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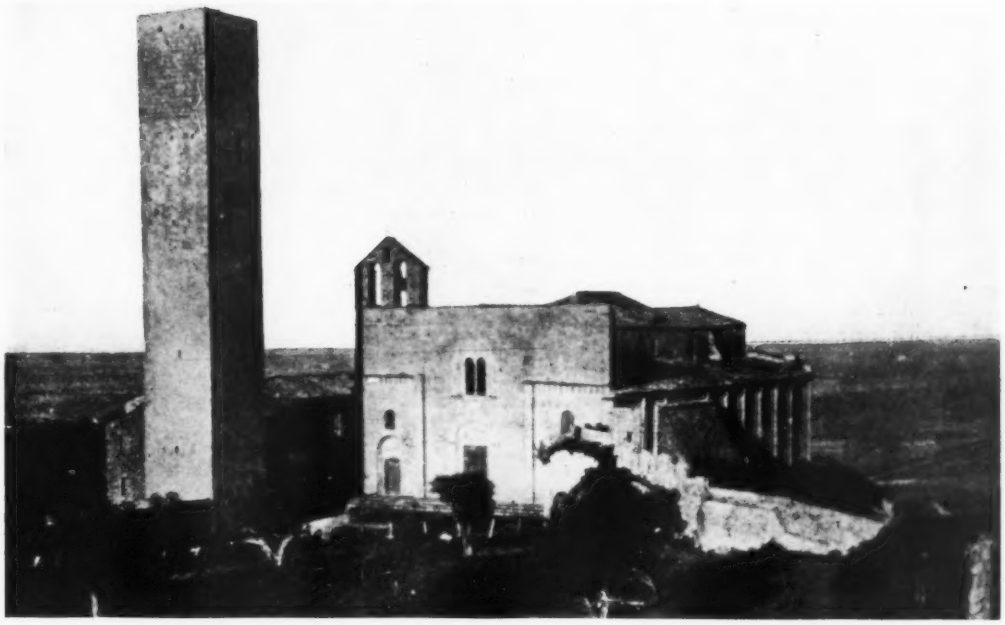


S. MARIA DI CASTELLO, CORNETO TARQUINIA

Lombard Architecture*

BY WILLIAM H. GOODYEAR, M.A.

Honorary Member of the Architectural Associations of Rome and Edinburgh; of the Royal Academies of Fine Arts of Venice and Milan; of the Society of Architects, London; of the Royal Institute of the Architects of Ireland; and Corresponding Member of the American Institute of Architects.

TO judge by the very considerable number of historical architectural summaries and compendiums which have appeared during the last few years, one would be tempted to presume that the general course of evolution in medieval church architecture is a well understood and definitely grounded subject, that controversies about it are only possible in details, and that the most essential outlines of the topic are accepted by all scholars. Generally speaking, it is only the specialist who knows the contrary, who knows that most essential and important facts are still in debate, that the differences of opinion as to these facts are sharply defined and vigorously defended by their respective partisans, and that their controversies are still being waged with unrelenting vigor.

From the impersonal tone and quiet assurance of

*By Arthur Kingsley Porter.
Volume I. 483 pages, Structure, Ornament, Accessory Arts, Iconography.
Volume II. 675 pages, Monuments: Abbazia di Albino-Milan.
Volume III. 611 pages, Monuments; Mizzole-Voltorre.
Volume IV. Atlas, containing over 1200 illustrations. Imperial octavo. Buckram. Boxed. $50.00 delivered. (Vol. IV may be had separately; price $15.00.) Yale University Press

Mr. Porter's latest and monumental work one would hardly gather that he had thrown a bombshell into a hostile camp of architectural historians, and that he had finally and definitely settled the most serious controversy of the last and the present century as to the history of medieval architecture. To argue without argument, to settle a controversy without mentioning that it exists, to triumph without exaltation, to revolutionize architectural history without saying so, and without even saying that the attempt has been made, is a remarkable merit. The subtlety of this method makes the task of a reviewer difficult. At least it obliges one to say some things that Mr. Porter has not said; for subtlety is not the mission or the method of a reviewer. Otherwise the greatest merit of an author might become the greatest weakness of his appreciative critic.

Where and how did Gothic architecture originate? The pontiffs of this subject say that it originated in the Ile-de-France. This is not only where the pontiffs live, which gives them great self-assurance, but it is also indubitably the territory in which, or near which, Gothic celebrated its earliest and greatest triumphs. To revere a pontiff is human; to adopt his opinion is easy; to write a book which does not mention that there are certain rebellious fallen angels (from the point of view of the pontiffs) who have held different opinions is a highly respectable and safe procedure. These fallen angels (in the opinion of the pontiffs) are those who hold that Lombard Romanesque is the basis, the foundation, and the point of departure of the Gothic, and that its influence penetrated the Ile-de-France partly through the Romanesque of Normandy and partly through the Romanesque churches of southern France.

Mr. Porter is not the originator of this theory. It is the theory of a school of architectural authorities best known to general knowledge through the reputation of Rivoira, and most actively represented in recent years by his great work published in 1901 in Italian on "Lombardic Architecture: Its Origin, Development and Derivatives."*

Rivoira's thesis is not limited to the origins of Gothic. His point of view looks first to the exaltation of the influence of ancient Rome, as found in its then surviving monuments, ruins or traditions, on the early Italian medieval churches. This point of view differs from the more usual one which considers the early Italian medieval churches to have been dominated by East Roman and Byzantine influence. Rivoira insists, for instance, that many important features of the Byzantine style were anticipated in the churches of Ravenna before they appeared in Constantinople, which, therefore, must have borrowed them. His book is ultimately devoted to the architectural precedence of Lombardy as compared with the medieval architecture of northern Europe, and to the resulting Lombard influence on that architecture. As regards the development of Gothic architecture, which is universally conceded to be a French style founded on the use of the ribbed vault, Rivoira has announced that the ribbed vault was used in the Lombard Romanesque at such early dates in certain special instances as to establish a distinct priority as against the French employment of the system. The conclusion is then rather drawn than proven that France borrowed its Gothic ribbed vaulting system from Italy.

S. NAZARO, SANNAZARO SESIA (NOVARA)

Northern Side Aisle of Ancient Narthex. The Following Detail Is from the South Side, Eastern Bay.

PHOTO. BY A. K. P.

*Translated into English by Rushforth; London, William Heinemann; New York, William Helburn; 1910.

The reception of this thesis by the French specialists in Gothic architecture has been one of polite and unqualified dissent, and it goes without saying that this unqualified dissent cannot be ignored or lightly considered. Moreover, Venturi, the leading Italian authority on the history of Italian art, whose third volume appeared in 1904, holds it to be a matter of course that the ribbed vault appeared first in France, and mentions the fact as though it were a matter beyond debate, in the following passage relating to S. Ambrogio at Milan: "Yet the rib vault was not, *as has been claimed*, of a character eminently Lombard, since in the north of France it was used earlier than in Italy and in a form more complete, more organic and general."

S. NAZARO, SANNAZARO SESIA (NOVARA)

Remains of Rib Vault Dating 1040; the Earliest Authentically Dated Rib Vault in Europe. The Earliest Rib Vaulted Nave of the Ile-de-France in St. Étienne at Beauvais dates 1125.

PHOTO. BY A. K. P.

The special weakness of Rivoira's claims regarding the rib vault, which have never been widely accepted, appears to me to lie in the point that only four examples of precedence are quoted, and that two of these are outside of Lombardy and in parts of Italy which could not themselves have been either the centers of an architectural discovery or the centers of a radiating influence. These two churches are the Norman Cathedral of Aversa in Southern Italy (about twelve miles from Naples) and the church of S. Flaviano at Montefiascone in Central Italy. His third instance is indeed Lombard, the church of Rivolta d'Adda in the Milanese, but this church and also his fourth instance, S. Ambrogio at Milan, are according to his own dating so close to the end of the XI century as to be practically synchronistic with various dates claimed by other authors for ribbed vaulting in northern Europe. Moreover, Rivoira's dating at Montefiascone and at Aversa was open to doubt and to debate. If his dating were correct the rib vault at Montefiascone would have been, in 1032, much the earliest in Europe, but Mr. Porter's researches have shown that the inscription on the façade of S. Flaviano on which Rivoira relied had been transferred there from an earlier church, and that the rib vaulting of the given edifice was a whole century later (1130). Rivoira's dating for the rib vault in the ambulatory at Aversa to 1049-1078 is also corrected to the XII century (1134-1160) by Mr. Porter. These corrections are purely incidental in Mr. Porter's work which fixes the dating of several hundred churches and of every monument discussed, without laying special stress on any one dating, but they suffice to show that the great Italian authority had, in this instance, rested a correct theory on insufficient evidence and on assumed but really non-existent facts. These instances may therefore serve to explain the scepticism which greeted his publication.

Rivoira's views as to the priority of the ribbed vault in Lombardy, and as to its influence on France, have been verified in Mr. Porter's new work by evidence of a more convincing character than had been furnished by his illustrious predecessor. The conclusive character of this new evidence will be mentioned later on, but it may be said here that the earliest known rib vault has been definitely dated to 1040 at Sannazaro Sesia in Lombardy in a church practically discovered and published for the first time by Mr. Porter. This date precedes the earliest *claim* for the dating of any rib vault in northern Europe by about forty to fifty years. What is still more to the point is that such a series of monuments of slightly later and sequent dates, and connected by

S. PANCRAZIO, CORNETO TARQUINIA

Sexpartite Vault Dating 1160, About Thirty Years Before the Earliest Sexpartite Vault in the Ile-de-France.
PHOTOGRAPHED BY A. K. P.

S. MARIA DI CASTELLO, CORNETO TARQUINIA (CENTRAL ITALY)

Rib Vaulted Nave of Fully Developed Style, Derived from Lombardy and Dating 1121. The Earliest Rib Vaulted Nave in the Ile-de-France, that of S. Étienne at Beauvais, Dates 1125.

such orderly evolution, has now been discovered as to determine beyond debate the precedence of Lombardy in the use of the rib vault *and also the derivation of the French rib vaulting from this source.*

The first step in placing the importance of Mr. Porter's new book is to understand the serious controversy to which it relates (but which is not mentioned by it), and this is now probably clear. The second step is to consider Mr. Porter's own contribution to this controversy which preceded his present book. This is a small book of only twenty-nine pages and sixty-three photographic illustrations, mostly taken by the author, which appeared in 1911.* Its title was "The Construction of Lombard and Gothic Vaults." Its thesis was that the significance of the ribbed vault in the evolution of Gothic style lay in the fact that it allowed of the construction of a vaulting without solid timber centering by the use of a movable cerce,† *and* that the ribbed vault was originally developed in the Lombard Romanesque *for that reason* and in districts where timber for solid centering was expensive or relatively inaccessible. There was nothing new, and nothing claimed to be new, in the first point of this thesis as regards the significance of rib vaulting in Gothic. The novelty and originality of Mr. Porter's thesis lay in his proof that the rib vault originated in Lombardy as a sheer necessity, without which a Lombard vaulted nave of large dimensions *simply could not have been built.* It will easily be realized that to prove not only that Lombard rib vaulting dated to 1040, but to prove also that the larger Lombard Romanesque vaulted churches *could not have been built without the rib vaulting,* gave a vitality to the theory of Lombard influence on northern Europe which it never had before. A theory apparently suggested by Italian patriotism became a fact based on economic necessity.

S. BASSIANO, LODI VECCHIO (MILANESE)
Eastern Bay of Southern Side Aisle. Rib Vault Dating About 1050.
PHOTO. BY A. K. P.

Mr. Porter's little book made no sensation. It was modest and unpretentious in style and matter, and also in size. The review by Louis Serbat in the *Bulletin Monumental* (1912, pp. 195-200) was as courteous and delicately phrased as only a French review can be. Need I mention that the *Bulletin Monumental* is the organ of the pontiffs? The pontiff in question declined to take Mr. Porter's little book seriously; Mr. Porter was a scholar of Rivoira, all the more so because Rivoira's name was not mentioned in his book. "It is sufficient to verify the fact that Mr. Porter accepts the doctrine and the chronology of his master and that the slightest doubt does not graze his faith."* M. Serbat suggests also that Mr. Porter should undertake "for our instruction and his own an inventory and critical examination of the Italian and Lombard monuments." M. Serbat did not know in 1912 that

*Yale University Press.
†See my review of this book in the AMERICAN ARCHITECT for Feb. 21, 1912.

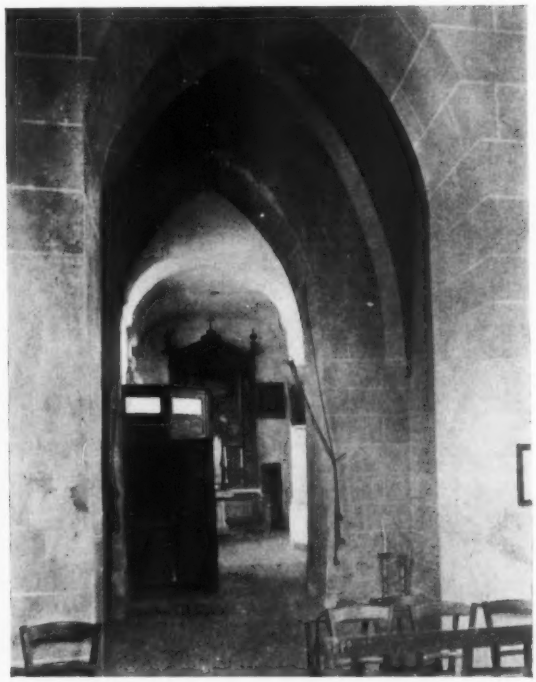
*The reader will compare with this statement my own account above, of Mr. Porter's corrections of Rivoira's dates.

Mr. Porter had been then engaged for several years on just that inventory and critical examination, and this phrase to some extent, but only partially, defines his present book. It is all that and a good deal more.

I come now to my first definite point about Mr. Porter's present book. *He takes for granted the reader's acquaintance* with his "Lombard and Gothic Vaults" and declines, in effect, to rehearse or to bolster up his position there taken. Instead of that he deploys a crushing, incredible and overwhelming mastery of his general subject. He discusses the Lombard monuments to the number of about three hundred and twenty-seven. Many of these are personal discoveries of his own; for his is the first book on the subject since the advent of the automobile. Of the more than twelve hundred illustrations, six hundred and ninety-one are photographs of his own. The plans and sections are new (except a few old drawings relating to destroyed monuments), representing Mr. Porter's own surveys, and they mostly relate to monuments which have never been previously published. The original medieval and later authorities are quoted at length for every monument; the inscriptions are quoted and commented upon in detail, the construction is then described, and the ornament and sculpture are next examined; finally the question of dating is critically examined. Thus the inventory and critical examination recommended by M. Serbat are now ready for his examination. They occupy the second and third volumes.

S. NAZARO, MILAN. CUPOLA
The Nave and Transepts Have Rib Vaulting Which Dates 1075-1093.
PHOTO. BY A. K. P.

In the text of the first volume Mr. Porter has given us his own general conclusions and results, carefully systematized and supported by innumerable references to his other volumes. I shall endeavor in a second part of this review to point out, to the extent of my ability, those results reached by Mr. Porter which can be classified as original research and original contributions to knowledge. Meantime, let us not forget that *this book is unique in its class,* not only the latest and best, but the first attempt ever made to cover the whole field of Lombard Architecture. Hence a review of what has previously been done in this field is not without

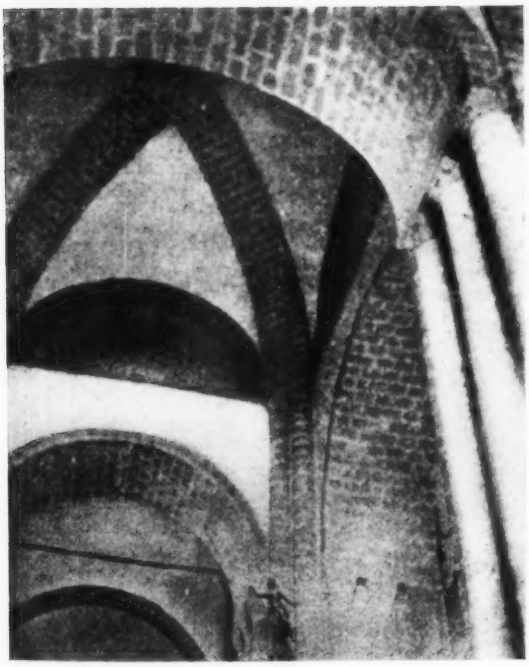


Above

LOMBARD TYPE OF RIB VAULTING WITH HEAVY DIAGONAL RECTANGULAR RIBS

Vault Under Tower at Crouy-sur-Ourcq (Siene et Oise), Dating c. 1100.

From Porter, "Construction of Lombard and Gothic Vaults."



Above, at Left

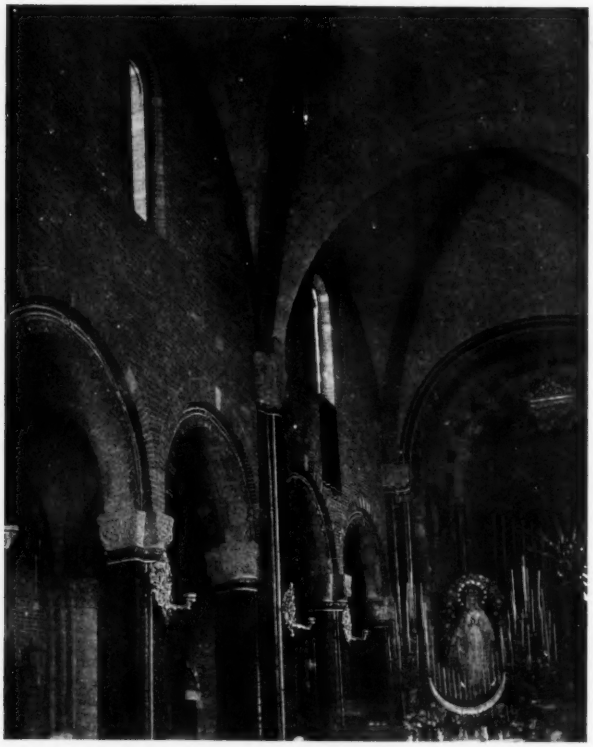
CATHEDRAL, FRÉJUS

Probably the Earliest Rib Vaulted Nave in France, Dating Close of XI Century. The Ribs Are of Stone, But Have the Rectangular Form Peculiar to the Brick Churches of Lombardy, From Which They Were Derived.

At Left

STE. CROIX, QUIMPERLÉ (FINISTERRE)

Stone Vault of Crossing With Lombard Type of Heavy Rectangular Diagonal Ribs, a Form Necessary in Lombard Brick Construction But Not Desirable in Stone. Supposed to Date 1083.



S. SAVINO, PIACENZA
Rib Vaulted Nave, Dating 1107.
PHOTO. BY A. K. P.

interest. The following account is based on the first chapter of Mr. Porter's book.

Although the bibliography of Lombard architecture is a long one, there have been remarkably few attempts at a synthetic analysis of the style. Before the XIX century none at all had been made. The dim and vague impressions with which the earlier antiquarians were fully satisfied seem to have been derived almost entirely from the work of Puricelli upon the monuments of S. Ambrogio at Milan, published in 1645. While this book is one of remarkable erudition, it nevertheless initiated a great misconception destined to lead scholars astray until even our own day. This was the misdating of S. Ambrogio to the IX century, based on a mistaken interpretation of a celebrated inscription, the epitaph of Bishop Ansperto. The earliest attempt worthy of the name to form a synthetic conception of the medieval Italian style was that of Séroux d'Agincourt, who published his History of Art, in six volumes, in 1823. His description of the Romanesque period, it is true, is fundamentally erroneous, and his book is to-day valuable chiefly for tracing the changes which monuments have undergone in the century that has elapsed since its publication. Five years later appeared the work of Cordero who first began the study of Lombard architecture in the modern spirit. To him belongs the glory of having been first to recognize that many edifices which had been believed to date from the VIII and IX centuries were in reality of the XI and XII centuries. This great advance over Séroux d'Agincourt gives him ample claim to forgiveness for many mistakes and lapses of judgment. Moreover, he anticipated Rivoira on holding that Norman architecture was derived from Lombardy.

The contemporary work of the brothers Sacchi of Pavia was based on the fundamental error that many medieval buildings there preserved were the actual edifices of the VII and VIII centuries. The work of the Sacchi is, however, in detail more conscientious and more exhaustive than that of Cordero, and to-day is still of value, especially for determining the condition of buildings in the early part of the XIX century.

For fifty years the weight of critical opinion inclined strongly to favor the thesis of the Sacchi as against that of Cordero. Whatever was written on Lombard architecture at this period was generally based on the assumption that the churches of Pavia dated from the VIII century and S. Ambrogio from the IX century. Little progress was made in the synthetic analysis of the style, although as early as 1856 Clericetti anticipated the two principal theses of Rivoira, i.e., first, that the churches of Ravenna are earlier than the churches of Constantinople and hence prototypes rather than derivatives of the Byzantine monuments, and, secondly, that the Lombard style was introduced into northern Europe through the constructions of S. Guglielmo at Dijon. From 1856 to 1882 was published the great work of De Dartein, illustrating the Lombard monuments by means of a folio volume of text and an atlas in great folio with superbly engraved plates. De Dartein's drawings were, and are, and probably always will be, the *ne plus ultra* of measured drawings. Unfortunately the text of the work is far from being so remarkable as the atlas, and the question of the chronology of Lombard architecture became through its influence only more perplexing and confused.

In 1888, however, appeared the work of Raffaele Cattaneo, one of the most brilliant achievements ever produced in the realm of artistic criticism, and worthy of rank beside the productions of Morelli.

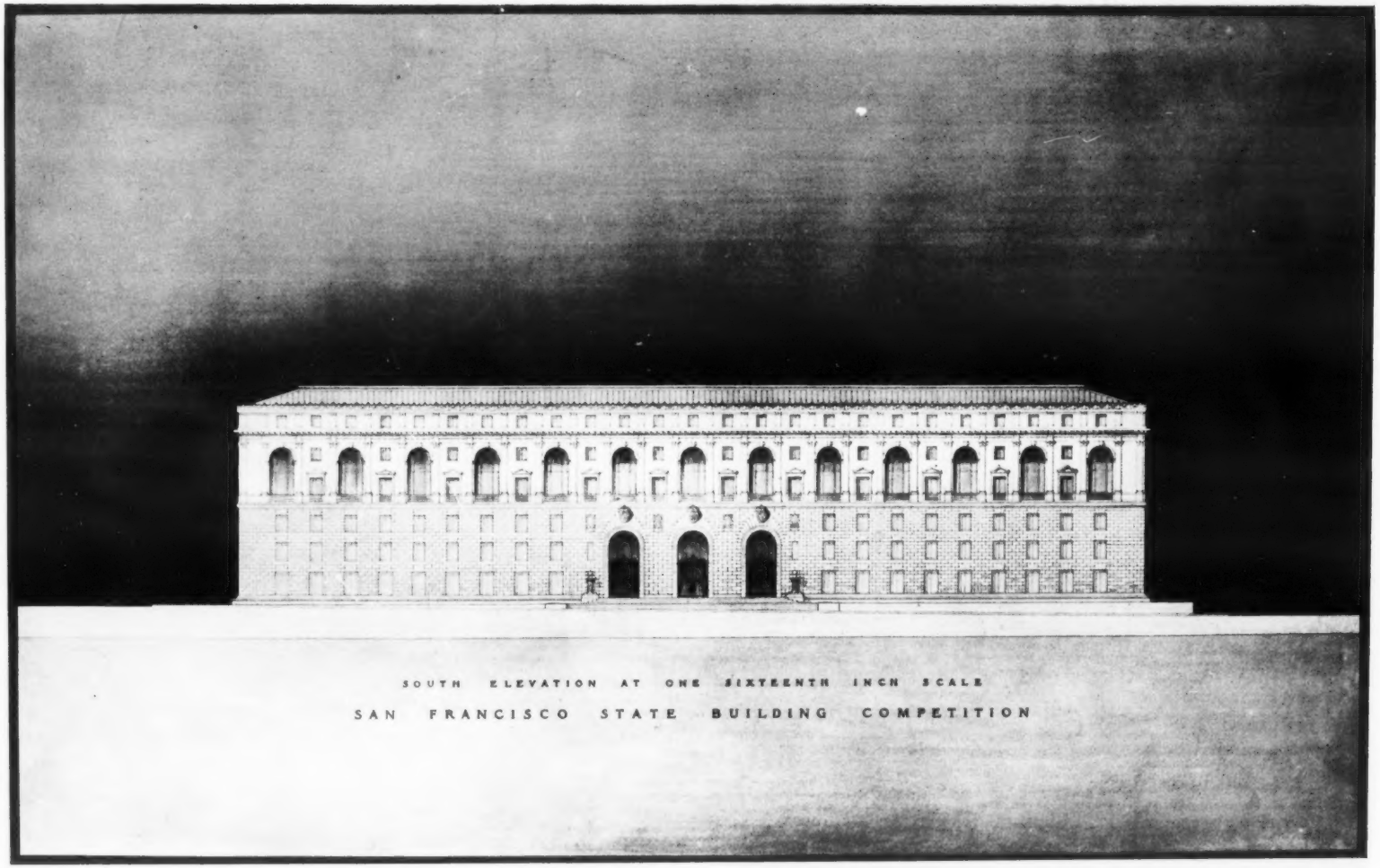
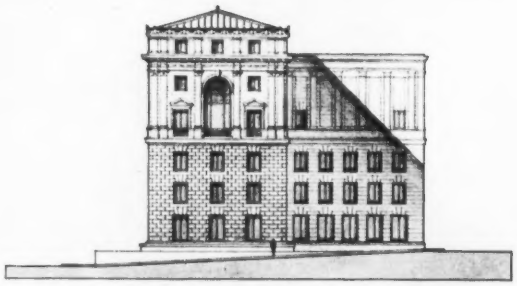


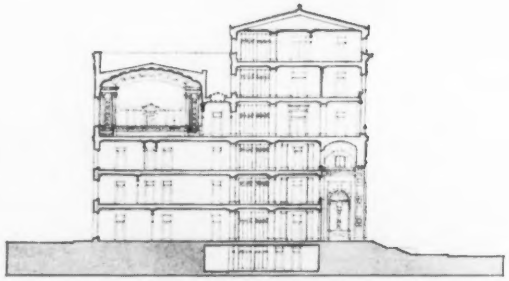
PLATE 59

PRIZE WINNING DESIGN

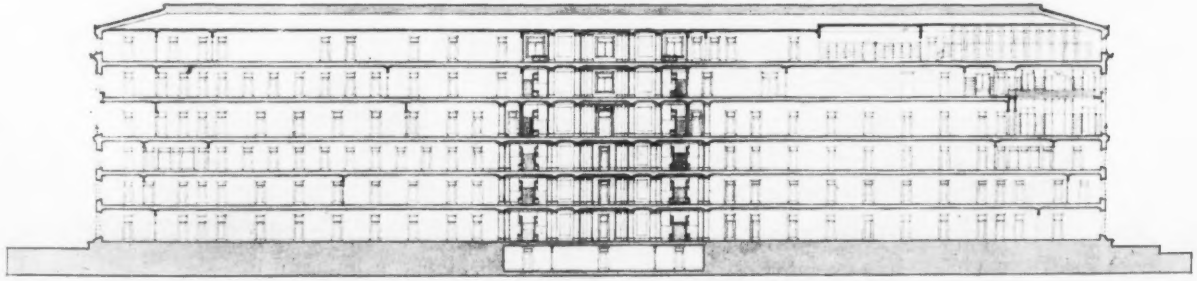
BLISS & FAVILLE, *ARCHITECTS*



EAST ELEVATION
AT ONE SIXTEENTH INCH SCALE



NORTH - SOUTH SECTION
AT ONE SIXTEENTH INCH SCALE



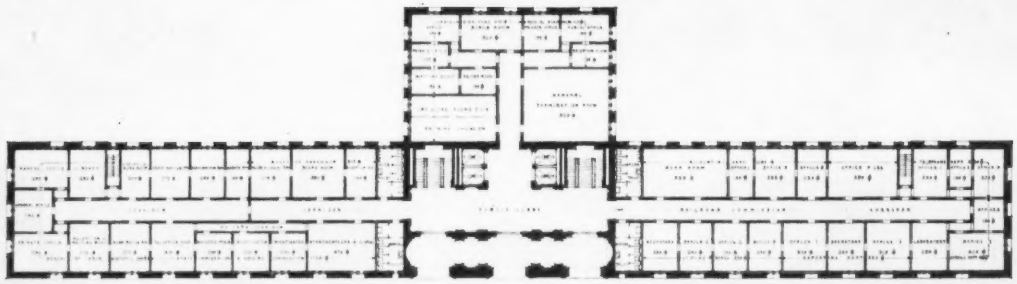
WEST - EAST SECTION AT ONE SIXTEENTH INCH SCALE

SAN FRANCISCO STATE BUILDING COMPETITION

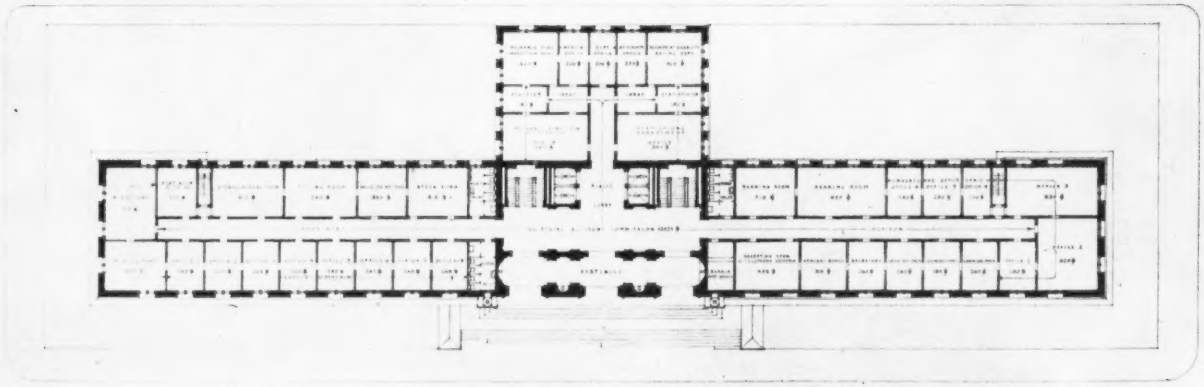
PLATE 60

PRIZE WINNING DESIGN

BLISS & FAVILLE, *ARCHITECTS*



SECOND FLOOR PLAN AT ONE SIXTEENTH INCH SCALE



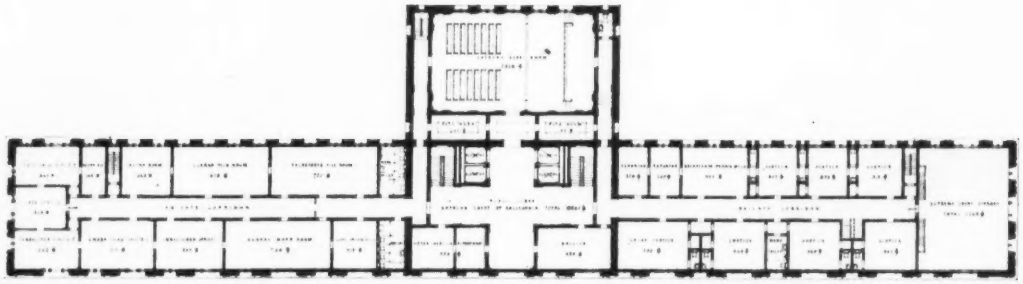
FIRST FLOOR PLAN AT ONE SIXTEENTH INCH SCALE

SAN FRANCISCO STATE BUILDING COMPETITION

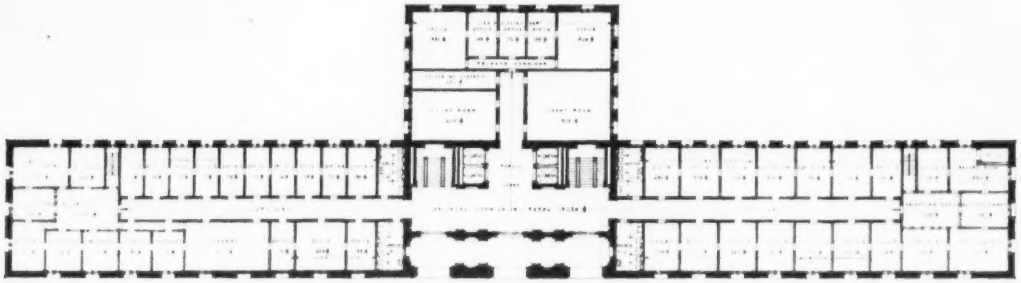
PLATE 61

PRIZE-WINNING DESIGN

BLISS & FAVILLE, *ARCHITECTS*



FOURTH FLOOR PLAN AT ONE SIXTEENTH INCH SCALE



THIRD FLOOR PLAN AT ONE SIXTEENTH INCH SCALE

SAN FRANCISCO STATE BUILDING COMPETITION

PLATE 62

PRIZE WINNING DESIGN

BLISS & FAVILLE, *ARCHITECTS*

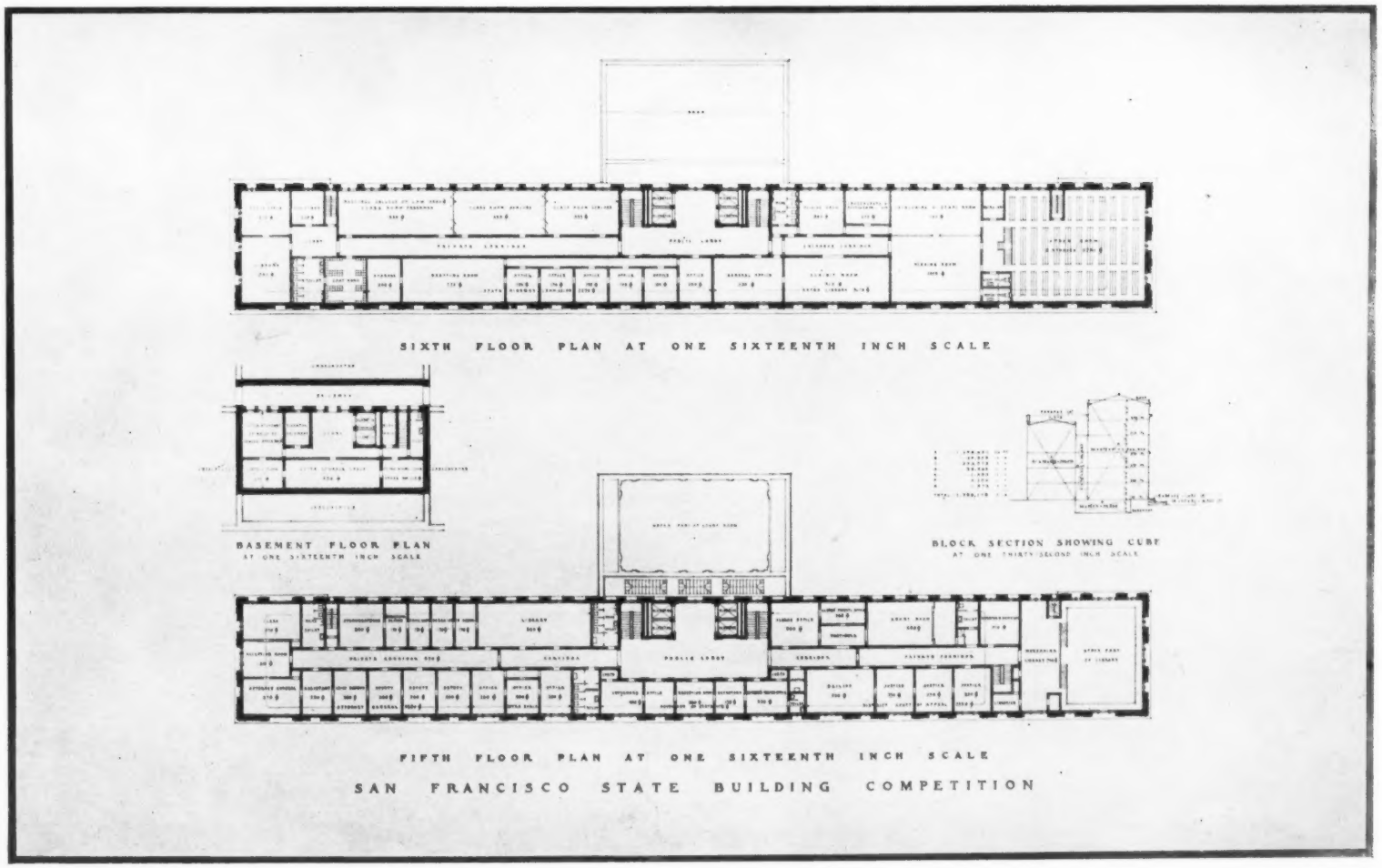
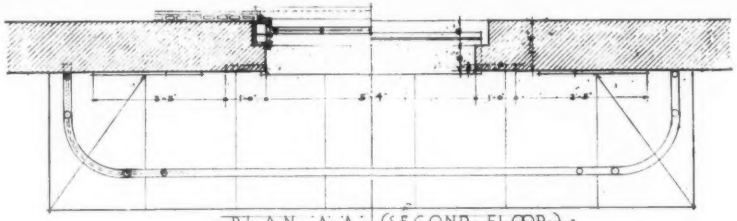


PLATE 63

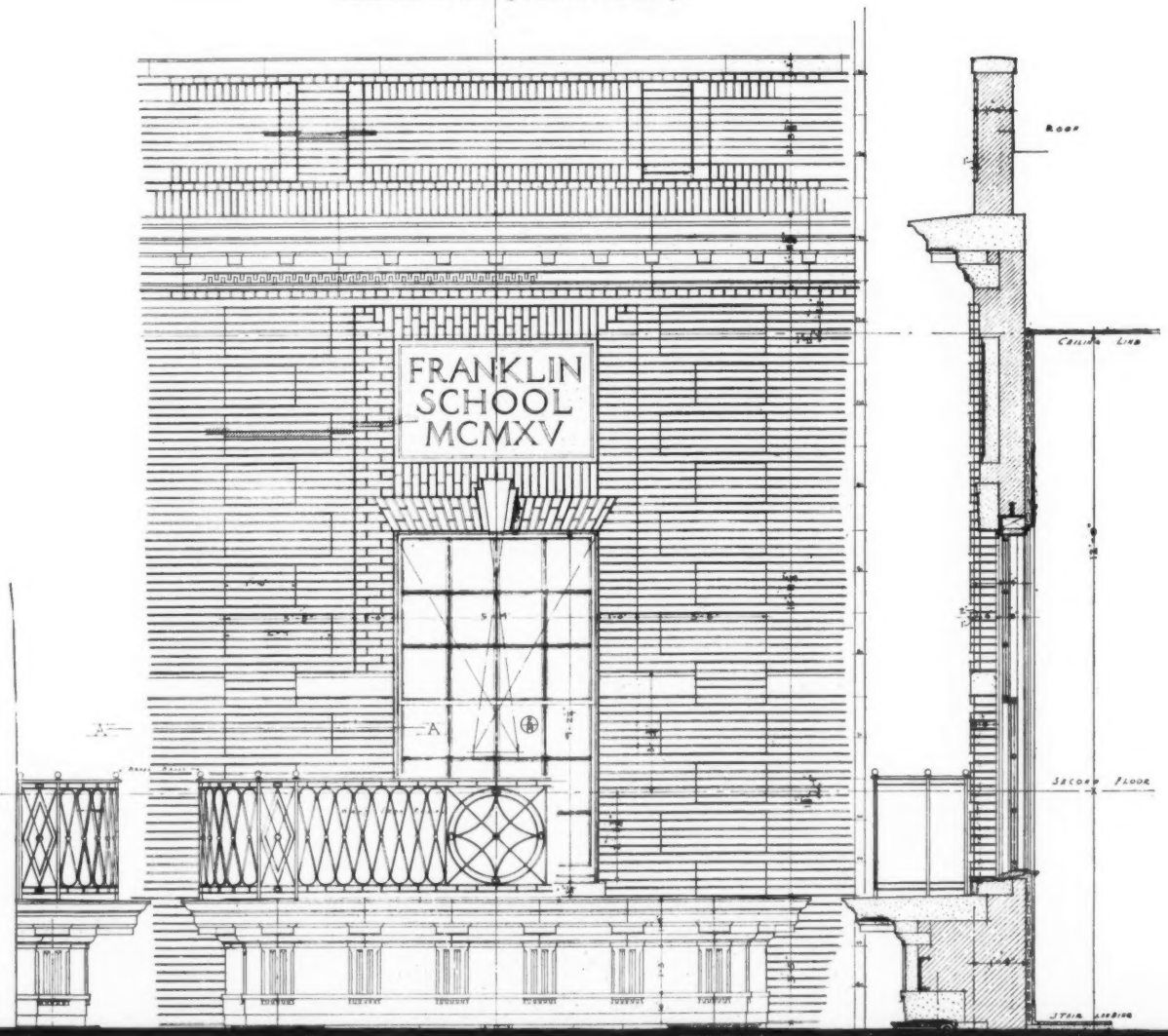
PRIZE WINNING DESIGN

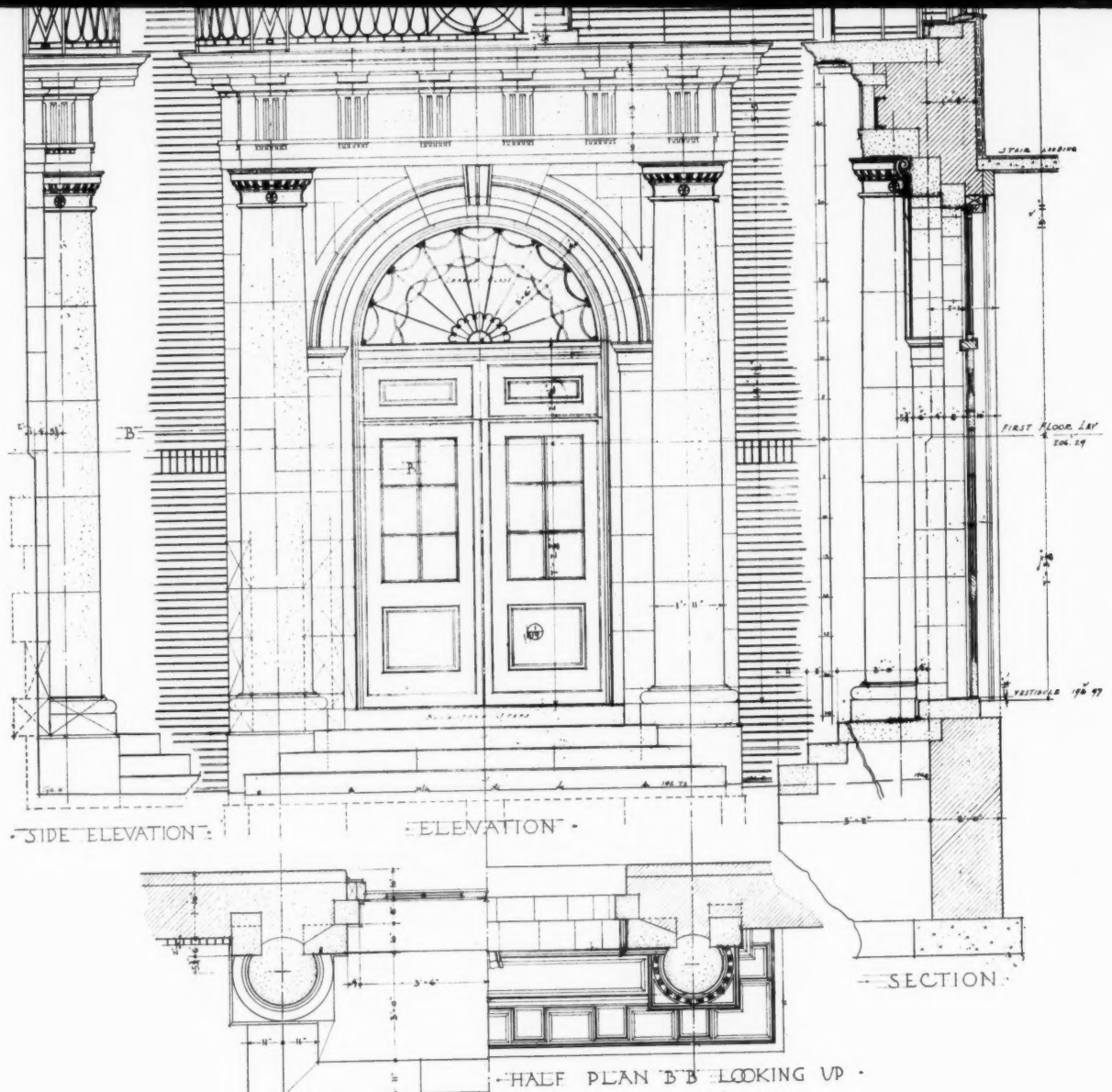
BLISS & FAVILLE, *ARCHITECTS*

XUM



PLAN 'A-A' (SECOND FLOOR)




SIDE ELEVATION
ELEVATION
SECTION
HALF PLAN B B LOOKING UP
FIRST FLOOR LEV
STAIR LANDING
VESTIBULE

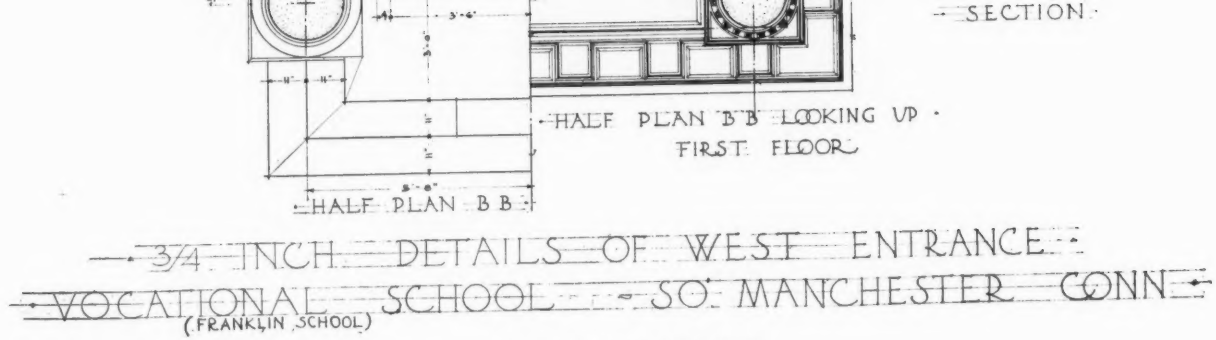


PLATE 64

DETAIL OF MAIN ENTRANCE

FRANKLIN SCHOOL, SOUTH MANCHESTER, CONN.

CARRERE & HASTINGS, *ARCHITECTS*

XUM

PLATE 65

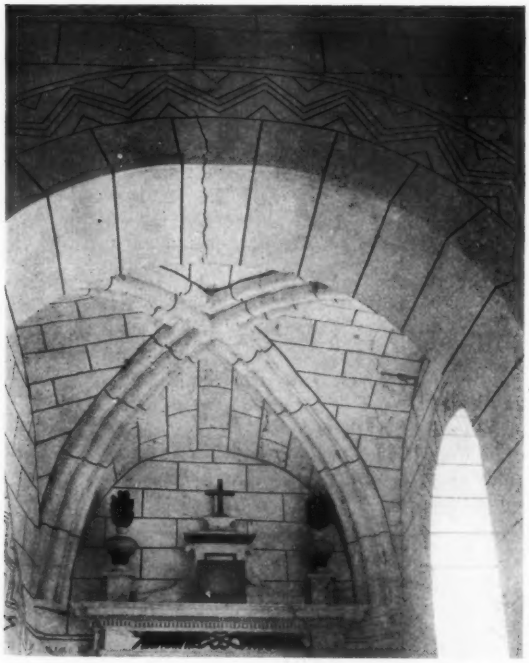
STORE AND OFFICE BUILDING, BROOKLINE AVENUE, BOSTON, MASS.

MONKS & JOHNSON, *ARCHITECTS*

XUM

S. EUSTORGIO, MILAN

Rib Vaulted Nave. Eastern Bays, Dating About 1120.



STS. GERVAIS-ET-PROTAIS, RHUIS (OISE)

South Side Aisle, Vault of Eastern Chapel; Showing Diagonal Ribs with Profiles of French Style; Dating from the First Quarter of the XII Century.

Written by a young man still in his twenties, abounding in errors and inexactitudes of detail, this book nevertheless by a few sharp incisive strokes at once destroyed the work of the critics who had been building for centuries upon false foundations. Cattaneo's early death offered the opportunity to men like Luca Beltrame to do, without fear of reprisal, what they could to attack the young archeologist's reputation. For a moment it seemed as if the reactionaries might carry the day, but the dead iconoclast found a supporter in

LOMBARD TYPE OF RIB VAULTING WITH HEAVY DIAGONAL RECTANGULAR RIBS

Vault Beneath Tower of Acy-en-Multein (Oise), Dating about 1110.

From Porter, "Construction of Lombard and Gothic Vaults."

Rivoira, who reiterated with emphasis and far more profound scholarship the great thesis of Cattaneo.

Rivoira greatly enlarged the outlook upon Lombard architecture, calling attention to numerous monuments until his day unknown. Only one who has had long experience with the inaccessibility of Lombard churches can appreciate the patience and enthusiasm which must have been required to write this book at a time when automobiles were still unknown. Rivoira's efforts to establish the chronology of the Lombard style cannot, however, be con-

sidered successful. Since the publication of his book, as before, the most divergent and contradictory opinions have continued to be expressed on the question.

A definite synthetic analysis of Lombard architecture, therefore, remained to be made, and it is this which Mr. Porter has undertaken, and successfully carried out.

(*To be continued*)

Wisconsin Passes Licensing Law

An architects' registration law, similar to the present law in New York State, has been passed by the Wisconsin Legislature.

The law provides that after January 1, 1918, no person doing business in Wisconsin shall use the title "architect" as a part of his business name or title, or in any way represent himself to be an architect, without a certificate of registration. The Industrial Commission, which administers the state building code, is to appoint a board of five examiners, three of whom shall be architects of at least ten years' active practice in the State, the remaining members being the State architect and the dean of the Engineering College of the State university. The members receive no compensation except expenses.

This board will have full power to prescribe rules and regulations for the examination and registration of architects. Candidates for examination shall submit satisfactory evidence of having acquired a thorough knowledge of sound construction, building hygiene, architectural history, and mathematics. (This provision was substituted for the original requirement of a high school education, to which objection was made by the Legislature.) The candidate must also have had at least five years' experience. In lieu of examination, the board may accept a diploma of graduation from a recognized architectural school, followed by three years of practical experience. The board may also accept, in lieu of examination, registration in another state or country having satisfactory standards. Any person who, at the time of the passage of the bill, was actually engaged in the practice of architecture, may receive a certificate without examination.

Candidates must pay $5.00 upon application and $10.00 additional if a certificate is granted. This fee was purposely made as low as possible, and is thought to be just enough to cover the expenses of the board.

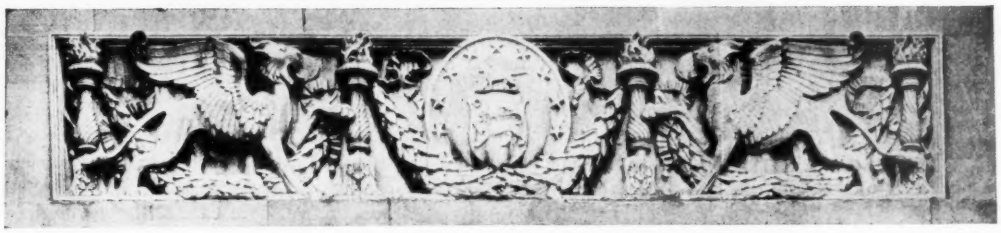
The Industrial Commission is required to issue certificates to all candidates who are certified by the board of examiners. The commission is required to revoke a certificate if recommended by the board of examiners, after a hearing, upon proof that the certificate was obtained by fraud or misrepresentation, or that the holder thereof has been guilty of felony, or has been guilty of any dishonest practice or practices in connection with the practice of architecture, or for gross incompetency, or for flagrant or repeated violation of any building law or ordinance. For the purpose of such hearings the board has testimonial powers, and its decisions may be appealed from to the Circuit Court.

Work of the Architectural League Food Battalion

Lantern slides, the property of the French Government, showing the condition of the devastated areas of northern France, recently retaken by the Allies, were shown for the first time in this country at a recent meeting in the Fine Arts Building, New York, under the auspices of the Food Battalion of the Architectural League of New York. The most interesting of the views were those showing the remains of the orchard district, which the Germans ruthlessly destroyed in their retreat.

Many of the pictures were explained by Charles Butler, designer of one of the large hospitals in France, who had made a tour of the region. He said that the cannon had plowed up the top soil of much of the land to such an extent that it would be years before anything could be grown on it again. Mr. Butler told of the efforts of the French Government to help the peasants to rebuild their ruined homes in the very spots where their houses had stood.

Several members of the league also spoke on the work which the battalion is doing on its twenty-acre farm at Forest Hills.



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Women's Work for Women

WHEN women seek to teach a lesson to their sex, to remind them of their shortcomings, and endeavor to arouse them to a sense of duty, they go about it with a thoroughness that men seldom equal.

An instance is afforded by the action of a group of alumnæ of Bryn Mawr College. Sixty women who had been students at Bryn Mawr during the first four years of its existence, from 1885 to 1889—not only members of the classes of '89, '90, '91 and '92, but also fellows, graduates and special students—agreed to celebrate their quarter-century by a social experiment.

At this time the Triangle fire in New York had aroused widespread indignation as an example of criminal negligence. The great loss of life, the large number of women who perished, and the apparent neglect on the part of well-to-do women whose exalted social position should have caused them to take up the question of the protection of women workers from similar future danger and to urge any possible reform, moved this group of alumnæ of Bryn Mawr to undertake the study of fire prevention and to offer the results of their work to the Department of Labor and Industry of the State of Pennsylvania. As the offer was the first of the kind that had ever been made to the department, great doubt was expressed as to just what might be accomplished. The alumnæ, with the same application that afterwards marked their labors, were able to present their plan in such a manner that the scheme received official approval and the work was begun and carried to a most successful conclusion.

The investigations and research were confined to the State of Pennsylvania, as owing to the centralization of different forms of labors in various states it was believed that any investigation, to be of real value, should specialize along certain lines and leave the application of its various disclosures and their effect upon other industries to each specific employment to deal with in a way best calculated to meet its needs.

The report states:

The important factory industries of Pennsylvania are pre-eminently of a girl- and woman-employing type—a characteristic accentuated by the fact that many Pennsylvania employers have appeared to throw into their industries a larger proportion of young workers and women than is customary in corresponding occupations in other states. Pennsylvania, moreover, is unique among the great industrial states for the diversity of her large woman-employing industries. Thus, while New York has no peer in the garment making trades; while Massachusetts is pre-eminent for her textile factories, with boot and shoe making a close second, Pennsylvania distributes her largest groups of working women, in textiles to the number of 84,183; in tobacco and cigar factories, 24,295; in garment and clothing trades, 39,236; with from seven to ten thousand girls and women employed respectively in paper products, confectionery and food, shoes and leather goods.

In fires and panics requiring rapid exit under difficult conditions, women—with their greater unaccustomedness to emergencies of this sort and with their hampering and often inflammable clothing—are usually the greatest sufferers and always present the most difficult problem to handle. Among the duties charged to the Pennsylvania Department of Labor and Industry when it was created by the Legislature of 1913 was the safeguarding of the lives and health of these women, both through the enforcement of legislation, then recently enacted, and through the adoption by the Industrial Board of rules which, after due procedure, have the force of law. The last Legislature greatly broadened the functions and increased the duties of the Department of Labor and Industry, and it has not had the machinery or the opportunity to collect the data upon which to base rules for fire prevention and protection. As this, in the opinion of the Commissioner, was the most pressing need of the Department, it was determined to make this study supply

this want. Therefore, the most definite expression of the purposes of the Bryn Mawr group and the most tangible result of their effort are contained in the recommendations to the Industrial Board.

The recommendations on fire prevention, the results of the study and investigation of these women are presented in a pamphlet of sixty pages. The thoroughness with which the work has been done, and the value of the suggestions embodied in the report cannot be overestimated. For the unselfish and humanitarian act of a group of women seeking to lessen the dangers to which their less fortunate sisters laboring in factories are daily exposed, no praise can be too strong.

The report will serve as a model of thoroughness. The amount of labor and personal effort that has been undertaken may well entitle every woman in this country to regard with pride and gratitude the work of this group of alumnae of Bryn Mawr College.

Building Interests During the War

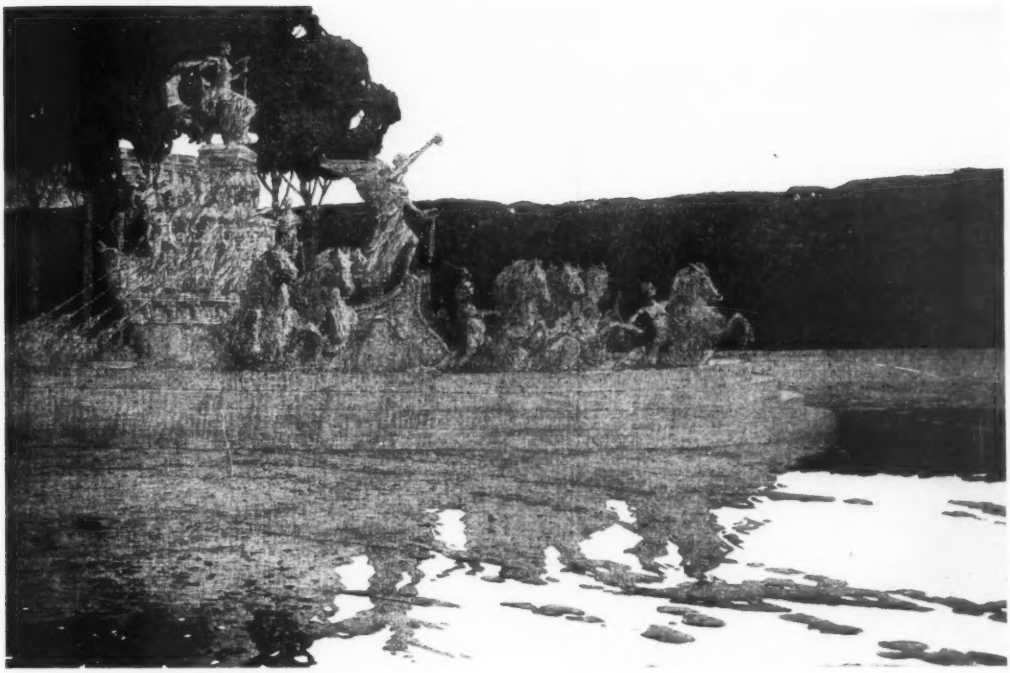
IT is logical to contend that if we are to successfully pass through the abnormal conditions that beset us as a result of this war, the Government should exercise the same supervision over building materials and other merchandise that it does over food and the many manufacturers of munitions.

If the value of such action is not impressed on the Government by those most directly interested, there is grave possibility that through restricted building operations and the consequent enforced idleness of labor there will result a condition so far reaching in its harmfulness as to constitute a very real menace to the building industry in the future and to create a condition that it will be extremely difficult to overcome.

As a nation, it is of course our first duty to use every effort to accomplish the purposes of this war, and no red-blooded and patriotic citizen will begrudge either the effort or the self-denial necessary to this end. But to accomplish this, it will not perhaps be necessary to forego every other purpose, or to so lose sight of the objects that will become important when peace has been declared and that happy day arrives when, as a victorious people, we return once more to our usual pursuits.

If it is true that during the coming year ten billion dollars will be spent in this country by our Government and by foreign governments in American markets, it is well to inquire in what directions this enormous sum will be distributed, and if all business not connected with munitions of war and food must languish for want of a market for its products.

We have been told that owing to the needs of the Government, there will be no structural steel available for building. We have also been told that it would be necessary to find an adequate substitute, and, as suggested by Cass Gilbert, this substitute is available in wood and concrete. Later we are informed that the needs of the Government in the construction of cantonments will absorb a large part of the available supply of lumber, and that so closely does the supply and demand balance under present governmental needs, that it is not unusual to see the standing tree converted into lumber and built into cantonments in the space of seven working days. These conditions of scarcity may perhaps result in extortion in the prices demanded for material and the men engaged in legitimate building operations face the necessity of either yielding to this extortion or paying the price that will be without doubt demanded. There never was a time when the building industry in this country more surely needed sane guidance.



COLUMBIA ENTHRONED, WITH FAME AT THE PROW.
MONUMENT BY FREDERIC MAC MONNIES, SCULPTOR
Reproduced from the water-color drawing by Jules Guerin

The Sunken Garden in Central Park, New York

NO project affecting the park area of New York City has been worthy of more general support than that of the proposed sunken garden in Central Park.

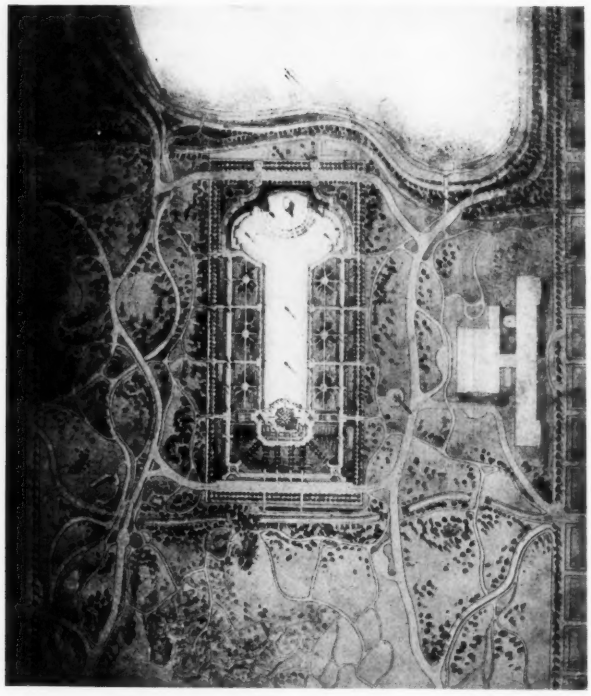
The residents of New York and that large number of transient people who visit this city are unusually fortunate, as they may accept without suspicion and give unqualified approval to any project that has received the indorsement of Mayor Mitchel and his committee or any one of the many efficient departmental heads of his administration.

The present project for a sunken garden grew out of a desire on the part of the city administration to mark by fitting ceremonies the completion of the Catskill Aqueduct. As one of the most remarkable engineering accomplishments of modern times it seemed fitting that its completion should be properly celebrated, and it was decided to arrange for such a commemoration next October.

A Mayor's Committee with Hon. George McAneny as chairman and Hon. William Williams as chairman of the Board of Celebration, while engaged in formulating a program, consulted with Mr. Thomas Hastings, and his suggestion of a sunken garden to take the place of the south Croton reservoir in Central Park, now out of use, was enthusiastically received.

Of this plan in its various phases it can be said that it was conceived and accepted by men actuated by the highest ideals of civic betterment, the best artistic judgment, all controlled by a method so economical in its execution as to leave no possible opening for adverse criticisms or objections.

The original plan of celebration, before the sunken garden scheme was proposed by Mr. Hastings, contemplated the placing of a jet in the north storage reservoir that would send a column of water straight into the air for a distance of at



GROUND PLAN

least one hundred and fifty feet. This original idea, conceived by Hon. William Williams, Commissioner of Water Supply, Gas and Electricity, will be adhered to, and it is expected to have this jet in operation when the ceremonies are to be held and the corner stone of the proposed sunken garden laid.

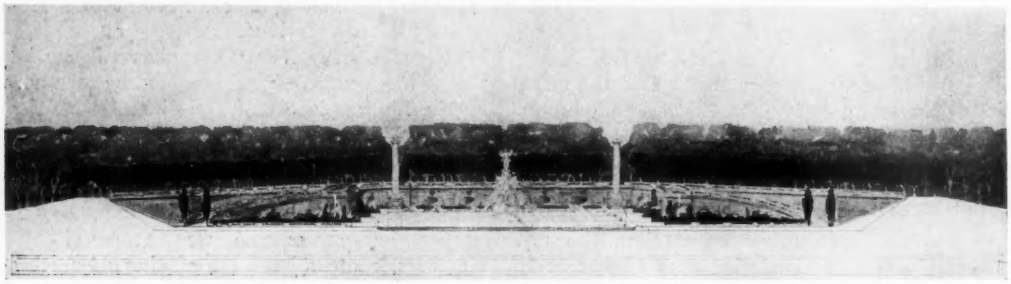
Hon. Cabot Ward, Commissioner of the Department of Parks, has suggested many features of the design and plan as here presented, while approved by the Mayor's Committee, must be finally submitted to Mr. Ward for consideration and further development.

The Croton reservoir, which it is now proposed to remove, has for more than seventy years occupied a large tract in almost the exact center of the park. At the time of its construction it was, with a similar reservoir that occupied the site of the present Public Library at Fifth Avenue and Forty-second Street, a prominent feature of the city, and it was then believed that these two storage basins would supply the city's need for a water supply for all future time. With the building and rapid extension of the Museum of Natural History on the west and the Metropolitan Museum of Art on the east it was found that the Croton reservoir set up a barrier that prevented easy and convenient access to these buildings, and it has been claimed by their directors very seriously affected the attendance, and in a sense the value, of these Museums to the general public.

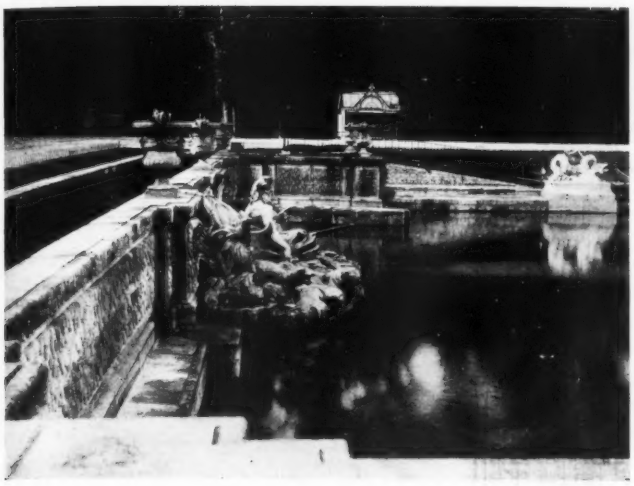
As may be seen by reference to the plan, the two roads, one each north and south of the sunken garden, are linked by natural and easy extension to the east and west park drives, and afford a convenient means of access across the park at this point.

The area covered by the Croton reservoir, and which it is proposed to convert into a sunken garden, comprises approximately thirty-four acres or about seven city blocks in length by about three in width. The addition of this large space to the park is a feature that should in itself serve to prove the value of the scheme. In fact, so readily do all the various conditions seem to lead toward an economical and artistic conclusion that, to quote Mr. Hastings during a recent interview on this subject, "like all good things, it seems to execute its own self."

Mr. Hastings' plan contemplates the placing of MacMonnies' celebrated fountain, "Columbia Enthroned," in the north end, and in the south a music pavilion, which, owing to the contour of the site, will be at the base of a natural terrace forming delightful grovelike tiers from which spectators may view the natural beauties of the sunken garden



PROFILE AND CROSS-SECTION



NEPTUNE FOUNTAIN, VERSAILLES

and be so near as to easily hear the orchestra located in the music pavillion.

The architectural reader will not need to be led in a description that is so clearly set forth in the ground plan reproduced. All that landscape architecture can contribute will be added to supplement the architectural dignity of the design, and it is quite reasonable to suppose that in comparatively few years this section of the park will become the exact center of its artistic beauty.

None of similar features have ever reached their crowning beauty in even the first five years of their erection. The gardens that have probably furnished the suggestion for the present scheme, photographs of which are reproduced in this issue, are the result of years of growth and that subtle touch that can only be given by the hand of time. The Plaza fountain in New York is an example of this. It is somewhat surprising to read the criticisms of an art critic who should be better informed with reference to this dignified civic embellishment and to note the lack of appreciation as to just what is necessary to complete a work of art of this nature.

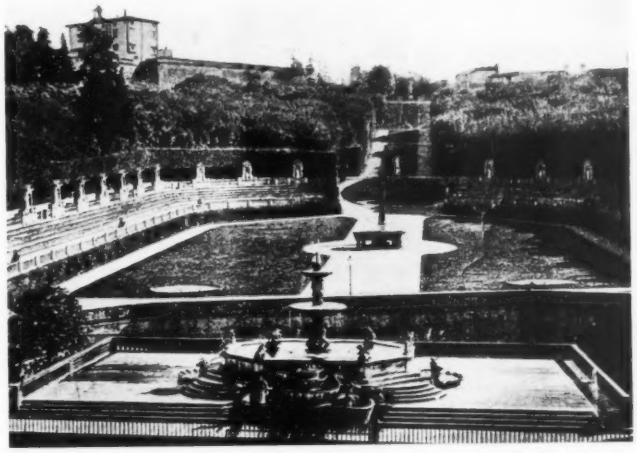
As to the cost of this improvement, it will be a surprise to learn that in place of an appropriation running into the millions, the actual money outlay to insure the success of the scheme is so comparatively insignificant as to be practically negligible, when viewed in the light of a most important civic improvement.

It is estimated that the cost of the fountain and its implacement will amount to about $200,000. This amount it is proposed to raise by popular subscription, and thus early it is shown that so favorably is this scheme regarded that there is no doubt that the money will be promptly raised.

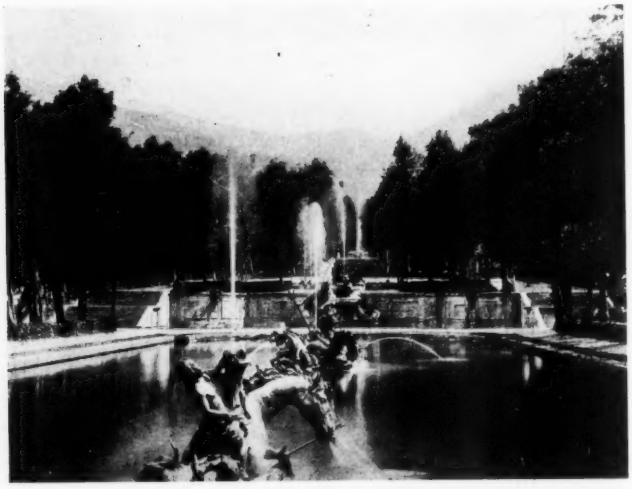
The Temple of Music, it is estimated, will cost $40,000, and a donation of this amount is practically assured. An additional amount, approximately $12,000, will be necessary to install the jet in the north reservoir. This amount has already been donated. In building the wall for the lagoon the economy of construction is further emphasized. The bottom of the pool will be the present bottom of the Croton reservoir, and the side walls will only require waterproofing. This lagoon will be built by the Department of Parks, and with the comparatively small amount of grading and terracing necessary will constitute practically the major item of expense to be borne by the city. Probably no undertaking of equal importance has ever been possible of execution so economically.

The whole scheme will apparently finance itself, and to again quote Mr. Hastings, "the scheme seems to execute its own self."

Owing to past experiences, there has been implanted in the public mind suspicion of any project looking to change in Central Park. For this reason, and the added and perhaps more important one that this distrust was proved to be well founded, the daily press in New York failed at the outset to seize upon the true significance of this plan or to appre-



BOBOLI GARDENS, FLORENCE



PUBLIC GARDENS, MADRID

ciate that, owing to its sponsorship, it was above suspicion. Many misleading statements have been made and wrong conclusions advanced.

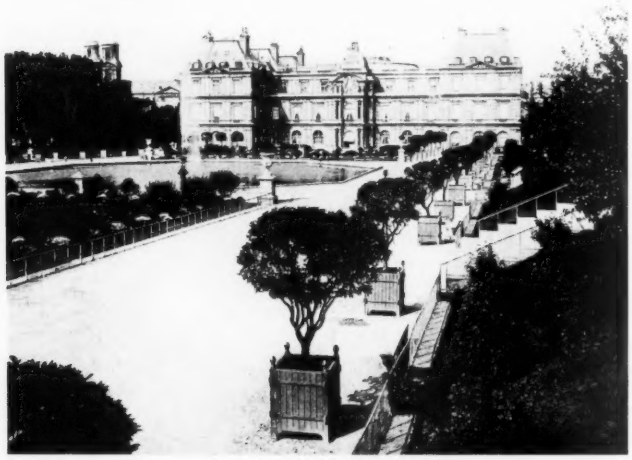
The names of the men who have evolved this project and who will, it is believed, watch its progress toward its first stage of completion may be relied on to conserve the rights of the people in every way, and also to insure a result that will be so satisfactory as to mark a very decided improvement in this city's attitude toward its public parks.

Painting Bridges White

Service Bulletin of Iowa states: "A Tama County bridge on the Lincoln Highway in the Indian reservation and over the Iowa River is painted white. People who cross this bridge at night who are accustomed to the black or red bridges of the majority of Iowa counties are struck with the ease with which the outlines of the bridge are noted. As a matter of highway safety it would seem to be a good thing to paint bridges white. The same color should prevail on guard rails erected on fills and at dangerous turns where such safeguards are erected."

American Artists in France

For the first time since the beginning of the war American artists received official permission to make drawings at the front. Although one or two prominent French painters have been allowed to approach the firing line, the privilege has been jealously withheld from others hitherto. Now two Americans, Waldo Pierce of Bangor, Maine, and Eben Given of Chicago, have been notified they have the right under the auspices of the American Red Cross to tour the French front in an automobile unrestricted even by the presence of a French officer.



GARDENS OF THE LUXEMBOURG

San Francisco State Building

EXTRACTS FROM PROGRAM OF COMPETITION

IN conducting this competition the State desires to put before the architectural profession of California a program of conditions that will invite the participation of the ablest members of the profession. At the same time it is deemed necessary to safeguard the competition with certain restrictions, to the end that no appointment as architect of the San Francisco State Building will be made of any competitor until he has demonstrated to the entire satisfaction of the jury his artistic talent, his integrity and his administrative ability to execute his design should he be selected. To effect this purpose the competition is held in two stages, the first being for the purpose of eliminating all but eight architects, who will be admitted to the second stage.

The building will be erected on the Civic Centre in the city and county of San Francisco, California.

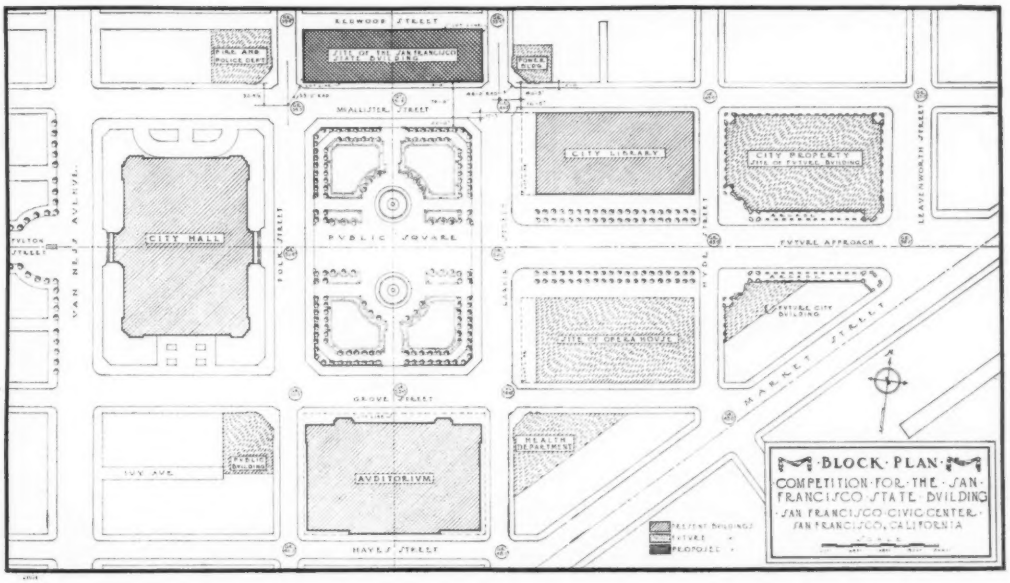
The San Francisco City Hall on the west side of the Civic Centre and the Auditorium on the south side are complete and in use. The San Francisco Public Library is in course of construction at the northeast corner of the Civic Centre. The State Building is to be erected on the north side; the main front will face the south.

A description of the site is as follows: On Polk Street, 120 feet; Redwood Street, 412½ feet; Larkin Street, 120 feet; McAllister Street, 412½ feet.

It is mandatory that the design of the State Building shall be in harmony with the three monumental buildings already constructed or in course of construction on the Civic Centre, as above described, the height above grade of the cornices on the City Hall, the Auditorium and the Library.

The building shall be of skeleton steel frame construction, fire-resisting according to the very best practice. All material shall be of the very best quality; the exterior of the building shall be faced on the McAllister Street front and on at least suitable returns on the Polk and Larkin Street fronts with California granite, and preference shall be given to California material and also to California labor where same of suitable character can be obtained at reasonable market prices.

For the purposes of this competition the San Francisco State Building is not to exceed in cubical contents 1,800,000 cubic feet. The cubage shall be computed as carefully as possible, showing the actual volume of the building calculated from the finished level or levels of the lowest floor to the



mid-height of the roofs, if sloping, and to the highest points of the roofs, if flat and contained within the outside surfaces of the walls. Pilasters, cornices, balconies and other similar projections shall not be included. Porticos with engaged columns and similar projections shall be taken as solids and figured to the outer face of the column. When columns are free standing, one-half of the volume of the porticos shall be taken. There shall also be included in the cubage the actual volume of all parapets, dormers, vaults and other features adding to the bulk of the building, also the actual volume of exterior steps above grade. Light wells of an area of less than 400 square feet shall not be deducted.

In calculating cubage account shall be taken of the variation in the exterior wall surface, as, for example, the projection of a basement story beyond the general line of the building.

Any excess of cubical contents above 1,800,000 cubic feet, calculated as above stated, will place the author of the design out of the competition.

The heating plant is already installed in a detached building and shall not be provided for in the State Building.

The relation of the building to the boundary lines of the site is left to the competitors.

A jury of seven members shall be composed of the Governor, the Chief Justice of the Supreme Court, the Attorney General, the chairman of the State Board of Control and three architects. The three architects shall be selected as follows:

The San Francisco Sub-committee on Competitions of the American Institute of Architects, on receiving notice from the Board of Control, will nominate five practising architects, these names to be transmitted to the Board of Control, and from these five names three will be selected by the Board of Control to be members of the jury of seven. It is expressly required that in making these nominations, the Sub-committee on Competitions shall choose the five names from the membership of the California Chapters of the American Institute of Architects, not more than three names to be selected from either of the two chapters. Should a vacancy occur in the Jury, the Board of Control reserves the right to fill the vacancy.

The jury will select, by the aid of the material submitted, not more than eight of the competitors who shall be admitted to the second stage.

The competitors in the second stage shall be the eight architects selected above, and no others, except that the jury may fill the place of any architect who fails to undertake the second stage by another who participated in the first stage.

The Department of Engineering will pay the sum of $1,000.00 to each participant in the second stage except the winner.

The winner of this competition shall enter into a written contract with the Department of Engineering, the terms of which shall be in accordance with the document entitled, "Professional Practice of Architects and Schedule of Proper Minimum Charges," of the American Institute of Architects, as revised at the Washington convention, December 15 to 17, 1908, as far as said document conforms to the laws of the State of California, provided, however, the compensation of the architect shall be 6 per cent, based upon the total cost of the building, exclusive of furniture.

Interpreting Idaho's Licensing Law

In an opinion rendered by the Attorney General's office of Idaho it is held that under the law regulating the practice of architecture which was passed by the last Legislature no distinction can be made between architects whose offices are in another State and those whose offices are in Idaho, so long as they practise their profession in this State.

It is further held that any architect who was engaged in the practice of his calling at the time of the passage of the act is entitled to a license without examination, irrespective of where his offices may be maintained.

The construction of the law is said to be contrary to the intentions of the Idaho Association of Architects, which was instrumental in having it enacted, as it is said that one of the purposes of the act was to make it necessary for all architects residing outside of the State to secure a license in order to be entitled to continue to do business in Idaho.

Art Not Necessarily Treason

The *Brooklyn Eagle*, referring to the arrest of Vernon Howe Bailey, comments as follows:

"We may suppose that the arrest of Vernon Howe Bailey for the offense of drawing or sketching a street scene at the corner of Eight Avenue and West Forty-second Street, on the theory that he was a German spy, was a pardonable blunder on the part of an overwrought policeman, just at the time when our entrance into the war excited everybody.

"But the conviction of Bailey, a professional illustrator, of 'disorderly conduct' by a police magistrate is very hard to explain, very hard to apologize for. There was no evidence to justify the conviction. And suspension of sentence was only an added irritation to the victim.

"We are glad to note that the Special Sessions Court has found a way of wiping out the record of this manifest injustice. Art is not necessarily treason. Fortunately, the first craze of the war has

passed. Even policemen and petty court magistrates are not making quite the same sort of oppressive blunders at the present time."

Nevertheless, it will be a wise precaution for architects who desire to sketch out-of-doors to secure from the commander of the miltary division in which they live some form of identification. Police and Secret Service officers have their orders, very explicitly given, and are not supposed to use any discretionary powers in making arrests where the offense is proven.

What a College Education Is Worth

Dean Holmes, of the Pennsylvania State College, after spending months gathering statistics and reducing them to orderly form, has discovered that the money value of four years at college is $20,000, or a financial return of $5,000 for every year so spent. Dean Holmes's investigations reveal the fact, which at first seems a little disconcerting to the advocates of university training, that the average earnings of a Bachelor of Arts amount to $1,187 a year, not quite twenty-five dollars a week. But the situation brightens for the colleges when we learn that the average earnings of the non-college man are only $518—not ten dollars a week. The difference between these two sums is $669, and since the average man lives thirty years after leaving college, his financial reward for four years of more or less arduous undergraduate toil is evidently somewhat more than $20,000.—*The World's Work for July.*

Convention of Granite Men

The quarterly convention of the National Building Granite Quarries Association, Inc., was held at the City Club, Boston, Mass., starting July 17th, 1917. This association includes the majority of firms in the granite industry, east of the Mississippi River. The Convention was largely attended, about 75 being present.

At the business meeting in Boston, a "Form of Proposal," "Form of Contract" and a "Code of Practice" were discussed and referred to the Board of Directors for adoption.

After the business meeting, the guests and members left for an automobile trip and visited granite quarries and cutting plants at Rockport, Mass., West Chelmsford, Mass., Concord, N. H., and Milford, N. H.

The Convention voted that the next convention should be held three months hence, in Mt. Airy, N. C., and vicinity.

The offices of the Association are at 31 State St., Boston, Mass.

Delaying the Restoration of the City Hall Cupola

It is a big stretch, geographically, says the *New York Sun,* from the country churchyard at Stoke Pogis to the City Hall Park in New York, but no person familiar with Gray's "Elegy" should miss the application of the third stanza to a certain architectural ornament of the metropolis. Only persons of extreme pessimism, however, will set the date of needed repairs so far ahead as to say:

"That from yonder ivy-mantled tower
The moping owl does to the moon complain
Of such as, wandering near her sacred bower,
Molest her ancient solitary reign."

Illinois Advisory Art Board

Governor Lowden of Illinois last week appointed the board of art advisors, who will superintend the artistic character of State buildings and State monuments and the board of building advisers who will have charge of the recommendations, as to the improvement and maintenance of State parks. On the board of art advisers, architecture is represented by I. K. Pond and Martin Roche. Architecture is represented on the board of park and building advisers by Frank E. Davidson and N. Max Dunning.

To Preserve a Valuable Work of Art

Houdon's celebrated statue of George Washington in Lafayette Park, St. Louis, will, if the petition of the St. Louis Art League to the aldermen is favorably considered, be removed from its present undesirable location, where owing to neglect its preservation is menaced, to some other location, preferably indoors.

It is deplorable to learn that a work of art so generally approved should be allowed to stand uncared for until its pedestal has crumbled to an extent that the statue is liable at any time to fall.

Personal

Benjamin J. Dulang of New Iberia, La., announces the removal of his offices to 26 East Main Street. Manufacturers' samples and literature may be addressed to the new address.

R. E. Lawrence, architect, has new offices at 9216 Hough Avenue, Cleveland, Ohio, having moved from 1868 East Seventy-first Street, Cleveland. Manufacturers please send literature.

Industrial Information

Service Records Shown for Wrought Iron Piping

Service claims for wrought iron pipe in plumbing, heating and power systems, are supported by citations of actual long and continued satisfaction, in a booklet circulated by the A. M. Byers Company of Pittsburgh, Pa. This little publication is "an illustrated record of the service given by Byers pipe installed from 25 to 40 years ago." The pictures show thirty-odd familiar industrial and office buildings, hospitals, hotels and municipal structures, each bearing a caption giving the date of installation of wrought iron piping for specific purposes and testimonial of its endurance. The booklet should be valuable to architects specializing in this type of building construction.

The Keynote in Room Decoration

In a room designed to include a fireplace, the selection of the mantelpiece is a matter of primary importance. Arthur Todhunter, 101 Park Avenue, New York, specializes in colonial and Adam mantels of wood and marble and fireplace accessories designed to meet varying styles of decoration. The 1917 price and specification list of Todhunter mantels has just been issued, and will be sent to architects upon request.

An Ounce of Preventive

A. C. Horn Co., Long Island City, N. Y., manufacturers of waterproofing and preservative materials for sub-structures and super-structures, are circulating a folder giving an interesting detail of the sources of the various ingredients of the materials manufactured. This company makes ten dehydratines for the membrane methods of water-proofing and damp-proofing; two forms of hydratite, paste or powder, for the integral method of waterproofing, and fifteen technical paint coatings for concrete, steel and masonry surfaces.

Wear-Resistant Steel

A casting process which deposits a wear-proof alloy steel stratum at wearing surfaces of gears and other machine parts upon a base of softer steel is in operation by the Stroh Steel-Hardening Process Company of Pittsburgh, Pa. A booklet of twenty-four pages and cover, well written and illustrated, is issued by the company to explain the theory of the Stroh process and the efficiency to be secured from its use in machine wearing parts. Instances in which this alloy has proved its worth are specified and illustrated in an interesting manner. The booklet will be mailed to inquirers upon request.

Expanded Metal for Concrete and Plaster Work

Corr-Mesh, a stiff-ribbed diamond mesh expanded metal for concrete, plaster and general stucco work, is the subject of a catalog just issued by the Corrugated Bar Company, Mutual Life Building, Buffalo, N. Y. The forepart of the catalog is devoted to a detailed description of the material, its advantages and applications. Then follow designing tables, graphic construction details and specifications relating to Corr-Mesh uses in partitions, walls, floors, roofs and ceilings respectively. Construction photographs are scattered throughout the catalog in pleasing effect.

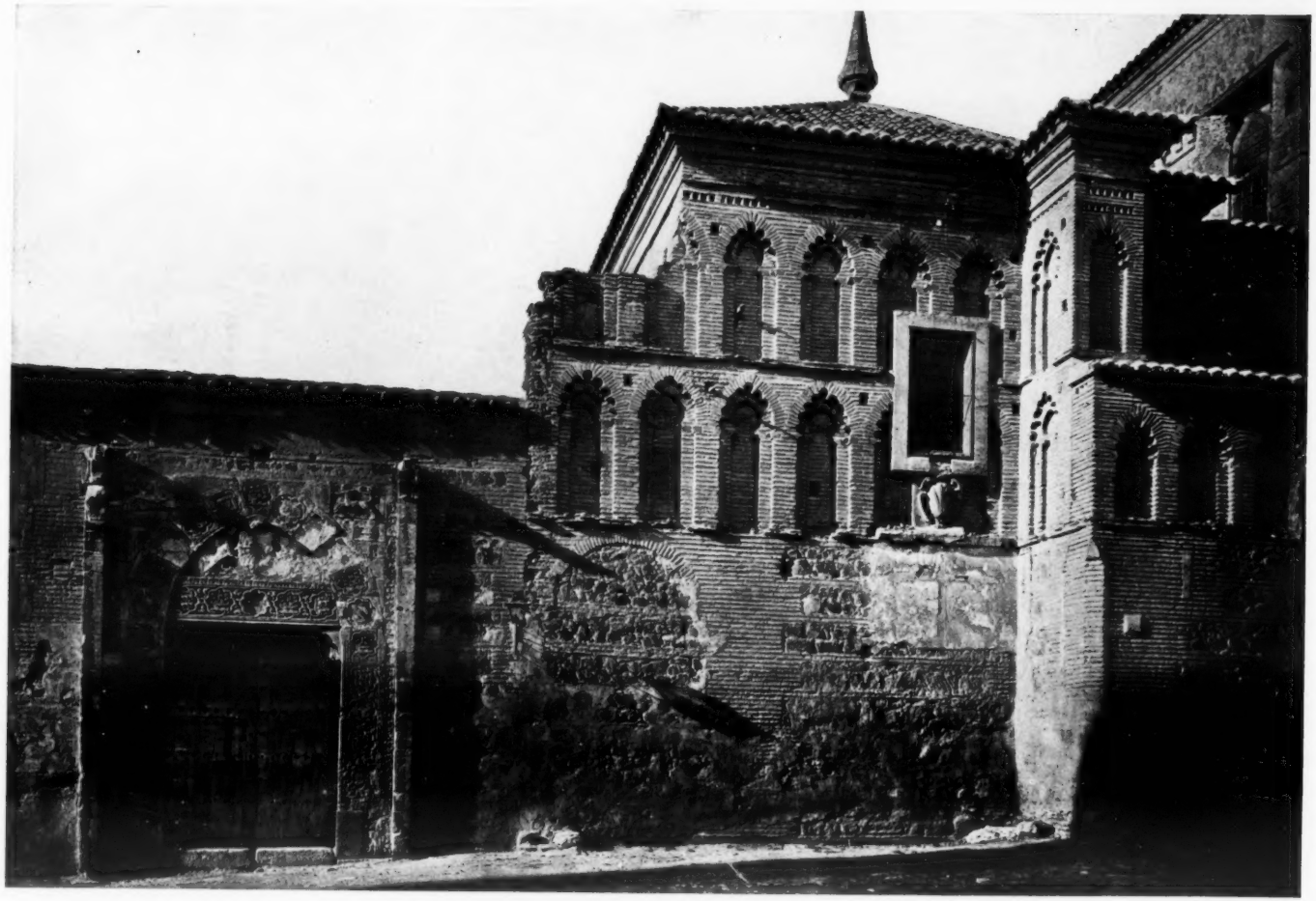
Commonwealth Edison Has a New Booklet

The Commonwealth Edison Company, 72 West Adams Street, Chicago, Ill., has just issued a booklet entitled "Electricity in Homes." This publication is designed to assist architects and owners in planning the electrical equipment for the home. It deals with the requisite number and location of ceiling outlets, wall brackets, floor outlets and switches for residences and apartments. The character of illumination and proper requirements for each room of the house, for porch and laundry, are discussed separately and completely.

"Weatherproof" Cedar Siding

The Seattle Cedar Lumber Manufacturing Co. of Seattle, Wash., have published a folder discussing advantages and applications of their Maltese Cross brand of cedar colonial siding and lumber. The chief superiorities claimed for this building material are reasonable cost, freedom from pitch or gum and non-susceptibility to excesses of moisture and dryness. Photographic reproductions show dwellings of colonial and bungalow types employing this material for exteriors. Eastern sales agents of the company are the Arthur E. Lane Lumber Corp., Grand Central Terminal, New York City.

XUM



PALACE OF DON PEDRO, TOLEDO, SPAIN