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Architects of United States Government Buildings.

It is only within recent years that the history of American architecture has been considered worth writing about. Some there are who claim that American architecture in the United States dates back only twenty years, but those depend only upon their own memory. Our history, such as it is, is recorded in our public buildings, which date back to 1793 or 1795, at which time the capitol at Washington and the Massachusetts statehouse were commenced. All previous to that time can be comprehended under the word which has recently come to have a distinctive architectural meaning—"Colonial." The erection of public buildings has been coincident with the evolution of the American architect, who was an unknown quantity before that time; and our historians have only recently discovered that his trials and tribulations were in the early days very little more than some of us have to endure at the present time. It has been shown by Mr. Glenn Brown, in his series of articles on the Washington capitol in the *American Architect*, that it had many architects. Part of this history is touched on in the present number of THE INLAND ARCHITECT. It has taken nearly a century to find out to whom the credit for these works is due, and it may take another century to unravel the mystery which seems to surround the real authorship of our government works at the present day. The case of the National Library, not yet completed, may prove to be an illustration. It is a fact, however, that, notwithstanding the intricacies of government bureaucracy and the predominating influences that the military clique has so often exercised over our national architecture, that the government has never been able to dispense with the services of talented architects, however the military arm may have kept them under its shadow and the Treasury arm may have reduced them to the condition only of draftsmen. The only hope for the future seems to be in the passage of the Aldrich bill for the appointment of an architectural commission, which was recommended for adoption by a committee of the present House of Representatives, and which, in similar forms, has been before each successive Congress for more than a decade. It is probable that, a precedent having been set by the appointment of a special architect for the Chicago post office, no important government building will be designed without similar action. Much complication, if not money, can be saved by the passage of a general law.

Fire Tests on Iron Columns.

The first report of the Committee on Fire-proofing Tests appointed by the Tariff Association of New York, the Architectural League of New York and the American Society of Mechanical Engineers, under date of July 27, 1896, which has been printed *in extenso* by most of the technical journals, was duly received by THE INLAND ARCHITECT. It is marked "Bulletin No. 2," and covers the test of two steel columns of different sections and three round cast-iron columns, without protection, by fire and water. The reason why we did not publish this long and interesting report, so far as the subject of investigation is covered by it, is that it is only preliminary to the many experiments that are to follow, provided sufficient funds are voluntarily provided to complete the

investigation already commenced. The field thus far covered is a very limited one. The committee has only brought to a demonstration and put on record the exact proofs of what has long been known, namely, that all steel and cast-iron supports in buildings are valueless except in very slight conflagrations, unless protected by fire-resisting and nonconducting materials. This has been repeatedly done by the two leading fireproofing companies of Chicago in procuring data for the prosecution of their own business. The first of these experiments was tried just twenty-two years ago, and the fireproofing experts have always held that iron began to be weakened for all construction uses at a temperature of 900° Fahr. The experiments of the committee, by the use of more perfect appliances, have shown that the Chicago experts were on the safe side, and have brought this to an actual demonstration and put on record important facts which no one will attempt to dispute. The steel columns tested were of two kinds: one was the ordinary box column made of two channel beams and two plates, and the other one was made of Z-bars. The cast-iron columns were all eight inches in diameter, and all the columns were thirteen to fourteen feet long. They were tested under the safe loads to which they would have been subjected in actual use. It was shown that the Z-bar steel column yielded at 1125° Fahr. and the box column at 1210°, while redness was shown at 1200°. No water was used on the steel columns, and they began to yield by crimping of the flanges. Of the cast-iron columns, one showed redness at 1125° and commenced to yield at 1137°. Another commenced to bend at 1350°, and only showed color when the heat was raised to 1375°. This column broke suddenly when the heat was raised to 1550°. No water was used. The third cast-iron column was tested with water from a fire hose four times, first at 675° without result, second at 775° without result, and the third time it was brought to a red heat at 1050° and water thrown on without result. It was then reheated to 1250° before showing red and commenced to bend at 1275°. At 1300° water was thrown on for the fourth and last time. After the test the column was found to be bent to about three inches from a straight line. This column seems to have shown greater resistance than any of the others, for in the previous test the column was bent about ten inches from a straight line and broke off without the application of water, but at an increase of temperature to 1500°. Thus far cast iron has been shown to resist fire better than steel.

The Committee Need Substantial Help. The committee has wisely appended their treasurer's report, which shows an expenditure of about \$3,000, and nothing left. But of this about \$2,500 has been expended upon permanent plant. Most of the subscriptions to the fund have been made by insurance associations in New York, Philadelphia and Boston, and architects in New York alone. Unless these are increased, the work may have to cease where it is, at a time when a small additional expenditure in connection with the plant on hand might show wonderful results. As is well known, the members of the committee, Charles L. Heins, from the Architectural League of New York, S. Albert Reed, from the Tariff Association of New York, and H. de B. Parsons and Thomas F. Rowland, Jr., from the American

Society of Mechanical Engineers, have given their services gratuitously. Mr. H. de B. Parsons, as superintendent of tests, has been the largest contributor of time and skill. If we were to look for those who are most likely to receive substantial benefit from the committee's work, we would find them among the insurance companies and the fireproofing contracting companies whose products are to be submitted. The former are already the largest contributors of money, but of the latter one has contributed 54,000 common bricks and another 14,000 fire bricks and fourteen barrels of fire clay. The rest have not yet been heard from.

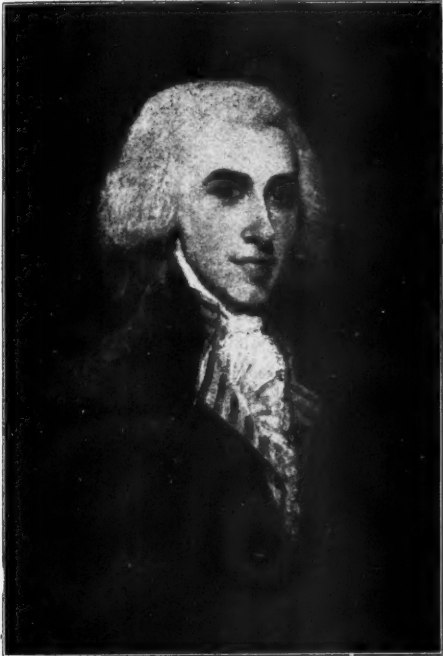
**Chicago
Masons'
and Builders'
Association.**

In our report of the May meeting of the Illinois Chapter of the American Institute of Architects, published in *THE INLAND ARCHITECT* for June, after giving a brief account of the informal discussion between members of the Chapter and the five members of the Chicago Masons' and Builders' Association who were present, of the provisions of the code of practice, which that body had recently published, we used the following words: "Elsewhere we print that part of the code which relates to dealings with owners and architects, as amended and recommended by the committee of the Association as a result of the conference." As a matter of fact it did not appear. The committee did not furnish a copy because they had not reported to their association. A recent inquiry reveals the fact that the association not only has made no amendments to the original code, but does not intend to do so. Hence all the advantages that might have accrued from the conference will be lost, and the Master Masons' Association, after having asked the advice of the only organized body of architects in Chicago, and then declining to accept any of the suggestions received, will presumably have to enforce the provisions of their code, on their own responsibility. It is understood that they are now busy, during an exceptionally dull season, while very few contracts are being offered, disciplining some of their own members. The general opinion among the architects has been that they had no right to make any agreement with the Builders' Association in matters that affected the interests of their clients only, but that those requirements of the code that demanded certain things to be done by the architects were such as almost every properly managed office had always complied with. Experienced architects, who understand the position of their clients better than any contractor possibly can, could offer many valuable suggestions which, if accepted, would prevent much of the friction and ill-feeling that is sure to follow any attempt to enforce its literal requirements, the only result of which would be a withdrawal of capital from investment. If the builders, smarting under the injustice to which they are often obliged to submit, at the bidding of the trades unions, seek to enforce their rules upon the capitalist in the same way — which, after all, is the only effective one — they must refuse to contract with any owner who does not recognize these rules. In this case the employer of contractors will naturally resort to a lockout, and capital will certainly win in the end. This will be good amusement to the trades-union men, and yet it may also be a valuable lesson to all in demonstrating the advantages of arbitration and conciliation among all classes of men.

CHARLES BULFINCH—THE FIRST AMERICAN ARCHITECT.

BY P. B. WIGHT.

It is not often that the reviewer, upon opening a new book, finds his work already done by another. This is suggested by reading the "Introduction" to the "Life and Letters of Charles Bulfinch, Architect,"* by his granddaughter, Ellen Susan Bulfinch, that has just appeared. This "Introduction," by Charles A. Cummings, whom most of our readers will recognize



CHARLES BULFINCH AT THE AGE OF TWENTY-THREE.
From a portrait painted in London.

as the genial president of the Boston Society of Architects, contains nearly all that can be said about Miss Bulfinch's memoir, and it is difficult to add to what has been written by one so well qualified to review the life and works of "our first architect," as he was well called in an earlier memoir by his son, Rev. S. G. Bulfinch, prepared at the invitation of the Boston Society of Architects, and read before it in 1869. To the last mentioned paper Mr. Cummings,

in 1890, added his own contribution to the life of Bulfinch in the "Memorial History of Boston," and more recently in the *Architectural Review*. These, with other publications and a fragmentary autobiography written for his children, have been the bases of the volume before us; and it was doubtless on account of some diffidence on the part of Miss Bulfinch in dealing with the architectural aspects of her grandfather's life that she asked Mr. Cummings to write an introduction to the book. No one could be found better fitted for this task, and yet the necessity for it is less evident to the reader than it must have been to the author. As a literary work its distinctive characteristic is the modesty with which it deals with family matters, as well as its freedom from all claims for the architectural greatness of the subject. In fact it does not make the architectural life of Bulfinch any more prominent than his other experiences, and while it has great interest to the architectural reader, that is not its only interest. It would never have been written had not a persistent effort been made by certain active parties in Massachusetts to tear down the historic statehouse at Boston, which Bulfinch designed just one hundred years ago, and replace it by a new structure. The defense of the statehouse, which has been organized and promoted by the architectural profession not only of Boston but throughout many parts of the country, has attracted attention to the man who built it, who, until but recently, had been almost forgotten except by his immediate descendants and a few students of American architectural history. But for this the world would have known but little of this signally pure and noble life that passed away more than half a century ago. Now that it is revealed to us his written life is found to be profitable reading from many points of view, and should be especially commended to all young architects as an illustration of the value of high character in their own or any other profession.

As an explanation of the main incident that has led to the

*"The Life and Letters of Charles Bulfinch, Architect, with other Family Papers." Edited by his granddaughter, Ellen Susan Bulfinch, with an introduction by Charles A. Cummings. Boston and New York: Houghton, Mifflin & Co., 1896.

publication of the life of Charles Bulfinch Mr. Cummings says: "And now, at the expiration of a full century since he entered upon his long and honorable career, his name has been, in the city of his birth, on every lip, in connection with the threatened destruction of his greatest work, and with the determined effort to save it." He then proceeds to review the book, pointing out the position in which Bulfinch stood with relation to the art of building as then practiced in America, as well as the position of our own with reference to the older countries of Europe architecturally at the end of the last century. As Christopher Wren was to architecture in England in the seventeenth century so was Charles Bulfinch to American architecture. While Inigo Jones was the first who practiced architecture as a profession in England, Christopher Wren was the first to reduce it to a system and to utilize that system during a large professional experience. Neither of these men was educated for the profession. They made it. It was the same with Bulfinch when there were no architects in America. He knew no more of architecture at first than became part of the accomplishments of an educated gentleman.

He was born in 1763, the son of a well-to-do Boston physician, and graduated at Harvard University without any preference for a profession or other calling; and it does not appear that either was a necessity to him; for while not rich, he had enough to live upon without working, and the only incentive he had after graduation was the sense of duty that kept him from idleness. He entered the counting room of Joseph Barrell, a private capitalist and friend of his father, as a clerk, but did not remain there long. As he said in his autobiography: "Unfortunately, the unsettled state of the times prevented Mr. Barrell from engaging in any active business, so that for except about three months of hurried employment, when he was engaged in victualing a French fleet in our harbor, my time passed very idly and I was at leisure to cultivate a taste for architecture, which was encouraged by attending to Mr. Barrell's improvement of his estate and improvements on our dwelling house and the houses of our friends."

Having just come of age in 1785, and inherited a sum of money from a distant relative, he went abroad and spent two years traveling in Europe. His letters during this time do not show that he took more than an ordinary interest in architecture, or had any idea of making it his profession. Referring to his travels he says: "This tour was highly gratifying, as you may well suppose. I was delighted in observing the numerous objects and beauties of nature and art that I met with on all sides, particularly the wonders of architecture and the kindred arts of painting and sculpture, as my letters to my friends at home very fully express; but these pursuits did not confirm me in any business habits of buying and selling; on the contrary they had a powerful adverse influence on my whole after life." He returned to Boston in January, 1787, lived a life of leisure, and married in November, 1788, his wife adding to their income. In the spring of 1789 he took a trip to New York and Philadelphia, and was present at the inauguration of Washington at New York. In his letter from Philadelphia he says: "This city is not much altered since I was last here, except in its increase; the same plain style of building is kept up, and the same quakerish neatness. One only great exception to this appears in the house of Mr. Bingham, which is in a style which would be esteemed splendid even in the most luxurious parts of Europe. Elegance of construction, white marble staircase, valuable paintings, the richest furniture and the utmost magnificence of decoration, make it a palace in my opinion far too rich for any man in this country."

The first authentic record of anything having been erected from his design is the account of the building of a monument on Beacon Hill to replace the old beacon pole which had been blown down. This was done the year following, 1790. It was a Roman Doric column resting on a paneled pedestal, and surmounted by an eagle. The height was sixty feet, and it was built of brick and stucco, having four slate slabs on the pedestal bearing inscriptions. These are now preserved in the statehouse. The hill was at that time the property of his father. He conceived, advocated and carried out the idea of erecting a monument, which was to be a memorial of the events that led up to the Revolution, instead of a practicable beacon. It is not known who paid for it. Probably he and his father bore most of the cost, and there was no architectural employment about it. He simply gave his services as an amateur.

The year before, that is, just after his marriage trip in 1789, he had been elected one of the selectmen of Boston, a position

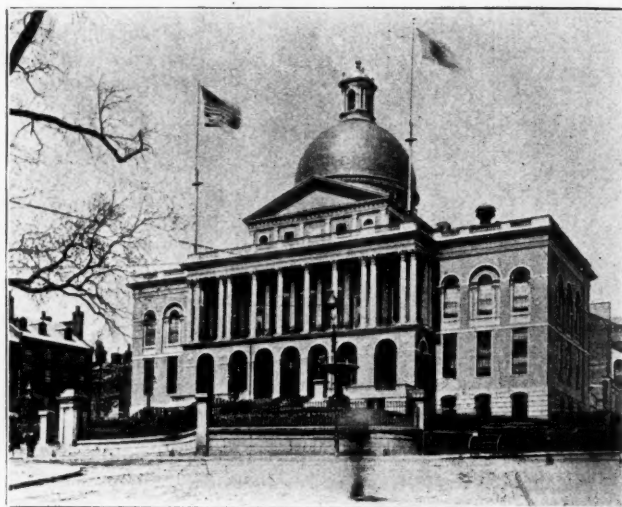
which he filled twenty-eight years and was only given up when he went to Washington to finish the capitol in 1817. Most of the time from 1797 to 1818 he was chairman of the board, a position about equal to that of mayor. From 1790 to 1793 his mind was directed toward having a theater built in Boston. After three years of constant effort to overcome local prejudices, a company was formed and the Boston Theater, in which he was a considerable stockholder, was commenced in July, 1793, and completed and opened February 3, 1794. For this he contributed the design, but most probably as a promoter and not as an employed architect, for in recognition of the fact a gold medal was presented to him by the corporation. On this is preserved the design of the front. While this was being erected, he, with two other gentlemen, undertook a great building speculation known as the Franklin place building venture. It was no less than the erection of two rows of three-story brick dwellings, 500 feet long, planned in the form of a crescent with a long narrow park in front. It was divided in the center by a triple archway covering a cross street, over which were rooms which they gave to the Boston Library and Massachusetts Historical Society. Bulfinch contributed the plans, part of which have been preserved. When one-half of the buildings were completed he was obliged to take the whole venture upon his shoulders, and it ended in his financial ruin and bankruptcy, involving that of his father, brother-in-law and sisters. In his own words he ascribed this to his "blindly gratifying a taste for a favorite pursuit." It is evident that he was not only an amateur of architecture but of finance as well. As no salary was attached to the office of selectman he received much sympathy, which resulted in his being appointed by that body as superintendent of police at a salary of \$600 a year, which office he held until 1815.

This was probably the first money he ever earned, and as the office did not occupy all his time he was free to do other things. He was still one of the most popular men in Boston and had many friends and well-to-do relatives. Others finished the block and it was standing until 1855, extending from Hawley to Devonshire street. Arch street crossed it in the center. The necessity for turning his talents to account was now felt for the first time, and his professional experience as an architect must have commenced in 1794, about the time that the theater was completed. It is therefore an important date in American architectural annals, for up to that time, in the New England States at least, there was no practicing architect. The competition for the capitol at Washington and the President's house had just taken place, but he took no note of it. His opportunity was soon to come, for he still had the unbounded confidence of the community in the midst of which he had been reared. In 1795, by a resolve of the General Court of the Commonwealth of Massachusetts, on February 16, Edward H. Robbins, Thomas Dawes and Charles Bulfinch were appointed a committee to erect a statehouse on a lot of ground commonly called "the Governor's Pasture," containing about two acres, adjoining Governor Hancock's garden, then owned by his heirs.

The corner stone of the statehouse was laid on July 4, 1795, and the building completed in January, 1798. The records do not show that Bulfinch was anything more than one of the committee, but as such he certainly was the architect and designed every part of the building. He must have received compensation as a committeeman, if not as architect, for he was then dependent upon his work for a living, but for which circumstance he might never have become a professional architect. The statehouse was built entirely of brick and wood. After referring to the recent additions in the rear, which are not yet completed, the author says (and it may be taken as the last plea of the architect's descendants): "It is yet uncertain what its fate will be. Whether it may not be found already undermined and ruined by the work upon the additions; whether, if not yet too late, the public sentiment that has called for its preservation be heeded, and it be kept for future time as nearly as possible in its original form, strengthened and rendered fireproof, as advised by a special commission of expert authorities in a recent report to the legislature; or whether, on the other hand, it be rebuilt on a larger scale, with some resemblance, perhaps, to the old model, but at the cost of forever destroying a genuine relic of the first century of the Republic."

It was not intended at the commencement of this review to trace the events of the life of Charles Bulfinch, however briefly, to their end, but to show as a part of current history how he became the first American architect. Neither is there any cer-

tainty that there were no other professional practicing architects in America. We have his own testimony that there were costly buildings elsewhere, but there is no evidence that they were not designed by European architects, and thus far the evidence in this country does not go back of 1794. The record of the life of Bulfinch shows that for twenty years after the erection of the statehouse he was a very busy man and had an immense practice for that time. Through him the people of Boston first realized what an architect might be, and he became one of the historical personages of the small town who contributed in no small degree to making it a great metropolis. He not only designed all the churches and other edifices of Boston and the surrounding country during that time, but as chairman of the selectmen was the most prominent factor in inspiring those changes and public improvements which have contributed to make it what it is today. It is needless herein to recite what they were, Miss Bulfinch having now put them on record for the first time sixty years after his



THE STATEHOUSE, BOSTON, MASSACHUSETTS.

death. It is interesting to note, however, that notwithstanding his extensive architectural practice, the emoluments of which were probably very small compared with what they might have been at the present time, he was for the second time the victim of a financial disaster far greater than the first one; and that his removal to Washington in 1818 to complete the capitol was due to the same cause that made him architect of the statehouse, and the absolute necessity for earning his daily bread. This in its results was a fortunate circumstance, for it probably prevented the design of Thornton and Latrobe from falling into worse hands than those of the conscientious and painstaking Bulfinch. In 1812 he was engaged in a large scheme of land improvement when the war made land transfers impossible. At the same time a fall and the breaking of one of his legs laid him up for three years and ended in permanent lameness. He was reduced to absolute poverty at a time when all building improvements had ceased as the result of events of the war, and was even imprisoned for debt.

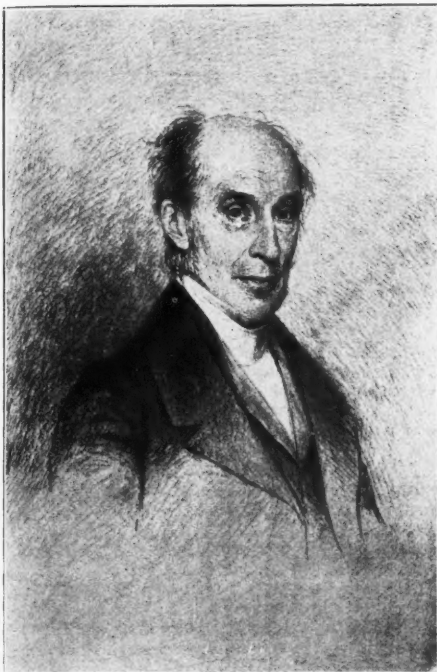
The correspondence with his friend Lee at Washington, which led to his employment on the capitol, is to architects of the present day the most interesting part of the book. His consideration for Latrobe and the fidelity with which he carried out the original plans of the capitol to completion during a period of twelve years shows his high appreciation of the ethics of the profession and a lofty sense of honor that commends his life and example to the study of every American architect. It is well known that Latrobe was forced to resign because of his unwillingness to be subordinated in everything to Samuel Lane, the dictatorial commissioner of public buildings, and that Bulfinch was solicited to come to Washington and apply for the position of architect while the quarrel between Latrobe and Lane was going on. This he refused to do, notwithstanding that his family was almost at starvation's door. He did not accept the position until after Latrobe had left Washington. The following characteristic remarks are found in his letter to Mr. Lee, of September 27, 1817:

"The appointment which you propose has many attractions and strong inducements to please a more ambitious man than

myself. * * * * *

But there are objections which you will permit me to state, some of which you may be able to remove.

"I have always endeavored to avoid unpleasant competition with others that by opposing their interest would excite enmity



CHARLES BULFINCH AT THE AGE OF SEVENTY-NINE.
From a drawing by Alvan Clark.

and ill will. I would much regret to be an instrument in depriving a man of undoubted talents of an employment which places him at the head of his profession and which is necessary to his family's support."

After the commissioners appointed by Congress had refused to remove Latrobe, he wrote to Lee on November 15: "I was not surprised at the determination of the commissioners to continue Mr. Latrobe in employment. I think his talents

entitle him to the place, and that he is the most proper person to rebuild what he had once so well effected."

But Mr. Latrobe resigned after he had been exonerated by the commission, a few days after this letter was written. Bulfinch accepted the position at a salary of only \$2,500 per annum. His amiable disposition completely disarmed the tyrant Lane—who, however, did not remain as long as Bulfinch—and he completed the capitol in 1830. He was then sixty-seven years of age. He designed but one other building during this time though his employment allowed him to engage in other practice, and his failure to do anything else in Washington was a sore disappointment to him. He returned to Boston in the spring of 1830. It is not recorded that he had any architectural practice after this except the designing of the statehouse at Augusta, Maine. His retirement from practice was rather from inability to obtain other employment at his then advanced age, than from choice. The inheritance of a sum of about \$15,000 at this time was the only thing that kept him from actual dependence upon his relatives. He lived a quiet and retired life, boarding in the house that his father had formerly occupied, but surrounded by many relatives and friends who ranked high in the cultured society of Boston. His accomplished and saintly wife died in 1841, at the age of seventy-four, and he followed soon after, on April 15, 1844, in the eighty-first year of his age.

THE ETHICS OF THE SKETCHBOOK.*

BY PAUL WATERHOUSE, F. R. I. B. A.

THE phases of our shifting styles have their reflex in the changes of hunting ground. This, as a general statement, is a truism not worth the saying; but looked into more intimately the facts have a significance at the present day which at least deserves some thoughtful estimation. That in days gone by the study of things Roman should have bred the Renaissance, and that reciprocally the Renaissance should have sent architects with their drawing tackle to Rome, is a mere piece of artistic political economy, a bit of commonplace demand and supply, which calls for no comment, and has a parallel in every period of architectural importation. Our Gothic Revivalists scoured Europe for Gothic ammunition, and the creators whose activity adorned Regent's Park and Fitzroy Square dug ores in Greece or remote Spalato, though to be sure their manufactured article was a far

cry from the original material. More recently, and with less transfiguration in the process, the sketchbook has borne its cargoes from the brick miracles of Bruges and Nuremberg, and from the placid wharves of Holland. Even Spain, hitherto sulking in peninsular seclusion behind the barriers of her Pyrenees, her impregnable language, and her marvelous railway system, has at last been forced into contribution; and more than once one has seen upon the walls of the architectural room at the Academy productions (essays rather than performances) which suggested at least the will to transplant into boreal England the growths of that alien and uncongenial land. In all these processes of transfer, as indeed in every aspect of the stupendous conditions that govern architectural production, there is opportunity for thought and speculation, but it is in the comparison of our own day with the past that we find a special object of consideration. Without disregarding the fact that architectural borrowing has been the practice of all ages except the primæval (witness the transplantation of Greek work to Roman, and the debt of Greece to Egypt and the East), it will probably be allowed that the present century has been preëminently the age of the sketchbook as a vehicle. Of course, in thus speaking of the sketchbook one means not merely, nor indeed at all, a collection of random and incomplete studies, but genuine architectural memoranda of all kinds, including measured drawings.

From the time when Nash, in 1800, set Augustus Pugin to work on the collection of Gothic materials which were to introduce an authentic character into the not too authentic mediævalism of the hour, there has been a continuous, unintermittent flow in the supply of such necessary evidences. The publication of these evidences in printed books is a second stage in the process, and one that has done much to bring about that present condition of affairs which is so singularly in contrast with the days that are gone by. It is hardly possible for a student trained under modern conditions to so much as imagine the circumstances of our immediate forerunners. The elder men of our living generation, and those who were their predecessors—those, in fact, who were the leaders of the Gothic revival—had literally to find their own materials, to make their studies, not in books but in buildings, and to refer when faced by a question of precedent either to their own sketchbooks, or to some far-away and at the time unrecorded example. A strange age of twilight groping; to realize its conditions and its difficulties is to gauge and to appreciate the magnitude of that movement, at present half neglected and sometimes more than half despised, which after all will certainly rank in the eyes of the future as the great feature of Victorian architecture. Today we have at our elbows, or at the worst a few streets off, such storehouses of printed precedents that no one need go far for study or for appeal.

It is but a short while since all was otherwise. Some fifty years ago an English architect won, in open competition, the honor of building a church in a German seaport. In the preparation for his design he studied on the Continent innumerable buildings which he considered would train him in the style he should adopt. To be sure, in a German building it was excusable that he should wish to be German, and it is therefore not wholly to be regretted that he made Germany his field of study. But the reason of it is almost beyond our modern intelligence; it is hard nowadays to realize that this architect did not understand till three years afterward that France, not Germany, was the real cradle of Gothic ecclesiastical architecture. The architect was no less a man than Sir Gilbert Scott, who paid his first visit to the French cathedrals after his appointment as restorer at Ely. Scott had built a matter of eight churches and carried out three restorations before he made that simple pilgrimage to the great churches of France which many a lad now takes in his pupilage. This goes to prove that even as recently as half a century ago the difficulties of scanty records were infinitely increased by actual doubt, even among professors of art, of the right sources in which to look for inspiration and teaching.

In Street's time such difficulties were less, but with him, also, his own sketchbook and his own memory were his standards of reference. What a sketchbook his was too, and what a memory!

In those days there sprang up the duty of sketching as a means of record. It became a duty on the part of architects, young and old, both to travel and to sketch, and in sketching to make faithful memoranda of what they studied and what they saw. The duty, at least in that special aspect, is now practically gone. You can hardly visit a building of beauty anywhere in Europe without the discouraging sense as you pull out sketchbook and pencil that all you see before you, and every detail of it, has been already recorded and published, and probably much better drawn than you can draw it yourself.

Here, then, we face the questions, what is the need of sketching, and what is the good of travel? The bookshelves of any good office, or failing them the Library at Conduit Street, will afford you the opportunity of studying, comparing, and committing to memory any building of importance in any country or of any age; why, then, should one travel a few hundred miles to make an inferior copy in one's own sketchbook or to study these things under less comfortable circumstances? The man who could seriously ask this question could never arrive at, could never understand, the answer. It is, of course, the fact that our many and accessible records have made study a thousand times easier, and have rendered possible as never before the science of comparative archæology. Nay, further, these ready helps have made it no unlikely thing that a man should become even expert in the architecture of a country he has never

* From Journal of Proceedings of the Royal Institute of British Architects, July, 1896.

visited: certainly it is possible for a student to have knowledge, and real knowledge, of more than he can ever attempt to see with his own eyes and draw in his own sketchbook. But is the sketchbook, therefore, to die? Never, and for these reasons. Primarily, because in architecture the pencil works with the brain, and the brain with the pencil. To draw is to learn. It is impossible to learn architecture without drawing; it is impossible to draw architecture without learning. You can draw from engravings and photographs, of course, but that is a lifeless sport at which Nature revolts, and you have to reckon with human nature even in an architect's fiber. Again, there are more things in a building than the best book can give you. We are saved the necessity of visiting all buildings, but we must visit some, at least, and we must draw some. The resources of other men's labors, engravings, lithographs and photographs have brought us much; they have taken away the need of sketching as a means of essential record, but they have not killed the sketchbook—rather, they have given the sketcher a new scope and a glorious liberty—a liberty which no man should abuse. So long as you draw—and draw you must—you may now draw what you will. Some of the necessity has gone, but none of the duty; and duty has its laws. Here are some of the guiding lines. Never draw to make a pretty sketchbook—Burgess taught us that. Of two subjects never choose the easier because it is the easier. Draw what you think you cannot remember rather than what you can. Never be timid, and above all, draw whatever you admire. Such are the rules we glean from the direct teaching and still more from the indirect example of those who have been and are the great masters of that magnificent and most modest art, the art of keeping an architectural notebook.

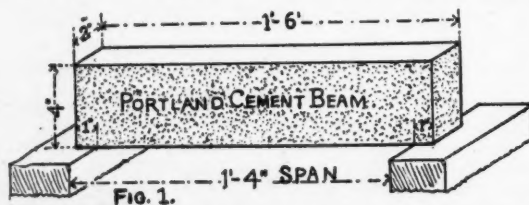
The young man of today who visits for the first time some famous building is relieved from the necessity of making anything like a complete record of it; but this should not by any means lighten his conscience of the duty of carrying away in his own mind, aided by his sketchbook, such memoranda as will enable him in imagination to reconstruct what he has seen. The practice of entering a cathedral and gleaning from it just so much as will provide a few pages of tasteful sketches is, of course, utterly reprobate. No doubt that man will learn most who on his first visit to the building draws nothing, but endeavors to absorb much. If on leaving the building he will attempt to put together on paper the general outlines of what he has seen, and on his second visit corrects the mistakes of his rough sketch, and fills the inevitable *lacunæ* by fresh observation, he will then have learnt much—far more, indeed, than if he had spent his first-half-hour in making jottings of gargoyles or drawings of foliage. In buildings such as cathedrals, where plan is of importance, the plan should certainly be noted carefully, and rough general sections are by no means to be despised. They are not pictorial, and they do not interest the lady friends who look through your sketchbooks, but they give the key to many a building, and they are as a rule sadly neglected by sketchers. Many men need to be reminded that there is a class of drawing which lies between the strictly measured drawing and the purely freehand sketch which is of infinite practical value. A record of the leading dimensions and an approximation of the main proportions can often be obtained when time does not allow of measuring in the usual sense. Notes of this kind, even if they be burnt as soon as made, will put more knowledge into a man's brain than the execution of volumes of pretty bits or whole sheaves of water colors.

Briefly, our new position comes to this. We shall soon have no need, except in rare cases, to store up records for others, nor even for ourselves. Our process in drawing will be the same, accurate as ever, careful as ever, but for a changed purpose. We shall sketch, in fact, for the training of our hands, the strengthening of our memories and the cultivation of that nameless and indefinable faculty which is the mainspring of art.

TESTS OF CEMENT BEAMS.

P. H. JACKSON, C.E., of San Francisco, is authority for the following report on experiments on the transverse strength of beams made of foreign cements:

"The following is the result of tests to ascertain the relative transverse strength by central loads of small Portland cement beams, at 228 First street, San Francisco, on August 21, 1896, in



the presence of Messrs. G. W. Percy and F. T. Shea, architects, and W. E. Brown, C.E., with the representatives of the following dealers in Portland cement in this city: Messrs. H. Cowell & Co., J. D. Spreckels & Bros. Company, W. R. Grace & Co., Girvin & Eyre and M. J. Brandenstein & Co., each of which furnished a barrel of their cement for the purpose, and under the direction of the undersigned.

"Tests were made of two beams of each kind of cement, pure and mixed, from the different dealers, composed of neat cement,

and half cement and half gravel volumes, of the form shown in Fig. 1—with load suspended in center, each twenty-eight days old, ten of which immersed in water, resulting as follows:

TESTED IN THE FOLLOWING ORDER:

BRANDS.	Neat Cement broke at		Average.	½ Cement and ½ Gravel, broke at		Average.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Dyckerhoff (German)	568	and 667	617½	684½	and 705	695
Gillingham (English)	674½	and 578	626	524	and 590	557
Star (French)	597½	and 549	573	646	and 668½	657
Scale (French)	669	and 599	634	660	and 674	667
Hilton (English)	739½	and 610	675	931	and 934½	933
Green Island (China)	546½	and 642	594	389	(X)	389

"N.B.—The trial of beams 546½ and 642 pounds neat Green Island cement, and the 389 of half cement and half gravel of the same kind, were but twenty-five days old when tested, and one beam of half-and-half mixture was found imperfect and not tested, which is the reason of the omission at X."

ANNUAL MEETING OF THE OHIO CHAPTER A. I. A.

THE annual convention of the Ohio Chapter of the American Institute of Architects was held at the Hotel Atlas, Dayton, Ohio, August 19, 1896.

The convention was called to order at 10:30 o'clock, by the president, J. W. Yost, of Columbus, Ohio, who read a short-paper relating to the business of the Chapter during the past year, and referring to such matters as are of immediate present interest.

Owing to the absence of the secretary, the calling of the roll was omitted, and G. W. Drach, of Cincinnati, acted as secretary pro tem.

Inasmuch as the minutes of the last convention had been published in the various architectural journals, their reading was, on motion, dispensed with.

The secretary being absent, no regular secretary's report was received.

Upon motion, the treasurer's report was deferred until the afternoon session.

The executive committee of 1894-5 made a report of the letter-ballot taken to test the wishes of the Chapter in regard to changing its character and name, as authorized at the last convention. The report is as follows:

To the Ohio Chapter A. I. A.: DAYTON, Ohio, August 19, 1896.
Your committee, instructed to take a letter-ballot in regard to the reorganization of the Chapter, as per resolution of Mr. Rapp at the convention held at Cincinnati, August 20-21, 1895, reports as follows:
Blank ballots have been mailed to all the members of the Chapter. Twenty-four have been returned, of which fifteen are in the affirmative and nine in the negative.

Respectfully,
J. W. YOST,
JAMES W. McLAUGHLIN,
GUSTAVE W. DRACH,
For the Executive Committee.

An informal discussion of the resolution to reorganize the Chapter followed the reading of the report. Upon motion of Mr. Williams the consideration of the matter was postponed until the afternoon session.

There being no reports from the other special and standing committees, the president appointed two committees to nominate officers for the coming year. First committee: Mr. Ball, Mr. Burns, Mr. Rapp. Second committee: Mr. Williams, Mr. Drach, Mr. Peters. The committees were directed to report at the afternoon session.

A committee was appointed to audit the report of the treasurer when ready. The committee consisted of Mr. Dexter, Mr. Rapp and Mr. Drach. Mr. Dexter presented a communication from the Secretary of the American Institute of Architects, requesting a contribution to the fund for the payment of necessary expenses incident to the support of the McKaig bill in Congress, whereupon Mr. McLaughlin moved that if the funds of the Chapter, when the secretary's report is received, are found to warrant it, the treasurer be authorized to send a check for \$200 to the secretary of the American Institute of Architects for the purpose above mentioned. After discussion, the motion was carried unanimously.

Upon motion of Mr. McLaughlin the Chapter adjourned for luncheon.

AFTERNOON SESSION.

Convention was called to order at 2:30 P.M. by the president. The treasurer reported that his annual report had been mislaid and was not present, and, upon motion, he was permitted to make a report at a later date.

The two nominating committees thereupon reported tickets of names for officers for the next year, whereupon a ballot was taken, resulting in the election of the following persons: President, Luther Peters, of Dayton; first vice-president, F. L. Packard, of Columbus; second vice-president, C. H. Owsley, of Youngstown; secretary, R. E. Dexter, of Dayton; treasurer, E. O. Fallis, of Toledo; executive committee—C. I. Williams, of Dayton; J. W. Yost, of Columbus; D. L. Stein, of Toledo. The next place of meeting, Columbus.

Mr. Luther Peters, the president-elect, was called upon for a speech, and responded gracefully, thanking the convention for the honor conferred upon him, and pledging his earnest support to the work of the Chapter.

Upon motion of Mr. McLaughlin, Mr. R. E. Dexter was elected secretary pro tem.

The question of changing the character and name of the Chapter was then taken up, and, after discussion, upon motion of Mr.

G. W. Rapp, of Cincinnati, the convention agreed by unanimous vote to the change proposed, and the executive committee was authorized to confer with the executive committees of the Cincinnati and Cleveland Chapters, and with the secretary and executive committee of the American Institute of Architects, for the purpose of carrying into effect the resolution above referred to, which was presented by Mr. Rapp and adopted at the annual convention in Cincinnati, in 1895.

Mr. Walter Forbush, a former member of the Chapter, presented two gavels, the one used by Mr. W. W. Carlin, president of the Western Association of Architects, and the other used by Mr. Richard M. Hunt, president of the American Institute of Architects, at the Consolidation Convention, whereby the two societies were united under the name of American Institute of Architects. On motion of Mr. Fallis, thanks were returned to Mr. Forbush and the gavels accepted.

The president then called the attention of the convention to the coming convention of the American Institute of Architects, to be held at Nashville, Tennessee, and requested as full a representation of the Ohio Chapter as possible.

There being no further business, on the motion of Mr. Burns, the convention adjourned.

OUR ILLUSTRATIONS.

Commercial building for estate of M. A. Mayer, Chicago. D. Adler, architect.

Great Northern Theater and Hotel building, Chicago. D. H. Burnham & Co., architects.

Competitive design for courthouse, South Bend, Indiana. Lamb & Rich, architects, New York.

Accepted design for courthouse, South Bend, Indiana. Shepley, Rutan & Coolidge, architects.

Preliminary design for the postoffice and customhouse at Chicago. Henry Ives Cobb, architect.

Competitive design for courthouse, South Bend, Indiana. Yost & Packard, architects, Columbus, Ohio. Yost & Packard write: "We wish to call your attention to the fact that the requirements of the competition were that the stone for the exterior, except trimming, should be of rough granite, variegated in color, such as is found in the county, and this stone is unfit for a building of Renaissance design. We designed the exterior in a style best adapted for the material. We make this explanation in order that you may understand why the interior is in Renaissance and the exterior is in Romanesque."

Photogravure Plate: Library and meeting room of the Illinois Chapter of the American Institute of Architects, at the Institute of Building Arts, Chicago.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure Edition.

Residence of Jacob Heissler, Chicago. C. J. Furst, architect.
Residence of Mrs. Henry W. Hoyt, Chicago. Charles S. Frost, architect.

Residence of G. W. Shannon, Chicago. Holabird & Roche, architects.

Residence of Prof. Jacques Loeb, Chicago. Patton & Fisher, architects.

Residence of Prof. Henry H. Donaldson, Chicago. Patton & Fisher, architects.

Residence of Prof. Frank Bigelow Tarbell, Chicago. Harvey L. Page & Co., architects.

Residence of Dr. William H. Harper, of Chicago University, Chicago. Henry Ives Cobb, architect.

MOSAICS.

JOSEPH TILTON MOULTON, well known as a contractor and builder of grain elevators, died on Sunday night last at his home, No. 1 Groveland Park, at the age of seventy years. He was the head of the firm J. T. Moulton & Son, and for more than forty years had been a resident of Chicago. Death came as the result of enfeeblement from age. Mr. Moulton was the father of Col. George M. Moulton, of the Second Regiment, Illinois National Guard, and William A. Moulton, of the Pioneer Fireproofing Company.

MANY of the most prominent architects in New York, says the *World*, have appealed to Mayor Strong to move for a larger appropriation for the Building Department. The paper has been presented, and, it is said, will be favorably considered. The petition follows:

We, the architects of this city, whose names are appended to this petition, solicit and request that you respect the former petition requiring a larger appropriation for the conduct of the affairs of the Building Department of this city, so that that department may be enabled to still more effectively carry out its work.

We submit as an argument in favor of this request that during the incumbency in office of the present superintendent and the able assistants that he has gathered around him, more satisfactory work has been done than ever was done before to properly carry out the great building enterprises of this city.

Under these circumstances we feel it due to the superintendent to thus show our appreciation in this tangible form, and we do so with the hope that our petition will be considered and a further interview granted us on this request.

The petition carries with it what many officials declare to be a suitable answer to those at fault with the department. Some

weeks ago these enemies circulated another entirely different petition. It declared, among other things, that Mr. Constable was incompetent and distasteful to architects. It was asserted also by the petitioners that the superintendent made a practice of delaying work on buildings to suit his own convenience, and that architects who had imperative business with him were often kept cooling their heels for hours at his office. This petition was presented to Mayor Strong, and within a few days Mr. Constable will be called upon to answer it. He will have in the new petition, however, a sufficient answer to the accusations of these detractors, who, he asserts, are insignificant. Mr. Constable, in common with his assistants, has declared that no architect of any fame has found fault with him and that his enemies are moved principally by political bias to ask for his removal. Among those who have signed the new petition are: W. & G. Audsley, Holland C. Anthony, Berg & Clarke, Balb, Cook & Willard, Brunner & Tryon, Bloodgood & Lund, William P. Bannister, A. S. Bell, Cady, Berg & See, Clinton & Russell, F. T. Camp, William Arthur Cable, Constable Bros., Delemos & Cordes, John Dufais, John H. Duncan, Cyrus L. W. Eidlitz, Ernest Flagg, Flemer & Koehler, Fowler & Hough, Robert W. Gibson, Harding & Gooch, Heins & La Farge, H. J. Hardenberg, Howard & Cauldwell, C. C. Haight, George E. Harney, Francis Gilman, Howard Jardine, Kent & Jardine, N. Le Brun & Son, James Brown Lord, Lord & Kewlett, Little & O'Connor, A. C. Longyear, George B. Post, Bruce Price, Parish & Schroeder, W. A. Potter, George Palliser, Renwick, Aspenwall & Owen, Rydel & Shepard, John B. Snook & Son, W. Wheeler Smith, Schickel & Ditmass, Benjamin Silliman, R. M. Upjohn, Downing Vaux, Stamford White, of McKim, Mead & White, and Alfred Zucker.

ASSOCIATION NOTES.

AMERICAN INSTITUTE OF ARCHITECTS.

A meeting of the Executive Committee of the American Institute of Architects was held in New York, August 28, 1896. Present—President George B. Post, Edward H. Kendall and Secretary Alfred Stone.

The reading of the records of the last meeting was omitted.

An illustrated publication, the alternate pages of which were filled by the designs of a prominent firm of architects and advertisements, principally of builders and contractors, was submitted to the committee by a prominent member of the Institute. The publication was considered to be unprofessional, and because of its importance and gravity the matter was referred to the next annual convention, with a view to the establishment of a code of ethics which will stamp its disapprobation of the practice.

Mr. P. B. Wight, F. A. I. A., sent to the committee a copy of the certificate formerly used by the Institute, which was designed by the late Mr. E. J. N. Stent, but it was not thought best to revive its use.

The secretary was instructed to print in the next Proceedings a chronological list of Fellows and Associates of the Institute, indicating those who were deceased and grouping those who founded the Institute in a separate list.

The secretary was requested to prepare an amendment to the by-laws, giving the board of directors power to remit the dues of members who, by reason of disability, were unable to continue to pay the same.

It was voted that the treasurer be directed to pay to the secretary of the National Conference on Standard Electrical Rules the sum of \$25, the amount agreed to be paid toward the expense of said conference.

The secretary read a letter from Mr. William Martin Aiken, F. A. I. A., Supervising Architect of the United States Government, expressing his earnest hope and his desire to raise the standard of excellence of government architecture, and his willingness and readiness to cooperate with the Institute in any action tending to the equitable and honorable adjustment of the problem of the designing of certain government buildings by the best talent available among general practitioners, and in this he believed the present Secretary of the Treasury was also agreed.

The programme of the Nashville convention, as suggested by Mr. W. C. Smith, of Nashville, the chairman of the committee, was read and received consideration and suggestions.

The following applications for election as Fellows of the Institute were acted upon favorably: F. E. Kidder, Denver, Colorado; J. Monroe Hewlett, New York, N. Y.; Frank H. Quinby, New York, N. Y.

The letter-ballots of June 8 were opened, and Robert E. Dexter, Dayton, Ohio, J. Graham Glover, Brooklyn, New York, and Rudolph L. Daus, Brooklyn, New York, were found to be elected.

Adjourned.

ALFRED STONE, Secretary.

SYNOPSIS OF BUILDING NEWS.

Architects are invited to furnish for publication in this department monthly or occasional reports of their new work before the letting of contracts. Reports of buildings costing less than \$5,000 are not published.

Allegheny, Pa.—Architects Alden & Harlow, Pittsburg: For A. M. Byers, residence; three stories; cost \$125,000.

Chicago, Ill.—Architects Cole & Dahlgren: For W. W. Lloyd, five two-story and basement frame residences, 22 by 45 feet in size each; to be erected at Winnemac avenue and North Fifty-ninth street; they will have stone basements, oak interior finish, mantels and sideboards, gas fixtures, the modern plumbing, furnaces, etc.

Architect Frederick A. Glattes: For Miss Nellie C. Mackey, a two-story and basement flat building, 22 by 58 feet in size; to be erected at 1304 Congress street; it will have a buff Bedford stone front, oak and Georgia pine finish, mantels, sideboards, the modern sanitary improvements, gas fixtures, steam heating, electric bells, speaking tubes, etc.

Architects F. L. Fry & Co.: For W. Demming, a three-story summer residence, to be 65 by 90 feet in size; to be erected at Linville, North Carolina; will put in the modern plumbing, electric light, heating, hardwood finish, etc.

Architects Ostling Brothers: For C. O. Callahan, a two-story, basement and attic residence, 22 by 56 feet in size; to be built at the corner of Crawford and Greenwood avenues; will put in all the modern sanitary improvements, gas fixtures, heating, mantels, sideboards, etc.

Architects Hallstrom & Ockerlund: For Mrs. Thorson, a three-story store and flat building, 24 by 85 feet in size; to be erected at 232 Division street; it will have a buff Bedford stone front, flat roof, oak interior finish, mantels, sideboard, gas fixtures, steam heating, etc.

Architects Huchl & Schmid: For M. Cole, a two-story store and flat building, 25 by 80 feet in size; to be erected at Division street near Western avenue; it will have a front of buff Bedford stone, pine interior finish, painted; the modern open plumbing, gas fixtures, electric bells, speaking tubes, steam heating, cement floor, etc.

Architects Schlacks & Ottenheimer: For Gutman & Co., a five-story factory, 50 by 134 feet in size; to be erected at Webster avenue and Dominic street; it will be of common brick with stone trimmings, gravel roof, electric light, plumbing, steam heating, elevators, cement work, etc. Also making plans for a three-story building, 66 by 95 feet in size; to be erected at Rosehill; it will contain orphan asylum, schoolroom, dormitory and chapel, and cost about \$50,000; it will be constructed of pressed brick with stone trimmings, have hardwood interior finish, the best of modern plumbing, steam heating, electric light, etc.

For Mrs. Nora Hartman, a three-story and basement flat building, 25 by 88 feet in size; to be erected at Forty-seventh street near St. Lawrence avenue; it will be of buff Bedford stone front, have interior finished in quarter-sawn oak, mantels, sideboards, gas and electric fixtures, the modern open plumbing, laundry fixtures, steam heating, electric light, bells, speaking tubes, etc. For L. Collinger, a three-story store and flat building, 25 by 68 feet in size; to be erected at Forty-third street near Vincennes avenue; it will have a cut stone front, oak interior finish, mantels, sideboards, gas and electric fixtures, gas ranges and fireplaces, electric light, speaking tubes, electric bells, laundry fixtures, etc.

Architects Brompton & Lawson: For M. Clark, agent, two two-story and basement frame residences, each 22 by 40 feet in size; to be erected at Ashland and Cullom avenues, Ravenswood; they will have brick basements, oak finish, mantels, sideboards, gas fixtures, furnaces, electric bells, speaking tubes, laundry fixtures, etc. Also two two-story, basement and attic frame residences, 22 by 45 feet in size; to be erected at Sunnyside avenue and Lyman street; they will have stone basements, hardwood interior finish, mantels and sideboards, gas fixtures, furnaces, the modern sanitary plumbing, etc.

Architect Julius H. Huber: For Philip Weil, a two-story and basement flat building, 22 by 46 feet in size; to be erected at Sawyer avenue, near Logan square; will put in hardwood finish, mantels, sideboards, furnaces, gas fixtures, modern plumbing, etc.

Architects Finkler & Niess: For J. Bromley, a two-story livery stable at 1597 Clark street; it will be of pressed brick and stone front, have the modern plumbing, gas fixtures, etc.

Architect J. T. Fortin: For A. J. Giroux, a three-story and basement store and flat building, 48 by 68 feet in size; to be erected at the corner of Washburn avenue and Wood street; it will have a buff Bedford stone front and pressed brick and stone side; oak and Georgia pine interior finish, mantels, sideboards, gas fixtures, steam heating, laundry fixtures, etc. For M. Bremer, a three-story and basement store and flat building; to be erected at Peoria street; it will have a buff Bedford stone front, oak and Georgia pine finish, the best of modern improvements, gas and electric fixtures, mantels and sideboards, laundry fixtures, steam heating, electric bells, speaking tubes, etc. Also three-story and basement flat building, 25 by 80 feet in size; to be erected on West Sixteenth street; pressed brick and stone front, hardwood finish, mantels, sideboards, gas fixtures, etc. For L. P. Cardwell, a two-story and basement flat building, 51 by 65 feet in size; to be erected at the corner of Harrison and Gold streets; to be of stone front, have hardwood finish, mantels, sideboards, steam heating, best of plumbing, etc.

Architect A. Sandegren: For Frank Gustavson, a four-story flat building, 28 by 88 feet in size; to be erected at Oakenwald avenue; it will be of stone front, have hardwood interior finish, mantels, sideboards, gas and electric fixtures, steam heating, laundry fixtures, gas ranges, etc.

Architects Wilson & Marshall: For J. C. Hutchings, a three-story and basement apartment house, 50 by 80 feet in size; to be erected at Oglesby avenue and Sixty-second street; it will be of buff Bedford stone front with stone cornice and stone bays, have interior finished in quarter-sawn oak, marble wainscoting, mosaic and tile floors, the best of modern sanitary improvements, gas and electric fixtures, laundry fixtures and driers, steam heating, electric light, gas ranges and fireplaces, cement floors in basement, electric bells, speaking tubes, wrought-iron lamps at entrance, etc.

Architect B. S. Elmendorf: For W. B. Thompson, at West Congress street, a two-story, basement and attic flat building, 25 by 60 feet in size; to be of buff Bedford stone front, have oak interior finish, mantels, sideboards, gas fixtures, furnaces, electric bells, etc. Also three-story and basement flat building to be erected at West Adams street; to be of buff Bedford stone front, have oak and Georgia pine finish, gas fixtures, mantels, sideboards, steam heating, etc. Also two-story, basement and attic frame residence, 24 by 50 feet in size; to be erected at Oak Park; it will have stone basement, quarter-sawn oak finish, mantels, sideboards, gas fixtures, laundry fixtures, furnace, electric bells, etc.

Architect Martin Carr: Made plans for St. Bernard Church, to be erected at Stewart avenue and Sixty-sixth street. It will be 157 feet long and 82 feet wide, and will be constructed entirely of white Georgia marble. The interior will be very handsomely finished in oak and frescoing, marble floors, etc., and will also put in electric light, steam heating and the necessary plumbing, and handsome stained glass windows. There will be galleries with a seating capacity of 378, and the main body of the church will accommodate 1,138, making a total seating capacity of 1,516. The church will be completed some time toward the end of next year. Rev. P. B. Murray is pastor. The cost when all complete will exceed \$100,000, and it is expected to be the finest church in Chicago.

Architect George Grussing: Making plans for a two-story and basement residence, 25 by 60 feet in size; to be erected on Washington boulevard near Albany avenue; it will be of buff Bedford stone front, have the modern plumbing, gas and electric fixtures, gas ranges and fireplaces, oak interior finish, mantels, sideboards, laundry fixtures, electric light, hot-water heating, speaking tubes, electric bells, etc. For Henry Schwing, a two-story and basement flat building, 25 by 72 feet in size; to be erected at 3728 Archer avenue; it will have a front of buff Bedford stone, hardwood interior finish, mantels, sideboards, gas fixtures, electric bells, speaking tubes, the modern sanitary conveniences, laundry fixtures, furnaces, cement floor in basement. For Charles S. Stover, at 465 Douglas boulevard, a two-story, basement and attic flat building, 28 by 65 feet in size; to have a buff Bedford stone front, interior to be finished in quarter-sawn oak and Georgia pine, have mantels, sideboards, gas fixtures, furnaces, laundry fixtures, electric bells, speaking tubes, etc. For A. D. Hillegas, at Winnetka, a two-story, basement and attic frame residence; to have stone basement, oak interior finish, mantels, sideboards, gas and electric fixtures, furnace, gas ranges and fireplaces, open plumbing, etc.

Architect Frederick Foehtinger: For William Hagen, a two-story residence, at 1740 York place; to have a buff Bedford stone front, copper bay and cornice, oak finish, mantels, sideboards, gas and electric fixtures, hot-water heating, laundry fixtures, gas ranges and fireplaces, electric bells, speaking tubes, etc.

Architect A. T. Ferree: For M. P. Severin, a three-story and basement flat building, 49 by 60 feet in size; to be erected at the corner of Seventieth and Honore streets; it will have a front of blue Bedford stone, the modern sanitary improvements, interior to be finished in quarter-sawn oak and Georgia pine, steam heating, mantels, sideboards, gas and electric fixtures, electric bells, speaking tubes, etc. For S. R. Moore, a three-story and basement flat building,

44 by 60 feet in size; to be erected at Wright and Sixty-sixth streets; it will be of stone front and side, have interior finished in quarter-sawn oak, mantels, sideboards, steam heating, electric light, laundry fixtures, gas and electric fixtures, gas ranges and fireplaces, etc. For J. C. Simson, a three-story and basement apartment house, 45 by 70 feet in size; to be erected at 7020 Union avenue; it will be of stone basement and pressed brick above, with cut stone trimmings, have the interior finished in quarter-sawn oak and Georgia pine, mantels, sideboards, gas and electric fixtures, laundry fixtures, steam heating.

Architect Albert S. Hecht: For J. H. Hamilton, five two-story, basement and attic residences, 100 feet front and 51 deep; to be erected at Forestville avenue near Forty-fifth street; they will have buff Bedford stone fronts, flat roof, quarter-sawn oak interior finish, mantels and sideboards, gas and electric fixtures, steam heating, electric light, laundry fixtures, etc.

Cleveland, Ohio.—Architect A. N. Oviatt, the Arcade, reports as follows: At South Brooklyn, Ohio, a Methodist Episcopal church building, consisting of auditorium, Sunday-school room, parlors, dining room and kitchen; to be built of brick and stone, with slate roof and copper and stone cornices; hot-air heating and ventilation; hardwood throughout, seating by pews; cost \$12,000. For B. W. Haskins, a frame and stone residence on Streeter avenue; slate roof, steam heat, plumbing, hardwood, grates and mantels, electric bells and lights; cost \$14,000. For E. E. Adams, on Euclid avenue, a house practically the same as the above; cost \$12,000. For G. E. Collins, on Euclid avenue near Willson, a frame and stucco dancing academy and music hall, 50 by 150 feet, two stories; stores in front, steam heat, electric light; cost \$10,000. The interior fittings and furnishings for the clubrooms of the Century Club; these rooms will be located on the fifteenth floor of the New England Building and will be most elaborately finished in hardwood, mosaic, ornamental plaster and stained glass; the rooms will consist of dining, grill and billiard rooms, parlor, ladies' parlor, library, kitchens and pantries; the cost will be about \$30,000.

Architect Charles E. Tousey, 176 Euclid avenue, reports under construction a brick, frame and shingle stable for William Grief, on Lake avenue, 38 by 54 feet in size, slate roof, wired for electric lights, plumbing and stable fixtures; cost \$5,000. For the Brooklyn Congregational Church he is preparing plans for the remodeling of the church building on Archwood avenue, adding to the rear of the building; brick and stone construction; steam heat; cost \$6,000.

Architects Sprackling & Metzinger, 89 Euclid avenue, report a brick and stone three-story tenement and store building for George Tinnerman, on Lorain street; gravel roof, steam heat, twenty suites with separate plumbing, plate glass; cost \$6,000.

Architect E. E. Smith, 44 Euclid avenue, reports a frame residence for Warner White; building on Euclid avenue, in East Cleveland; slate roof, plumbing, steam heat, modern improvements; cost \$5,000.

Architects Lehman & Schmitt, 619 Hickox building, have prepared plans for a county morgue, to be built on Lake street, Cleveland; it will be 38 by 108 feet, two stories high, brick and stone, in the Egyptian style of architecture; the building will contain a reception room, offices, vault, preparation room, show case, coroner's room, courtroom and bathroom, plumbing, steam heat, marble work, cement, plate glass; cost \$28,000.

Architect Fennimore C. Bate has fitted up offices in the New England building, Nos. 401 and 402.

Denver, Colo.—Edbrooke Architectural Co.: For W. McQuown, two and one-half story dwelling, brick; size 30 by 54 feet; cost \$5,000. For Alfred Crebbin, two and one-half story terrace, brick; size 100 by 25 feet; cost \$7,000. For W. J. Wilson, two and one-half story dwelling, brick; size 37 by 52 feet; cost \$7,000. For Patterson & Thomas, four-story addition to Hotel Markham; cost \$30,000. For Thomas Freeman, two and one-half story dwelling, brick; size 35 by 44 feet; cost \$5,000.

Architect Robert Reeschaub: For Denver School District No. 1, three-story addition to schoolhouse, brick; size 64 by 119 feet; cost \$39,000. For William K. McMillan, two-story dwelling, brick; size 36 by 38 feet; cost \$5,000. For L. H. Jackson, residence of white brick with stone trimming; size 40 by 60 feet; cost \$14,000.

Thirty-seven permits issued in August, costing \$120,700.

Detroit, Mich.—Architect Alfred Wood: For Detroit and Toledo syndicate, to be built at Amherstburg, Ontario, a four-story brick and stone summer hotel and sanitarium; tile roof, modern improvements; size 27 by 118 feet; cost \$100,000.

Architect Wells D. Butterfield: For First Methodist Episcopal Society, Williamston, Michigan, stone church edifice; field stone with sandstone trimmings; size 62 by 78 feet; cost \$10,000.

Architects Nettleton, Kahn & Trowbridge: For Mr. Yates, two summer houses, to be built at Pointe au Barques, Michigan; cost \$5,000. For Detroit College of Medicine, veterinary hospital, four-story brick building, at southeast corner of St. Antoine and Mullett streets; size 40 by 96 feet; cost \$16,000. For Dr. Fred Anderson, summer residence at Grosse Isle, Michigan; cost \$5,000.

Architect Edw. C. Van Lye: For Police Commission, Detroit, remodeling and repairing police headquarters Farmer and Randolph streets; cost \$6,500. For Police Commission, Detroit, East Side Central Station, three stories and basement; stone and pressed Roman brick, tile roof, furnace heat; size 68 by 72 feet; cost \$25,000. For E. E. Taylor, Reed City, Michigan, three-story brick store and residence flats; size 30 by 70 feet; cost \$5,000. For Thomas W. Tzel, two-story frame residence and barn, to be built on Stanton avenue; cost \$5,000.

Architect Harry J. Rill: For congregation of Most Holy Redeemer, Roman Catholic church edifice; to be built of Iona sandstone, at corner of Dix and Junction avenues; size 80 by 153 feet; cost \$50,000. For Lorman Building Company, an eight-story buff pressed brick apartment building, on north side of Jefferson avenue between Leib and Mt. Elliott avenues; trimming of Ohio sandstone; size 50 by 130 feet; cost \$75,000.

Architect George Zimmerman: For Thomas Zottowski, two-story brick and stone residence, to be built on north side of Canfield avenue; cost \$6,500. For Board of Education, two-story, twelve-room schoolhouse; to be built of pressed brick with stone trimmings; to be built on Ellery street; size 75 by 80 feet; cost \$25,000.

Architects Malcombson & Higginbotham: For St. Thomas Protestant Episcopal Church Society, a brick and stone church edifice; to be built at corner of Boulevard and Shady lane; size 50 by 60 feet; cost \$10,000. For Board of Education, two-story, eight-room brick school; to be built on Kirby avenue; size 65 by 70 feet; cost \$18,000. For Board of Education, two-story, twelve-room school building, at corner of McGraw avenue and Eighteenth street; size 70 by 75 feet; cost \$25,000.

Architect Gordon W. Lloyd: For St. Joseph's Retreat Society, Dearborn, Michigan, a four-story brick addition; size 40 by 220 feet; cost \$65,000.

Architects A. C. Varney & Co.: For U. S. Fish Commission, Northville, Michigan, a frame fish hatchery; size 40 by 70 feet; cost \$7,500. For Frank N. Clark, Northville, Michigan, a two-and-one-half-story frame residence; cost \$5,000. Also a three-story brick double store with residence flats; to be built on Grand River avenue near Sixth street; cost \$6,000.

Architect Julius Hess: A memorial military building; to be built on the Cass market site; cost \$30,000.

Architect Joseph G. MacLean: For J. Askew, Windsor, Ontario, a two-story brick double store, corner of Goyeau and Wyandotte avenues; cost \$25,000.

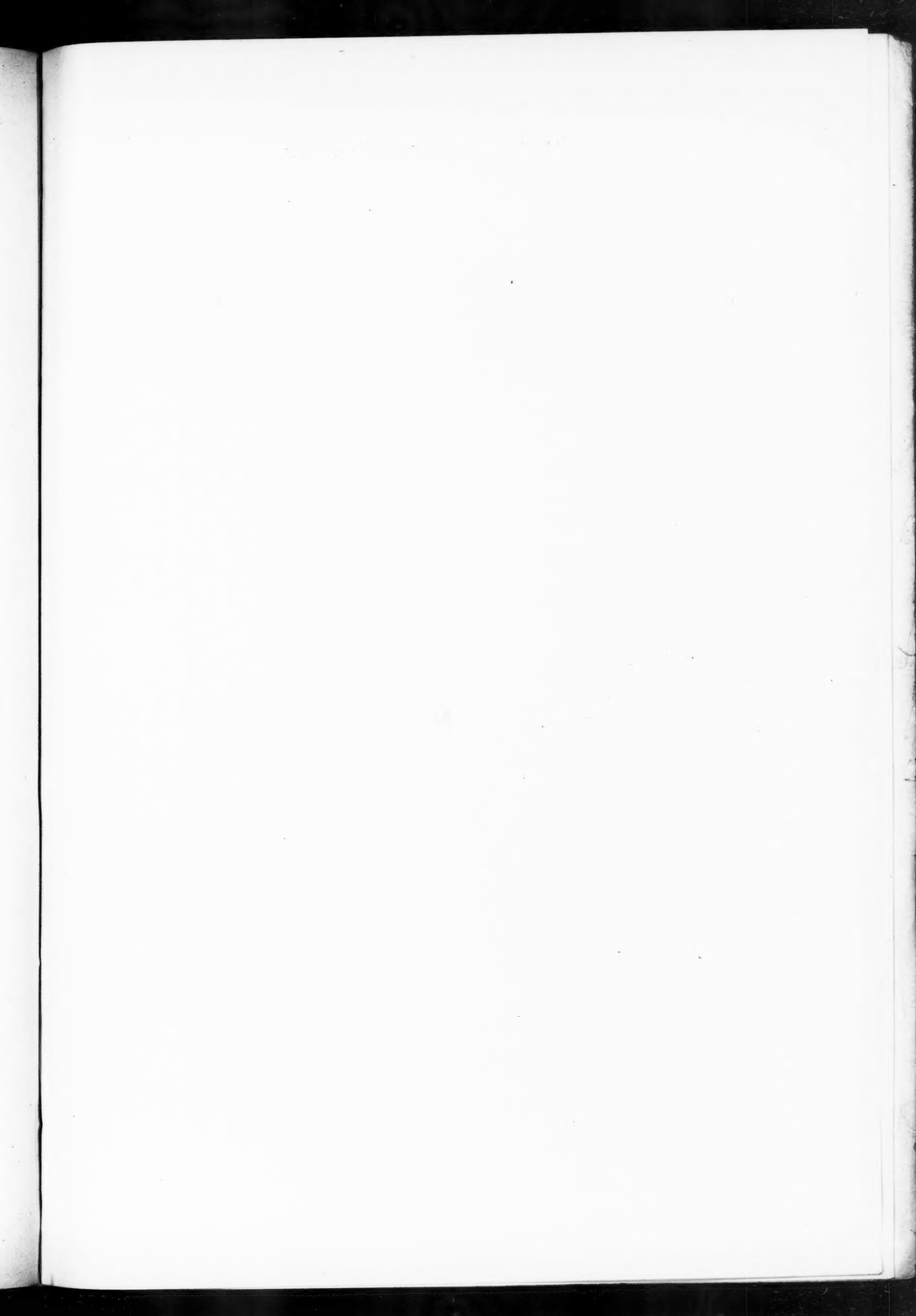
Architects Mortimer L. Smith & Sons: A two-and-one-half-story brick and stone residence, at Ypsilanti, Michigan; cost \$25,000. Also a two-and-one-half-story brick veneered residence; to be built on north side of Calumet avenue; cost \$5,000.

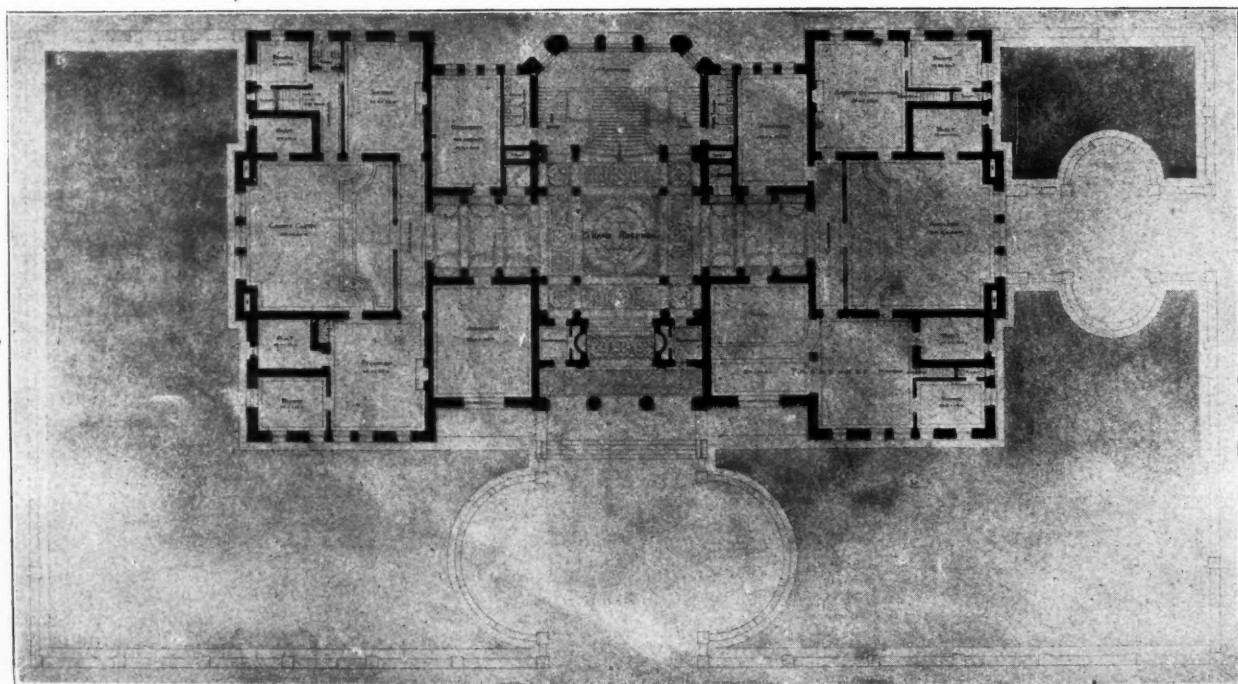
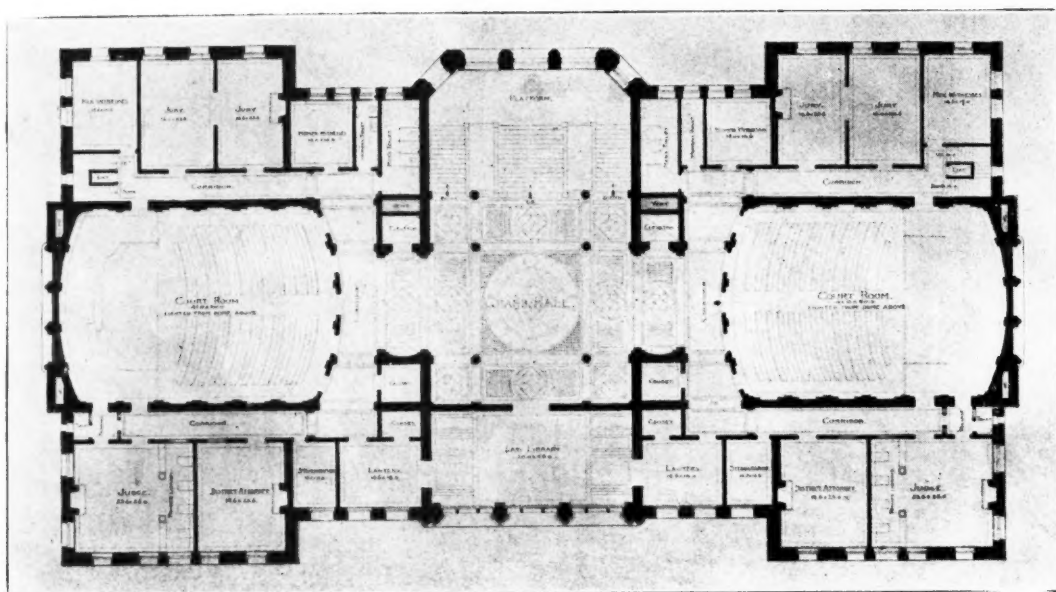
Architects Donaldson & Meier: For F. B. Stevens, a two-and-one-half-story brick and stone residence; to be built on north side of Elliott street; size 35 by 52 feet; cost \$9,200.

Milwaukee, Wis.—Architects Ferry & Clas: For Goll & Frank, seven-story building of stone, pressed brick and terra cotta; cost \$125,000.

Architects Rau & Kirsch: Have been awarded by the county board \$750 on account of plans and specifications not used for rearrangement of courthouse.

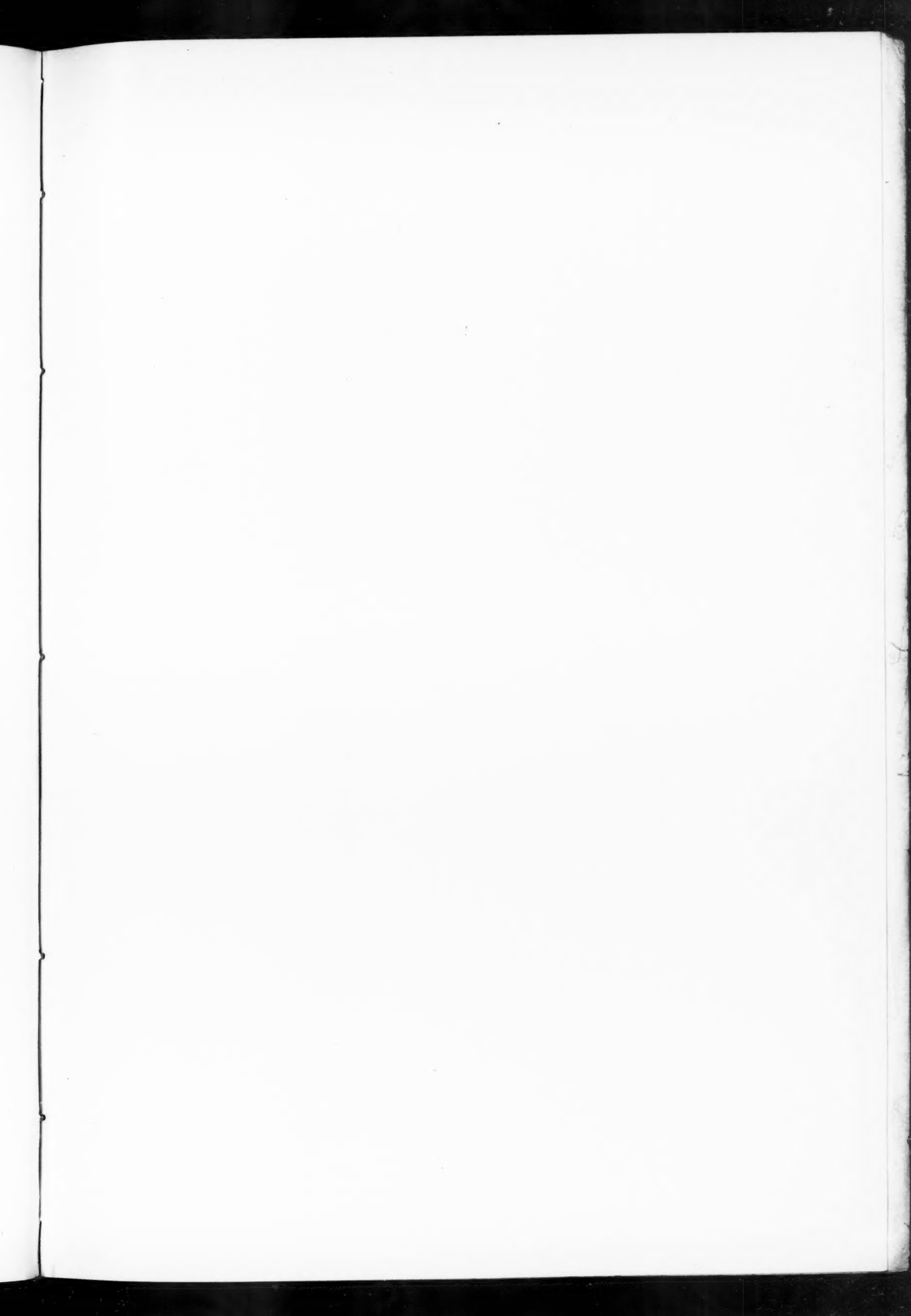
Minneapolis, Minn.—Architect W. B. Dunnell: For William H. Eustis, fireproof building for N. W. Telephone Exchange Company; size 71 by 100 feet; three stories; to be of pressed brick with stone trimmings; cost \$50,000.

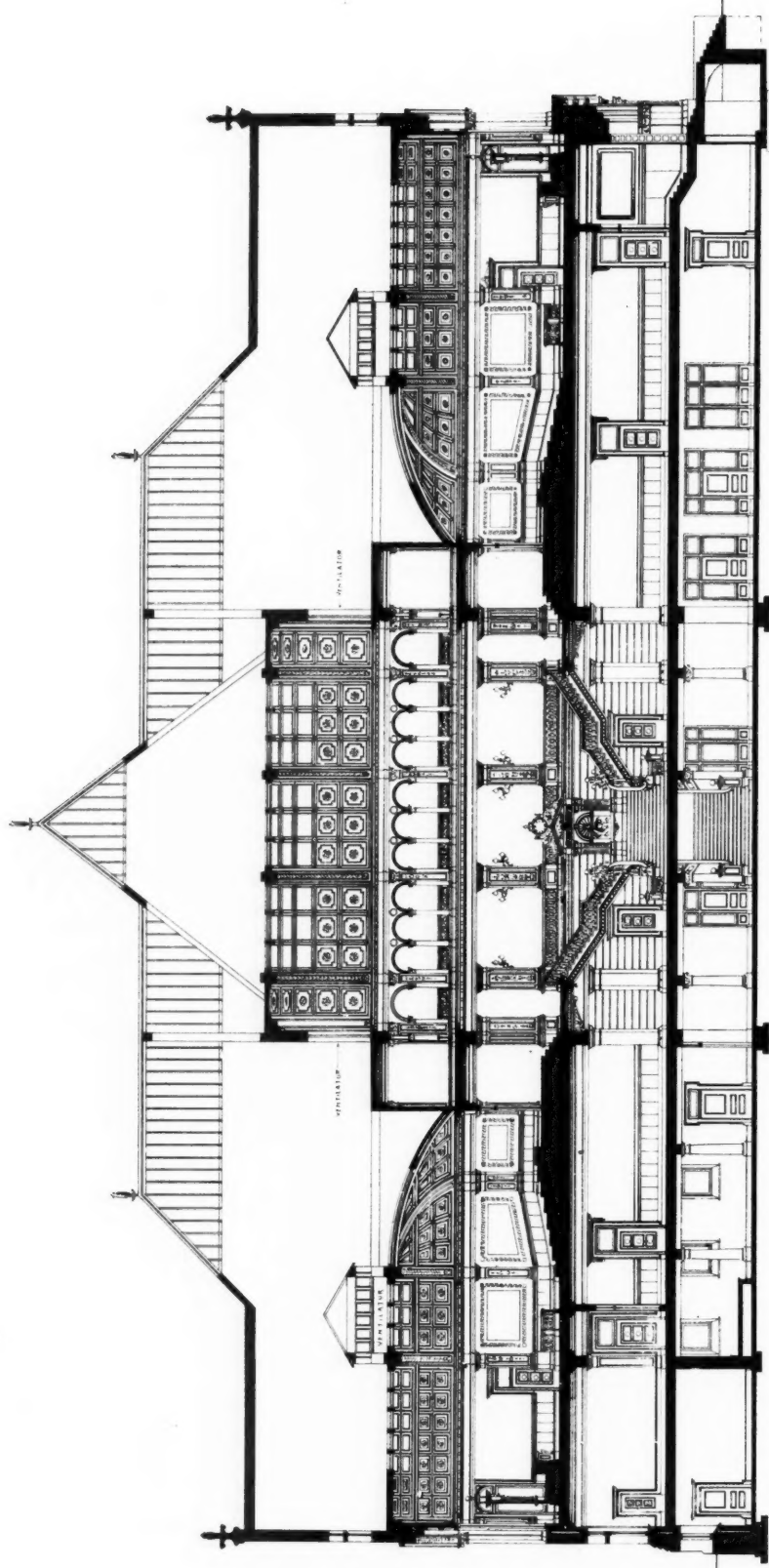




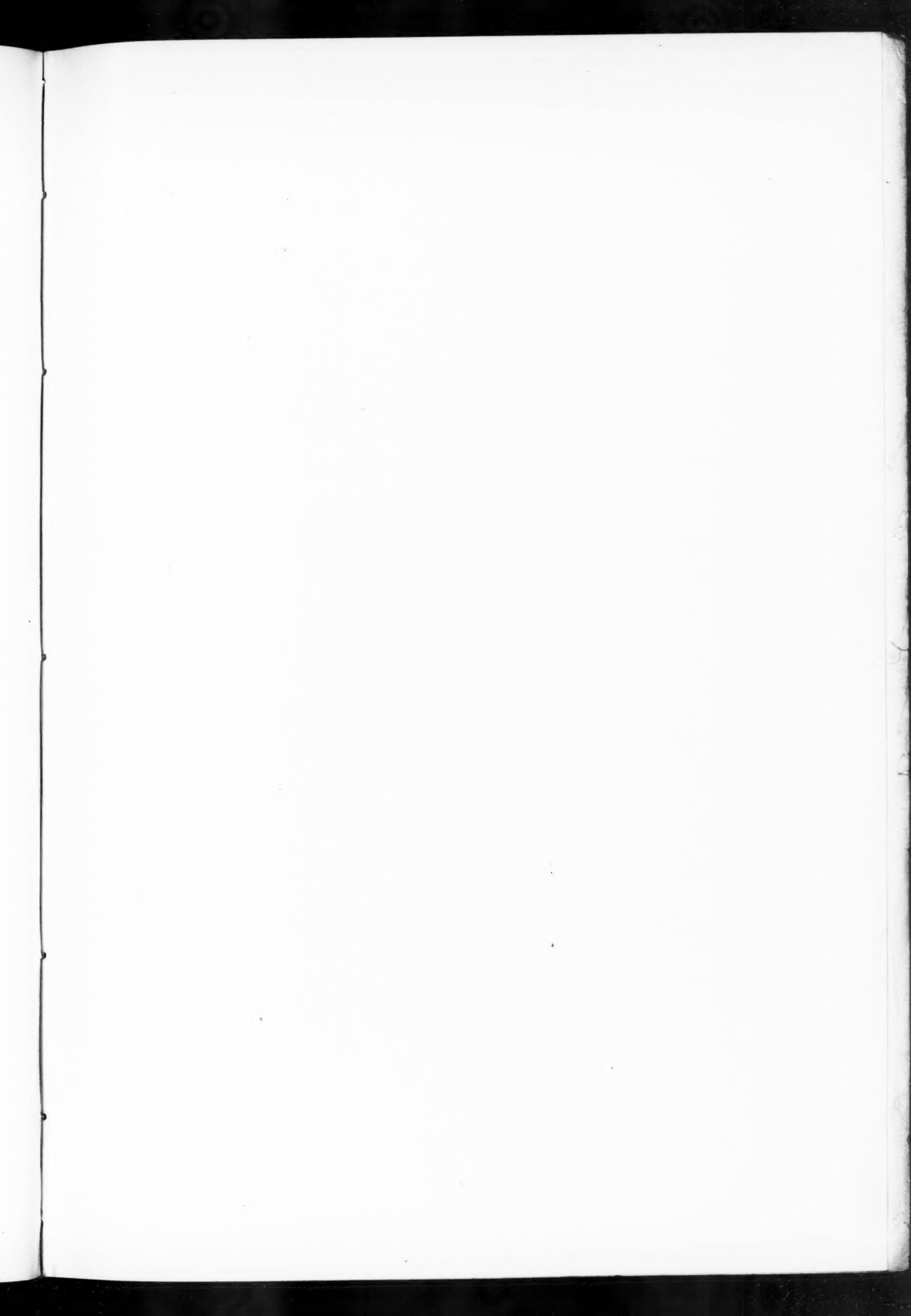
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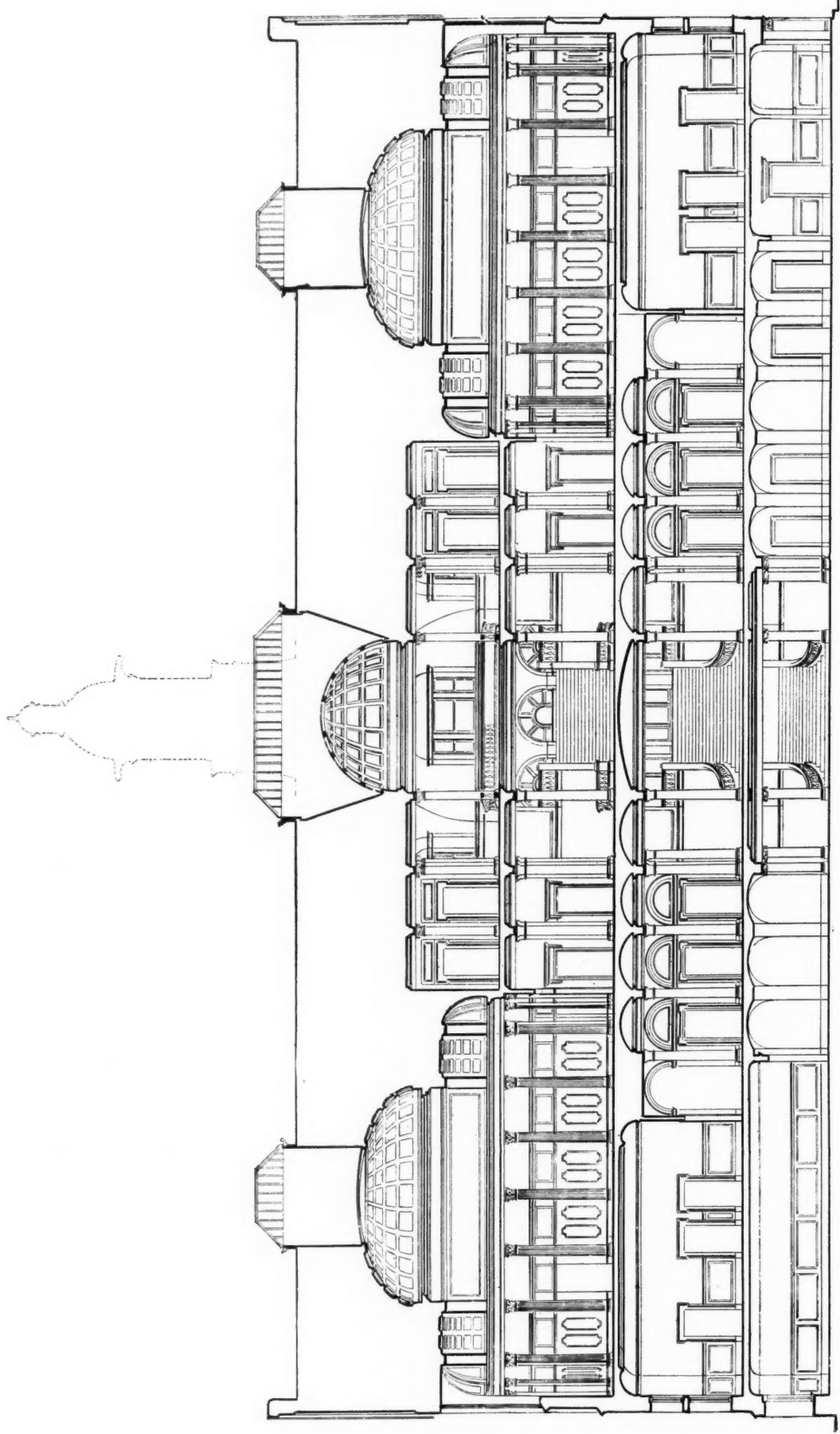
SPECIAL NOTE.—At the last moment it is necessary to postpone the publication of the Accepted Design for St. Joseph County Courthouse, Shepley, Rutan & Coolidge, architects.



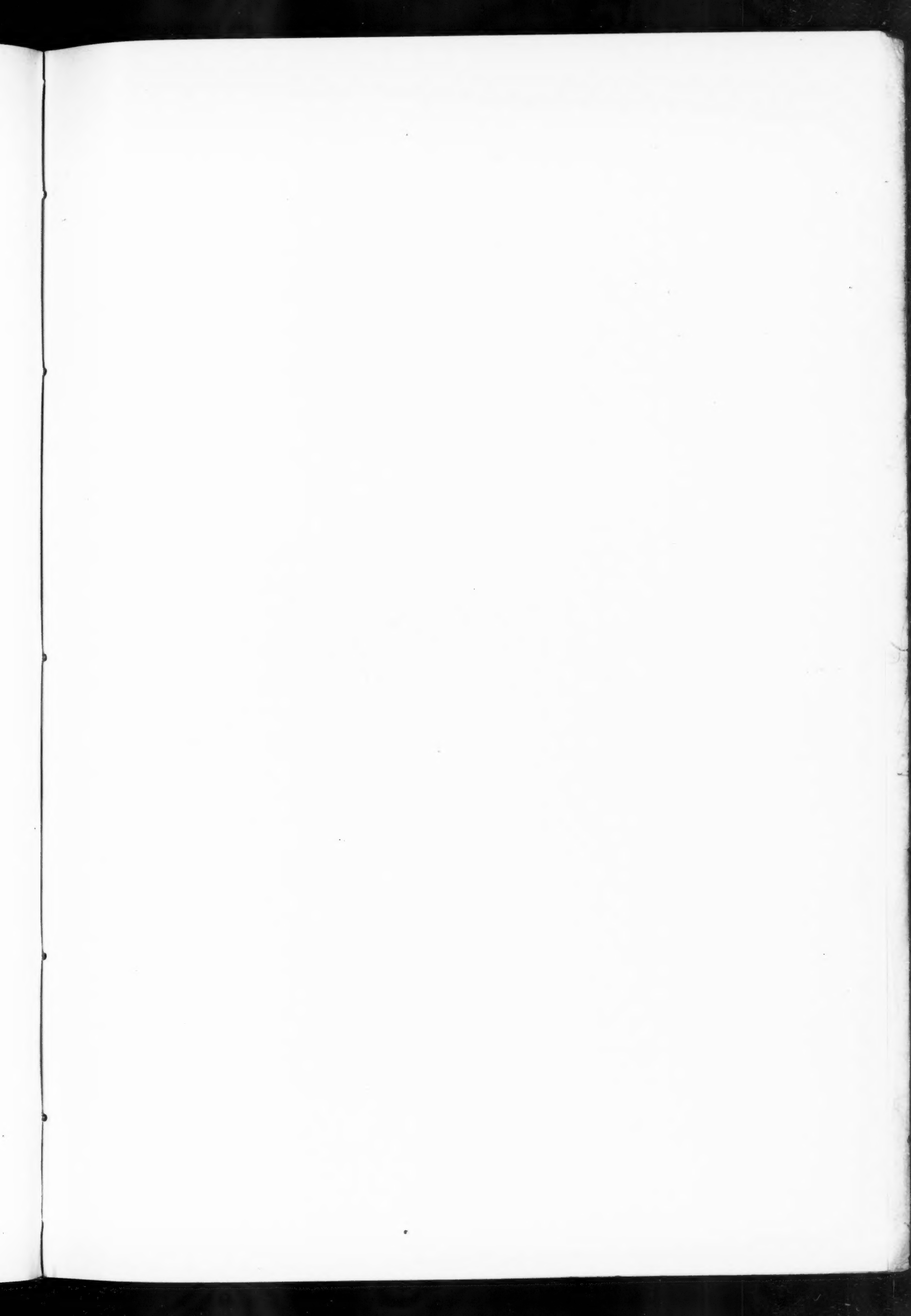


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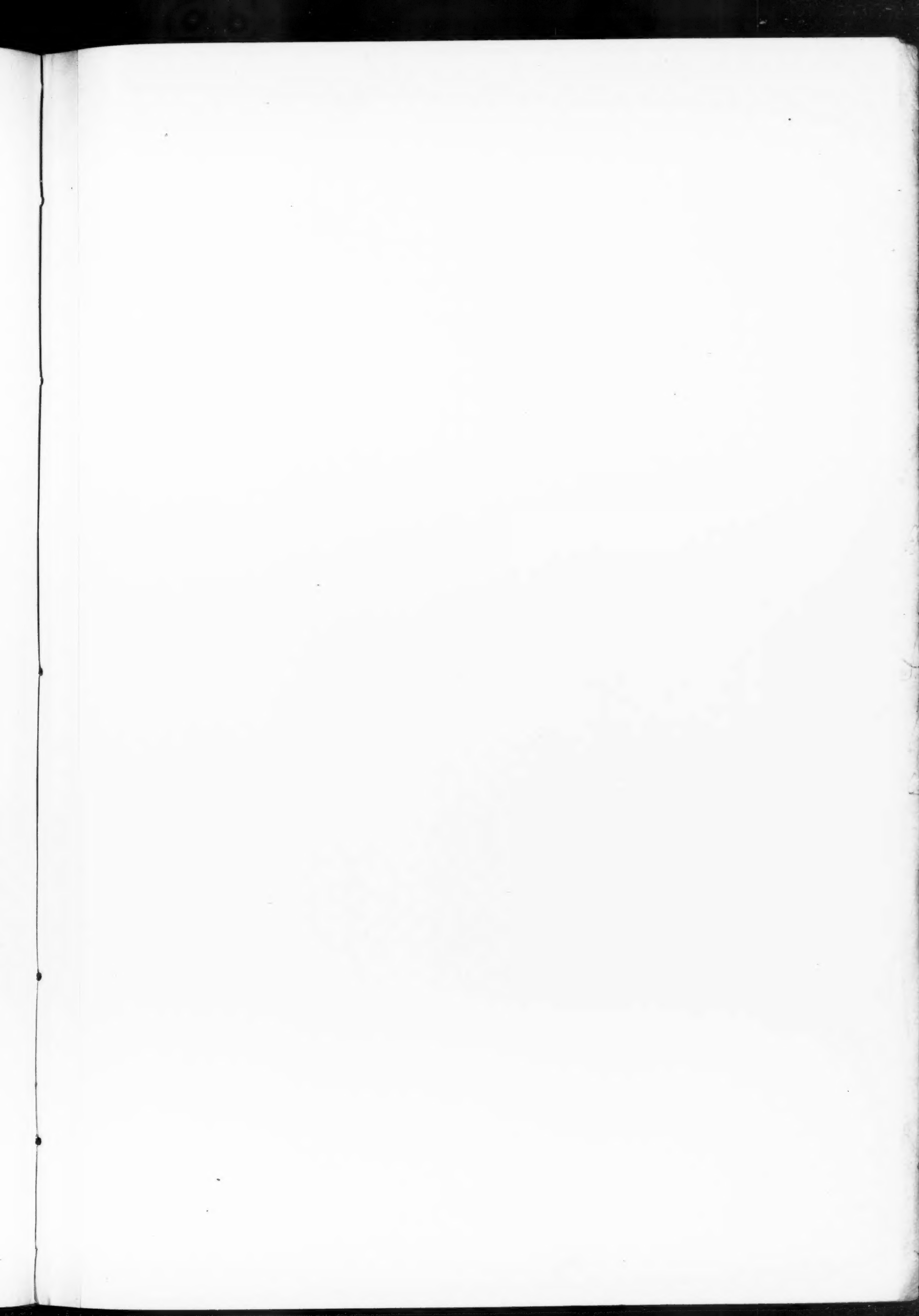


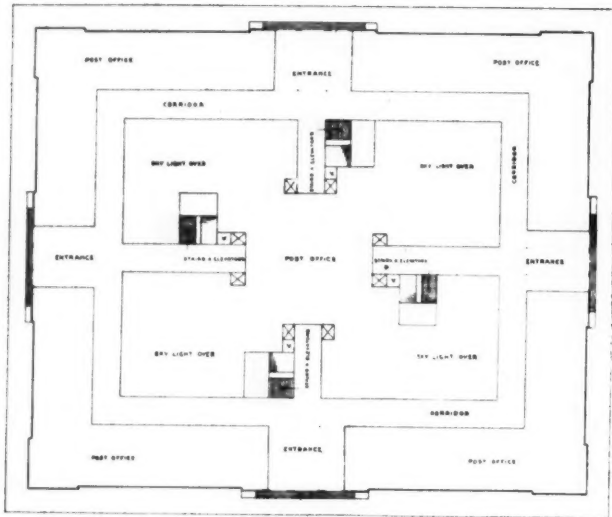
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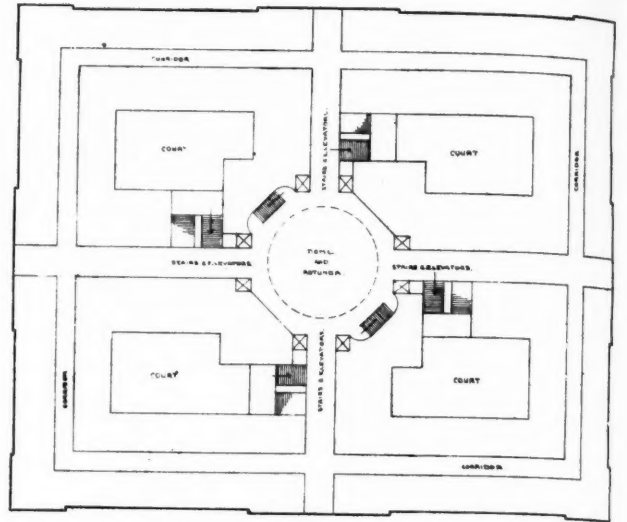


COMMERCIAL BUILDING FOR ESTATE OF M. A. MAYER, CHICAGO.
D. ADLER, ARCHITECT.





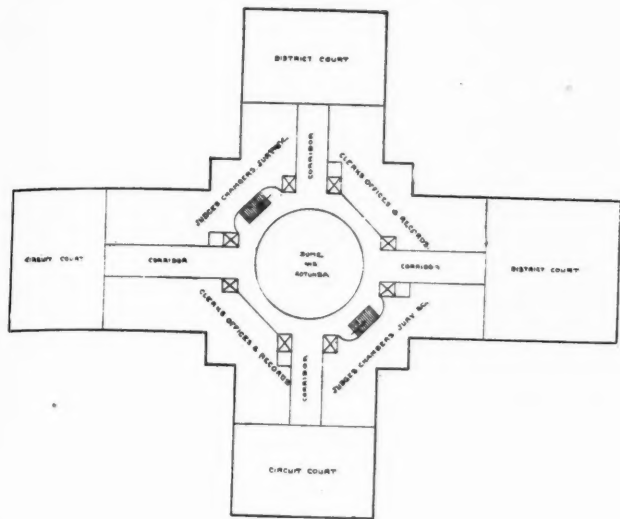
FIRST FLOOR.



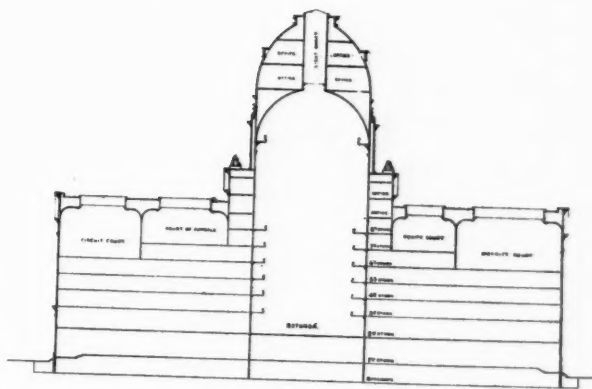
SECOND FLOOR.



THE UNITED STATES GOVERNMENT BUILDING AT



SIXTH FLOOR



SECTION



GENERAL LIBRARY,
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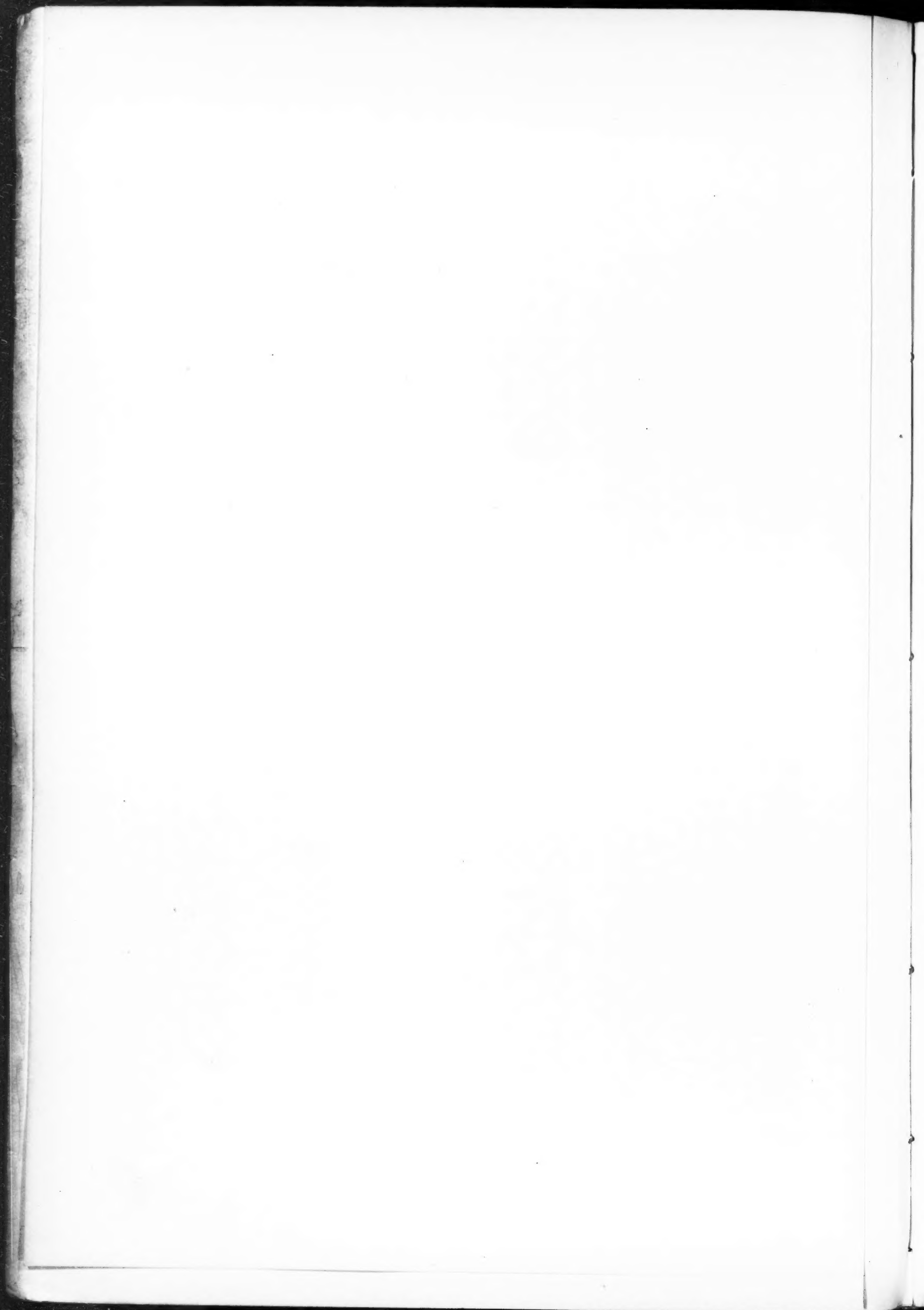
ING AT CHICAGO, HENRY IVES COBB, ARCHITECT.

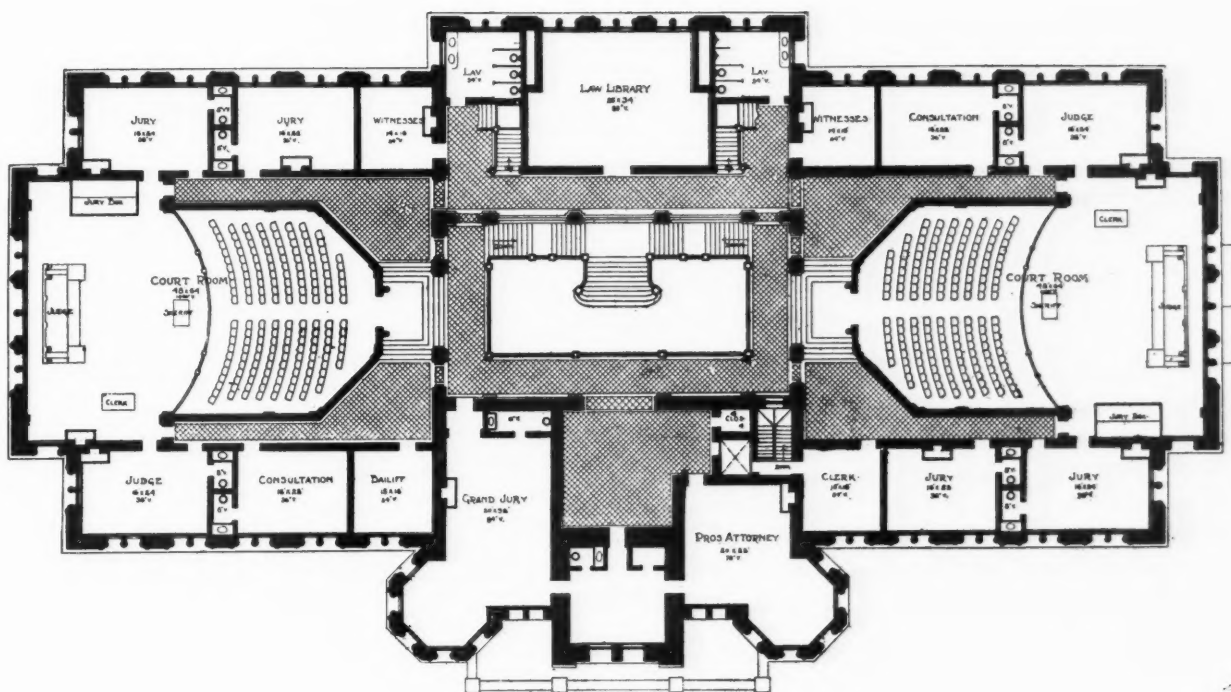


LIBRARY AND MEETING ROOM OF THE ILLINOIS CHAPTER OF THE AMERICAN INSTITUTE
OF ARCHITECTS AT THE INSTITUTE OF BUILDING ARTS, CHICAGO.

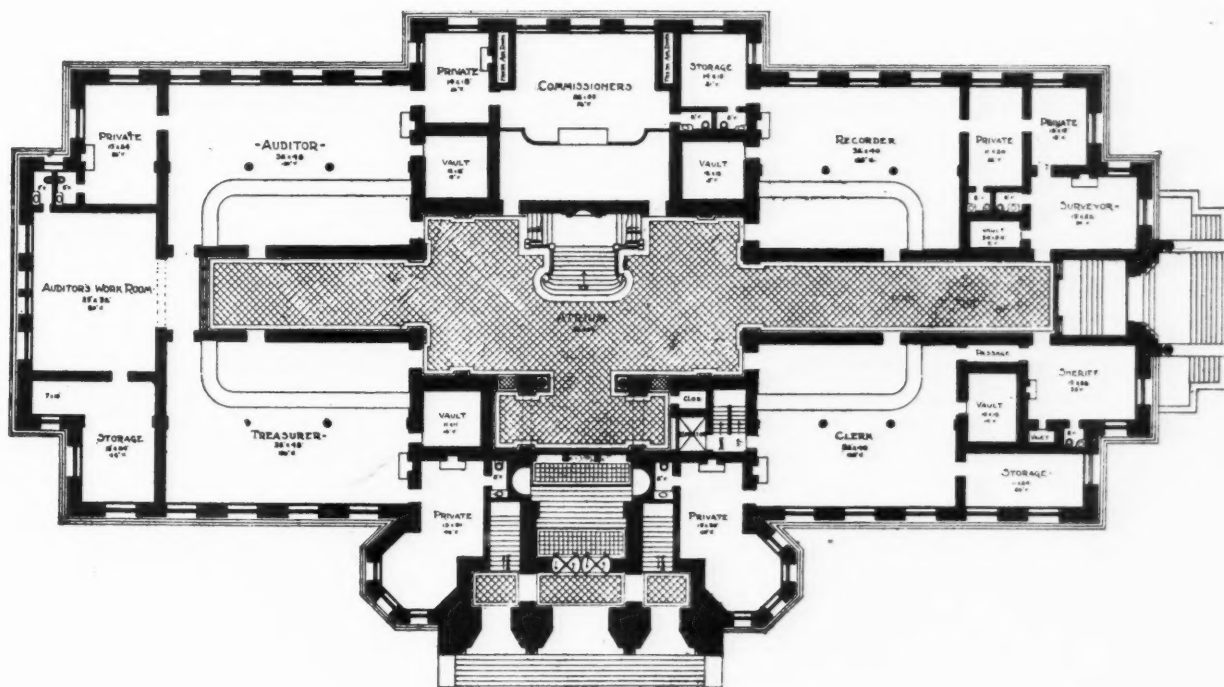
PETER B. WIGHT, ARCHITECT.

INLAND ARCHITECT PRESS.





SECOND FLOOR PLAN.

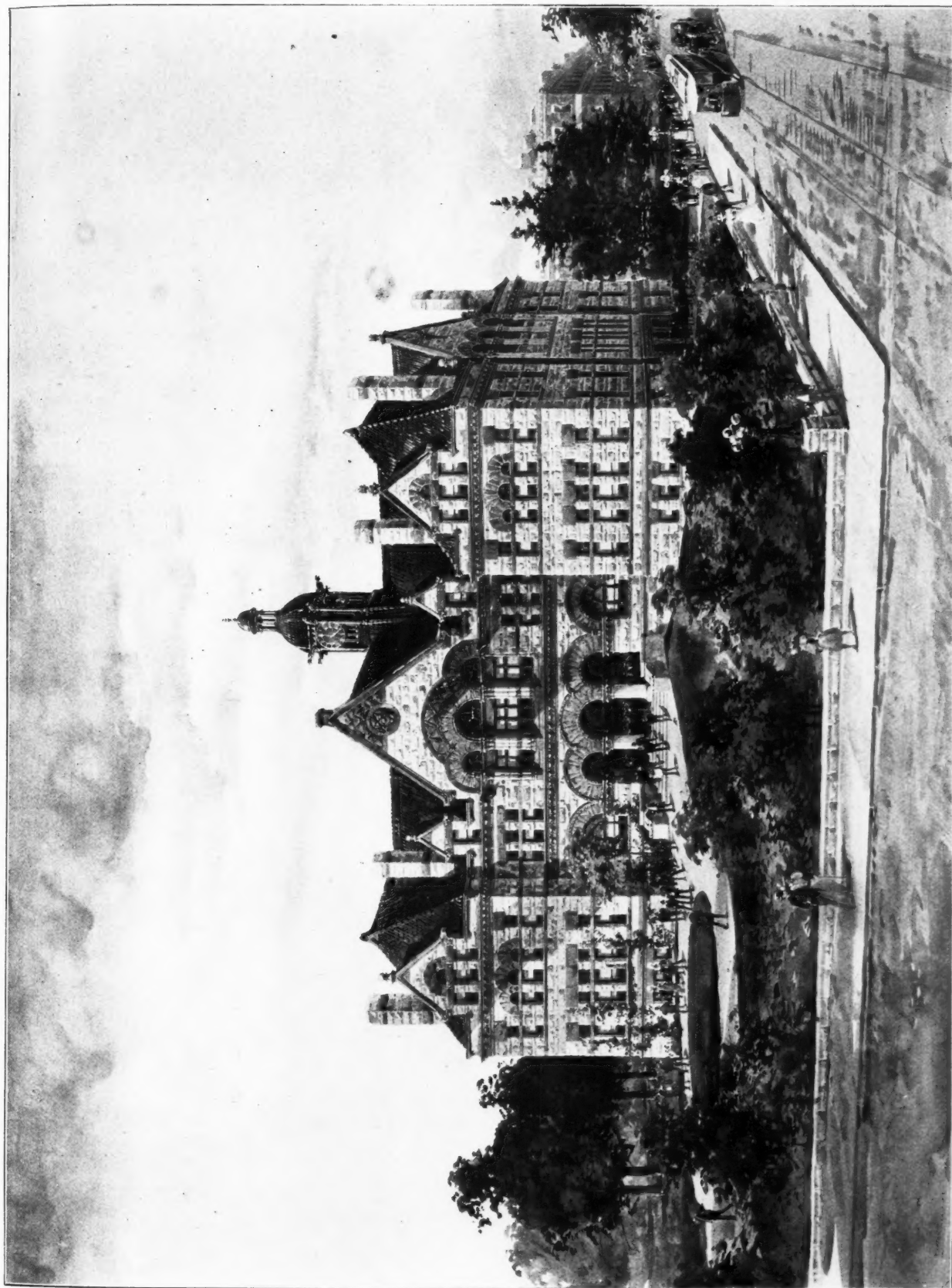


FIRST FLOOR PLAN.

FLOOR PLANS, COMPETITIVE DESIGN, ST. JOSEPH COUNTY COURTHOUSE,
SOUTH BEND, INDIANA.

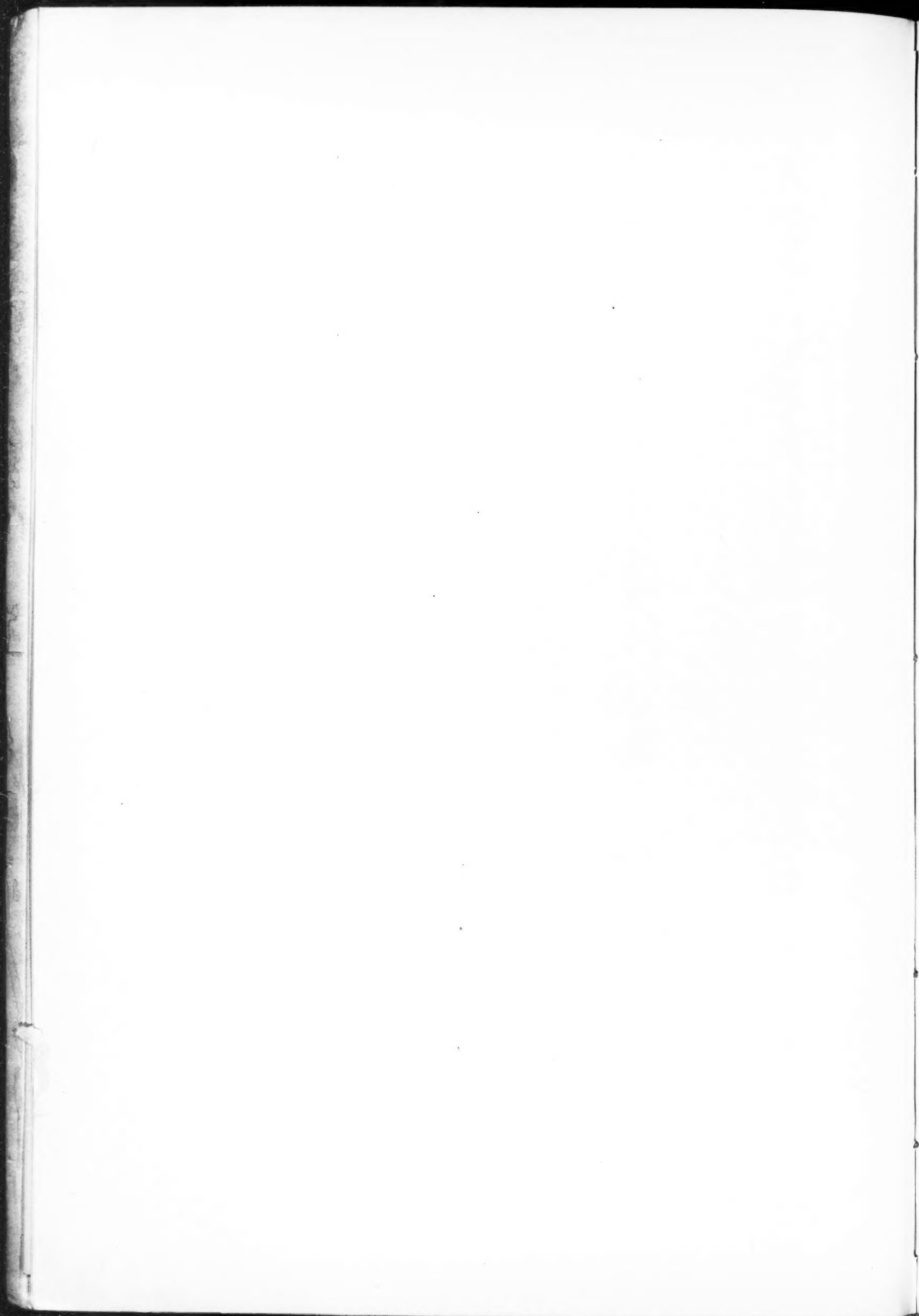
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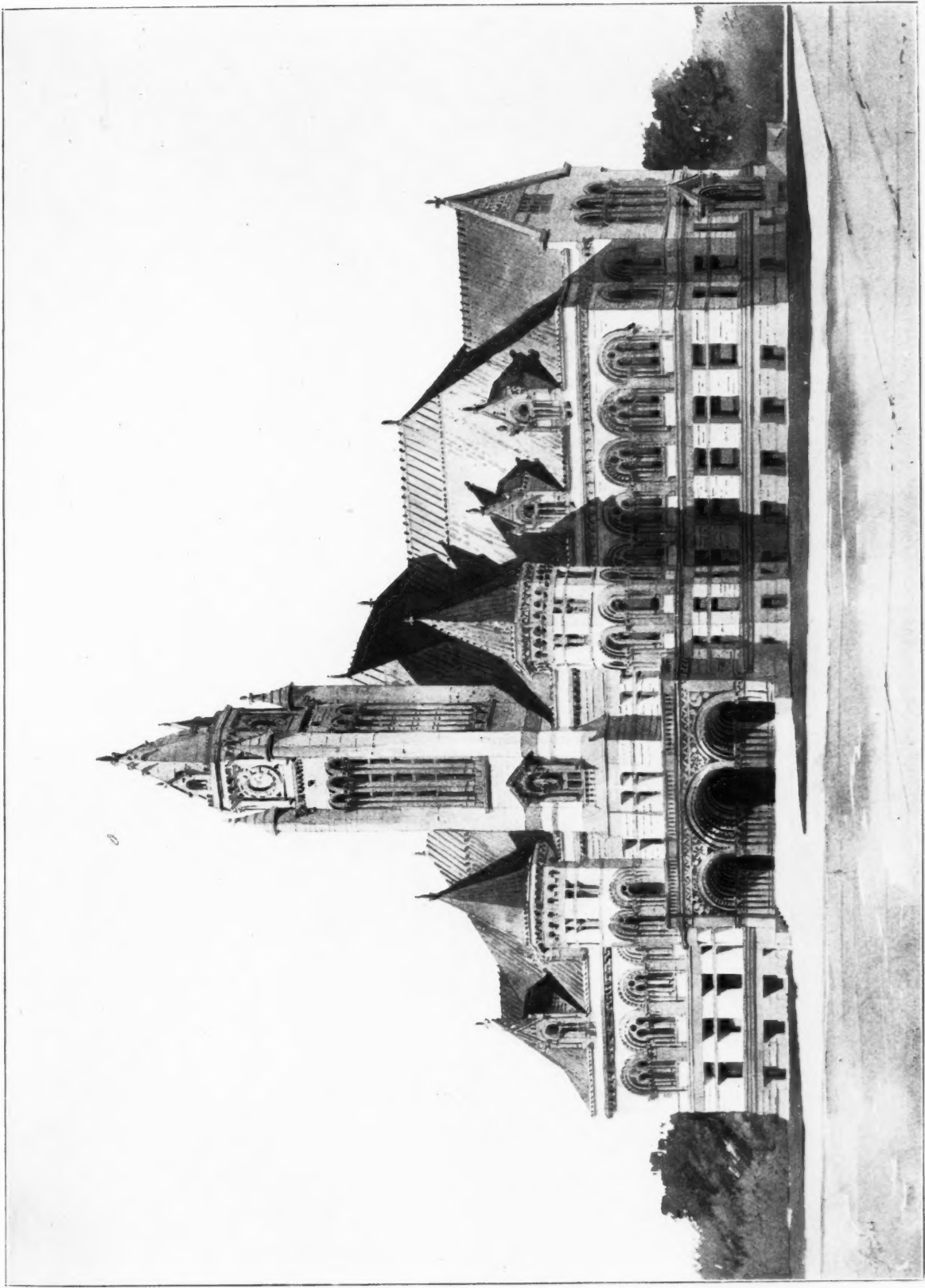




COMPETITIVE DESIGN, ST. JOSEPH COUNTY COURTHOUSE, SOUTH BEND, INDIANA.

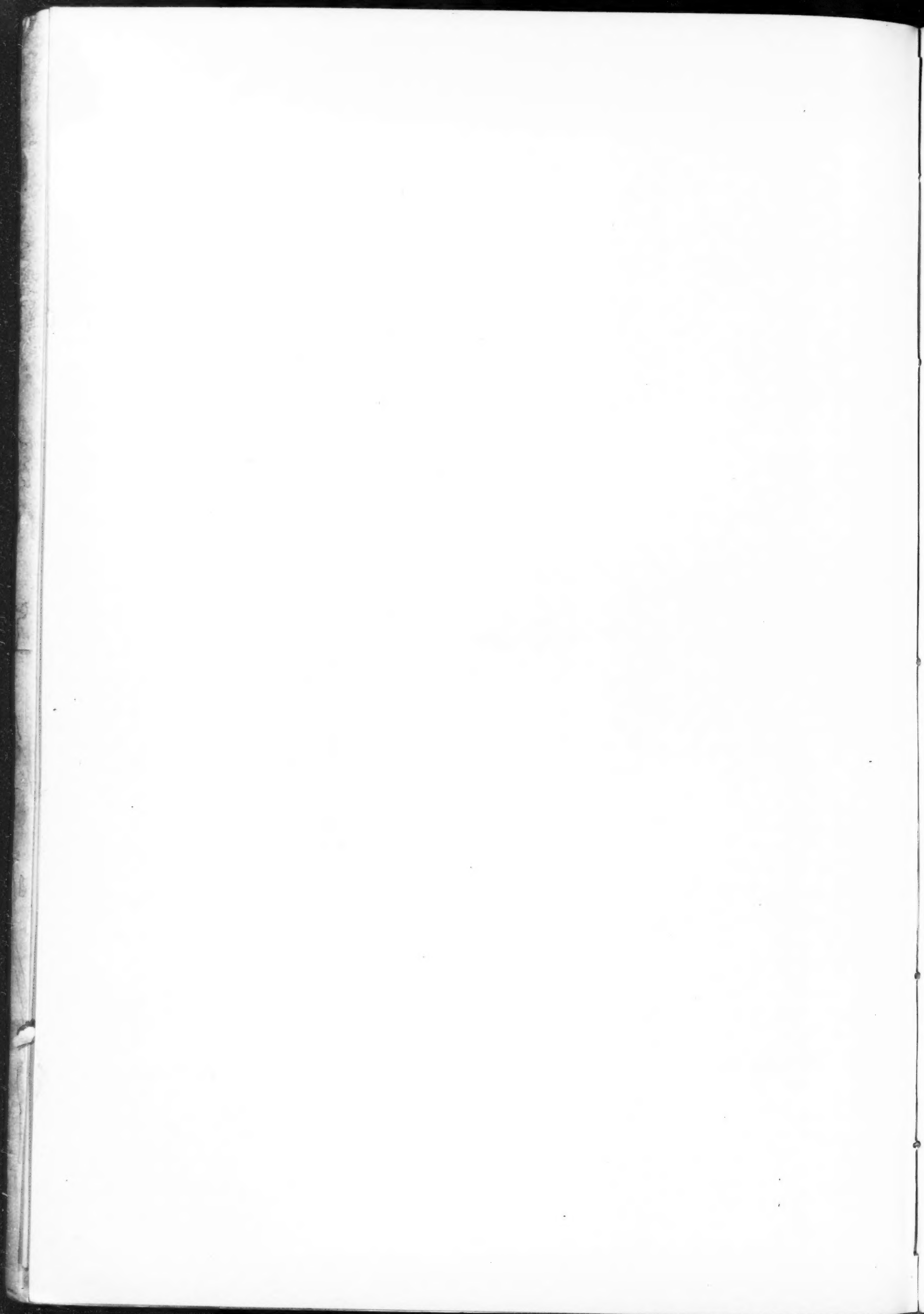
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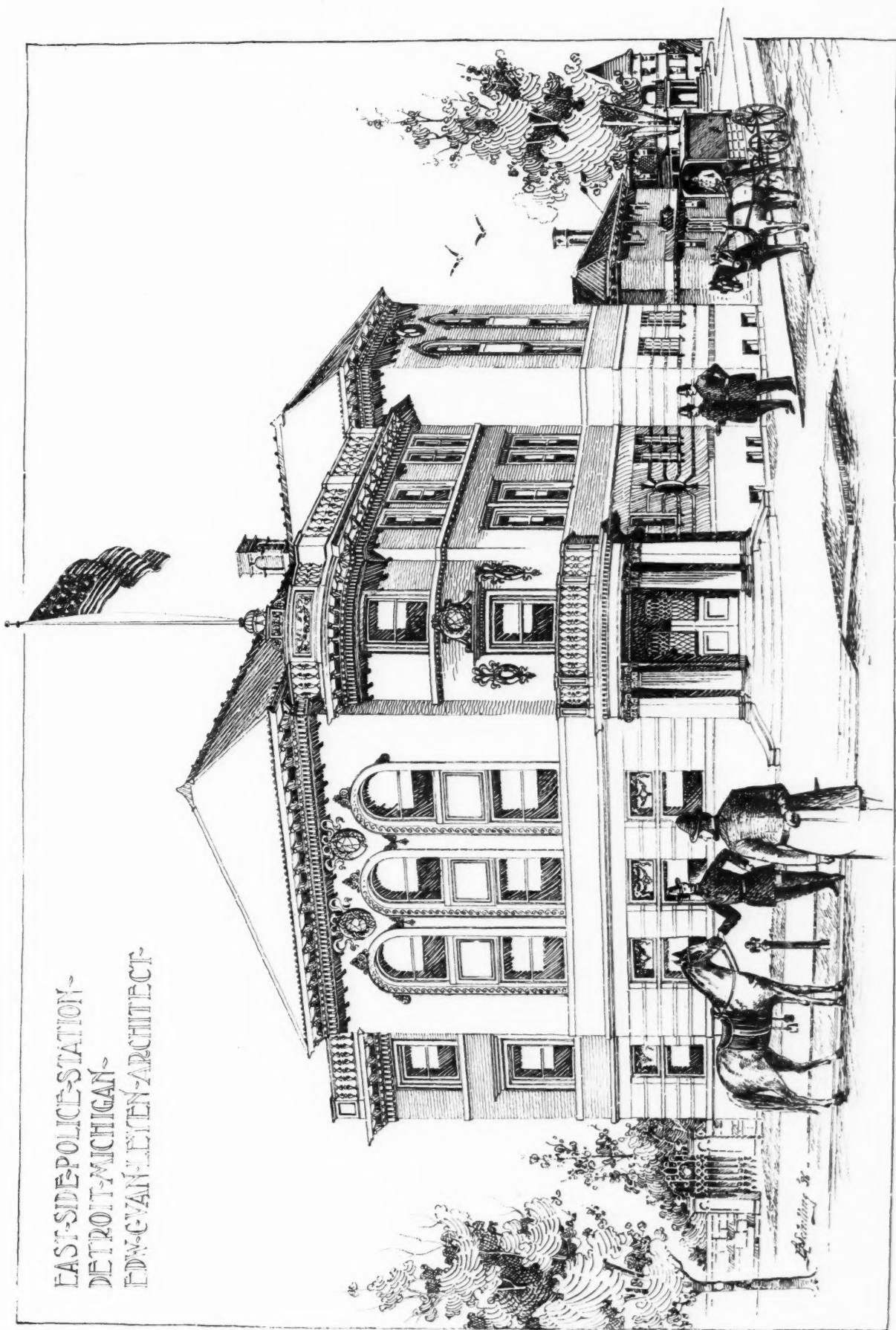


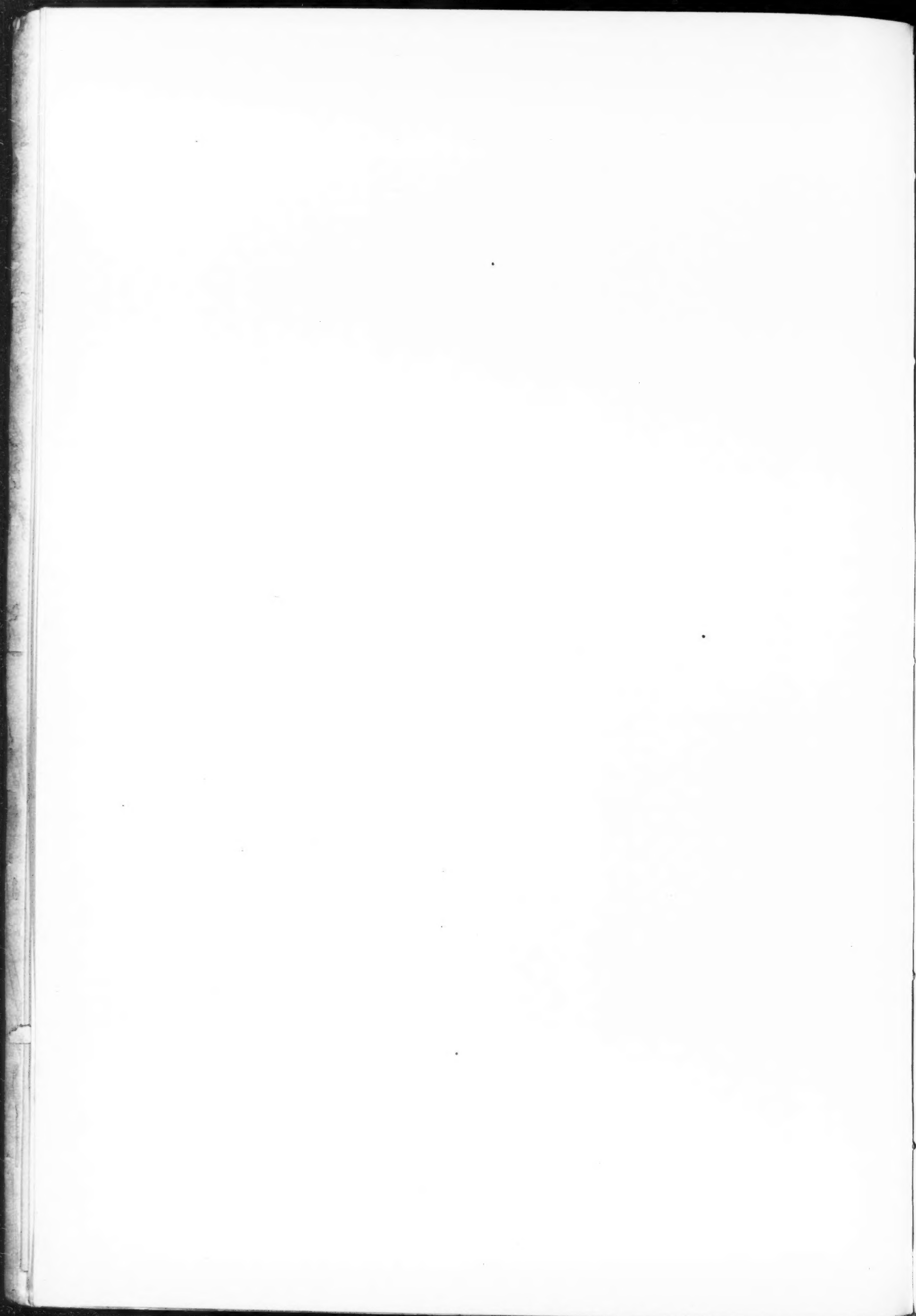
COMPETITIVE DESIGN, ST. JOSEPH COUNTY COURTHOUSE, SOUTH BEND, INDIANA.

SUBMITTED BY YOST & PACKARD, ARCHITECTS, COLUMBUS, OHIO.



EAST-SIDE-POLICE-STATION,
DETROIT-MICHIGAN,
EDW. C. VAN LEEUWEN-ARCHITECT.





SPECIAL SUPPLEMENT.



VOL. XXVIII.

SEPTEMBER, 1896.

No. 2

Technical Review, Great Northern Theater and Hotel Building, Chicago.

THE NEW GREAT NORTHERN—A TEMPLE OF HOSPITALITY, BUSINESS, AMUSEMENT AND FESTIVITY.

THE new and enlarged Great Northern is now almost an accomplished fact. There was the Great Northern Hotel, to which name the words "Fire Proof" were added. But such an appellation for any hostelry that claims to be first-class and up-to-date now "goes without saying." There is also the Great Northern office building and roof garden, and there soon will be the Great Northern Theater and Banquet Hall. All of these are now united between four walls, and the aggregation fronts on



JACKSON STREET ELEVATOR ENTRANCE.

Dearborn, Jackson and Quincy streets, covering an area of 200 by 165 feet. They are coördinate branches of one great establishment, all connected together by internal communications in proper places, and mutually interdependent, while each having a special function to perform, is equally accessible from the public streets. The observer will note that they form a harmonious com-

bination, as if conceived as a whole by one brain. Yet the original hotel, fronting on Dearborn street, has been in use several years, and was planned without any anticipation of the additions that have been built. These occupy the east part of the site, and have fronts on Jackson and Quincy streets of one hundred feet each, and up to the seventh story of the original building cover the whole ground, while above this point the north and south portions extend up to sixteen stories in height, with fronts on both streets and a court between, which is an extension of the original court of the hotel to the eastward, forming the largest interior court faced with enameled bricks in the city of Chicago.

The original hotel building and all the additions have been designed and carried out under the direction of D. H. Burnham & Co., architects. The extension to the hotel part has a frontage of 100 feet on Quincy street, and is carried back 40 feet up to the seventh story; above this it is 52 feet deep. The reason why this enlarged depth is obtained in the upper stories will be explained further on in connection with some ingenious features of planning and construction. Through the first story of this part is the main entrance to the theater, also the stage entrance and a separate entrance to the second balcony. The extension on the Jackson street side has a street frontage of 100 feet and extends back 40 feet up to the seventh story, and above this 52 feet. This enlargement above the seventh story is due to a system of construction the same as that used in the hotel extension. Both extensions are sixteen stories high above the basement. The Jackson street extension is a separate office building, containing 225 offices. On the first story are four retail stores and entrances to the offices, as well as an additional entrance to the ground floor and first balcony of the theater. These entrances are connected by a corridor which extends to the hotel office. There are three elevators at the entrance to the offices, which extend up above the roof into a ponthouse, which opens out into the roof garden. The latter covers the whole of the office building, and is roofed and inclosed by awnings which are removed in the winter.

On the Quincy street side is a new ladies' entrance with two elevators, which also run above the roof. In the sixteenth story is the new dining room of the Great Northern Hotel. Immediately above this on the roof is being constructed a conservatory of steel and glass, which is to be used as a banquet hall, having the same connection with the new kitchen to be built on the roof of the old hotel part as the dining room.

Between the two extensions is the new Great Northern Theater, which is 100 feet in length and 85 feet in width between the walls, with entrances from Quincy and Jackson streets at the west end, the stage being at the east end. The latter is 34 by 85 feet on the ground, and extends upward from the cellar grade, which is 14 feet 6 inches below the street grade, 73 feet to the under side of the roof. It has two steel fly galleries and a steel gridiron. The balance of the space, 85 by 62 feet, is the auditorium with its two balconies and three tiers of proscenium boxes on each side.

In addition to the above, the hotel company has purchased the five-story building, No. 14 Quincy street, and is reconstructing the same into a Turkish bath house, including a swimming bath in the basement.

In the construction of the new parts of the Great Northern aggregation some of the most interesting problems that beset the modern architect have been solved. The new additional structures stand between the original hotel, which is of nearly equal weight and has already settled from nine to ten inches, according to the original calculations, and two other old-style buildings which came to their permanent bearings many years since. Yet the new part fills the whole intermediate space, and it has been required to provide for the necessary settlement of the new building while regarding the safety and avoidance of disturbance of two classes of contiguous buildings. When it is understood that the estimated settlement of the new structure was nine inches, the difficulty in doing this can be readily appreciated. As a matter of fact, the Jackson street addition has settled nine inches and the Quincy street addition has settled six inches. But the former has now its full weight, while the latter has not yet attained its full weight, and the construction has been slower. The theater which stands between is therefore three inches lower on the south than on the north side, but as its whole construction is sufficiently elastic, nothing has to be feared while waiting for the north side to go down three inches more. But another difficulty had to be overcome. By the operation of the building law of Chicago all theaters must have independent walls, and the proscenium wall must be built of brick and closed in over the opening. This made it necessary to build the theater with heavy walls all around and across, and consequently of great weight, while it was necessary on account of the great height of 200 feet to make all the rest of the structure of steel frame construction. Here was a case where the heavy brick walls of one part had to be built before the weight could be distributed over other parts. But the elastic system of steel framing made this feasible, so that now the weights are nearly all on, there is no evidence of any rupture between the parts which have settled rapidly or slowly. It would take a long treatise to fully describe all that has been done to preserve the integrity of this and the older adjoining buildings. It is enough to know that there is no evidence of its having in any way affected the neighboring structures. All the foundations are of course independent of the older ones, and the steel columns built next to the old east wall of the Great Northern Hotel are still carried on steel screws resting on the new foundations, ready to be adjusted either way to preserve the proper position of both buildings. The wall of the building on the east side, fronting on Jackson street, still has a row of intermediate screws between itself and the new foundation of the office building on which it rests, ready to be lengthened as fast as the foundation settles.

The most novel and interesting part of the steel construction is in the roof of the theater. This is of steel trusses bearing on solid brick walls. It has been mentioned that the new buildings which front on the streets are deeper in the lower than in the upper stories. Consequently the theater building is wider than the open court that is above it. This difference is twenty-six feet. When the brick walls at the sides of the theater had been built and the roof constructed to carry all that might be above it, all the requirements of the theater ordinance had been complied with. But there was not room enough for an economic arrangement of apartments in the office part or hotel above the sixth floor, while the court would be unnecessarily wide. The court, therefore, was narrowed so that the walls are in line with those of the older part of the hotel building. The trusses were made strong enough to carry the skeleton construction and enamel brick-faced wall of nine stories, and they were divided into panels so as to bring the weight at the ends of the first panels from the bearing plates. At the bottom line of the trusses the ceiling of the theater is a complete hollow tile fireproof floor, and the trusses are all completely inclosed in hollow tile partitions to effectually protect this vulnerable part of the construction. The whole scheme has been approved by the board of underwriters.

The exterior architectural treatment of the Quincy street front is an exact repetition of the original hotel building executed in red terra cotta and brick, but two stories higher. The Jackson street front has been treated as if it were a separate building, on account of the distinctive character of the use to which it is put, and this is executed in white terra cotta. The style is fifteenth

century Gothic, and the treatment is extremely ornate, a method which seems to lend itself better to the finish of skeleton construction than any other. The front has the advantage of several points of view which will not be encroached upon, notably that from Plymouth place.

We live in a period of condensation of time and space. An immense city springs into existence in less time than it would take to build a single temple in olden times, and the electric cars and the world-conquering bicycle bring the extremities close to the pulsating heart of the metropolis. A few weeks sufficed to conceive and complete the plans for this great building, and soon the glowing iron shot forth from the embrace of powerful rollers, the plastic clay took shape and form, forever now preserved by the petrifying flame, and as the giant's mighty skeleton arose, so grew with it the flesh and skin and stately garment. And there he stands, beautiful and strong, equally defying fire and water, wind and weather.

Two materials are necessary for the successful construction of our sky-scraper—steel and terra cotta. Steel it must be to create a rigid, immovable frame; terra cotta it must be because there is no other material which, with the quality of being fireproof, combines absolute durability and at the same time offers to the architect such unlimited opportunities for artistic expression in form and color. Neither stone nor brick nor any other known building material combines in itself all these advantages. The use of ornamental terra cotta, together with steel construction, in such quantities and its manufacture according to special design in the course of a few months is strictly new and American, and no European city can boast of a similar edifice. The European architect would find no terra cotta factory that could carry out his conceptions of a prominent building except years could be consumed for the purpose, while Chicago contains a plant—the North-Western Terra-Cotta Company—which can produce a score of similar structures in one year. And still it is all hand work. With the exception of the preparation of clay and the application of glaze and enamel, no machine work has ever been successfully applied to the manufacture of architectural terra cotta. To anyone who knows that, substantially, terra cotta is nothing but burned clay, it may seem an easy matter to mold and burn it according to requirements, but in practice this is a rather complicated process. There is a drawing department, where every feature is carefully laid out, subdivided, profiled and scheduled, where every joint, every check for iron, every anchor hole is indicated on the working diagrams. There is a carpenter shop where templets are made, a plaster shop where plaster models and molds are produced, a modeling room where the sculptor lends plastic form to his interpretation of the architect's sketches of ornamentation. There is the clayworkers' department, where the soft clay is pressed into the required forms and where intricate pieces are built up of clay and fitted together under many difficulties. There is the drying room where the finished pieces are carefully dried in various positions, in order to preserve their correct outlines. There are the complicated ovens, where by an immense but uniform gradually increasing and decreasing heat, the indestructible silicates are produced which transform into everlasting terra cotta the fragile pieces of dried clay. There is, finally, the fitting room where all burned work is carefully fitted together in order to let it all go into the proper place in the building without delay at the scaffold where skilled mechanics set it up at the rate of several stories a week. The result of all these varied and complicated manipulations, performed by men who have become experts in their respective branches, all working in strict coöperation under experienced supervision, is, in this case, a most beautiful Gothic front, fireproof and imperishable, made according to the designer's most delicate conception of detail, and set up and securely fastened to the iron frame—all within about three months, by the North-Western Terra-Cotta Company, of Chicago.

The large light court of the Great Northern Theater and Hotel Building is faced with white enameled brick, manufactured by the Tiffany Pressed Brick Company, of this city. Over one hundred thousand of these bricks were used, besides a considerable quantity in blue and white in the hallway leading to the stage entrance. The enameled surface of these bricks is made to withstand the severest climatic changes, hence their suitability for exterior as well as interior uses; in fact, wherever light, cleanliness, durability and artistic shadings of color are desired.

Not only is this material very largely used in light courts, railway stations, etc., but its adaptability for fine fronts is becoming recognized. One great advantage in the use of enameled bricks, is in their being impervious to moisture, and the avoidance of all unsightly white efflorescence which so often disfigures walls constructed of other materials.

The enameled bricks manufactured at Leeds, England, have always held the highest place in the minds of architects, but they are rapidly being displaced in this country by the Tiffany enamel, which has reached a perfection difficult to surpass, by strict attention to all details essential to a perfect article. This company has just placed on the market a "granite" shade of enamel brick worthy of the special attention of architects.

The brown pressed bricks for the Quincy street front were made and furnished by the Chicago Hydraulic-Press Brick Company, whose works are at Porter, Indiana, and whose sales of pressed brick last year in Chicago were upward of twenty million. A large number of the bricks were made from special molds, and form the rounded jambs of the windows and the rounded external and internal angles of the bays. The bricks are entirely free from the white discoloration which so often appears on buildings of brown brick of other manufacture throughout the city; this same freedom from discoloration will also be noticed in the Marquette building, which also contains Chicago Hydraulic-Press brown brick. The high quality of these bricks is due to the careful study and selection of the clay from which they are made, the thorough seasoning of the clay before the bricks are pressed, the tremendous pressure on the bricks in the machine, the high and carefully regulated temperature under which they are burned, and the care which is taken in selecting the bricks before they leave the works.

A great deal of originality was displayed in the finishing of the ornamental iron elevator inclosures, which are a combination of nickel-plate and bower-barff (or more properly speaking, magnetic oxide). The architect has designed this part of the work in the Gothic style, arranging the wrought-iron work in grilles or panels between uprights (or pilasters) and cross-pieces of ornamental cast iron. All the wrought iron is finished in dead black or oxidized, while the cast iron is heavily electroplated in nickel. The handsomely wrought grille work is shown off most advantageously by the luster of the nickel finish on the cast iron, which entirely surrounds each separate grille as though it were a frame. The whole work forms a beautiful effect and one that is pleasant to look upon. The inclosures above the first floor are not so elaborate, although in the same style as the first floor, and are finished in black. In the main hall on the first floor is a letter-box, used in connection with the mailing chute. This is admirably executed in cast iron, richly ornamented and finished in bower-barff. The stairways throughout this portion of the building follow the style of the other work (Gothic) and are of cast iron, with cast-iron risers, newels and railings. They are made in keeping with the general excellence of the rest of the work. All the interior ornamental ironwork for this whole building was made by the splendid young firm of artisans, the Chicago Architectural Iron Works, M. Salomon, president, Oakley avenue and Kinzie street, Chicago, Illinois.

The tinting, painting and woodwork finishing of the hallways and the four hundred and forty rooms and offices of this building were done by the Nesbitt Company, of 360 Wabash avenue, Chicago.

The electrical plant will be one of the most interesting features of the building. Its capacity to supply the necessary power will be as great as the largest plant in the West. The dynamos, furnished by the Western Electric Company, are three 150-kilowatt, direct-connected units, of the multipolar ironclad type. They will operate at a speed of 280 revolutions per minute. The armatures of the dynamos are mounted on separate shaft, with a bearing on each side of the armature. Connection is made with the engine shaft by means of a flexible coupling. The sub-bases of the dynamos are mounted on I-beams, which form a part of the engine foundation. The usual adjustments are allowed for centering the armatures and aligning the fields. These machines are equipped with carbon brushes, self-oiling bearings, and are over compound wound for five per cent, which is the loss in the wiring system. The frames of these machines are made of cast steel; the pole pieces of forged steel; the field coils are wound on brass frames made in such a manner that they are easily removed in case of accident. The machines will be connected to a marble switchboard equipped with Weston instruments.

Automatic circuit breakers will be used between the dynamo and switchboard in place of fuses. These will be made single pole, one on each side of the circuit. All connections between dynamo and switchboard are to be in lead cable underground, and all connections from circuits will be run in iron pipes concealed from view as far as possible.

The wiring of this building is on the three-wire convertible system, and all wires from the switchboard to lamp outlets are incased in insulated iron pipe. The mains are rubber-covered wire with a lead casing, the service for each floor being tapped off to the cut-out box. By means of the new system of connection, the maximum difference of potential between any two lights at the point they are tapped on to the cut-out box is but .25 of one volt, making the difference in candle-power so small between the lamps on the top and bottom floors that it would be almost impossible to detect it with the most delicate instruments. The cut-out boxes are made of 7/8-inch marble equipped with plug fuses, and are provided with ornamental iron doors.

The lights in the different offices are controlled by push switches conveniently located. In the hotel rooms there are provided both automatic door switches and flush push switches in the rooms.

The engines are to be furnished by Westinghouse, Church, Kerr & Co., Chicago, and consist of three Westinghouse compound engines, with cylinders 14 inches and 24 inches in diameter, by 14 inches stroke of piston, space being allowed for one more unit to be placed later. With the steam pressure to be carried they will develop 230 horse-power each, and being entirely self-lubricating, are capable of making long continuous runs without stoppage or attention.

The flexible spring couplings for connecting engines and dynamos are so designed as to give great flexibility between engine and dynamo shafts, obviating the necessity of bed-plates.

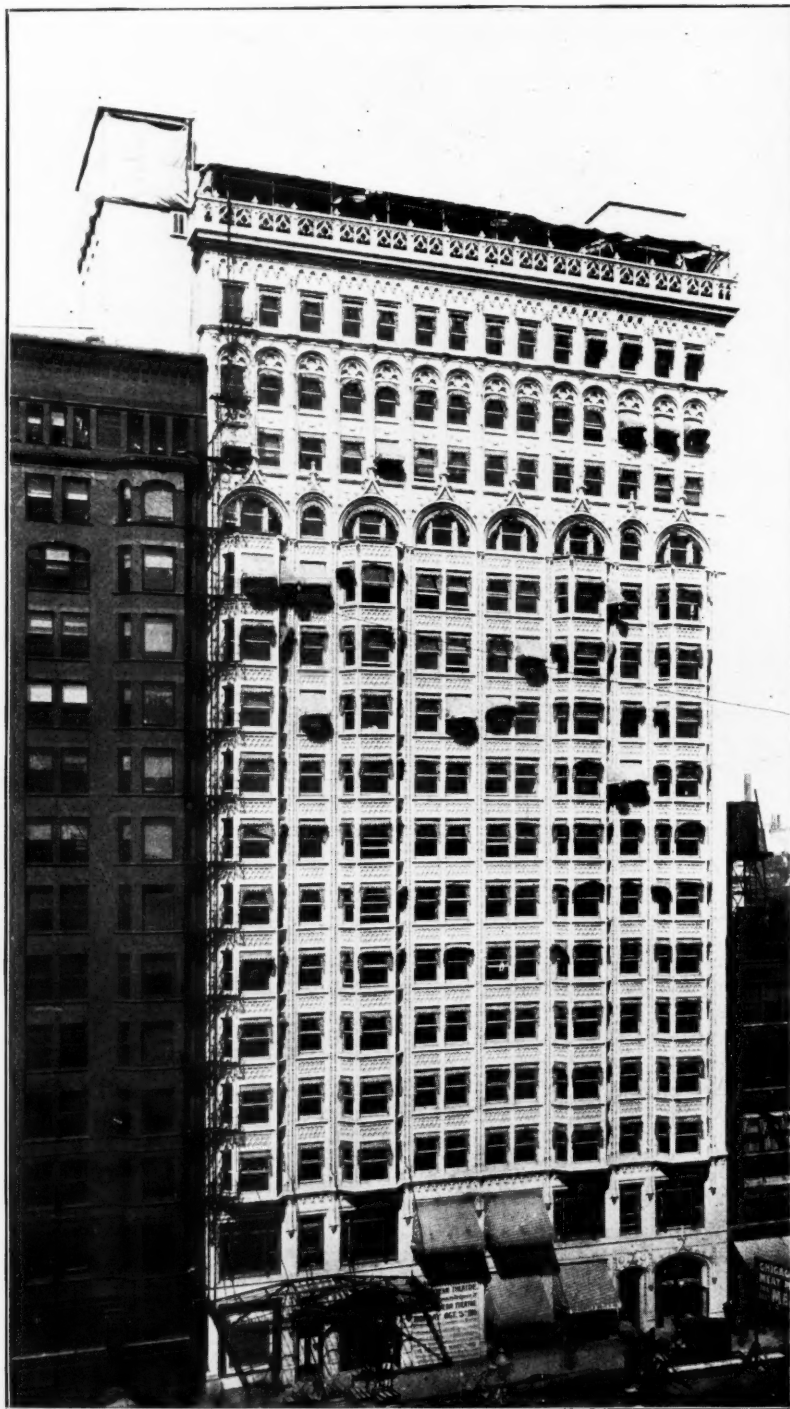
These engines were chosen after a very careful investigation, on account of their great reliability and guaranteed economy for this kind of service. This fine economy was not only guaranteed, but, following the general custom of the Westinghouse Company, an actual test of the engines was made at their factory in Pittsburg, under the supervision of Mr. Charles G. Armstrong, consulting engineer, at which test the steam consumption per horse-power per hour was over a pound less than guaranteed, showing the reliability of a guarantee made by a company willing to base it upon an actual test made at the works before shipment. This form of guarantee is peculiar to the Westinghouse Company, and very few of any other engine concerns have facilities at their works for making such complete tests for actual conditions under which the engines will operate. They further invite any prospective customer for engines to visit their shops and make such tests as they may desire, and to inspect their thorough system of testing all material that enters into the construction of their engines.

The general plan of the hot water piping to supply the hot water to all the rooms of the hotel baths, kitchen and laundry, is so arranged that there is a continual circulation of the hot water to every faucet in the building, so that there is no "waiting for the cold water to run out of the pipe," before the hot water comes, and in addition there is a reserve of many thousand gallons of fully heated water always on hand. There are two feed-water heaters 1,000 horse-power each, 54 inches diameter by 14 feet long, and weighing seven tons each. They are of the horizontal brass tube steam jacket type. One supplies the boilers with feed-water at 212° Fahr. and the other is capable of furnishing the building with 15,000 gallons of hot water per hour at from 180° to 200° Fahr.

The heater that supplies the boilers is provided with every facility for examination, cleaning and blowing off. It is estimated that the saving in fuel by the thorough utilization of the exhaust in these heaters will more than repay the first cost of their installation each year. This splendid plant was manufactured in all its details at the iron and boiler works of Messrs. Baragwanath & Son, of 48, 50 and 52 West Division street, Chicago.

The electrical plant, steam, hot water and general details of machinery installation are under the direct supervision of Mr. Charles G. Armstrong, consulting engineer, of Chicago.

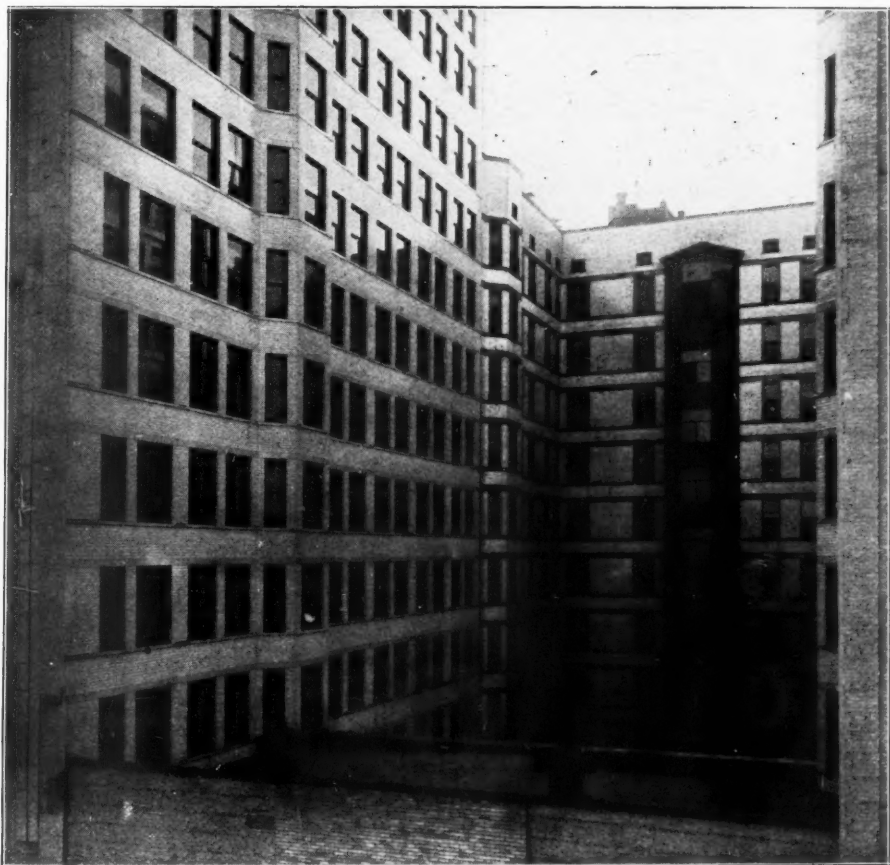
Many of the most important interests of the building are in the hands of Messrs. John & Alex Davidson, and are being conducted in a very efficient manner, and when the building is fully completed Chicago will have a noteworthy addition to her buildings.



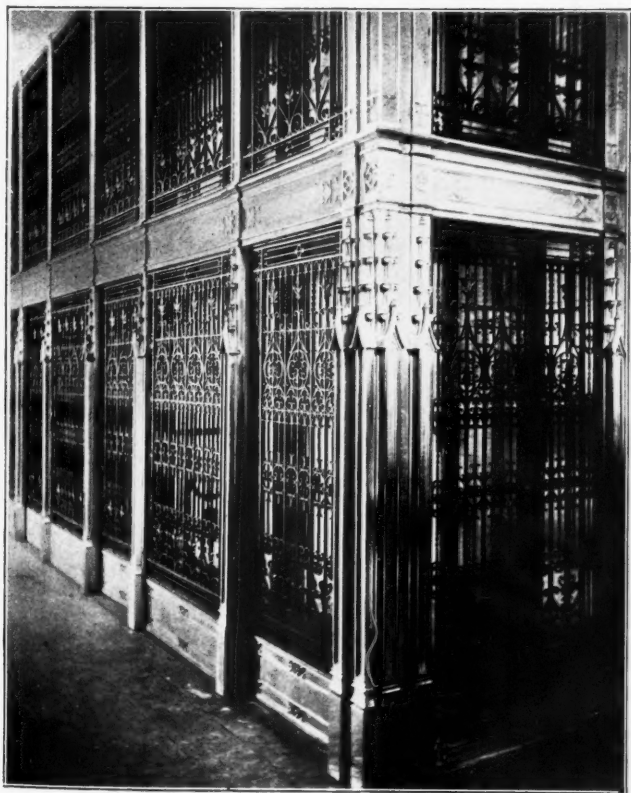
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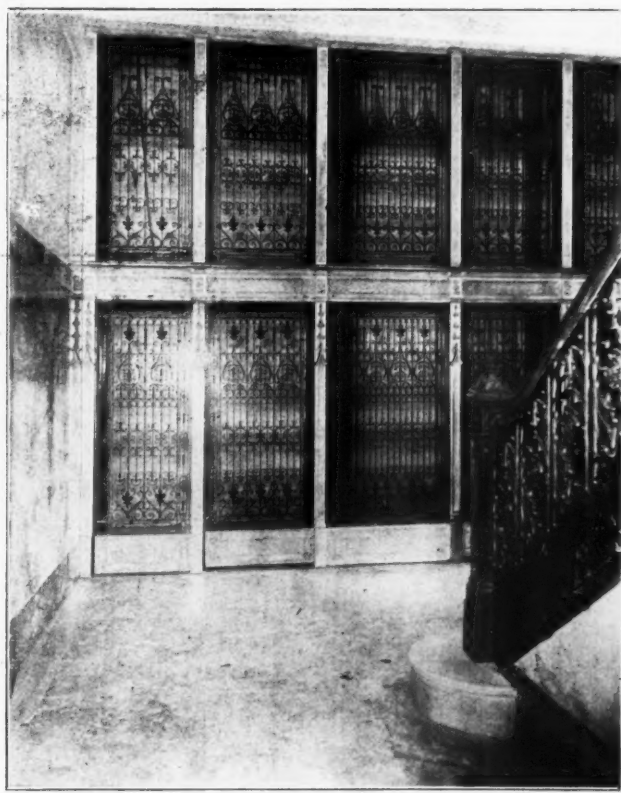
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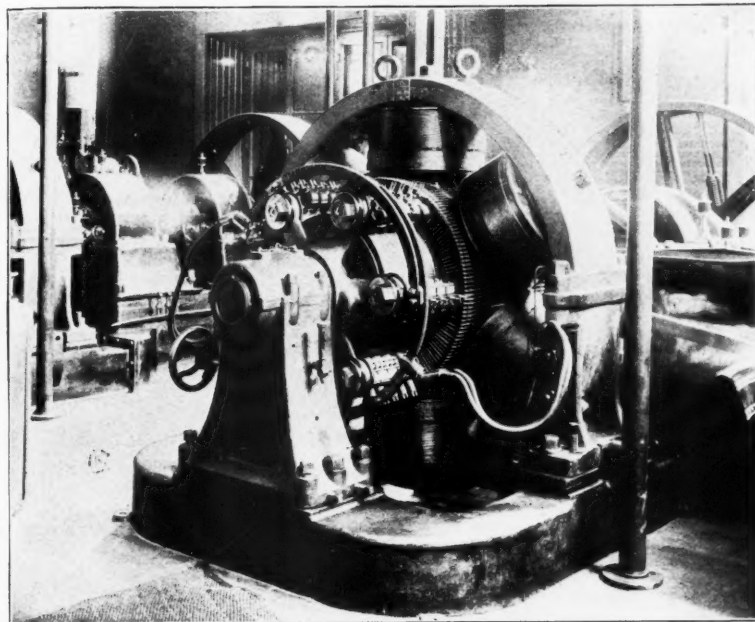
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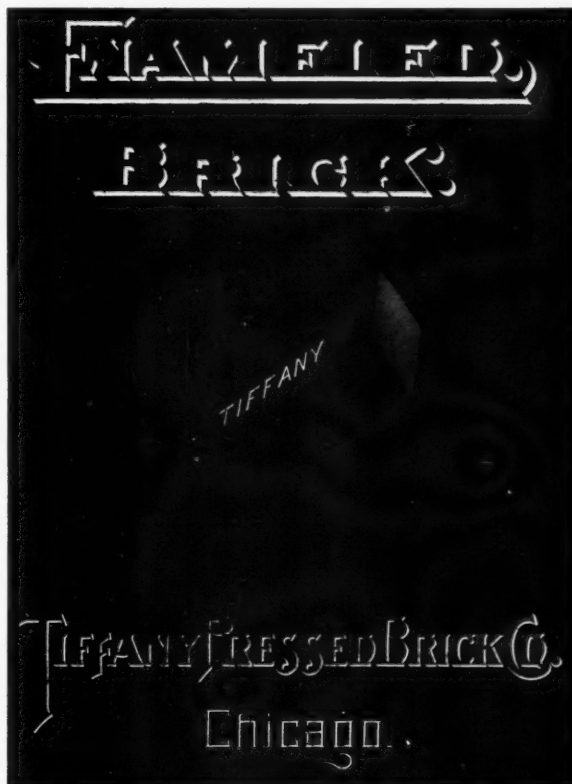
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