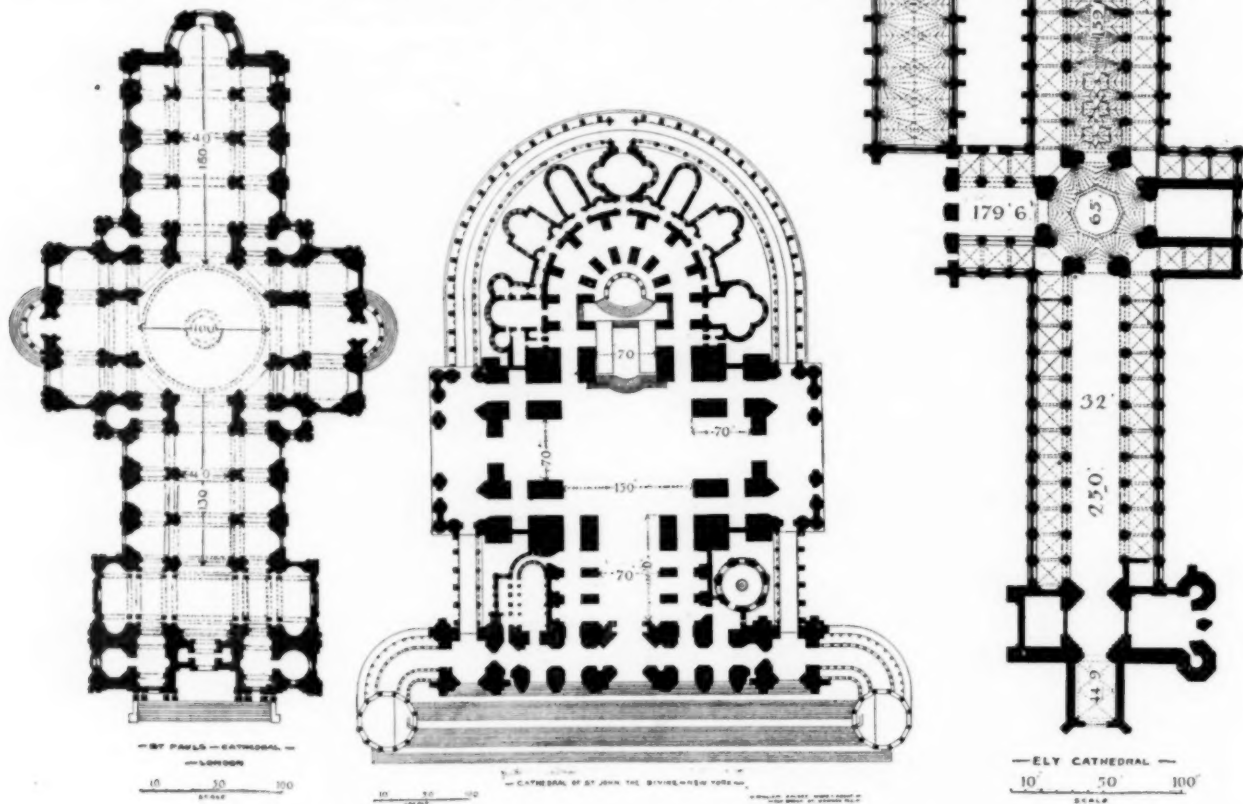
5. What does this *ensemble* mean? How did it come to possess and dominate the thought and purpose of your architect?

The corporate name of the Cathedral, "St. John the Divine," explains the meaning and accounts for the inspiring motive of the design. Nowhere, save in the Book of the Revelations, could he look for the animating spirit of symbolism that should convert the mass of quarried stone into a living teacher. And so every foot and inch of the structure rests upon and is interpenetrated with this Apocalyptic symbolism. If literal orientation seemed impracticable—"on the north side lieth the city of the Great King" came into his thought as he swept the circle of the apse. The symbolism of "tens" gave a decimal analysis to every inch of lateral and upright space; making the succession of the different stages of construction, the interrelation of columns, windows, aisles and exits. The symbolism of "sevens" is repeated and multiplied indefinitely, as, for example, in the seven chapels or Churchly structures that encircle the head of the sanctuary, and by seven openings have access to the

"Jerusalem, the golden!
With milk and honey blest;
Beneath thy contemplation
Sink heart and voice oppress.
I know not, O! I know not
What joys await us there;
What radiance of glory,
What bliss beyond compare.
O none can tell thy bulwarks,
How gloriously they rise;
O none can tell thy capitals
Of beautiful device:

"Thy loveliness oppresses
All human thought and heart:
And none, O peace, O Syon,
Can sing thee as thou art.
New mansion of new people,
Whom God's own love and light
Promote, increase, make holy,
Identify, unite.
Thou City of the Angels!
Thou City of the Lord!
Whose everlasting music
Is the glorious decachorde!"

In the further elucidation of the ground-plan as figured, the ancient temple with its outlying courts, each helping in some divinely appointed way the great central service of sacrifice and worship, supplies an analogue for the symmetrical clustering of the "courts," which the development of cathedral life and work has made inseparable from the sacred edifice, and also that



Comparison of the Cathedral of St. John the Divine with St. Paul's and Ely Cathedrals.

central altar from which they radiate. The symbolism of "twos" also is frequently exemplified. As every perfect gift is from above and cometh down from the Father of Light, so the great interior is illuminated by upraised windows, especially the four in the lantern, which is the lowest stage of the central dome-spire. Again "Jerusalem is built as a city at unity with itself," and so the shallow, wide transepts and nave of the same proportions gather up all the faithful into one great mass of worshippers, almost under the dome, where every eye shall see and every ear catch the sanctuary with its Eucharist and its hymn, and the pulpit with its living word.

The modern church is both a worshipping and a preaching church. It was therefore but a prime necessity to sacrifice perspectives to the larger and dominant interests of the great congregation, who with us have outgrown merely spectacular worship.

The Ten Tribes, the Twelve Apostles, the Seven Churches, the Sevenfold Gift of the Holy Ghost, the Four Evangelists, the Twofold Natures of our Blessed Lord, Lawgiving and the Beatitudes, these are among the tremendous analogies that enter into and shape the architect's purposes.

immediateness of approach which such a relation requires. "The Courts of the House of our God" symbolizes this unification of sacred uses and offices. Again "The hills stand about Jerusalem, even so standeth the Lord round about His people, from this time forth forevermore."—Ps. CXXV: 2.

The human body furnishes a modulus of proportion and relation, not alone in the Christian evolutions of architecture, but in the Greek if not other ethnic types. The interior, then, may exemplify this mystery of proportion, after this wise: the entire interior length from the sanctuary wall to the opposite end being 400 feet, the sanctuary, representing the head, will after the proportion of an eighth of the body, be 50 feet, as laid down in the plan. Similar homologies will be apparent in the details of the plan. In the sanctuary the symbolism of "sevens" prevails. The transepts and foot of the nave, below transept intersection, are of equal dimensions. The ambulatory which surrounds the choir and sanctuary separates them from the outlying line of seven chantries, chapter-house, etc., is raised a few steps above the main floor-level, and on each side, descending, meet the north and south aisles of the nave, which are

not used for sittings, but for processions and passageways. There are twelve exits and doorways, which serve the Cathedral on all its sides.

The nave is 70 feet wide and on a continuous line with the choir. The transepts are of the same width. The choir is figured at about 135 feet in length, and with place for 150 stalls on each side. There is room for supplemental rows of stalls for exceptional occasions. The choir, as in Canterbury Cathedral, is raised several paces above the nave, the sanctuary is also duly elevated above the choir, while the altar is approached by other additional paces. The

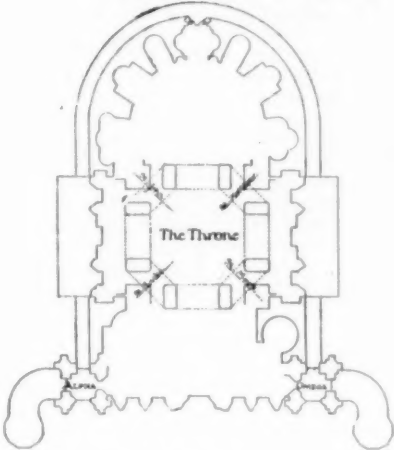
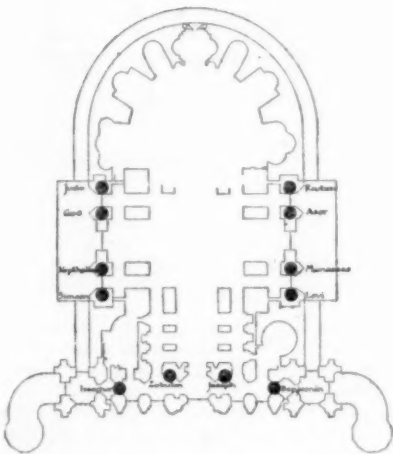
find an impressive analogue in the stratifications of native rock-masses, suggesting structural solidity as well as security.

7. The cloisters present a noteworthy feature in the general design. They lie in the plane of the main floor encincturing the entire Cathedral, and connecting with the interior by multiplied entrances. They approach the width of 20 feet and complete the actual square of the general ground-plan, after leaving the apse. Within the exterior angles, on the north and south sides of the west front (conventional), lie, first, the chapel proper, opening from the nave at the southwest corner, furnished and fitted for the daily

The Throne ALPHA and OMEGA
*"and, behold, as Throned
was set in Heaven."
Rev. 4: C. part of 24V.*
*"I am Alpha and Omega,
the beginning and the ending."
Rev. 1: C. part of 8V.*

The Twelve Tribes

Each Throne has twelve sides

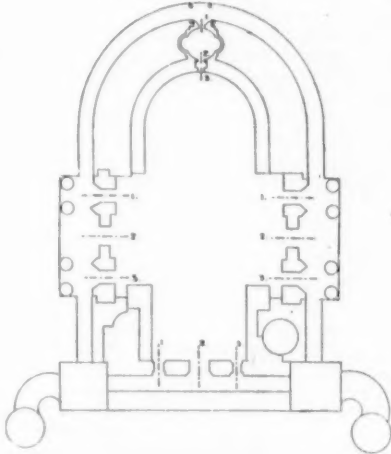


The Four Beasts

*"and in the midst of the Throne, round about the Throne,
were four beasts full of eyes before and behind."
Rev. 4: C. part of 6V.*

The Twelve Gates

*"and he had twelve gates."
Rev. 2: C. 12V.*
*"On the East three gates, on the North three gates,
On the South three gates, and on the West three gates."
Rev. 7: C. 12V.*



Bishop's throne is placed between the sanctuary and choir, south side (conventional), facing the Gospel side. The pulpit stands in the nave, detached, near the northwest corner (conventional), so placed that it commands altar and throne, as well as the entire choir and nave.

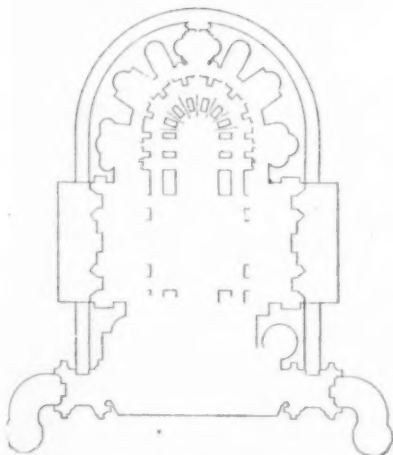
6. The triforium is arranged to extend around the entire Cathedral, directly above the vaulting of the side aisles, behind the main arches that rise from the spring line of the columns; above these steps the triforium is arranged in the usual form below the clerestory windows, making a complete circuit of the edifice. The clerestory windows are generously proportioned and intended to be

religious offices, with sittings for several hundred worshippers; and second, opening from the southeast corner of the nave, the great baptistery, both with proper vestries and conveniences. This hurried résumé covers the principal features having immediate relation to the interior.

8. Concerning its ornamentation, it need only be observed that the construction of the sanctuary with its seven arched openings, gives opportunity for richly varied monumental and memorial treatment; while the numberless niches and angles discovered in ambulatories and aisles may be turned to similar pious uses. The great breadth of wall-spaces distinctive of the architectural type

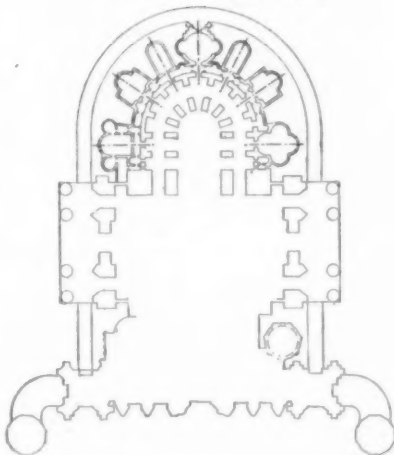
The Seven Candlesticks

*"And he had seven golden candlesticks."
Rev. 1: C. 12V.*



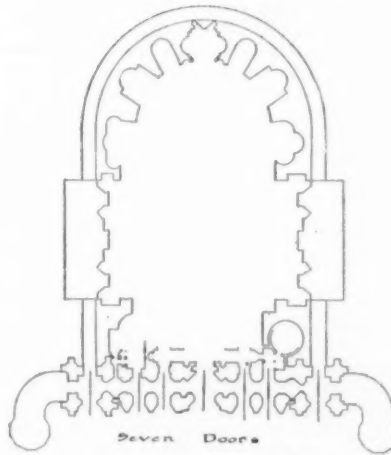
The Seven Churches

*"And the seven churches which these words
are the seven churches."
Rev. 1: C. 8V. part of 4V.*



The Seven Stars

*"And he had in his right hand seven stars."
Rev. 1: C. part of 24V.*



finished as double walls. These different levels connect with the main floor by staircases in the turrets. The apse chancel in its exterior treatment contemplates flying-buttresses which divide the architectural features as indicated in the nave, with the several chantries, chapels, etc., grouped about the base. The lines of these different features run horizontally about the building, thus tying all masses in unbroken and harmonious unity. This principle of horizontal unification will be seen in the perspective elevations, indicating the stages of construction, supplying data of proportion, relation and altitudes, while knitting the great edifice together in visible lines of structural security. Furthermore, these horizontals

chosen, suggests the largest range of decoration in the way of colored mosaics, paintings and sculptures.

9. The disposition and provision for the music and choristers, have received careful consideration. The separate vestries for bishops and the clergy, are adjacent to those for the choristers, and are grouped outside the ambulatory near the southwest (conventional) angle of the choir. Processions therefore may be formed, each group emerging from its proper vestry into the ambulatory, following the choristers without confusion, the music sustained not only by the choir organ, at the north side (conventional), but by small choir organs which may be placed at intervals over the doorways

of the chapels and chantries, with louvers to admit the sound, thus sustaining the pitch in the longest processional movements, the key-board of the choir organ commanding all manuals placed elsewhere by electric connections. A diffused grandeur of effect, a general breadth of praise will result from this dispersion of the organs into widely separated groups. Thus the great organ will be grouped in two divisions, placed over the north and south (conventional) entrance towers, corbelled upon stone arches in front of the triforium passageways. The key-board will be placed on the floor in the north transept (conventional) in view of the organist in choir.

Under such an arrangement, with supplemental orchestras effectually placed in the open spaces adjacent to the choir organ, a dignity and grandeur of musical delivery may be realized hitherto unprecedented in any cathedral, even in the old world.

10. The value of this musical relation will appear in a fresh if not stronger light, when it is considered that such a cathedral might be the music centre of a vast population, where the oratorios, the solemn Passion music of Bach, Haydn and others, the cantatas, motetts, masses and anthems of the great masters, might find the most perfect conditions conceivable for due and solemn interpretation, a consummation devoutly to be wished for, and one which must add the lustre of public admiration and gratitude to the more strictly ecclesiastical offices of the Cathedral. This, in effect would be an honest and long overdue recognition and restoration of that public art-relation, which for hundreds of years existed between the medieval cathedrals and their outlying populations. It would be, practically, a fresh reinvestment of sacred art with those ancient societies that hallowed its beginnings, and which long since have suffered loss under the irreverent spirit of modern secularization.

It does not appear that more detailed comment upon the distinctive characteristics of the interior are called for at this stage of inquiry.

11. The approaches, general perspectives, cloisters and adjacent buildings, as located upon the ground-plan herewith, invite attention.

The plot of ground lies in an irregular square, the eastern boundary being a straight diagonal, leaving an unequal north and south boundary, the longer at the south. The plot is treated, however, as a complete square with the north and south boundaries equal, thus suggesting the north end as the most effective disposition of the apse, quite justifying the displacement of true orientation, in the better utilization of the prescribed area. The frontage, therefore, logically falls upon the southern line, which thus brings into the foreground of the Cathedral, the historic city, with Central Park broadly flanking the south and east.

The abrupt descent along the eastern boundary suggests a supplemental façade or point of commanding architectural significance, which logically suggests the highly accentuated esplanade, approached by series of steps, broken by structural masses in gradual approach to the Cathedral, with sculptural figures of angels.

This expedient while protecting the façade from the suggestion of abruptness, broadens and dignifies the *ensemble* as viewed from the east. The central tower-dome-spire, with the great spires at the angles of the southern front, secures the dignity and sufficiency of this broad eastern outlook. The main approach must be from the south, another logical warrant for the artificial orientation. Great and unbroken lines of steps approach this front across the entire length, accepting the eastward sloping of the site, an expedient that suggests security and solidity of foundation. Flanking each of these great spires are small supporting spires, which, while giving breadth to the foundation of the whole mass, and not foreign from the suggestion of the outlying cloistered colonnades of approach at St. Peter's, Rome, afford at the base, entrance to a well-lighted *sub-cloister* which underlies the entire length of the cloister proper, utilized as a carriage driveway, opening by stairways at proper intervals to the exits and entrances above, as well as to the doorway of the chapter-house, chapels and chantries. The practical utility of this expedient is at once apparent when account is taken of the concourse of carriages which must set-in towards the Cathedral, and of the great numbers of visiting clergy and laity who will thus approach it.

The disposition of diocesan buildings already contemplated, as the see-house, the deanery and clergy-house and schools, are merely indicated, together with the covered passageways connecting with the cloisters.

There are seven chief entrances marked by elevated archways; one in both the great eastern and western towers, one for the chapel, one for the baptistery and one for each of the side aisles, and one at the centre of the apse. The porch along the south front represents the ancient narthex, and the architectural features behind, appear to rise independently from it, and are treated as detached features with appropriate architectural symbolism. Ascending with the main structure each commanding motive recedes from the base line, thus contributing to the complex pyramidal idea which dominates the general design.

When observed from the street running east and west, at the front, the Cathedral will appear as the central structure flanked by the sides of an architectural quadrangle.

In order to impart dignity to the base, it will be noticed that both the east and west approaches are accentuated with suggestive architectural incident — with steps leading up to them from the street-levels in terraces, with open arches, pinnacles, etc., all subordinate to the transepts.

12. Attention is directed to the central tower-dome-spire, arising above the intersection of nave and transepts. In obedience to the Byzantine or Oriental idea this is made to constitute the main feature of the design, giving character and importance to the entire mass. Symbolically it is made to represent the enthroned sovereignty of God "over all," sitting upon the circle of the Heavens. Rising from its quadrangle base, 150 feet square, the stage immediately above the roof serves as a vast lantern, flooding the inner spaces of the nave with light from its lofty, broad windows. The next stage is designed for the belfry, with its chimes and carrillons of many tones and octaves. Gradually, amid a growing wealth of decoration, supporting pinnacles, and chiselled gables, it is seen emerging from the square into the octagon, and from the octagon by almost imperceptible refinements of outline and ornamentation approaching the perfect circle of the great dome, sloping upward, in characteristic lines of true Gothic, to the spiral terminal that crowns the whole, uplifted in the air. Mercy and Truth, Beauty and Strength are met together. Thus the square and cylindrical ideas, together with spire and dome, realize an artistic unification strictly within canons of sound architectural development. The consummation of this confessedly daring project lies easily within range of structural achievements, and is become, under the rapid march of scientific development a far simpler matter than the dome of St. Paul's or the spires of Salisbury or Lichfield.

There is majesty in this dominant, central expression of the Divine Providence, the herald of coming and departing day for the vast metropolis as the first rays of sunrise and the last lustre of sunset light up its glowing dome, and from the apex of that finial the great tower-spires of the dome catch their key-note of significance, and fall into the pyramidal *ensemble*.

13. It may be asked what kind of Gothic is here exemplified? It may be truthfully said that, beginning with its earliest period, all modes of Gothic expression successively find place in the growth, elaboration and ornamentation of the design, until the period of flamboyant degeneracy.

It may be assumed as your architect's ideal, that, should the last great masters of this sublime type of ecclesiastical construction "awake out of sleep," confronting the problems of the present, which we are now attempting to solve, they might proceed upon such eclectic lines as we are following, and thus triumphantly demonstrate the inexhaustible resources, the absolute plasticity and the supreme utility of the Gothic art.

14. It may again be asked, and in reasonable good faith, "Is this American Gothic? And can Gothic put on National types?" The answer is plainly "Yes"; and, that when any recognized type of construction proves unequal to the constantly shifting and growing requirements of advancing civilization it must, and righteously, suffer loss and fall into decadence.

This study is confidently, yet with all modesty, advanced as a demonstration of this practicability and plasticity of Gothic ideals under the demands of American life and thought, ideals that had their main springs and inspirations among all the peoples, and that remain fruitfully in their service to this day and for coming days; and we consider, then, that as there are recognized types of Anglican, Norman, French, Italian and Spanish Gothic, so the same germinal ideals under reverent and intelligent culture will develop a distinctly American type of expression. These studies for the Cathedral of St. John the Divine, then, may be looked upon as a practical attempt at the realization of an American type of Gothic architecture, inasmuch as it provides for social conditions and exactions, accidental in their origin, and altogether unknown and unlooked for so far as the great European builders are concerned.

In conclusion it is proper to observe that careful study has been made of the disintegrating forces of our local climate as discovered in many edifices in stone, and structural precautions and safeguards resorted to in generals and details, throughout the design.

WILLIAM HALSEY WOOD.

[The exhibition of Mr. Wood's drawings at the Academy of Design was attended with one untoward circumstance: attached to one of the plans upon a separate slip of paper was a graphic scale which did not agree with the printed description of the dimensions of the building nor did it "read with" the plan to which it was attached in any way, and some who noticed the discrepancy did not hesitate to express the belief that the scale was introduced merely to aid in disguising the real size and great cost of the building. The fact that this belief may have had some currency, makes it desirable to reproduce the following letters sent in answer to our letter pointing out that a blunder had probably been made by some irresponsible draughtsman.]

NEWARK, N. J., April 11, 1891.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I send these tracings for illustration in connection with my design to show that the symbolism is only to be represented in the stained-glass windows, statuary, etc. I fear there is some misunderstanding regarding this, and if you will kindly publish them in connection with my other Cathedral drawings, I would feel grateful.

I do not want this symbolism confused with the walls, but put in the usual place for such decorations.

I know you will appreciate all this and the fact how difficult it is to keep run of these details when one is so busy with other matters.

My plans were in four months before the others, and all in accord with the Trustees' wishes. So now the whole subject comes to me

almost afresh and I would like to defend just a few points which have been raised up against the symbolism.

Very truly yours,

WILLIAM HALSEY WOOD.

NEWARK, N. J., April 13, 1891.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I found (on investigation) the pinned scale attached to the ground-plan—which should have shown a 1-16 inch scale—hence the confusion. This is now corrected and an explanation reads at the foot of this plan:

"Ground plan submitted in the first competition, scale 1-16 inch to the foot, an alternative plan sent in the second competition."

I send herewith the corrected combination of the two plans which I should like published in the *American Architect*. Kindly put the lettering underneath as per the enclosed.

These two suggestions will give my ideas regarding the 400 feet which the Trustees requested should be the length. The 1-16 inch scale will provide for an interior length of 400 feet, and the 1-10 scale an exterior length of the same (about).

The adoption of the 1-16 inch ground-plan should simply be to rearrange the exterior without increasing the altitude.

To explain the reasons for sending in the plans—and taking the liberty of making the drawings to a tenth scale—and working my drawings up, I need only quote again the following from the final instructions.

"Voted:—That each architect be allowed to submit his original plan, and another set according to his discretion."

And then to show the scope given regarding the conception, I need only quote another clause:

"Voted:—That the instructions for the second competition be modified by striking out the part relative to estimates."

On the whole, the instructions were such as to bring out the conception in elaborate sketches. The designs being subject to alteration and further consultation.

I write this hastily that you may put in such form as you may see fit to better clear up this seeming misunderstanding, and I thank you for pointing out the error. I am, dear sir,

Yours very truly,

WILLIAM HALSEY WOOD.

THE POTTER AND ROBERTSON DESIGN.

THE design submitted by Messrs. W. A. Potter and R. H. Robertson was accompanied with the following explanatory statement:—

Gentlemen,—To say that any architectural work to be really great must fitly express the spirit of the age in which it is reared, so far as this spirit is embodied in the purpose of the work, is to state an axiom. Slavishly to copy the plan and arrangement of any mediæval cathedral is to ignore the history of the Church since that period; and in the consideration of such a problem as that involved in the planning of a cathedral church, the point of view from which the nineteenth-century architect must approach it must of necessity be different from what it would have been in the thirteenth century.

The fact that the conditions are changed the architect must recognize, and he must further recognize that if his work is to be truly great these changed conditions exist as a large factor in the problem which he is desired to solve.

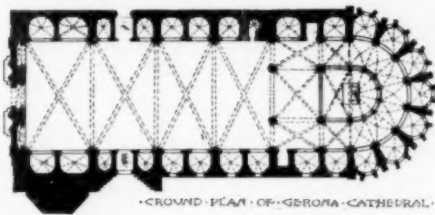
Among these conditions now existing that which demands proper provision for fitly preaching the Word of God seems to hold a pre-eminent place, and for this the mediæval cathedral church plan makes no adequate provision.

A large, central, unobstructed space would seem to be the starting-point in planning the cathedral church of to-day and while recognizing this fact it is of equal importance, if it be possible to do so, that the traditions and affections which have insensibly clustered around the cathedral as it is usually planned should not be swept aside. The ritual and liturgy of the Church demand opportunity for their fit presentation and this as well must be accepted as part of the problem.

Holding these general principles as of paramount importance they have been made the basis on which the scheme designated by the name "*Gerona*" has been developed. This name, which is that of a city of Spain, has been placed upon the drawings as it was from the plan of its Cathedral Church that the suggestion on which this design has been based and elaborated was received. Assuming that the tendency of the Church to-day is to bring the services and the worshippers into closer contact and to permit the preacher to be heard, it follows that the first requisite is the incorporation of a large central area in the plan. An examination of the methods by which the architects of the past have accomplished this would show that it has been done almost without exception in connection with the use of the dome, a feature of Pagan architecture which, while having been successfully adopted in the Mohammedan and Renaissance styles, and in a lesser degree in such transitional styles as the Byzantine and Romanesque, has never been incorporated with the Gothic style with any measure of success. The Pantheon at Rome, the Church of Santa Sophia, the mosques of Egypt and India and the later churches, Santa Maria del Fiore of Florence, St. Peter's at Rome, and St. Paul's, London, will suggest themselves as instances where the dome-covering has been used.

The late Sir Gilbert Scott, while asserting that the dome might be successfully incorporated with the Gothic style, failed to achieve its adaptation and it may well be held, as it is by many of the most eminent critics, that the spirit of the dome, when developed beyond certain very circumscribed limits, is so diametrically opposed to the spirit of Gothic architecture that the two are not compatible. One

disadvantage which all dome-covered spaces have presented, has been that the vistas through the aisles, one of the most beautiful features of the mediæval cathedral, have been destroyed by the introduction of piers in the line of the aisles. It will be seen by reference to the plan herewith submitted that the whole length of the aisles is unobstructed and the vistas preserved. Beyond the fact that the introduction of the piers to carry the dome obstructs the vista through



GROUND PLAN OF GERONA CATHEDRAL.

the aisles, is the fact that the space covered by the dome cannot exceed in diameter the width of the nave and aisles combined. In other words the space covered by the dome cannot be more than an

octagon whose diameter is this combined width. In this instance had the dome-form been used the main central space would have been an octagon of only 86 feet diameter, whereas by the present arrangement of vaults this space is nearly trebled, and the superiority of this arrangement, therefore, cannot be called in question.

In the plan of the Cathedral of Gerona which is composed of a nave of single span with the usual arrangement of the nave and aisles of the choir opening into it (the nave proper being 73 feet in clear width) it is believed that a scheme exists which, largely modified from the model, offers a method by which the central space which is here held to be indispensable, the fundamental idea of the cathedral church of to-day, can be achieved. No less an authority than the late George Edmund Street, the foremost English architect of his time and an unimpeachable authority, writes of this building in terms of the highest admiration.

The scheme herewith presented and which is based upon the conjunction of a single-span nave with a choir of the usual arrangement of nave and aisles, as shown in the Cathedral Church of Gerona, consists of a central space 86 feet square with four lesser spaces placed at the four faces of the central square, forming a space, cruciform in plan and unobstructed by columns, containing 21,000 square feet of floor-space, an achievement which, it is believed, is unprecedented in the whole range of the Gothic style.

To be able to seat nearly three thousand people within a radius of not more than 115 feet of the preacher has never been accomplished in any cathedral of the usual type, certainly not in any building of the Gothic style. The very fact that the usual tripartite arrangement of nave and aisles has been retained and grouped around this central space adds to its majesty and grandeur through contrast, and the nave and aisles of the nave, transepts and choir are reacted upon by the simplicity of arrangement and detail of the great central feature.

The power of contrast, one of the most, if not the most potent element which the architect has at his command, is here attained in a very striking degree. On this point Mr. Street writing of the Gerona example, says:

"At the east end of the nave" (a nave of one span) "three arches open into the choir and its aisles. Here it is that the magnificence of the scheme is most fully realized. A single nave and choir, all of the same enormous size would have been immeasurable by the eye and would to a great extent have been thrown away. Here, however, the lofty choir and aisles with their many subdivisions give an extraordinary impression of size to the vast vault of the nave and make it look even larger than it is." Since the treatment so highly praised has in the design herewith presented been adopted not only for the choir but for the nave proper and the transepts, the words above quoted may without impropriety be applied to it, and it should be borne in mind that this is not the opinion of an eminent critic upon a theory of design but upon an accomplished fact of building.

The constructive difficulty of carrying arches and vaults over a space of such extent as that which the plan involves, lies in furnishing proper abutment for the outward thrust of the arches and vaults. This is met by the four towers, placed in the angles as shown on the plan where they receive and counteract by their mass and the weight of their walls the outward thrust of the arches and the vaults of the crossing.

If the premise laid down be correct—that is, the necessity for this large central space in a Cathedral Church—it is claimed for this design that it furnishes it in a manner not only most novel but entirely practicable; and it is further claimed that the result will justly challenge universal admiration, as embodying the expression of the idea most essential to be expressed, and at the same time as retaining all the essential features of the usual plan of a cathedral church thus perpetuating its traditions and characteristics and recognizing the affection with which they are regarded.

That the services may be brought nearer to the worshippers, the choir-stalls have been brought boldly into the north arm of the cruciform space and outside the choir arch. They are raised well above the level of the central space or crossing and are enclosed by a chan-cel-screen. The advantages of this arrangement seem to need no argument. The details of the screen and stalls may be combined to produce an effect of the highest beauty.

The placing of the choir-stalls shown on the plan is an innovation,

but there is, it is believed, no liturgical objection which can be raised against this arrangement, and since it permits of the nearer approach of the congregation to the services it possesses a distinct practical advantage which cannot be ignored. The effectiveness of the choral service, as may readily be seen, will be greatly enhanced by the acoustic advantages which this position affords. Again precedent has been laid aside in the treatment of the floor-levels. While this may, perhaps, be thought too bold an innovation, it is, together with the proposed position of the choir-stalls, the logical sequence of the premise which claims the central unobstructed space as the necessary starting-point of the design. If this premise is sound, as it is held to be, then these two features of arrangement naturally follow—but it may be added that while they are suggested and their adoption advised—their introduction must not be looked upon as necessary to the other features of the design. They may be abandoned and the usual treatment followed, without modification of the general arrangement. The reasons for placing the choir-stalls outside the choir arch have been given in brief. A word as to the difference of floor-levels which is suggested. When the limit of length has been fixed, as is the case in this instance, the large central space can be secured only at the expense of the length of the nave proper and the choir. It must be admitted, that while exceeding in total length the limit suggested by the Trustees in their instructions to the architects, this design would be bettered by the introduction of an additional bay to the length of the nave and choir. To increase the appearance of internal length in the nave is one reason for the introduction of this difference of floor-levels, and that this would be its effect may not be doubted.

The eye is unable to follow the floor-level, losing it at the point at which the steps are introduced and not catching it again until it reaches the point at which the chancel-steps rise.

The possibility of scaling the distance by the eye is removed, and the appearance of the length greatly augmented thereby. Any one who has seen one of the Spanish churches in which the altar and choir are placed in opposite raised galleries will have noticed how greatly this arrangement, even in small churches, has increased their apparent size, and although the treatment of floor-levels is not, in this instance, carried to any such length, the same effect must follow, though in lesser degree. But another and stronger reason has led to the adoption of these different floor-levels, which is that to the preacher, the congregation as it recedes from him rises in higher levels, one tier above another, thus bringing him into closer connection with his hearers, and them into closer contact with him. This is a positive advantage, but it were unwise to seek to gain it at the loss of Churchly effect.

There are, however, instances without number in which the introduction of steps occurs, and while not precisely in the way here suggested, in such way at least as to lead to the conclusion that if followed out it could in no way mar the general effect of the building, nor take from it its Churchly character.

Recognizing the value of the suggestions contained in an article which appeared in *The Churchman*, six chapels have been incorporated with the design for the use of non-English speaking congregations. The cosmopolitan character of the City of New York is thus recognized in the plan of its Cathedral Church and an additional interest thereby added to the building. These chapels are so situated and so arranged that services may be held in them while the main central service is in progress, the services in no way interfering with one another. The spectacle of a cathedral church in which the service of the Church was being performed in six or more languages at the same moment could not be paralleled in any other city of the world, and must of necessity arouse supreme interest.

The scheme proposed by the plans designated "*Gerona*," possesses one advantage which seems of the very highest value: it is that a part of the design, and that the most important from the practical point of view, can be carried out with the result that so much of it as is completed, shall be a concrete and finished work. Reference is made to the central space with its towers, and the choir. These two parts of the cathedral church are really those which are of practical value for use. The nave and transepts complete the monument in its architectural entirety. It may be necessary to build different parts of the church at different times, and if this be so, it is of no small moment that such parts as may be built in the near future shall not only furnish in the best way what is of most practical value, but furnish it also in a completed form. The nave and transepts and, if need be, the spires may be built at such times as circumstances may permit. While the effect of the four spires would be a very noble, and a fit crown for this city, it would be possible to abandon two of them, finishing the two abandoned with lower roofs or lanterns. But, as has been suggested, the towers themselves, up to a certain height, are constructive necessities—indispensable adjuncts to the great vault of the crossing.

The section shows the three divisions of the nave, the main arcade, the triforium and the clerestory. Reference to it will show the galleries, which have been introduced in the towers over the tower lobbies, two of which contain the organs, and two can be used for sittings. It should be stated that the triforium arcade has been returned one bay back of the high aisle arches, and carried to the outside wall at that point, thus permitting the arches at each side of the central arches to be carried up to a very considerable height, and so composing well with these larger arches. A gallery is introduced in the south end of the Church over the narthex: a position

well-suited for a supplemental or great organ. The two side entrances of the south front are open to the air, and are in height the full height of the arches opening into them, somewhat after the manner of Peterborough. The crypt is placed under the choir and a stairway leading to it is found in the crypt lobby. The choir aisles have been stopped at the line of the centre of the apse, and a narrow ambulatory carried around the latter. This treatment has been adopted as affording greater depth to the choir.

Interior Dimensions.—The extreme length of the interior of the building from the inside of south wall over the gallery to the inside of apse wall is 446 feet. The total width across the nave and aisles of the nave, transepts and choir is 84 feet. The width of the transepts from wall to wall is 283 feet.

The central square measures 86 feet each way and the arms of the cruciform central space are 86 feet by 37 feet.

From centre to centre of nave piers 43 feet.

Depth from front of chancel screen to apse wall 164 feet.

Depth of choir proper 128 feet.

Number of stalls in choir 124.

Choir stalls 72.

Number of stalls in retro-choir, 160.

The baptistery is placed at the west side of the nave, near the entrance and the opening to it is in the first bay next the south front.

It is an octagon of 26 feet diameter.

The chapter-house, octagonal in plan and treated, as is unusual, with a clerestory, is placed at the corner of the west transept and connected to it by a colonnaded arcade.

The vestries are placed to the east of the choir and contain besides the usual accommodation for the bishop, the dean and canons, a library and choir vestry in the second story.

Contiguous to the vestry is the morning chapel.

A cloister has been designed in connection with the vestry and it and the porch of the morning chapel are connected with the east transept by an arcade enclosing the cloister-garth.

Near the entrance from the vestry to the choir is placed a sacristy, with a strong vault for the reception of the plate and ornaments of the altar.

Stairways, ample in number, have been introduced into the plan which give access to all parts of the structure for the purposes of repairs, etc.

As the ground-plan in this scheme is all-important and all-embracing, as it must be in any good architectural work, its description has been given somewhat at length.

The elevations and perspective view speak for themselves, but it should be clearly stated that they must be considered only as what they really are, suggestive studies. They cannot be considered as more than generally suggesting the mass of the building and the treatment of its main features. Properly to develop all the details of so complicated a building must require months of serious and laborious study.

It has been the aim to rely rather upon the mass and dignity of the main features for an effect of majesty and solemnity rather than upon elaborate detail.

The pointed arch has been used in the vaulting of the ceilings, the round arch for all other arches and openings, such as doors and windows. In fact all exterior openings are formed with the round arch. For this it is perhaps hardly necessary to say that ample precedent exists.

The material of which the Cathedral should be built is one of such moment and one which will require such extended investigation to be made that the matter has received only very general consideration. No recommendation therefore is made.

In conclusion, the attention of the Trustees is called to the fact that in the ground-plan of any scheme which may be presented for their consideration, the real value of such scheme must be found.

To design a cathedral church is quite a different thing from adapting a mediæval church to the uses of the Church to-day as far as adaptation is possible and it is only in the ground-plans, by the arrangement and grouping of the various parts, that any development from the model of the mediæval cathedral church can be shown.

It is claimed for the scheme herewith submitted that the true plan of endeavoring to develop an appropriate and harmonious design has been followed. What is believed to be the peculiar characteristic of the Church of this century in contradistinction to that of the time at which the great cathedral churches of the world were evolved has been the starting-point from which the scheme was originated, and it has been the guiding principle throughout in the development of this scheme. This the ground-plan and the ground-plan alone can show in this or any other scheme which may be presented.

Any scheme which does not attempt to embody the characteristics of the Church of to-day is not worthy of embodiment in fact, and a cathedral which fails to do this must be a monument to the incapacity of the architects of the nineteenth century, if nothing more.

So far as the design of the exterior is concerned the elevations and perspective view by which it is shown may be said to be in no way final. They are susceptible of wide modifications, always excepting the four towers which are constructively necessary.

All of which is respectfully submitted.

GERONA.

To the foregoing notes which were submitted with their original

design, the architects added the following particulars when the revised design was delivered:—

The communication of your Committee of Architects under date of July, 1889, requested us to revise and alter our design as further study might suggest, and in accordance with the instructions contained in that communication.

Extracts from the report of the experts were given which covered the following points:

1. Treatment of the main front.
2. The proportions of the towers.
3. Difference of scale between the treatment of the central space and other parts of the building.
4. Insufficient lighting of the central area.

1. The report states that "if the main front is not acceptable to all tastes and if the towers seem too large, especially in their lower stories for the place they occupy, these are details susceptible of easy modification."

We have modified the main front, not so much in the hope of making it acceptable to all tastes, which we would despair of accomplishing, but rather with a view to securing a treatment less Italian in character, and one in which the disposition of parts should better suggest the subdivisions of the structure which it terminates.

2. The objection to the size of the towers strikes us as well taken, and they have been reduced and the projection of the buttresses diminished.

The original perspective view is submitted that these changes may be seen, and an opinion as to their value reached.

3. The report further says that "there is a difference of style as well as of scale between the different parts of the design," which criticism we suppose to refer to the central area and those parts of the building opening into it. It would seem to us that there is here a reasonable ground for difference of opinion. We have not seen the original example, the Cathedral of Gerona. The authors of the report from which we quote may have seen it, and if this be the case between these gentlemen and Mr. George Edmund Street, there is a radical difference of opinion. We find nothing in Mr. Street's account of the building which would lead us to the conclusion that there was a want of scale between the nave and the choir of the Cathedral of Gerona of the nature which this criticism would imply. We find on the other hand, from Mr. Street's account of this building that the difference of the size of the parts is the most striking excellence of the work. We cannot but think that if the difference of scale exists in our design, it must also exist in the original scheme on which our design was based. That the geometrical section gives any idea of the effect cannot be affirmed, and we must leave this point to be determined by the interior perspective. We hold that in the simplicity of the central area contrasted with the multiplication of parts and details of the nave, transepts and choir lies one of the strongest features of the design of our interior.

4. The report further says "It is a matter of serious consideration whether the central space will be sufficiently lighted."

This point hinges naturally upon the question, What is meant by "sufficiently lighted?"

If to be sufficiently lighted it must be possible for the congregation to read the service without artificial light, we admit that it will not be sufficiently lighted. If, however, it is considered as sufficiently lighted if the whole architectural character of this part of the building be clearly defined and a fine contrast to the more brilliantly illuminated areas be obtained, we hold that it will be sufficiently lighted. There are few more difficult problems than the artistic lighting of such a building. A uniform light distributed equally through all the parts must be destructive of all effect. We hold that the brilliantly illuminated nave, transepts and choir seen through a more sombre area, such as this central space will be, must add immensity to the interest and effectiveness as well as to the apparent size of the building. With the present development of artificial lighting the temporary illumination for public service is a simple matter, and it were better to have recourse to such a method during the few hours of the day when the building may be in use for large congregations, than to attempt to introduce permanent light through windows, thereby destroying in large measure the beauty of the effect.

Reference to the plan will show that we have added one bay to the length of the nave. We have also largely modified the treatment of the choir. We have introduced a sanctuary, next to the great arch opening from the north arm of the cruciform space, covered by a single vault, and in this sanctuary we have placed the altar. This we hold to be a great improvement over the original plan, as it brings the altar sixty feet nearer the congregation, and places it in a feature of the plan especially constructed for its reception and at a point where its importance can be much increased. The choir, north of the altar, is filled with stalls, and flights of steps leading to each face of the altar admit of the use of the retro-choir for special services.

The interior perspective view will, we think, endorse the opinion which we have expressed as to the value of these changes in the arrangement of the choir, which are in line with those features which we have incorporated in the design, and which are based upon the central idea which has governed us in making this design, which

idea is set forth in our description of the original drawings to which description we would again call the attention of the Trustees.

We have the honor to be respectfully yours,

W. A. POTTER,
R. H. ROBERTSON.

THE HUSS AND BUCK DESIGN.

MESSRS. HUSS & BUCK furnished the following statement:—

"So build thy Temple that man,
In silent meditation of its grandeur,
Shall feel his soul raised to the
Greater Glory of God."—C. de R. H.

THE drawings submitted by the undersigned are prepared in accordance with your instructions for "further elaboration," and are the general conception of a grand scheme for this cathedral.

The drawings consist of a ground plan, east, north and south elevations, transverse and longitudinal sections, and two exterior and one interior perspectives, some of these drawings (those with the original device, A. M. D. G.) having been submitted in the first competition. In your revised instructions of September 12, 1889, it was voted "that each architect be allowed to submit his original plan and another set, according to his discretion." We therefore venture to suggest, by means of "flaps," a mode of considerably enlarging the central area, which will be described hereafter.

Attention is respectfully directed to the following brief explanation of the principal features of these drawings.

In designing a church which is to take the rank of the Cathedral of the City of New York, the traditions and examples of the "Mother Church" in England and Scotland will undoubtedly prove the best guide. (Not in a servile copy, but in a building developed and adapted to our present wants.)

There we have "inherited a priceless treasure of old religious buildings from our church in its unreformed condition, and as, happily, the English Reformation involved no breach of continuity, as it purified, but did not reconstruct, these churches in the main have served well for our present use; still there are those differences between the older and the newer Church of England which ought to make a church provided for this generation something different from the one which had been built for the Middle Ages."

Thus every age demands building plans of its own to suit, without loss or perplexity, its special requirements.

"It must be remembered that this cathedral is not a building for the Roman Catholic Ritual, but for the services of the 'Protestant Episcopal Church in the United States'; there are, therefore, many adjuncts of a mediæval cathedral which would be utterly out of place." It would be a grave error to imitate the heathen basilicas or the Roman traditions of a choir finished with an apse and its surrounding chapels, which are utterly inconsistent with the ritual of our church, and of which no example exists of its adoption in the ancient edifices of the "Mother Church."

"The original type of English chancel, with square east end, notwithstanding all the influence of Rome and the Continent, still maintains its ground as a triumphant proof of the deep hold taken by the original planting of Christianity in Britain, and of its vital and unbroken continuity. This peculiarity of English churches is so decisive, so marked, so characteristic, that it is no wonder that the English ecclesiologists have insisted on it as the proper rule, and have opposed the use of apses at all in the Anglican Church or any of its branches."

"For ecclesiastical buildings, there is no question but the general voice would declare in favor of the Gothic style. Tradition, association of ideas, prepossession, all tell in its favor. A new cathedral, setting at naught all these reminiscences, would appear to be an intruder, hardly calculated to take rank with its elder sisters, clothed in a different garb, and suggestive of different ideas."

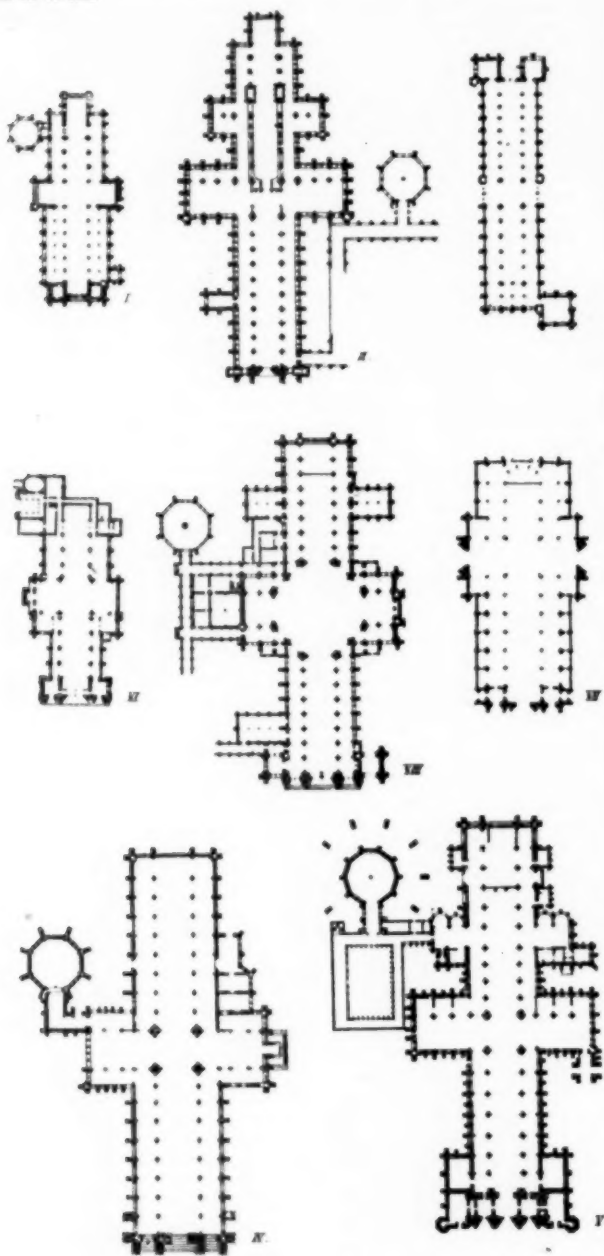
In the Gothic work of the thirteenth century it would be difficult to find buildings more pure in detail, more graceful in design, or more suited to the present wants of the church.

The building of this cathedral will be perhaps the best opportunity that will be given in this, or the succeeding century, to develop the lessons learned from the past generations and to rival the skill which was shown in the Middle Ages by the architects of the cathedrals and great churches in the East.

Plan.—The usual plan of a cross church is followed (this differs from the original plan by the reduction of the transepts to three bays and in the shape of the chapter-house) crowned at the junction of nave and transepts with a large central tower and spire; this forms a combination of the two grand types of church arrangement—the "avenue" and the "central hall"—the common nave-and-aisle plan combined with a large central octagon (with an inside diameter of 74 feet) and giving accommodation to a large congregation within a small radius of the pulpit—an important point in a nineteenth-century cathedral. On separate "flaps" a mode is shown of enlarging (if desired) this central space to 115 feet diameter. The construction of this with our modern appliances and with our knowledge of steel and iron would not be difficult. In your instructions for "further elaboration," you call our attention to this "high lantern tower with small towers at the corners," which is one of the great features of the design. Of course this can be easily modified if on further study and consideration it were deemed wise to reduce the height of the central tower; and the opinion of Professors Babcock and Ware, architects,

and Mr. John Bogart, civil engineer, voices our own judgment that in an important construction like this the utmost and special care should be taken, when the design is worked out, to secure the most complete, scientific and practical arrangement for ample areas of distribution of pressures and for taking the thrusts. It is not to be expected that in one-sixteenth-of-an-inch-scale drawings the entire constructive features and methods of development can be indicated, except in the most general way.

A cathedral, to dominate, should have a commanding mass with a great centre, and we have endeavored, while remembering the magnificence of the site, to avoid the contracted effect of two towers immediately flanking the nave, as at Westminster, York, Lichfield, etc. It is necessary to place the towers outside the ends of the aisles, as at Wells.



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|------------------------|--------------------------------|
| I. ELGIN, SCOTLAND | V. LINCOLN, ENGLAND. |
| II. SALISBURY, ENGLAND | VI. ALL SAINTS, ALBANY. |
| III. GLASGOW, SCOTLAND | VII. S. PATRICK'S, NEW YORK. |
| IV. YORK, ENGLAND | VIII. S. JOHN THE DIVINE, N.Y. |

Block plans.—Herewith are plans of several cathedrals reduced for comparison to the same scale.

Nave.—The nave is wide (forty-four feet from the centre of piers) for the seating of worshippers; the aisles to be used as passages except in case of great crowds. The triforia are also designed to be used as galleries in such cases, and ample staircase approaches are planned.

The gallery across the south end of the nave is intended for the great organ.

The whole internal area, south of the choir, including transepts,

aisles and triforia, but exclusive of choir, amounts to 40,000 feet and will give accommodation to over 5,500 persons; the seating to be by means of movable benches or chairs.

Choir.—The choir is a continuation of the nave, of sufficient length to accommodate the bishop, the clergy of the diocese and choir, and, if necessary, future extension into the retro-choir would add one or two bays. The choir could also be brought forward under the octagon as at the junction of choir and transepts at Westminster. The admission of the laity into the choir at the daily services is a question which the architect is not called upon to decide; but light, open benches or chairs could be arranged in the centre between the stalls, or the choir aisles be made available by open screen-work between the piers.

Light open screen-work and gates of metal are suggested between nave and choir, and at the entrances from the choir into the aisles; the gates north of the stalls on the east and west forming a convenient mode of return for communicants leaving the altar without impeding those approaching.

The altar is brought forward from the end wall, leaving a present space of two bays to form a retro-choir or chapel. The altar-screen and reredos to be of the richest marbles, statuary and mosaics. The sanctuary is of ample dimensions for proper service at the altar with sedilia on either side. The bishop's throne (cathedra) is at the north end of the stalls on the east side.

Chapels, etc.—Two chapels opening into the choir aisles are arranged to the east and west of the choir, with a small morning chapel for early communions near the southwest tower, which later it is proposed to utilize as a baptistery, while the tower to the southeast forms a porte cochère.

Vestries.—The clergy and choir vestries are west of the choir, communicating by the choir aisles, with the cloistered passage to the chapter-house, and, by the arrangement of the aisles and retro-choir with either of the chapels, as well as with the choir and sanctuary. Ample provision is made for lavatories, and for the sacristan and his assistants. The northwest chapel being in direct communication with the vestries could be used as a robing-room, etc., during conventions.

Organs.—It is proposed to place the choir organ in the two northern bays of the central tower over the choir aisles, and the great organ as previously mentioned in the south gallery over the main entrance.

Chapter-house, etc.—The chapter-house is placed in close proximity to the offices of the Chancellor, Registrar, etc., the muniment-room (with library over) and, through the cloisters, to the vestries and choir.

Entrances.—The principal entrances are at the south end and the east transept. These entrances modelled after the more imposing Continental forms are deeply recessed for protection from the weather. Staircases and passages in the walls give access to all parts of the building at different levels.

Crypt, etc.—If required, a crypt could be arranged under a portion of the nave, but small chambers and tunnels would be necessary to contain the air-flues and water-pipes also electric wires from the separate engine-house and organs so that repairs, etc., might be made without disturbing any portion of the flooring.

Construction.—It is proposed to face the walls inside and out with wrought-stone; granite for the outside, with dressings of Wyoming Valley or Warsaw bluestone; inside, of Indiana buff limestone with marble shafts, slabs, etc. The exterior work to be bold and massive, suited to the climate, leaving the principal decoration for the interior.

The roofs to be vaulted with ribs of Warsaw bluestone, either filled-in with Hoosier buff limestone, with hollow brick or fireproof material, in turn to be covered with rich mosaics. The vault over aisles to be filled-in and covered with Roman mosaic to form floor of triforia; the roof above to be vaulted, decorated and covered with an arch turned (between the buttresses) in hollow firebrick or cement-concrete to carry the lead or copper roof.

The roofs above vaulting of nave, choir, chapter-house etc., to be of iron trusses filled-in with fireproof blocks and covered with either lead or copper. All floors to be of stone, marble or Roman mosaic and the crypt, if any, to be vaulted.

The towers, and especially the upper portion of the central tower, to be constructed of heavy lattice girders, trusses and ribs resting upon wrought, built iron or steel columns carried down to the foundations and surrounded by the stonework: an independent skeleton of structural ironwork subordinate to, and covered with masonry. We need hardly remind you of some of the recent secular buildings, of great height, quickly and safely constructed on this well-approved method.

The arrangements for heating and ventilating would be by means of fresh hot and foul air channels, the air of which would be worked by fans in a separate building or engine-house, where would be placed the dynamos for lighting and supplying motive power for blowing the organs, etc.

Symbolism.—It is unnecessary to explain the symbolism of the peculiarities of the plan, or arrangement and disposition of the parts of the structure, but attention is called to the double Cross worked out in the plan which is generally conceded to be the "mark of a metropolitan church." This is to be found at Canterbury and York.

In Conclusion.—The endeavor has been not to experiment in any new direction of architecture, but rather to adapt the best periods to

a plan suitable for modern requirements and the services of the Church and for the site.

"It is, ecclesiologically, a momentous crisis in the history of the American Church. Irrevocable mischief or inspiration for all the future are bound up in it. There is good ground for anxiety lest the opportunity be let slip, and the most tenderly cherished predilections of Church people be sacrificed to radical, if not revolutionary, developments in structural art."

It is hoped that this design may meet with your approval and secure your further instructions.

Respectfully submitted,

GEORGE MARTIN HUSS, } *Associated Architects.*
JOHN HENRY BUCK, }

"Stone upon stone!
Each in its place,
For strength and for grace,
Rises stone upon stone!"

Like a cluster of rods,
Bound with leaf-garlands tender,
The great massive pillars
Rise stately and slender;
Rise and bend and embrace
Until each owns a brother,
As down the long aisles
They stand linked to each other;
While a rod of each cluster
Rises higher and higher
Breaking up in the shadow,
Like clouds that aspire.
While here in the midst,
'Neath the great central tower,
The strength and the unity
Mingle in power,
And the mystery greatness;
Nowhere in the place
Can the eye see the whole,
Or the sun light the space.
And here the gloom gathers,
And deepens to dense,
While yonder the white light
Breaks sharp and intense.

Unity! Mystery!
Majesty! Grace!
Stone upon stone,
And each stone in its place."

THE HEINS AND LAFARGE DESIGN.

THE design submitted by Messrs. Heins & LaFarge was accompanied with the following statement, which deals with the material, rather than the theoretical conditions of the problem:—

A PROBLEM of such magnitude as the proposed Cathedral of St. John the Divine is not lightly to be undertaken, if even a measure of success is to be expected; and the present design is by no means regarded by its authors as an ultimatum. Its essential features are as follows, almost everything else being a matter of detail, subject to reconsideration and further study:

1. A cross plan, with semicircular terminations to the choir and transept arms. A large space at the crossing as wide as the nave and aisles together. Wide nave, narrow aisles. A central lantern over the crossing, thoroughly lighting the interior and dominating, with its spire, the exterior.

2. The transepts arranged to contain memorial monuments.

3. All the necessary constructive features, such as buttresses, protected from the weather, by being brought under roof.

4. The walls built with air-spaces. The inside lining-wall of hollow brick to be finished with painting, fresco, mosaic or slabs of stone or marble. The exterior wall of cut-stone.

5. The vaults constructed with tiles, and made to carry the roof proper, leaving the necessary air-space.

6. The interior following the architectural traditions of the Early Church. The exterior following the architectural traditions of the Church of England.

7. The chief decoration by means of works of art of the highest attainable character.

1. The original instructions to the architects limited the total length to 400 feet. This dimension has in the present design been taken from the outside of the façade to the outside of the ambulatory.

In the plan of the chancel, the architects have felt that the simplest traditional arrangements were the most proper to follow. These include its subdivision by broad steps and structural design into choir and sanctuary.

The chancel vault is lofty, in order to give it predominance and dignity. The nave and transept arches are lower, the transepts being vaulted at this level, while the nave arches carry vaults which rise above them.

This subordinates these features in the ratio of their importance, while the central lantern rising above the crossing admits a flood of tempered light into every part.

The choir has the necessary stalls for the clergy and choristers and the bishop's chair which particularly distinguishes the Cathedral Church. The stalls and the organs have, to avoid confusion, not been shown on the elevations, although they are provided for on

plan and in the general design. The altar is at the centre of the sanctuary wall with a broad space between it and the communion rail.

The open galleries above the choir aisles are arranged to receive the organs; being open to the choir, they would allow the sound to escape freely. The pulpit and lectern are placed in the crossing immediately next the congregation.

The chapter-house is in the centre of a group of memorial chapels and vestries which extend around the chancel. The baptistery is at the west and the morning chapel at the east of the nave; each has a separate entrance from without, but can also be entered either from the main vestibule or the church itself. Separate chapels for service in other languages were included in the original scheme, but have been omitted in the present plan.

The most typical Christian plan must necessarily take the form of the cross. To devote the greatest possible space to the sittings, the width of the nave and aisles together is taken for the crossing, the nave being wide and the aisles narrow. The congregation is thus massed about the chancel and pulpit immediately under the central lantern and in the wide nave and transepts.

The nave is vaulted by a tunnel vault over the entrance bay, followed by two bays which would have either the true domes as shown, or vaults of continuous surface, rising from the transverse and longitudinal arches.

By the setting back of the clerestory walls, as explained later, and the lifting of the nave vaults, so that neither vaults nor walls catch the light from the south façade, and by the depth of coloring in the clerestory windows, the nave would contrast effectively against the brilliant illumination of the crossing and chancel beyond.

With this in view, the nave has been made longer than would be strictly necessary for an auditorium, but this increased length seems an advantage in that it not only provides space for unusually large congregations, but avoids the unsatisfactory effect of entering directly under a great dome. On the exterior, it also has the advantage of preventing the central feature from overpowering the rest of the church.

The question of lighting the interior brings up that of stained-glass, which is properly to be divided into two kinds. Those windows intended primarily to give light, such as the windows in the central lantern and in the façade, should have the stained-glass of delicate tones, with only subordinate figure-work, while the great windows of the nave should be given up to the utmost splendor of subject and depth and richness of color.

For stained-glass of this kind, large openings, unbroken by mullions, offer the most favorable opportunity. The windows are all placed high up in the walls. This lends to the exterior an effect of solidity through the unbroken wall-surface below, as contrasted with the enrichment of the openings above, while it gives the interior an air of seclusion and repose.

The seven windows in the sanctuary wall are arranged to receive a borrowed light through the triforium gallery, which, in turn, is lit by windows in the exterior wall. This is the most favorable arrangement for effects of splendor of color.

2. Memorials, in the form of inscriptions and tablets, need large, simple wall-surfaces for their proper arrangement, while isolated monuments or statues require ample floor-space within the edifice, not too remote, yet distinct from the space devoted to religious services. Such monumental spaces are provided by the memorial chapels, and especially by the semicircular transepts.

This design is distinguished from the usual type of cruciform church in that the transepts have this definite function, and are not used as thoroughfares, access from the east and west being given by entrances in the flanking towers.

On the exterior the transepts are kept low, corresponding to their relative importance in the interior, so that they do not interrupt the roof-line of the nave and chancel.

3. In the cross-section through a nave of the usual Gothic type, the nave-vaults are higher than those of the side-aisles, to allow for windows in the clerestory wall. The buttresses, springing from the outside wall of the aisle, and resting against the upper clerestory wall, are outside the building. If, now, the clerestory wall be moved outward, to come above the aisle wall, and the roof be extended to cover it, the buttresses will be inside the building. This arrangement has the advantage of bringing all the necessary constructional features under roof, and thus protecting them from the weather; it has been done in some edifices of the Eastern Church, and it seems remarkable that so rational and simple an arrangement should not have been more frequently used in the West. It protects the vital parts of the construction from the weather, it frees the exterior from flying-buttresses, and it gives an air of great spaciousness inside, since the whole width of nave and aisles together is obtained above, as well as at the level of the floor.

The projection of the piers on the inside is also of value for proper acoustics; truthfulness of constructive expression would be obtained by constructing them in solid masonry, showing the actual courses, and reserving the surface treatment of mosaic, slabs of marble or painting for the walls and vaults, where an air-space is necessary.

4. The walls of buildings in this climate may be said to consist of two parts: an outer solid wall for the purpose of support and as protection against the elements, and an inner skin of some kind separated from the main wall by an air-space. This air-space is essential to preserve and protect the interior from dampness and cold.

The usual method in inexpensive work is to place wooden studs against the inside of the wall, and to lath and plaster on these, but the best method is to build a thin lining-wall inside the main wall.

This lining-wall can be built of cut-stone, but the artistic result hardly warrants the expense. By far the best method is to build the wall of hollow brick, which can be either painted or frescoed, or covered with mosaic or with slabs of stone or marble.

This, it will be seen, is a question to be determined without reference to the style of architecture, but with an eye solely to the necessary conditions of the problem and to the decorative result desired. It is as obviously correct and proper so to build as it is to line a coat with a material softer and finer than that used for the outside; and, in fact, there is an architectural propriety in having the interior of a building differentiated from the exterior. The exterior is exposed to all the elements, while the interior is not so exposed.

In Saint Mark's, at Venice, both are treated in exactly the same way, but exterior mosaics and fine marble, while suitable for a mild climate, would be out of place here. In Gothic work, the cut-stone treatment, developed as a necessity of exterior architecture in Northern countries, is employed in the same manner in the interior. It seems quite as unreasonable to use cut-stone within as it is to use mosaics upon the outside. The church at Cefalu, in Sicily, however, has an interior in mosaic and marble slabs, and an exterior in cut-stone, with a tendency toward early Gothic details. Here, then, is an example, produced by the intermingling of Northern and Southern architectural traditions, in which a peculiarly rational result is attained.

The exterior of any building should, of course, correspond in its architectural divisions to the interior construction. There seems, however, no valid reason why that construction need actually project beyond the walls; on the contrary, the best arrangement for this climate would seem to be that in which the interior shows not only the vaults, but also the counter-thrust of the buttressing, so as to produce an effect of complete stability within; while the exterior is confined to its real architectural function, that of a protection against the elements.

5. The Romans employed two methods of vault-construction: one, of ribs buried in the concrete mass of the vault, which has been developed into the Gothic system of independent vaulting-ribs; the other, of flat-tile arches, which has never been fully developed, although in small and unimportant use in some parts of the world ever since. It has lately been introduced into this country by workmen familiar with its use, and has proved to be the most economical method of permanent vaulting.

Vaults constructed according to this system consist of tiles laid at right angles to the radius of the arch and overlapping each other in several layers.

In the Middle Ages the loftiest cathedral vault was constructed in the same manner as the vaults in secular buildings. It was only an architectural development of the usual methods. This was obviously the only reasonable course to pursue, and we propose that the new cathedral should follow in the same spirit, employing the best and most suitable form of construction available at the present day. If the Gothic architects had not thought for themselves, but had tamely followed the practice of their predecessors, there would have been no progress. It could never have occurred to them to use a heavy and expensive mode of construction, if they had a lighter and more effective one available; in fact, their constant effort was to lighten and improve their construction.

That the tile-arch construction was not in more general use in Gothic times is presumably due, largely, to the lack of the necessary cement of a uniform quality. Its advantages over the Gothic system are its greater strength, lightness, economy, and ease of execution, and the fact that it exerts very little outward thrust against the supports, and that it is equally strong at every point. Since its chief advantages lie in its use in surfaces of continuous curvature, it follows that domes, barrel-vaults or what is known as "continuous pendentive" vaults are suitable forms; while pointed barrel-vaults or Gothic vaults with projecting ribs, being discontinuous curved surfaces, are less well adapted to this material.

To vault the eighty-seven foot span of the crossing of the present design in this manner would require less massive buttressing than to vault it with cut-stone ribs and vaulting compartments in the Gothic manner, and hence would be much less expensive in that regard, as well as in the cost of the vault itself, in which alone the saving would be great.

Except the lately removed vault of the Assembly Chamber at Albany no Gothic vault of first-class dimensions has, we believe, as yet been constructed in this country.

The Gothic vault is in reality only a decorative ceiling, which, except the ribs, could be removed without organically affecting the construction. The real roof is carried by the trusses which span the space from wall to wall quite independently of the vault below.

The construction proposed for the present design would give vaults stiff and strong enough in every part to carry at convenient intervals, walls of hollow brick supporting the roof-surface proper and leaving the air-spaces which are even more necessary in a roof than in the walls. Thus the vaults would actually carry the roof, and this seems to be their proper architectural function.

In a severe climate, with violent changes in temperature, a stone roof, in which all the joints shall be covered by overlapping the slabs of which it is composed, would be the most monumental and durable

and the one most likely to ensure freedom from repairs. Tiles, however, laid in cement, would answer very well. With modern mechanical appliances, sufficiently large slabs of suitable stone can be obtained without undue expense.

In the vaulted structures of the Early Church, the dome was frequently employed as the actual roof, visible both inside and out. Except in a very dry climate, a double shell to such a dome is necessary to give an air-space. The Cathedral at Florence and St. Peter's at Rome are so constructed. The exterior shell, if of masonry, is exposed toward the top to infiltration of rain which with frost would, in this climate, quickly cause irreparable damage. It is therefore necessary to cover the exterior dome with metal which was done in the two buildings just mentioned, but this suggests the suppression of the exterior masonry shell and the substitution of an iron or wooden framework carrying the metal covering; in which case the dome on the outside would merely be a satisfaction of personal preferences rather than a form resulting from constructional necessities.

In St. Paul's in London, there is an inner masonry dome, over the crossing. Outside of this is a conical construction built of brick in horizontal courses, like a spire; this carries the small lantern and cross. The domical shape on the exterior is given by a wooden framework covered with metal. If now this outer woodwork be removed, the remaining features would be a dome surmounted by a spire like the famous ciboria of the old cathedral at Salamanca which consists of these two features employed in a logical manner. In the Romanesque churches in central France, also, the domes are generally covered by conical or pyramidal roofs.

It is as reasonable to put a cone.

A spire, by the steep inclination of its faces sheds rain, thereby insuring the permanence which is impossible in an unprotected masonry dome. It is, in fact, a monumental roof, and a cone or polygonal pyramid is as properly to be used to protect a dome within as a square pyramid to cover a groined arch, or a common roof to cover a barrel-vault or a gable over an arch.

The use of iron or steel in construction is not desirable as their life is limited unless they are constantly repainted, and it is a question whether, even if completely built-in, they will not oxidize. M. Viollet-le-Duc,¹ in his restoration of the cathedral of Paris, found that clamps in the interior of the masonry and thoroughly protected, had oxidized, and by the consequent expansion, brought ultimate disaster to the construction they were intended to secure.

6. The Protestant Episcopal Church in America traces her descent from the early Apostolic Church, through the Church of England; the design here presented recalls this history.

The Byzantine domed churches first gave to the world a perfected type of Christian art. The Roman basilica was, of course, employed from the earliest times, but it was not originally a typical expression of Christian architecture, since the idea was borrowed directly from the Roman halls of justice. The influence of the basilica type became paramount, and the Gothic nave was a development and perfecting of the unremitting attempts to vault a basilica; but St. Sophia, at Constantinople, must be regarded as the first great expression of a typically Christian mode of religious architecture.²

An almost universal feature of the early domed churches was the central lantern, which is a striking point of similarity with the English Cathedrals. It gives the dignified and harmonious composition of a great pyramidal group with the most important feature over the crossing. It is sufficient to recall the outlines of the English cathedrals to see that this was their usual arrangement; while the majority of the French cathedrals were never intended to have other than the towers of the façades. In some of the Continental cathedrals, the central tower or lantern was used, but except in the Rhenish churches, it was nowhere so characteristic as in England.

The round arch has been used throughout the present design since not only would pointed arches have been out of harmony with the desired character of the interior, but no constructive necessity required their use.

It has much admirable precedent. Pointed arches were not used extensively until they were introduced into the vaults as a means of overcoming constructive difficulties. Finally they were employed throughout, from a just sense of harmony, but they are by no means an indispensable feature; the Cathedral of Durham with the round arches of its nave is as much a splendid type of Christian church as is Westminster Abbey with its pointed arcades.

There is in the exterior of the present design a gradually increasing verticality of composition proceeding from the chancel toward the façade and culminating in the latter in a strongly marked predominance of vertical lines, thus giving a Norman Romanesque character to the chancel growing into Gothic in the façade. The object of this is to secure some of the interest and variety which is so characteristic of Transitional architecture.

In the usual Gothic interior the perspective convergence of the lines of the walls and vaults apparently contracts the choir and lessens its

¹ Viollet-le-Duc: "Dictionnaire," Article "Chainage," p. 400.

² In the article "Construction," p. 113, of the "Dictionnaire de l'architecture," by Viollet-le-Duc, one may find a clear statement and diagrams of the distinction in the construction of the French and Gothic vaults which illustrates the structural kinship between the rib-vaulting and the fan-vaulting of the English cathedrals and the domical system of the earliest Christian churches. This explains most of the differences between French and English Gothic. The English work, except in the latest periods, retained as well much more feeling for simplicity of wall-surface, in dim recollection, perhaps, of this distant ancestry.

importance as compared with the nave, and the higher and wider the vaults, the more do they apparently diminish as they recede. In the present design, however, there is a gradual enlargement of the interior, from the entrance toward the chancel, which is emphatically accentuated by a sudden increase in height. A somewhat similar treatment has given to the Cathedral of Monreale, in Sicily, one of the most effective and most famous interiors in the world.

7. In considering the kind of decoration practically available at the present time, one cannot fail to be struck by the great preponderance of painters and sculptors, and the almost utter absence of any consistent school of purely decorative ornamentation.

What decorative ornament is attempted is for the most part merely clever copying of old work; but the painters and sculptors are working along untrodden paths; one cannot but feel that the work they are doing satisfies more fully our æsthetic desires than would any amount of decorative patterns or carvings of string-courses and crockets. In the Middle Ages, in northern countries, there were guilds of artist-artisans who carved the delightfully varied and charming capitals, corbels, running-foliage and the like which enliven the architecture, but except in the Byzantine schools there was probably not a man in Christendom who had the training and artistic experience necessary to paint a picture containing figures ten feet high. The Byzantine schools had fallen during the Middle Ages into a dreary monotony and it is the productions of this time, rather than those of the earlier and purer periods, that are now generally brought to mind by the name of Byzantium.

In any attempt to use the structures of the Early Church as models, great care is, of course, necessary to avoid such Oriental characteristics as would seem strange and foreign. There is, however, so much common sense in these early churches and they offer such a straightforward solution of the architectural problem that they appear to apply with peculiar force to the present case. The rugs and hangings of the East are a part of the furniture of houses to-day, and in the Middle Ages the Byzantine ivories, carvings and miniatures were likewise highly prized and gave many suggestions for carving and decoration.

Although a school of decorative carving might perhaps be created and carried on especially for the Cathedral work, and a popular interest aroused which would have a powerful effect in producing the best work of this kind possible at the present day, yet it cannot but be admitted that the decoration which appeals most powerfully to the imagination is that afforded by great paintings or bas-reliefs together with stained-glass windows of religious subjects. This is not only the highest form of decoration, but it seems in fact the most available under modern conditions. It is, however, by no means necessary to the design as presented that the interior should be throughout elaborately decorated by figure subjects on a large scale, this might in execution not be attained for centuries, if ever; dignified proportions and logical arrangements would of themselves give an effective result if only painted in low tones in a simple, agreeable manner.

These are the practical and architectural considerations and the historical precedents which have controlled the design here presented and the resulting forms are such as are at many points susceptible of symbolic interpretation.

The subjects to be employed in the decorative treatment are a matter for mature deliberation. The following scheme is only one of a number which might be suggested.

The nave as a whole is taken for the representation of the Old Covenant and is devoted to the scenes and types from the Old Testament.

The three bays of nave are devoted to the Three Persons of the Holy Trinity; the five subordinate bays of aisles to the Pentateuch. The four piers, supporting the nave vaults have carved capitals or figures on the vaults, representing the four Greater Prophets and the twelve columns the twelve Lesser Prophets, while the two columns next the main vestibule represent Adam and Eve. The stained-glass windows of the nave have figures of the prophets with symbolic events represented in the semicircles above.

In the crossing is represented the Revelation, and this seems particularly appropriate in the Cathedral of St. John the Divine, giving the proper importance to the Vision, yet not conflicting with the dignity of the chancel.

The twelve piers supporting the great lantern are devoted to the Twelve Apostles, and the piers and columns of the transepts, by the carving of their capitals, to the noble army of Saints and Martyrs. Above the arches of the transepts and nave, facing the chancel, are the four-and-twenty Elders casting their crowns before the Throne; in the four pendentives of the great dome, the four Beasts of the Revelation under the guise of the Symbols of the four Evangelists, while the great dome itself has order on order of the Hosts of Heaven in adoration and praise about the Throne.

The chancel is devoted to the expression of the fulfilment of prophecy in Our Blessed Lord and Saviour. It should be the most impressive part of the sacred edifice and should be marked by its distinct architectural treatment; its proper adornment demands the highest efforts of Art, expressed in the most precious marbles, the most exquisite carvings and paintings, and the finest mosaics and stained-glass. It is needless to enumerate what scenes of the Life and Passion of Our Lord might animate the walls, the embarrassment being but to choose from the riches offered; whatever may be desired of artistic and symbolic beauty should certainly be lavished here. The twelve columns forming the ambulatory, the

seven arches supporting the vault of the sanctuary with the seven windows above, the two larger and two smaller piers, should all tell their story and add to the voices which speak from the walls. It is here, in a word, where should be represented and expressed the most solemn teachings of the religious belief, which the cathedral as a whole, represents.

The proportions, subdivisions, and carvings of the exterior have throughout been considered with reference to the decorative scheme of the interior. The south façade is in the form of an equilateral triangle, the extreme width of the front, forms the base and the top of the main gable, the peak. The façade also forms a square, the width being as before and the height, that to the base of the spires. In the four towers, as buttresses of the central lantern, are symbolized the four Evangelists, while the two towers of the façade are devoted to Saint John the Baptist and Saint Michael Archangel as heralds and messengers of Our Lord.

The central lantern is naturally devoted to the expression and representation of the Revelations and by its decoration is intended to recall the Vision of Saint John the Divine.

The seven stages of its height are adorned with statues or carvings of the seven Angels, the four turrets at the angles have carvings to represent the four Beasts corresponding to the pendentives inside, and the twelve gables about the twelve-sided spire have pinnacles carved with statues of the four-and-twenty Elders about the Throne. The twelve sides of the spire have, carved, the symbolic eagles at the upper part, while the seated statues at the peaks of the great gables represent great teachers of mistaken religions, Buddha, Mohammed and Confucius being thus subordinated to the more perfect Christian Faith.

HEINS & LAFARGE.



[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

DESIGN FOR THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MR. W. HALSEY WOOD, ARCHITECT, NEWARK, N. J.

PLAN OF THE SAME.

DESIGN FOR THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. W. A. POTTER AND R. H. ROBERTSON, ASSOCIATED ARCHITECTS, NEW YORK, N. Y.

PLAN OF THE SAME.

DESIGN FOR THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. G. M. HUSS AND J. H. BUCK, ASSOCIATED ARCHITECTS, NEW YORK, N. Y.

PLAN OF THE SAME.

THE "flap" showing proposed enlargement of the crossing is shown at the top of the plate.

DESIGN FOR THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. HEINS & LAFARGE, ARCHITECTS, NEW YORK, N. Y.

PLAN OF THE SAME.

[Additional Illustrations in the International Edition.]

SOUTHEAST PERSPECTIVE VIEW OF THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MR. W. HALSEY WOOD, ARCHITECT, NEWARK, N. J.

WE particularly regret that we cannot exhibit a better reproduction of this drawing, for the original is very, very near to being one of the most remarkable and interesting pen-and-ink drawings ever made. We understand that it is the last drawing made by Mr. Davidson, who was ill even while at work upon it, and one of the Trustees who is an enthusiastic admirer of the design has declared his belief that the drawing is actually "inspired work," done under the direct guidance of heavenly hosts.

INTERIOR VIEW OF NAVE AND CHANCEL OF SAME DESIGN.

PLAN AND PERSPECTIVE SUBMITTED IN THE FIRST COMPETITION. W. HALSEY WOOD, ARCHITECT.

SECTION OF THE SAME.

NORTHWEST PERSPECTIVE VIEW OF THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. W. A. POTTER AND R. H. ROBERTSON, ARCHITECTS, NEW YORK, N. Y.

INTERIOR VIEW OF CROSSING AND CHANCEL OF THE SAME DESIGN.

PLAN, SECTION AND PERSPECTIVE SUBMITTED IN THE FIRST COMPETITION. MESSRS. W. A. POTTER AND R. H. ROBERTSON, ARCHITECTS.

EAST ELEVATION OF THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. HEINS & LAFARGE, ARCHITECTS, NEW YORK, N. Y.

FRONT ELEVATION OF THE SAME.

INTERIOR VIEW OF NAVE AND CROSSING OF THE SAME.

LONGITUDINAL SECTION OF THE SAME.

REAR PERSPECTIVE VIEW OF THE CATHEDRAL OF ST. JOHN THE DIVINE, NEW YORK, N. Y. MESSRS. HUSS AND BUCK, ASSOCIATED ARCHITECTS.

LONGITUDINAL SECTION OF THE SAME.

The "flaps" showing the treatment of the enlarged crossing is also shown upon this plate.

[It was our intention to give each design a fairly equivalent illustration, but the character of the drawings, the light and a mistake in instructions made it impossible to procure as many plates of Messrs. Huss & Buck's design as of the others.—Eds.]



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

"SAFE BUILDING."

April 25, 1891.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—How soon can the second volume of "Safe Building" be looked for? Will you also kindly tell whether there will be a continuation of the papers or will they end with the second volume which, I understand, is now in press?

Yours respectfully, Q.

[The articles on Safe Building are, so far as this journal is concerned, completed. The second volume is in press and only awaits the index, which Mr. Berg has not yet finished. Eds. AMERICAN ARCHITECT.]

STORAGE-BATTERIES FOR ELECTRIC-LIGHTING.

ROCHESTER, N. Y., April 10, 1891.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Will you kindly inform me whether the use of the storage battery for lighting by electricity in dwelling-houses is now practicable, and oblige,

Yours very truly,

JAMES G. CUTLER.

[ENTIRELY practicable and in regular use in many places. If, as we half imagine, our correspondent hopes to use a storage-battery alone, sending it to be recharged when necessary, we will add that while even this can be done, yet the freight charges on a fifty-lamp battery—which weighs about a ton—would make this course an unduly costly one. A storage-battery used in conjunction with a small dynamo, run by steam, gas or water, is very useful both as a regulator of and auxiliary to the sometimes uneven action of a small, isolated plant.—Eds. AMERICAN ARCHITECT.]



THE CATHEDRAL AT MORELIA, MEXICO.—Morelia is best known as having the champion military band of the country; but this is an uncertain and transitory distinction when musical rivalries are intense and every town plaza resounds nightly with national music played with fire and spirit. It has also one of the few really beautiful cathedrals. The foundation dates back to 1538 in Tzintzuntzan, but there were successive removals during the next forty years to Pascuaro and Valladolid—now Morelia. The first cathedral was a tiny structure, now known as La Cruz, and in a half-ruined state. The present structure was begun in 1640 and completed in 1744. While the altars have been refurnished and the whole interior has been regilded and freshened, the loss entailed by the confiscation of nearly \$500,000 worth of silver and other ornaments by the Government has not been made good, and richness is lacking. The sacristy, however, is very beautiful, and there is much fine carving in the choir. The towers are finely proportioned and the effect of the exterior is symmetrical and imposing. There are several other handsome churches in the town, but this ranks among the most pretentious in Mexico. In general terms it is safe to affirm that in excellence of architectural design and in richness of interior decoration there are a dozen churches in Mexico surpassing any cathedral in South America that can be named. There may or may not be more piety here, but certainly there is better art. Another distinguishing characteristic of Morelia is its charming pleasure-grounds. In addition to the plazas on each side of the cathedral there is an alameda on the eastern end of the town where a long stone causeway, with broad parapets and benches, is shaded with trees. This causeway is spanned by an aqueduct, and it is a delightful place for outdoor music. Since I have ventured to compare the ecclesiastical architecture of Mexico with that of South Amer-

ica, I may go farther and add that with the exception of Rio in Brazil and Santiago in Chili there are no cities in the far south possessing such artistic plazas and alamedas as are seen in this Aztec land; and certainly there is no music heard there equal to that of the military bands here. In the original Aztec blood there must have been a strain of passion for decorative effects and music. Spanish regularity and landscape gardening have left their impress upon Mexican cities, but the superior taste shown in the arrangement and maintenance of the plazas and alamedas is the heritage of ancient native civilization.—I. N. F., in the New York Tribune.

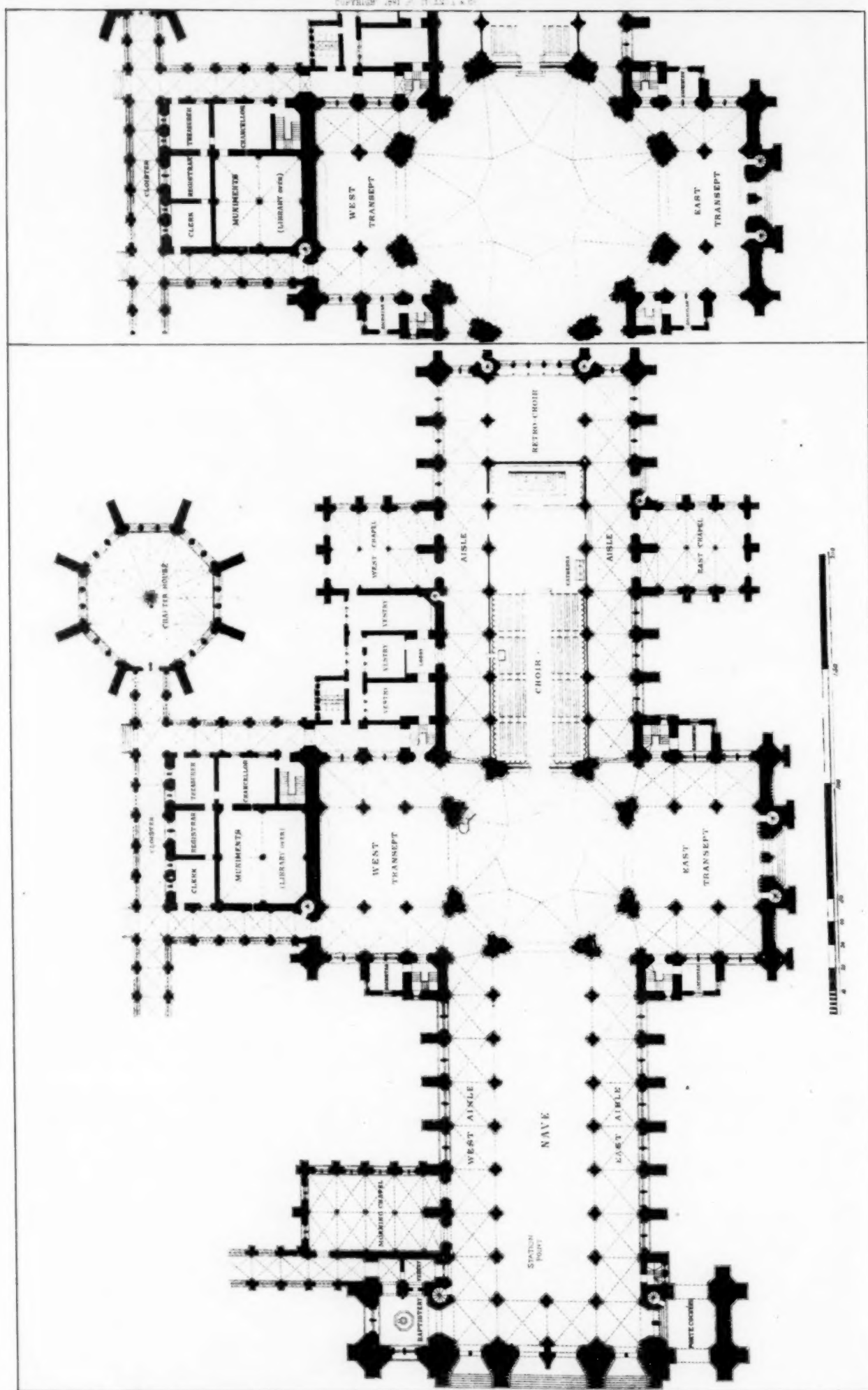
GAS DAMAGE TO TREES.—"If, through a leak in the gas-main, a tree should be killed, is the company legally liable for the loss? And if not, is it generally the custom to pay damages for the same?" The answer to this question by a member of the New England gas-managers was that the company was certainly liable; "but we never make it a question of the law. As soon as we have a report of injury by reason of a gas leak, we tell the party we are very sorry, and give a nurseryman an order to replace the tree."—Scientific American.

PAINTING WOOD.—It is found that in painting wood one coat takes 20 lbs. of lead and 4 gallons of oil per 100 square yards; the second coat 40 lbs. of lead and 4 gallons of oil; and the third the same as the second: say, 100 lbs. of lead and 16 gallons of oil per 100 square yards for the three coats. The number of square yards covered by one gallon of priming color is found to be 50; of white zinc, 50; of white lead paint 44; of lead color, 50; of black paint, 50; of stone color, 44; of yellow paint, 44; of blue color, 45; of green paint, 45.—Invention.

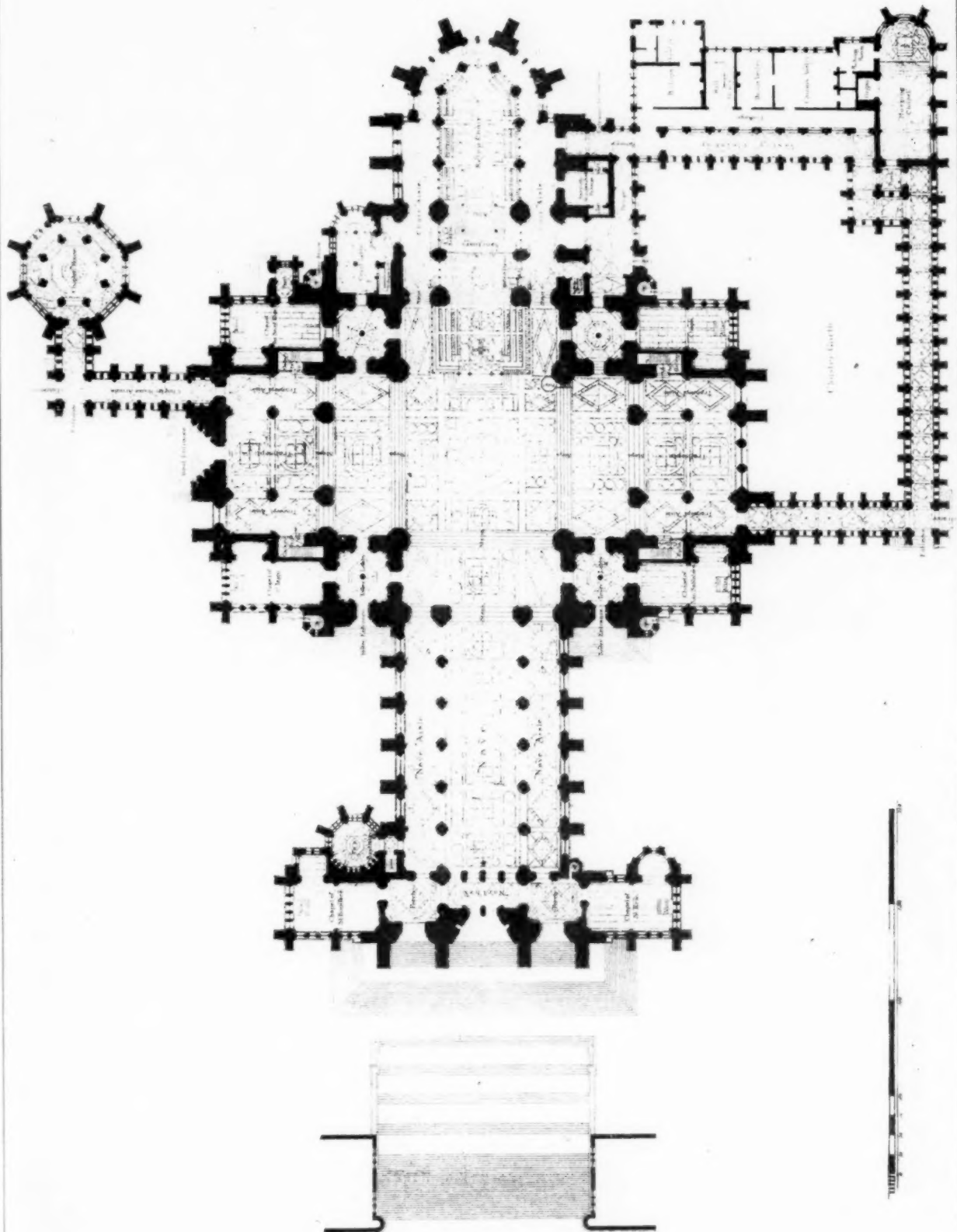


THE disposition of the labor question for the year is already leading to the inauguration of quite a number of enterprises which were held back until that emergency passed. The very latest expressions and opinions from leading architects, engineering constructors and builders are to the effect that building labor will be fully employed for the next two or three months. Contracts for large quantities of brick, lumber, cement, plaster, lath, shingles, etc., have been placed within a few days in New York, Philadelphia, Chicago and some other large cities. These contracts were merely closed, the negotiations having previously gone to the point of being closed. It is stated also by locomotive-builders and the managers of a few large engineering establishments that, within a few days past, contracts have been closed for machinery and engines. It is stated on the authority of one or two large locomotive-builders that the probabilities are very strong that railroad companies will depart from their very economic policy in regard to supplying motive power and equipments, and that they will equip their roads more fully, and up to the standard which engineers have been advising all along. The railroad managers have been going against the advice of their engineers in respect to equipments, and have allowed their roads to run down, so to speak; but, if the statements made in some quarters are to be relied upon, there will be a great deal of locomotive-building done, as well as a great deal of equipment material ordered during the next two or three months. The railway engineering managers are very anxious to put the railroads of the country into first-class condition, and they have been urging this policy upon their companies for a long time past. The managers have admitted the wisdom of the course advised, but their attention has been taken up with less important matters; but it is now probable that more systematic management will be given to the better equipment of railways in the matter of engines, cars, shops and the equipment of shops. This will have a favorable effect upon those industries which supply railway companies. There is also, it is stated on good authority, a very heavy demand for machinery for general shop equipment purposes; also, the machinery for those establishments engaged in the manufacture of farming implements, etc. Tools and small engines are also in very active demand. The manufacturers of railway equipments are busier than they ever have been, if that be possible, and decided improvements are being introduced in the matter of storage-batteries and methods of propulsion for street-cars. The electrical engineers are making remarkable headway in the solution of practical questions within their field. The coal trade is also very active, considering the industrial depression. For instance, the anthracite output so far this year is reported at 1,750,000 tons more than last year. The bituminous mines in the mountain regions of Pennsylvania and Virginia have yielded 700,000 tons more than last year. The mining regions of the Western States have also yielded a larger output than up to this date last year. Throughout the South, more coal is being mined and much more coke made. The Connellsville agitation continues, and the miners are being more liberally provided with means to continue their resistance. The lumber trade has improved remarkably within the week, and, as building operations will now be prosecuted with vigor, retailers and wholesalers in nearly all of the larger cities are making large purchases to cover work to be done for the next three or four months. Yellow pine is crowding its way into Northern markets, especially in the Northwest, where white pine is supposed to be king. The Southern hard-wood interests are being rapidly developed, and that, too, by Northern capital. Building material is low in price, including iron and steel. The production of iron has not been increased, but, from indications thrown out, an improving demand is supposed to be near at hand. The most active demand is for material for bridge-construction, of which a large amount is underway. More interest is being exhibited in the improvement of country roads, and the attention of several State legislatures is being now given to this subject. The money markets continue in an unsatisfactory condition, despite the very favorable reports from money centres. It is not true, as stated in many journals, that at least to the rank and file of borrowers, money is easy. Collections are still difficult, especially in the Western States. It is true that commercial failures are not increasing, but the stringent conditions and the causes leading thereto continue. There is nothing of a very serious nature to be apprehended; manufacturers and distributors are gnaging their efforts and operations with the utmost care and foresight. The accumulation of goods is being carefully guarded against. Notwithstanding the dullness, there appears to be but very little unemployed labor. The decrease of business so far this year, as compared to last, is generally put at from seven to eight per cent. Prices are not declining, for the good reason that there is now only a very narrow margin between cost of production and ruling market rates.

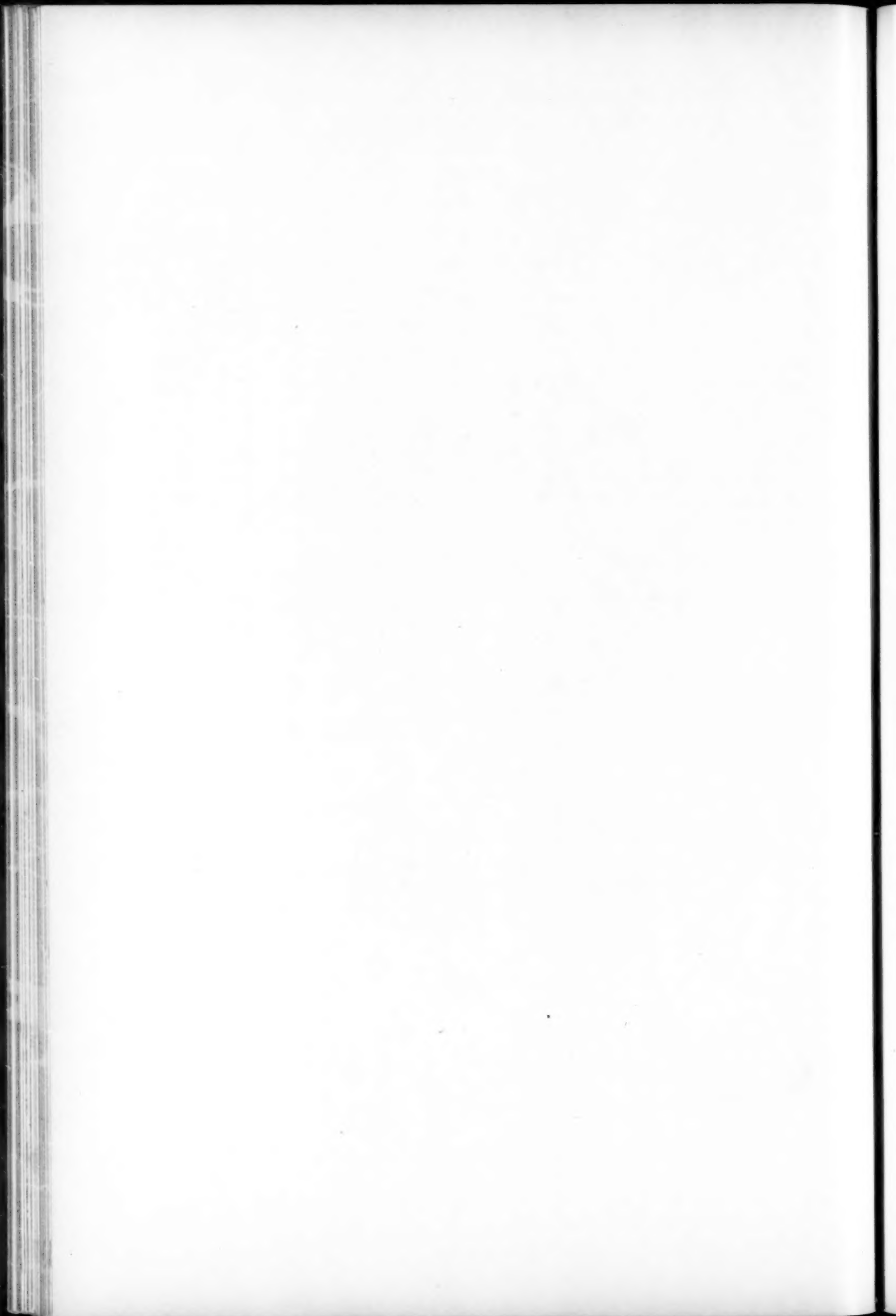
THE
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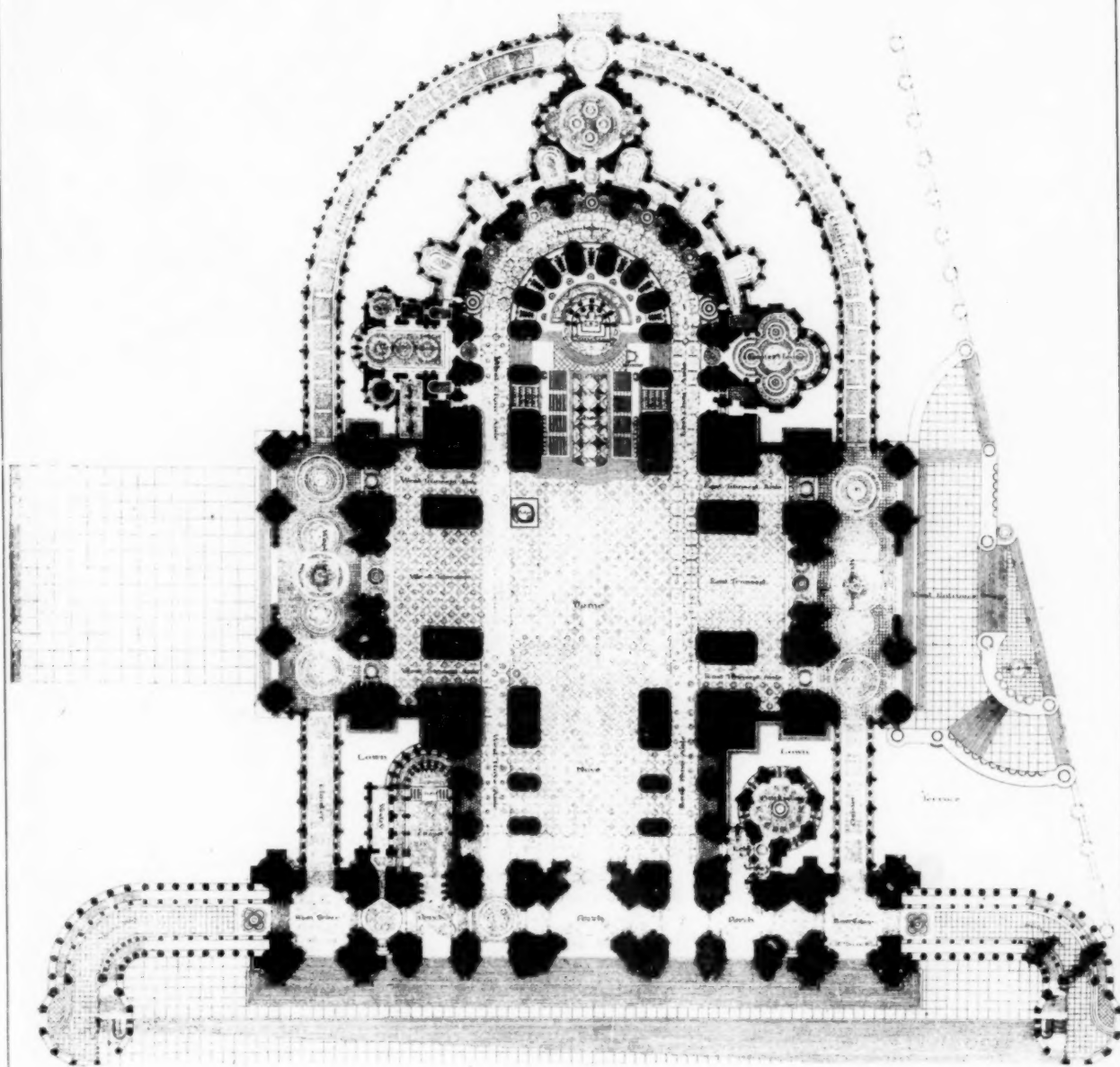
Competitive Design for the Cathedral of
St. John the Divine New York. 1891.
• HUSSEY & BUCK, ARCH'TS. NEW YORK, N.Y. •



Competitive Design for the Cathedral of
St. John the Divine New York



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Prepared by the Golden

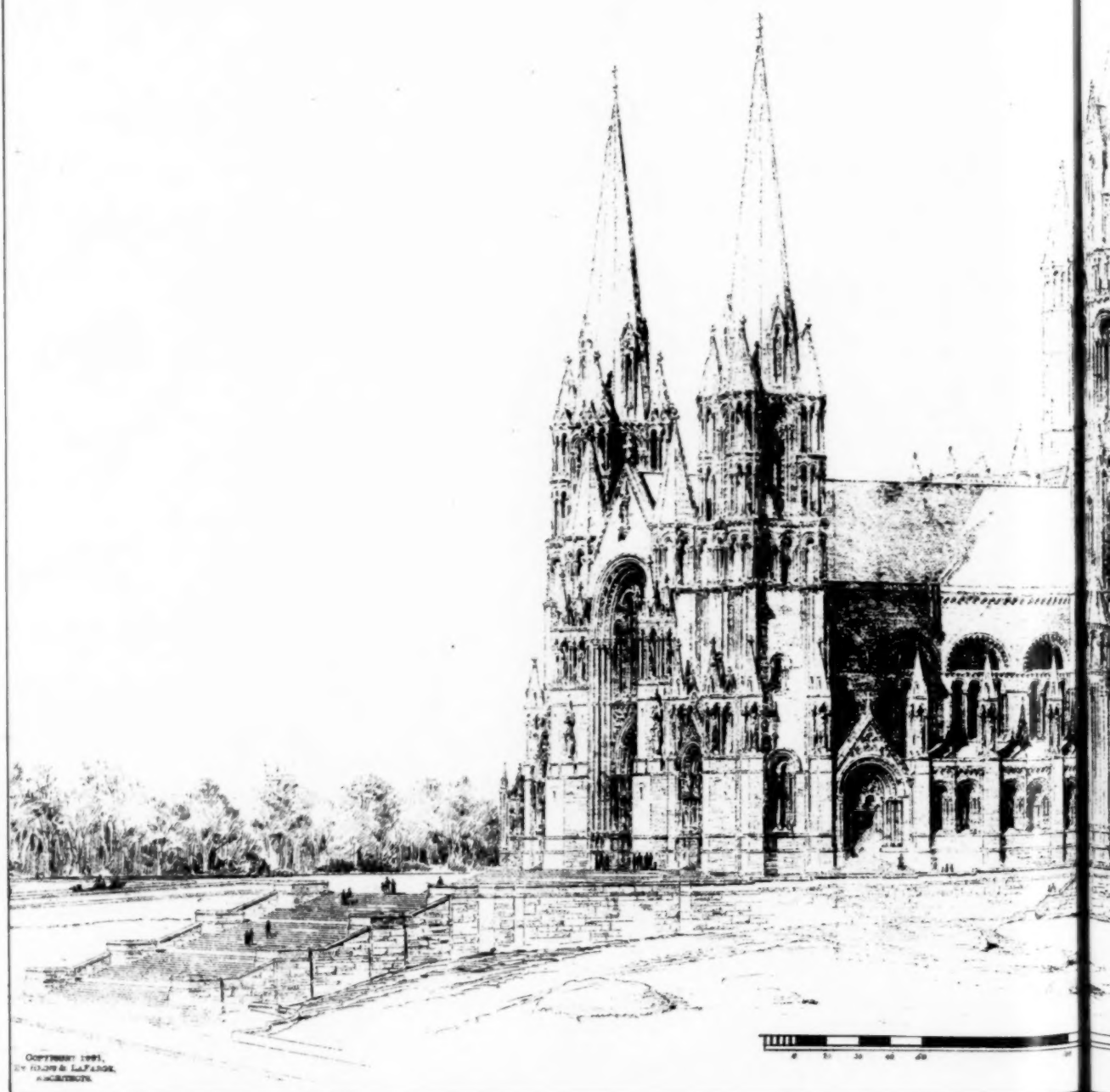
Circular Plan

William Halsey Wood
Architect

Competitive Design for the Cathedral of
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W. HALSEY WOOD, ARCHT., NEWARK, N.J.

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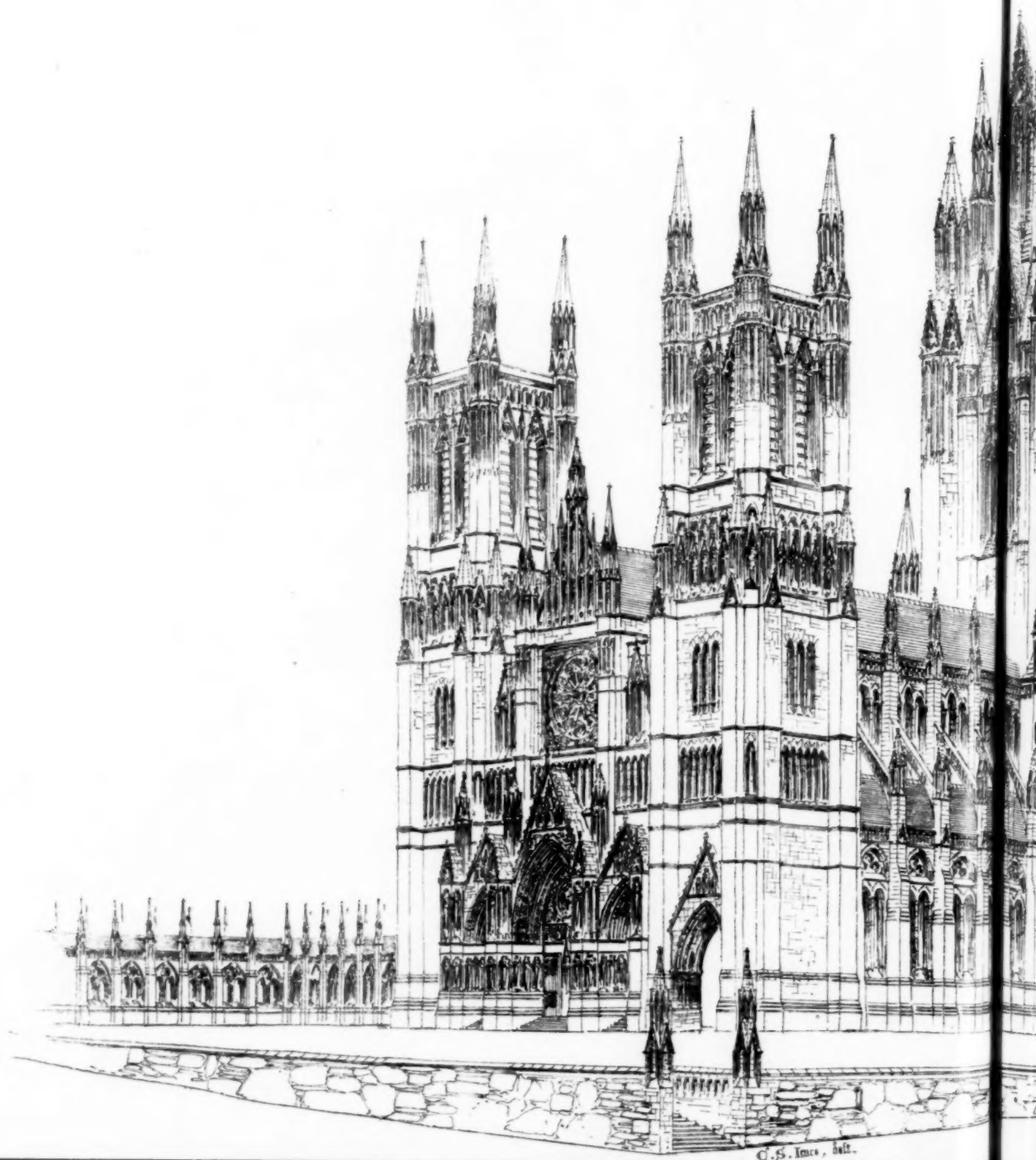
Competitive Design FOR THE CATHEDRAL OF
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HEINS & LAPARGE, ARCHTS., NEW YORK, N.Y.



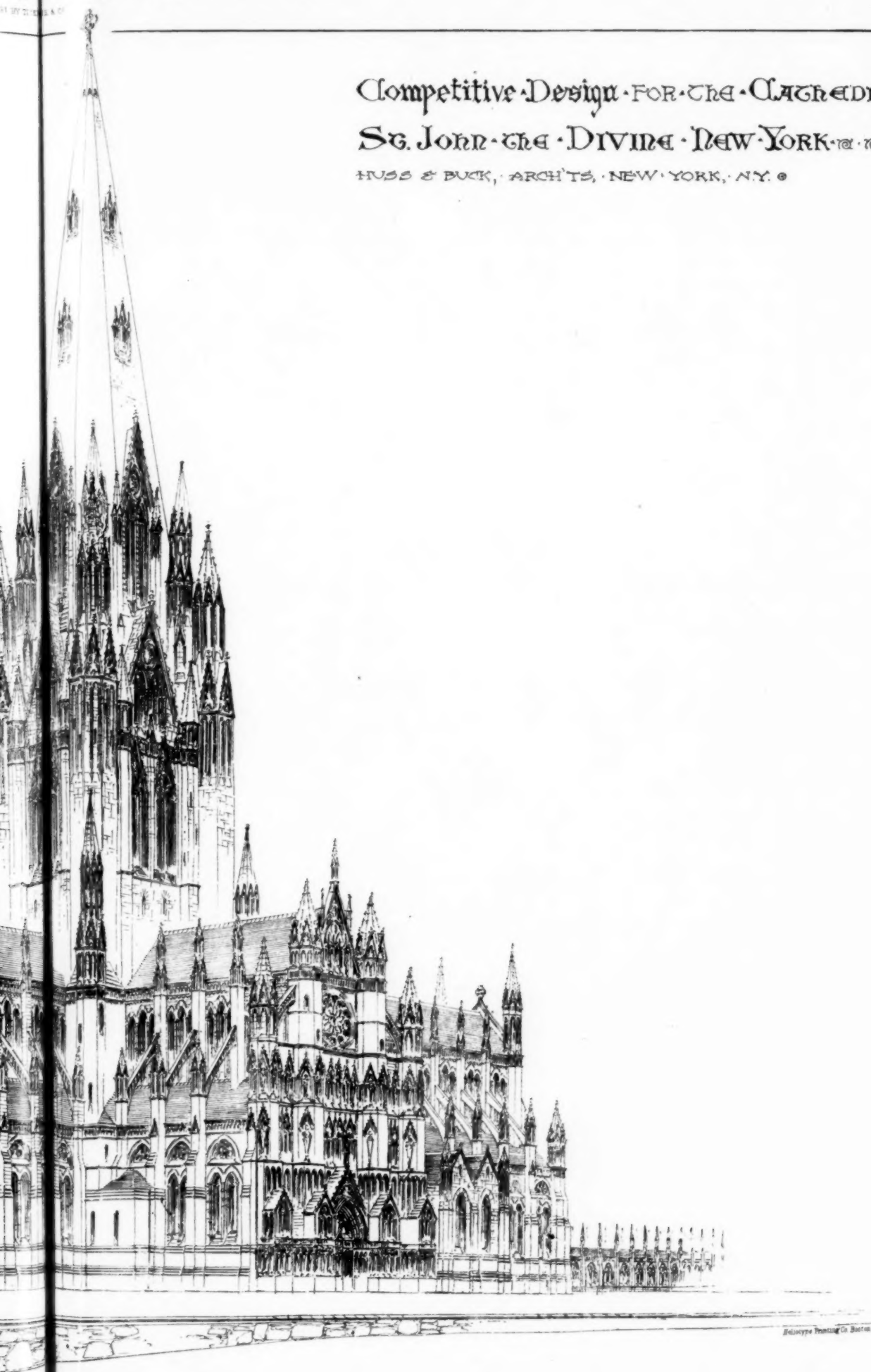
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Original
Perspective Sketch.



Competitive Design FOR THE CATHEDRAL OF
ST. JOHN THE DIVINE NEW YORK

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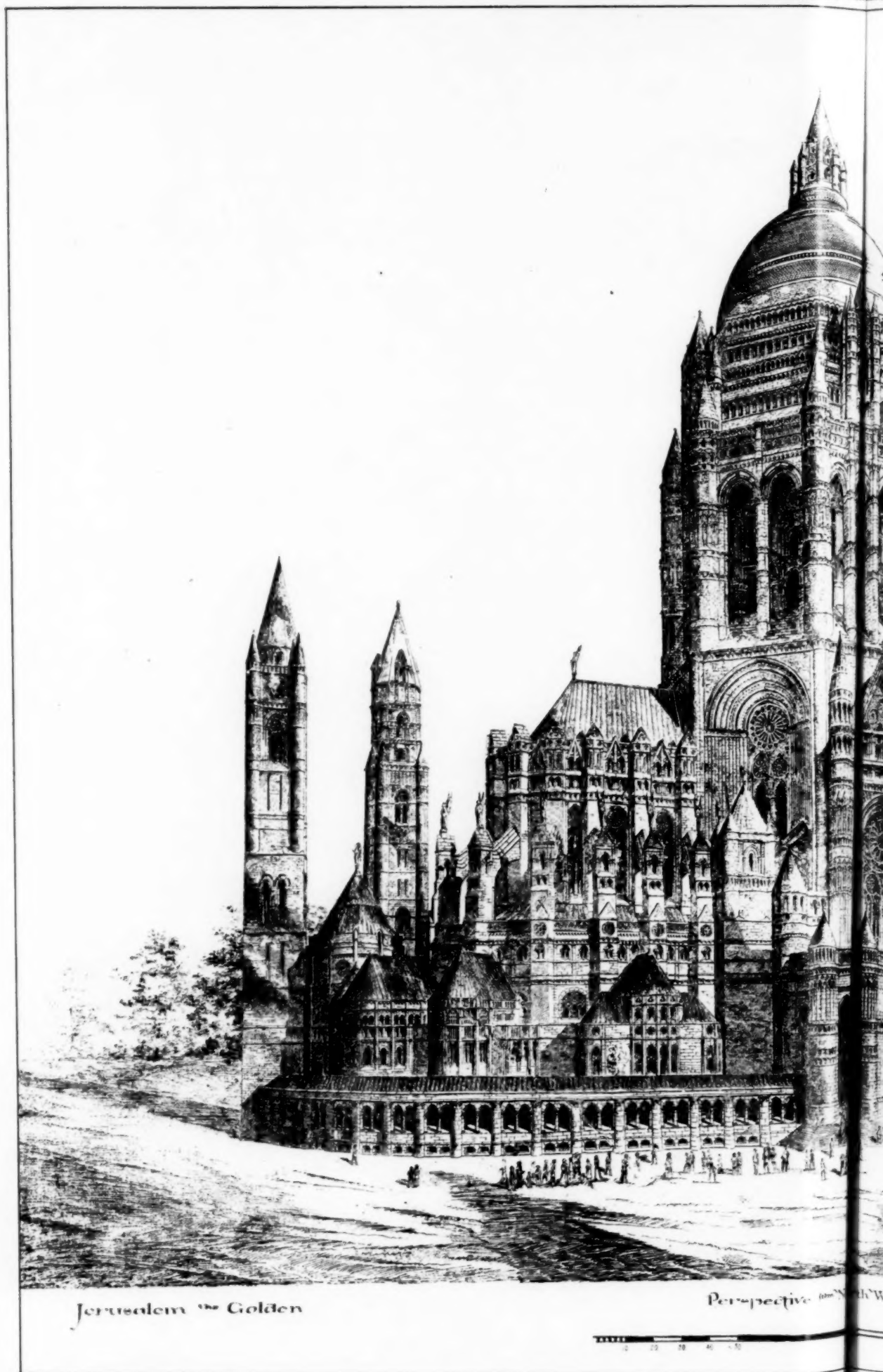




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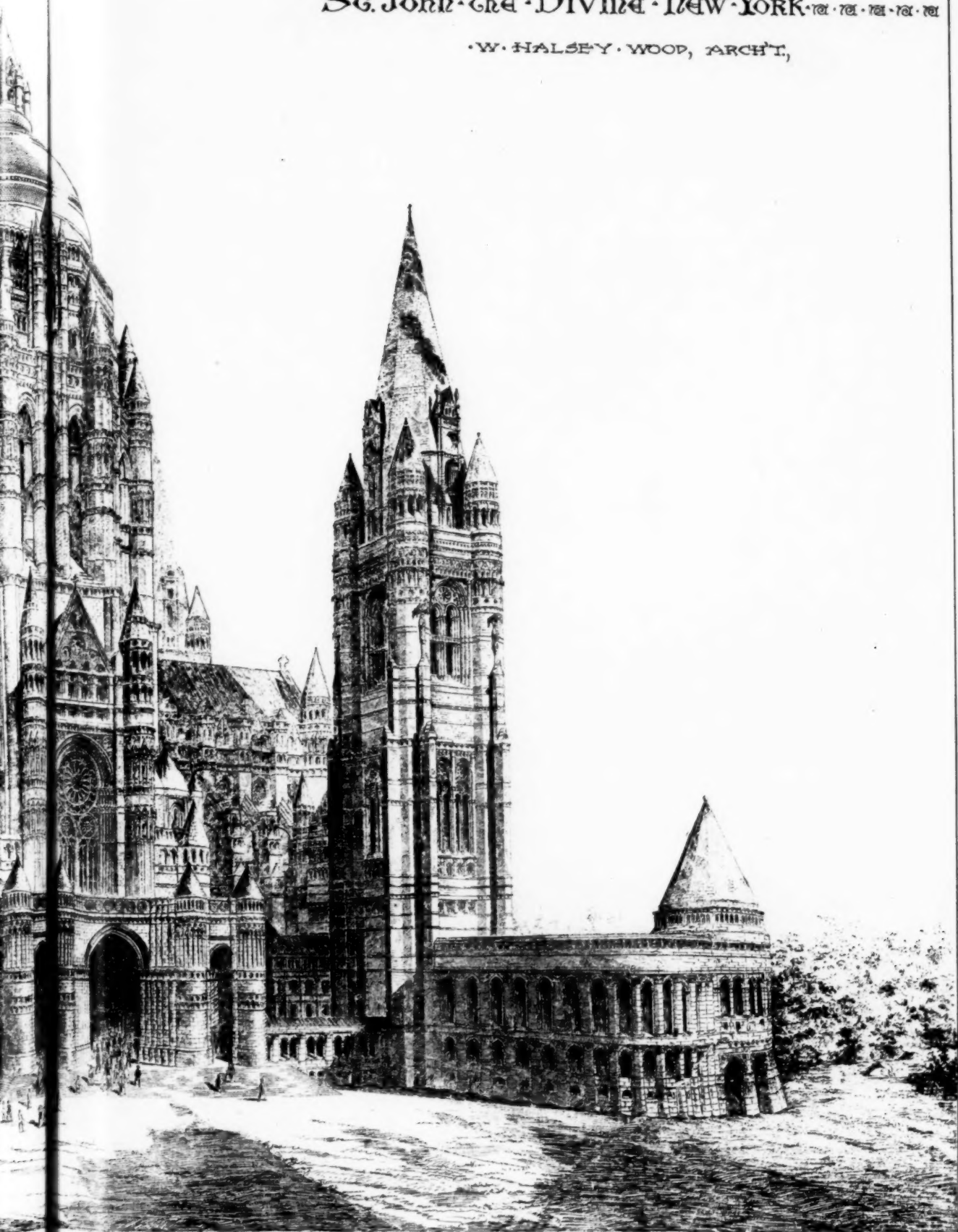
W. A. POTTER & R. H. ROBERTSON, ARCHTS., NEW YORK, N.Y.





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ST. JOHN THE DIVINE NEW YORK.

W. HALSEY WOOD, ARCH'T.



John N. West

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