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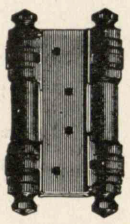

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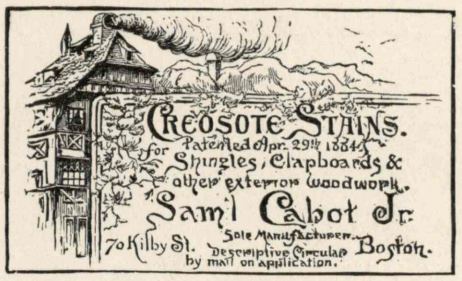

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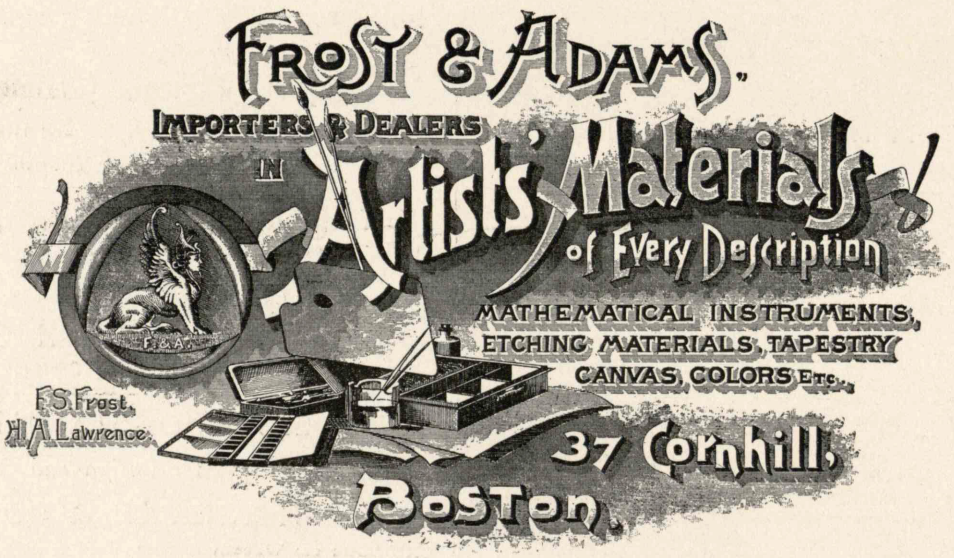

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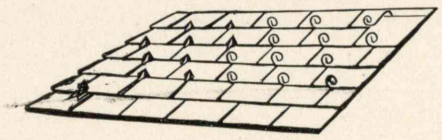

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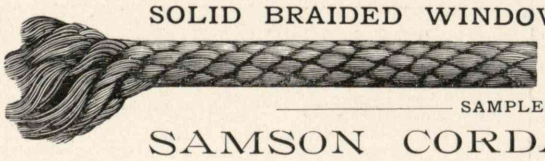

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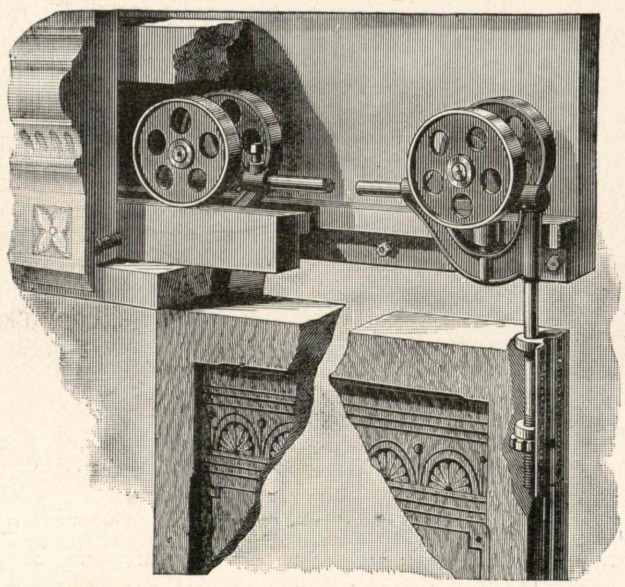

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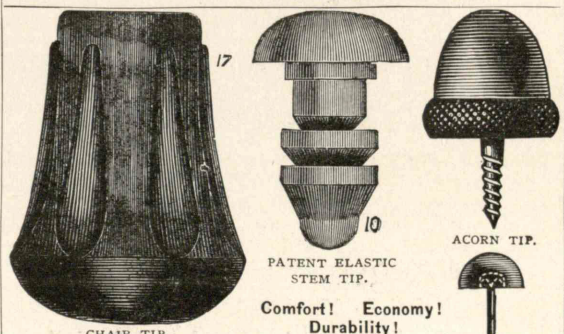

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INDEX TO ADVERTISEMENTS.

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THE INSTITUTE OF TECHNOLOGY offers four years' courses, leading to the degree of Bachelor of Science, in CIVIL, MECHANICAL, MINING, AND ELECTRICAL ENGINEERING, ARCHITECTURE, CHEMISTRY, NATURAL HISTORY, AND PHYSICS. A course of General Studies for young men contemplating a business life is also provided.

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aims not only to make the student thoroughly acquainted with the scientific principles underlying sound construction, and to familiarize him with the mathematical and mechanical formulæ and processes necessary to the solution of architectural problems, but also to cultivate his taste in color and form by constant practice in design and by the study of the history of architecture. Too great restriction to purely professional work is avoided by the introduction of the study of modern languages, history, political science, etc., the proportion of time devoted to these general subjects diminishing as the student goes on in his course.

The studies of the first year are common to all the courses of the School, and embrace mathematics, drawing, chemistry, and modern languages. In the higher years, thorough courses in analytic geometry and the calculus, carried on simultaneously with lectures and laboratory work in physics, lead up to the study of theoretical and applied mechanics, the lecture-room work in which is supplemented by actual laboratory tests to determine the strength of the various building materials, the accuracy of the commonly accepted constants, etc. The strictly professional work begins with instruction in materials, common constructions, and architectural history, followed, in the later years, by courses in stereotomy, iron construction, specifications, and contracts, in heating and ventilation, in planning, and in the requirements of schools, theatres, hospitals, and other special classes of buildings. Whenever practicable, the text-book and lecture-room work is emphasized by visits to actual structures; and throughout the whole course the student is continually drilled in original design. To this end two problems each month are required, — one, a sketch, to be finished within one week; and the other, more elaborate, occupying the whole month for the completion of the details and finished drawings relating to it.

Sketching in water-color and pen-and-ink, together with lectures and exercises in color decoration and history of ornament, are in charge of well-known gentlemen; and a class for drawing from the living model is maintained during the greater part of the year.

Unusual advantages exist in the nearness of the Boston Museum of Fine Arts and of the Boston Public Library, the facilities of which are freely offered by the Trustees to students of the Institute. The School itself possesses a valuable departmental library and collection of casts and building materials.

For the benefit of those who are contented with a limited acquaintance with the subject, or who have acquired elsewhere the necessary mathematical and physical knowledge, a partial course in Architecture is arranged, occupying two years.

The professional work of both courses is under the immediate charge of Prof. Frank W. Chandler, who gives the lectures on Construction, Specifications, and Contracts, Materials, and Special Classes of Buildings; Assoc. Prof. Eugene Létang, the Instructor in Design; and Messrs. Eleazer B. Homer and Frank A. Moore, Assistants. Special instruction is given by Messrs. Ross Turner, in Water-Colors; C. Howard Walker, in Decoration; Charles E. Mills, in Drawing from the Life; and David A. Gregg, in Pen-and-Ink Sketching.

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TECHNOLOGY ARCHITECTURAL REVIEW.

DEPARTMENT OF ARCHITECTURE,

Massachusetts Institute of Technology.

VOL. I. BOSTON, JUNE 15, 1888. No. 8.

TECHNOLOGY ARCHITECTURAL REVIEW.

PUBLICATION OF

The Massachusetts Institute of Technology Architectural Society.

HENRY D. BATES. THOMAS R. KIMBALL.
EDITORS.

WITH the present issue, the REVIEW closes its first volume. Before considering the scheme of our second volume, we wish to express our gratitude for the liberal interest taken in this work by so many prominent architects and artists. When in our first number we explained that the aim of the REVIEW was to point out and emphasize the resources of classic art as a basis of design, we were sure that an interest would be awakened: we did not expect to find the interest so keen or so widely spread.

The past year has shown that a desire to promote the cause of broader education among architectural and art students is not confined to the profession. In recognition of this fact we have decided to widen the scope of our paper and give to its future numbers a more extended text Besides the regular problems, which will as heretofore be accompanied by critical comment from the jury appointed by the Boston Society of Architects, we have chosen subjects important to architectural students, but in many cases of general as well as special interest.

The generosity of those having at heart the cause of greater enlightenment for the younger generation has given us a list of contributors so rich in eminent names that whatever the theme, and however treated, it cannot fail to be of great value. In many cases we can promise the handling of subjects by their recognized authorities. We take pride in the assurance of contributions from such scholars as Prof. Charles Eliot Norton of Harvard College, Messrs. Henry Van Brunt, Edward C. Cabot, Russell Sturgis, Edward Robinson, and many others.

Our scheme of subjects will comprise such topics as "The Student's Library, and How to Choose it," "Architecture without Decoration," "A Study of Decoration," "The Growth of the Plan of the Mediæval Church," "Planning," "Stained Glass," "Mediums of Sketching," "Water Color in Architectural Drawing," also original translations from French authorities. For the benefit of students looking forward to foreign study, there will be letters from travellers in various countries.

Our student readers will be glad to know that through the kindness of the Rotch Trustees we are empowered to publish the *envois* from the travelling *pensionnaires* of that valued scholarship. We are sure that the future numbers of our paper will keep alive an interest worthy of the cordial spirit that has made it possible for us to present such a programme, and we hope that its good influence will reach those at whose welfare it aims.

To the Editors of THE TECHNOLOGY ARCHITECTURAL REVIEW.

Before the close of the first volume of your dignified and extremely interesting paper, I beg to offer a short biographical sketch of our dear friend and beloved master, Professor EUGÈNE LÉTANG, of the Architectural Department at the Massachusetts Institute of Technology.

Mr. Létang was born on the 20th of May, 1842, at Boulleret, *Departement du Cher*, one of the most interesting and charming towns in France, situated on the banks of the Loire. Spending his infancy in this delightful spot, and learning later to sketch and color its beauties, could not fail to deeply impress his mind and influence it in the direction of art.

He went to the village school, afterward receiving instruction from a tutor in various branches till proficient in each. He then worked for his father, mastering the art of the stone-cutter. His extended study of stereotomy, both in theory and practice, gave him great skill in solving its most difficult problems. Spiral staircases with vaulted ceilings, complicated buttresses, carving and other detail, studied from the great Gothic cathedrals, gave him a rare preparation for his future profession.

On May 20, 1862, Eugène Létang was called upon to comply with French law by going to the Government office and drawing a ticket which was to determine his lot in life, — that is, soldier or civilian. His number being among those chosen for service, he was obliged to don uniform and present himself at headquarters for a seven-year term of enlistment. Through the intervention of a kind uncle, however, a substitute was provided. Mr. Létang would have insisted upon going, in the hope that a departure from Boulleret might open a way for cultivating his great musical talent; but the appeals of an affectionate mother decided him to accept the offered substitute and give up a military career.

In November, 1864, his uncle, a civil engineer, advised him to go to Paris and study a profession, giving him his choice of engineering, sculpture, or architecture Although Mr. Létang much preferred music, he was obliged to select from these three subjects, and decided upon architecture. He immediately entered a preparatory school at Paris, gaining admission to the Beaux Arts through the influence of friends already there; he spent much time in assisting them at their work. Professor Emile Vaudremer advised him to take his examinations at once; but he preferred the certainty of a brilliant entrance to a possible failure, and chose to make his application a year later, when he presented himself with one hundred and ninety-nine others, of whom forty-three were admitted, Mr. Létang standing seventh in rank. During his course at the Beaux Arts he was a regular student in the atelier of Vaudremer, that professor forming a strong and lasting attachment to him, — to this day calling him his "boy," as in the old studio days.

In 1869 he entered the First Class, having received medals in the several courses of study, and honorable mention for nearly every problem he had designed.

In 1870 he was called to serve his country in the Franco-Prussian war, throughout which he distinguished himself by great courage. The war ending in 1871, he returned to the Beaux Arts for a year, when he was called to teach design at the Massachusetts Institute of Technology. He was excluded from the *Grand Prix de Rome* competition by a change of the law, making the age-limit twenty-five, instead of thirty years. [The thirty-year limit has since been re-established.]

His appointment to the Professorship of Design at the Institute was secured through the late Alfred Greenough. Commissioned by Professor William R. Ware to find some promising young man for that position, he made this most fortunate choice.

Mr. Létang sailed for New York Dec. 3, 1872, and was there met by Professor Ware, who accompanied him to Boston. Owing to his slight knowledge of English he found himself much embarrassed in his work; but a few years removed this difficulty, and to-day Professor Létang has no peer among teachers of design in this country. A wonderfully facile imagination, guided by great natural and acquired refinement, has accomplished this result.

Mr. Létang has always been most intimately associated with his pupils, who are fascinated by his great love for his work and his interest in their welfare. He has never lost his love for music, and plays during his leisure moments on his flute, violoncello, and piano. It is his custom to visit his native country almost every year, and during these trips he has visited all parts of Europe, studying its arts and architecture. I am very sincerely yours,

THOS. O'GRADY, JR.

We have been unavoidably forced to cut down Mr. O'Grady's most interesting letter; and in our apology to him we wish to express the deep sense of gratitude we have for the great and generous interest he has taken in our paper.

From the first we owe to him its inspiration. Throughout the first volume his hand is manifest in the work published, for nearly all our best contributions have been from men who had the good fortune to study with him during his instructorship at the Institute.

In his letter he has put before us a most interesting subject. Not one of Professor Létang's students but will read with satisfaction this outline of his master's life.

In all Mr. O'Grady says he will have the support of every one who has been well acquainted with Professor Létang. Mr. Richardson's selection of him as counsel on the trying problems of the Albany State House, is but one of the many cases where our greatest architects have paid tribute to Létang's profound understanding of his chosen profession.

Though meeting with the keenest of disappointments in losing his chance for the *Grand Prix*, he may comfort himself with the thought that no other man has had so great or so good an influence on the future of American architecture as our beloved and honored master, Eugène Létang.

At a recent meeting of the Board of Trustees of the Boston Public Library, it was voted to set apart for an Architectural Library one of the rooms of the Third or Special Library floor, of the new building now in process of erection on Copley Square. The room selected will be ideal for such a purpose, both by reason of its location and general character.

It is situated directly at the head of the main staircase, and adjoining the elevator, being therefore the most accessible of any of the Special Libraries. It will be provided with the best of light and ventilation, having three large windows facing directly upon the Courts, with a large fireplace at one end.

The Trustees have certainly come forward in this enterprise in a manner which can leave no doubt as to their belief in the good results to be accomplished by the successful establishment of a Library of this character. Not only have they donated for its use the best and most convenient room in the new building, but they have expressed their willingness to add to the collection the many valuable Architectural works now in possession of the Public Library.

This should act as an incentive to all those who are interested in the Architecture not of Boston alone, but of our whole Country, to make every effort to have a Library worthy of the room which will contain it, and which should ultimately grow to be second to none in the world.

Books of reference are of vital importance to professional men. Lawyers, doctors, and ministers recognize this, and accumulate private libraries of greater or less value. Architects, while attempting to do likewise, find themselves at a comparative disadvantage.

The books of other professional men are usually small, either octavos or quartos, published in economical form in moderately large editions, easily obtainable and capable of being replaced if injured, and requiring but little space.

Works on architecture, on the other hand (excepting the histories, which are few), depend for their worth upon their plates, which need to be large, finely drawn and engraved, often colored, making the books expensive folios, published in small editions, and often only to be found in unique copies which have fictitious values.

An architect, therefore, finds himself somewhat in the position of a collector of prints and etchings, with the difference that his material is a necessity, and not the gratification of a caprice; and he must have a long purse to get together works which are to him essential. However frequent this happy complement may be with an architect in active practice, with students it is wanting, unless they may have private fortunes.

In other professions much of importance can be condensed into note-books, and more carried in the mind. With the student of architecture, measured and accurate drawings, which it would take months of labor and exceptional skill to copy, and which it is futile to attempt to remember, are constantly desired for reference.

As during the course of study the appreciation of the highest qualities of architecture increases, the demand for such material becomes more frequent, until it is only satisfied by such expensive works as Prisse d'Avenne's "Egypt," Fenger's "Parthenon," and Le Tarouilly's "Edifices de Rome Moderne."

Study from the best material will alone foster the qualities of the best architecture; and upon the amount of such study the worth of the future architecture of the country depends.

An architectural library should be provided with works connected with architecture, constructive, artistic, historical, and theoretical; with collections of photographs and casts of actual work, especially of details; with works on ornament, decoration, and color; and with architectural journals, both native and foreign.

Such a library would be a benefaction to the city and State far greater than gifts of statues and monuments, for its influence would underlie all the qualities which would make them of value; and such a library it is proposed to establish in connection with the Public Library. To do this there will be a considerable sum of money required, and it is hoped the purpose of the library justifies the appeal soon to be made for subscription.

DEPARTMENT OF ARCHITECTURE.

Plates I. and II. of this number present in elevation and plan one of Escalier's Beaux-Arts *projets*. Its subject, an Italian villa, gives excellent opportunity for the light style of rendering used.

The elevation is from a drawing made expressly for the Review in exact fac-simile of the original, which was found too far destroyed for reproduction. Like the original, it is almost entirely done in pencil, and shows how little of the right thing is required to model an architectural drawing. Like all of Escalier's work, this example is full of originality in treatment.

Plate IV. shows the principal elevation of a design for an Art Club. It is one of the solutions of a problem given at the Institute in 1887. The programme imposed the same conditions upon which the Boston Art Club was built, which accounts for the inscription used in the Drawing.

Our Supplement, the Doric Doorway (reproduced for the first time), completes the set of Brune's Cori drawings, with the exception of one done in line, which it was decided to omit.

It is hoped that our student subscribers will study them well; for as examples of washed rendering they are still unsurpassed.

THESIS WORK.

Plate III. — A Reformatory Prison.

Henry D. Bates, Class of 1888.

ABSTRACT FROM THESIS.

At present there are in use two great systems of prison management, — one known as the Philadelphia, or *solitary* system; the other as the Auburn, or *congregate* system. In the former each prisoner remains constantly in his cell, shut off from all communication with his companions. In the latter system the prisoners during the day are brought together in the shops, where they work in silence; during the night each is locked in his cell.

In order to provide a basis from which to work in developing a plan, it was assumed that for reformatory measures the congregate is preferable to the solitary system. The maximum number of prisoners was placed at five hundred.

In studying the general disposition of the plan, three main features are to be considered: the entrance, with accompanying offices, waiting-rooms, and quarters for the resident officers and guards; the administration, comprising kitchen, laundry, store and supply rooms, baths, shops, school and lecture rooms, chapel, and hospital; and the prison proper, or guard-room and cell accommodations. In the arrangement of this part, the panoptic principle, as exemplified in the most improved prisons, is followed. The cells are built in superimposed tiers placed back to back, forming long blocks which stand isolated in the middle of wings radiating from a central pavilion, containing the guard-room. In order to avoid too great extension in the height and length of the cell-blocks, the five hundred cells are distributed in four wings. Therefore, fixed as it is by certain recognized rules, this last feature forms the governing factor in the arrangement of the whole, and the problem presented is to combine with it the other features in such a manner as to arrive at a well-connected, rational composition.

By grouping certain offices of the administration in a fifth radiating wing, and by placing this upon the main axis of the plan together with the entrance to the prison, which will occupy the side of the guard-room opposite the administration, the four cell-wings easily arrange themselves, two on either side of the main axis. The cell-wings are now all equally convenient to the administration, and all communication between the three distinct parts of the institution must come under surveillance from the guard-room.

Each cell-block contains one hundred and twenty-six cells, which are placed back to back, thus bringing sixty-three doorways on each aisle. They are arranged in three tiers, the cells of the second and third tiers opening upon iron galleries, or balconies, leading to stairs at the guard-room end of the block. These stairs also lead to the chapel, which is above the guard-room. The back walls of the cells are of extra thickness, and are separated by an open space extending the full height of the block and open at the guard-room end. The water and drain pipes of each cell are brought directly through the back wall and carried down through this space to the sewer, which runs under the middle of each block. All cells can be simultaneously locked from the guard-room, and can also be locked separately. The guard-room proper is an hexagonal iron cage in the centre of the pavilion and on a level with the second tier of cells. The floor below is left open for passage to and from the cells, but each wing can be instantly cut off from the others by folding gates worked from the guard-room.

The administration building is three stories high. On the first, or ground, floor are the store and supply rooms and baths, with the kitchen and laundry occupying a one-story addition at the rear of the building. The various offices on this floor are arranged on either side of a central corridor, extending the entire length of the building and continued by a covered passage leading to the shops. Between the kitchen and laundry this corridor is broadened into a wide vestibule to prevent crowding when the men are marched to the kitchen for their meals, which are eaten in their cells, thus avoiding the disadvantages of a large dining-room. The second floor of the administration building is devoted to school-rooms, a library, and a large lecture-room. The third floor is occupied by the hospital, and contains a large ward, four small wards, dispensary, bath-room, linen closet, nurses' room, kitchen, and laundry.

The shops extend across the rear of the prison yard, and a branch track from the railroad runs behind them. This track enters the prison yard through safety gates, constantly guarded. Provisions and supplies for the prison itself are unloaded from the cars in an extension of the power house, which is located on the main axis of the plan and in the middle of the shops. There a tunnel, connecting this house with the cellar of the administration building, and a tramway provide an easy means of transferring the supplies to the store-rooms.

The whole prison yard is surrounded by two walls, separated by a wide ditch completely under view of the guards stationed at the corners of the outside walls. In front the walls follow the line of the front cell-wings, meeting on the main axis at an angle, in which are located the entrance and offices. The only connection with the prison is by two bridges, crossing the ditch at the ground and second floors.

The buildings are to be heated by steam on the indirect system. In the cell-wings the air is admitted through the outside walls, and passing through steam coils, enters the cells through the grated doors. Registers in the back walls of the cells open into flues leading downward to a tunnel in which the water and drainage pipes are laid, and which runs to a reservoir under the guard-room. Two ventilating shafts, built in the angles of the cell-wings on either side, exhaust the foul air from this reservoir. Each cell has a separate flue, consisting of a cast-iron pipe built into the wall. When the chapel is in use, the down draught is partly shut off, and the fresh air drawn into the chapel through registers in the floor; the ventilator in the cupola being opened, a constant stream of fresh air rises from the floor to the ceiling. In the cellar of the administration building are store-rooms, dark cells, and the heating and ventilating apparatus for this wing. The air is heated by steam coils, and rises through flues in the walls. In the first two stories registers near the floor remove the foul air, and ducts between the floor and ceiling carry it to an upcast shaft at the end of the building. In the hospital the fresh air is admitted through registers above the head of each of the side beds, and registers in the floor under the foot of each bed open to ducts under the floor. These ducts connect with the upcast shaft.

The problem is one of planning; and in the elevation the aim has been to express the functions of the different parts of the plan in the simplest manner, and to give to the *ensemble* an air of severity and endurance.

MONTHLY COMPETITION.

THIRD YEAR REGULARS AND SPECIALS.

Programme: A Railroad Station.

This building is supposed to be erected upon the outskirts of a large country town. Its principal requirements will be as follows: entrance vestibule, stairs if necessary, two large waiting-rooms for passengers, ticket-office, telegraph-office, baggage-room, store-room, and also toilet-rooms connected with the waiting-rooms. Parallel with the track runs a street, leaving sixty-five feet between it and the passenger-platform, which will be no less than twelve feet wide, so that there is little chance for projecting porches on the street side; but on the track side the building may be recessed to give increased platform room. From one end of the building the company's land extends along the track to a cross-street, a distance of fifty feet, leaving a corner plot which may be used as a garden. At the track-crossing a gate will be necessary. From the other end of the building the company's land extends indefinitely between the track and the street. At both ends the land is to be fenced or walled in, so that the track can be reached through the station only, except at the end opposite the cross-street, where the platform is returned, and a small gate allows the officials to enter and baggage to be passed through.

The railroad is a double-track one; therefore directly opposite the station a shed covering about six hundred square feet will be necessary, for the accommodation of passengers waiting for trains on the further track. The platform on this side will be about eight feet wide.

The station is to be of stone, or stone and brick combined, and the main platform is to be covered.

Required: preliminary sketches, — comprising general plan on a one-thirty-second scale, one elevation and a plan of the station on a one-sixteenth scale. Finished drawings, — comprising two elevations on a one-eighth scale; general plan and section on a one-sixteenth scale.

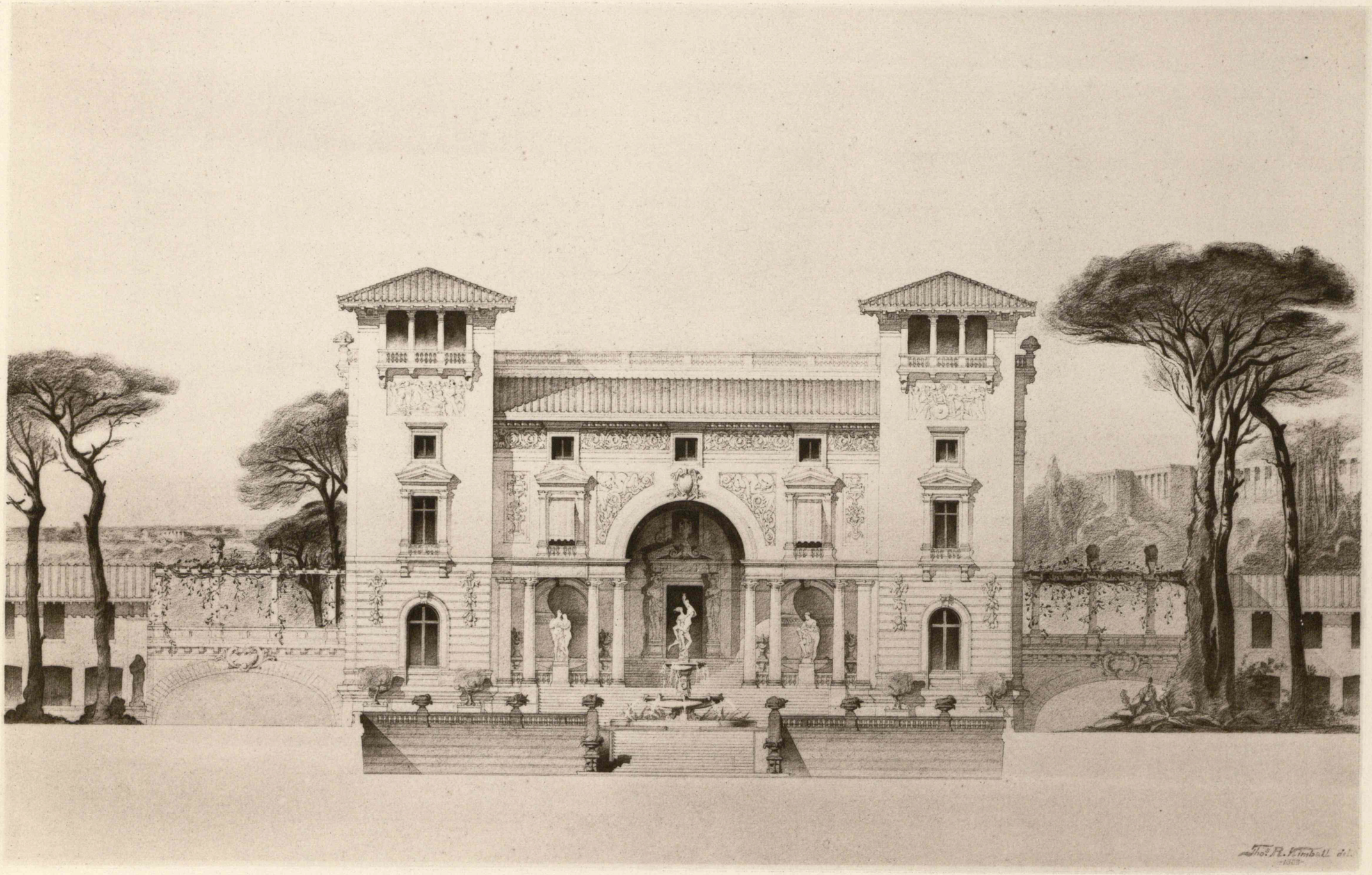
E. LÉTANG.

First Mention . . .	E. A. Crane.
Second Mention . . .	George W. Stone.
Third Mention	Arthur V. Edwards.
Fourth Mention	Walter H. Kilham.

Twenty-four designs in competition.

Note. — As none of the *projets* submitted in this competition were considered specially meritorious, and none were so arranged that they could be published without too great reduction of scale, it was deemed advisable to let them give place to more interesting matter. — Editors.

PUBLICATION OF
THE M. I. T. ARCHITECTURAL SOCIETY.



AN ITALIAN VILLA.

(Principal Elevation.)

PROJÉT BY M. ESCALIER.

RE-DRAWN BY THOS. R. KIMBALL.

HELIOTYPE PRINTING CO. BOSTON.

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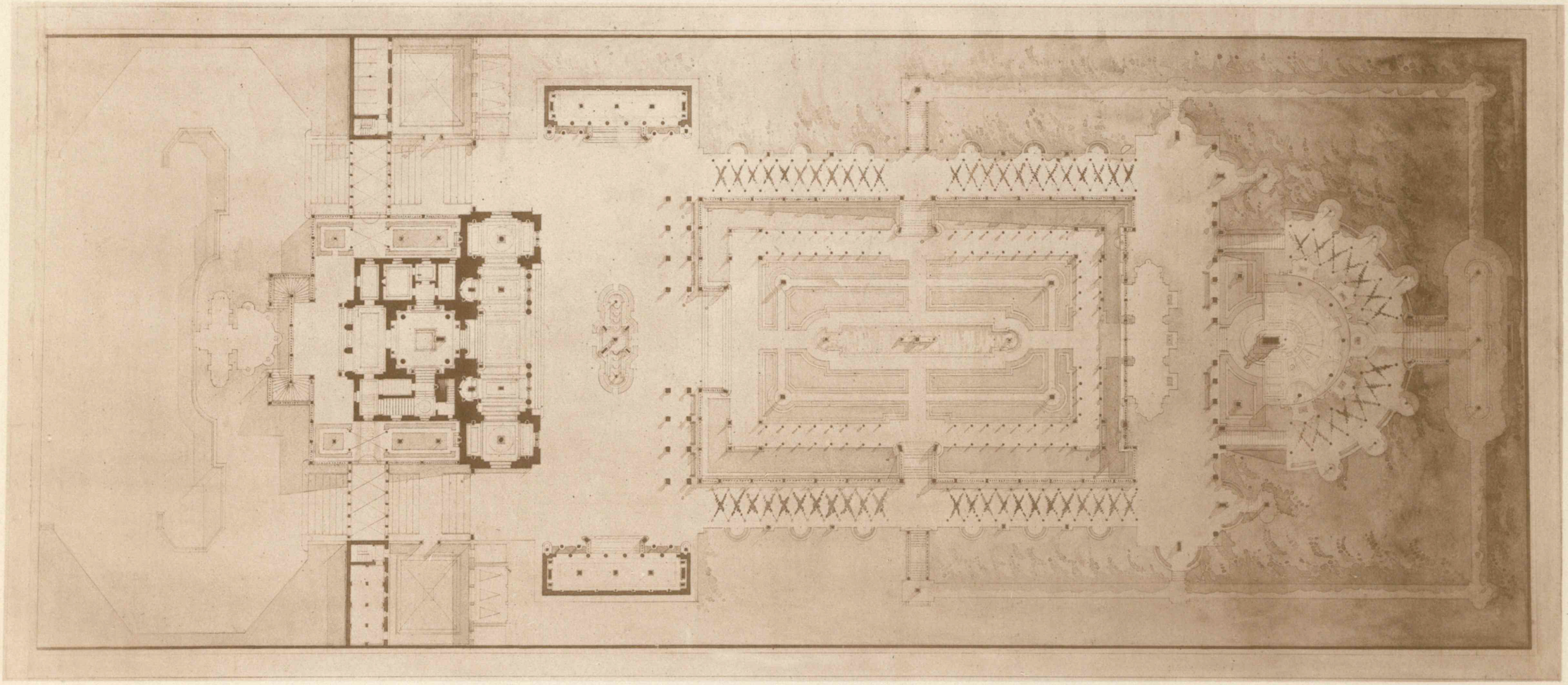

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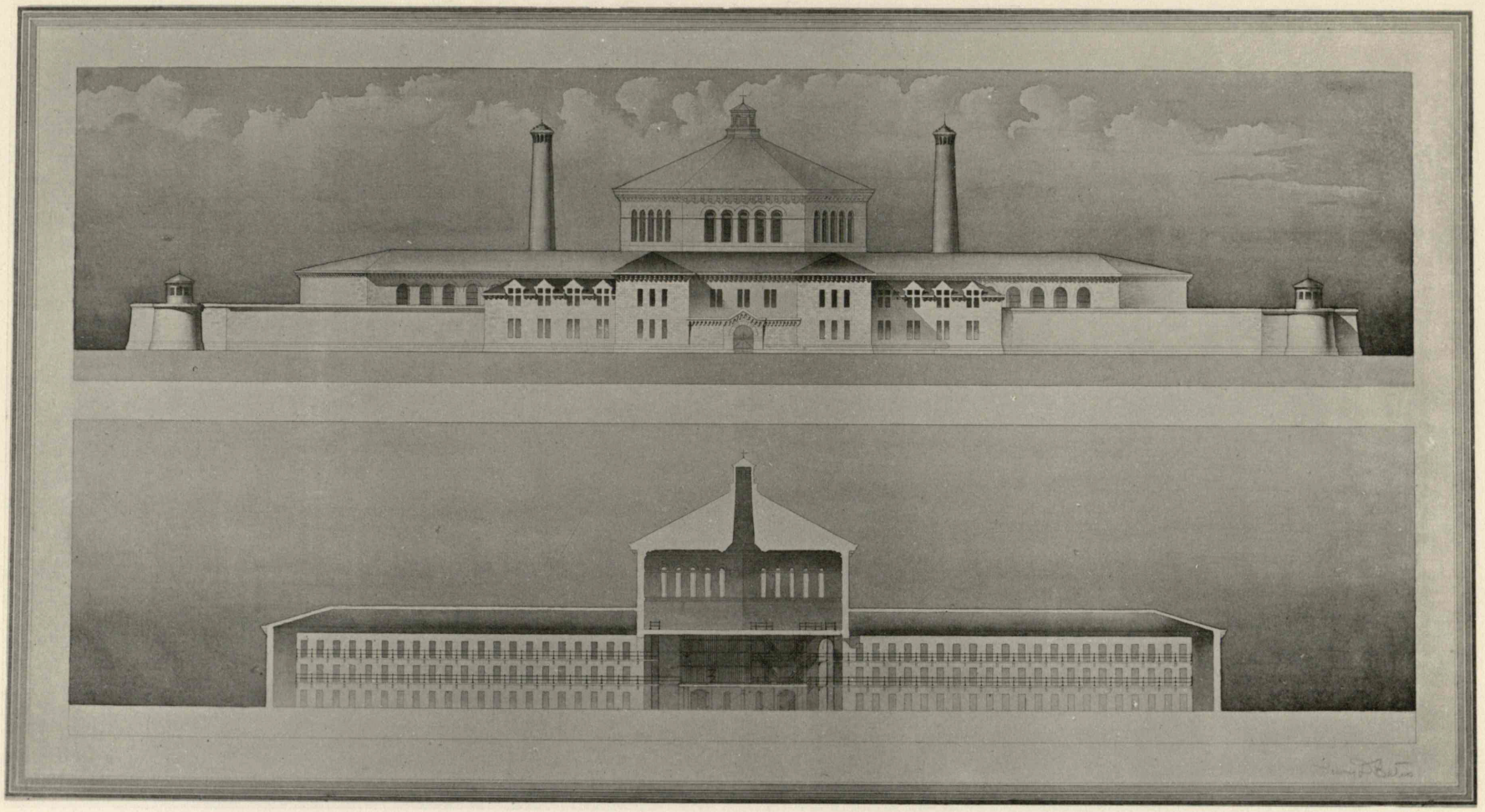

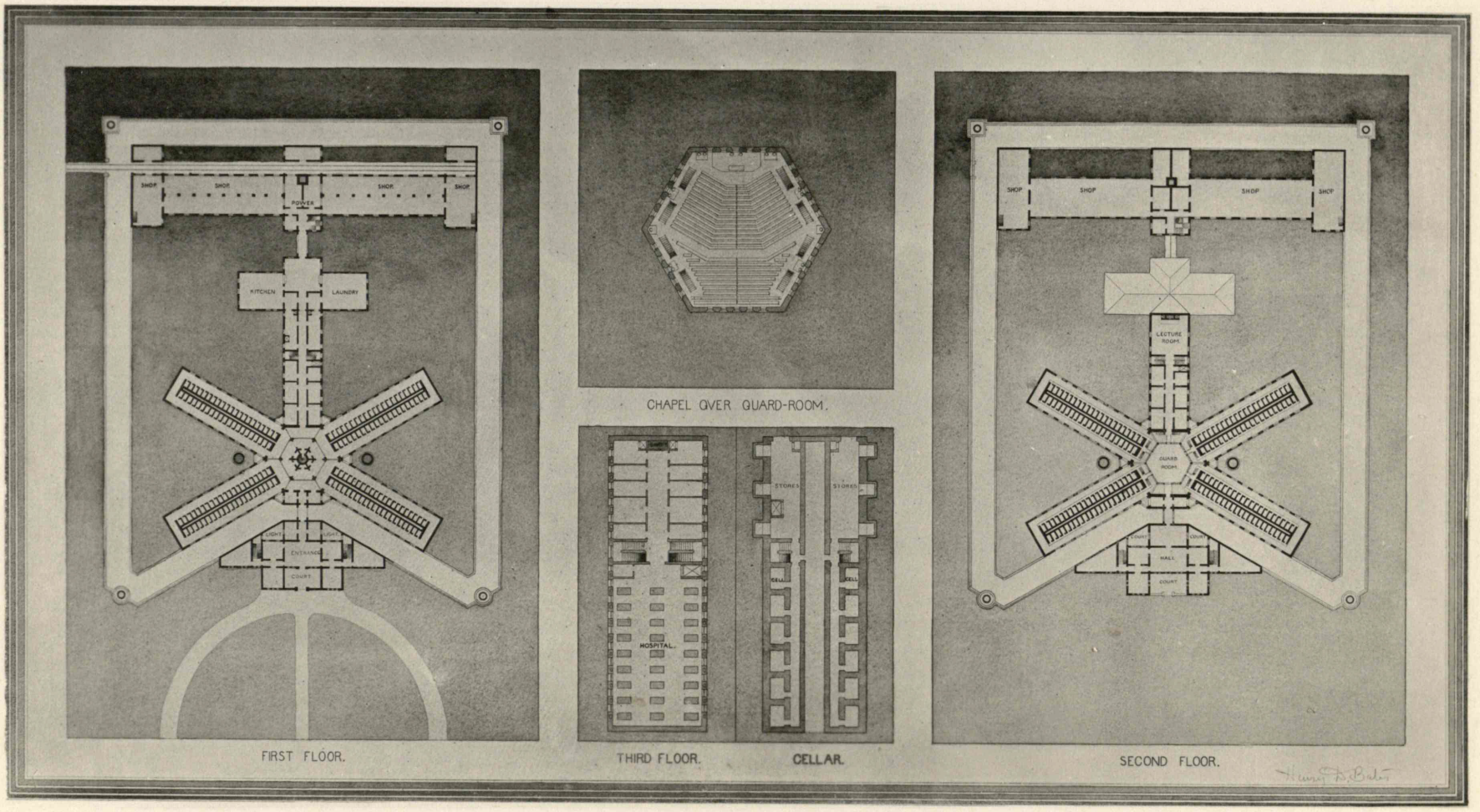

THESIS. 1888.

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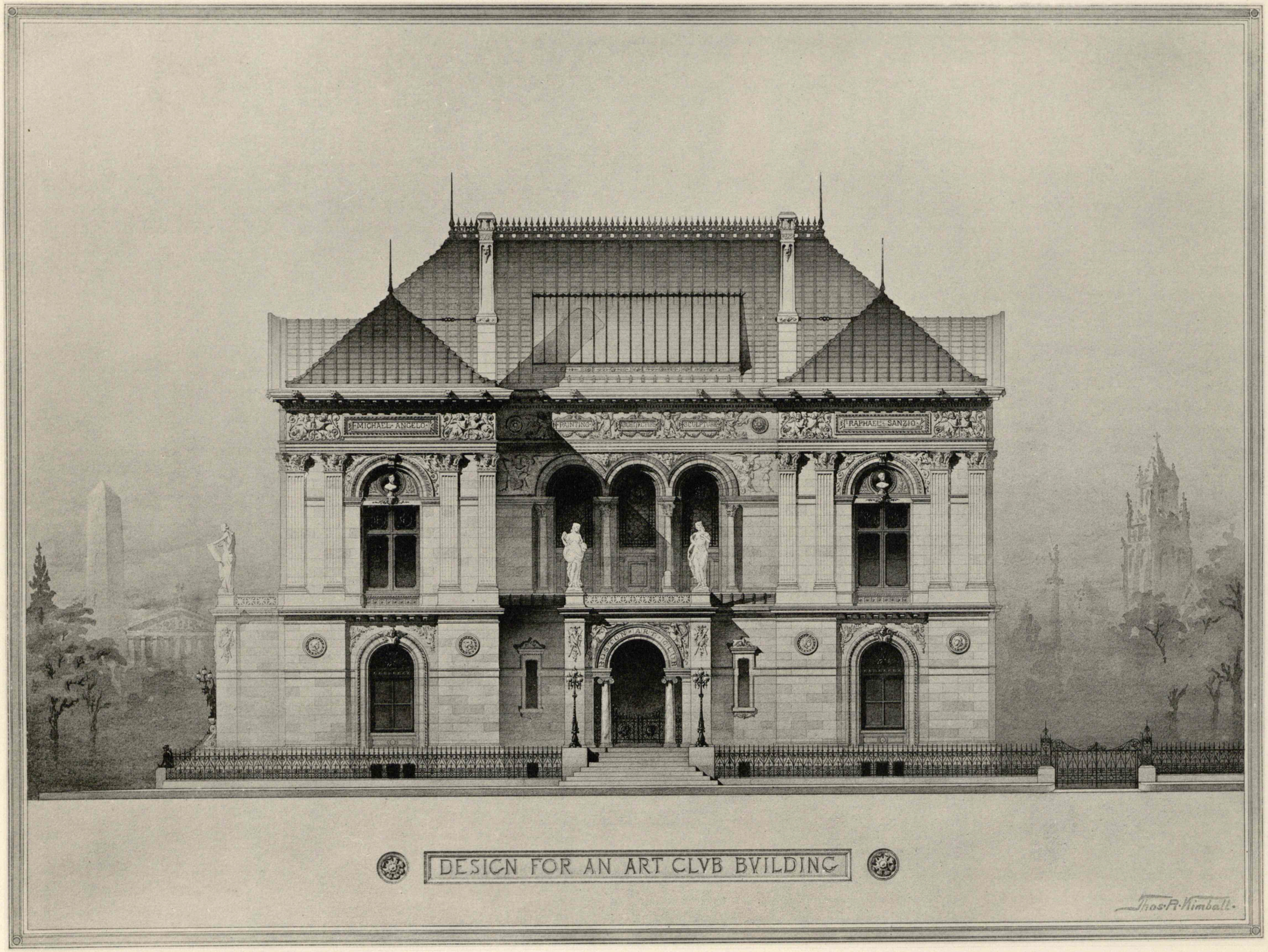

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MONTHLY COMPETITION:
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