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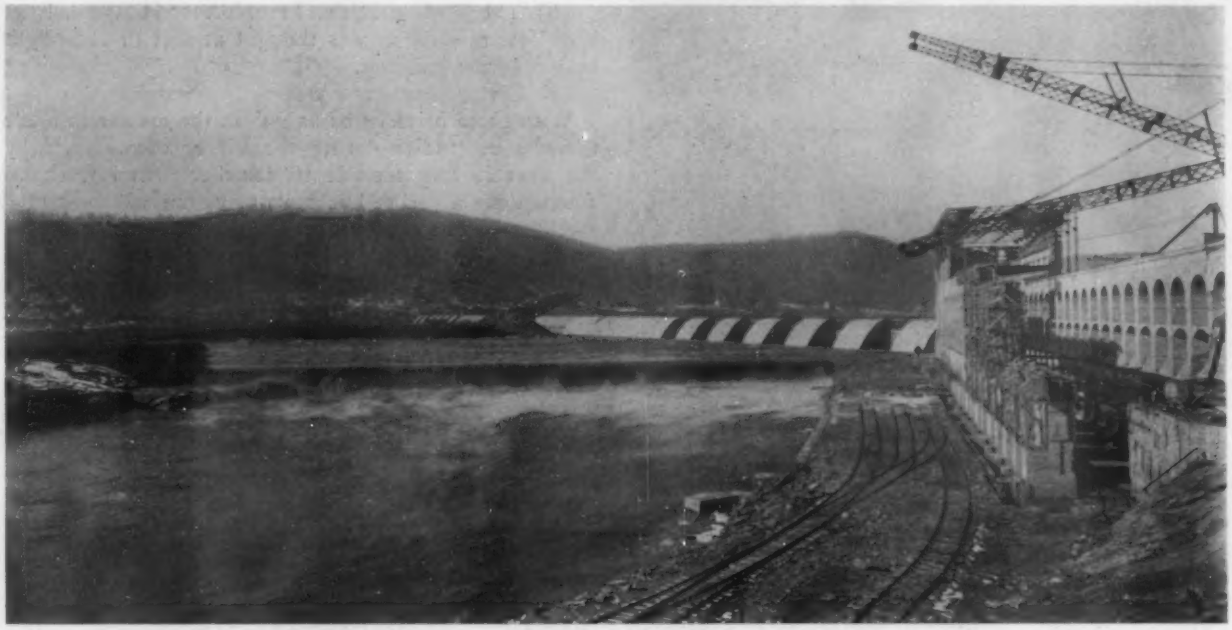


DAM AND POWER-HOUSE, McCALL FERRY, PA. MESSRS. TROWBRIDGE & ACKERMAN, CONSULTING ARCHITECTS

The Architectural Treatment of a Concrete Dam and Power-house

ENGINEERS are beginning to believe that it pays to employ consulting architects. The custom in the past has been to erect power-houses, bridges and other engineering structures with an eye only to utility and with the esthetic features of such work determined by a draughtsman employed as art censor to an engineer. Perhaps it had not occurred to the engineers that a good design helps the sale of bonds; that a building costing many thousands of dollars and destined to outlive all of those concerned in its construction might be built with some feeling of concession to the good taste of posterity. The tide is turning, however, and those engineers who are broad enough to believe in the commercial value of specialists are engaging the services of trained architects.

Much has been written of late concerning the architectural treatment of concrete buildings. The treatment of surfaces has been one of the most important branches along which investigators have worked. There has been little material published, however, showing a successful use of concrete for work of very large scale on which there was some attempt at detail embellishment.

The accompanying photographs and the four plates reproduced from drawings show what has been done in the architectural treatment of a large dam and power-house at McCall Ferry, Pa.

At a point about ten miles northwest of the Maryland State line, the Susquehanna River flows between fairly precipitate banks and around an island in mid-stream known as Fry Island. A deep channel near the southern bank forms a natural tail-race requiring little improvement.

The dam itself, now nearing completion, is of solid concrete with an upstream straight face and a down-stream face of the usual ogee curve. At the eastern end of the dam proper, on the Lancaster County shore, the power-house stands, slanting at an angle toward the shore, but separated from it by an exterior spill-way, tunneled to give access to the building. The section reproduced herewith shows in a general way the screens, gates, wheel pits and draft tubes, through

THE POWER-HOUSE FROM BELOW

which the water flows to generate power. Each of the turbines, which have vertical shafts, carries the revolving element of an electric generator, securing to the whole plant an ultimate capacity of about 135,000 mechanical horsepower.

Messrs. Trowbridge & Ackerman were called in to give to the problem, as it had been worked out by the engineers, suitable architectural treatment. They were confronted with a programme containing certain limitations, and with the general admonition to avoid running up the expense. Their task was to design a building, architecturally good, that would cost no more than the purely utilitarian structure already under consideration in the drafting room of the constructing engineers. The following were the items of the programme:

(1) The site on the Susquehanna River, quite isolated in effect, yet within reach of Baltimore, Harrisburg, Lancaster, Reading, Wilmington, and many other cities of commercial importance.

(2) The structure to be of solid concrete, poured, in the proportions of 1, 2, 5. There was to be no steel reinforcement.

(3) A plan was given, showing that the huge, vertical turbines would be in line spaced forty feet on centers.

(4) A sketch was given showing a tentative section, explaining the relation of the generators to the source of energy; the fall of water obtainable; the draft tubes; the traveling crane, etc.

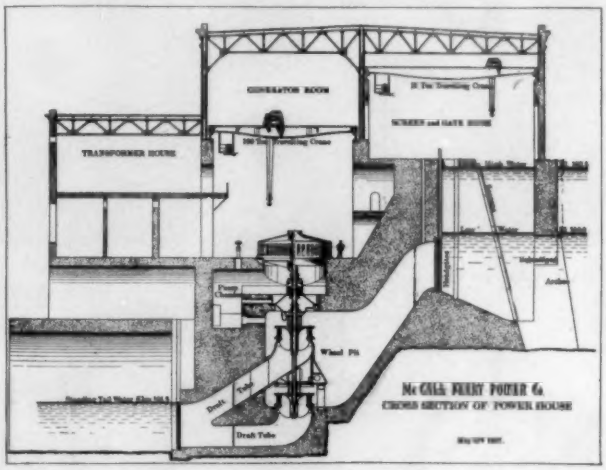
(5) A general statement as to the floor levels and the approximate height of the roof.

(6) The position of the Transformer House had not been determined. It was thought at first that it might be a separate building.

(7) Certain space was reserved for offices.

With these brief items as guides the architects made a series of studies during the winter months and by the time it was possible to consider actual work on foundations a design had been approved which showed the Transformer House resting on the construction bridge. This bridge had not been built with this end in view but its value could not be overlooked.

From this point the architects prepared all scale and detail drawings necessary for the construction and completion of the power-house, receiving from the engineers detailed directions as to the dimensions of concrete as determined by the machinery, the water pressure, etc.



A PRELIMINARY DRAWING BY THE ENGINEERS, SHOWING THE FLOW THROUGH THE TURBINE PITS

LOOKING ACROSS THE WORK, WITH THE PARTIALLY COMPLETED DAM IN THE DISTANCE

In the study of the design the architects searched for constructed material which would offer suggestions for the logical use of poured concrete. It was difficult to find much of service. Those buildings which had been built of brick or stone were not helpful. The problem was to develop an architecture of a new kind in which the monolithic character of the construction would be expressed; to have the ornamental features produced coincidentally with the building of the forms for the sake of economy; to accentuate on the exterior in some manner the positions of the generating units; and, finally, to produce a monumental mass which through its simplicity, strength and dignity, would satisfy both engineer and artist. The pilasters serve to mark the divisions in plan, to counteract the extreme effect of horizontality which would result if five hundred linear feet of cornice were to be used without breaks, and to

permit the placing of vertical slip joints at regular intervals in the wall construction as a means of avoiding trouble through the expansion and contraction of the material.

The detail drawings in the accompanying plate show the manner in which the ornamental features are constructed. Almost all of the ornament is recessed. This is produced by nailing on the inside of the forms pieces of fine-grained wood, so designed as to permit the forms to be drawn easily from the concrete without disturbing its shape. Thus when the forms are removed the concrete work is complete with the exception of some bush-hammering given to the surface as a general clean-up treatment.

It is a matter for great satisfaction throughout the profession that in the McCall Ferry project recognition has been given to the need for some architectural unity and beauty in a structure that has to be built with the main idea always in mind of making the capital invested pay a reasonable return.

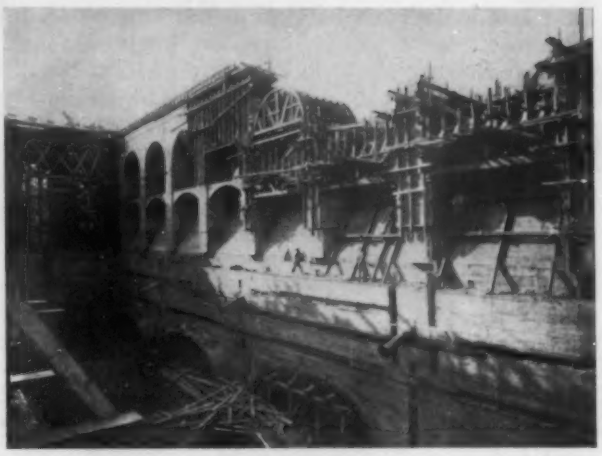
Messrs. Trowbridge & Ackerman are to be congratulated on their successful solution of a problem that must have brought with it great difficulty. The building as shown by the perspective drawing is a notable milestone in the expressive use of concrete as a building material. Throughout the design everything has been developed along the main idea of expressing in form the material employed. Particularly successful, it seems to us, is the restraint shown in the detail. There is absolutely no applied ornament; rather has the concrete mass, made necessary from an engineering standpoint, been so modified by the presence of arches and vertical lines as to give it monumental character and beauty.

NOTES ON ARCHITECTURAL TRAINING

BY PROFESSOR WARREN P. LAIRD

(CONTINUED FROM LAST WEEK)

In short, modern science employs an infinitude of agencies of divers character, all of which must be known to the architect. And this is but secondary to his highest duty, that of so employing these agencies, that, while his building shall be sound in construction and adapted to its practical purposes, it must be a thing of beauty, for the architect is, above all, a creative artist; an exemplar, in its profoundest sense of that pregnant word "design." Thus, as a designer of buildings, he is responsible not alone for their construction or the methods by which they are brought into existence; for their convenience or adornment or surroundings; but for the completed whole. This is the aim of his labors, and his success is measured by its merit. If it be faulty in construction or inconvenient in arrangement, it is of course imperfect as a work of architecture, whatever its abstract beauty, and its author has, by so much, failed as an architect. But his failure is absolute if his work goes no further than construction and utility, for, though perfect in these respects, if it lacks a just beauty, it is not even a work of architecture and the author has de-classed himself into the ranks of the engineer or builder.



A PORTION OF THE POWER-HOUSE, SHOWING THE CONSTRUCTION OF FORMS FOR THE ARCHES.

Thus the architect does his work under the severest handicap. While his highest function is that of the artist, his most insistent duties are those of the engineer or business administrator. Under these conditions the practice of architecture has become one of the most complex and highly specialized of pursuits, followed under a pressure similar to that of business life rather than in the atmosphere so necessary to artists in other fields.

Thus it comes that the office is no longer a place for student instruction; it affords no time for teaching. That which must be learned is too diverse and too specialized for any one man to teach; that which must be taught by method rather than acquired by experience demands the service of the trained instructor and of facilities and opportunities not afforded by the office. For this reason the architectural school has in this country come to be an essential element in the upbuilding of the profession.

Now, what must the school provide that this highly organized profession demands in its practitioners yet cannot itself offer? And what can the office best provide toward the architect's training? Unquestionably

A CORNER OF THE POWER-HOUSE ON THE DOWN-STREAM SIDE, SHOWING THE LOWER TIER OF ARCHES COMPLETED

the school is the place for theory and the office for its applications; the school for imparting information and the office for experience in its use; the school for the arousing and developing of faculties and qualities for whose growth to maturity the office alone provides the proper atmosphere. Architecture, like other great human activities, is only the working out, consciously or unconsciously, of great underlying truths, and the function of the school is to inculcate these truths and demonstrate them so clearly that they may provide the prospective architect with the foundation for his future career; may give him a comprehensive knowledge and insight into reasons, a body of conviction, an aroused sense of the beautiful, a stimulated imagination. Together with this there must be such attendant discipline as will serve both to demonstrate these truths and to develop his capacity to understand and use them. Thus equipped, the student's powers should steadily develop when brought into contact with the practical realities of office work.

Therefore, the training of the school should be made complementary to that of the office, so that one shall fit into the other. It would be less difficult to provide training which would more or less duplicate that of the office instead of supplementing it. But if the purpose of the school were exclusively to fit its students to be of instant use in the office—to be capable only as draftsmen, then the school has no reason for existence, for each office could serve itself better by doing its own training. On the contrary, the highest debt which the school owes to the student is to train him for his ultimate destiny—that of a practicing architect.

This can best be done by holding to that ideal which demands that the architect be both a man of education and an artist with sound knowledge of the materials of his art.

First: Education is a fundamental necessity to the architect because the field in which he works is quite as truly intellectual as is that of any other profession. Its operations call for a well trained mind no less than for imagination, taste, and judgment; they concern the greatest of the human arts and come into responsible contact with highly organized human activity in many of its phases. Nothing that the architect is called upon to do lies outside of the mental scope of the well educated man. On the contrary, the more cultured his mind the nobler will be the work of the architect.

Second: That the architect should be an artist requires no assertion and no defense if this work be understood in its true significance. The world does not realize and we too often forget that the architect stands preëminent in the field of art because he is at once the chief artist among craftsmen and the master craftsman among artists. His work has always been distinctive because it is at once the noblest embodiment of pure art and the most essential of the useful arts. His field is unique as the meeting place of human activities elsewhere as far apart as the poles, for in him must be combined the functions of artist and engineer, of dreamer and executive. For this reason the well organized school devotes its chief attention to training in design, to the development in the student of the creative faculty, of perception and imagination, of the appreciation of beauty in line, color and form, and of acquaintance with the masterpieces of architecture. These influences are exerted along many lines of study and constantly attended and reinforced by the discipline of design, through which he is learning the great underlying principles of his art and acquiring facility in their practice.

Attending this work there must be a careful study of the scientific laws underlying sound building construction, as regards both native material and its behavior under stress. This work is theoretical but it must be thorough, for upon it rests the intelligent understanding of many things vitally essential to sound building. Also the student must be given such information on practice in building construction as will enable him to take up office work in it not as a stranger but with preparedness to put to intelligent use the training he has brought from the school.

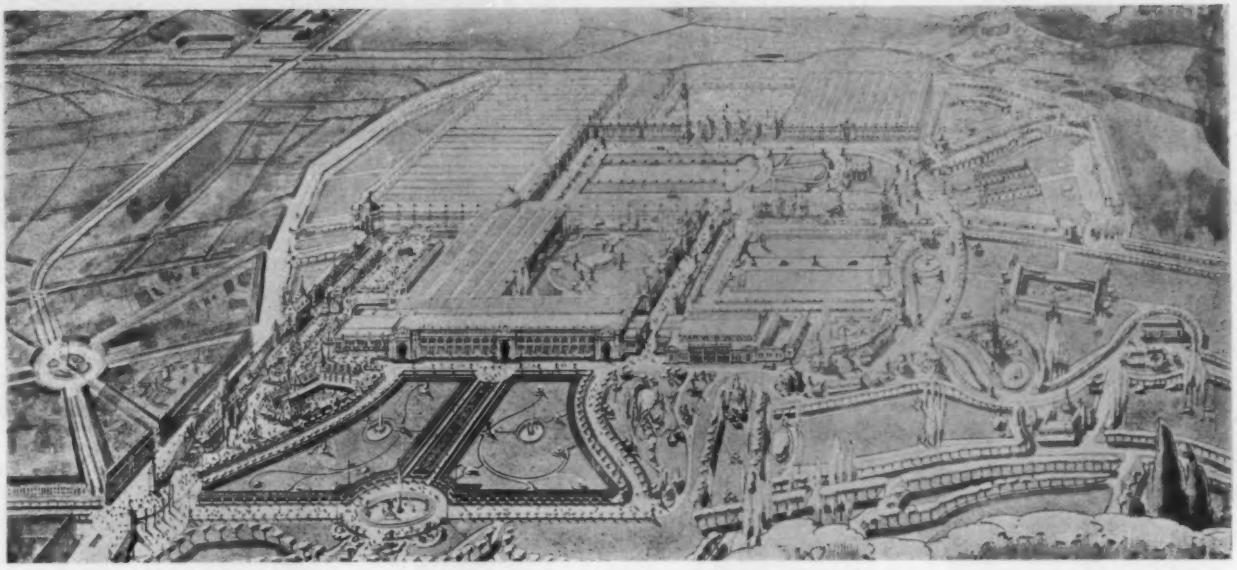
This outline of certain technical aspects of the architect's training, although roughly sketched, may suggest the reason for its advancing ideals and the insistence of the schools upon a scheme of teaching which shall make of the architect an educated artist.

The architectural schools of the country have arranged and are steadily improving their systems of instruction under a deep sense of responsibility and an open vision toward the future. The relation between the school and the architect is intimate and vital and the former will grow in usefulness and strength as the latter fosters that relation. One of the most encouraging signs of the times has been the recent activity of the Institute in matters of education. To be fruitful, this must be fully coöperative and it is of primary importance that the very active and able spirit of inquiry which has thus far characterized the work of the Committee on Education be enlarged into an effective working organization of which the schools will form an integral part.

SUGGESTED IMPROVEMENT OF THE HORSE GUARDS PARADE, LONDON

MESSRS. F. W. SPEAIGHT AND C. E. MALLOWS, ARCHITECTS

(See "Notes from Europe" on opposite page)



BIRD'S-EYE VIEW OF THE BRUSSELS EXPOSITION, 1910 MR. ERNEST ACKER ARCHITECT

NOTES FROM EUROPE

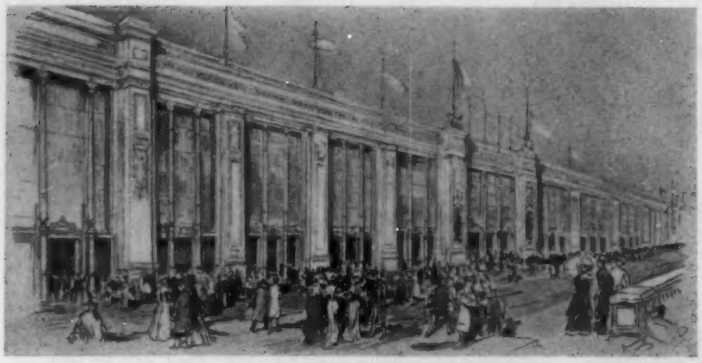
BY FRANCIS S. SWALES, ARCHITECT, LONDON

Few modern cities in the world can compare with Brussels in point of the number of diverse attractions to visitors. The capital of Belgium occupies an exceptionally interesting site, consisting of plain, hillside and plateau, with wide planted boulevards and broad avenues, fine parks, theaters and other places of amusement, monuments and public buildings, art galleries and conservatories. Nearby lies the field of the Battle of Waterloo. The catalogue of Belgium's industries would practically be a catalogue of the industries of the world; in their interesting nature and artistic design perhaps no other country—with the possible exception of Japan—could offer so much to charm and educate the visitor. One need only mention a few of these industries, such as glass making, carpet and tapestry weaving, carving, lace making and color printing to suggest the character of the works in which Belgium excels and of which Brussels is the storehouse and showroom.

Next year Brussels is to have an International Exhibition, and to judge from the rapid progress which has been made it would seem safe to predict that this exhibition will be absolutely completed and ready for Opening Day, on May 1, 1910. With the exception of the United States Government pavilion and the concessions, everything appears to be settled and what is to be done is known. The Chief Architect is Mr. Ernest Acker, whose plan when studied proves to be better than the first impression would lead one to suppose. The site has been one of extreme difficulty to treat owing in part to the preservation of portions of the grounds—which may not be built upon —and to the irregular lay of the surrounding roads, drives and buildings, but especially to the fact that the site is hilly and bears a curious relation to the *Bois de la Cambre*—which is to Brussels much the same as the *Bois de Boulogne* is to Paris. The progress being made is in marked contrast to what has been hitherto the rule with exhibitions.

LONDON

It is difficult to understand why England has been seized with a sudden desire to rearrange her town plans and to find cause for the marvelous interest that is being taken alike by the profession and the public generally in this phase of architectural work. The building of Garden Cities may, in a measure, account for public interest, which is probably more apparent than real, and the very recent introduction of a bill into Parliament to regulate future extensions to English cities is due perhaps to the fact that among the cabinet ministers are at the present time one or two men of exceptional experience in building matters. These men have probably long realized that the present arrangement of English towns is picturesque rather than practical or convenient and that the regulation of the traffic in the streets of the larger towns is consequently difficult and expensive. On the other hand it is just possible that the friendly relations which have grown up between England and France during the last few years are beginning to bear fruit in this direction. To anyone frequenting artistic gatherings in both countries it must be apparent that in England a great movement is taking place toward following in the footsteps of France as regards the monumental arrangement of streets, parks and public buildings in the larger towns, while in France an unusual amount of attention has recently been given to the study of domestic work, particularly the smaller class of house and schemes for the housing of the poor, in which English precedent is being closely followed. The same gentleman who brought about the improvement at the Marble Arch, Mr. F. W. Speaight, has now come forward with another scheme of civic improvement, which is, to rearrange the open space known as the Horse Guards



A FAÇADE OF ONE OF THE HALLS
BRUSSELS EXPOSITION, 1910

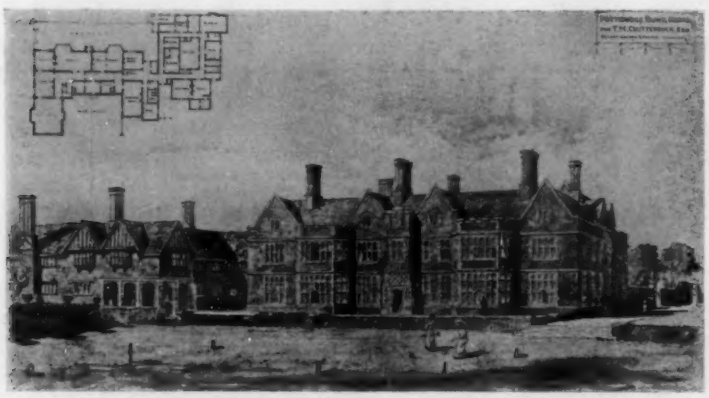
MR. ERNEST ACKER
ARCHITECT

Parade and to join this with the new Mall, recently constructed under the direction of Sir Aston Webb, R.A., on the one hand and Birdcage Walk on the other in a very monumental manner by means of formally planned and planted roads. Mr. Speaight has been assisted in the architectural treatment of this scheme by Mr. C. E. Mallows who has prepared some characteristically beautiful pencil drawings. It is not improbable that we may see this fine scheme put into execution in the near future.

Besides Mr. Speaight's scheme there has recently appeared an announcement of the founding of a Professorship in Town Planning at Liverpool University, the Chair having been endowed by W. H. Lever, Esq., M.P., and Mr. S. D. Adshead has been appointed to fill it. Professor Adshead will visit the principal cities of Europe, and Professor C. H. Riley those of the United States, for the purpose of investigating the plans of Continental and American cities and other matters bearing upon the subject.

PARIS

"Town planning" continues to go on in Paris. The latest detail is that the Conservatory which has occupied a site between the Seine and the *Cours de la Reine* and between the *Pont de l'Alma* and the *Pont des Invalides* has been cleared away and in its place a new formal garden with statues and flights of steps to the river bank is being laid out from designs by M. Bouvard.



A COUNTRY HOUSE
PUTTERIDGE BURY, HERTS

MESSRS. ERNEST GEORGE
& YEATES, ARCHITECTS

In the *Jardin des Plantes* important changes are taking place. Some of the old buildings, which have been in a bad condition for a long time past, have been rebuilt, including the old conservatories. Several other structures are being changed and brought up to the character of other Parisian public buildings, under the direction of M. Blauvette, and a scheme for the general improvement of the park has been begun. It will take some two or three years to complete and is estimated to cost some $160,000.

The *Galerie des Machines*, which for so many years has completely masked the fine front of the *École Militaire*, is now in actual course of demolition and the development of the *Champs de Mars* may soon become another of those beautiful open places treated with formal gardens and statuary in the manner for which Paris is so justly famous.

POLICE-OFFICE BUILDINGS
SUTTON, SURREY

MR. J. DIXON BUTLER
ARCHITECT

The new building for the *École de Marine* will be the first important architectural improvement to be carried out adjoining this site for some years. It will face the *Avenue de Suffren* at the extreme southern corner of the *Champs de Mars*.

Another of France's historic châteaux is soon to disappear. It is that known as the *Château d'Etoilles*, which stands upon the banks of the Seine not far from Corbeil and which was formerly the residence of the Marquise de Pompadour, the favorite of Louis XV. Already the building has been dismantled, its furniture and objects of arts sold and scattered and the building itself is about to be demolished.

Americans at the *École des Beaux-Arts* continue to uphold the national reputation as architects, Hirons having been placed third in the *Labarre* and second in the *Godebœuf*, while a first-second medal went to Kellogg in the *Rougevin* competition.

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CONTENTS

ON another page will be found a news item announcing the formation of an Architectural League of the Pacific Coast. With the marked progress of the western coast in architecture of recent years the need for an organization of this kind has been keenly felt. It has been impossible to arrange any satisfactory method by which the architects of both East and West could enjoy together the advantages of a common exhibition circuit. Owing also to the magnificent distances involved and the tendency to hold the annual conventions of the Institute in the East, the men along the Pacific Coast have not had the opportunities for meeting together in large representative bodies that they have desired. Local associations have a very great value in themselves, but they can never completely fill the need for a broader and more comprehensive organization. With the formation of the new League there is filled a gap that has for long been felt. The chain is completed between the local societies on one side and the Institute on the other.

PARTICULARLY gratifying is the attitude of the men to whom the credit is due for the new League's existence. It is at least conceivable that the Western men might have been so impressed with their geographical unity and their separation from the center of the Eastern organizations as to consider advisable the formation of a body that would be in effect a rival of the A. I. A. A movement of this sort would have been unfortunate in many ways. The Institute has gained for itself a standing and a widespread influence for good that will, so far as it is possible to foresee, grow steadily in power. Any addition along the line of more complete organization within and subordinate to it is a step in the right direction. On the other hand any division of the architectural profession's loyalty would weaken its influence for good. That the Western Coast architects fully appreciate this fact is shown by the published summary of their objects in organizing the Architectural League of the Pacific Coast. Their aims are: to secure affiliation between the A. I. A. chapters and the western architectural clubs; the formation of similar organizations in cities where none exist; the institution of a western circuit of architectural exhibitions; the establishment of an annual convention of architects in the West; and the development of educational work among the draughtsmen, along the lines of the atelier system. Our congratulations are extended to the men on whose shoulders the labor of this movement has fallen. The whole profession will watch their efforts with the satisfaction that comes from seeing work that is worth the doing well done.

STATISTICS continue to drive home the conviction that the wave of prosperity is actually upon us. March shows an increase in building of 98 per cent. over the same month last year, according to reports from some fifty important cities throughout the country, as compiled by *The American Contractor*. New York and Chicago made a combined gain of some $25,000,000, the percentage of increase in the former case being 387. Oklahoma City comes to the front with a gain of 933 per cent., South Bend shows 289 per cent., Worcester, Mass., gained 333 per cent., Dallas, Tex., 286 per cent., and Omaha, Neb., 175 per cent. Spokane, Wash., doubled its volume of building for the month. It is interesting to notice that the three parts making up New York's average were: Manhattan, 631 per cent., Brooklyn, 76 per cent., and the Bronx, 371 per cent. In but six of the cities was there a decrease in the month from last year's record. While this average percentage of increase is not so large as February showed over a corresponding period in 1908, it must be remembered that such a record as that—132 per cent. gain—is too large to be reasonably expected to continue; nor can New York's phenomenal record keep on rising. To take evidence of an indirect sort, the receipts of the New York Post-office for March were 16.9 per cent. above last year, and, what is more significant, they were 12.5 per cent. above the month's record for 1907. Still another of the straws that show how the wind is blowing is a marked increase in the immigrant arrivals of the past few weeks. The departure of foreign labor is an almost instantaneous reflection of the lack of work; the returning tide cannot be without significance.

THE TRAINING OF THE DESIGNER

BY PAUL P. CRET, A. D. G.

(CONTINUED FROM LAST WEEK)

It must be the aim of the professor to extract from the first scheme of the pupil everything which it can give. He will avoid substituting what he himself thinks the best solution for the solution of the pupil, trying only to point out the defects of the pupil's scheme and to suggest the best way to correct them. The purpose of this is to familiarize the pupil with the constant fight against adverse conditions. Is not the architect most of the time trying to get the best results in spite of conditions which prevent the employment of what he considers the best solution of the problem?

In this respect, I differ with those educators who think that the method of requiring the student to make preliminary sketches and to hold him to the main feature of his sketch, is an inefficient scheme. I think that this method is valuable for three reasons:

(1) A pupil who begins a problem without a preliminary sketch, will spend three-quarters of the time allowed on this problem in experimenting on different schemes without ever really studying one; this is missing the aim of school competitions, which is not to arrive at the best solution of any particular problem, but to learn how to study any problem.

(2) In trying to improve a poor scheme, the pupil makes a greater effort than he would if you gave him from the beginning the right solution.

(3) The pupils, working together and not obliged to keep to their preliminary sketches, arrive after some time to have all the same scheme, which is either that of the most brilliant pupil among them or the one that the instructor has pointed out as the best solution. Thus they lose one of the most valuable benefits of school study, which is to see the different solutions possible under the same program.

How is the study of design to begin?

It has been thought for a long time that the study of architecture had to start with what is called Vignola, or the Five Orders; the pupil copying the plates and then trying to memorize the endless list of models or parts accepted by the author as standards of beauty.

The pupil was then supposed to know classical architecture. One may read in nothing less than the Report of the Committee on Education of the American Institute of Architects sentences like this:

"With a thorough knowledge of the Orders and their application in Greece and Rome, one is in position to understand the varied expressions of the Renaissance in Italy, in France, in England, in Spain and in her American possessions and here in the United States."

I wish it were true, and that after a thorough study of Vignola a pupil could understand so many beautiful things. You will allow me to put in parallel with this quotation one taken from the History of Architecture, by Choisy:

"In construction, what is Roman in the Italian Renaissance consists only in the few antique methods which had survived all through the Middle Ages: the construction with brick and small materials and the idea of building the structure independently of the ornament which decorates it. The artificial monolithic construction of the large Roman buildings was impossible. The imitation then bears only on the ornamental. It seems that Vitruvius, whose writings were never entirely forgotten, could have been followed as a guide in the choice of proportions and types; in fact, Vitruvius was very little consulted in all the creative period. The first edition of his book was issued only in the last years of the fifteenth century."

As for the Renaissance in France, there is a century between the introduction of motives from Italian Sculpture, which is the beginning of the Renaissance, and the period of Henry II, when the canonical proportions of the Orders, such as Vignola understands them, were adopted. It is necessary to know something more than the Orders to understand the Renaissance, for in all the countries where it developed successively it did not change the existing architecture, but introduced, timidly and awkwardly at first, a few forms borrowed from antiquity, but very remote from the types of Greece and Rome. It is a fact that the knowledge of the art of antiquity is much more necessary in a study of the Romanesque or Gothic Art, than in a study of the Renaissance, at least for those who think that a tin cornice hung to a building is not enough to make this building Greek or Roman.

Vignola, as well as the other theorists of the Renaissance, had for what was known of antiquity, a more enthusiastic than critical admiration. You will note that he lived two centuries after the beginning of the Renaissance in Italy, and, therefore, after the production of the real masterpieces. His book was inspired by the only work on architecture which had come down to us from the ancients and therefore being unique was considered then as the essence of antique art. I mean the book of Vitruvius in which the absence of the original plates has made the reading of certain parts absolutely impossible, and the interpretation of other parts left to the fancy of the translator. There is, at least, no doubt that it is an inferior work, trying to set forth the principles of the Greek architecture, when this architecture had been dead for almost four centuries, and was known but little in Rome.

(To be continued)

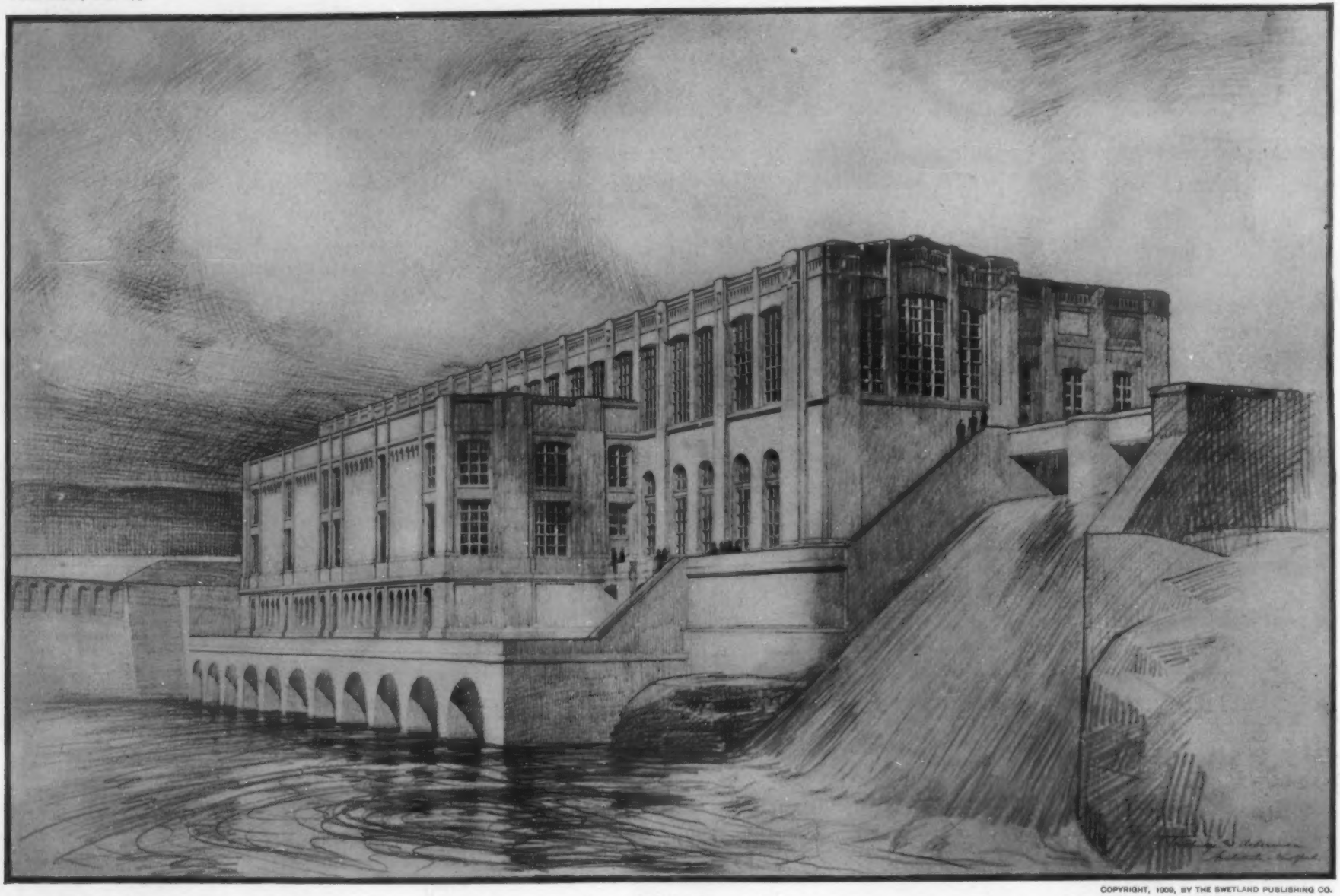
PLATE ILLUSTRATIONS

A description of the Dam and Power-house at McCall Ferry, Pa., of which four plates are shown, will be found on the first page of this issue.

University Club of Chicago

The new home for the University Club of Chicago (four plates) stands on Michigan Avenue at the corner of Monroe Street. On the lake front the building has a depth of 68 feet, with 171 feet on Monroe Street. Following the line of academic tradition, so successfully employed in many of our university buildings of to-day, Messrs. Holabird & Roche chose the Collegiate Gothic as the basic style, adapting it to the necessarily great height with marked success.

Bedford stone has been used for the exterior, and the roof is of green tile. Every modern device has been employed to render the building fireproof.



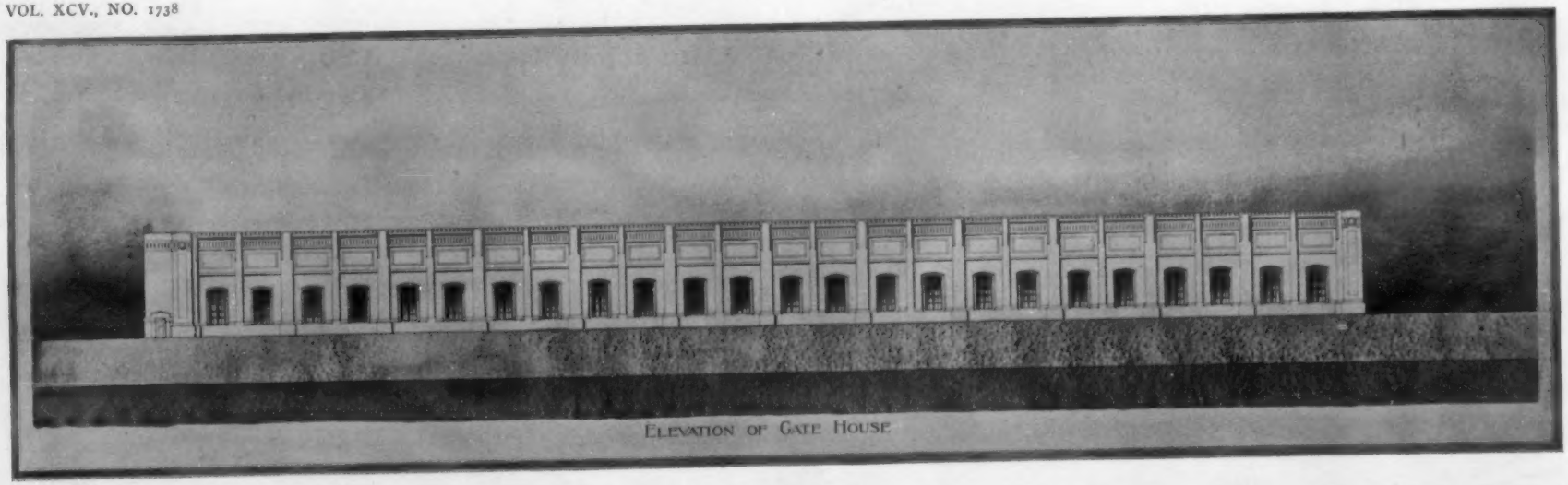
PERSPECTIVE

DAM AND POWER-HOUSE
McCALL FERRY, PA.

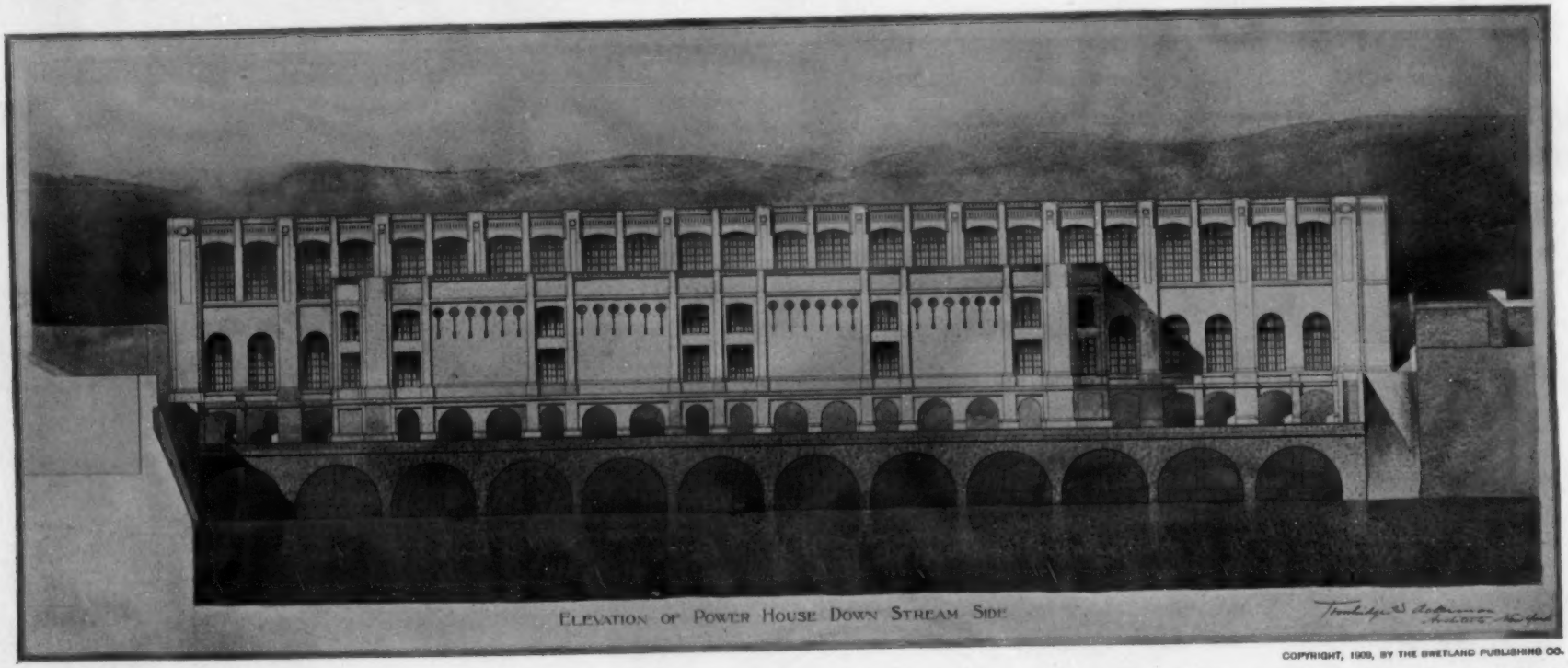
MESSRS. TROWBRIDGE & ACKERMAN
CONSULTING ARCHITECTS

McCALL FERRY, PA.

CONSULTING ARCHITECTS



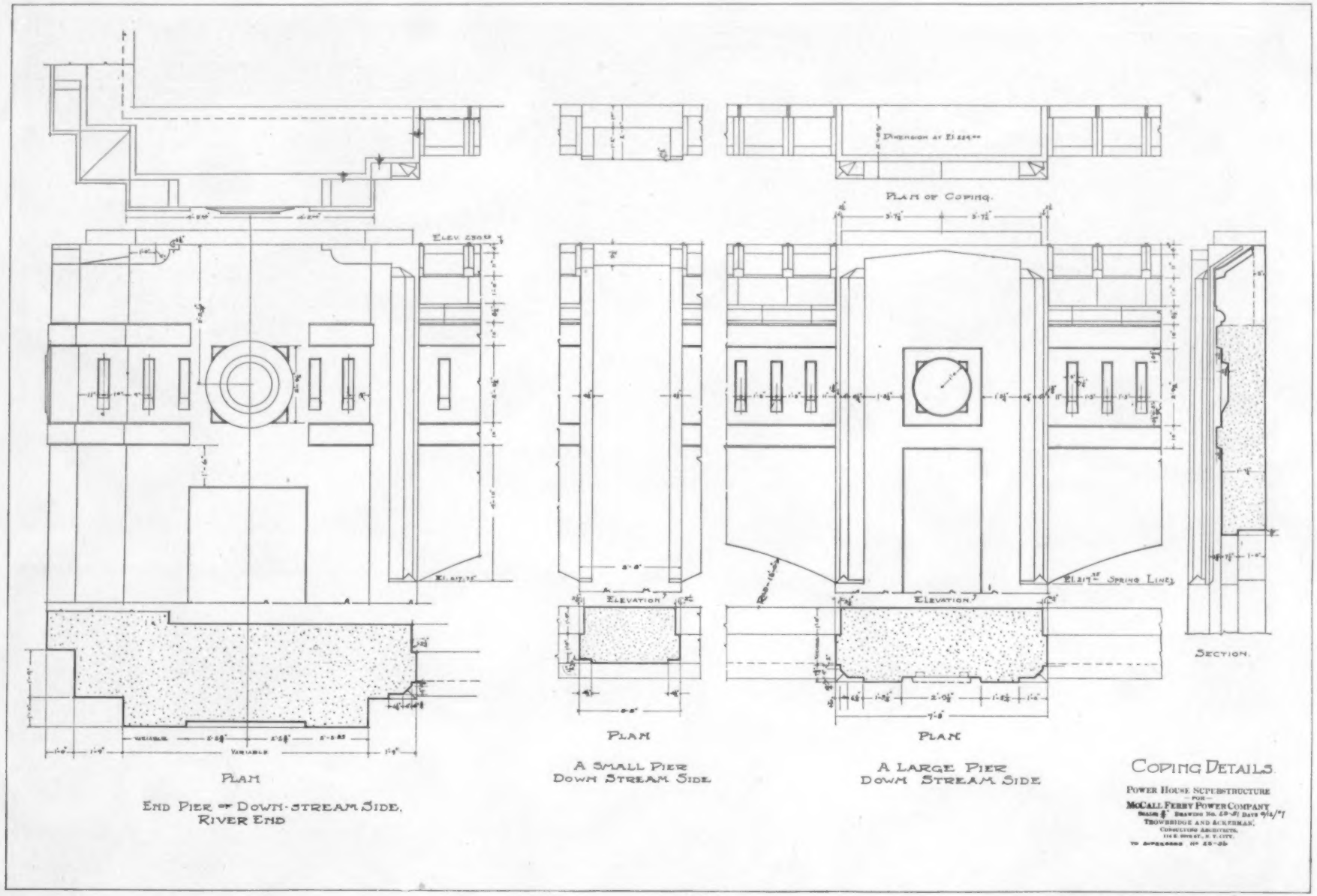
ELEVATION OF GATE HOUSE



ELEVATION OF POWER HOUSE DOWN STREAM SIDE

DAM AND POWER-HOUSE
McCALL FERRY, PA.

MESSRS. TROWBRIDGE & ACKERMAN
CONSULTING ARCHITECTS

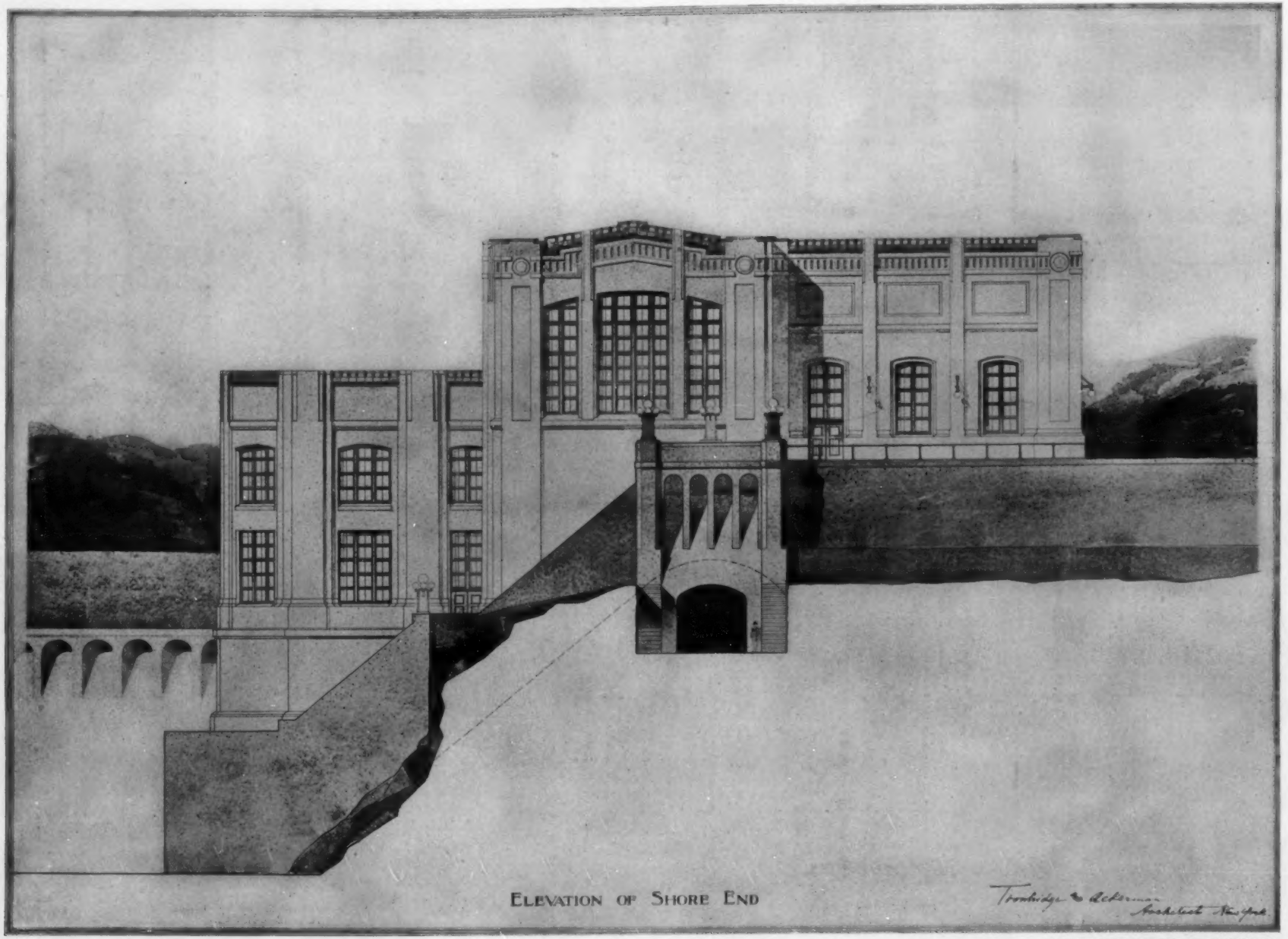


DETAILS

DAM AND POWER-HOUSE
McCALL FERRY, PA.

MESSRS. TROWBRIDGE & ACKERMAN
CONSULTING ARCHITECTS

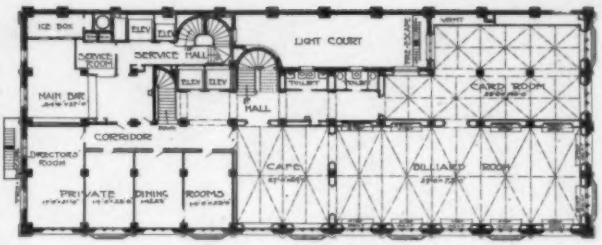
THE AMERICAN ARCHITECT APRIL 14, 1909



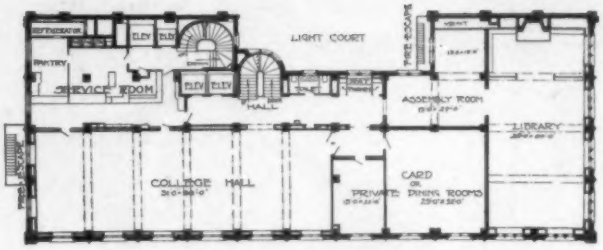
ELEVATION OF SHORE END

DAM AND POWER-HOUSE
McCALL FERRY, PA.

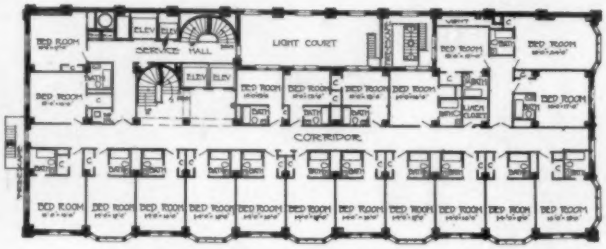
MESSRS. TROWBRIDGE & ACKERMAN
CONSULTING ARCHITECTS



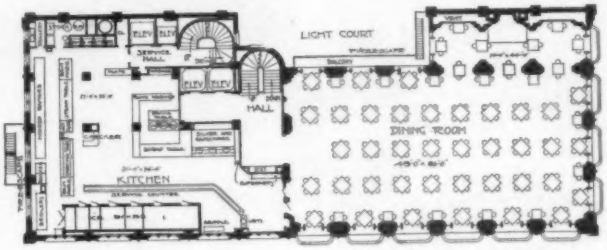
SEVENTH FLOOR PLAN



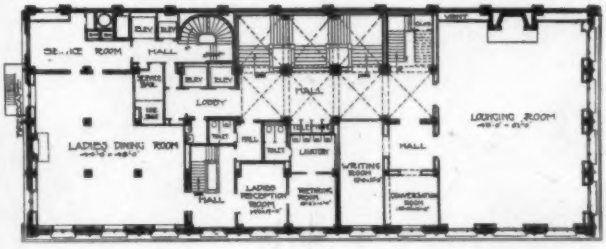
EIGHTH FLOOR PLAN



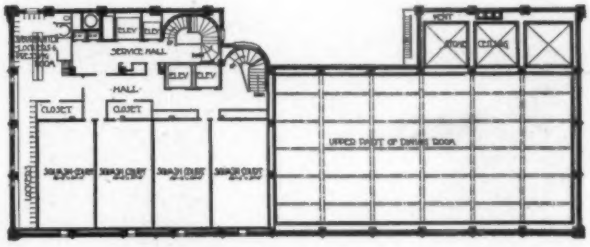
THIRD, FOURTH, AND FIFTH FLOOR PLAN



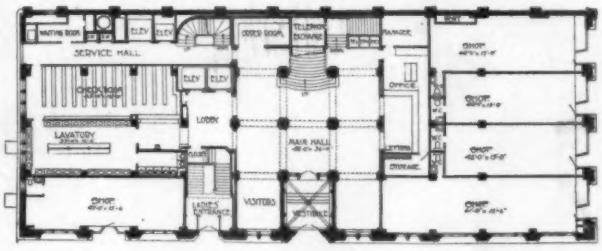
NINTH FLOOR PLAN



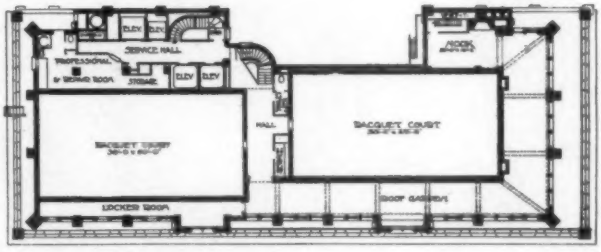
SECOND FLOOR PLAN



SQUASH-COURT PLAN

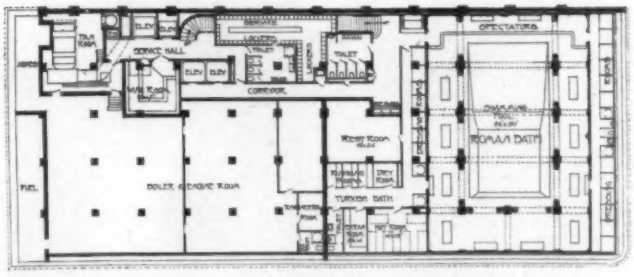


FIRST FLOOR PLAN



RACQUET-COURT

THE
UNIVERSITY CLUB
CHICAGO, ILL.

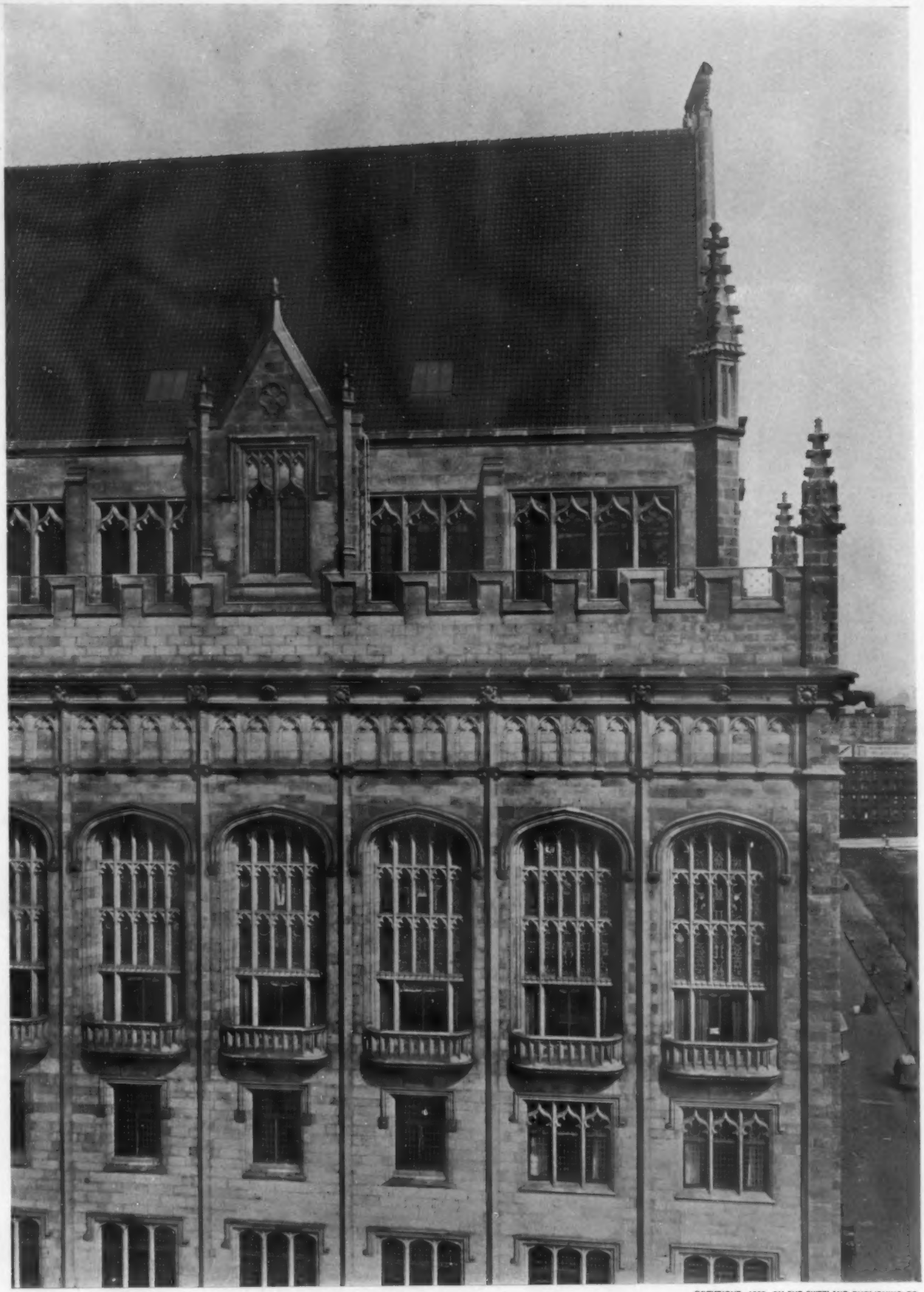


BASEMENT PLAN

MESSRS.
HOLABIRD & ROCHE
ARCHITECTS

THE UNIVERSITY CLUB
CHICAGO, ILL.

MESSRS. HOLABIRD & ROCHE
ARCHITECTS



DETAIL OF UPPER STORIES

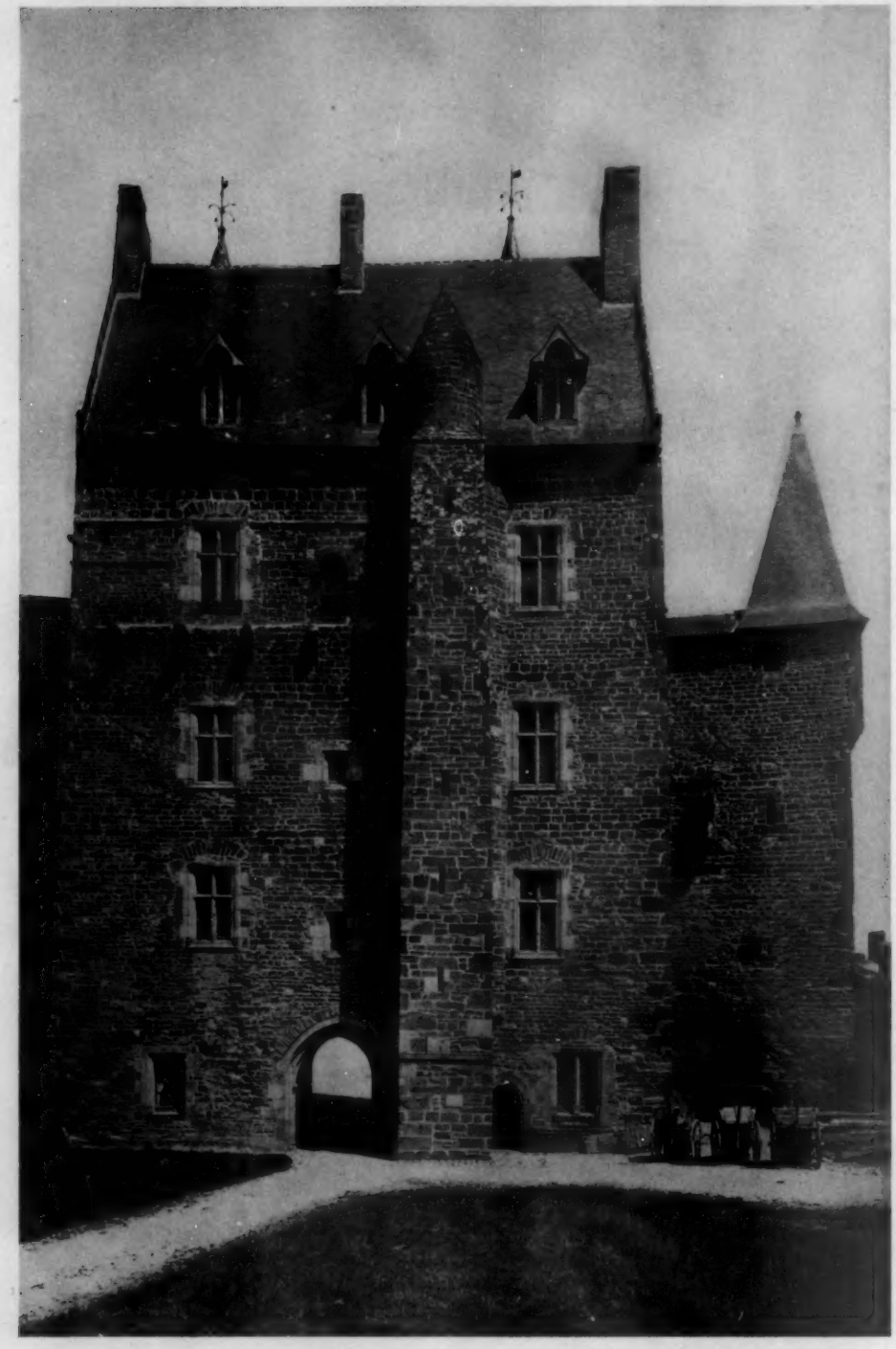
THE UNIVERSITY CLUB
CHICAGO, ILL.

MESSRS. HOLABIRD & ROCHE
ARCHITECTS

DETAIL OF MONROE STREET ENTRANCE

THE UNIVERSITY CLUB
CHICAGO, ILL.

MESSRS. HOLABIRD & ROCHE
ARCHITECTS



CHATEAU OF VITRÉ, FRANCE.