

THE AMERICAN ARCHITECT

VOLUME CIV.

WEDNESDAY, JULY 30, 1913

NUMBER 1962

HEATING AND VENTILATING PRACTICE

By D. D. KIMBALL

PART III.—AUXILIARIES TO POWER PLANT



COMPLETE heating and power plant requires a large auxiliary equipment which should be selected for economy, durability and convenience.

The most essential elements are the boiler feed pumps. These should be installed in duplicate and may be of the single cylinder pattern which are the most economical in consumption of steam but least used because of their greater cost; or the feed pumps may be of the duplex pattern, either inside or outside plunger type. The inside plunger type pumps are the most used, being less expensive and entirely satisfactory for all except the larger sizes. The outside plunger type pumps are used generally in only the large plants, as they require greater pressure for their operation and they also require more attention to prevent leakage of water around the plungers.

If a vacuum heating system is used, vacuum pumps should be installed in duplicate, these being of the single cylinder pattern, equipped with suction strainers and vacuum governors to maintain a predetermined vacuum. Occasionally electric motor driven vacuum pumps are used where an electric generating plant is a part of the power plant equipment.

Wherever the water pressure is insufficient to carry the water to the top of the building with sufficient pressure for satisfactory service duplicate water pumps, simi-

lar to the boiler feed pumps, should be installed. These water or house pumps may discharge into house tanks on, or under, the roof, and then should be equipped with proper pressure and speed regulating devices. They may, in large installations, discharge directly into the water mains without necessitating the use of the house tanks. In many installations it is also advisable, and sometimes it is necessary, to install duplicate hot water pumps to maintain a circulation of hot water throughout the hot water pipes of the system.

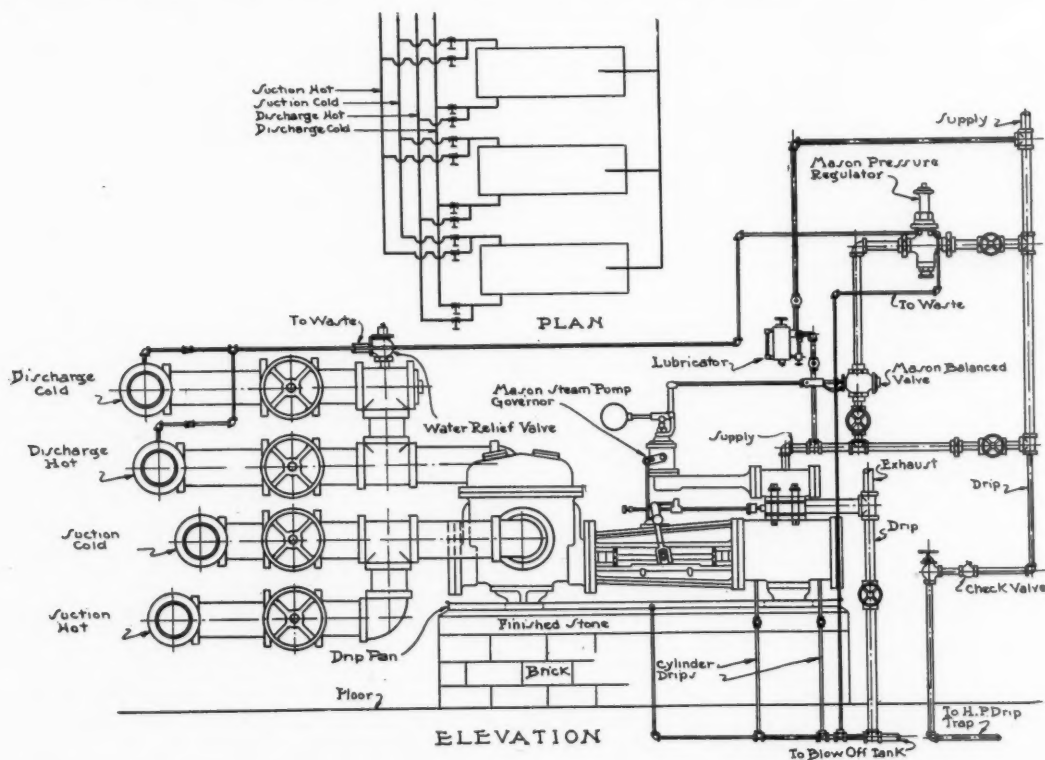
If cooled water is supplied to drinking fountains, or other outlets, additional pumps are required also to circulate the cooled water. These pumps also should be installed in duplicate. If two pumps are installed for each cold, hot and chilled water supply, a total of six pumps would be involved. This number may be decreased to four, providing one pump for each of the cold, hot and cooled water service, with one spare pump, either connecting the spare pump to each of the three services on suction and discharge sides, or better still, by running three suction and three discharge headers with a supply and discharge connection to each of the four pumps. By so doing any one of the four pumps may be made to handle cold, hot or cooled water and at all times leave a spare pump for emergency or for repairs.

The boiler feed pumps and all water pumps should be provided with a water relief valve on the discharge pipe inside of any valve so that should the valve on the

discharge pipe be shut while the pump is in operation an excessive pressure will not be developed in the water cylinder and thus cause breakage.

It is desirable, also, that a speed governor and a pressure regulator should be attached to the steam pipes supplying steam to these pumps so that the pump will be stopped automatically in case of excessive pressure on the water mains, and also so that the pump will not race should a sudden demand for water be placed upon the pumps.

It is customary to install a fire-pump of the Underwriters' pattern, built and equipped according to the rules of the Fire Underwriters in power plants serving large buildings and in central heating and power plants serving a group of buildings, but this applies only to such plants as are intended to have steam available throughout every day of the year and every hour of the day. The rules referred to cover the details of the construction of the pump, its equipment as to connections, relief



A drawing showing three pumps intended for use in pumping cold and hot water arranged so that any one of the three pumps may be used for cold water and any other of the three pumps for hot water is shown herewith. By the addition of another pump, and another suction and discharge header with connection therefrom to the pumps, the four pumps may be made to cover the cold, hot and chilled drinking water systems with an extra pump at all times. A boiler feed injector is frequently used in small plants as a substitute for a duplicate boiler feed pump.

valves, hose outlets and all other details.

To supply air for the temperature regulation system, and sometimes for other purposes, an air pump is required. This should be installed in duplicate also. In small systems this may be of the hydraulic vertical pattern, but in large systems either the electrically driven air pumps or the steam driven air pumps are most suitable, the latter being constructed similar to the single cylinder boiler feed pump mentioned above. The required pressure regulators, of the automatic starting and stopping pattern, pressure gauges and air tank.

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A stationary vacuum cleaning system is essential to a thoroughly equipped plant. For small work the rotary pattern pump will prove satisfactory, otherwise the reciprocating pump plant will prove more satisfactory and more economical in operation. For the best results wet and dry separating tanks are essential. Where the power plant includes electric generating units the reciprocating pump may be best operated by electric motors.

Another system of vacuum cleaning which meets with some favor in connection with high pressure boiler plants is the steam ejector system, this system including the usual dust tanks. Much less space is occupied by this system and it has the further advantage of automatically regulating the vacuum and maintaining the system in operating condition at all times, without the starting and stopping of pumps or other machinery.

In large plants for hotels, hospitals, private schools, colleges and similar institutions a refrigerating plant is an essential part of the equipment. For plants operating exclusively in winter when exhaust steam may be used a compression system is desirable, but for plants operating through the summer season the absorption system will prove the more economical. The subject of refrigeration is an extensive one and may be treated later as a separate subject.

Except in plants where low pressure is used exclusively a feed water heater is an important part of the plant's equipment. This may be of the open or closed pattern. In the former the steam and water mingle together in the same chamber, the water finely divided by dripping over the edge of trays, from which it drips through the chamber, thus coming into intimate contact with the steam and absorbing the heat therefrom. The feed water heater is desirable where cold water must be used for feed water for the boilers. At the bottom of the open feed water heater is a storage chamber, a portion of which is filled with white foundry coke or excelsior, which is used as a filter to free the water from sediment, oil or other impurities. In some cases a water softening plant is required.

In connection with this heater there should be furnished a float control valve

for automatically adding fresh water when the storage of water becomes low, and also a float controlled trap to permit the overflow of excess water to the sewer to prevent flooding of the heater.

The closed heater consists of a cast iron or wrought iron tank in which are placed brass or copper coils. In some cases the water is contained in the case and the steam passes through the coils while in other cases the chamber is filled with steam and the water passes through the coils. In either case the heat is transmitted through the metal of the coils to the water.

The two types of heaters are practically the same in efficiency but the open feed water heater has the advantage of acting as a receiver and, to some extent, as a purifier. Its use is desirable in all vacuum heating systems and in gravity heating systems where the feed water heater may be also used as a receiver instead of the usual separate pump receiver as hereinafter described.

In addition to the value of purification the feed water heater is economical, wherever the exhaust steam may be used for increasing the temperature or feed water heater, it being generally recognized that approximately one per cent. is saved in fuel for each ten degrees increase in the temperature of the feed water. Where only the return water or condensation from the heating system is used for boiler feed water the factor of economy is slight, but where a large amount of cold make-up water must be used for boiler feed purposes, as in power plants, the feed water heater has a real value as an economical factor.

An essential attachment to the feed water heater is a grease extractor with drip trap which will prevent any oil in the exhaust steam from entering the feed water heater, as the entrance of this oil into the feed water heater would coat the heating surfaces and materially lessen the efficiency of the heater. It is especially desirable that this oil should not be permitted to enter the boilers.

In the open feed water heater the water is drawn from the storage section of the heater by the boiler feed pumps and forced into the boilers while in the closed feed water heater the water is drawn from a tank receiver by the boiler feed pumps

and forced through the closed feed water heater into the boilers.

In each plant operating boilers at a pressure higher than that required for heating system the return water of condensation from the heating system is permitted to flow back into a pump receiver, which, for small plants, may be of the usual cast iron pattern, approximately sixteen inches in diameter and thirty-four inches long as manufactured by the pump manufacturers, while in large plants a wrought iron receiving tank is furnished with metal one-quarter inch thick, with domed heads, with manhole in one head, in connection with which tank there is provided a float controlled balanced valve in the steam connection to the pumps so that pumps are operated in proportion as the water is fed into the pump receiver.

If the return pipes in each building connecting with the plant are sealed by a trap this receiver may be vented through a two-inch or larger vent pipe, with gate valve, to the roof, but if the condensation is permitted to return direct to the receiver without being so sealed this vent pipe should be connected to the low pressure heating main in such a way as to act as a balance pipe.

The illustration herewith shows the proper method of steam and exhaust connection for pumps used for hot and cold water service, especially where the pumps operate in connection with a closed system of water supply. This illustration also shows the method of connecting three pumps so that any one of the pumps may be used for hot water, while another one of the pumps is used for cold water and the third pump is used as a spare pump for either hot or cold water service. By means of such connections the pumps are interchangeable for either service and thus three pumps may be made sufficient for both cold and hot water service, and four pumps may be made to cover cooled, hot and cooled water for drinking water with one pump as auxiliary or spare for either service. Connections to boiler feed pumps are simpler, in that there is but one suction and one discharge connection and the pressure governor and speed governor are often not installed, the balance float valve, referred to above, being the only valve in addition to the throttling valve which is installed in the steam connections. However, in fully equipped plants the pressure and speed governors may well be supplied in the steam connections to the boiler feed pumps.

CONACASTE, A NEW TROPICAL AMERICAN HARDWOOD

THE wood known to the trade as conacaste is produced by a massive timber tree growing in the southern states of Mexico, Central America, Columbia and Peru. The botanical name of this tree is *Enterolobium cyclocarpum* Griseb., but in the trade the wood is also frequently called guanacaste or juanacasta (pronounced as if spelled wanacaste). The group *Enterolobium* to which conacaste belongs, contains four different species of timber trees growing naturally in the American tropics, and durability is a common character of their woods. Conacaste is one of the largest timber trees growing in the deep, rich ravines and on the moist slopes, chiefly on the west side of the central plateau of Mexico and Central America. It is found principally in the dense forests where its enormous crown

overtops the surrounding vegetation, and often shoots up a clear trunk from sixty to eighty feet, with a total height of 120 feet, and a diameter of seven feet at breast height. The average of the logs that have been cut is about four feet in diameter. This tree is nowhere abundant, but like that of true mahogany (*Swietenia mahagoni* Jacq.) the large merchantable trees are scattered. In many parts of its range it is at present inaccessible, for the reason that the country has not yet been opened up and transportation is attended with considerable expense. The streams are all short and swift and do not aid in bringing the timber in communication with the coast.

Throughout its range conacaste associates with several species to which it is closely related and all of which are highly esteemed for their valuable and durable woods often known as timbouva; conspicuous among these are timbouva (*Enterolobium timbouva*)

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and (*Enterolobium schomburghii*) Over two hundred other trees important for their useful and valuable woods occur within the range of conacaste. These supply enormous quantities of the finest cabinet and dye-woods and construction timber, all of which are exported to the United States. The most valuable of them are true mahogany, Spanish cedar, grandillo, *lignum vitae*, green ebony, polo maira, and logwood.

Conacaste is a comparatively new hardwood in the American markets, but it promises to become very important, especially on the west coast where it has been in use for more than ten years as a substitute for black walnut. Formerly it was shipped principally from Manzanillo in the State of Colima on the west coast of Mexico and from points south.

In general appearance conacaste closely resembles black walnut, only it has a more open grain and is somewhat softer. Sometimes it has rather attractive markings, but its coarse structure prevents it from being used for finer grades of furniture work. Tests have shown that it will stand up in practically all kinds of climatic conditions after it has been thoroughly seasoned. Conacaste can be worked more easily than black walnut and can be finished more quickly by the painter because it takes filler readily. In its natural state this new hardwood approximates dark colored oak, but finishes with richer and deeper tints. The wood is moderately soft, not very strong, though quite tough, and is not prone to check or warp after it is once carefully seasoned. Conacaste has a specific gravity varying between .35 and .55, the average weight of kiln-dried heartwood and sapwood being approximately the same, or about thirty-two pounds to the cubic foot. The heartwood is light or often dark brown in very old trees, and turns quite dark upon exposure.

The most important use of conacaste at the present time is for interior finish. It is also highly esteemed for furniture, not only because of its pleasing grain, but because it takes and retains a beautiful polish when properly filled and finished. It takes mahogany stain as well as any other wood now used for making furniture, and is now employed for practically all purposes for which true mahogany and Spanish cedar (*Cedrela*

odorata) are used. Owing to its great durability, conacaste is used extensively and satisfactorily for construction timber in Mexico.

Although this wood has no well-defined annual rings of growth like those present in our oaks and chestnut, there are obvious zones or bands of pores which seem to separate layers of growth. These pores are less numerous than in mahogany, but they are slightly larger and are open. The pith rays are numerous, but so narrow that it requires a hand lens magnifying from four to six diameters in order to see them. These rays add no attractive figure to the wood when quarter sawed.

CHURCH OF CHRIST SCIENTIST, SAN FRANCISCO, CAL.

MR. EDGAR MATHEWS, ARCHITECT

THOSE who insist that a building should express in its design the purpose of its occupancy, have, we believe, no reason to find fault with the First Church of Christ, Scientist, of San Francisco, Mr. Edgar A. Mathews architect, very fully illustrated in this issue of *THE AMERICAN ARCHITECT*. This building not only declares itself a church from every point of view, but it is also reminiscent of the earlier Christian churches built throughout Italy, of which the architect appears to have very successfully retained the best traditions of those interesting buildings.

The building in its exterior and interior design appears to have received the most thoughtful study. The use of brick and terra cotta is a further adaptation of these materials used in early Christian churches, and in the present instance has been handled in the most restrained and thoughtful way. The exterior brick used is of varying shades of warm gray, yellow and golden brown with here and there a red or dark chocolate brown header introduced. The trimmings of matt glazed terra cotta with a temperate use of polychrome in corners in projecting eaves to gables and upper part of tower in the large auditorium window, and in the raised window in front and the inner portions of the entrance, combined with the well-selected color of the brick, has produced well conceived color effect.

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The roof is covered with gray-green terra cotta tiles with copper brackets supporting the wide projecting eaves to roof. To these brackets there is applied touches here and there of dull gold, greens, blacks and reds. The soffit panels between the projecting rafters too, have a dull gold background. The front entrance spaces are of white marble with panels of brick in the platforms, while the side entrance to the Sunday-school room and the walks leading to entrance are constructed of brick. The fences to the side gates, the entrance lamps and the doors are all of bronze. In the interior the walls are painted and stained to a golden hue. The trim, organ screen and low wainscoting is finished in a light warm gray. The platform furniture and pews are in gray oak, the carpets of a tan shade, while the window glass is a dull "rippled" texture, producing a warm golden glow throughout the interior

and which imparts a very slight suggestion of green to the gray oak woodwork. The wall beneath the balcony to the gallery has the effect of a wooden screen constructed across the full width of the building, while a similar wainscoting to the vestibule is a tan shade of Rookwood tile, the patterns in the floor being of cream colored marble. The inner doors to vestibule entrance to auditorium are covered with tan leather.

The lighting is direct, diffused lighting, and the results achieved have received universal endorsement. The acoustics of the building are equally good.

The seats in the Sunday-school room are arranged so that every other row has reversible backs and every other row is only fastened to the floor. One row can, therefore, be moved back to the next stationary row, as the backs reverse and thus provide space for small classes.

RECENT LEGAL DECISIONS

RIGHT TO RECOVER FOR PLANS PREPARED

Where an architect is employed by the owner of land to prepare plans and specifications for the erection of a building thereon, and does so, and the owner decides not to have the building erected, because of the estimated cost, but nevertheless retains the plans and specifications, in the absence of any guaranty as to the cost of the building or agreement as to his compensation for preparing the plans and specifications the architect would be entitled to recover the reasonable value of his services in preparing and furnishing the plans and specifications. Where, in such a case, the architect sues on *quantum meruit*, in the absence of a contract, and the main issue of fact is as to the cost of the building to be erected according to his plans, it is not even error to admit the testimony of a general custom among architects not to guarantee the exact cost of buildings to be constructed on the plans and specifications furnished, but only to make an approximate estimate of the cost.

Douglas v. Rogers, Georgia Court of Appeals, 7 F. S. E. 700, (J.S.)

IMPLIED APPROVAL BY ARCHITECT

When the architect is, by the building contract, made the sole arbiter between the parties of matters concerning the material and character of the work, has knowledge of such, and does not object at the time, it will be an approval of the same, which cannot be renounced to the injury of the contractors.

Pippy v. Winslow, Oregon Supreme Court, 125 Pac. 298.

SUBSTANTIAL PERFORMANCE BY ARCHITECT

In an action for services rendered in the supervision of the erection of a house for the defendant upon plans prepared by the plaintiff the material question of law involved in the case was whether there had been a substantial performance of the contract sufficient to permit a recovery under an allegation of entire performance. The contract entitled the plaintiff to ten per cent. upon the cost of the building, the compensation amounting to \$780. The jury deducted \$190 for damages for permitting the installation of a plumbing

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THE AMERICAN ARCHITECT

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Founded 1876

PUBLISHED EVERY WEDNESDAY BY

THE AMERICAN ARCHITECT (INC.)

No. 50 Union Square, New York
(Fourth Avenue and 17th Street)

G. E. SLY, PRESIDENT

E. J. ROSENCRANS, SECRETARY AND TREASURER

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TEN DOLLARS PER YEAR, POSTAGE PAID
ALL OTHER COUNTRIES . . . \$12.00 PER YEAR
SINGLE COPIES (Regular Issues), 25 CENTS

CHICAGO OFFICE, Hearst Building
Page A. Robinson, *Western Manager*

Entered at the Post-office, New York, as Second-class Matter

VOL. CIV

JULY 30, 1913

No. 1962

PROGRESSIVE BUILDING LEGISLATION FOR NEW YORK CITY

AN efficient preventive for unfair discrimination on the part of city employees in various departments having jurisdiction over certain phases of construction work, commented upon editorially in our issue of June 11th, has apparently been provided by the proposed new building code for New York City. The flagrant abuse of authority on the part of some minor officials in large cities has been notorious for years, but it seems that the Committee which drafted the proposed new legislation is about to put into the hands of the public a powerful weapon of self-defense.

By its terms, when an architect, builder or owner desires a modification of any provision in the building ordinance or a ruling on any matter not covered by it, he must make written application therefore with the reasons for his request. The Building Superintendent must give his decision, with reasons, in writing; the same is to be published in the official *City Record* within two weeks and filed, properly indexed, in the permanent records of the Building Department. These records, to which the public shall have free access, may be cited as precedents.

Now that the authority of the minor building official is probably to be greatly curtailed in at least one city, it hardly seems likely that any good purpose would be served by indulging in denunciation of his previous course of action. It is certain that under the old regime his position was difficult for the very reason of his irresponsibility. He was something of an autocrat granting requests on the one hand, withholding them on the other, without much regard to the decision of his predecessors or associates.

Charges of favoritism, suggestions of influence through trifling, or larger, "considerations," are certain to be minimized if the proposed code becomes effective.

That this feature will receive the hearty endorsement of every one concerned in building activities, including the honest city official, can scarcely be doubted.

RESTRICTING THE HEIGHT OF BUILDINGS

THE movement to restrict the height of future buildings on Fifth Avenue to 125 feet, which had its inception in the Fifth Avenue Association, has led to the appointment by the city of a Committee on Height of Buildings, of which former Public Service Commissioner Edward M. Bassett is chairman.

The source of interest in this movement was the desire to prevent in the newly formed shopping district on Fifth Avenue, the possibility of congestion equal to that now present on the lower end of this thoroughfare, which has resulted in a very material decrease in the rental value of property on Fifth Avenue and contiguous to it.

The unconstitutionality of any measure that would discriminate as to a given locality has been seriously considered and it is now generally agreed that the basis of any successful plan must be the division of the city into zones or districts, each to have its maximum height of buildings clearly defined.

The highest courts of Massachusetts and Maryland, as well as the Supreme Court of the United States, have held that laws limiting the height of buildings are based directly on a proper exercise of the so-called "police power of the state."

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It is therefore a natural inference that any limitation as to height must be a reasonable one, else it would not be upheld by the courts.

The question then is,—what is a reasonable restrictive height? It was to determine this that the Committee on Height of Buildings was formed. Many meetings both public and private have been held, and it is expected that a preliminary report, as a basis for legislation will be forthcoming in the autumn.

In an address before the National Conference on City Planning, Chairman Bassett referred to the legal aspect of City Planning, included in which is the subject of height limitation of buildings, as follows:

"Broad exercise of community control of the use of private property is requisite. The city should have the power to impose restrictions on the use of private land, so that the community's needs extend not only to sanitation and safe building con-

struction, but include adaptation of buildings to their surroundings, distances of buildings from and relation to streets and public places, creation of zones for industry, business or residence and prohibition or regulation of unsightly objects. The police power is the power of safeguarding the community. This power is entirely distinct from the right of condemnation. The city by its exercise takes no title from the private owner and makes no compensation.

The courts have chosen to limit the police powers to health and safety on the ground that a more extensive application would violate the Constitution both as to taking without compensation and without due course of law. Yet no one can doubt that the city of the future will need to enforce harmony of buildings, the setting back of buildings in certain areas, the limitation of heights and to some extent the segregation of residential, business and industrial structures."

RECENT LEGAL DECISIONS

(Continued from page 46)

system differing materially from the plans and specifications. It was held that these omissions which were so substantial as to deprive the plaintiff of a right to recover nearly twenty-five per cent. of the contract price, precluded recovery. Substantial performance is performance; the deviations permitted being minor, unimportant and unintentional.

Gompert v. Healy, New York, Appellate Division, 133 N. Y. Supp. 689. (J. S.)

DESTRUCTION BY FIRE—CONTRACTOR'S LIABILITY TO REBUILD

A building contract provided that if the work should be wholly or partially destroyed by fire the loss should be sustained by the owners, who agreed to carry an insurance for the full amount of labor and material as the work progressed. In an action to foreclose materialman's and subcontractor's liens, it was held that the provision did away with the rule in ordinary cases, that the risk of fire is upon the contractor, and that he must rebuild if, before completion, the building is burned. It puts

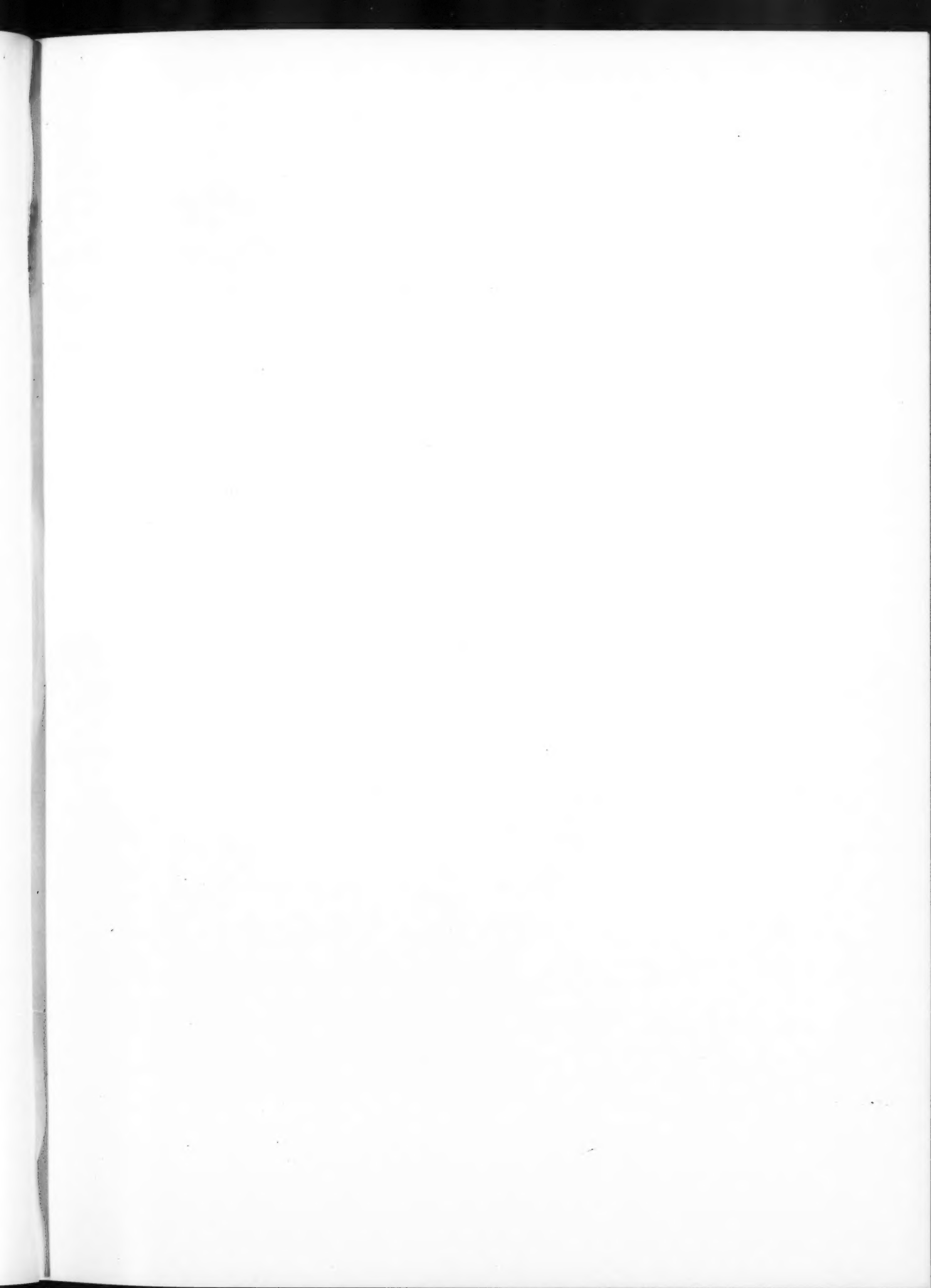
the loss upon the owner, and, in effect, requires him to insure for the mutual benefit of himself and the contractor to the full value of the labor and material that may be subject to destruction by fire during the progress of the work.

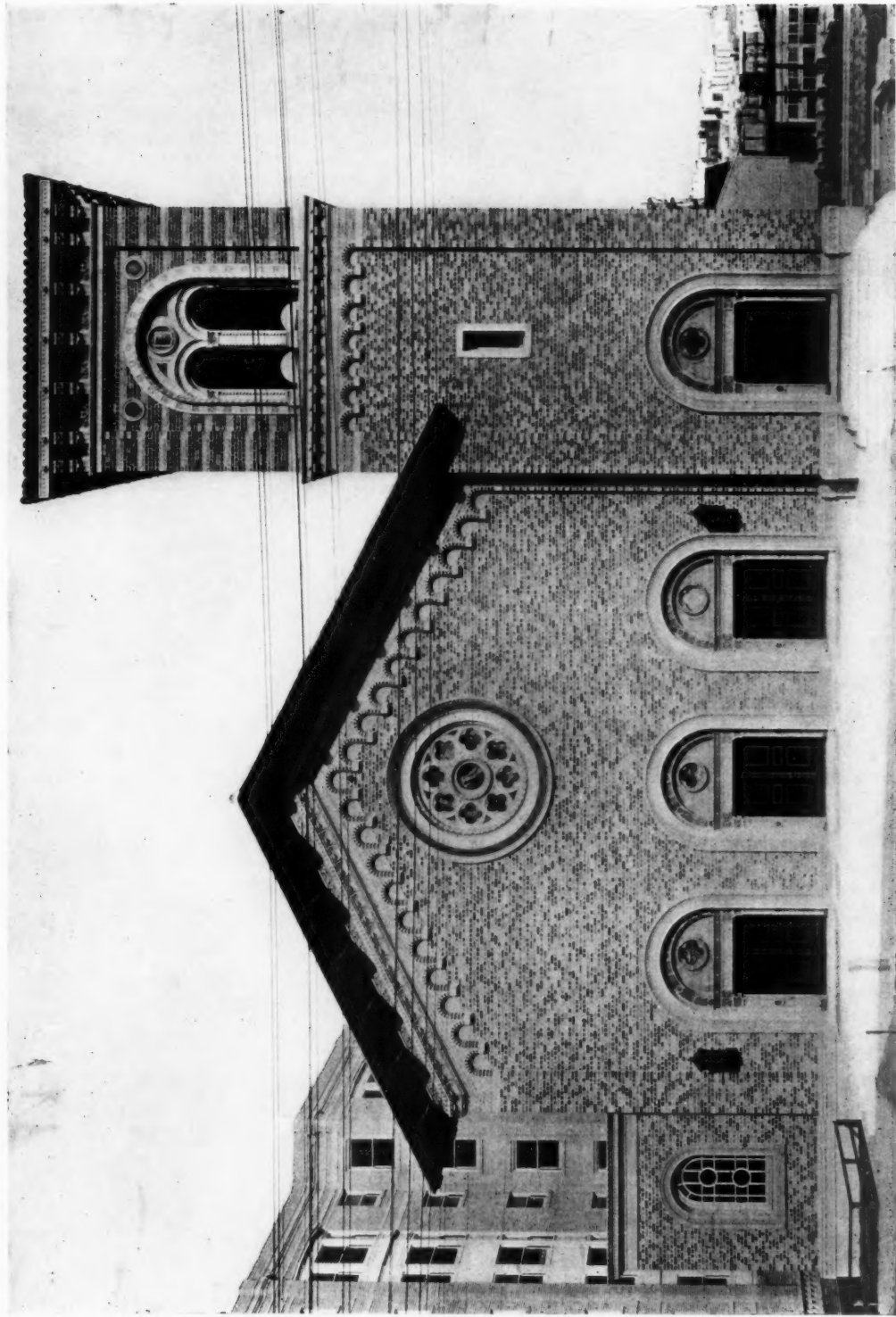
Butler v. Chung, California Supreme Court, 117 Pac. 512. (J. S.)

EFFECT OF ARCHITECT'S APPROVAL OF MATERIAL SUPPLIED

The liability of a surety or a guarantor is created entirely by his contract, and is confined and limited to his contract. A building contract specified lime plaster as that to be used. A patent plaster of a different kind was used with the approval of the architect, but without the consent of the contractor's sureties. They were not liable for damages resulting from such use. And when the contract made the architect's decision final and conclusive on all matters referred to him, the owner could not recover for defective plastering after the plaster work had been approved by the architect on completion.

Trustees v. Andrew & Thomas, Maryland Court of Appeals, 81 Atl. 1. (J. S.)



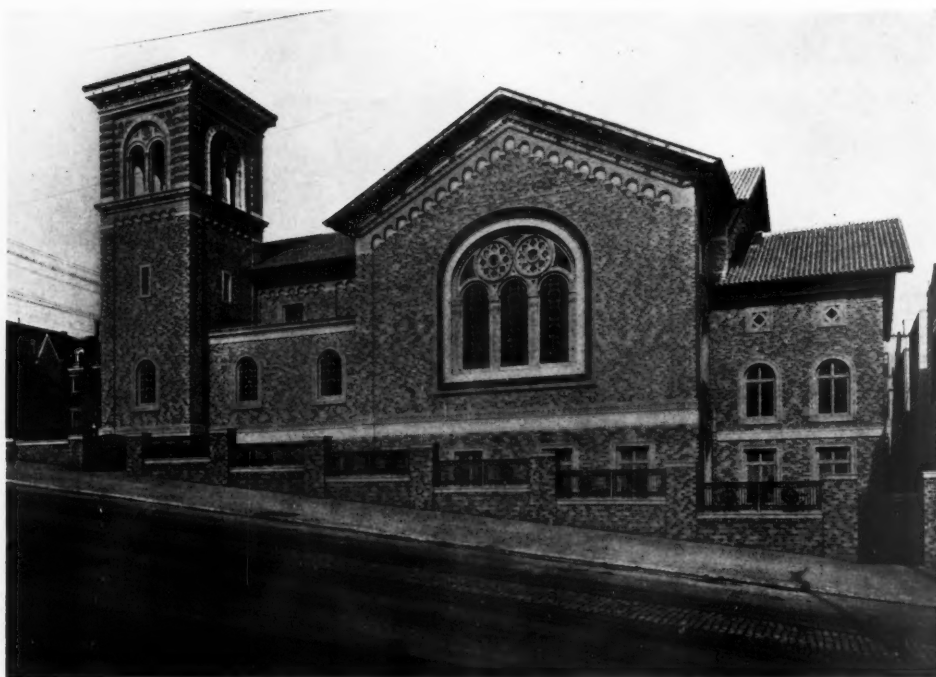


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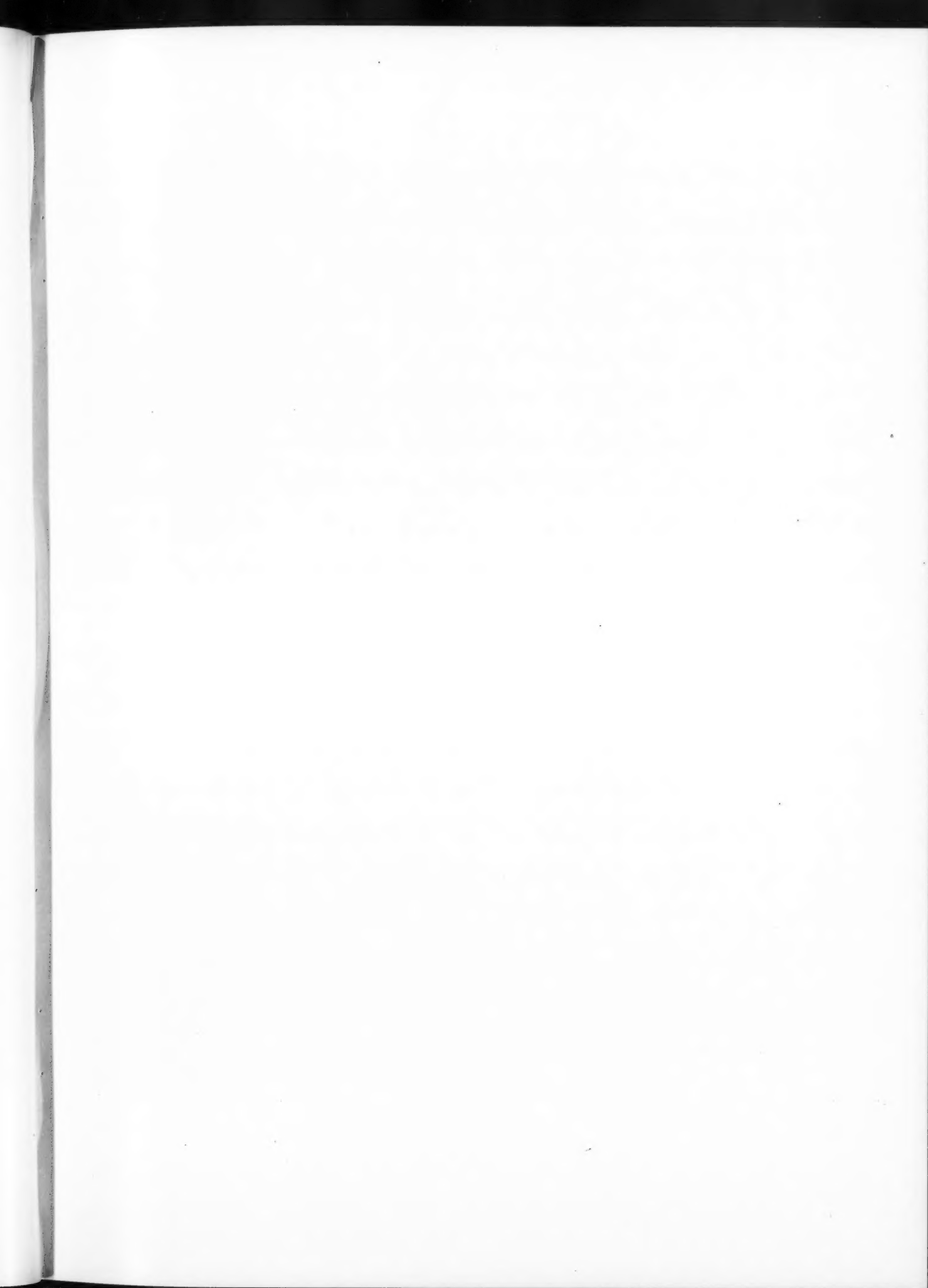
DETAIL OF BRONZE GATES

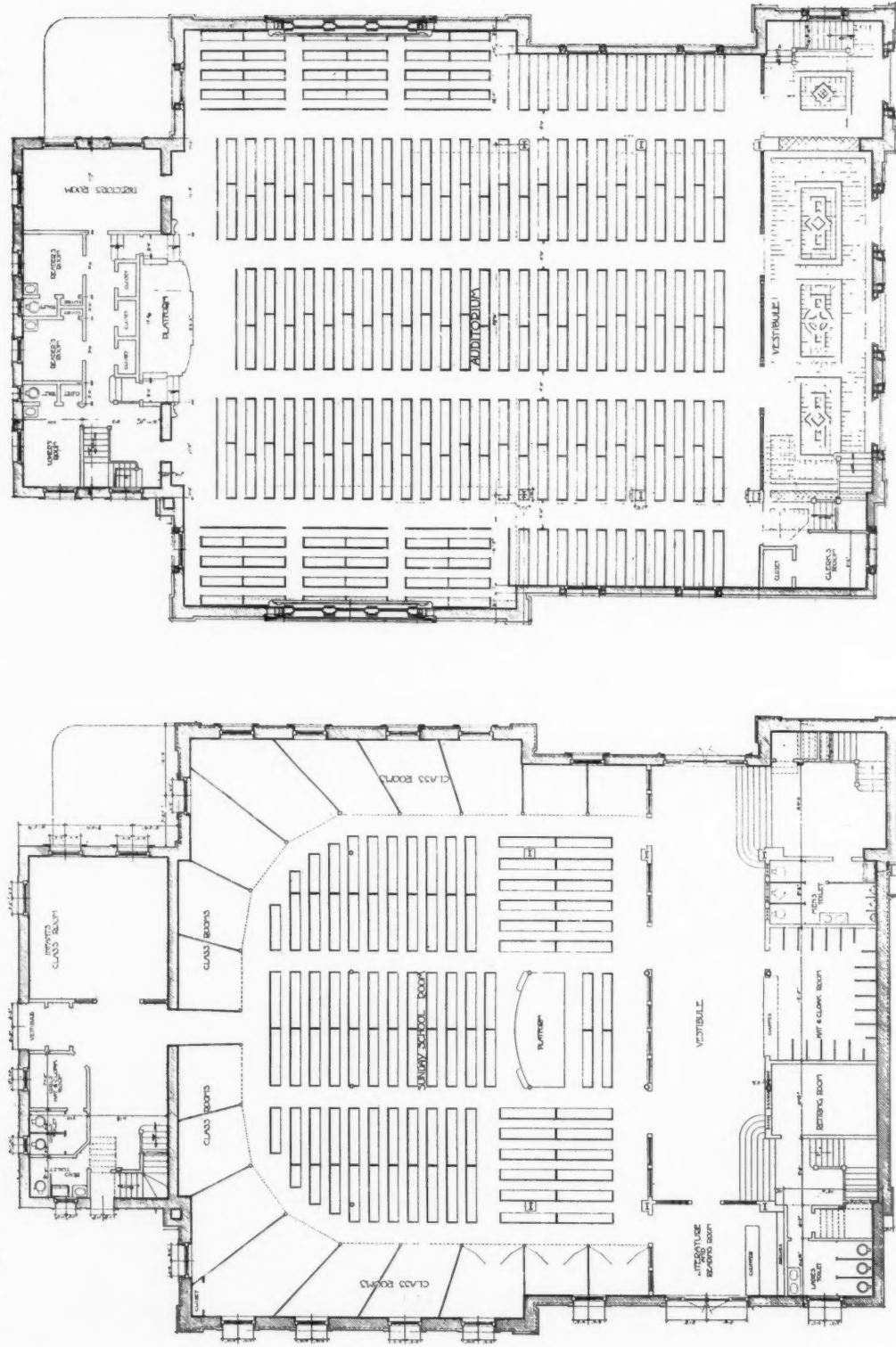


SIDE ELEVATION

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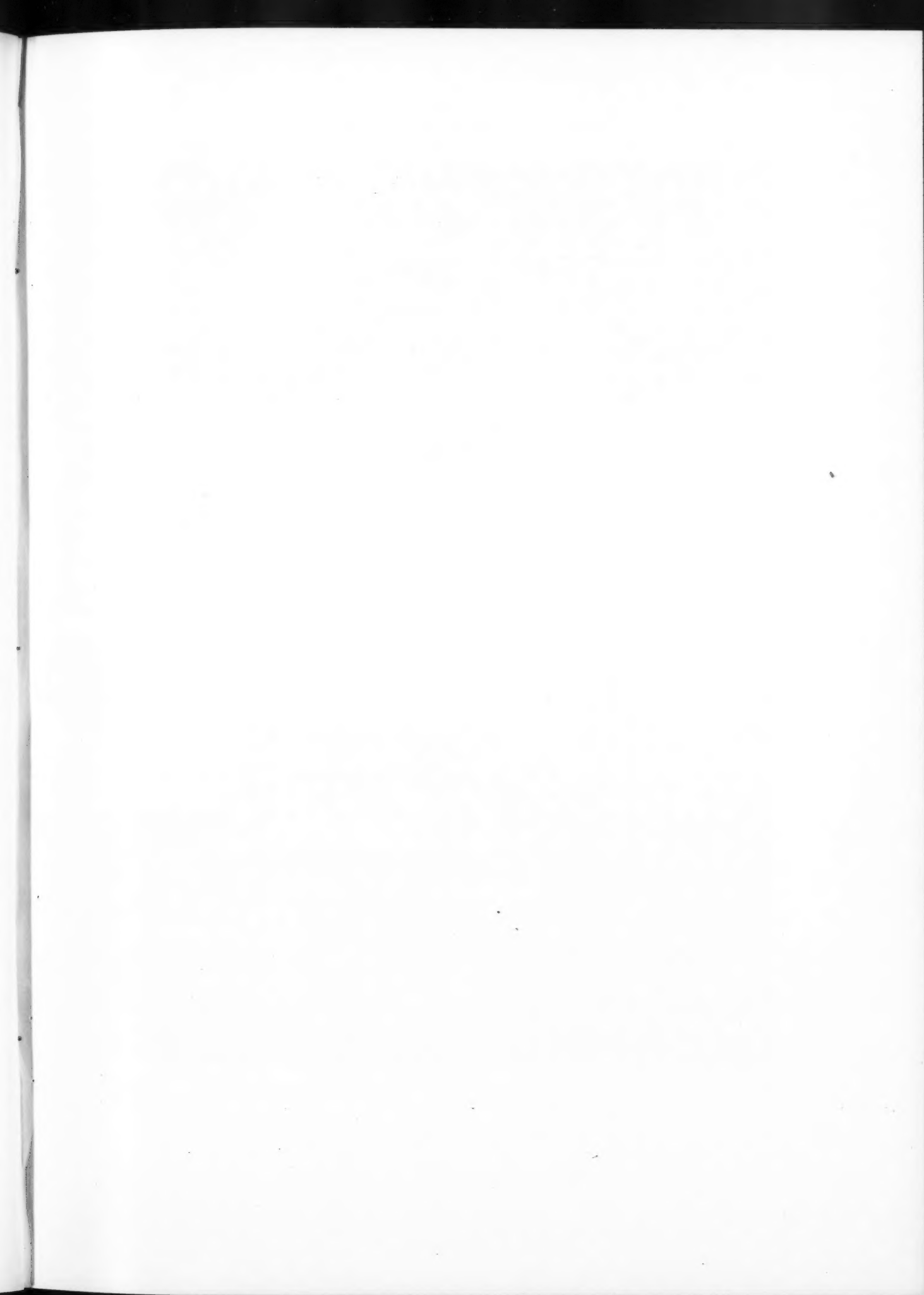
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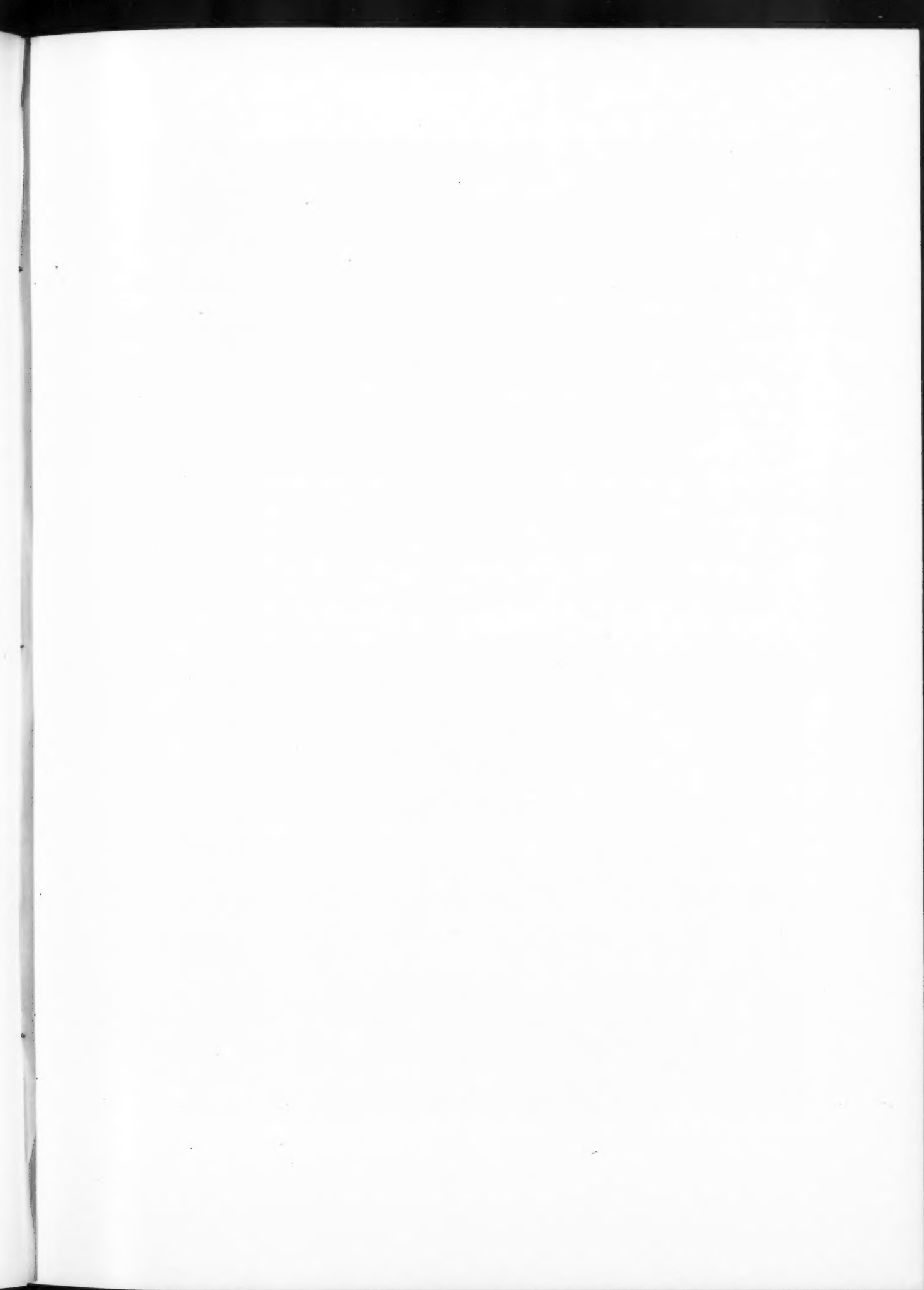


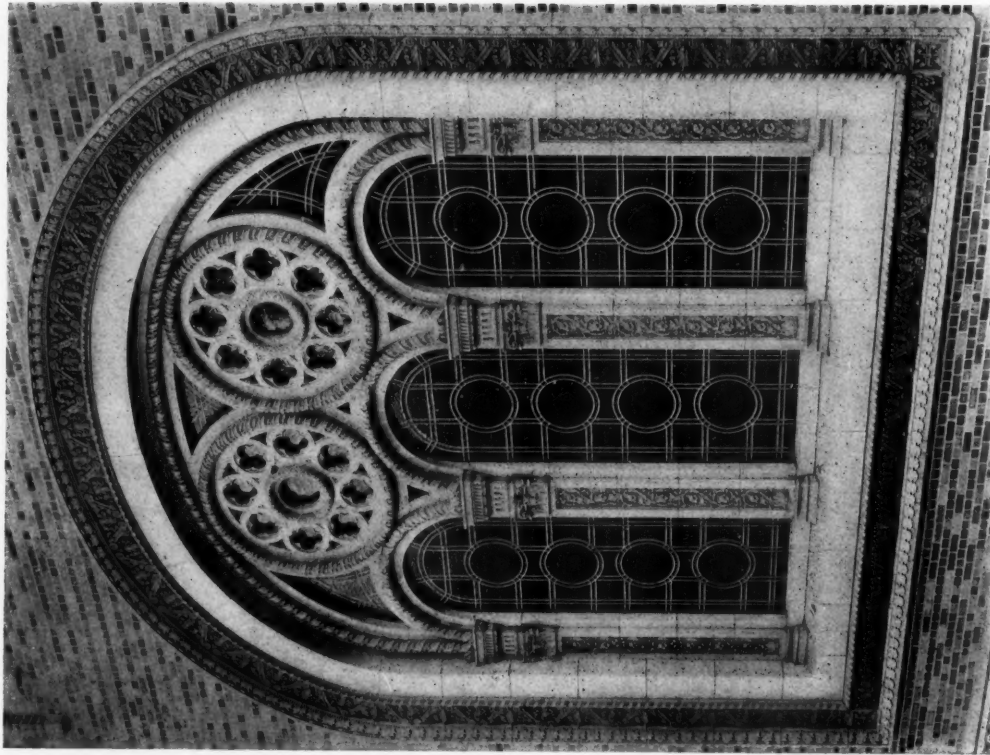


ONE OF FOUR ENTRANCES

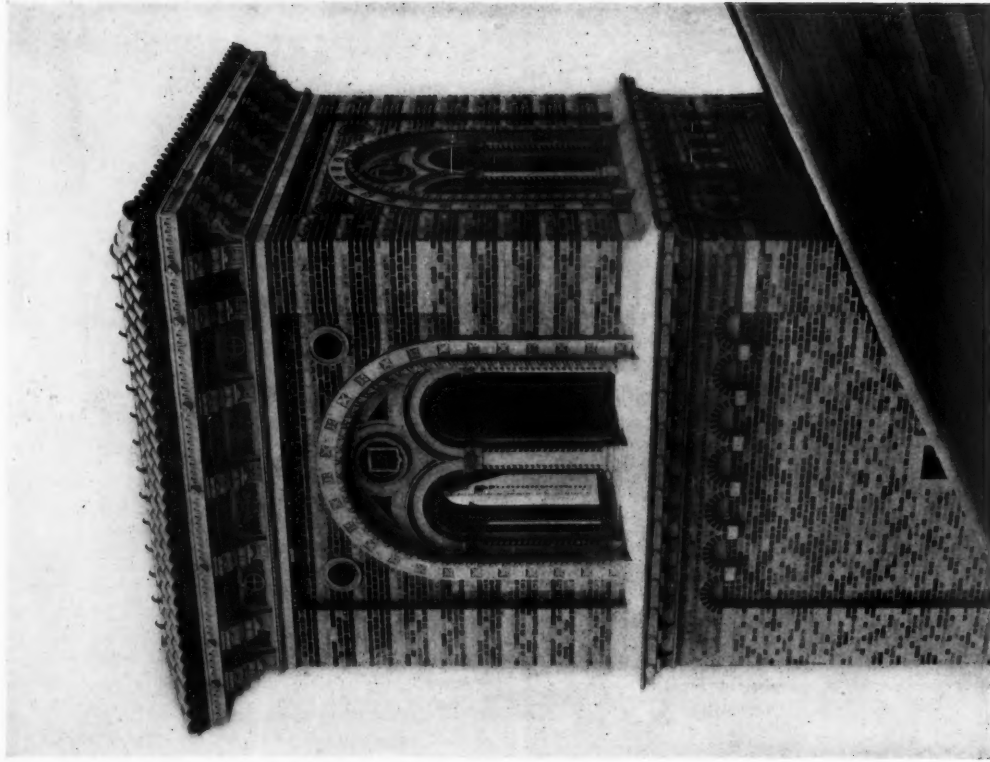
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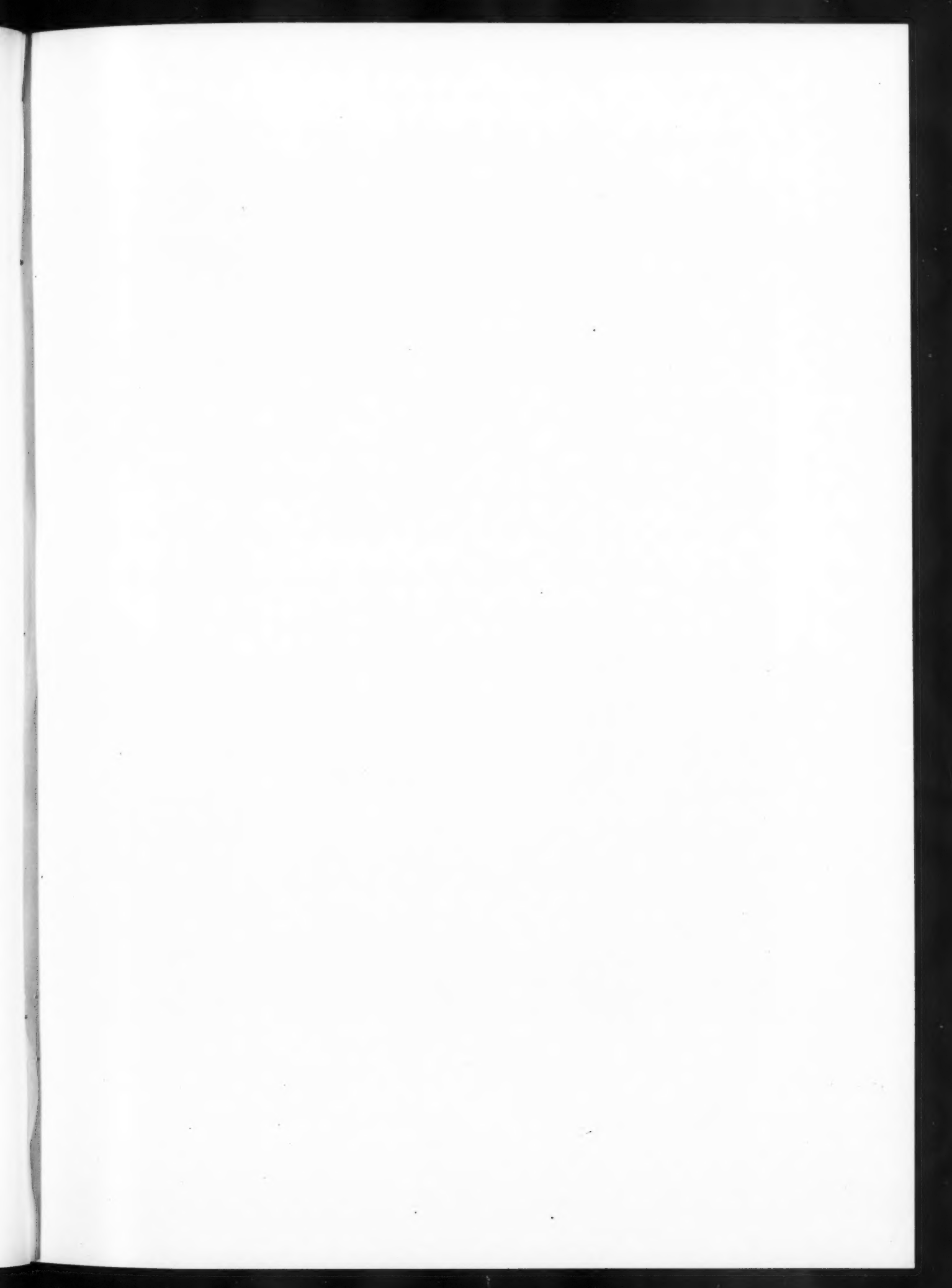
WINDOW IN AUDITORIUM



DETAIL OF TOWER

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LOOKING TOWARDS ENTRANCE

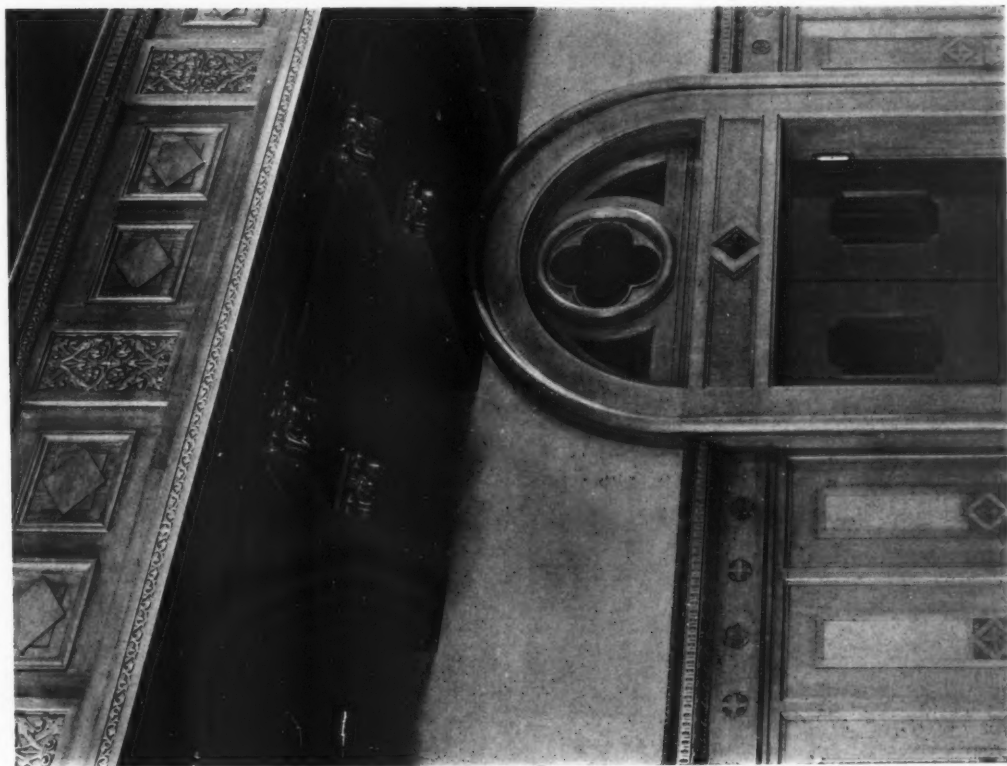


MAIN VESTIBULE

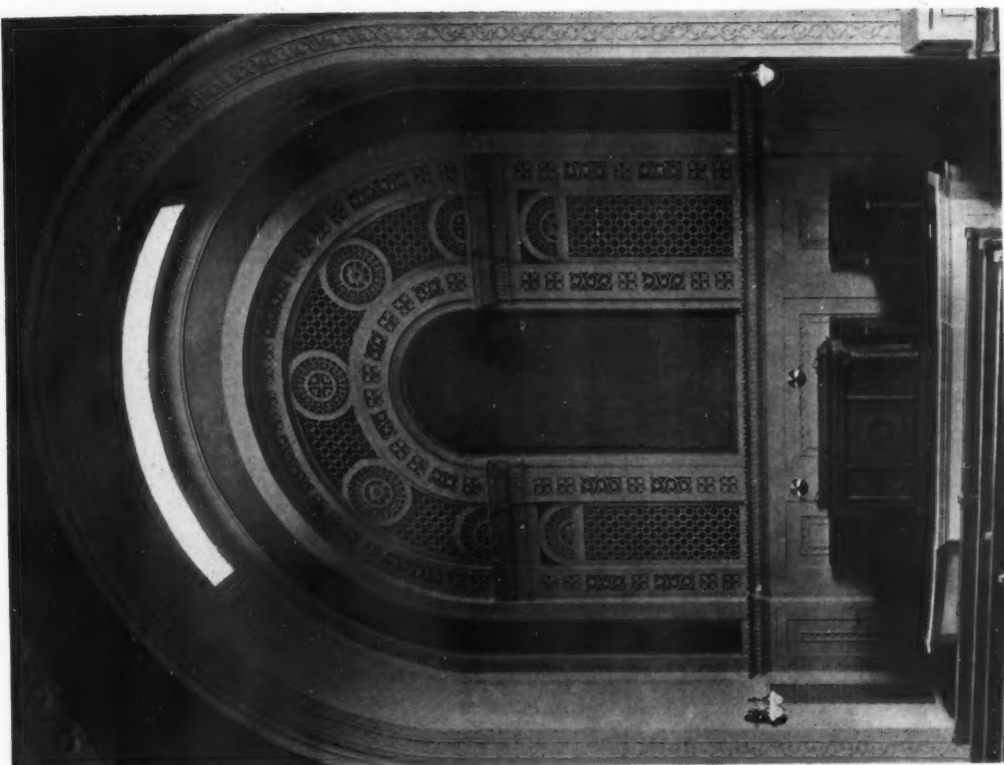
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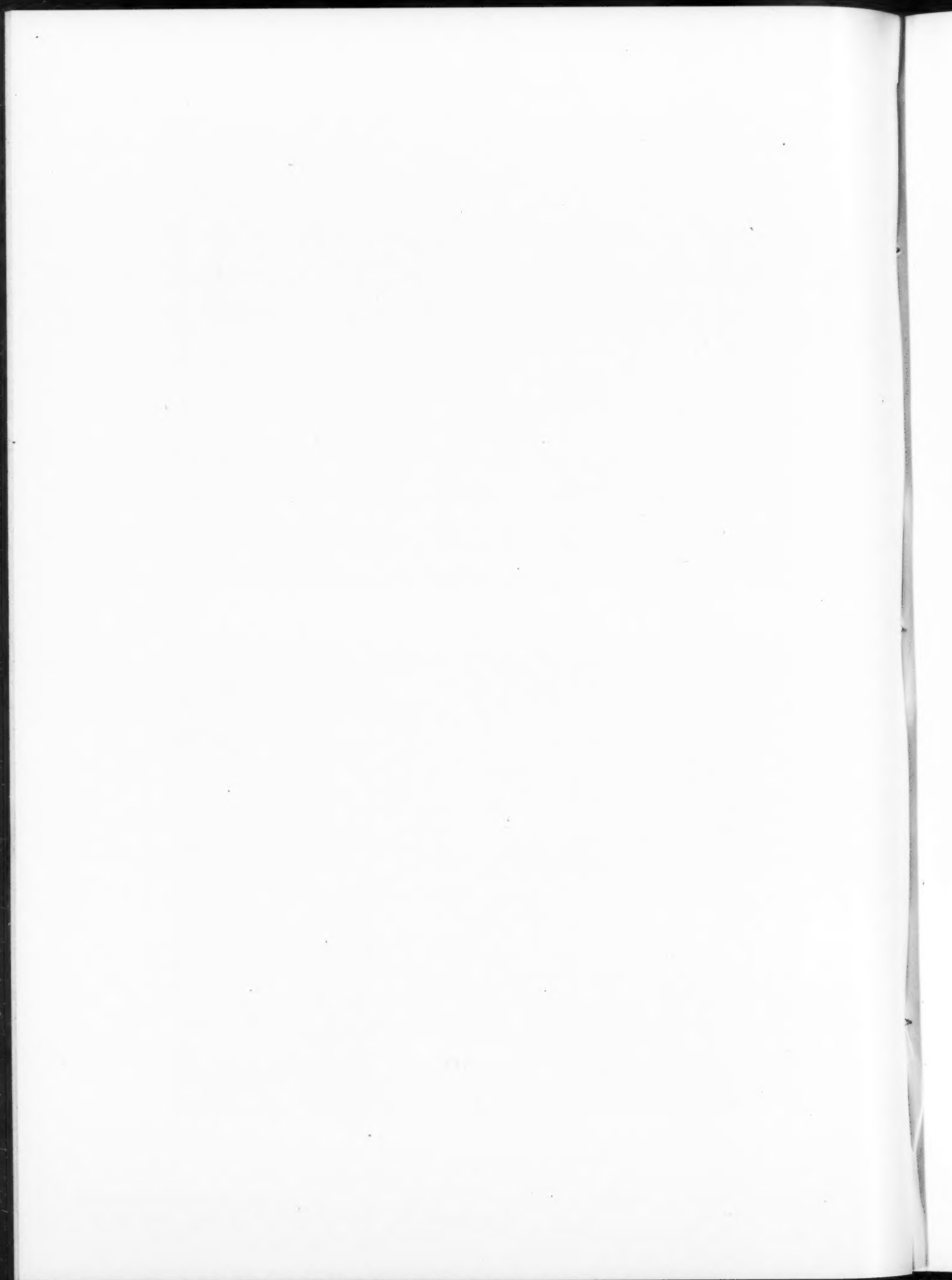
GALLERY PROJECTION AND WALL

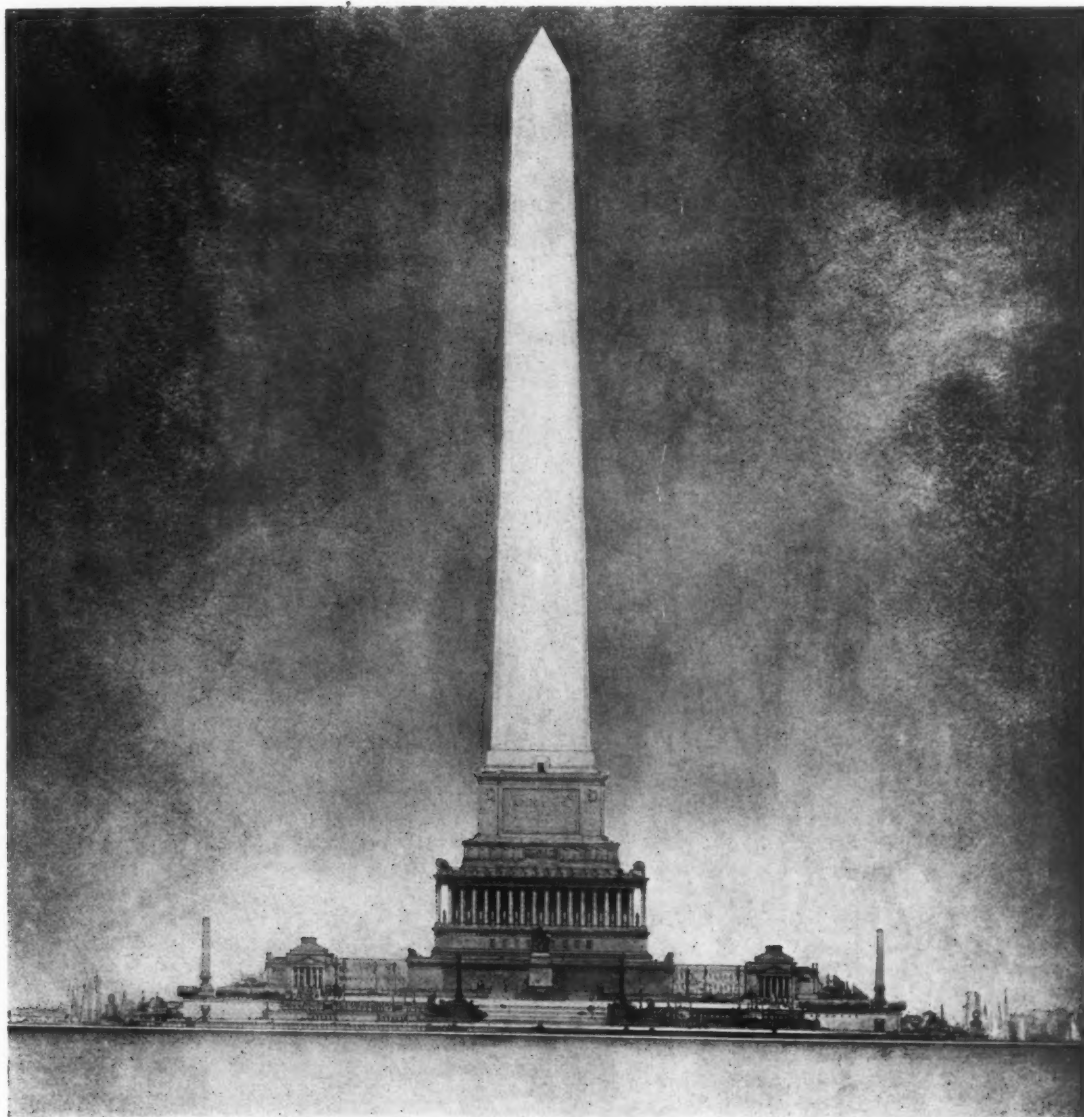


ORGAN SCREEN

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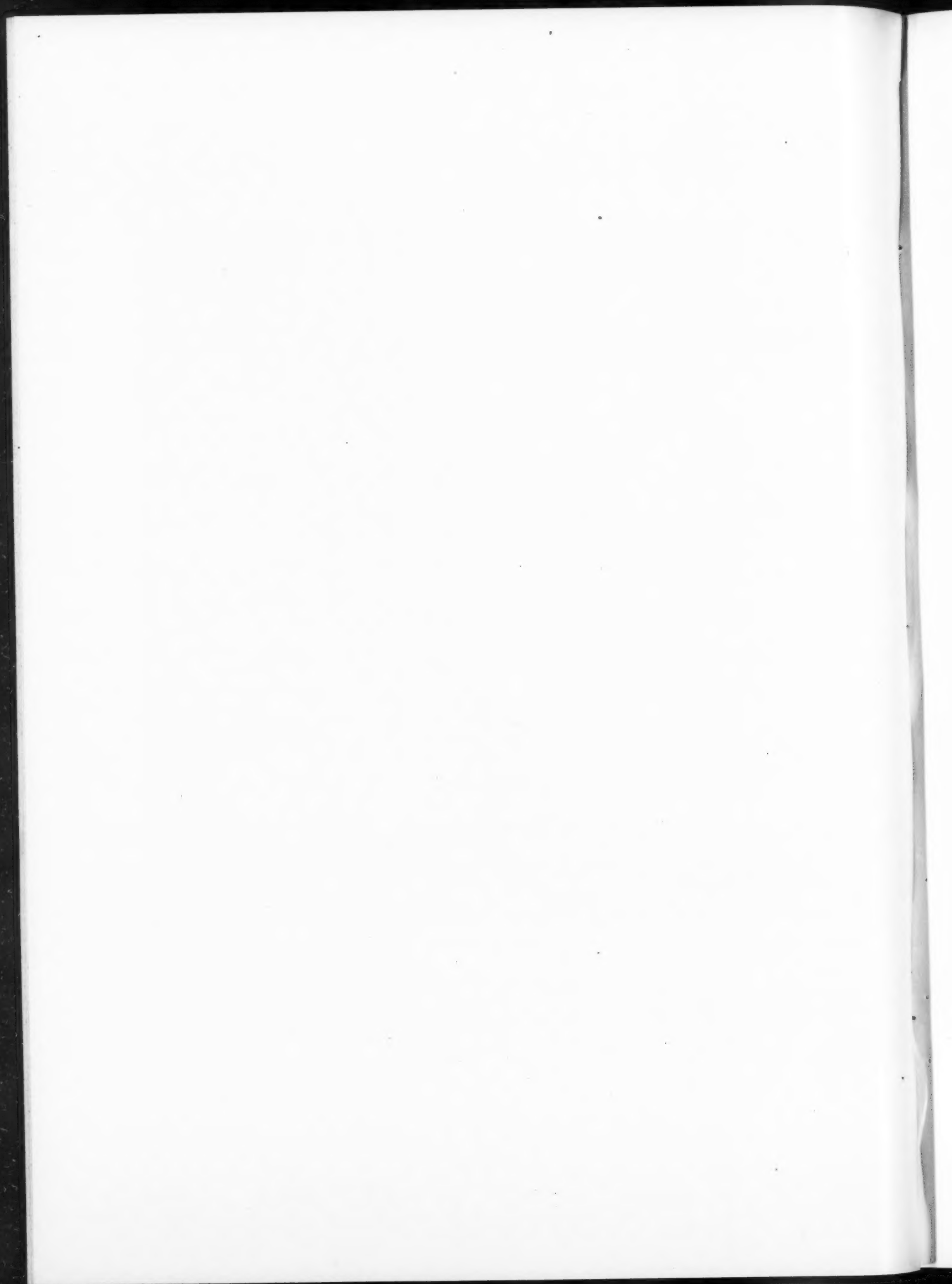
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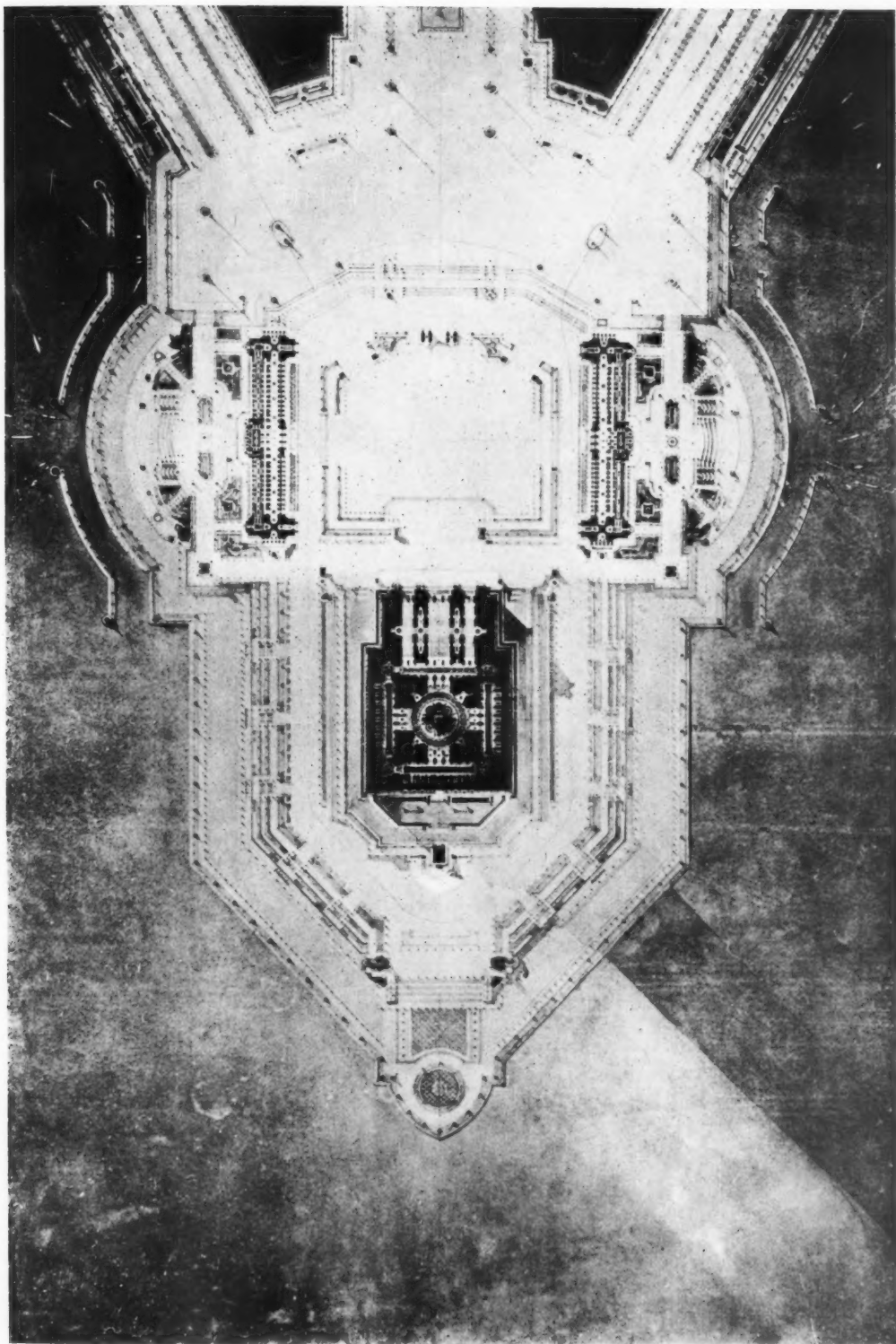
GRANT MILES SIMON

PHILADELPHIA ATELIER, U. OF PENN.

STUDENT WORK—SOCIETY OF BEAUX-ARTS ARCHITECTS

THE PARIS PRIZE COMPETITION





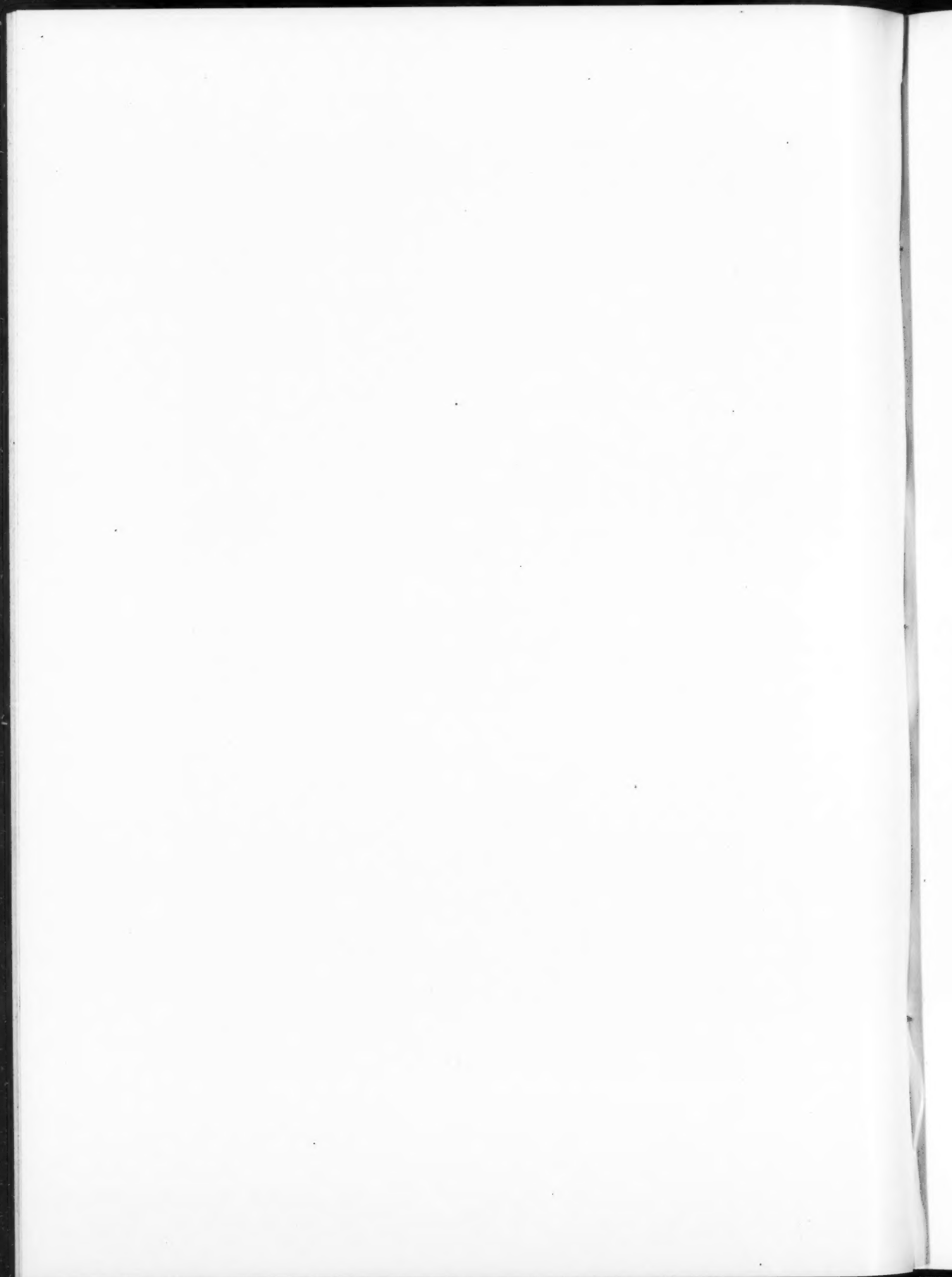
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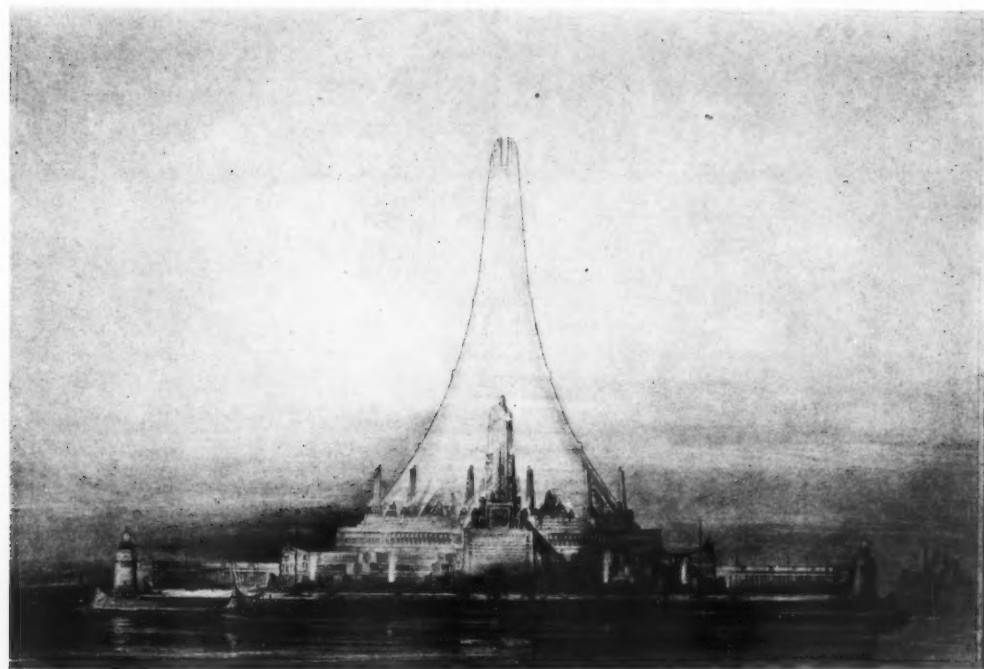
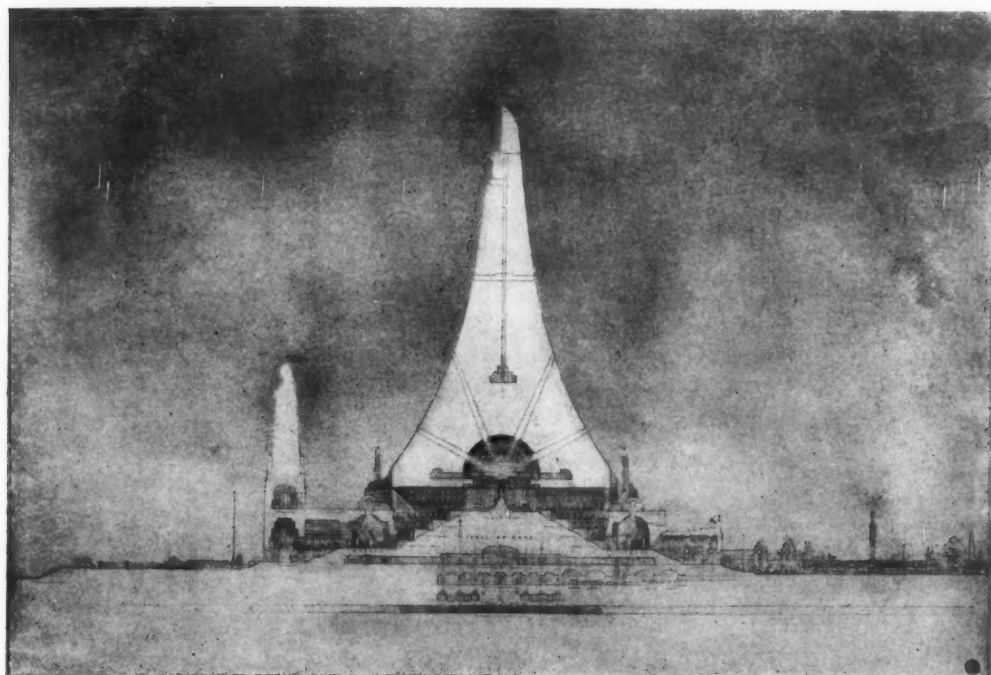
GRANT MILES SIMON

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STUDENT WORK—SOCIETY OF BEAUX-ARTS ARCHITECTS

THE PARIS PRIZE COMPETITION





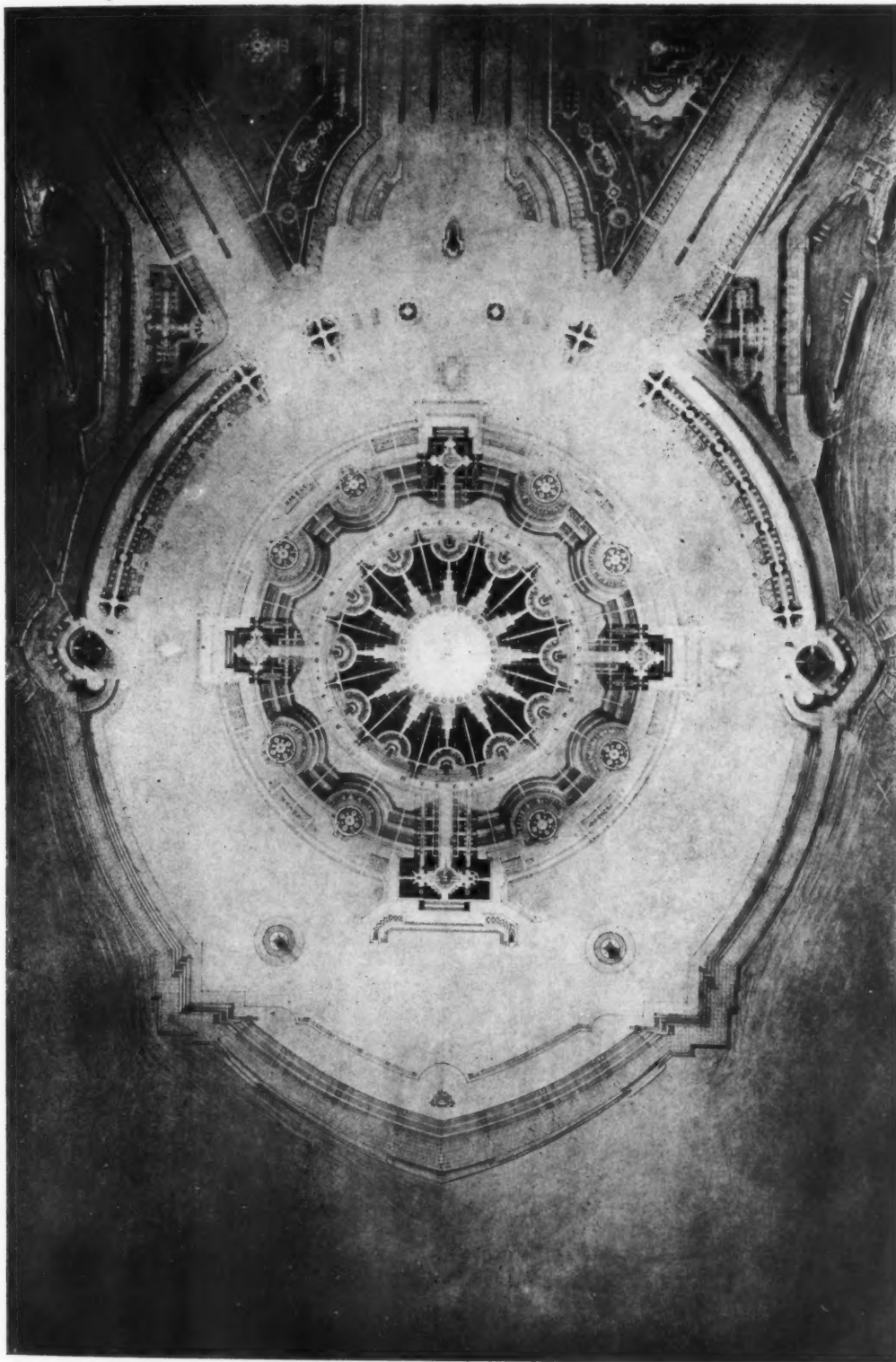
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B. HOYT

ATELIER WARE-WAGNER

STUDENT WORK—SOCIETY OF BEAUX-ARTS ARCHITECTS

THE PARIS PRIZE COMPETITION



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B. HOYT

ATELIER WARE-WAGNER

STUDENT WORK—SOCIETY OF BEAUX-ARTS ARCHITECTS

THE PARIS PRIZE COMPETITION

SOCIETY OF BEAUX ARTS ARCHITECTS

FINAL COMPETITION
FOR THE TENTH PARIS PRIZE

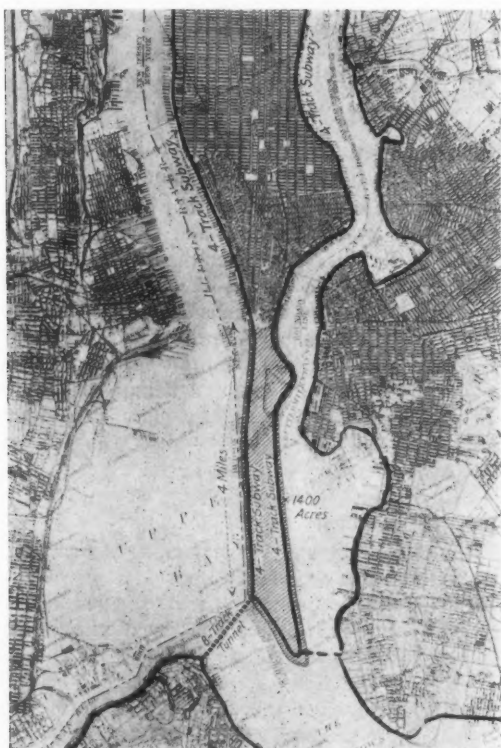
SOCIETY OF BEAUX-ARTS ARCHITECTS

THE MONUMENTAL TREATMENT OF THE LOWER END OF MANHATTAN ISLAND

PROGRAMME BY JOHN WYNKOOP

The Tenth Paris Prize is the Gift of Mr. and Mrs. William Emerson

As suggested by T. Kennard Thomson, Esq., whose plan is hereto appended, it is proposed to extend Manhattan Island southward along natural rock ledges by means of an enclosing concrete wall



PROPOSED EXTENSION OF LOWER END OF MANHATTAN ISLAND

and earth fill obtained from dredging the Upper Bay. New York City will in this way have added to its most congested section a strip of land approximately four miles long and one-half mile in width. This extension of the island will have wide boulevards in two levels along the water fronts and its central axis will be developed as a broad parkway

along which will be placed civic monuments and administrative buildings. The water front in general will be given over to dockage facilities.

Coincident with and in commemoration of its extension of Manhattan Island, its achievement of international commercial supremacy and its surpassing in population all the cities of the world, New York proposes to erect, at the southern extremity of this extension, a monumental group of buildings terminating the commercial and industrial development. This treatment will afford the setting for a commemorative monument or building.

The plot of ground upon which the subject of this competition is placed, being constructed and not natural, may even though otherwise indicated on the appended map, take any desired form; its area however is limited to one million five hundred thousand (1,500,000) square feet and is limited in that where the plot adjoins the island, the water fronts of the island must symmetrically diverge at an angle of 60 deg. from a line perpendicular to the axis of the extreme lower portion of the island. No dimension of the plot may exceed one thousand eight hundred (1800) feet. The plot will be approached by the three parkways or boulevards mentioned above and will have a general level of twenty (20) feet above the mean high-water level of the bay in order to allow for the double streets along the water fronts of the island extension.

In general this program demands that the end of Manhattan Island be treated in a monumental way on an immense decorative scale. The Competitor must bear in mind that his composition should be considered in relation to the irregular sky-line of tall buildings behind as one enters the Harbor as well as from other points of view.

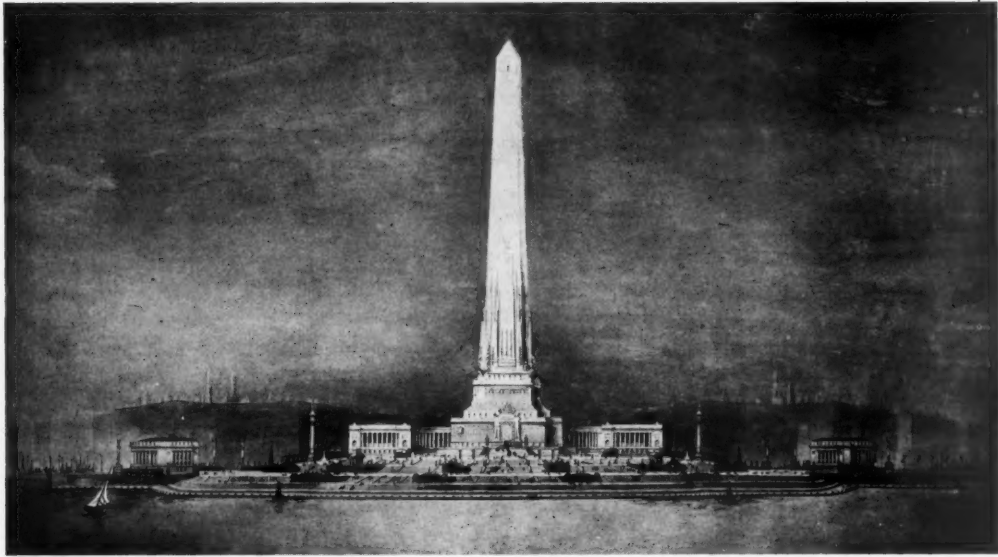
REQUIRED:—

I. A Commemorative Monument combining architecture and sculpture and a Hall of Fame may be placed the names or statues of famous Americans. These two elements may be separate or combined as a single building, treated with large open colonnades, porticos, triumphal motives, shafts, pylons, etc.

II. As secondary to the Monument and Hall of Fame there should be a Museum or Museums for the exhibition of articles of historical, commercial and industrial interest in as many stories as desired within reason. In connection with the above there should be a library, one or more large lecture rooms and a few class rooms.

III. The upper level of the entire plot is restricted to park treatment and facilities for pedes-

THE AMERICAN ARCHITECT



PLACED THIRD

THOMAS J. RAGUERE

CARNEGIE INSTITUTE

trians only. The lower level will be so arranged as to give access from vehicles, street cars and subways to any desired part of the plot and may not be indicated on this project. The park designed along very formal lines should contain one or more harbors for small boats, launches, etc., a naval reviewing stand facing due south, refreshment pavilions, band stands, subway entrances, etc., etc., to and from all of which there should be ample circulation for large crowds.

"THE MONUMENTAL TREATMENT OF THE END OF MANHATTAN ISLAND"

The final competition for the 10th Paris prize which is donated by Mr. and Mrs. William Emerson was judged on Tuesday, July 15, the jury being composed of the following members of the S. B. A. A.: W. Emerson, W. P. Blagden, J. C. Levi, W. D. Blair, W. L. Bottomley, Lloyd Warren, H. B. Price, C. M. Gay, A. C. Nash, L. A. Oliver, W. A. Delano, C. Ewing, F. C. Hirons, H. Tallant, J. Oakman, J. Wynkoop, Whitney Warren and A. W. Lord.

The programme, perhaps the most interesting yet written for the Paris Prize, concerned the monumental treatment of the end of Manhattan Island, supposing that island to have been extended by means of concrete retaining walls and fill some four and one-half ($4\frac{1}{2}$) miles southward into the bay, as is shown on the accompanying map. It called for: 1st, a commemorative monument and a hall of fame (separate or combined); 2nd, one or more museums; 3rd, a park surrounding this

monumental group of buildings with one or more harbors and a naval reviewing stand.

Of the five drawings submitted in this final competition the two placed first and second were considered by the jury far better than the other three; consequently the debate for the prize very rapidly narrowed itself down to a consideration of these two projects. The drawing placed third had very serious defects in plan, perhaps the most serious of which was a complete lack of monumental approach to the main monument from the city side. The fourth failed badly in elevation principally through a complete absence of sense of scale, and the fifth was apparently much handicapped by lack of time for proper development.

The prize drawing, while lacking somewhat in imagination and originality, showed a very logical and well developed solution of the problem in plan, a good appreciation of scale in elevation and much skill in draughtsmanship and rendering in all of the drawings. The hall of fame and the memorial monument combined in one structure formed the head of the plan, with no other buildings between it and the lower bay. On the city side of this monument an ample fore-court, flanked on either side by the museums, opened into a large public square which received the three main boulevards from the city. This general scheme not only gave an excellent composition but a splendid approach from the city to the group of monumental buildings, combined with the best possible view of the main monument from the lower bay. The elevation was treated in a simple and dignified if somewhat unimaginative spirit. The project as a whole gave a

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direct and convincing answer to the programme, a scheme that would build well.

The second prize was from many points of view the most interesting of all the drawings. The plan, simple and logical in disposition and composition, caused considerable unfavorable comment with its fanciful mosaic and tricky indication of walls, an indication which seemed to mean but little from the construction point of view. The main feature of interest and excellence in this projet was its great imaginative quality, as shown in the elevation. Explaining his conception by a quotation from Zangwill, "New York the crucible, where the great alchemist melts and fuses with his purging flames the Celt, Saxon, Slav and Teuton, Latin, Greek, Syrian and Jew, into a new race, rising Phoenix-like from the fire. Peace, peace to all ye unborn millions, destined to fill this great continent where all races and nations come to labor and look forward; here shall they all unite to build the great Republic of Man," the author of this design endeavored to put this idea into architectural form. It was a most daring conception, showing much thought, feeling and artistic ability, and excellently carried out from the point of view of draughtsmanship. The jury after much debate decided that while in certain respects it was distinctly first, its composition in plan was inferior to that of the first prize, its character in elevation funereal rather than triumphant, and many of its architectural forms dis-

pleasing. It would not build well and was not as good or direct an answer to the programme as its more sober and less imaginative competitor.

The jury wishes to express its satisfaction with the competition as a whole and to wish God-speed to the winner.

JAMES OTIS POST,
Chairman, The Annual Committee on Paris Prize.

JUDGMENT OF JULY 15, 1913, 1:30 P. M.

FINAL PARIS PRIZE COMPETITION

"THE MONUMENTAL TREATMENT OF THE END OF
MANHATTAN ISLAND"

Author	Award	Atelier	City
Simon, G. M....	Winner.	Phila. Atelier-U. of P.	Phila.
Hoyt, B.....	Placed 2nd.	Ware-Wagner.....	N. Y.
Raguere, T. J....	Placed 3rd.	Carnegie Inst. of Tech.	Pitts.
Moscowitz, J....	Placed 4th.	Bosworth.....	N. Y.
Frank, A. C....	Placed 5th.	Licht.....	N. Y.

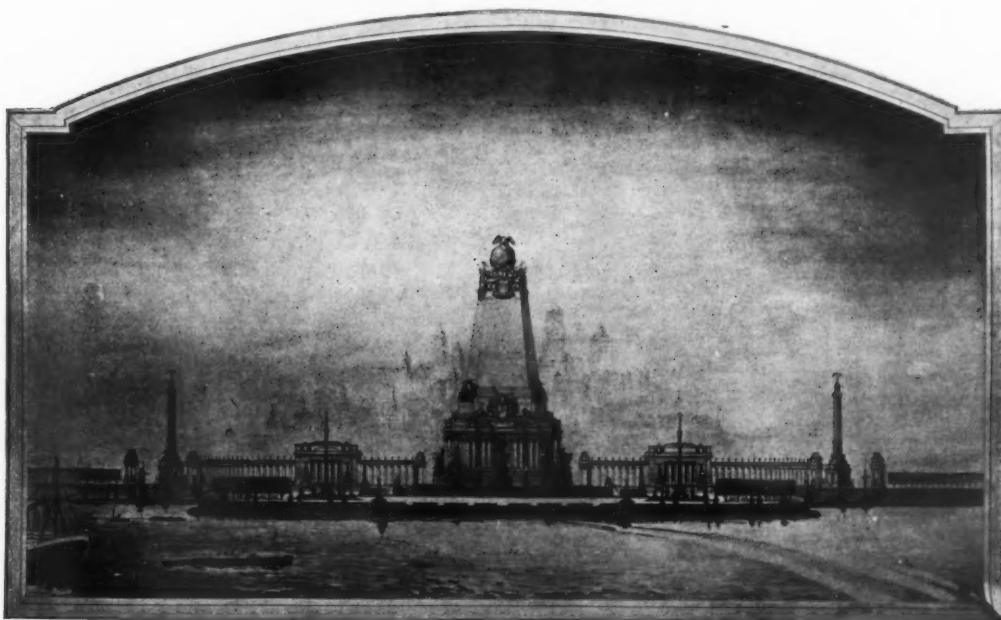
BACON PRIZE COMPETITION

Offered for the greatest number of values obtained in Class "A" by any student in good standing during the current season—August to July, inclusive.

First Prize—\$100. Second Prize—\$60. Third prize—\$40.

The prize is the gift of the Honorable Robert Bacon, former United States Ambassador to France.

Author	Values	Award	Atelier	City
Stedman, C. W....	12	1st Prize	Un. of Pa.-Sch. of Archt.	Phila.
Wilson, J. V....	12	1st Prize	Carnegie Inst. of Tech.	Pitts.
Barney, W. P....	10½	3rd Prize	Un. of Pa.-Sch. of Archt.	Phila.



PLACED FOURTH

J. MOSCOWITZ

ATELIER BOSWORTH

THE AMERICAN ARCHITECT

NEW BUILDING CODE FOR NEW YORK CITY

The proposed new building code for New York City, prepared by an advisory committee of the Committee on Buildings, was presented to the Board of Aldermen at a stated meeting held July 15th.

Considering the revolutionary changes in construction methods adopted during recent times, the present code, which became effective about fifteen years ago, is hopelessly antiquated and inadequate in its provisions. For that reason much of the recent work in the city to-day probably represents to a considerable extent the different opinions of the several building superintendents who have held office since 1898, each of whom has made his own rules in matters not provided for in the code.

The proposed new code, in the language of Section 2, is "to be construed liberally, to secure the beneficial interests and purposes thereof." An important improvement over the present code intended to prevent discrimination on the part of building superintendents is provided in Section 2, which, in part, reads further:

"Each Superintendent in exercising the powers to vary the provisions of this Code or Ordinance, as provided in the Greater New York Charter, shall proceed in the manner therein set forth. All such modifications and all variations, including the application with reasons for same, and the Superintendent's decision, with reasons, shall be published in full in the *City Record* within two weeks after the Superintendent's action, and may be cited as precedents.

"A record of all such variations and modifications shall be kept in the Bureau of Buildings, and shall be properly indexed under section numbers of the Code or Ordinance, to which each modification applies, and shall be open to public inspection during business hours."

The code now in force makes no restriction as to change in the manner of occupancy of a building. Section 10 of the proposed new code provides, in part:

"No change in the manner of occupancy shall hereafter be made in any building or structure, or portion or part thereof tending to increase the number of persons to be accommodated therein until there shall have been issued by the Superintendent a Certificate of Occupancy covering such new use or manner of occupancy, nor shall the manner of occupancy nor the purpose for which any building or structure or portion thereof is used to be hereafter changed, except in conformity with the requirements of the Code and the rules and regulations adopted under the authority of this Code."

Section 11 provides that Public Buildings in Class A, including hospitals, schools, theatres, etc., hereafter erected shall be of fireproof construction, and

that public buildings in Class B, including churches, amusement halls and other public buildings not included in Class A, if over thirty-six feet and six inches in height, shall be of fireproof construction. Special provisions are made for church spires and for grandstands.

The tenement house is given increased protection by a provision that "portions of the first floor of buildings hereafter erected, except frame buildings occupied for stores or other business purposes, shall be enclosed in fireproof partitions, and that portion of the ground floor above the stores on other spaces occupied for business purposes shall be of fireproof construction."

Factory and other buildings in Class E, if over 40 feet in height, are to be of fireproof construction. The code now in force does not require fireproof construction unless the building is over 70 feet in height. The proposed new code further provides that "if under 40 feet in height, the first floor of every building of this class shall be of fireproof construction."

"The number and widths of stairways required," reads a portion of Section 19, "shall be determined upon the number of persons occupying the floor area of any building above the first floor." The present code bases the stairway requirements upon the floor area irrespective of the number of persons occupying the floor.

A measure in the interests of economy in construction is the reduction of the minimum live load for the upper floors of tenement houses and dwellings from 60 pounds per square foot, as at present provided, to 40 pounds per square foot.

Public hearings on the proposed new code will be held beginning July 29. These will allow opportunity for the discussion of possible changes in its provisions, and it is hoped that architects having at heart the best interests of the profession will be in attendance.

A CORRECTION

In the June 25th issue of *The American Architect*, in which was illustrated the Judgment of June 10th, Society of Beaux Arts Architects, the reproduction of work by Mr. A. C. Holden and Mr. R. C. Wilcox, both of Columbia University, was credited with "Mention." This should have read "Mention placed."

THE PANTHEON AT ROME

Panel at side of the entrance

THIS plate illustrates one of the bas-relief panels at the side of the entrance, each of which is of a single slab of marble six feet three inches in length and two feet ten inches in height. The festoons are exceedingly graceful and are composed of fruit and flowers well arranged and executed. It is to be noted that grapes are relieved by grape leaves, the pomegranates by pomegranate leaves, the olives by olive leaves, etc., thus avoiding confusion and at the same time producing a beautiful and pleasing effect. The festoons are attached by means of ribbons to candelabra which, while appearing to be exactly alike, are in some of their minor details quite dissimilar. Over the centre of the festoons the panels contain various ornaments, the one in this panel being the lituus, or augural staff which was symbolic of the office of pontifex maximus.

THE AMERICAN ARCHITECT



PANEL AT SIDE OF ENTRANCE

PANTHEON, ROME, ITALY

(For description, see preceding page)