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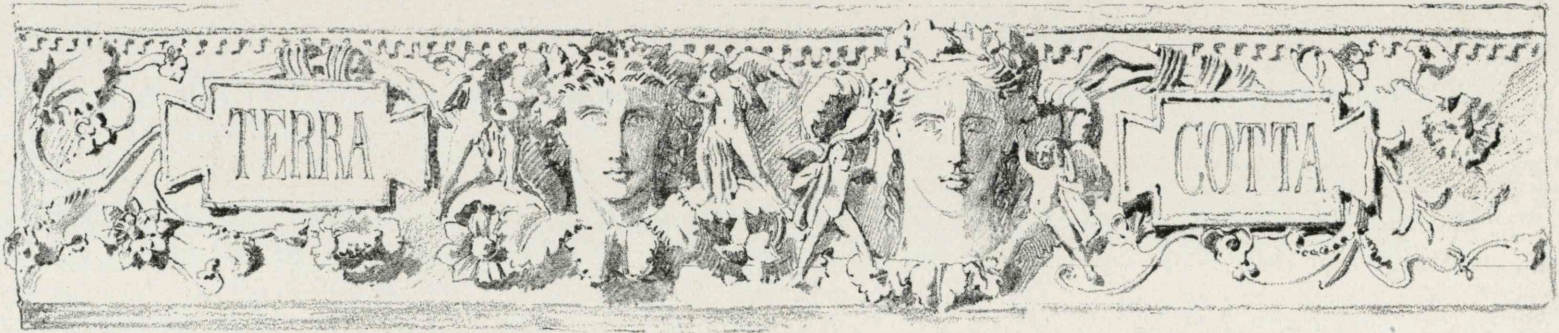
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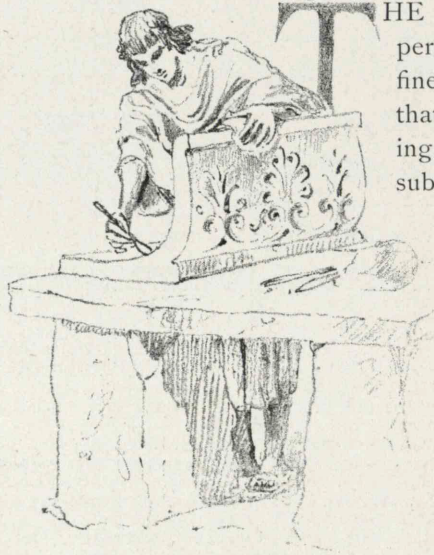
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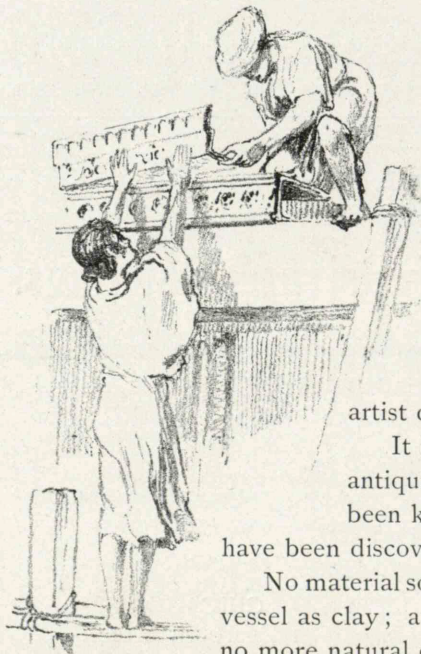
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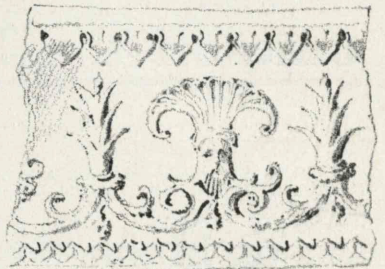


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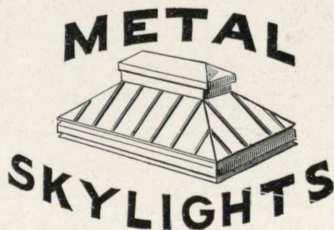
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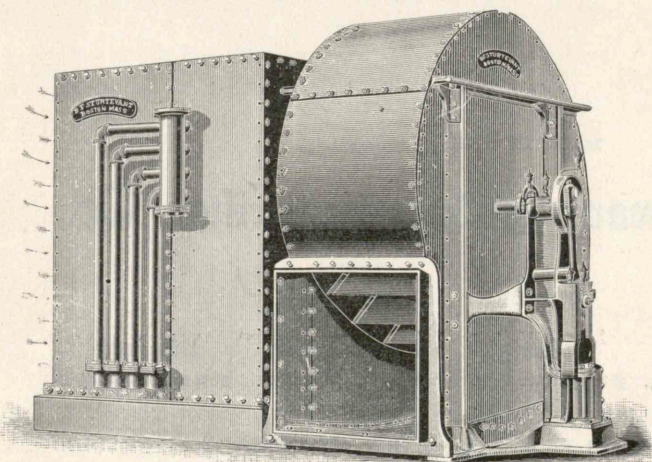
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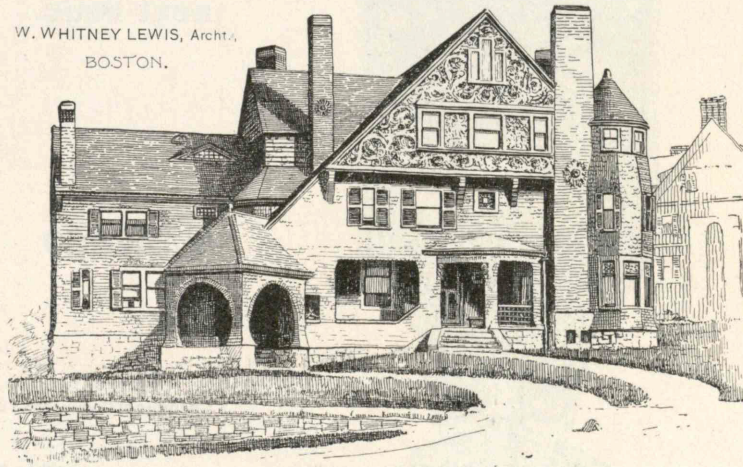
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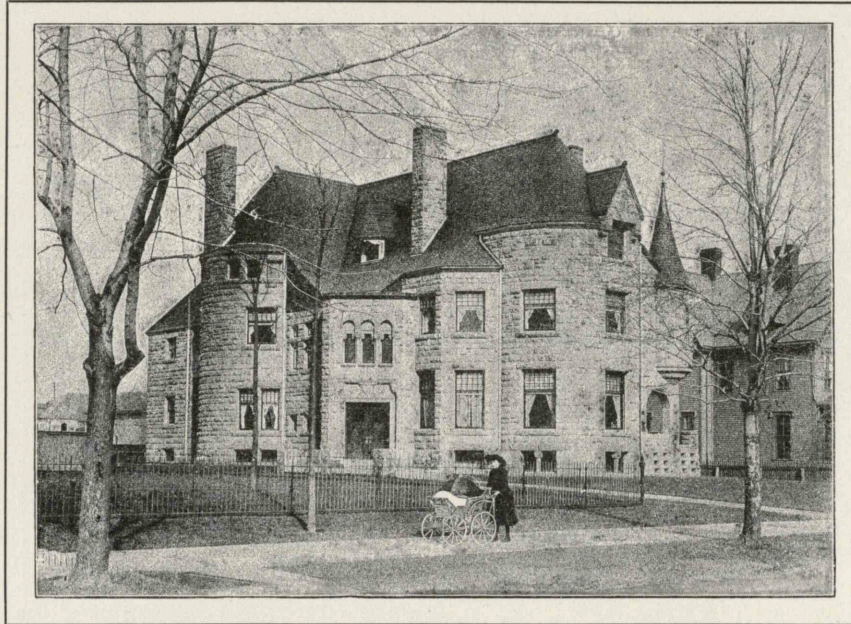
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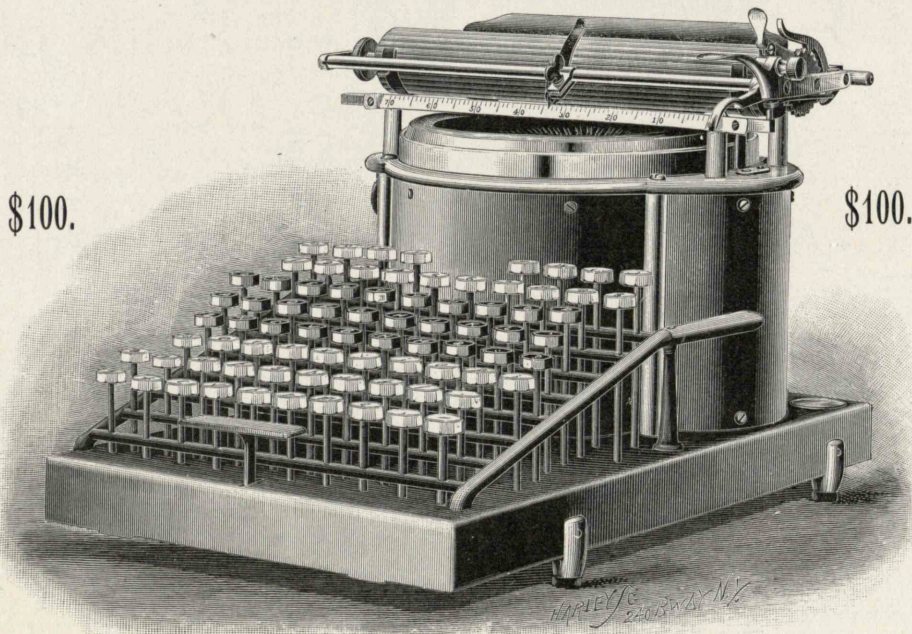
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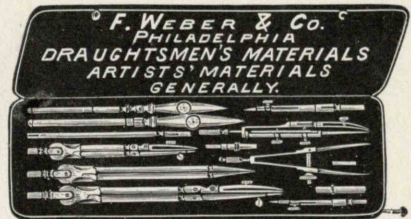
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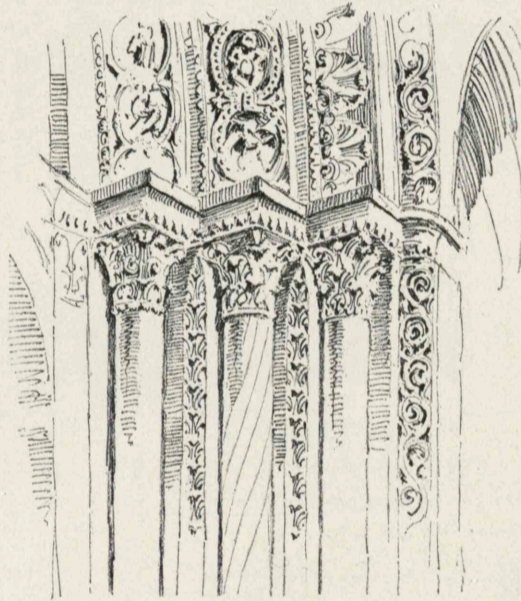
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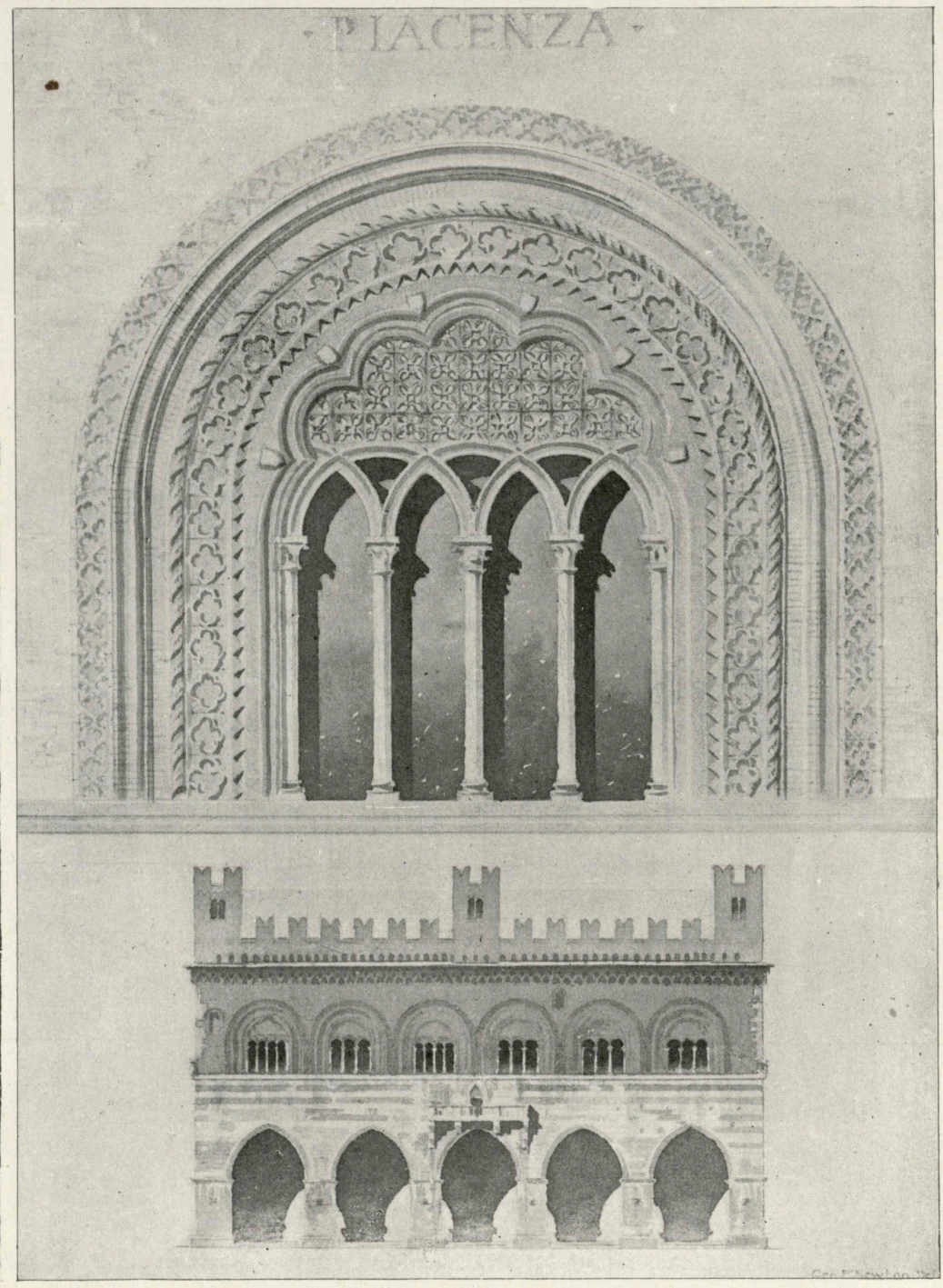
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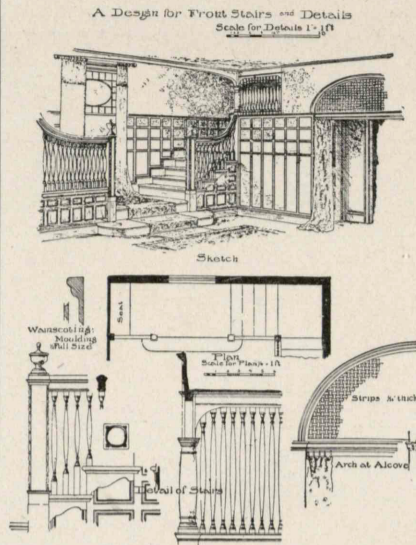
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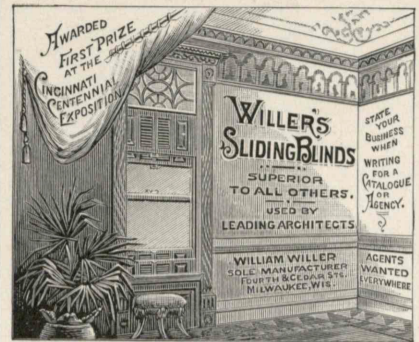
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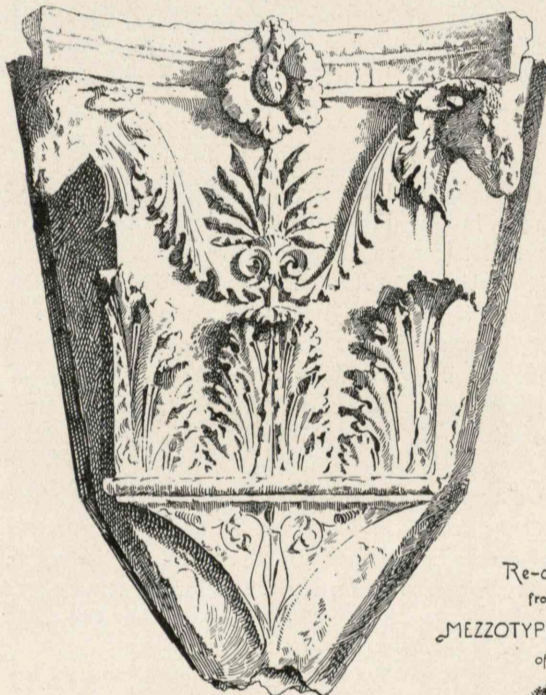
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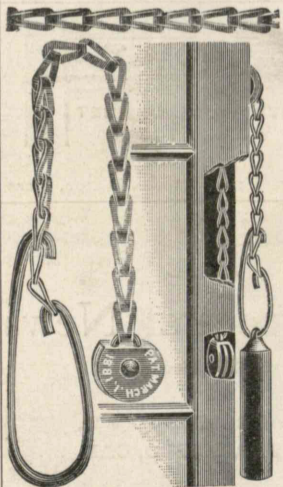
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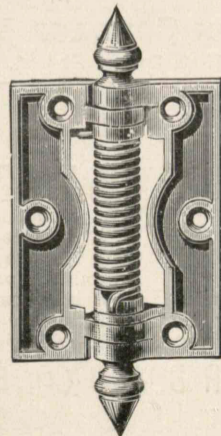


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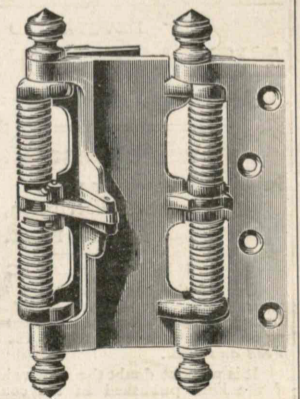
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One evening, not long ago, I was sitting on the porch of a summer hotel, talking with an architect friend. We were looking at a certain cottage across the road. "It is very comfortable," I said, "no doubt, but ugly like the rest of them. There is no consistency of parts, no unity, no dignity, no harmony, no appropriateness in the ornamentation. The effect is crude and unsatisfactory. The house pretends to be beautiful, and is not. Why," I asked, "don't you architects make your houses as attractive to look at as they are pleasant to live in?"

"It takes so much time," said my friend, "to design beautiful houses, and we have so little time to give to the work. It takes almost all our thought and energy to make our houses convenient, and comfortable, and pleasant to live in, and to get them properly built. The client cares a great deal more for utility and solidity than he does for beauty. He thinks very little about beauty, he knows very little about it; but he knows what is solid and useful, and that is what he particularly desires. He wants just as many conveniences, comforts, and utilities as he can get for his money. It takes all our time to satisfy this demand. The client expects us to know all about plan-making, construction, ventilation, drainage, heating, and lighting. He expects us to know all about the materials used in building,—wood, stones, and metals. We must know about the latest inventions, so as to be able to give the client what is best; or, if he cannot afford that, to give him the best that he can afford. He expects us to know the relative cost of things as well as their value in use. He expects us to know the difference between good work and bad work, in every department. He demands of us the experience of men, and the ability to deal with them so that we may obtain from them what is wanted at the lowest price. We are expected to watch the processes of building closely, to superintend every piece of work from beginning to end, and to verify and correct all bills and accounts. Do you think we have much time to give to æsthetic questions, to the questions of unity, harmony, and beauty? Very few of us architects can give much time to such questions; and those of us who

do, do so mainly on our own account, for our personal satisfaction, because we care for beautiful things and desire to produce them. It is not business, but pleasure,—pleasure which few of us can afford to take."

"If that is the case," I said, "would it not be better if you set the æsthetic problems aside altogether? With only the little knowledge of what is beautiful which you can get in a little time, with only the vague and crude ideas of beauty which arise out of a little knowledge, you are sure to fail in the attempt to produce beautiful things. Is it not better to make no attempt to produce such things, than to make a pretentious attempt and fail in it? Surely no ornament is better than bad ornament; and when you try to make a plain, serviceable building beautiful, and have not the knowledge, the ideas necessary for the purpose, you spoil a good thing. You confess that you have very little time to devote to æsthetic questions. At the same time you go ahead and introduce elaborate mouldings in your designs, and heavy friezes and cornices. You multiply the number of columns and capitals. You add sculpture and painting, and stained glass and mosaic. You put all the ornament on your buildings that your client is willing to pay for."

"I don't think it is fair," said my friend, "to state the case as you do. Although the client is mainly interested in the utilities of building, he almost always demands that his building shall be ornamented. But while his demand for utilities is specific and definite, his demand for what is ornamental is very vague and general. As a rule, he is easily satisfied with the ornamental part of a design, so we are tempted, pressed as we are for time, to finish this part in a hurry. I agree with you," my friend added; "the simple utility is much better unadorned, unless its adornment is well considered and really good. But the client will not accept the unadorned simplicity."

"You see," I said, resuming my own line of thought, "the knowledge of the beautiful is not easily obtained, nor in a short time. Ideas of beauty arise out of the knowledge of it. Without the knowledge you have not the ideas, and it takes a long time and special application to acquire the knowledge. The science of beauty, and the art of producing beautiful things, constitute a profession in themselves, the profession of the artist-designer. Unless you take up this profession, and devote your life to it, you had better give it up altogether. You had better keep very strictly to what is useful in building; and if your client wants the useful thing made beautiful, tell him he must go and consult the expert, the specialist. Tell him that the art of making what is useful in building also beautiful has become a separate profession, quite distinct from that of the practical builder."

"I see," replied my friend, "if a man wants a serviceable, a comfortable, a pleasant house to live in, he goes to the practical builder; if he wants a beautiful house, he goes to the artist-designer. It is an absurd idea!"

"That is not my idea at all," I said. "The client goes to the practical builder to solve the problem of utility for him. When

this problem is solved, and the builder has prepared his plans, the client goes to the artist-designer to solve the problem of beauty; which is, to make what is in the builder's plans useful, also beautiful."

"The artist-designer will spoil the builder's plans every time," said my friend.

"Not if he knows his business," I replied; "which is to take simple utility and invent a beautiful equivalent for it. What in the builder's plan, for example, is a plain support, becomes in the artist's plan a supporting column, with a base and capital, carefully considered in proportions and studied in details. The column serves the same purpose as the plain support, and may be a thing of beauty, which the support is not supposed to be. What in the builder's plan is a mere opening in the wall, to serve as a doorway, becomes in the artist's plan no less a doorway; but in the artist's plan it is a beautiful composition of mouldings and of sculpture. The builder places the beams and the brackets, the artist carves them. The builder places the walls, the artist paints them. The builder's plans remain practically unchanged. All the artist does is to substitute, for the plain utilities of the builder, beautiful equivalents. If the artist-designer spoils the builder's plans, it is because he does not know his business. The artist-designer must be always strictly bound by the conditions of utility of service defined by the builder."

"But in old times," urged my friend, "the practical builder was also the artist. When the best things were done, the functions of building and of decorating were performed under the directions and under the superintendence of one and the same person, who was called the architect."

"That may be so," I replied; "but you must remember that conditions have changed. The utilities of building were in old times few and simple. The architect could solve the problems of utility easily and quickly, so he had time to give to the problems of beauty. He gave most of his time to them. This is no longer the case. The utilities have become numerous and complicated. The problems of utility take, as you yourself admit, almost all the time that you have to give to your profession; so what was possible once is not possible now. As human knowledge increases, it gets beyond the comprehension of the individual. It has, then, to be divided into departments, and the individual chooses one. Along with this distribution of knowledge there follows, inevitably, a distribution of the arts: for the arts depend upon knowledge, and the individual must practise the art which connects itself with the special knowledge which he has acquired. There was a time, as you say, when the knowledge connected with the architect's profession was so limited that the individual could master it. Then the architect was both a practical builder and an artist; but the knowledge required of the architect in these days is much too vast and varied to be mastered by any individual. When we consider the nature of architectural knowledge, we see that it distributes itself very naturally and properly into two departments: one is the department of useful and practical knowledge, the other is the department of æsthetic or artistic knowledge. If these departments are assigned to different persons, as they may very well be, we have two persons in place of the architect: the practical builder and the artist-designer. Where we have had one profession we have two. We cannot hope, except by such a division of labor, to get the work of the architect well and competently done. Where partners in the architectural business know the same facts and solve the same problems, there is sure to be a failure of knowledge and incompetence somewhere. Either the practical work will be badly done, or the artistic work. The time has come when we must seek, not the architect, but the specialist in some department of architectural work. What has come to pass in medicine is coming to pass also in architecture. General practice can no longer be competent practice. For

different purposes we turn to different men. We look no longer to the general practitioner, but to the specialist. If we want something beautiful, we go to the man who knows what is beautiful, and who has the ideas of beauty which arise only out of knowledge. We have been in the habit of saying to the student, 'You had better go into an architect's office, to master the practical part of your profession, before you go abroad to study beautiful examples, because the practical part of the profession is the important part. You must give your first thought, and almost all your thought, to what is useful and necessary. After a while you can go sketching in France and in Italy. You can take a few months away from your business and see all the best things.' This is what we say to the student. We ought to say to him, 'What do you want to be, a practical builder or an artist-designer? What knowledge interests you most, the knowledge of useful things or the knowledge of the beautiful? There are two branches of science, and connected with them two arts. There is the art of making useful things, and the art of making what is useful also beautiful. You must not think of mastering more than one of the sciences; you must not think of practising more than one of the arts. You must take up the science which you care most for, and the art which is connected with it. If you choose to do practical and useful work, the sooner you go into an office and begin to get your experience the better. What you want to know is best learned in the course of professional practice and business. If, however, you wish to get a knowledge of the beautiful, you must keep out of business for a while. You must go abroad. You must see what is best in nature and in art. You must observe, compare, and discriminate, so as to discover what is best. You must fill your note-books with definitions and descriptions of it. Wherever you find a fine composition of forms, make a drawing of it; not a careless, suggestive sketch, but a definition of the fine qualities. Wherever you find a beautiful harmony of color, make a painting of it, and be sure not to miss the harmony. In making these descriptive notes, you not only secure records and memoranda of what you have seen, but get your impression fixed distinctly in mind. You learn in this way what has been best done, and also what is best to do. Spend as long a time as you can in this work of learning, then connect yourself either as employee or partner with some practical builder. With him your work will be to take his plans and specifications, and to develop them upon strictly æsthetic lines; the problem in every case being to make what is useful as beautiful as possible. The utilities of the builder's plans must not be in any way lost or diminished. What is useful must become beautiful without ceasing in any degree to be useful.'"

This was the end of our talk.

DENMAN W. ROSS.

SUGGESTIONS TO TRAVELLING STUDENTS.

(Continued from Vol. III., No. 2.)

To the east of Turin is Asti, famous for the *Vino Spumante*, which has many of its mediæval towers remaining, and contains a Gothic cathedral, 1348, with some excellent detail; a basilica of the sixth century, under the church of S. Giovanni; and a peculiar and interesting octagonal baptistery of S. Pietro, eleventh century. Acqui, between Asti and Genoa, has a twelfth-century cathedral, with double aisles and good proportions. Alba, near at hand, has a fifteenth-century cathedral, with interesting mouldings. Cuneo, to the west, near Mondovi, has a twelfth-century Gothic church. Alessandria, though the principal town of the district, is profoundly

uninteresting; but Valenza, eight miles north, has a sixteenth-century cathedral; Tortona, thirteen miles east, a cathedral dating from 1584. The work on these sixteenth-century cathedrals is apt to be heavy, and with the beginnings of rococo, but is often very suggestive in motives, and the mouldings are worth study.

On the Mt. Cenis route, after crossing the frontier, the way is through a beautiful mountain region, with numerous picturesque villages rising in terraces upon the foothills. Susa, which lies on a hillside a mile away from, and three hundred and twenty-five feet above, the station of Meana, can be reached by a short branch from Bussolino, six miles farther on. Susa, Roman *Segusio*, is some forty miles from Turin, and contains a considerable number of Roman remains, the principal one being an arch of Augustus, erected A. D. 8, in the Corinthian order, and of majestic proportions. This is one of the best of the little-known triumphal arches scattered about Italy. The church of S. Guisto was built in the eleventh century, and has a sturdy breadth of character. Between Susa and Turin there is nothing of architectural value. Turin itself is particularly devoid of interest; its regular streets, shabby stuccoed façades, and erratic statues merely enhancing a manifest mediocrity. The ancient castle of William of Montferrat, built at the end of the thirteenth century, is almost the only remaining piece of mediævalism. It has a somewhat ordinary façade veneered upon its belligerent sides, for which Juvara was responsible in 1718. Four of its towers, clumsy and uncouth, but picturesque, are still standing.

The Palazzo Reale has suites of apartments fitted up in that wretched imitation of the worst of the eighteenth-century French decadence, which seems to be the particular curse of royal establishments throughout Europe, and in which the injury of bad form has added to it the insult of atrocious color. In the southeast wing is the royal armory, which contains, in the midst of modern barbarities, some fine fifteenth and sixteenth century helmets and suits of armor. The Accademia delle Scienze contains a large picture gallery, in which the best works are in Room XIII., and a museum of antiquities which is not especially interesting to an architectural student. It has happened occasionally in Italy, as elsewhere, that through some sarcasm of fate a city has been cursed by its artists instead of blessed by them. This was true of Rome in the case of Bernini; and Turin seems to have been peculiarly unfortunate in suffering successively the sway of the monk Guarini and the architect Juvara. Even the absolute stupidity of the former scarcely deserved the added injury of the vulgar embellishments of the latter. Between them they have produced a series of architectural nondescripts in Turin that would accelerate flight. As a result there are more uncouth domes in Turin than can be found elsewhere, and a vulgarity of detail that is phenomenal outside of the realm of Churruguete. Even the pedestals to the monuments are heavy and stupid.

The few remaining things worth seeing in Turin are diverse in character, and can be summed up rapidly. The Museo Civico, No. 1 Via Guadenzio Ferrari, near the Royal Gardens, has some excellent sixteenth-century wood-carving, bronze and iron work, enamels, majolica, and ceramics; some good tapestries, and a most interesting collection of stained glass,—an unusual thing to be found in Italy; there is a good late Renaissance court in the Università, 1713, by Ricca, a Genoese; the campanile of the convent of S. Andrea, now incorporated in La Consolata, ninth-century work; the façade of the cathedral, by Mea del Caprino, of Florence, 1492-98. There is much modern work in Turin, and with ancient examples at hand, it is to be expected that it would be moderately good, but it is disappointing at best. The new churches are in so-called Lombard style, but seem to fail in attaining excellent proportions; of these there are S. Secondo, S. Gioachino, S. Giovanni Evangelista. By far the most interesting building in Turin

is the so-called Mole Antonelliana, on the Via Monteverello, begun as a synagogue by Antonelli, in 1863, left unfinished for eight years, and completed in 1889 as a national historical museum in memory of Victor Emmanuel II. It is square, one hundred and thirty-two feet on each side, and is, to the top of the statue, at apex of the dome, five hundred and thirty-eight feet in height. The walls, which are comparatively plain below, are banded above with successive colonnades; and the dome above the cornice—this latter being over three hundred feet above the street—is square, and has a peculiarly flat but vigorous curve. The interior hall is eighty-four feet square and some three hundred feet high, and has three rows of galleries. The whole façade is masterly in its scheme, and most effective in the use of the light and shade to be obtained by superimposed colonnades above plain wall surface, of which the cathedral tower at Pistoja is so fine an example. The cornice is somewhat slight and the details could be better, but the whole conception is that of a master.

Near Turin, to the southwest seventeen miles, is Pinerolo, with an interesting old cathedral. Fifty miles north of Turin, on a branch line from the main line to Milan, is Biella, with fine old palaces now occupied by the poorer classes. The northern Italian brickwork begins to appear here in most interesting form. There are a fine cathedral and picturesque arcaded streets. Branching to the south, from the main line, Casale is reached, with an excellent Romanesque cathedral full of vigor; and there are several Renaissance palaces with excellent detail, and the Palazzo di Cette has a fine colonnade. On the main line to Milan is Vercelli, with the impressive thirteenth-century church of S. Andrea, with two western towers like German churches, and an excellent early Gothic interior. Twelve miles farther on, Novara is reached. Here there is a tolerably good Renaissance cathedral, picturesquely grouped with a court and baptistery, and a sixteenth-century church, S. Gaudenzio, which has had a huge dome, three hundred and ninety-six feet high, added recently by Antonelli, not with the success of the Mole Antonelliana in Turin. Between Novara and Milan there is little of interest.

The district of Piedmont, in which most of the towns thus far mentioned are situated, was inhabited by Celtic and Ligurian tribes, and was not fully subjugated by the Romans until the time of Augustus. No Roman work previous to the first century is therefore found here; and as after the first century but little large work is done outside of Rome, Piedmont is not a good field for early classic work. The Saxon Duke Wittikind, the German opponent of Charlemagne, is supposed to have been the ancestor of the nobles who, during the troublous times of the tenth century, held the small towns of the Piedmont valleys. They became prominent among the nobles of Upper Burgundy about the year 1000, and one hundred years later were made imperial Counts of Savoy by Henry IV. During the wars of the Guelphs and Ghibellines these Counts shifted from side to side, sometimes being with the Popes and at others with the Emperor, always with their own aggrandizement in view; and it is to this period that most of the architectural remains belong. Later, in the fifteenth century, between France on one side and Austria and Spain on the other, Piedmont had all it could do to maintain its existence, and but little early and fine Renaissance appeared within its territory. Early in the eighteenth century, Vittorio Amadeo II. threw off the French yoke and became king of Savoy, and under the new impulse of a nationality, Turin pretended to architectural distinction; but it was too late for any refined and noble work, and whatever Renaissance is found in Piedmont is a base imitation of inferior French models.

C. HOWARD WALKER.

[To be continued.]

THESIS WORK.

ABSTRACT OF THESIS.

ROBERT T. WALKER, 1890.

A DESIGN FOR A CATHEDRAL AND CLERGY HOUSE WITH APPROACHES. Plates XXII., XXIII., and XXIV.

This cathedral is intended for the use of an Episcopal service with High Church tendencies.

It is supposed to be situated on a plateau overlooking a large city, and faces the west. This plateau is a square, and is enclosed by four streets; the two on the north and west, being principal avenues, decide the arrangement of the plan.

The requirements of the plan are as follows: a nave with double aisles, two transepts, a dome at the crossing, a choir and sanctuary, an ambulatory with small chapels opening from it, vestries for choir and clergy, a morning chapel, a baptistery, a chapter house, and a clergy house.

In placing the building on the plateau, the cathedral is so situated as to be readily accessible from the two principal avenues on the north and west; approaches are arranged leading from these avenues directly to the two principal entrances of the edifice. The morning chapel, to be used for daily services, opens from the north transept close to the entrance. In a corresponding position leading from the south transept is the baptistery. The dome is octagonal in plan, and in width includes the nave and adjoining aisles.

The vestries are placed conveniently near the choir and sanctuary, and are four in number. The sanctuary contains the high altar, the bishop's throne, and stalls for the clergy.

Five small chapels are arranged about the ambulatory "*en chevet*." A triforium gallery overlooking the nave runs entirely round the building. In the gallery over the porch at the west end is placed the grand organ, while smaller organs at either side of the choir opening into the dome are for the direction of the choir.

In designing the exterior, the greatest importance should be given to the west front, and it should be monumental, rich, and dignified. For this reason the two lofty spires are placed at the west end. A large rose-window serves to express the nave externally. The central doorway is made larger and more prominent than the others, to give a more massive effect to the bases of the towers. The remainder of the building is kept rather simpler and of less importance than the west front.

The chapter house is placed opposite the south transept, and the two are connected by a cloister. It is octagonal in plan, and is designed for use as a council chamber for diocesan conventions. Connecting with this and also with the cathedral, by cloisters, is the clergy house, in which are the studies, libraries, parlors, refectory, and service for the resident clergy, and apartments for the use of the visiting clergy and the bishop. A large garden is enclosed by the cloisters between the cathedral and the clergy house. The entrance to the clergy house is on the south side of the plateau.

The stone used for the outside of the entire structure is a warm-colored hard sandstone. The roofs are covered with brownish tile, and the dome with lead.

All the statues are of white marble. Decorations in mosaics, in different colored marbles, and in carved stone are used in various parts of the edifice.

The principal material used in the interior is a warm marble, similar to the exterior in color, while colored marbles are used in

various parts of the structure. A wrought-iron screen separates the choir from the main body of the cathedral. Frescos, mosaics, and stained glass are the principal mediums of decoration of the interior, and they are especially rich about the dome and the sanctuary.

ABSTRACT OF THESIS.

SOPHIA G. HAYDEN, 1890.

A MUSEUM OF FINE ARTS. Plates XXIV. and XXV.

It is proposed to build a Museum of Fine Arts in the vicinity of a large city. This museum is intended to contain a large collection belonging to the city, and must be so designed as to exhibit it to the best advantage as regards lighting and accessibility. For this purpose it is to be arranged about courts, some open and others covered in by skylights. The building is to be two stories high. The first story is to provide room for the exhibition of Classical, Renaissance, and Gothic architecture, and also to contain a *salon* for contemporary sculpture, galleries to accommodate departments of antiquities and casts, a Greek vase room, and a room for terra-cottas. Beside these, there must be on the first floor a theatre for lectures, with a *foyer*. From the grand hall ascends the principal staircase to the second floor. On this floor is to be arranged a series of picture galleries, print rooms, rooms for metals, woods, ivories, coins, ceramics, textiles, and a gallery for photographs.

The building is to be in the midst of a public garden ornamented with fountains and statuary.

In the accompanying plan, the arrangement of the building is a perfectly symmetrical one.

The building faces the west, and is situated on a slight eminence. In front there is an open court with fountains and statuary. On each side of the court is an exedra, merely an artistic feature of the gardens. The main entrance leads from this court, through a vestibule into the main staircase hall; behind which is the principal hall of the building, two stories in height and lighted by a skylight. This hall is to be used for the exhibition of Classical architecture. On either side of this hall there is a smaller one also two stories high, to be used respectively for Renaissance and Gothic architecture. Behind the hall devoted to Classical architecture is placed the theatre for lectures, which is reached both from that hall and by an entrance on the east side of the building. Four open courts, two at the left and right respectively of the staircase hall, and two at the left and right respectively of the theatre, furnish light for the galleries around them. On the second story, light is afforded by skylights.

In the basement, near the east side of the building, are situated a restaurant and dependencies, janitor's lodging, storage rooms, and heating apparatus. As the building covers a large area, and the height is comparatively small, it will be heated by steam on the direct radiation system, and ventilation will be effected through the skylights. In the theatre, however, the only room which will be crowded, the indirect system of steam heating is to be used, and ventilation will be effected by means of a skylight.

The structure is to be built of light yellow sandstone, and all the carved work and statuary is to be of marble.

In designing the *façade* the main object was to express the character of the building, and make it attractive and dignified. It is in the Renaissance style. A portico with Ionic columns emphasizes the main entrance, around which the principal interest should centre. The wings on either side are simpler, depending more on proportion than on elaboration of detail.

A STUDY OF DECORATION.

(Continued from Vol. III., No. 4.)

GOTHIC.—Plate XXVI.

The three families (to speak as in classifying fauna) under which all architectural styles, except those of the Chinese and Japanese, can be classed, are the Classic, the Mohammedan, and the Gothic. We have seen the growth and development of the Classic from primitive forms until its downfall upon the taking of Rome by Alaric in A. D. 410, and its subsequent struggle for existence in the varieties of the Romanesque; and the Mohammedan, in its development from Persian forms.

The sources from which the Gothic style springs are not as readily traceable, though the reason for its development is sufficiently plain. It is pre-eminently a rational, logical style; and whereas other styles, starting from rational requirements, soon crystallize and become conventionally formal, the Gothic develops along perfectly logical lines until its overthrow by the Renaissance; indeed, it is an open question whether the Renaissance would have been possible or of great value without the vigor and freedom which the Gothic bequeathed to it. The popular idea of the distinctive mark of the Gothic style is the pointed arch, or, as one authority states it, the pointed arch with the gable above it; and Mr. Ruskin apparently acquiesces in this view. But the pointed arch existed in Assyria and in Greece, as far as the form of the opening is concerned, and in Persia in a form derived from covering bracketed wooden supports with stucco or plaster; and the gable is common to all northern countries where snow is frequent. The combination of the two may not be found outside of the Gothic style, but they do not by any means characterize the Gothic style. It is the spirit of a style that defines it, not its accessories. The spirit of Classic architecture is inertia, with horizontal masses decorated with mouldings; of Mohammedan architecture, inertia, horizontal masses decorated with color or low relief, without mouldings; of Gothic architecture, intense vitality, perpendicular masses, every part of the building performing its function visibly and in exactly the right proportion. This means that Classic and Mohammedan buildings have heavy walls of great proportional expanse, with comparatively small openings; that Gothic buildings starting from classic heaviness develop more and more into an elaborate, carefully balanced set of organic forms, each supplementing the other, thrust counteracted by thrust and buttress, buttress weighted by pinnacle; the intervening walls, of no value as supporting members, being eliminated and replaced with tracery and stained glass. The entire principle of architecture having changed, naturally new constructive forms developed, and these forms are associated with the style from which they sprang; exactly as the pediment is associated with Classic architecture, though over the entrance to the Cathedral at Palermo it is Gothic; so buttresses, pinnacles, pointed arches, tracery, and flying buttresses are associated with Gothic architecture, though they later appear in the valley of the Loire in Renaissance work.

The derivation of the Gothic arch is debated at times, though it is without doubt an adaptation of the line of a sharp pendentive against a wall, or of the pointed vaults over naves where stone roofs are used, when height is desired and width is limited. Oriental influence may have induced the use of such an arch also. The Crusades brought the West into contact with the East, and the returning warriors brought many Eastern ideas with them. Venice is evidently affected by Oriental work in the line of its arches. The Eastern pointed arch is, however, very different

from the Western one. It starts to curve inward with rather a rapid curve, then follows almost a straight line to the apex, which is frequently slightly flamboyant or curved upward. The Western arch curves continuously from its spring to its apex. This difference, like all other things in which Gothic differs from its precedents, is caused by structural requirements, the Eastern arch of plaster and stucco being weak in stone if with large span. The Gothic arch passes through a succession of variations, always progressing towards a more sharply pointed form; and in the three hundred years during which the pointed styles were universal in mediæval Europe, the pointed arch is constantly changing in its curve, its angle, its details, and its entire character. As for the title Gothic, its usual application to the architecture of the period of the pointed arch is purely an arbitrary definition. The Goths had little to do with pointed arches or the centuries that produced them; and the use of this title seems to have been actuated by a desire to create an opposite term to that of Classic.

Developed construction produced the Gothic forms, but the development was encouraged by several conditions. During the Crusades, the feudal rulers of the different European peoples were, in considerable numbers, away in the East, busied about other affairs than those of their fiefs. The cities began to govern themselves, and the burghers, no longer harassed by the demands of barons, became prosperous. In many cases the absent rulers, in sore need of money, sold previously unknown privileges to the cities in return for funds with which to carry on the war against the infidels. Naturally, upon the return of the crusading barons, many of these obligations were repudiated; but in the mean time the people had had a period of freedom, the spirit of communism had become rife, and from the time of the Crusades, feudalism began to decay. Communism meant co-operation in all the trades, in all the crafts, and throughout Northern Italy, Germany, France, and Spain the trade guilds sprang into being. It took time for these guilds to become powerful; they were in most cases pitted against the nobility and met with much opposition, but nevertheless made rapid progress, and by the middle of the twelfth century both guild halls and town halls for the municipalities began to be reared in the cities. Of the different guilds, there was one which served all the others, whose members journeyed from city to city in bands as their services were needed, which had its own leaders, its foremen, who were its judges, and the members of which were amenable to their own laws and enforced their own penalties; this was the guild of the Freemasons, and it was this guild that developed Gothic architecture. So much for the workmen; now for the conditions under which they worked, and for the masters who designed the work. Italy, which had been the centre of Christianity, had, through the remains of ancient Rome, influenced all church architecture. The round arch above the column, in all its numberless variations of grouping, was the standard factor of architecture, and of decoration even, throughout the entire Peninsula; the still powerful traditions of ancient Rome prevented the development of new forms.

Outside of Italy, the educated classes were the clergy, and of them the highest in authority had been educated in Rome, and clung to forms reminiscent of the sacred city; but there were others, who, though visitors in Rome at times, had spent the larger part of their lives away from its influence. In the monasteries of Northern Spain, of Burgundy, the old tradition prevailed; but there was jealousy between the great monasteries, such as that of Cluny, and the bishops of the cities; and the cathedrals began to emulate the abbeys. In the ninth and tenth centuries the Northmen had overrun the northern coast of Germany and France, and the disintegrated states of France had only recovered sufficiently in the twelfth century to begin to think of consolidation as

defence against these powerful enemies, who were now the masters of England.

The Crusades were over, there was fresh religious enthusiasm, both the people and the nobles were beginning to respect each other, and see that for the time at least they must act together; and under the favorable auspices of the time, all classes aided in erecting the cathedrals that glorified the cities of mediæval France. Here were the people enthusiastic with the beginning of their sense of individuality; the nobles, acting with the people for self-preservation; the bishops, anxious to vie with the monasteries; and the Freemasons, trained as few men ever have been to their work. The result is a rational development from a heavy-walled, round-arched style to a light, delicate, pointed-arched style where openings exceeded wall masses. The transition was rapid but regular in its progress; in one hundred years even the roll mouldings, the columns, the heavy piers, had changed into mouldings with deep undercuttings and subtle curved surfaces, and into long shafts grouped together. The intersecting vaults had developed a rib at their intersections, and this rib had become moulded and had knotted into a boss wherever it crossed another rib.

The invention of colored glass had influenced the development of the style in a marked degree. All early styles of art had been decorated with polychromy; the Egyptian, the Assyrian, and the Greek upon the exterior of the buildings, the Roman and the Byzantine upon the interiors; the round-arched churches, especially in Italy, had their walls colored in fresco, very much as the shrines of the Greek Church do to-day. These frescos were usually representations of Scriptural scenes and of the apostles, saints, and martyrs; occasionally tapestries with similar subjects were hung on the walls.

The aisles of the churches were frequently the places of sepulture for both clergy and laymen, and effigies of those buried beneath were carved upon the marble slabs in the pavement. It was found these stones were worn by the feet of the worshippers, and to preserve the record of the inscription, they were taken up and set into the walls of the aisles. Here then were memorial effigies and frescos of saints upon the walls of the church; the light to see both was slight, and nothing was more natural than that the openings of the windows should be enlarged. At just this time in the twelfth century the use of stained glass made its appearance. It was probably derived from Oriental sources, as colored glass jewels set in perforations of stone had been used in the East in Byzantine work; but the leading and painting of colored glass was a purely European invention. No richer or more magnificent style of decoration could be imagined, and all the churches at once showed a tendency to have as much space given to stained-glass windows as possible. This reduced wall surfaces. The effigies of departed bishops and the frescos of saints were now depicted in the glories of colored glass. The wall surfaces concentrated into piers; the piers, insufficient to prevent the thrusts of the great vaults from spreading, were re-enforced by buttresses; the buttresses, in their turn, were weighted with pinnacles; the window openings, become too large for the mosaic of pieces of glass to stand the wind pressure, were divided by upright ribs of stone; and all the wealth of Gothic forms, clustered columns, buttresses and flying buttresses, pinnacles and finials and crockets, mullions and traceries, appears. The glass itself deserves a separate chapter. Meanwhile sculpture has, both in representation of animal and human form and of foliage, taken a distinctly new departure. The older school of carvers had been influenced by classic tradition; forms had not only been conventional, but motives had been adaptations of classic motives, of the fret, the egg and dart, the dentil and modillion, the acanthus; these newer men, breaking from what they consider bondage, go to nature for their inspiration.

At first there is a tendency to cling to the previous forms of leafage. The acanthus slowly changes into a leaf hardly recognizable as a descendant of the classic form. The change occurs in two directions: one by the gradual elimination of the eye of the leaf and its simplification into a leaf with merely scalloped edges; the other by an exaggeration of the eye of the leaf, so that each lobe finally becomes a long stem with a group of leaflets at its end. The outline of the leaflets, instead of being pointed, becomes round, and the groups are trefoils, quatrefoils, and cinquefoils, which have their stems curved and twisted about each other with great freedom of line.

Apart from this rounded Gothic leafage, which is seen at its best in the early English capitals, is a pointed leafage which seems to have been influenced by the forms of wrought iron and other metal work. These pointed leaves are long and slender, they bend and flow like flames, and undulate, not only in the direction of the leaf, but in the planes of its surface. They are seen most frequently in color decoration upon the borders which accent the ribs of vaulting, and surround panels of plain color on the walls, and upon missals in the decorated margins. There appears also, at a very early date in the stone carving, a raising of the centre of the leaf, as if it were *repousséd*, that strongly suggests derivation from metal work.

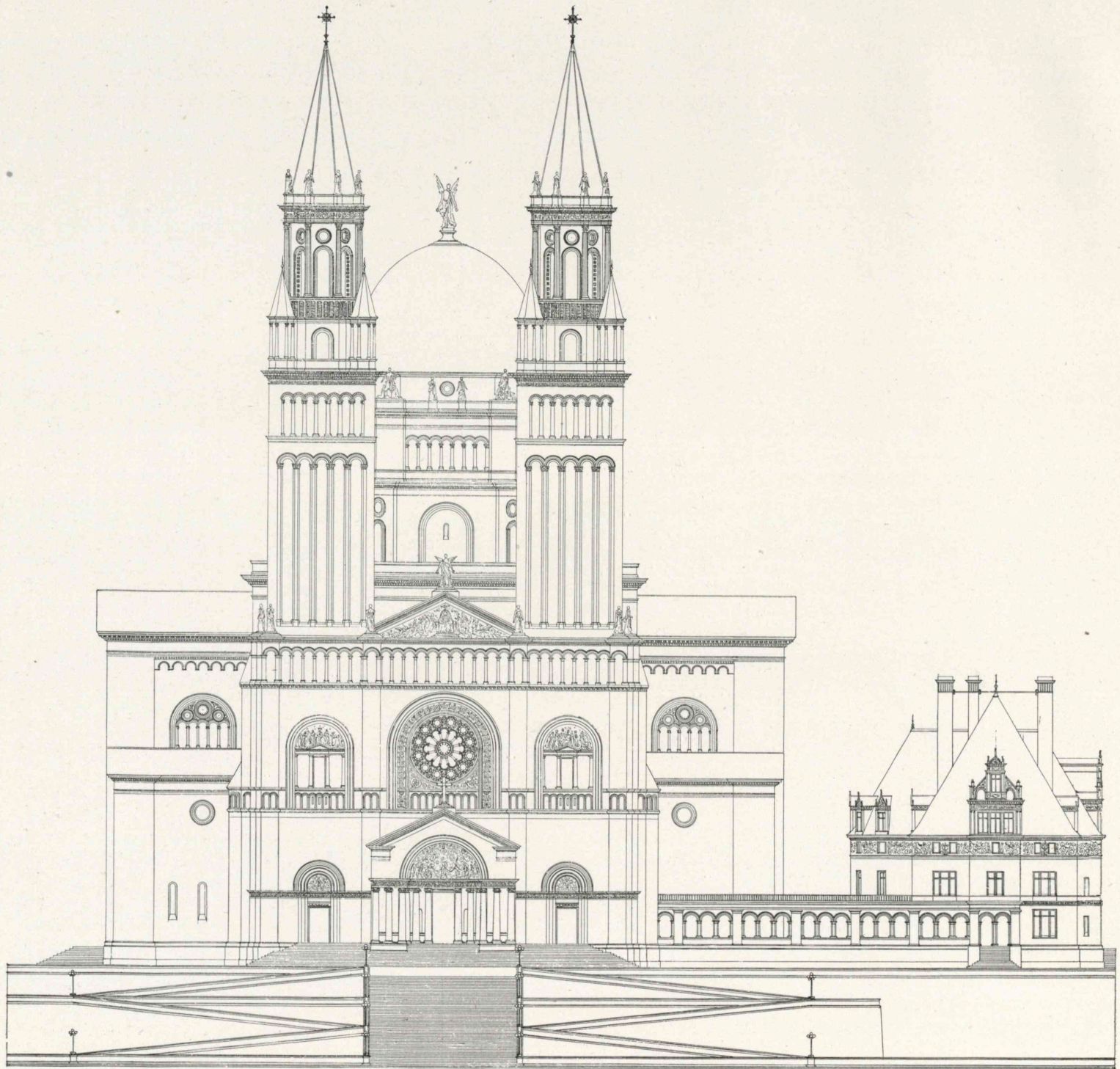
By the end of the thirteenth century any attempt at conventionalization of leafage, except in the method of its distribution, was forsaken, and there is to be found in all Gothic carving exact representations of all varieties of leafage, mingled with mongrel, grotesque, and bizarre shapes, and portrayals of animal and human form. The coloring of wall decoration, which was mostly done in *tempera*, has this peculiarity, that as it advances in historical period it diminishes in richness and brilliancy of tone, and becomes a harmony of dull reds, gray greens, gray blues, and yellow browns. The early work, especially upon the missals, is brilliant with scarlet, vermilion, and emerald green, but the later work partakes of the asceticism of the Middle Ages, and humbles itself by an admixture of low dull tones, where the primaries have disappeared and the secondaries are disguised and in mourning. Gold is used in small quantities to pick out ornament and to outline it.

C. HOWARD WALKER.

[To be continued.]

Miss Hayden, who graduated in the regular architectural course at the Institute last year, and whose thesis is published in this number, has recently won the competition for the Woman's Building at the Columbian Exhibition, Chicago. It is to be the proud boast of the managers of the woman's department that everything relating to that department shall be the actual work of women, and with this idea in view they instituted a competition for the design of the building, providing the competitors with a sketch plan and the general disposition of the rooms. Two elevations in line only were required at one sixteenth of an inch to the foot.

Of the drawings submitted, Miss Hayden's were pronounced the best. She was awarded the first prize of \$1,000, and has gone to Chicago to undertake the erection of the building. Miss Lois Howe, a graduate of last year's special course, won the second prize of \$500. The success of these young ladies proves the efficacy of training, and their enthusiasm for their profession, for both are most determined in their desire to be architects in every sense of the word. They can be heartily congratulated on their attainments.

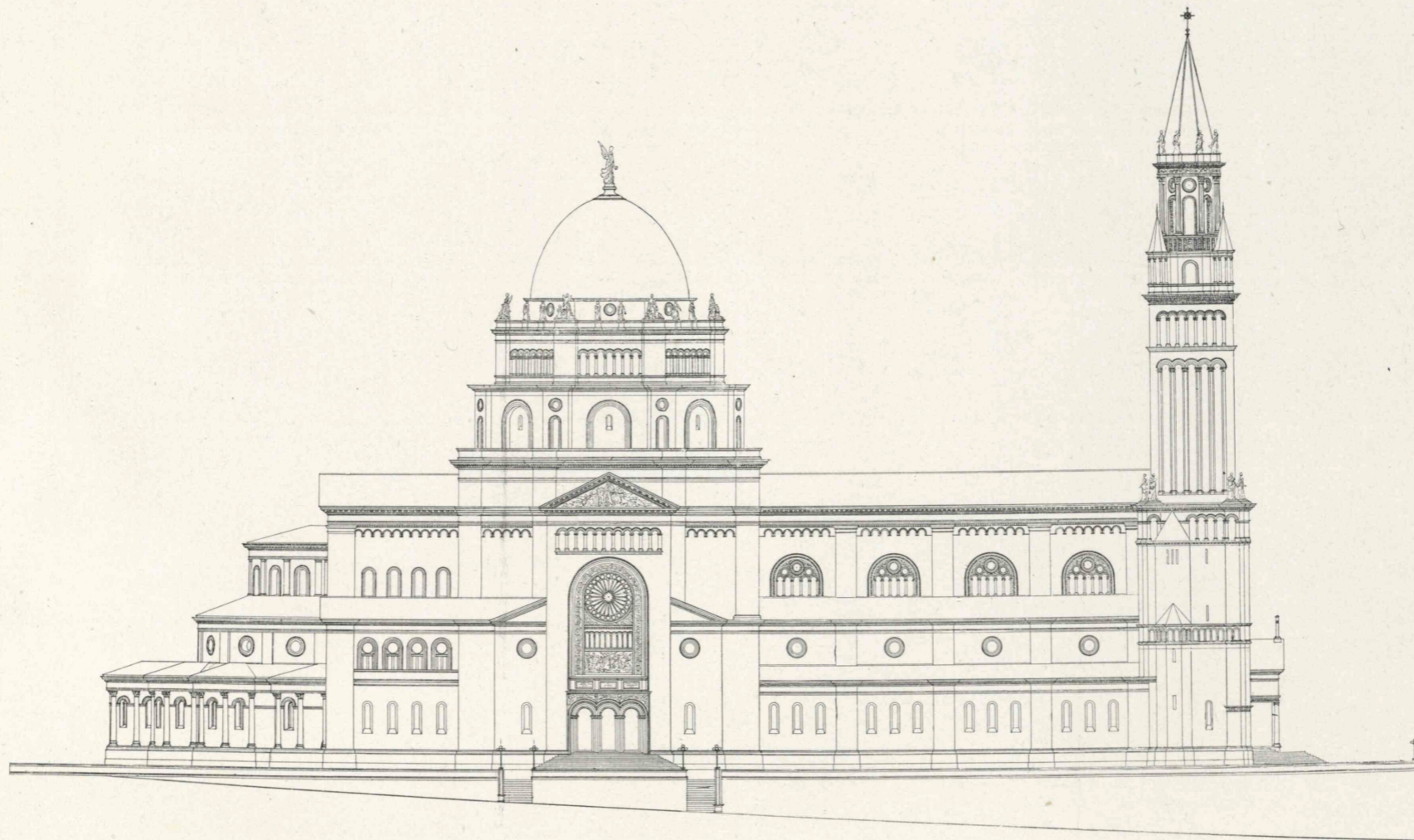


THESIS DESIGN.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

A CATHEDRAL, BY ROBERT T. WALKER, 1890.

WINDMILL HILL, NEW YORK

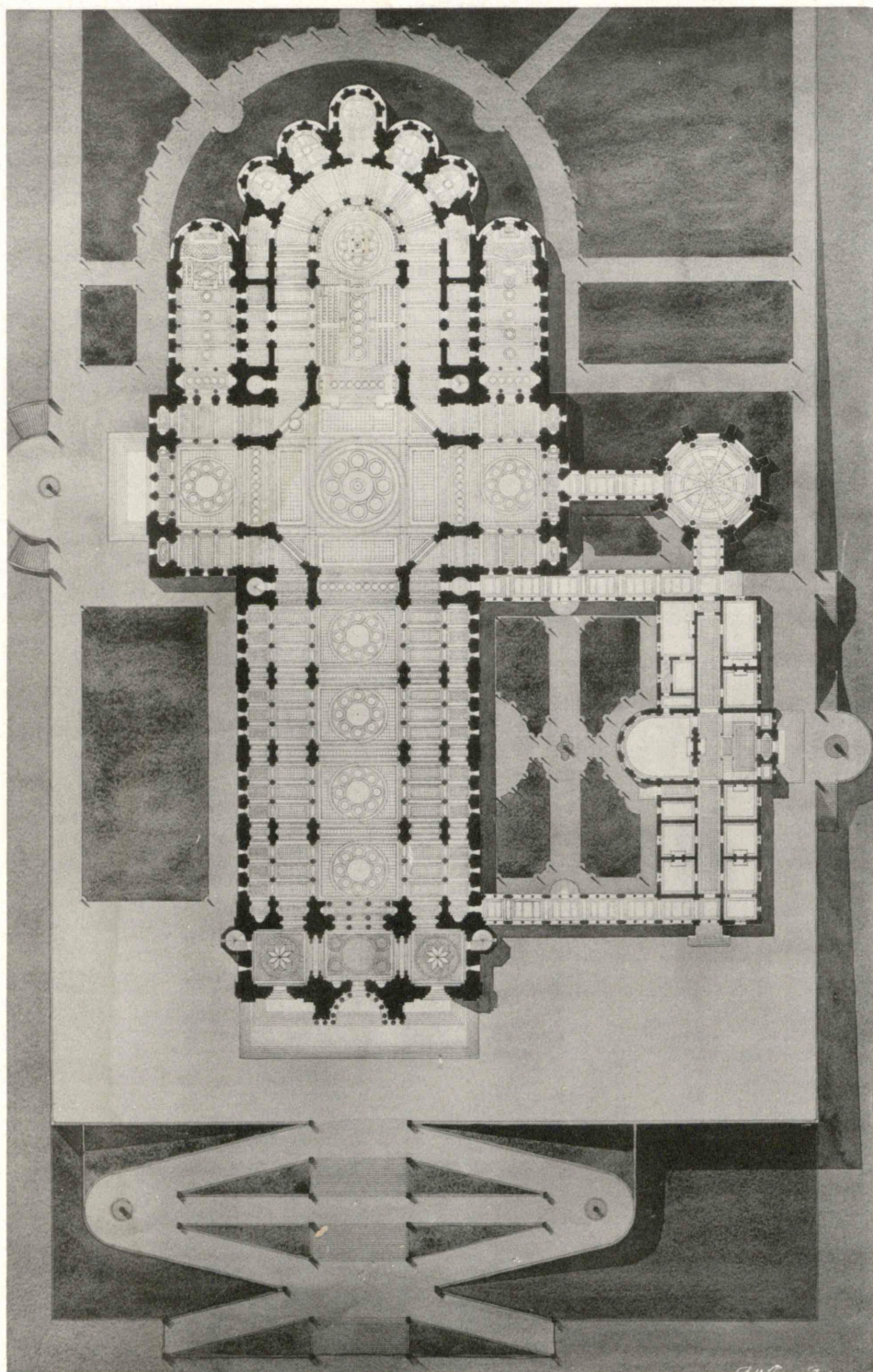


THESIS DESIGN.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

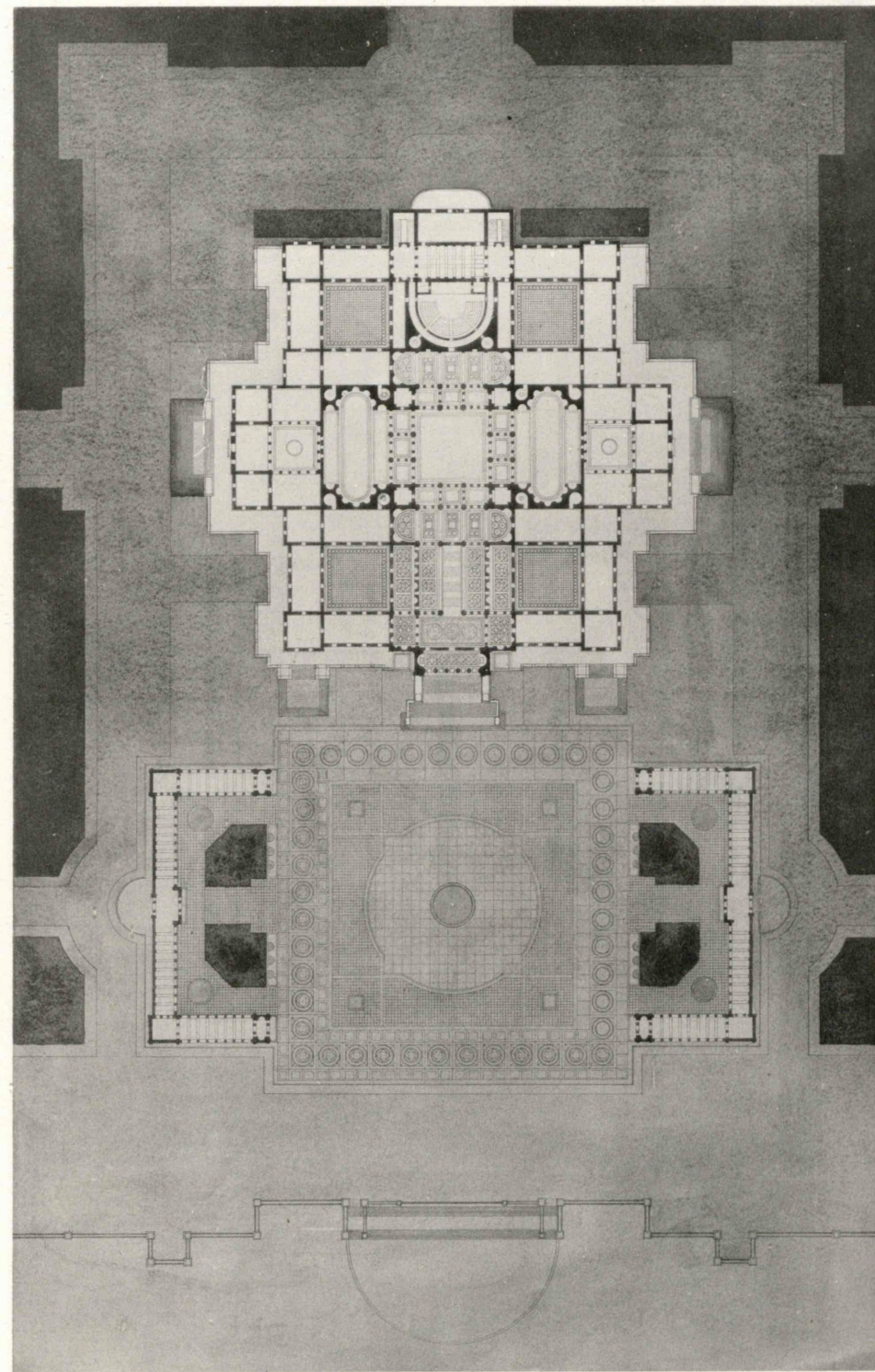
A CATHEDRAL, BY ROBERT T. WALKER, 1890.

1875
MAY 11 11 55 AM '75
NEW YORK



PLAN OF CATHEDRAL.

ROBERT T. WALKER.

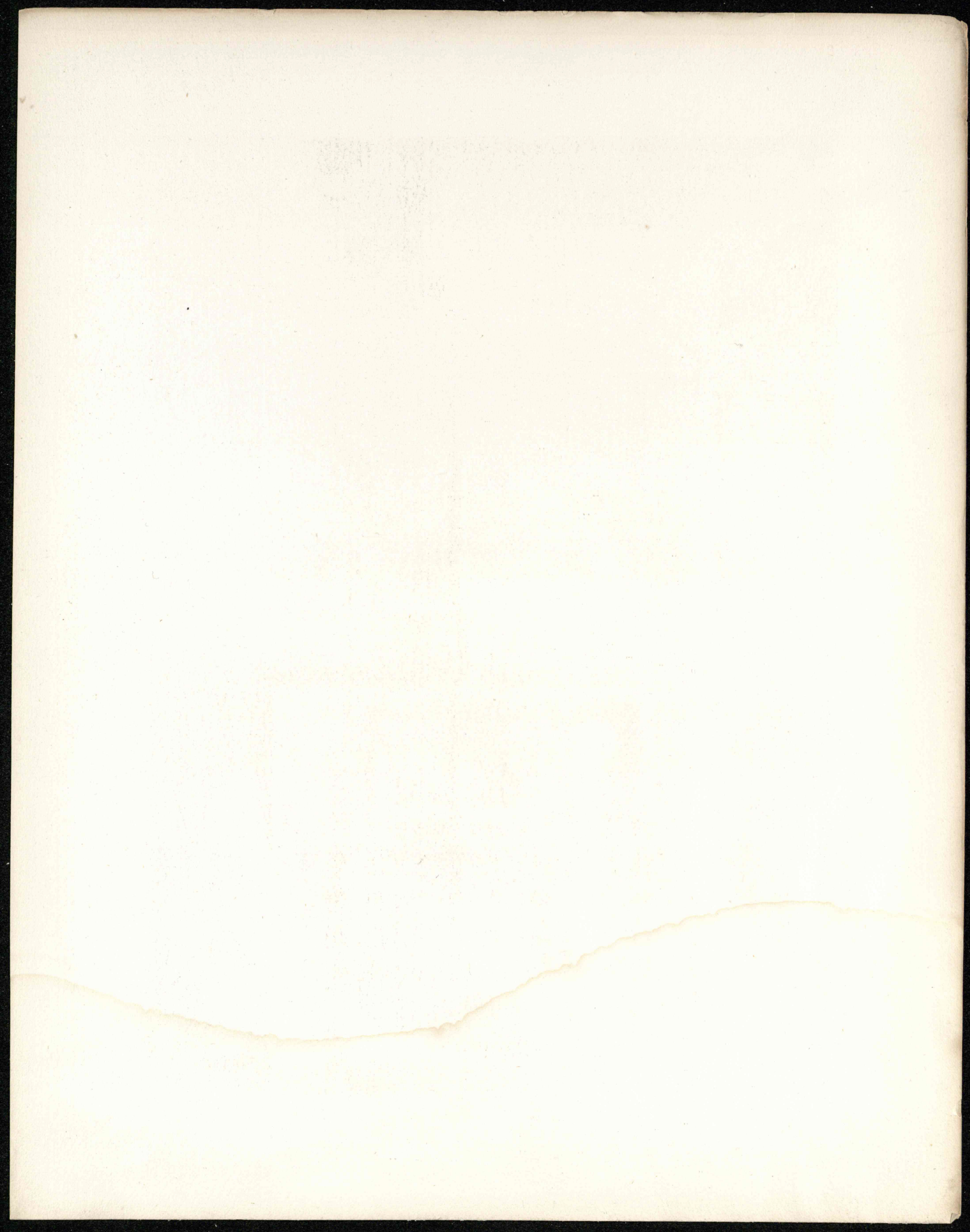


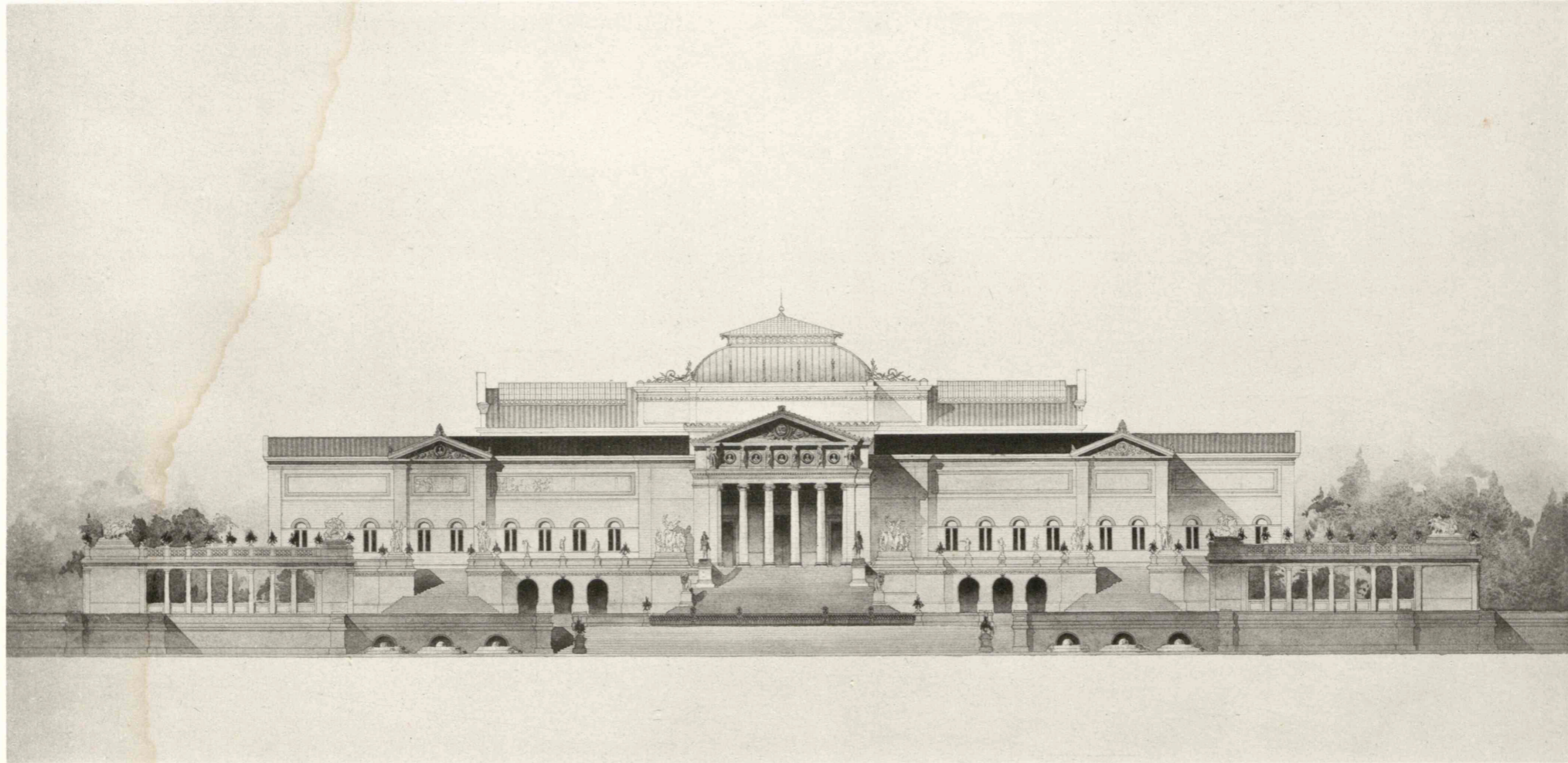
PLAN OF ART MUSEUM.

SOPHIA G. HAYDEN.

THESIS DESIGNS.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.
CLASS OF 1890.

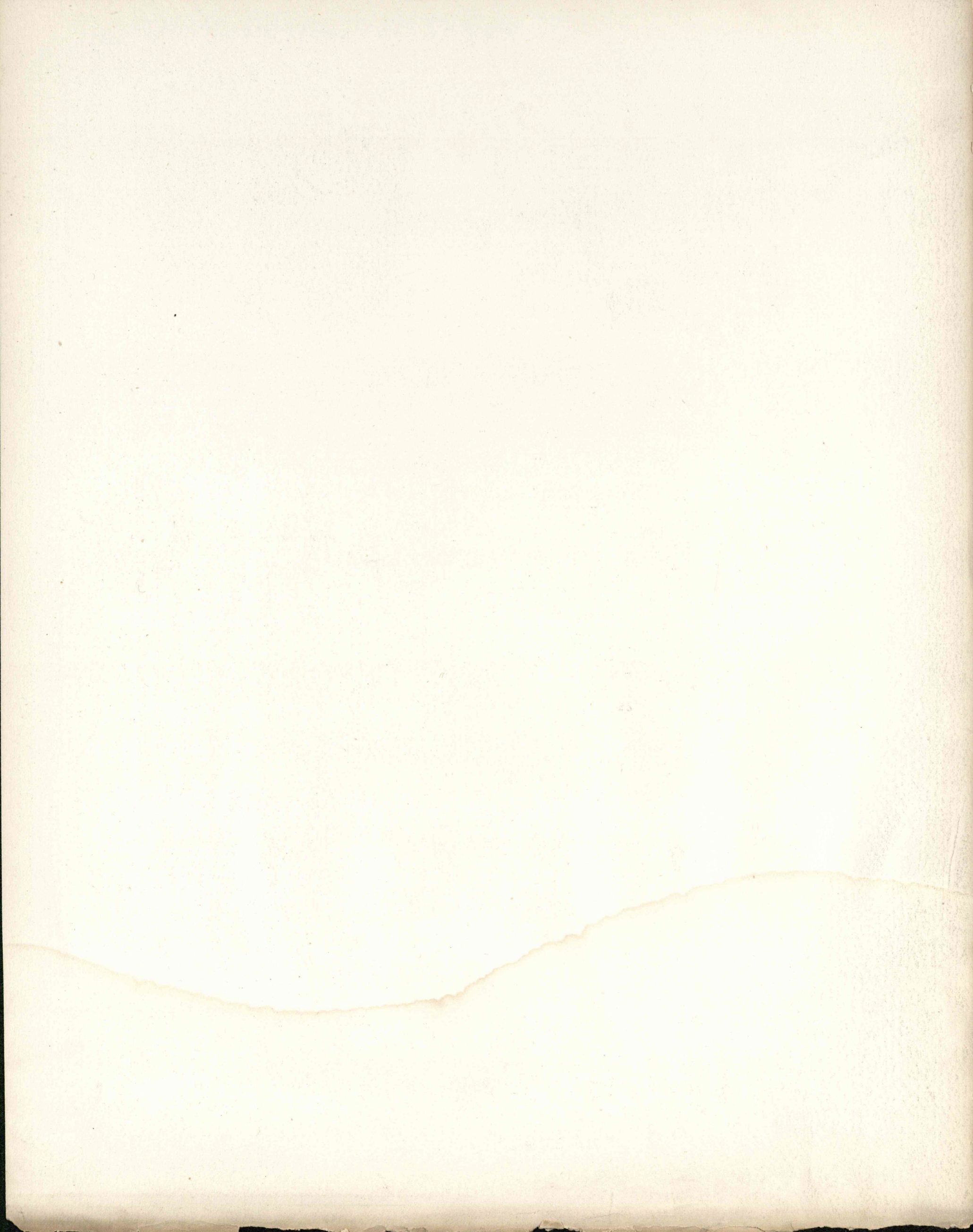




THESIS DESIGN.

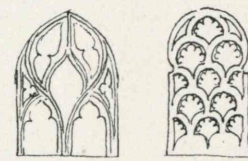
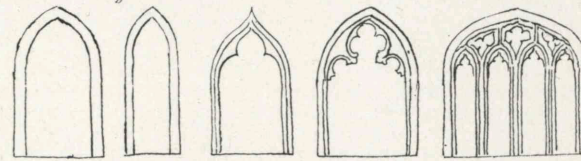
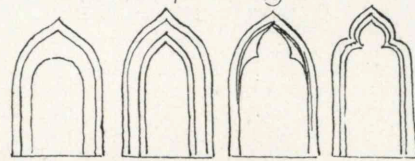
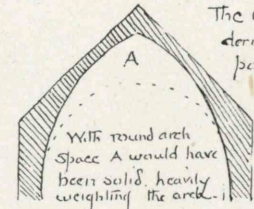
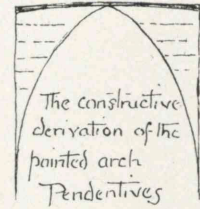
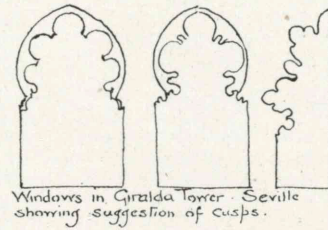
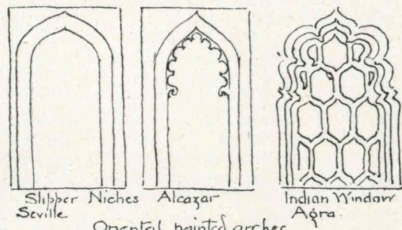
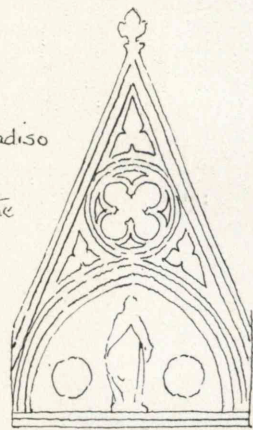
MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

A MUSEUM OF FINE ARTS, BY SOPHIA G. HAYDEN, 1890.



-Gothic-

Porta del Paradiso
Venice,
containing the
motive of
gable and
pointed arch
usually
considered
distinctively
Gothic.



Venetian windows showing Oriental influence

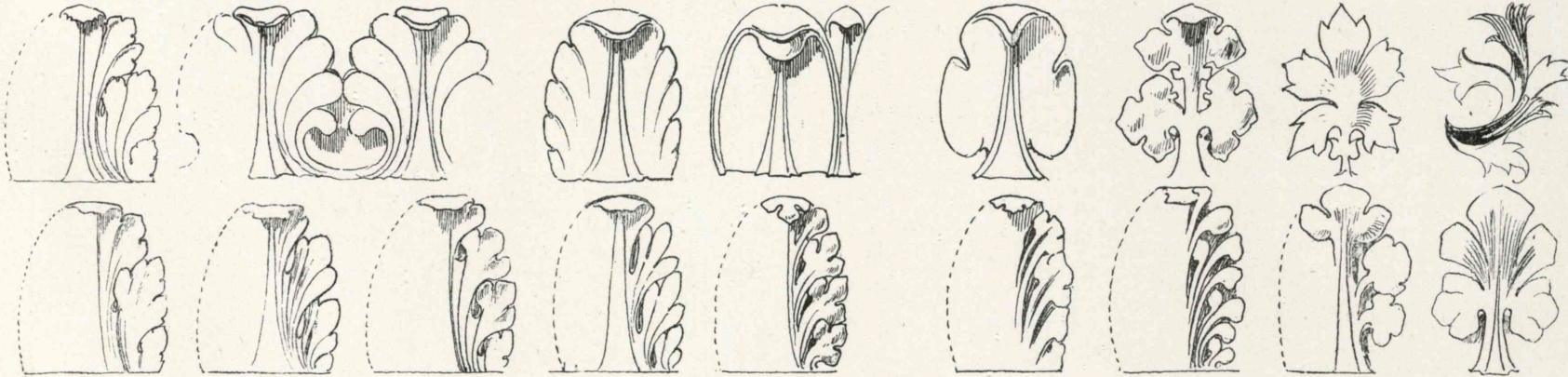
Northern Gothic forms derived from construction

Tudor Flamboyant

Examples showing derivation of Gothic leafage from the Acanthus by elimination of the eye of the leaf

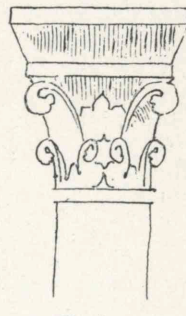
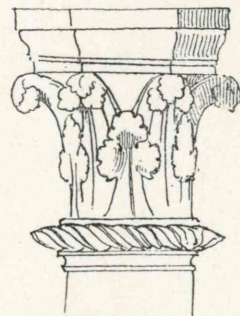
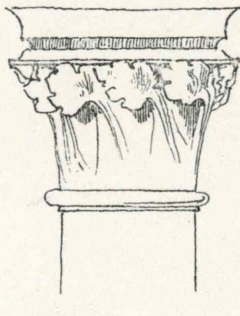
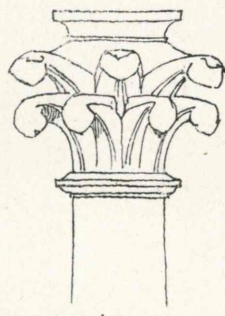
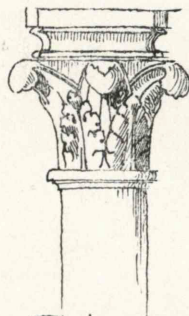
Forms of leaf used in metal work and manuscript

Types of Gothic leafage showing derivation from Classic leafage - These forms are also influenced by natural forms -



Examples showing derivation of Gothic leafage from the Acanthus by exaggeration of the eye of the leaf

Examples of Gothic Capitals



Rheims

Rheims

Bonn

Chartres

Pavia

Pavia

Capitals of this type are derived from Romanesque originals -

Capitals of this type are derived from Byzantine originals -

