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THE AMERICAN ARCHITECT

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BRONZE DOORS AND THEIR TREATMENT

BY HUGER ELLIOTT

Director of the Rhode Island School of Design, Providence, R. I.

THERE were recently placed in the Boston Public Library six doors designed by Mr. D. C. French. Each valve is cast in a single piece, and each is decorated by a full-sized figure in low relief. As examples of subtlety of modeling and beauty of form they are worthy of the praise which has been bestowed upon them. They are also logical in that the single valve of bronze is clearly shown as such, in sharp contrast with an example to be cited further on. In fact, it would seem that until these doors were cast no one had asked, "What should be the design of a door cast in a single piece of bronze?"

But in these doors the ideal solution has not been found. Can a door the beauty of whose design would be seriously marred by handle or knob be said to be perfect? Yet these doors are, most emphatically, sculptured placques, where such a thing as a knob would be an impertinence. Then consider their relation to their surroundings. When closed, these delicately modeled panels seem out of place in the massive stone vestibule; the figures seem to demand a frame — some suitable setting. When open, they are even more unfortunately detached. The subtle, melting planes of the figures cry aloud to the sensitive eye for a boundary-line of some sort. It seems unfortunate that these figures should have been placed just where the spectator must, of necessity, be elbowed by those passing in and out. The door of a much-frequented building should not by its beauty block the traffic. They are almost as out of place there as Sargent's ceiling of the gods of Egypt and Phœnicia would be over a subway entrance. Would that these panels might be placed where they could be suitably framed and conveniently seen!

Does this prove that a door of bronze, which may be made in a single casting, should be divided into panels and made to suggest a wooden structure? By no means. Designed so that the necessary knob would injure the design were it removed, and the composition being good, there is no reason why such a door, without suggesting wooden prototypes, should not equal any other in beauty. But precedent has overborne logic, and a glance at the development will show an originally logical procedure which has become through an entire reversal of method, totally illogical.

CENTRAL BRONZE DOORS OF THE VANDERBILT MEMORIAL PORTAL, ST. BARTHOLOMEW'S CHURCH, NEW YORK
MESSRS. McKIM, MEAD & WHITE, *Architects* A. O'CONNOR, *Sculptor*

In early mediæval times the art of casting large masses of bronze had been lost. Small castings were within the scope of the sculptor; and he proceeded in a perfectly logical manner to make these and to affix them to a wooden frame. Next he covered even the frame with bronze mouldings; and a bronze door was evolved having, very properly, all the elements of a wooden structure. The doors of San Zeno, Verona, are early examples of this logical development. They consist of a framework enclosing panels, these being square and uniformly distributed. Two of the panels are reserved for lion heads holding rings, the others filled with scenes from the Bible. The framework is covered with strips of richly pierced metal, the joining points

BRONZE DOORS, SOUTH EAST TRANSEPT, PISA CATHEDRAL, PISA, ITALY

at the corners of the panels being covered by grotesque heads—a beautiful and entirely logical solution of the problem. The same procedure is found in the doors of the northern transept of Pisa's cathedral, the design somewhat more reserved and with greater skill shown in the execution. Then, as through the centuries the skill of the artist increased, the entire framework was cast in one piece—still a logical method. But can any word be said in defence of such a procedure as we find in the central doors of St. Bartholomew's, in New York City? Here we find the door divided into panels with an architectural framework about them; the valve has been cast in three pieces, the joining lines of which cut through the supposititious structural members.

The fitness of the uniformly paneled door was long accepted. The north and south doors of the baptistery of Florence are splendid examples of the type; the eastern doors fall a little behind them in this respect. In recent years, however, we have had many examples in which this principle has been thrown aside, and a "more interesting" door evolved, one in which a large central panel has been made the dominant, with small panels above and below. These lack the restful quality, the unity, of the evenly paneled door. Their character as swinging units is lost and they assume the appearance of panels for wall decoration. Of this type the central doors of the Congressional Library in Washington, by Frederick Macmonnies, are perhaps the best. They are more reserved than the three eastern doors of St. Bartholomew's, in which the enframement of the panels has an unstructural quality. In the northern and southern doors of this church the handles have been incorporated into the design in a very clever manner, showing by comparison the defect of the Boston doors in this respect.

Leaving the question of the relative beauty of the uniformly or unevenly paneled door for individual decision, it is interesting to study the development of the decoration placed in the panels. This usually consists of pictorial compositions—scenes from sacred or profane history, or allegorical figures. In the early stages of the art we find crudeness of drawing and execution coupled with great vigor and a degree of conventionalization unfortunately too little appreciated in these days of the ever-present camera with its insidious urgings toward the naturalistic and commonplace. In the doors of San Zeno the casting is very rough, and here and there rude tooling is used to emphasize details. There is no leaning toward realism (for which one is thankful); no complicated background, no perspective. The important elements of the story are given with a naïveté and directness that are delightful. The various Biblical stories are told with a vividness which needs no elucidation; and yet such is the abstraction of the figures that the doors as a whole give an impression of being merely richly and almost uniformly decorated.

It is a far cry from this groping work of the twelfth

ASTOR MEMORIAL DOORWAY, TRINITY CHURCH, NEW YORK

DETAIL OF NORTHERN DOOR OF THE BAPTISTERY AT FLORENCE
LORENZO GHIBERTI, *Sculptor*, 1424.

DETAIL OF BRONZE DOORS IN CENTRAL PORTAL, MAIN ENTRANCE, BOSTON PUBLIC LIBRARY
DANIEL CHESTER FRENCH, *Sculptor*.

century to the fourteenth century work of Andrea Pisano, in the south doors of the Baptistery of Florence. In the quatrefoil panels of the Italian Gothic style are delightful compositions in which the figures have a fulness and beauty gained from the study of Roman sarcophagi. There is a repose and dignity, a spiritual quality, about these groups not equalled by any others. Even Ghiberti, in the northern doors of the same building, where the scheme is exactly the same, loses a shade of the restraint necessary in such work. Between these and the wonderful eastern doors which Ghiberti later made for the Baptistery there is a great gulf. Art in all its manifestations was developing with rapidity in the Italy of his day, and in these "Gates of Paradise," as Michael Angelo called them, we seem to see Ghiberti trying to rival the painters. There are tricks of perspective and crowds of figures: he has done in bronze that which should only be attempted in paint or stage settings. The panels are beautifully composed, marvelously executed, and lack all the rigidity and conventionality necessary to good decoration.

This, of course, may not be generally agreed to. It is difficult in these days of tense individualism to make people realize that a piece of decoration is good just in proportion to its power of mingling with the other elements which make the whole. When we admire a line of soldiers in a street parade, it is because it is a line composed of an oft-repeated unit. Were each dressed differently from the other the line would lose its interest. The panels of a door should be such units. In this door of Ghiberti's the scenes are too much individualized—they have not quite sufficient similarity to blend. This may seem to be overstating the case, but the truth of the contention will be felt on studying the eastern doors of Trinity Church, New York City, where there has been a less successful effort with a similar type of door.

In doors with a dominant panel there can be, of course, no question of even distribution of interest. But even here conventionalization is imperative. The figures in the large panels of Macmonnies' Washington doors are "squared up" to fit the panels in a beautifully decorative way. Comparing them with the Boston Library doors one realizes the architectural unfitness of the latter through lack of such conventionalization. This same defect is felt in the St. Bartholomew doors, where the figures are treated in an impressionistic manner which detracts from their character as decorations for an architectural feature. The doors of Mr. J. P. Morgan's library are decidedly more reserved.

From the craftsman's point of view the Florentine doors reach a point of technical perfection not yet sur-

passed. The doors of the Congressional Library have a somewhat cold, hard quality, while those of St. Bartholomew's err in the other direction. They are, as has been said, much too impressionistic—there seems too emphatic an insistence upon the plastic quality of the original clay or wax model. Many of the figures are dashed in with a clear indication of great facility, but with hardly the solidity demanded in such work; the mouldings, too, are left with a clayey softness which wars with their structural function. The illogical manner of casting the central door has been mentioned.

What, then, is a door, viewed as a logical piece of design; what the proper structure and the forms suitable for the ornamentation of a door? A door is an object of wood, metal or (rarely) stone; usually high in proportion to its width, and in comparison with these, very thin. It is hung on hinges or rollers and used to close an opening in a wall. If of metal the door, if not too large, may be cast in a single piece; if of wood it invariably consists of pieces fastened together—a frame with one or more panels. Thus it would seem logical that the decoration of a wooden door emphasizes these structural members, while a door of bronze might suitably be ornamented as a single large surface.

Considering the function of a door it would also seem logical to decorate it without undue emphasis on any one part. For no square inch of its surface is any more important than any other square inch, top or bottom. Therefore its decoration should be uniform over its entire surface.

There are also considerations beside the merely structural ones of the door *per se*. These are its relation to its surroundings and its adaptability to its use.

In its relation to its surroundings a door should be considered as a part of the wall—a special, movable part—yet having some of the general characteristics of the wall. This can be made clear by citing extreme cases. A massive bronze door would seem out of place in a wooden barn, or a delicately carved white and gold Louis Quinze affair closing the entrance to a prison. In the matter of the usefulness of the door, a convenient placing of the knob or handle is about the most important matter which has a bearing on the æsthetic side of the subject—that it shall swing easily and close snugly are presupposed.

In every field of human endeavor—because it is human endeavor—we can only hope to approach the unattainable ideal; and as this may be approached from many sides no one of the different nearly-perfect solutions may be upheld as the best. All that can be hoped for is that every worker in the fine arts may be led to train himself to analyze every art production; to determine for himself its logic or lack of logic; and so help bring nearer the day when our clear-headed commonsense will have its apotheosis in an art where beauty springs from a complete feeling for reasonableness.

This is not a plea for "practice before precedent." Architecture, like everything else in the universe, is a process of evolution, and an entire break with the past is as undesirable as unattainable. It is, however, a plea for a careful study of the works of our forerunners and a following of what is found to be based on reason and logic.

Bronze Doors for National Capitol

Seven years ago Congress awarded to L. Amatois, a citizen of Washington, a prize of $10,000 for the design, declared by a board of judges to be the most meritorious, for the western doors of the Capitol.

The doors have been completed and cast in bronze. They are to be placed on view in the Corcoran Gallery of Art.

The panels symbolize Jurisprudence, Science, Art, Mining, Agriculture, Electricity, Engineering and Commerce. The doors represent the apotheosis of America. They contain designs which bring the history of the nation down to the present time.

Western Doors of Capitol, Washington, D. C.

It is seventy-two years since the first bronze doors were placed at the eastern portal of the Capitol. They were by Rogers, and are known as the Columbus doors. Afterward the Crawford bronze doors, on which were designs depicting scenes in the history of the republic, were placed at the Senate and House entrances.

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Editor,
Charles Francis Osborne,
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Associate Editor, William H. Crocker.

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AN IMPERIAL DILETTANTE

THE daily press reports some marked expressions of dissatisfaction in Germany with the results of the German Emperor's interference in the matter of the design of the new bridge across the Rhine at Cologne. This bridge carries an equestrian statue of the Emperor, and the architect's design called for four towers—"two on the upstream side and two downstream"—all of equal height. The Emperor ordered the downstream towers to be carried higher than those on the upstream side. This was done at a considerable extra cost, and the result, as might be imagined, is not good. It seems odd that it should not have occurred to the Emperor or his advisers that towers on a bridge are not "upstream" and "downstream" towers at all, but are flanking towers of the land approaches to the bridge and are to be regarded as paired in that sense only.

"THE PROBLEM" IN DESIGN

IN a recent presidential address before the Liverpool Society of Architects Mr. Arnold Thorneley, dealing with the perennial topic, competitions, expresses the opinion that, while they may do very well for buildings of minor importance, the excuses usually made for them do not hold good where monumental structures are concerned and, in support of this view, advances the following curious argument. For minor buildings, he says in effect, "mere convenience of plan combined with a moderate standard of architectural design" are the qualities which make the most direct appeal to the jury, and as wise architects always play up to the jury's lead (known or assumed) there is, perhaps, some excuse for resorting to competition. But in major buildings of a monumental character "mere convenience of plan and the successful arrangement of minor details" take a lower place and give way to "the scheme which embodies the finest conception as a whole, even though it be defective in providing the maximum of convenience."

We venture to point out to Mr. Thorneley, whose admirable address we should be glad to print, if possible, that the solution of small problems in design does not differ in any particular, in principle, from the solution of big problems. And that it is particularly in the case of minor buildings, whose elements are simple and easily within the professional capacity of the average practitioner, that competitions place upon the owner a quite unnecessary expense. But in the case of monumental buildings, where the problem offered for solution is enormously more complex, and where the sentiment which is to find expression in the monument as a whole is much more lofty and dignified and calls for a correspondingly greater professional capacity in its designer, here, if anywhere, is competition justified. Could Mr. Thorneley select, with complete confidence in his own judgment, that architect in England, better capable than all others in England, of designing a monument commemorative of Britain's next great naval victory; or new Houses of Parliament (imagining for the moment an occasion for them)? Given a theme for a poem would not one rather have half a dozen of the major poets (if there be so many) try their hand at it before giving to any one of them the laurel wreath? Is there not still lingering in Mr. Thorneley's mind some remnant of the idea that utility and grand architecture are two things and not one?

Here in America we take design problems as we find them, and do not classify them into major and minor. The fine touch of the accomplished architect is just as beautifully shown in small things as in big, and there is no "moderate standard of design" which is regarded as "good enough" for the small building if better is to be had. It is only because the "minor" building is likely, as we have pointed out, to be quite adequately done by the average architect, that we do not usually make them the subject of competition.

THE TOWN PLANNING CONFERENCE

THE International Town Planning Conference recently held in London under the auspices of the Royal Institute of British Architects was successful in point of attendance and of interest beyond the anticipations of its originators. At the opening meeting under the presidency of the Lord Mayor the *Building News* reports a crowded attendance of representatives of architectural, engineering and other professional bodies; rural and urban county councils and other corporations; and a large number of delegates from the various Continental countries, Canada, the United States, and Australia. Business meetings were held continuously for the four days following, from two to five papers being read and discussed at each meeting. The American exhibits, from their large scale and "the delicacy and beauty" of the perspectives, attracted much attention.

M. Augustin Rey draws the following conclusions for the temperate zone: (1) Streets running north and south are eminently healthy; (2) streets at an angle of 30 degrees to a line drawn north and south are healthy; (3) streets inclined at an angle of 45 degrees to the line north and south are moderately healthy; (4) streets running east and west are notoriously unhealthy.

MECHANICAL REFRIGERATION
II.—THE CONSTRUCTION OF COLD STORAGE WAREHOUSES

The first cold storage warehouses of any account were of combustible construction, and while many of this class still exist, construction of this character is now practically out of consideration. Good air-dried, well-seasoned lumber is no longer obtainable in any quantity at a fair price, while the cost of fireproof construction is little higher than that of combustible construction of a necessarily indifferent quality. The life of wood-constructed buildings for cold storage purposes, moreover, is estimated at less than half its natural existence in other buildings.

The advent of fire-resisting materials and methods has been a large factor in developing to its present high efficiency the science of refrigeration, by directing the attention of engineering experts to new problems introduced by the properties of the materials and constructive systems employed. Wood is a poor conductor of heat (though not of moisture), while steel, cement, stone and the clay products are good conductors of both heat and moisture. It has been established by accurate tests that about 40 per cent. of the refrigerating efficiency in the average cold storage warehouse is lost in one way or another. One of the most serious problems of the refrigerating engineer to-day is to ascertain accurately the proportional losses due to different causes. Thus far much of the lost energy remains unaccounted for, according to the most reliable information obtainable, though the experts are agreed that their worst enemy is moisture and not heat, as was formerly supposed. Experiments show that one pound of moisture admitted to the cold rooms causes a waste of about eight and a half times its bulk in refrigerating power at medium cold storage temperatures. The importance is to be realized, therefore, of excluding moisture from all parts of a cold storage warehouse, from which it might gain admittance to the cold rooms. This raises the question of waterproofing, to which some slight reference was made in our previous article on Mechanical Refrigeration. The best practice in refrigeration now recommends that the exterior walls be waterproofed both on outside and inside by some one of the many reliable compounds now available.

Other losses in refrigeration occur through unsuitable structural design; and, to a slight degree, through variation in barometric pressure, defective wall and floor insulation against heat, and more, perhaps, through inadequate provision of vestibules to the cold rooms.

There is a feeling among refrigeration experts that the building laws of some localities impose an unnecessary expense upon the wall construction of fireproof cold storage houses in requiring excessively massive walls in systems where the extra thickness of masonry serves no structural or other effective purpose, and materially raises the cost of construction. For instance, the New York building code allows no curtain wall in a steel skeleton building to be built of less than 12 inches of brickwork for a certain height, with a proportional increase in thickness for additional height. As many cold storage warehouses are now built to a height of one hundred feet and over the increase in first cost is considerable. In a recent construction of this kind the increase of brickwork over what was considered by the expert as reasonably necessary to withstand wind pressure and stresses from the contents of the rooms amounted to about 5 per cent. It seems as though the building laws should make some classification of buildings of this nature whereby this disadvantage would be removed or minimized, if such action is possible without affecting any other vital issue of safe building.

(1) Three classes of fireproof construction represent the best practice in cold storage construction. Outer and inner walls of tile, the outer wall not carrying any weight but its own, and the floors a combination of concrete and tile, weights carried on the inner walls and partitions. Insulation between inside and outside wall a continuous fill.

(2) An inside building, with reinforced concrete columns and girders, and with floors of either reinforced concrete or combination of reinforced concrete and tile, all weights carried on columns. Outside walls either of brick or tile, or a combination of both. Inside walls of vitrified tile. Insulation between inside and outside walls a continuous fill.

(3) Iron framework with weights carried partially on columns and partially on outside brick walls, all ironwork covered with fireproofing. Inside wall of vitrified tile. Insulation between inside and outside walls a continuous fill.

Of the first class mentioned (all tile) one example may be quoted of a three-story house in Washington Court House, Ohio.

This house consisted of an outside wall of two 4-inch hollow vitrified tile, an inside wall of one course of 4-inch vitrified tile standing eight inches away from the outside wall. The floors rested on the inside wall and on the partitions, which latter divided the house into three sections. The floor was carried only to the outer edge of the inside wall and rested on it, hence there was a continuous space eight inches wide between the inside and outside wall, and also between the edges of the floor and the outside wall. This space was filled with granulated cork, making an unbroken fill from bottom to the small garret, or a circulating air space between the top floor of the cold rooms and the roof. The top of this filled space was closed with tile which could be easily taken off, so that if any settling occurred it might be observed and filled in.

The complete success of this type of insulation encouraged the building of larger warehouses containing from one and a quarter million to one and a half million cubic feet, and of from seven to nine stories high. These buildings come under (2). The architectural problem presented in the high building and differences of cost of material led to somewhat different form of construction, though the main principle was followed of a building complete in itself entirely surrounded by insulating material, such material being protected by a weather wall carrying no weight but its own. The first building of this type was nine stories high and was built in St. Paul, Minn. The building proper was entirely carried on columns very much as our present skyscrapers are built, excepting that the columns were

all of reinforced concrete, and the outer skin was not carried on the outside girders as in the case of office buildings. Instead of this, the outside wall was entirely independent of the main structure and standing about eight inches away from it at all points.

The outside wall was only 12 inches thick from bottom to top, but was reinforced by an imbedded "I"-beam framework in which the columns and cross beams ran parallel to the columns and outside girders of the main structure. It was tied to the main structure at the heads of columns by an iron rod imbedded in the concrete floor near the head of the column and attached to the paneled iron framework of the outside wall.

There was thus only about a square inch of conducting material between the outside wall and the inside structure at the head of each column, or rather at the corners of a panel about 11 x 15 feet.

To provide for the inevitable shrinkage of the inside structure and a corresponding expansion of the outside wall, when the refrigeration was turned on and the sun is beating on the outside wall, these ties were arranged to slide so that no matter how contrary might be the movement of the inside structure and the outer wall the ties would still hold the outer wall in place against wind thrust from the outside or the thrust of the insulation from the inside, or ordinary settlement.

As the floors and outside columns and girders were thus about eight inches from the outside wall it was only necessary to build from floor to ceiling a 4-inch vitrified tile wall and fill the 8-inch space with the non-conducting material giving the same continuous insulation as at first described (1). The outside wall was, of course, thoroughly waterproofed by a thick odorless coating on the inside (which may be in time followed up by an outside waterproofing.

Under (3) comes the cold storage building of the Murphy Storage & Ice Co., of Detroit. The general plans of this building were adopted and the framework was well under way in construction when it was taken hold of by the refrigeration expert. It is a ten-story building, constructed with built-up steel columns and with steel girders running longitudinally with the greatest dimension of the building, the ends of girders resting on the walls, and with "I"-beams running between the girders and from the girders to the walls on a spacing of a little over four feet. The walls, therefore, carried their share of the weight of the outside spans. The floors were of tile and concrete.

As construction was already well advanced on the building it was too late to change the construction, and the iron beams were therefore left in the outside spans with a share of the weight carried by the walls. The floors, however, had not been laid, consequently it was possible to stop the prolongation of the floors to the outside wall, and keep them about eight inches away. Four-inch tile walls were built from floor to ceiling flush with the edge of this floor, leaving, therefore, a continuous fill from top to bottom eight inches thick, excepting where the "I"-beams ran into the wall at each story on centers of a little over four feet. It was impossible to stop the conduction of heat from the outside wall via the floor beams to the inside of the building; but it was possible to prevent the trouble which has been experienced where steel "I" beams have run into the outside walls by reason of the conduction of moisture through the brickwork and running along the cold iron beams into the interior. This was done by carefully wrapping the ends of the "I"-beams which projected through the 8-inch space between the edge of the floor and the outside wall with hair felt dipped in an odorless compound and making a tight joint with the outside wall. The inner surfaces of the outside wall were coated continuously from top to bottom with a thick coat of odorless waterproofing material and the inside 4-inch wall was built up in the same manner as described in (1) and (2), and the space between filled with granulated cork. The columns and "I"-beams, wherever exposed, were covered with a hollow tile fireproofing, plastered on the outside. That there was some conduction of heat through the "I"-beams resting on the walls from the interior of building was evidenced by the fact that before the refrigeration was turned on and the interior was still warm (at a temperature from 40 to 60 degrees) and after the outside temperature had been very low for 10 or 15 days, and the temperature suddenly rose above the freezing point and the humidity increased to 100 per cent., all of the outside walls frosted, due to the fact that they were cold and could receive no heat from the interior of the building on account of the interposing insulation.

A photograph taken of this building while in this frosted condition showed that there was a distinct line opposite the ends of the "I"-beams showing less frost there than on other portions of the walls. It is not, however, believed that the total conduction from this source is a very serious matter. Experience in this case shows that there has been no trouble whatever with conduction of moisture, through the wrapping already mentioned, along the "I"-beams.

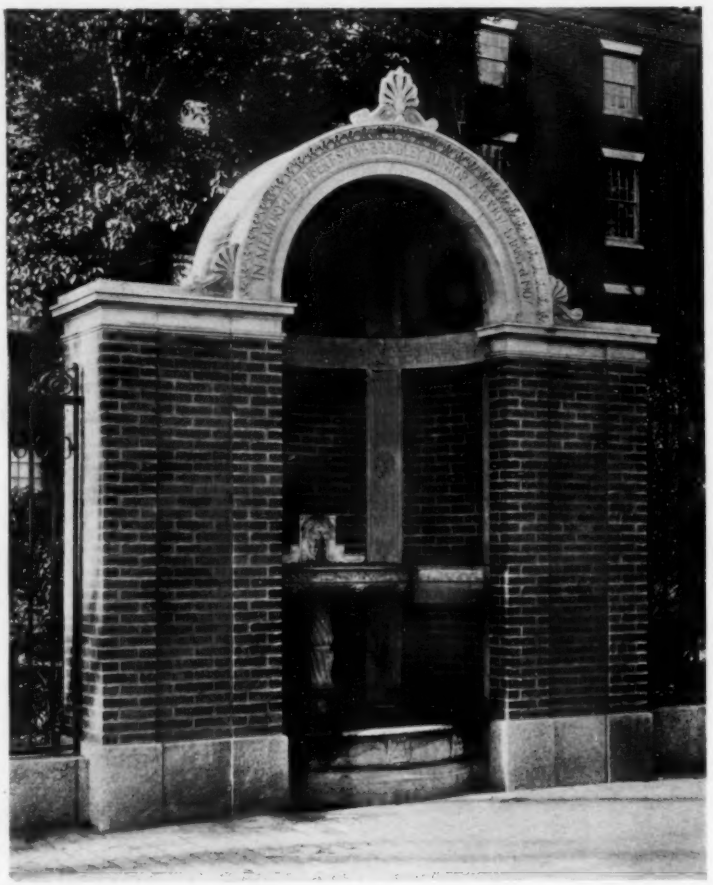
As far as possible the cold rooms in warehouses should be so grouped as to place rooms carrying the same temperature one above the other; but where this is impossible, and a lower room has one temperature and the room next above a different temperature, conduction by means of the continuous columns is prevented by insulating the columns in the colder room or the warmer room and joining the insulation of the column with that on the floor so that no heat can pass from the warmer to the colder room, except through the insulation.

While it is impossible to foretell, as mentioned previously, whether our homes, work rooms and places of amusement will to any extent in the future be cooled by mechanical refrigeration, it can be predicted with reasonable certainty that the principle of insulation will find a wide application in maintaining, in our homes, an equable temperature, keeping out cold in the winter and heat in summer. It is the opinion of experts that the installation of temperature insulation in buildings, up to a certain point of efficiency, will not only not be found an expense but will actually show a sufficient saving in fuel for heating as to offset the increased first cost, and under the most favorable conditions will actually show a considerable net saving over a protracted period.

RECENT LEGAL DECISIONS

Written Extension of Time and Written Order for Extra Work by Architect

A building contract provided that the building should be completed by September 15, 1908, and that the owner should remove the present building from the proposed site before May 15, 1908. It further provided for the payment by the contractor of $25 per day as liquidated damages for each day's delay in completion after the date agreed upon. In case of delay in completion caused by any act or default of the owner or other contractor, the time for completion should be extended for a period equivalent to the time lost; such period to be fixed by the architect upon written demand of the contractor. There was no extension of time by the architect. The owner removed the old building entirely from the proposed site on May 17, 1908. The building was not completed until November 14. The contractor was held liable for liquidated damages from September 17 to the date of the completion of the building.



BRADLEY MEMORIAL FOUNTAIN, HARVARD UNIVERSITY, CAMBRIDGE, MASS.
Messrs. McKim, Mead & White, *Architects.*

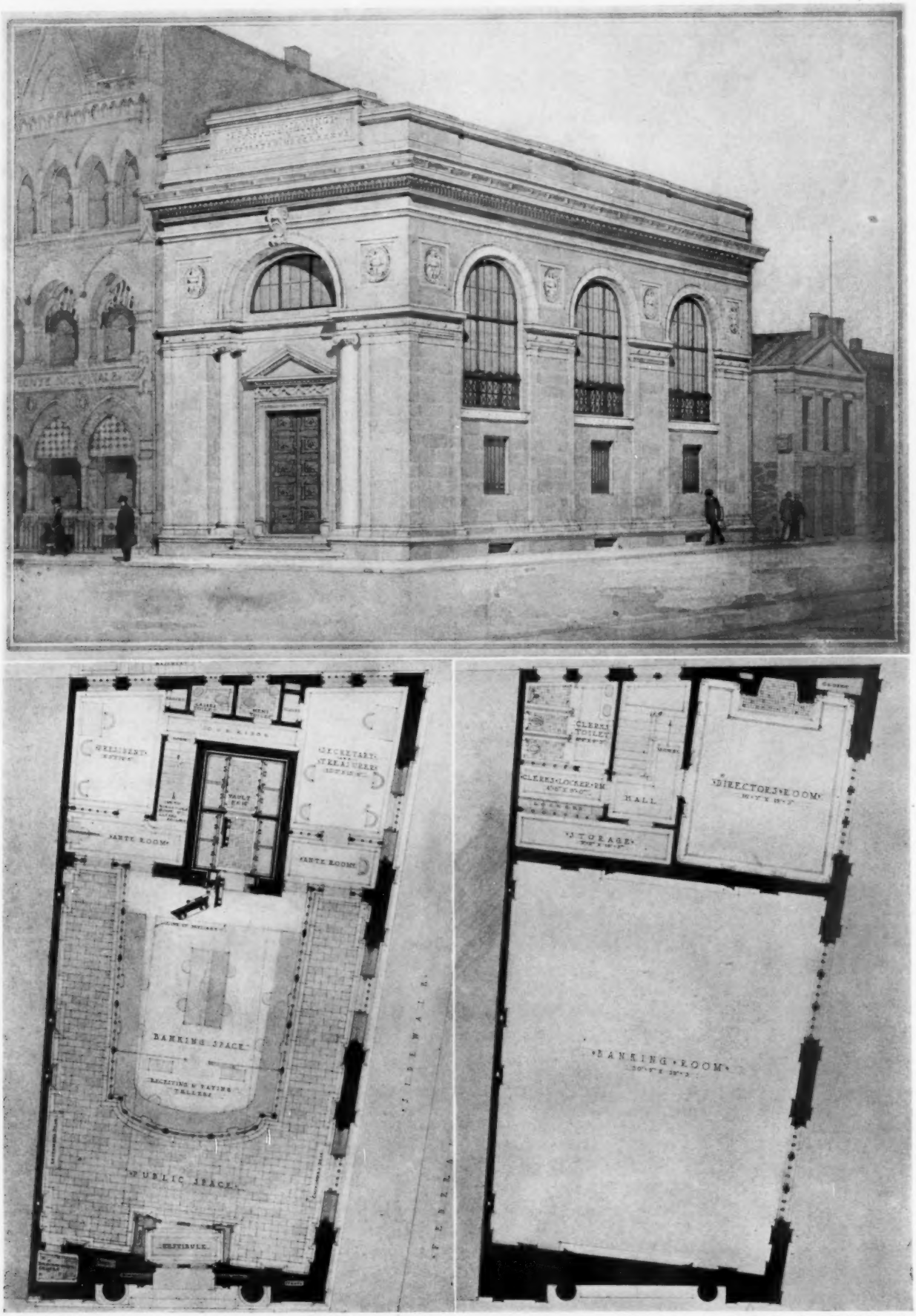
No written claim for an extension of time for completion having been presented to the architect within 48 hours of the occurrence of delay, parole evidence that the architect had promised the contractor that he would take care of it on final payment was held inadmissible in an action against the builder.

The contractor also made a claim for extra work, which was disallowed. The contract provided that no alteration, addition, deviation or omission which affected the price or the time for the completion of the work should be done without a written order of the architect, approved in writing by the owner. No such written order was made. The plaintiff attempted to prove a waive of this condition by the architect, but it was held that this was beyond his power. Even if the restriction had been that no alteration or addition should be made without the written order of the architect, and the requisition of the approval in writing by the owner had been absent from the contract, the architect alone could not have orally altered the terms of the contract, nor have created any obligations binding upon the owner, save in the manner provided by the contract itself. Stuart v. Cambridge, 125 Mass. 102; McIntosh v. Hastings, 156 Mass. 344, 31 N. E. 288; Leverone v. Arancio, 179 Mass. 439, 61 N. E. 45; Baltimore Cement Co. v. Coburn, 7 Md. 202; Abbott v. Gatch, 13 Md. 314; O'Keefe v. St. Francis Church, 59 Conn. 551, 22 Atl. 325; Van Buskirk v. Board of Education of Passaic Tp., Morris County, New Jersey Court of Errors and Appeals, 75 Atlantic, 909.—J. S.

Conclusiveness of Complete Written Contract.

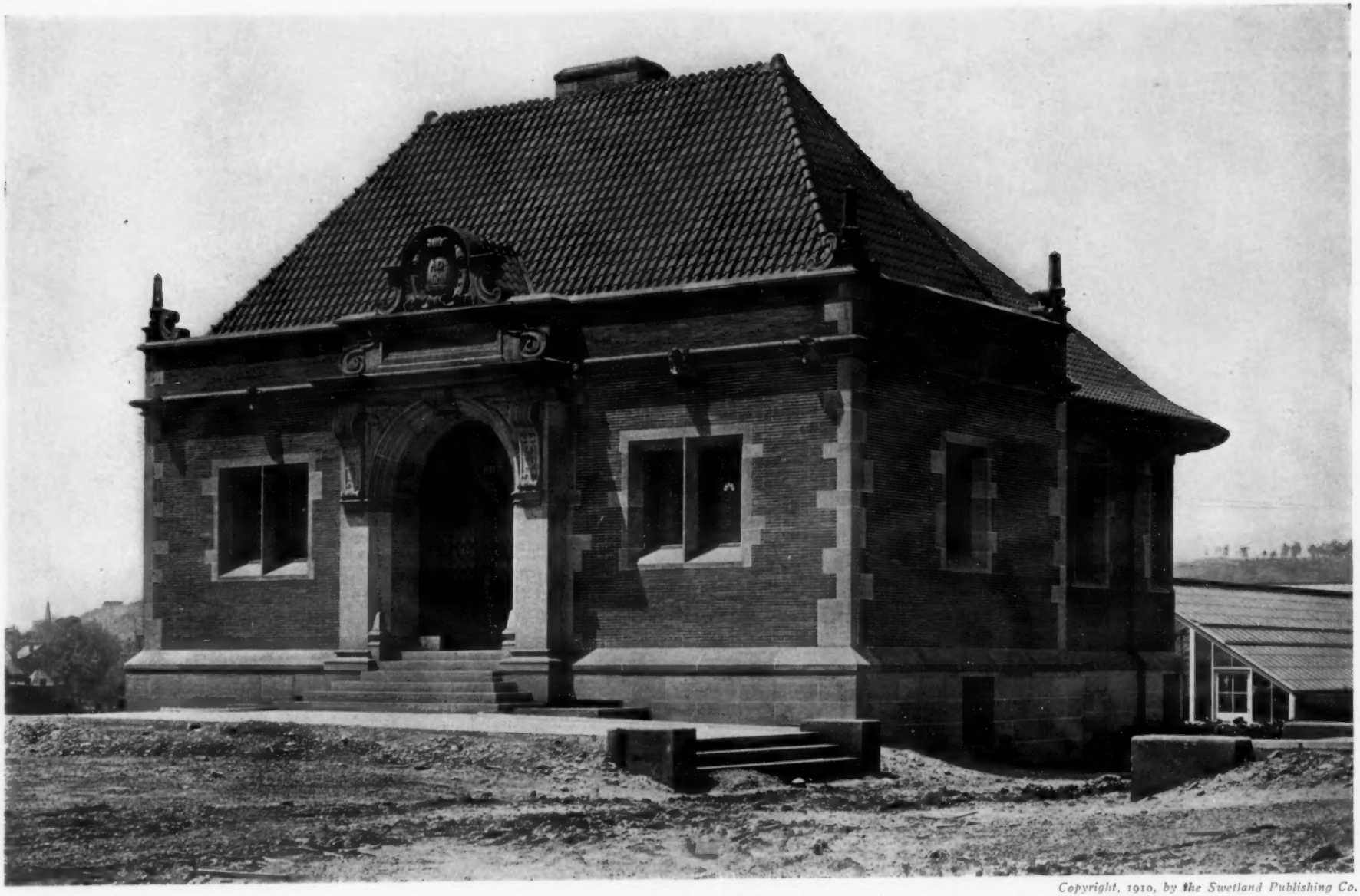
A written building contract provided for the erection of a three-story brick mill. It was a "uniform contract," the form adopted by the American Institute of Architects and the National Association of Builders. In an action for damages by the owners against the contractors it was alleged that it was verbally agreed that the mill was to be of sufficient tensile strength to bear the weight of certain machines and was to be satisfactory to the owners. The contract, however, contained nothing in reference to such matters. It was held that the contract was complete in itself and could not be varied by evidence of contemporaneous oral agreements unless such evidence was clear, precise and indubitable, which in this instance was wanting.

Wallace v. Steele, Pennsylvania Supreme Court, 77 Atl. 247.



PRIZE-WINNING DESIGN IN COMPETITION FOR BANK BUILDING, FRANKLIN SAVINGS INSTITUTION, GREENFIELD, MASS.

MARCUS T. REYNOLDS, *Architect*



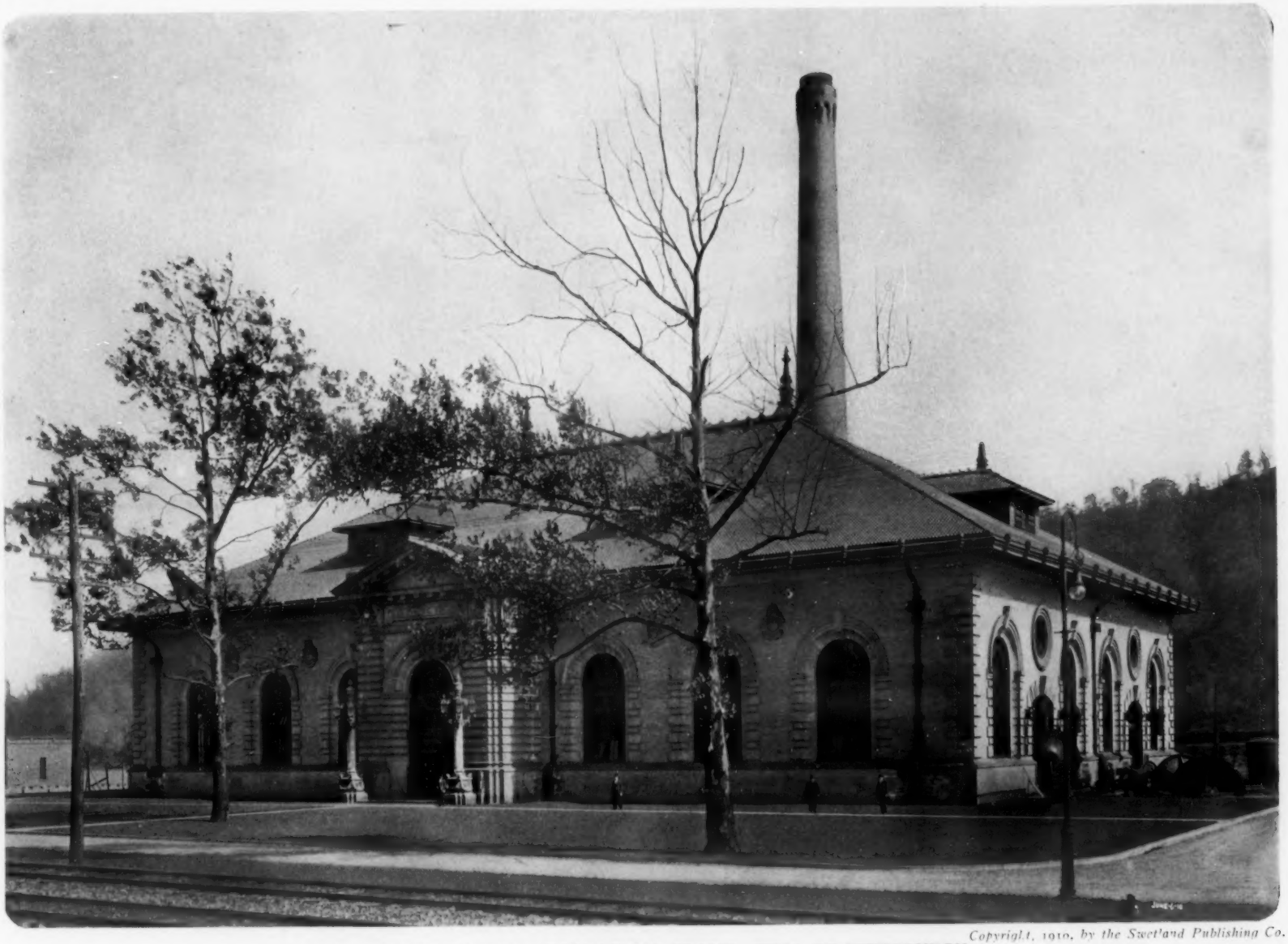
PHIPPS HALL OF BOTANY, SCHENLEY PARK, PITTSBURGH, PA.

RUTAN & RUSSELL, *Architects*

INSTITUTE OF MUSICAL ART, CLAREMONT AVENUE, NEW YORK

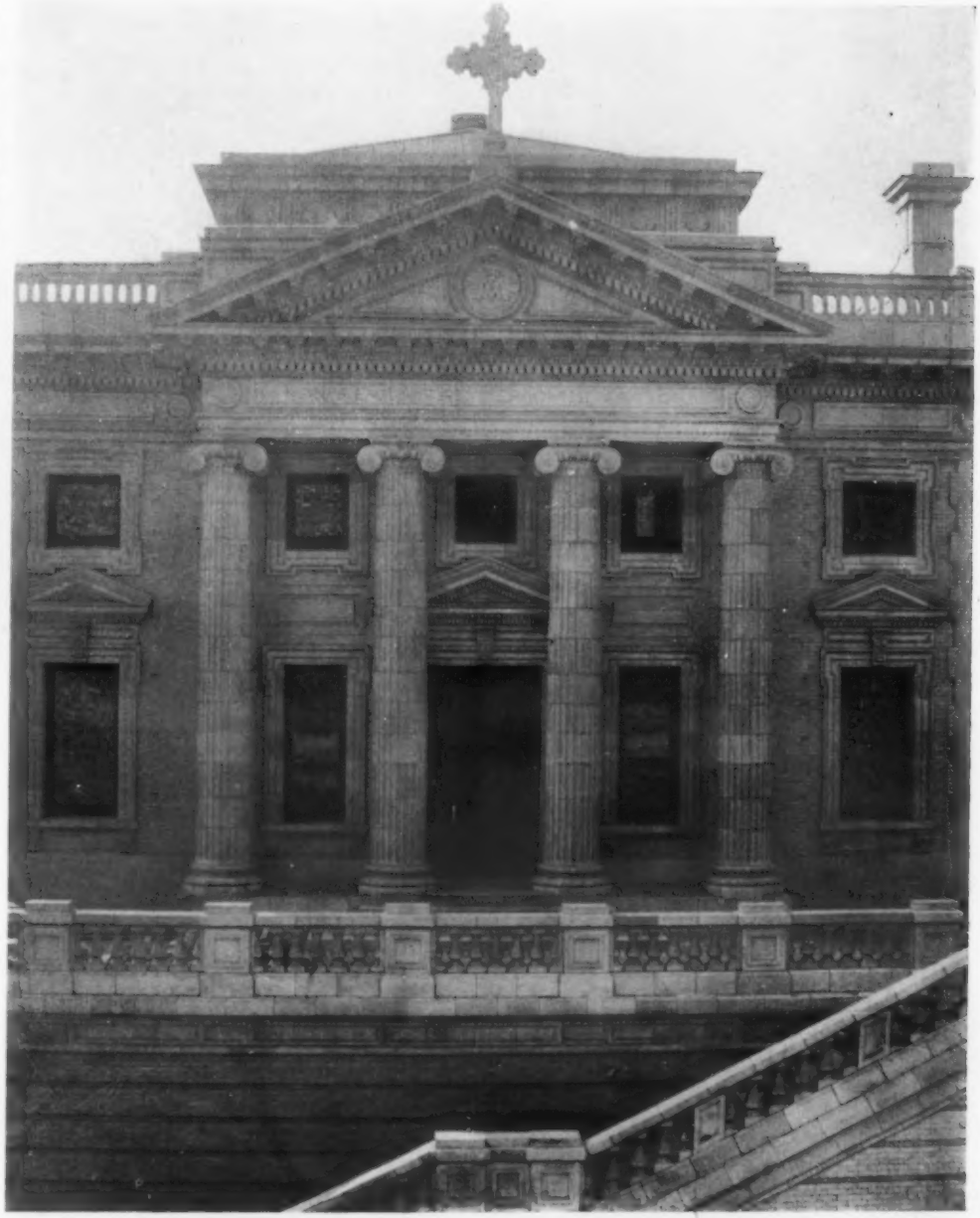
DONN BARBER, *Architect*

(For plans and working drawings, see issue No. 1796, May 25, 1910.)



PUMPING STATION, FILTRATION PLANT, CITY OF PITTSBURGH

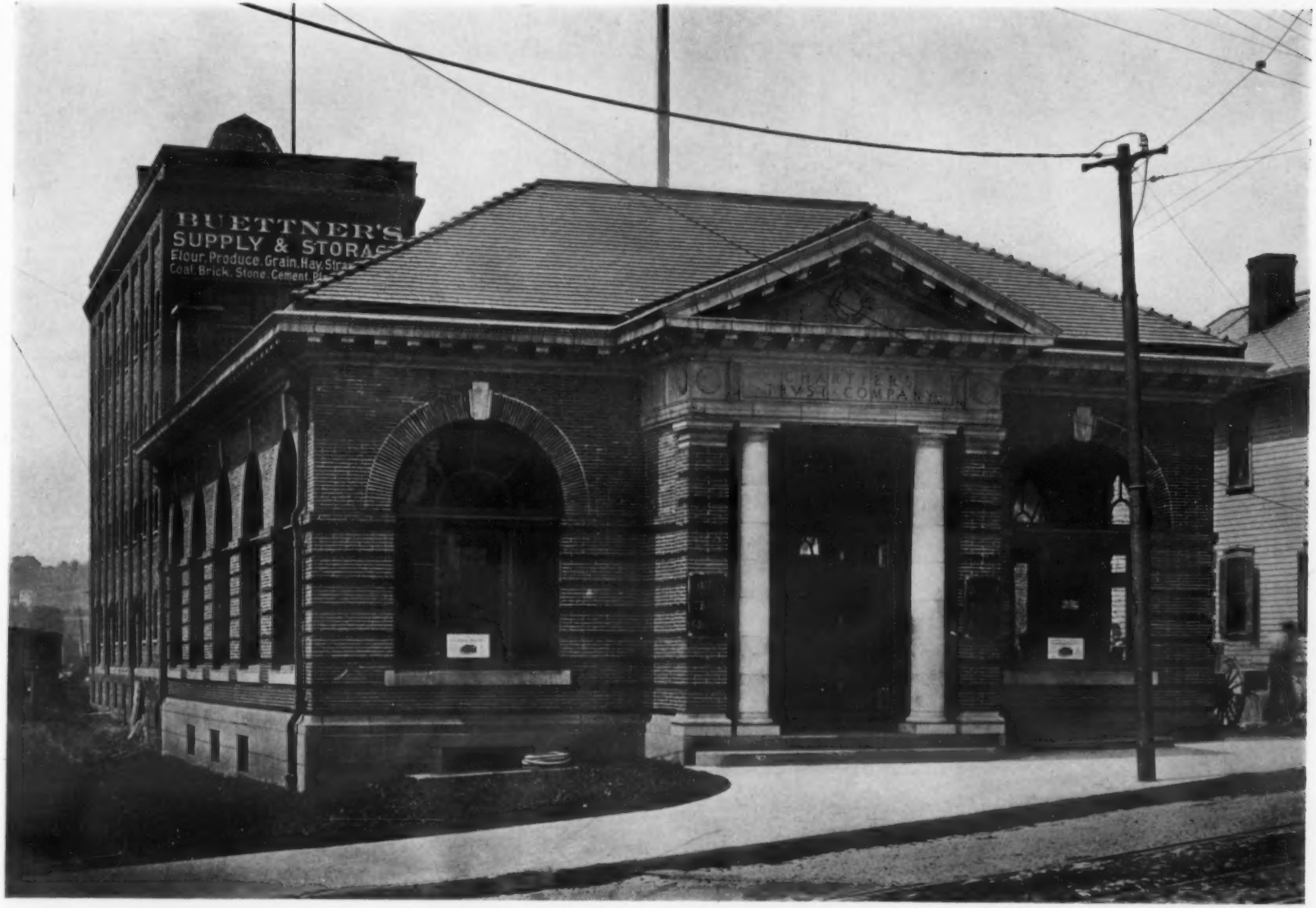
RUTAN & RUSSELL, *Architects*



CHAPEL OF OUR LADY OF GUADALUPE,
AUDUBON PARK, NEW YORK

C. P. HUNTINGTON, *Architect*

(For plans and working drawings, see issue No. 1765, October 20, 1909.)



CHARTIERS TRUST CO., PITTSBURGH, PA.

RUTAN & RUSSELL, *Architects*

STATE ARMORY, WHITE PLAINS, NEW YORK

FRANKLIN B. WARE, *State Architect*

(For plans and working drawings, see issue No. 1736 March 31, 1909.)

ADMINISTRATION BUILDING, FILTRATION PLANT, CITY OF PITTSBURGH

RUTAN & RUSSELL, *Architects*