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Effect of Competition Code on Competitions.

Considerable space has been given in the last two editions of THE INLAND ARCHITECT for the presentation of competition drawings and in reviewing these comment upon the place occupied by competitions is suggested. It is not so long ago as to be lost to the memory of the youngest practitioner that competitions were the *bête noir* of the profession, and going back farther into history the record printed in this journal shows that a special committee was once appointed by the Institute to decide whether it were proper for the subject to be alluded to at an Institute convention. Then about ten years ago the Western Association took the matter up and the verdict was accepted that competitions were a necessary evil and the famous code was formulated and adopted. Then began a series of years in which, upon review, a steady improvement is observed. The competitions for the soldiers' monument at Indianapolis, Chamber of Commerce buildings at Cincinnati and Kansas City, followed by that for the St. Louis city hall, all reflecting to a greater or less extent the diction of the "Code." The Milwaukee library competition, followed by that published last month of the Minnesota State Capitol and the last, of which a full report and illustration is published in this number. In this last competition all of the principal requirements of the code seem to have been observed, and while the choice still lies between two designs the practical purposes of secrecy have been observed. While the compensation for competitors might have been greater, the fact that some of the best offices in the country accepted them should be evidence that in this the terms were satisfactory. The competitions mentioned and many of lesser importance have shown the public that it can secure first-class services at ordinary professional rates if the desire is to secure a building that is artistic in design and convenient in plan, and not a scheme to obtain control of the expenditure of large sums of money for purposes of fraud. And it may now be taken as an axiom that a competition that does not recognize the rules which have become usual and proper and accepted by the profession as such, is a fraud, as ignorance can no longer be pleaded upon this subject even by the commissioners of Wayback or Posey counties. We do not mean to say that competitions have become perfect, for they are still and probably always will be objectionable, but they have become regulated by the persistent efforts of the best members of the profession who for years have steadily refused to accept the terms upon which they were offered, and are now rewarded by the acceptance by the public of the general provisions of their competition code.

The New St. Louis City Hall Investigation.

Whenever a new municipal or other public building is to be erected in this country intelligent people have learned to expect that the officers elected and appointed to care for its erection will distinguish themselves by the adroit way in which they will delay its completion, entangle its construction and increase its cost regardless of all legal restrictions. The new City Hall at St. Louis seems to be no exception. This building was begun about six years ago. The limit of cost was fixed at

\$1,000,000. Had it been a private enterprise, there is no reason to doubt that it would have been done and occupied at least four years since, and within a close range of the original appropriation. It is now, after a lapse of nearly six years, an empty skeleton, simply walled and roofed, the sport of the elements, while a pretended "thorough investigation" is being conducted by city officials, some of whom report the most serious faults in construction and plan, such as to render the building unsafe unless radical correctives are adopted. The city has in this investigation an able officer in the recently appointed Inspector of Buildings, Mr. J. Harry Randall, whose experience as an architect and thorough capability will greatly aid in the work of arriving at a proper conclusion, as well as in the future progression of the work. The plans for this building were obtained through a public competition with the advice of Prof. William R. Ware as expert. The ex-mayor, who was official head of the commission on plans, said many changes were made in the arrangement of rooms, their size, etc., immediately after the plans were adopted. Architect Mann testified that the president of the Board of Public Improvements told him his design would be adopted on condition that the interior plans should be so changed as to eliminate the entire inside tier of rooms and give all rooms an outside front—a very radical change, surely! Mr. Mann farther testified that an extra bill of \$40,000 was incurred at the very outset for piling and concrete, all of which might have been ascertained in advance, also that the board ordered him to substitute cut stone for terra cotta at a cost of \$53,000, that the carving of the stone cost \$57,000 more and that the interior finish was ordered to be changed from wood to marble at a cost of \$200,000. The architect seemed unable to tell by what authority the Board acted in thus increasing the cost of the building.

Law of Ancient Lights in America. Judge Withrow, of the Circuit Court, in St. Louis, Missouri, has rendered an important decision on the much debated question how far the English doctrine, which forbids the erection on one's individual land of buildings to obstruct the light and air of a neighbor, applies in this country. The facts in this case are substantially as follows: The defendant, Augusta Sthrodick, owned three adjoining lots. She dwelt on the western lot and sold the eastern lot, on which stood a one-story brick house, to plaintiff, Joseph H. Kleine. The western wall of this house had four windows overlooking the middle lot, which was vacant. At the time of sale the defendant knew that the plaintiff bought the building for use as a horseshoeing shop. For two years after the purchase the parties were on friendly terms and plaintiff had the benefit of the air and light from his four side windows fronting said vacant lot. Then plaintiff's wife and Mrs. Sthrodick became bitter enemies, the former causing said windows to be closed by boards. This so darkened the shop that it was unfit for the business of horseshoeing, and plaintiff sued for the cost he incurred in placing a skylight in the roof and for damages, pleading the English rule that where a person owns a house having the actual use and enjoyment of certain lights and also owns the adjoining land, if he sells the house he cannot afterward build upon the adjoining land so as to obstruct those lights. The court decided that this rule is recognized in but three states of the Union, and that,

this country being new and in process of rapid development, the English policy would be incompatible with the public interest. Hence a conveyance of land upon which is a building depending for light and air upon windows which overlook adjoining land of the grantor, does not include any right of light and air through such windows unless expressly granted thereby. Such right does not pass as an appurtenance or hereditament, and in the absence thereof the owner of the land may build thereon and totally obstruct said windows. Therefore judgment was rendered for the defendant.

Narrow Policy of American Manufacturers. Among the many interesting facts collected by Mr. W. E. Curtis, the newspaper correspondent in Japan, is one that should receive the attention of all American manufacturers.

According to this information, while the Japanese government and people show the greatest preference for everything American, the manufacturers of this country seem to have placed every obstacle possible in the way of their doing business with us. As a sample case, Mr. Curtis cites an experience of the Japanese government not long ago in trying to place some contracts in America. Mr. J. R. Morse, a prominent American merchant in Yokohama, was sent to the United States to secure bids for nearly \$1,000,000 worth of steel railway bridges. He was not permitted to close contracts, but was empowered to obtain estimates to be submitted to the Japanese government, which intended to compare them with those from other countries, but Mr. Morse was authorized to promise that American manufacturers would receive the business if their bids were not more than 25 per cent higher than those of England, Germany and Belgium. He visited New York, Philadelphia, Pittsburg, Cleveland, Chicago, and other cities, but the only bridge-builders he was able to persuade to offer estimates were the Union Iron Works, of San Francisco, and their prices were just 104 per cent higher than the lowest received from Europe. Several American companies were willing to prepare bids provided Mr. Morse would guarantee them the work. Others refused to do so unless a deposit of money was made to secure them against the loss of their time and trouble. Still more demanded that the specifications and terms of the contract be changed to meet their wishes. In other words they insisted upon furnishing such bridges as they pleased, and not such as the Japanese government wanted, and they endeavored to convince Mr. Morse that the Japanese did not know what was good for them. Nearly every firm that was approached on the subject required that the bridges should be inspected, accepted and paid for at the factories in the United States, and not upon delivery in Japan, as the specifications stated. No such objections or restrictions were found in Europe. There was not a manufacturer in England, Germany or Belgium that did not jump at the contract, and it was finally let to a British company. The older merchants in Japan say that this is not an unusual experience. It is the invariable habit of the American manufacturer who is offered business in Japan to imply, if he does not express, a doubt of the integrity of the government or the people, but the Europeans are never afraid to accept any business they can get, and at very small margins. To the enterprise of the *Chicago Record* in sending so experienced a correspondent to Japan American manufacturers are greatly indebted.

SKELETON STRUCTURES IN BUILDING.

BY JAMES R. WILLETT.

THE rapid rise and progress of the skeleton structure in buildings has now reached that stage where considerable (though by no means complete) experience has been obtained. This experience has been confined almost, if not wholly, to the few large cities in the country, while the practitioner at large has little and sometimes no experience whatever in it.

It takes some time for any method of construction to be in use before any experience worthy of the name can be had, and, when had, it sometimes takes quite a considerable time afterward before any competent person can be found able thoroughly and succinctly to describe the same and publish an account thereof.

The first book* that we think of was published but two years ago. A book written by a man who is eminently practical and actually engaged in iron construction, and which is of great value although written apparently in a hurry, and not as full and complete as might be desired. Doubtless future editions of this work will contain further matter such as experience may dictate.

This subject is now recalled to mind by the publication of another work,† the author of which does not appear to be engaged practically as an iron constructor, but rather as a designer exclusively, and, moreover, we should judge him to be young.

In the introductory chapter the author says: "The architect of early days was enabled by rule-of-thumb methods, good judgment and a knowledge of past examples to produce the structures he built; but with the exactness of our professional work at the present time, and the multifold necessities of our comprehensive civilization, the architect who endeavors to compass the sphere of the trained engineer will find the longevity of Methuselah desirable for his education." This is not altogether true. It is true that the architect cannot compass the whole sphere of the trained engineer, but the engineering knowledge required by an architect, even in the largest of our buildings, is but a small and simple part of engineering as a whole, and is within the compass of any man possessed of intelligence and industry and fit to be an architect.

The author speaks as if cast iron was entirely displaced in buildings. This is saying almost too much at the present time. While undoubtedly there are great defects about cast iron, and it has been replaced in a majority of cases by steel, yet he appears to assume that steel has almost no defects compared with cast iron. A perusal of the proceedings of one of the meetings of the Institute of Architects, if we recollect correctly, clearly shows defects of steel.

It is said, "As the 'sky-scraper' office buildings present interesting problems in architectural engineering, which are being constantly discussed in the technical press of today, some of the constructional points involved will be considered here with special reference to 'Chicago construction,' a construction which has almost universally been attributed to the skill of the architect, though in only too many cases the architect, who has designed, as it were, the sugar coat, to make the exterior palatable to the public, reaps all the reward for what the engineer has made possible." This is quite true, and is made evident by this book itself. The author has taken almost painful care to name every architect of any building he mentions, especially of one particular architect whom he names more than once in the same page, but he does not, so far as we have observed, name one of the engineers who designed the structure.

The writer is inclined to think that the period during which the architect will have chief control of large structures is passing away. Time was when architects designed bridges and other works of construction, which they would not think of doing now, and we are inclined to think that it is in the nature of things that the control of large buildings requiring engineering knowledge will pass from them. Already with more than one of our buildings all the architect did was to furnish the design or sketch of it, which was turned over to other parties who did the rest.

Let each architect ask himself, why should it not? As the ornamentation of the building, which is the principal thing which architects nowadays have to do, is, as the book says inferentially if not directly, a secondary matter. The principal qualities of the building should first be secured in every sense of the word,

both in regard to health, safety and structure, then let decoration follow.

How many of our buildings, large or small, with the exception of some residences, have provisions for ventilation? Few, if any. The writer cannot call to mind one of our large buildings, containing at times hundreds or perhaps thousands of people, which has any, though he would not be understood as making the sweeping assertion that there are none.

It seems as if the chief in the erection of large buildings is to be some man posted to a greater or less extent in hygiene, engineering and architecture, who possesses great executive ability, and who would be able to control the professional men engaged, both from education in the various branches and from natural ability.

The descriptions are given of a number of the buildings lately put up in Chicago, and some of the details thereof are given. This information is very valuable to the young architect, and if the book had done no more than this it would have justified its publication.

It is said, "The idea of allowing the manufacturer to prepare complete details after his own general scheme, and following specifications only, is not consistent with best results, in the judgment of the author, though such an arrangement has often been advocated. It is true that it has been a very common practice with bridge engineers to furnish the moving-load diagram, and allow the bidders to design the structure as they saw fit, so long as it fulfilled all requirements of the specifications. This has probably been one reason for the high degree of excellence shown in the work of the better bridge companies, as each bidder endeavors to use his material to the best possible advantage. Such a practice, however, in building work will require a very careful supervision of the work by the engineer, and as the various contractors will use those shapes most in favor, or of least cost, at their particular works, the calculations, connections, details, etc., must all be gone over and thoroughly checked, that all conditions may be satisfactory. A careful checking is necessary in any case, but where such complete freedom is accorded the bidder, it will rarely be that he is able to grasp the general ensemble in such a manner as to make satisfactory details in the required time. Again, only the most responsible and experienced firms could be trusted with such a task."

Omitting the consideration of the time which may be allowed to put up a building, there is no reason why building engineers could not furnish detailed designs for the erection of buildings as well as for a bridge. The reason why such a method succeeds with bridges is that the companies, mostly those of railroads, have usually a first-class engineer who is both well trained and experienced in his profession, and who is competent to inspect the designs of the bridge engineers and rate them at their true value.

Is this generally the case with regard to the architect? Not so far as the writer is aware. They are not trained usually, so as to be able to analyze and compare intelligently the stresses and the details of such construction as is spoken of in this work, and therefore such a plan is likely to be a failure; but when we have architects that are competent to do so, there is no more probability of failure with buildings than there is with bridges. Undoubtedly the association of the bridge engineer, one of whose principal efforts is to cheapen the construction, and who has knowledge of how this can best be done, does tend to economy in the structure without necessarily any loss in safety.

The author appears to have spared no efforts to acquire knowledge of the various buildings spoken of, the book is a mine of information in that respect.

Portions of the building ordinance of New York, as well as Chicago, are given; they do not agree in many points.

Rules are given for the calculation of stress, and appear to be well adapted to the purpose, though perhaps the architect in using the formulas for continuous beams will knit his brows somewhat at P's and Q's and Greek letters.

Speaking of wind bracing, the author says "the problem is not capable of exact solution," and this is doubtless true. One objection to sway-rods or bracing in any interior wall is the fact that you cannot forecast the future. It is not very improbable that the wall may be removed some time or other to suit the requirements of some tenant. Any old architect knows, sometimes by bitter experience, the havoc that is played with a building years after it is finished, when he has been called in to make good imperfections ignorantly and unintentionally done.

* "Skeleton Construction in Buildings," by William H. Birkmire. New York: John Wiley & Sons, 1893.

† "Architectural Engineering, with Special Reference to High Building Construction," by Joseph K. Freitag. New York: John Wiley & Sons, 1895.

The author says: "Considering high buildings, *per se*, it is evident that it is not so much legislation limiting the possibilities of design that is needed, as it is laws compelling the appointment of competent engineers to supervise the designs, specifications, and execution of large buildings, and possibly a competent board of architects to pass on the proposed location of an extraordinarily high structure."

This is all right, but the great objection to high buildings is not the difficulty of construction, it is hygienic; it is the overcrowding of people. It is true that at present little trouble arises from that source. That is because our high buildings, like our steeples, are few and far between; but when they become crowded together as they are in one or two places in Chicago, then it requires no great physician to tell that they must be unhealthy; they lack both fresh air and light, the crowding together of people must not only foul the air in the buildings, but also in the streets. If prevention is better than cure, then the physician should take the matter in hand.

The writer doubts if floor space is to be gained by the erection of high buildings, if proper hygienic laws are enforced. The width of streets and avenues surrounding the buildings should depend on the height of the buildings, and the avenues surrounding a building of ten to twenty stories would take up as much, perhaps more, ground than would give as much floor space with fewer stories and narrower streets.

Suppose all buildings in Chicago were, say, sixteen stories high, or even in the business portion of the city alone, how much fresh air and light would there be, except close to, or above the roofs? People would be like maggots in a piece of cheese.

The title of the book is somewhat of a misnomer; it might better be termed, "Chicago Skeleton Construction of Buildings." Its principal title is "Architectural Engineering," which has a wide application—far wider than the subject embraced in the book. But this is a small matter; the book is full of instruction on many points, and any architect may find abundant field for the exercise of his ability and ingenuity in solving some of the problems given.

The book is worthy of close and careful study by young architects, and we desire to call their attention to it. It confines itself almost entirely to Chicago buildings, while Birkmire's relates similarly to those of New York.

Comparing it with Birkmire's book, it gives more formula and later information, though it can hardly be said to be more practical. It would be well for a student to peruse both books. They, to some degree, supplement each other.

PRINCIPAL DUTY OF THE UNIVERSITY TO THE PEOPLE.*

BY DANIEL H. BURNHAM.

I REALIZE tonight the responsibility a layman takes upon himself when he comes here to address professional teachers on a topic which touches their own work, but I am comforted by recalling a bit of autobiography related to me many years ago by a doctor of medicine. In speaking of his own early training, he had been saying that a born doctor should hold himself open to instruction from any source, no matter how humble, and this he illustrated by an experience through which he had recently passed, wherein, at the bedside of a patient he had been baffled by the disease, but was finally able to overcome it through a suggestion made by an old country woman, who was there in the capacity of nurse. What she proposed was new to him, but he tried it, although her method was not at all according to his theories.

While I cannot suggest anything new to you, I may, possibly, present some old thoughts in a garb which shall quicken your interest in them.

I presume you do not call on a busy city man to come before you in order to display the graces of oratory, but rather because you wish him to speak from the standpoint of one whose student days being long past, is yet able to judge of the value of the training of the schools, when tested in practical life.

The exactions of business leave little opportunity for connected thought on matters which do not form part of one's daily vocation; even when they do, the moments are too brief to allow of one's effectually giving himself up to a new train of thought. Therefore, I could not have accepted the invitation of your honored president, which I highly appreciate, had I not found when the message reached me that I had something to say, something which has been threading itself in and out of my musings for many years and which you may welcome as an echo of your own thoughts—even of your own words.

Briefly glancing backward, we find that at the end of the eighteenth century a large proportion of the inhabitants of the United States could not read; a large proportion of the houses of

the country contained neither books nor printed matter; a large part of the product of the press went to the colleges, to the few public libraries, or to the homes of the wealthier citizens. Newspapers were few, their circulation limited, those who cared for books had difficulty in obtaining them; and he who possessed a hundred volumes was considered fortunate. There can be no doubt that at that time it was the college-bred man who was the individual of authority. He was held in veneration, almost in awe. When he uttered an opinion he was listened to with the deep attention due to his high claim to distinction among his fellows.

As we reach the end of the nineteenth century we find that conditions have changed, for if we exclude the black and the Indian races, it is true that only a small part of those born today on the soil of the United States are unable to read. We cannot enter the homes of well-to-do people, or even of industrious mechanics, without being struck by the amount and range of printed matter found in them. We find books everywhere; they are not now articles belonging exclusively to the library, in which they were wont to be seriously read and respectfully treated; they repose no longer, as of old, in their dignified glass-front cases, but are allowed to lie about with very little of the sanctity which once surrounded them. We have lost the deference we used to pay to the *Spectator*, and we flippantly toss the *American* or the *Edinburgh Review* on a pile of *Harper's*, *Life*, *Puck*, *Judge* and the daily papers. No unusual importance now clings to that once most potent mold of opinions, the author—his influence is much less than formerly, and the college-bred man is no longer venerated by those who are unable to achieve a college education, since the highways of knowledge are paved with books.

Individuals, as a rule, neither read carefully themselves nor are they under the direction of those who do; they do not use books with any further end in view than to keep posted or to be amused; they glance over the novels, magazines and newspapers which come in their way, picking them up haphazard and without any system, while printed leaves press upon them as does the rack of the storm, searching out every crevice in their abodes and finding a way to them whether they will or not. Though they cannot properly digest the things they read, because of the numberless subjects discussed, still, they try to keep in touch with them all, till many, in sheer despair, no longer careful to discriminate, read only to divert their thoughts, and thus, in time, become mentally demoralized.

The accusation that one is not "posted" is particularly exasperating to the average American. To be posted, one must be familiar with the newest novel, the latest fact in evolution or electricity, the most recent bit of current history, which, of course, includes the society gossip of St. Petersburg, New York and Yokohama. This is the fashion of the day and we try to live up to it. We call it keeping abreast of the times. Whichever way we turn we are met by a mass of printed matter, of which the bare cataloguing is enough to appall the librarians of the world. We are perplexed by facts and falsities, by theories and counter-theories, good and bad, cool and feverish; we are confused by advice and jeerings, by snarling cynicism and cries of despair. Of course, the press turns out wholesome truths every day, but they are mingled with insidious falsities. We look for healthy sustenance, but are threatened with concealed poison, or allured by open evil, enticingly presented. The homes of the most conscientious and fastidious are not exempt from this invasion, and the united efforts of many censors would be needed to select what ought to be retained.

Because the conditions of our youth were simpler than those of today, and because our training allowed of the clearer convictions by which we are still controlled, we are thus kept comparatively safe from wandering too far from the safe old roadways whereon the feet of man should tread, but having no time to test a tithe of the theories that are constantly advanced, or examine the numberless problems which are pressing for solution, we abstain from attempting to point out to our children which paths to take through the wilderness stretching before them. When one ceases to direct he ceases to exact obedience, when obedience ceases, respect and reverence are gone; in the place of them must come lawlessness, which expresses itself in conceit and insolence, or, what is worse, in apathy. The child reads almost as soon as he walks. The cramming process begins so early and is conducted with such entire freedom from restraint that the boy, being more or less at the mercy of circumstances, picks up the flotsam and jetsam which the tide brings idly in. When the student reaches practical life his habits remain the same, for the young man who is loose in his reading is loose in his work, the scene of his activity only has changed. The demons and angels of romance concerning whose quality he was unable accurately to judge, now appear in the flesh and are infinitely more difficult to deal with, while the theories in books, which he was not sufficiently clear-minded to accept or reject, now confront him as vital problems, which he must solve for himself.

It must not be supposed that I have dwelt upon the evils arising from the habit of loose, indiscriminate reading, because I regard this as the disease itself. It is, in fact, only a symptom of it. The real disease is the passionate longing which has seized upon the people to acquire everything—money, power, fame, position, and even intellectual attainment, by leaps, without taking the necessary preliminary steps. A victim of this disease shrinks from the arduous labor required in the study of fundamentals, and holds in especial contempt the simplicity of the laws on which success should ever be founded. He is like Alnaschar in the

* Annual address delivered before the University of Illinois, 1895.

market-place, his basket of glassware at his feet, who, closing his eyes, is carried away by the winged imagination of youth, and in his dreams sells his goods at double price, only to purchase others and dispose of them to the same advantage. Rapidly his thoughts traverse the land lying between poverty and wealth, and at last he pictures the Grand Vizier bringing to him his daughter in marriage. Alnaschar thrusts out his foot to spurn her, and overturning the basket shatters the little store of glassware on which his fortune was to have been founded.

Sound mental development would thus seem hopelessly difficult under this pressure of good and evil. In despair we cry out for a remedy. How can the misty atmosphere of youth be cleared? How can directness of thought and purpose be created and maintained under these conditions? Certainly not by filling the mind with mere data.

Religion tells us that safety lies in obedience to the Ten Commandments; that no one can be carried away who believes in God and follows His precepts; that "Unless the Lord builds the house, they labor in vain who build it"; that it is, in short, a question of character.

Herbert Spencer said, at the farewell dinner given to him fifteen years ago in New York, when speaking of the results of the utter license toward which we are tending, and predicting the dangers likely to arise therefrom, "Your safety cannot come from intellectual training, but it will depend altogether upon the character of the people." Thus, you see, both religion and philosophy agree that the safety of the future depends upon character.

And what is character? It is that within us which recognizes and unswervingly holds us to the dictates of fundamental laws. Character may be called lawful living, because the law lies within it, and is its very essence. Therefore, the youth of the country must be taught subordination to the law, and this, it seems to me, is the work the people have a right to demand of their universities.

While the world at large is disseminating great masses of facts, you can anticipate it and can preoccupy the mind of the student with the teachings of law; law that shall be so reiterated and insisted upon as to forever saturate his very being.

"Law," says old Walker's Dictionary, is "A rule of action, a decree, edict, statute or custom publicly established."

Webster defines it as "A rule of order or conduct established by authority, an edict of a ruler or government, a fixed regulation, an expressed command, a decree, an order."

John Stuart Mill says: "The expression, 'Law of nature,' is generally employed by scientific men with a sort of tacit reference to the original sense of the word law, namely, the expression of the will of a superior, in this instance being the Ruler of the Universe."

It is a common saying that a healthy-minded man is law-abiding. It is also commonly said that a lawless man is insane; and insanity may be defined as that condition in which the mind no longer recognizes or is controlled by the laws.

Since it is true that every business, trade and profession suffers because so few of our young men undergo the necessary severe and long continued training in the rudiments, and because of the resulting vagueness and discursiveness of their after-work, we do not need any more so-called "well-read" men, but we do need sound thinkers, whose mental activity flows from a pure, abundant and unfailing source; from profound knowledge and familiarity with governing principles, no matter how few and simple these principles may be.

In the architectural profession the best assistants and the most successful men are those who have received the severest drill in fundamental principle, and not those whose minds are loaded with the greatest number of facts. The young fellows coming from the schools are apt to have a certain conceit of intelligence. When put to the test as designers they exhibit an insolent independence, not backed by any deep, sure knowledge of the laws of proportion, of gradation or of arrangement. These young men are eager to dash off sketchy things, to show originality and freedom from settled forms. They know the stories of Phidias and Michael Angelo, and can recognize the buildings designed by them, though they are not profoundly acquainted with the principles on which they were constructed. They are quick to use the nomenclature of their work, can sketch every order of architecture under the sun, and even most of the well-known classic details, besides much of the stuff characterized by Mr. Hunt as "Queen Anne in front and Mary Ann behind." In a way, they know something of everything, and are like a great storehouse filled with unsorted parts of machines, out of which it is difficult to assemble the elements of a single one, for they have gathered only the superficialities of their profession, and have been allowed to escape from the schools without becoming acquainted with the very foundation of architectural thinking; in other words, with the Law.

Let me now call to your mind those who have built up large practices and who show a degree of mastery which makes men respect the work they do. Two of the leading designers of the country live in Boston, five in New York and two in Chicago. The greatest man of the past in the architectural profession in America was Richardson. Though each one of these men possesses or possessed great talent, I might name to you a dozen others in the profession who have as much, but whose industry and natural aptitude cannot place them on a level with these men, because the latter are more deeply grounded in the elements of design. Neither class possesses advantages over the other so far as memory

of buildings and details is concerned, but one knows the laws of his art while the other trusts to the empirical exercise of a wayward taste. We know how fascinating are the inspirations of some of these imperfectly trained men; we are struck with their work until we find that it possesses only the semblance of power, not power itself.

Of these nine leading men to whom I have referred, all but one went to the French School of the Fine Arts. Now this school uses few elements of design, but in the use of them the rigidity with which one is held to the laws is absolutely inflexible. One may spend years of earnest study there and not be able to obtain a certificate, much less the full diploma, while a student cannot graduate until he can be shut up without books or instructors, and, under these conditions produce a design that violates no law of architecture. He may express a new thought, but in the old words and according to the never-changing laws of order, which, in the highest sense, constitute the soul of architecture.

Richardson did not work in the Greek or Renaissance styles. He took a half-developed expression which was arrested many hundreds of years ago, the Romanesque, and made it his own. He worked it out logically on the principles that were drilled into him when he was at the École des Beaux Arts. He thought architecturally; he could not think otherwise, and it would have been the same had he chosen a Gothic or a Classic style, because the law was in him. One of the Chicago men is another illustration. Having been severely trained in the French school, he has taken up a style which I venture to say he never studied there, unless as a pastime with some fellow-student over a cigar; but he has made it beautiful, and two or three structures he has designed will remain among the best things done in our day.

I repeat that all but one of the leading architects of the country, men whom you would agree with me in placing first, came from one school, and that this school lays little stress on a man's historical knowledge or his acquaintance with details, but founds everything on his ability to make use of a few laws; at the same time, the French school does not interfere with originality, on the contrary it produces men who, grounded in the self-same laws, work as widely apart as Richardson and McKim.

One may be trained to carry a mental burden of heterogeneous information, this is a feat of mind; but if he be drilled to the accurate use of a few principles, so that his actions, while harmonizing with the laws that govern them, become spontaneous, his work will be that of a genius.

We must know the laws, and they should so thoroughly control us that we cannot think, much less act, except in harmony with them. Such training of a man's faculties gives complete effectiveness to his entire being, and he is safe to stem the tide of facts and find a way through them for himself and for others, no matter what his profession or occupation.

I believe in the unity of the laws of art, and that their homologous expressions are fundamentally identical. Those that appeal to the eye, whose loftiest manifestations are architectural, correspond in every respect to those of hearing—that is, of music. Many people have told me that, gliding over the lagoons in the twilight and lounging in the Grand Court of the last Exposition, they were moved to tears by the beauty of their surroundings, and I doubt not that this is literally true, for you all know that when listening to noble music, the thoughts come clearly, the eye dilates and the nostrils distend.

There is a parallelism between the effect of proportions in sculpture or architecture and the harmonies of color or of music. All of them stimulate man to quicker thought, to more glowing imagination, to deeper feeling. Why is it? Ask the physicist to explain the theory of light and heat, the laws of which are thought to be common. The ethereal waves actually strike blows upon the drum of the ear or the nerve surface of the eye, and by vibration they produce the phenomenon of hearing or of sight. Is not this true of man's whole body when set in vibration by the harmonious action of the waves that act upon him when in the presence of perfect form or of lovely sounds, and does he not then become a good conductor, so that the highest and purest messages of the law, which are expressed by and constitute the real quality of beauty or of music, are telephoned without obstruction to the center of the soul, where life commences and where God is?

We need to become mediums through which the law may express itself in every sense; then shall we move in the stream that flows forever. In our schools, therefore, the greatest good that can be done to the student, and through him to the republic, is to lay the foundations of his future work, deep in the changeless principles of law and order.

Dogmatic religion has lost authority, there will be no outside intellectual control over man, he will have none over himself, unless the university drills him into subordination. He who comes into possession of the talisman, the knowledge of pure law, and is a channel through which it operates, can never be led far astray.

We have had too much of freedom; it has passed into the region of license. We need correction. We must learn reverence and respect, and they are only born of convictions which are part of the very fiber of our being. Through the gateway of the universities the leaders of men must pass. In the hands of its teachers lie the future of the republic. Would you develop the nobler American, train for us makers and maintainers of order; on them all progress must depend. Herein is the highest duty of the university to the people.

STRENGTH OF BRIDGE AND TRESTLE TIMBER.*

YOUR committee appointed to report on "Strength of Bridge and Trestle Timbers, with special reference to Southern yellow pine, white pine, fir and oak," desires to present herewith, as part of their report, the very valuable data, compiled by the chairman of the committee, relative to tests of the principal American bridge and trestle timbers and the recommendations of the leading authorities on the subject of strength of timber during the last twenty-five years.

The uncertainty of our knowledge relative to the strength of timber is clearly demonstrated after a perusal of this information, and emphasizes, better than long dissertations on the subject, the necessity for more extensive, thorough and reliable series of tests, conducted on a truly scientific basis, approximating as nearly as possible actual conditions encountered in practice.

The wide range of values recommended by the various recognized authorities is to be regretted, especially so when undue influence has been attributed by them in their deductions to isolated tests of small-size specimens, not only limited in number, but especially defective in not having noted and recorded properly the exact species of each specimen tested, its origin, condition, quality, degree of seasoning, method of testing, etc.

The fact has been proved beyond dispute that small-size specimen tests give much larger average results than full-size tests, owing to the greater freedom of small selected test pieces from blemishes and imperfections and their being, as a rule, comparatively drier and better seasoned than full-size sticks. The exact increase, as shown by tests and by statements of different authorities, is from ten to over one hundred per cent.

Great credit is due to such investigators and experimenters as Professors G. Lanza, J. B. Johnson, H. T. Bovey, C. B. Wing, and Messrs. Onward Bates, W. H. Finley, C. B. Talbot and others, for their experimental work and agitation in favor of full-size tests. Professors G. Lanza, R. H. Thurston and William H. Burr have contributed valuable treatises on the subject of strength of timber. The extensive series of small and full-size United States government tests, conducted in 1860 to 1882, at the Watertown Arsenal, under Col. T. T. S. Laidley, and more recently the very elaborate and thorough timber tests being conducted by the United States Forestry Division, under Dr. B. E. Fernow, chief, and Prof. J. B. Johnson, of Washington University, St. Louis, afford us today, in connection with the work of the above-mentioned experimenters, our most reliable data from a practical standpoint. The test data at hand and the summary criticisms of leading authorities seem to indicate the general correctness of the following conclusions:

1. Of all structural materials used for bridges and trestles, timber is the most variable as to the properties and strength of different pieces classed as belonging to the same species, hence it is impossible to establish close and reliable limits of strength for each species.

2. The various names applied to one and the same species in different parts of the country lead to great confusion in classifying or applying results of tests.

3. Variations in strength are generally directly proportional to the density or weight of timber.

4. As a rule, a reduction of moisture is accompanied by an increase in strength; in other words, seasoned lumber is stronger than green lumber.

5. Structures should be, in general, designed for the strength of green or moderately seasoned lumber of average quality and not for a high-grade or well-seasoned material.

6. Age or use do not destroy the strength of timber, unless decay or season-checking takes place.

7. Timber, unlike materials of a more homogeneous nature, as iron and steel, has no well-defined limit of elasticity. As a rule, it can be strained very near to the breaking point without serious injury, which accounts for the continuous use of many timber structures with the material strained far beyond the usually accepted safe limits. On the other hand, sudden and frequently inexplicable failures of individual sticks at very low limits are liable to occur.

8. Knots, even when sound and tight, are one of the most objectionable features of timber, both for beams and struts. The full-size tests of every experimenter have demonstrated not only that beams break at knots but that invariably timber struts will fail at a knot, or owing to the proximity of a knot, by reducing the effective area of the stick and causing curly and cross-grained fibers, thus exploding the old practical view that sound and tight knots are not detrimental to timber in compression.

9. Excepting in top logs of a tree or very small and young timber, the heartwood is, as a rule, not as strong as the material farther away from the heart. This becomes more generally apparent, in practice, in large sticks with considerable heartwood cut from old trees in which the heart has begun to decay or been wind-shaken. Beams cut from such material frequently season-check along middle of beam and fail by longitudinal shearing.

10. Top logs are not as strong as butt logs, provided the latter have sound timber.

11. The results of compression tests are more uniform and vary less for one species of timber than any other kind of test; hence, if only one kind of test can be made, it would seem that a compressive test will furnish the most reliable comparative results.

* Report of Committee on Strength of Bridge and Trestle Timbers, presented at the fifth annual convention of the American International Association of Railway Superintendents of Bridges and Buildings at New Orleans, Louisiana, October 15, 1895.

12. Long timber columns generally fail by lateral deflection or "buckling" when the length exceeds the least cross-sectional dimension of the stick by 20, in other words the column is longer than 20 diameters. In practice, the unit stress for all columns over 15 diameters should be reduced in accordance with the various rules and formulæ established for long columns.

13. Uneven end-bearings and eccentric loading of columns produce more serious disturbances than usually assumed.

14. The tests of full-size long compound columns, composed of several sticks bolted and fastened together at intervals, show essentially the same ultimate unit resistance for the compound column as each component stick would have if considered as a column by itself.

15. More attention should be given in practice to the proper proportioning of bearing areas; in other words, the compressive bearing resistance of timber with and across grain, especially the latter, owing to the tendency of an excessive crushing stress across grain to indent the timber, thereby destroying the fiber and increasing the liability to speedy decay, especially when exposed to the weather and the continual working produced by moving loads.

The aim of your committee has been to examine the conflicting test data at hand, attributing the proper degree of importance to the various results and recommendations, and then to establish a set of units that can be accepted as fair average values, as far as known today, for the ordinary quality of each species of timber and corresponding to the usual conditions and sizes of timbers encountered in practice. The difficulties of executing such a task successfully cannot be overrated, owing to the meagerness and frequently the indefiniteness of the available test data, and especially the great range of physical properties in different sticks of the same general species, not only due to the locality where it is grown, but also to the condition of the timber as regards the percentage of moisture, degree of seasoning, physical characteristics, grain, texture, proportion of hard and soft fibers, presence of knots, etc., all of which affect the question of strength.

Your committee recommends, upon the basis of the test data at hand at the present time, the average units for the ultimate breaking stresses of the principal timbers used in bridge and trestle constructions shown in the accompanying table.

In addition to the units given in the table, attention should be called to the latest formulæ for long timber columns, mentioned more particularly in the appendix to this report, which formulæ are based upon the results of the more recent full-size timber column tests, and hence should be considered more valuable than the older formulæ derived from a limited number of small-size tests.

Attention should also be called to the necessity of examining the resistance of a beam to longitudinal shearing along the neutral axis, as beams under transverse loading frequently fail by longitudinal shearing in place of transverse rupture.

In addition to the ultimate breaking unit stress, the designer of a timber structure has to establish the safe allowable unit stress for the species of timber to be used. This will vary for each particular class of structures and individual conditions. The selection of the proper "factor of safety" is largely a question of personal judgment and experience, and offers the best opportunity for the display of analytical and practical ability on the part of the designer. It is difficult to give specific rules. The following are some of the controlling questions to be considered:

The class of structure, whether temporary or permanent, and the nature of the loading, whether dead or live. If live, then whether the application of the load is accompanied by severe dynamic shocks and pounding of the structure. Whether the assumed loading for calculations is the absolute maximum rarely to be applied in practice or a possibility that may frequently take place. Prolonged heavy, steady loading and also alternate tensile and compressive stresses in the same piece will call for lower averages. Information as to whether the assumed breaking stresses are based on full-size or small-size tests, or only on interpolated values, averaged from tests of similar species of timber, is valuable in order to attribute the proper degree of importance to recommended average values. The class of timber to be used and its condition and quality. Finally, the particular kind of strain the stick is to be subjected to and its position in the structure with regard to its importance and the possible damage that might be caused by its failure. (Tables showing the average safe allowable working unit stresses for the principal bridge and trestle timbers, prepared to meet the average conditions existing in railroad timber structures, the units being based upon the ultimate breaking unit stresses, which accompanied the report, are here omitted.)

In conclusion, your committee desires to emphasize the importance and great value to the railroad companies of the country of the experimental work on the strength of American timbers being conducted by the Forestry Division of the United States Department of Agriculture, and to suggest that the American Association of Railway Superintendents of Bridges and Buildings endorse this view by official action, and lend its aid in every way possible to encourage the vigorous continuance of this series of government tests, which bids fair to become the most reliable and useful work on the subject of strength of American timbers ever undertaken. With additional and reliable information on this subject, far-reaching economies in the designing of timber structures can be introduced, resulting not only in a great pecuniary saving to the railroad companies, but also offering a partial check to the enormous consumption of timber and the gradual diminution of our structural timber supply.

WISCONSIN STATE LIBRARY COMPETITION.

ON November 13 the State Library Commission of Wisconsin met and considered the report of Prof. W. R. Ware, of New York, upon the ten plans submitted in the State Historical Library competition. After selecting five sets of plans by number, the envelopes of these were opened and the following resolutions were unanimously adopted:

Resolved, That the designs submitted by No. 3, Ferry & Clas, of Milwaukee; No. 8, by Van Brunt & Howe, of Kansas City; No. 1, by Charles S. Frost, of Chicago; No. 2, by Peabody & Stearns, of Boston, and No. 4, by H. C. Koch & Co., of Milwaukee, be awarded a prize of \$500 each, in accordance with the printed instructions to architects.

Resolved, That the several plans and specifications marked "Three circles," "Red triangle," "Alpha Omega," "Patria Elliptica" and "Mask," the names of whose authors are unknown to this board, with their sealed envelopes, unopened, be returned to their authors by the secretary, upon private application to him therefor.

The names of the five prize winners then being known, the following resolutions were unanimously passed:

WHEREAS, In accordance with the suggestions and recommendations of Professor Ware, the Board of Commissioners, after most careful consideration, is of the opinion that the two plans most nearly adapted to the wants of the Commission are No. 3, by Ferry & Clas, of Milwaukee, and No. 8, by Van Brunt & Howe, of Kansas City; and

WHEREAS, Each of these plans, while having some distinct advantages over the others, will require very important modifications before it can be completely adapted to our wants; and

WHEREAS, We are uncertain whether such necessary changes can be made without very greatly modifying and perhaps radically changing the architectural character of the work; therefore

Resolved, That we invite the authors of plans No. 3 and No. 8 to make such changes and modifications in their plans as the board may suggest, and present the same for further consideration of this board.

Resolved, That a committee of three, to be named by the chair, be appointed to confer with said architects in accordance with the terms of the above resolution.

Following is the full report submitted by Professor Ware:

PROF. W. R. WARE'S REPORT.

Of the ten designs submitted in competition for the library, six follow more or less exactly the scheme suggested by the commission. Two adopt a rectangular plan with interior courts for light and air. One brings the reading room to the front, placing the offices and book stacks behind, and one puts the book stack in front.

In their external aspect four recall, more or less distinctly, the Fine Arts building, or the Agricultural building at Chicago, with their low dome and portico surmounted by a high frieze and pediment. One is in the Romanesque style with steep roofs, and four have roofs of such low pitch as to be virtually flat.

It was not to be expected that any of these designs, made without personal conference with the commission, should prove to be just what it is desirable to build. But even if the architects had perfectly understood, and precisely conformed to the provisions of the programme, they had no means of knowing which, among several apparently conflicting requirements, should have preference. Moreover, it was impossible for the commission, in framing their instructions, to know precisely what it was practicable or desirable to obtain, and it was almost inevitable, as has been found in similar cases elsewhere, that, through inadvertence, considerations which now prove to be important should be slighted, or omitted altogether. Further consideration also, especially in the light thrown on the problem by the full discussion these competitors have given it, may properly affect the views of the commission so that they may not now really care to have the precise thing that the instructions asked for. Under these circumstances a just regard for the interests and rights of the competitors requires that the design should be considered from the point of view of the technical merit and skill which they evince, as solutions of the precise problem proposed in the paper of instructions, while at the same time a proper regard for the interests of the state and of the university require that they should also be considered from the point of view of their adaptation to the requirements of the case as the commission now understand them.

It will be a perfectly satisfactory solution of the practical question at issue, and an abundant return for the time and money that have been spent upon this competition if the commission find a design which, though it may not be, as it stands, exactly adapted to the requirements of the case, yet shows such resources of skill and taste on the part of its author as to commend him to their confidence, and which can, by such modifications as their further instructions may suggest, easily be brought into shape to thoroughly meet all reasonable requirements. More than this it would not be reasonable to look for.

Of the designs which substantially follow the scheme suggested in the instructions, the one marked "Aldus" and the one marked with an open book, known to the commission as No. 3 and No. 8, seem to be distinctly the best.

The design marked "Aldus" follows very closely the suggestions of the commission, and has the merits and defects inherent in that scheme. The chief of the latter is that half of the reading room, the part, namely, under the dome, is insufficiently lighted, and the stack rooms are so large in both dimensions as to put a considerable portion of them, at least in the lower stories, quite in the dark. The basement corridor and the rooms at the west end are also insufficiently lighted, and the staircases are at an excessive distance from the western entrance. No proper provision seems to be made for the support of the dome, which shows, on the exterior, exceptionally massive features of doubtful value. In other respects the exterior is simple and appropriate. The terrace and balustrade suggested would seem to involve great expense without sufficient advantage.

No. 8, the design marked with an open book, is in plan very similar to "Aldus," and, like it, follows very closely the commission's suggestions. Its special merits are that by somewhat narrowing the reading room it gets good light into the book stacks from the west, and that by extending the reading room sixteen or eighteen feet to the east of the book stacks it lets light into the eastern end of the reading room, just where, in the other plans which follow the scheme, is the darkest part of the whole building. By this ingenious arrangement the delivery desks are placed in an admirable position, with windows of their own, close to the administration room and to the book stacks, the catalogue rooms and the main entrance, and where they command a view of the whole extent of the reading room.

The reading room itself is forty feet wide in place of fifty-six, and the lean-to for periodicals and newspapers is twenty feet wide instead of sixteen. These dimensions seem to have been adopted for the sake of obtaining a gallery for students on either side of the reading room near its eastern end. But this gallery is hardly sufficiently lighted, and if a wider reading room is preferred there is no apparent reason why it could not be had. The west end of the reading room is made semi-circular, which has obvious advantages in giving light both to the reading room itself and to the alcoves which surround it. But this also is an unessential detail. A rectangular form could be substituted if desired. No attempt is made in this design to utilize the dome to throw vertical light into the dark end of the reading room, and though the darkness is alleviated by the window which so excellently lights the delivery desks, it is still true that the portion of the reading room between the book stacks would be, at certain times of the day, of limited service.

It is a matter of regret that a plan which in many respects satisfies the chief necessities of the problem should exhibit, in these particulars and in the whole architectural treatment of the exterior, so little judgment and good

taste as to inspire serious doubts as to the professional resources of its author. Nothing could be more undesirable for such a building than the ungainly and confused masses which are shown in the elevations and in the perspective, and the treatment of the interior, as shown in the sections, by no means tends to remove distrust. The dome, especially, is a useless and ineffective feature, both outside and in, and the building would be better without it. But even this change would not save the design.

Pains have been taken in the basement to provide light in the corridor through glazed partitions. But the entrances at either end are inadequate and ill-contrived, that at the west end being too insignificant and that at the east end too conspicuous, being made to occupy the central position of the front, but treated without the dignity appropriate to a central feature. A flight of steps going directly down cellar is singularly out of place in so important a position. It is flanked by steps rising on either side parallel to the front, and meeting, or rather failing to meet, on the platform above. It would be better to reverse this, making the central steps go up and the side steps go down, or, still better, to set the basement doors further back altogether, as is done in "Aldus."

The two designs marked "Alpha" and "Beta," known to the commission as No. 1 and No. 4, resemble each other and differ from No. 3 and No. 8 in having the administration offices arranged along the eastern front of the building, opening from a transverse corridor running east and west. This arrangement somewhat separates them from the book stacks, delivery desks and reading room. They resemble each other also in presenting upon the exterior of the building a large rectangular mass, and in lighting the interior by open areas or courts.

No. 1, "Alpha."—A noticeable feature in this design is that the high mass of the dome is placed, not over the reading room, but over the vestibule. This prevents the dome from darkening the center of the building, and brings it nearer the outer wall, upon which it seems to rest. It is thus in no danger of being hidden, when seen in perspective, by the masses of building below it. The smaller areas or light wells that furnish light to the inner sides of the book stacks are too narrow for their purpose. A more serious objection seems to be the comparatively small space given to the museum in the upper story, there being no second story over the reading room.

No. 4, "Beta."—The design which on the whole seems best to succeed in combining a good plan with a good exterior is that marked "Beta." This shows an oblong building, 170 feet by 222 feet, with four large courts, each measuring about 30 by 40 feet. The arrangement of parts is simple and elegant, there is no space wasted in corridors and vestibules, the main staircase is in a central position and every portion of the building is perfectly well lighted. The book stacks, especially, not only have windows on both sides but are exceedingly narrow, and the delivery desks are in a central position. The entrances in the front as well as in the rear are on the level with the ground, this being one of the two designs which do not show upon the east end a great flight of outdoor steps, a feature which, as its authors say, is singularly unsuited to this climate, is very expensive, and darkens the eastern end of the building in two stories. The exterior treatment is simple and dignified and the architectural treatment of the book stacks is particularly happy.

It was greatly to be regretted that a design of such exceptional merit should be marked by some undesirable features which seem to be so inherent in the scheme that no modification of detail is likely to remove them. Indeed the very symmetry and completeness of the scheme makes it difficult to alter without injury. The book stacks, for example, are so placed that it would be difficult, if not impossible, to extend them. Then the administration rooms, though near the catalogue rooms, are so situated as to be at an inconvenient distance from the delivery desks and the reading room. Finally, the delivery desks are so placed that, though in a central position in respect to the book stacks, they do not command a view of the reading room. This condition, though not specially emphasized in the printed instructions, seems to be one of almost paramount importance.

The exterior is of noble aspect and has the merit of being equally presentable on all sides, with an appropriate front toward the university. Although monumentally treated, it would not be extravagantly expensive, and much is saved in regard to cost as well as to convenience, by placing the stairways within the building instead of outside, and by omitting the dome. This is almost the only one of the designs in which an adequate entrance is shown on the side of the university, and in which the passages within the basement are sufficiently ample and well lighted. It is also the only one in which the natural slope of the ground has received a proper architectural treatment, the height at the west end being reduced without altering the size of the columns, by omitting the pedestals on which they stand.

The design marked with a Dolphin, and known as No. 2, has also an admirable architectural character both without and within, and although the draftsmanship is a little rough, this only makes more conspicuous the excellence of the design, which owes nothing of its attractiveness to any special grace of presentation. This is the design in which the reading room is on the eastern front next the entrance, the book stacks running toward the west, with a large open area between them, and the administration offices occupying a one-story lean-to at the bottom of the open court thus formed. They are close to the delivery desks, to the book stacks and to the catalogue rooms, though separated from them by the width of the corridor which is used by messengers in carrying books from the book stacks to the delivery desks. This may or may not be a serious inconvenience. The delivery desks are placed close together near the book stacks, the administrative offices and the main entrance. They are admirably lighted by windows behind them, looking out upon the open court, and could also receive light if desired from the roof over them. But they do not well command the reading room, the great piers which support the dome cutting off the view. The catalogue rooms seem rather small, but they can easily be made larger by shifting the position of the partitions that divide them from the book stacks. The book stacks themselves are admirably lighted, and they can be enlarged at any time and to almost any extent by extending them toward the west, and then, if necessary, building additional stacks parallel to Park street, inclosing the court, and, if necessary, forming wings, corresponding to the reading room in front. This building also is exceedingly well lighted in every part, the central hall under the dome receiving a side light from high windows toward the west, so that the opening in the ceiling might well be dispensed with.

If the dome were omitted from the design, though this would somewhat impair the monumental effect of the exterior, it would considerably diminish the expense, and at the same time do away with what seems to be the chief defect of this design, as it would make it possible to throw the three divisions of the reading room into one, thus bringing all portions of the floor into full view of the delivery desks.

Although no one of these ten designs would, as it stands, meet all the requirements of the case, it is clearly within the power of the commission, by making judicious choice among them, to reach a perfectly satisfactory result, adopting a design which in its main features is acceptable, which is capable of being easily adapted to the needs which it does not meet, and which is the work of an architect whose skill and attainments justify them in putting the work into his hands. The last consideration is, in fact, the most important of all, for an incompetent person cannot, even with a competent sketch to guide him, properly fulfill the long and complicated duties which the erection of so important and costly a building would impose upon him. Fortunately the commission are at this point not restricted with the evidence now before them. They are not required to appoint their architect without knowing his name. It would be foolish to do so until the envelopes are opened and the premiums awarded, so that they may know with whom they are dealing. They can then, if they still find that the scheme that they suggested promises best to meet their needs, employ the author of No. 8 or No. 3 to revise his design, presumably the author of No. 3, since his drawings give evidences of greater professional resources, and have less distinctly objectionable features. They can then give fresh instructions according to their present lights, so that the design in its revised form may embrace all the good points which the competition has developed in any quarter, the commission's own suggestions, the side lights of No. 8, the lower doorways of No. 4 or No. 10, and, if they please, the advanced dome of No. 1.

Or, if the design shown in No. 2 seems on the whole the most satisfactory and its author proves to be, on the whole, most worthy of confidence, they

will have no difficulty in arranging with him to modify his scheme in accordance with their instructions, so that it shall perfectly meet all the requirements of the case.

Of course, proper compensation should be made to the authors of the rejected designs for the adoption by the commission of any features or devices which are, in technical phrase, "original to this competition." But it is not to be anticipated that any practical difficulty would arise in coming to a satisfactory agreement on this point.

NEW YORK, October 30, 1895.

WILLIAM R. WARE.

HEAT INSULATION.

IN a recent paper read before the Engineers' Society of Western Pennsylvania, Mr. John A. McConnell, of Pittsburgh, gave some interesting facts in regard to the tests made of the stability and heat resisting qualities of the several pipe coverings now manufactured. As an expert opinion upon what should constitute a reliable pipe covering his remarks are interesting. That portion relating to the above is as follows:

"Almost all the coverings now being made by reputable manufacturers are good nonconductors, and the question of their relative nonconducting power is not nearly so important as is the question of permanency.

"In addition to the reputed tests so largely advertised, experiments have been carried out in the engineering department of a number of our leading colleges to determine the heat insulating power of different classes of coverings, and the results announced have been very conflicting. Most of the tests have been by condensation, in substantially the same manner as follows: From the main pipe there branches a number of smaller pipes of the same size and length, each insulated with a different covering; the free end of each pipe is lower than the main, and the water is drained from each and weighed to determine the relative condensation in a specified time, the condensation in the main pipe being drained off separately. A carefully conducted test at the University of Michigan, under the direction of Professor Cooley, showed in favor of hair-felt. A similar test at our Pennsylvania State College showed mineral wool to be the best nonconductor; and, while I have not the report, I have been credibly informed that a test at Cornell University showed wool-felt lined with asbestos paper in a favorable light. In some of these tests asbestos coverings have come out ahead, and magnesia in others.

"Many of these tests have been conducted by gentlemen of reputation and honor, and were doubtless thoroughly honest. My experiments have shown that different pipes, all insulated with the same material, will at times show, by condensation tests, almost as varied results as the college tests have shown in pipes covered with different materials. More water may be carried from the main with the steam into some pipes than into others, and there are so many things that may modify the result of such tests.

"The average results of all these experiments, coupled with my continuous experience in the business these many years, and with twenty-five or thirty different varieties of material, convinces me that coverings can be made either of hair, wool, asbestos, wood pulp, mineral wool, infusorial earth, carbonate of magnesia, chalk, gypsum, and compounds of these and other materials that will all be so nearly alike in nonconducting power that a slight change of condition will turn the scale for or against either.

"While there is question what particular covering may save a few heat units more than some other covering, there is no question about the great difference in loss from a bare boiler as compared with an insulated one.

"The experiments of Peclet give the following as the conducting power per square foot of four materials, difference of temperature 1° Fahr.:

"Copper.....	515	heat units per hour.
"Iron	233	"
"Ordinary stone.....	13.68	"
"Powdered chalk.....	.869,	or less than one heat unit.

"Hence copper conducts 593 times as much heat as the chalk, iron 268 times as much, and even ordinary stone 15 times as much; hence, why should covering manufacturers quibble so much about a half-dozen heat units of difference when the difference between the covering and the iron steam pipe is counted by hundreds of heat units; of course, poor nonconductors must not be used, as their necessary thickness will so increase the radiating surface as to neutralize their nonconducting power. I purposely used chalk in illustration, because it is very similar to the three materials that are being most largely used in combination with asbestos in making high temperature coverings—these are infusorial earth, carbonate of magnesia and gypsum, each dependent for its strength largely upon the asbestos incorporated with it.

"Porosity is one of the necessary qualities of good nonconductors, and this porosity necessarily tends to weakness, hence clothing for steam pipes, like the clothing we wear, is liable to wear out. Means for counteracting this natural weakness and for making coverings permanent is the one thing now needed. I am thoroughly convinced that there is only one practicable way to render coverings really permanent, and that is to strengthen them by reinforcing with iron. Iron can be so incorporated in the body of the covering that the atmosphere cannot reach it; the life of iron thus protected from the atmosphere is almost unlimited, and thus situated it will hold the covering in place indefinitely, making it really permanent.

"I have known this a long while, but I have never been able to introduce it to the public on account of the largely increased cost, when I increase my price enough to justify this improvement other parties get the contracts, but the paying of this addi-

tional cost is, in the end, the very best of economy, for coverings thus strengthened with iron will last five or six times as long as any of the coverings now in general use. The iron, being protected as indicated, need not be of sufficient thickness to affect the nonconducting qualities of the covering.

"A high degree of permanency is attained by using one-inch thick of any of the well-known mineral coverings, and outside of this from a half-inch to an inch of wool felt paper, made into solid tubes and securely fastened over the mineral coverings.

"Felt paper pipe coverings, while excellent nonconductors, have heretofore failed of permanency because they were placed so near the hot pipes that they were gradually burned up. With an inch of good mineral insulation next to the pipe this charring weakness of the felt paper is entirely overcome, and the paper tubes being very strong will, if properly fastened, hold the magnesia, asbestos, or other mineral covering in place two or three times as long as it would otherwise remain.

"Less than an inch of mineral under the paper will not protect it, hence this plan means substantially two coverings and adds materially to the cost, and I do not believe it is possible to make heat insulating coverings permanent without making the first cost more than it has heretofore been, but by increasing the cost they can be made permanent.

"If, gentlemen, I have convinced you that it will pay to increase the first cost and make heat insulating coverings permanent, I will have benefited all parties concerned."

ASSOCIATION NOTES.

CLEVELAND ARCHITECTURAL CLUB.

After a summer of more or less inactivity, the club has taken up its work with the return of autumn with characteristic enthusiasm, and already a vigorous winter's work has been planned, beginning on November 14 with the annual banquet at the Hollenden Hotel, followed by the yearly meeting for the reports of officers and the election of new officers.

On the evening of January 9, 1896, the first annual exhibition of the club will be inaugurated, to continue during the balance of the week. This will be the first distinctive architectural exhibition ever held in Cleveland. In the last competition, "An Entrance to Lake View Cemetery," the mentions were as follows: W. D. Benes, first; Charles S. Schneider, second; Wilbur M. Hall, third; George W. Andrews, fourth; L. R. Rice, fifth.

UNIVERSITY OF PENNSYLVANIA.

The School of Architecture at the University of Pennsylvania opens this fall with the largest freshman class in its history, a class more than double that of the previous year. The recent growth of the school has rendered necessary the appointment of two additional instructors, which increases the teaching force to eleven. Mr. Frederick M. Mann, graduate of the Massachusetts Institute of Technology, in 1894 and in 1895, and gold medalist in the competitions of last year of the Society of Beaux-Arts Architects, has been appointed to the instructorship in design, and will have charge of the junior work in that subject. Mr. Lewis Frederick Pilcher, graduate of Columbia College in 1895, will take charge of the work in archæology, and will assist in the general architectural studies of the first year.

OUR ILLUSTRATIONS.

Foreign Sketch, by N. Max Dunning, Chicago.

Hotel, St. Joseph, Missouri. E. J. Eckel, architect.

Design for An Artist's Summer Home, by E. Eldon Deane, architect, New York.

Door of Hotel Garizot, Paris. Drawing from photograph by S. Jakubowski, Chicago.

Equitable Building, Denver, Colorado. Andrews, Jaques & Rantoul, architects, Boston. The following views are given: Principal Entrance, Main Stairway, Law Library, Main Corridor, Entrance to Elevators.

Premiated competitive designs for library building for State Historical Society of Wisconsin, at Madison. Designs submitted by Charles S. Frost, Chicago; Peabody & Stearns, Boston; H. C. Koch & Co., Milwaukee. The designs of Van Brunt & Howe, Kansas City, and of Ferry & Clas, Milwaukee, were also premiated, but are not published at this time as the choice of the commissioners rests between them. These two designs will be revised for final competition between them, as indicated in the following resolutions adopted by the library commissioners:

WHEREAS, In accordance with the suggestions and recommendations of Professor Ware, the board of commissioners, after most careful consideration, are of the opinion that the two designs most nearly adapted to the commission are Nos. 3, by Ferry & Clas, Milwaukee, and 8, by Van Brunt & Howe, Kansas City; and

WHEREAS, Each of these plans, while having some distinct advantages, over the other, will require very important modifications before it can be completely adapted to our wants; and

WHEREAS, We are uncertain whether such necessary changes can be made without very greatly modifying and perhaps radically changing the architectural character of the work; therefore

Resolved, That we invite the authors of plans Nos. 3 and 8 to make such changes and modifications in their plans as the board may suggest, and present the same for the further consideration of this board;

Resolved, That a committee of three, to be named by the chair, be appointed to confer with said architects in accordance with the terms of the above resolutions.

The chair appointed as such committee President C. K. Adams, Secretary R. G. Thwaites and L. S. Hanks.

Photogravure Plate: Northwest View, Residence of Professor

Charles F. Bradley, Evanston, Illinois. Bosworth & Chase, architects.

PHOTOGRAVURE PLATES.

Issued only with the Photogravure Edition.

Residences, Chicago.

Evanston Boat Club House. Henry Ives Cobb, architect, Chicago.

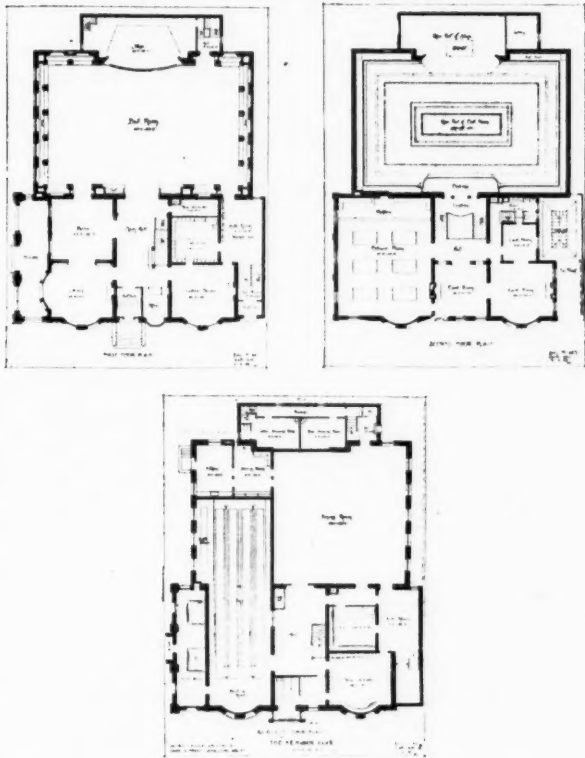
First Presbyterian Church, at Evanston, Illinois. D. H. Burnham & Co., architects, Chicago.

Residence of William Hudson Harper, Evanston, Illinois. Handy & Cady, architects, Chicago.

Cummock School of Oratory, Northwestern University, Evanston, Illinois. Charles R. Ayars, architect.

Southeast View, Residence of Professor Charles F. Bradley, Evanston, Illinois. Bosworth & Chase, architects.

Residence of J. Stanley Grepe, Evanston, Illinois. Robert C. Spencer, Jr., and R. R. Kendall, associate architects, Chicago.



Floor Plans, Kenwood Club, Chicago. View of exterior accompanied November, 1895, number. Patton & Fisher and Charles S. Frost, associate architects, Chicago.

NEW PUBLICATIONS.

One of the brightest and best of the publications which come regularly to our table is the *Trade Press*, a Chicago publication for trade and class journal publishers and their advertisers. It might be supposed that a paper about papers could be nothing but a stale reproduction of facts already stated, but under the able editorial management of the Messrs. Bohn and McColl, the *Trade Press* has become within a short existence the recognized representative of trade journalism as a profession in this country. Newspaper men rarely subscribe to periodicals, and when the *Trade Press* announced in an early number that it could not "exchange" with any papers, the policy seemed almost suicidal; it was so much like carrying coals to Newcastle to expect a newspaper or trade paper publisher to subscribe and pay for another paper, which in its way is quite as much of a class publication. But we are assured that in its short life thus far the *Trade Press* has been very successful in building up a large paid circulation, and that it is now quite generally regarded as the one class paper which the publisher cannot afford to be without.

THE Subscription News Company, of Chicago and New York, have issued for 1895-6 a very tasty and attractive trade list of daily and weekly publications for which they act as subscription agents. They have just completed their twentieth year in the subscription business, and are justly proud of a long and unbroken record of satisfactory dealings with publishers and the public. Their lists are very complete, and include all the best periodicals of our own and foreign countries. An ingenious method of printing the name, place of publication and price of each newspaper or periodical renders it possible to get all these particulars at a glance, and the list is therefore of great value to anyone interested in the best current literature if for purposes of reference only. In the very important matters of promptness and accuracy, as well as in satisfactory dealings with publishers, the Subscription News Company easily stands at the front, as the testimonials of those with whom

they have transacted business for from fifteen to twenty years bears evidence. Several publishers of prominent daily and weekly papers have decided, after long experience, to put all their subscription news business in the hands of this one agency. This certainly speaks well for the able management of Mr. L. Conant, of the Subscription News Company.

CORRESPONDENCE.

Editor INLAND ARCHITECT: CHICAGO, October 24, 1895.

Below please find copy of a letter received by me regarding plans for the University of Illinois, which kindly publish in the next issue of THE INLAND ARCHITECT, and oblige,

D. H. BURNHAM.

DWIGHT, Ill., October 14, 1895.

Mr. D. H. Burnham, architect, the Rookery Building, Chicago:

DEAR SIR,—On receipt this morning of the last issue of our university paper, the *Illini*, I found that the editor had made what I knew to be an erroneous statement in regard to yourself, therefore I immediately wrote to him the following letter, which I trust will meet with your approval, and if it should not, kindly advise me and I will have it modified or withheld as you may desire.

To the Editor: The *Illini*, of October 11, under the heading, "Change in the Library Plans," speaks of the employment of Mr. D. H. Burnham, of Chicago, as the architect engaged to prepare plans and supervise the construction of the proposed library building of the university, and the article says: "In his designing he will call upon the designs in the competition for good points, and these combined with his own ideas cannot fail of producing a splendid building."

The latter clause in quotation is erroneous, and a correction of it is due to Mr. Burnham.

As chairman of the Buildings and Grounds Committee, I tendered to Mr. Burnham the use of the premiated designs for the Library building, but he declined to examine them or receive them. As I understand him, it was on a point of etiquette in the relation between architects; also I feel safe in saying, that underlying that point of etiquette there might be found the just professional pride of Mr. Burnham himself. Trusting you will do him the justice of correcting the error, I remain,

Very truly yours, RICHARD PRICE MORGAN,
Chairman Buildings and Grounds Committee, University of Illinois.

BUILDING OUTLOOK.

OFFICE OF THE INLAND ARCHITECT, }
CHICAGO, Ill., December 1, 1895. }

So far as reliable statistics of the building trade have appeared, the improvement over each year seems to be in the neighborhood of twenty-five per cent. These figures are based on only partial returns. There has not been as much building as was hoped for. The results might have been expected. The bulk of the surplus earnings of the people for 1895 have been used to liquidate accumulated indebtedness. The earnings of 1896 will largely go to personal uses for current and prospective requirements. Hence the general anticipations of a better year in 1896. The foundation for firm and steady prices that has been laid this year will result in a broadening investment. In iron and steel, prices after rushing to panic limits subsided and are now as low as cost of material and fair margins will allow them to go. In lumber and its products, prices have preserved a uniformity throughout the season, and production has been kept within the limits of market requirements. In glass, nails and paints, prices have moved up and remained pretty near their higher limit. Building material in general is a little higher than last year, but is not likely to reach a higher level because of the increase in mill, shop and factory capacity. Brickmakers have maintained quotations with more regularity and stocks are larger. Builders in the larger cities do not venture specific statements as to the coming year, but they believe times in general will be better. The tariff and money questions will not reach disquieting proportions in Congress. The presidential campaign involves no new issues, but only the issue of returning or not returning to former policies of the dominant party of the past. Hence the business interests are not jeopardized, and, as a shorter than usual campaign is agreed upon, we have less to fear. The cause of good government needs more attention. Our prosperity is more due to our good luck than good management. The closing month of the year finds the people contented, fairly prosperous, and working in the direction of more healthy and more comfortable conditions.

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.

Chicago, Ill.—Architect J. W. Keneval: Making plans for the Metropolitan Club, to be erected at Jackson boulevard and Irving avenue; it will be of pressed brick and stone, have hardwood finish throughout, the necessary plumbing, fine interior decoration, art glass, galvanized iron and copper work, electric light, steam heating.

Architect Julius H. Huber: For A. Schoeninger, a four-story store and apartment building, 75 by 165 feet in size; to be erected at the corner of Evanston avenue and Melrose street; it will have two fronts of pressed brick, stone and terra cotta, the first story to be of blue Bedford stone; the interior will be finished in oak and cypress, have the best of open nickel-plated plumbing, mantels, sideboards, gas and electric fixtures, marble wainscoting, mosaic floors, elevator, steam heating. Also a three-story and basement apartment building for same owner, to be erected on Melrose street; it will be 75 by 75 feet in size; have hardwood finish, the best of modern sanitary plumbing, gas and electric fixtures, elevator, steam heating, electric light, marble work, etc. Also one-story power house, janitor's residence and five two-story stables adjoining the above; the whole to cost \$120,000.

Architects Rosenstock & Co.: For C. Aune, a two-story residence, 26 by 53 feet in size; to be built at Austin; it will be of frame with stone basement, have hardwood finish and mantels, gas fixtures, furnace. For Mrs. Hyndshaw, a two-story frame residence, 34 by 40 feet in size; to be built at Norwood

Park; it will be of rock-faced stone basement and frame superstructure, have hardwood interior finish, sideboards and mantels, gas fixtures, etc.

Architect John T. Hetherington: For R. H. Gruner, a three-story apartment house, fifty feet front; to be erected at Paulina street; the first story will be of buff Bedford stone and the remainder of buff pressed brick with Bedford stone trimmings; the interior to be finished in oak and pine with maple floors, have the best of open nickel-plated plumbing, mantels, sideboards, gas and electric fixtures, steam heating.

Architects Handy & Cady: For A. Zellweger, a three-story apartment house, 48 by 66 feet in size; to be erected at Orchard street; the front will be of buff Bedford stone; the interior to be finished in oak and Georgia pine, have the best of modern sanitary plumbing, mantels, gas fixtures, electric bells, steam heating. For Dr. Kuh, a three-story and basement residence, 25 by 77 feet in size; to be erected in Grand boulevard near Forty-second street; the front will be of buff Bedford stone and pressed brick; the interior to be finished in hardwood, have sideboards, consoles, mantels, all open nickel-plated plumbing, electric bells, speaking tubes, hot-water heating, etc.

Architect Albert S. Hecht: For Peter Minavegen, a two-story flat building, 22 by 51 feet in size; to be built at 193 Clarence avenue; it will be of pressed brick and stone front, have the interior finished in oak, mantels and sideboards, the necessary modern sanitary improvements, gas fixtures, furnaces, etc. For A. Carpenter, a two-story flat building, 48 by 50 feet in size; to be erected at Douglas Park; it will be of stone front, have hardwood interior, mantels and sideboards, gas fixtures, electric bells, speaking tubes, steam heating, etc. Also preparing plans for a four-story flat building, 60 by 85 feet in size; to be erected on North Clark street; it will be of pressed brick and stone front, have all hardwood finish sideboards and mantels, gas fixtures, electric bells, speaking tubes, etc. For M. Muir, a two-story flat building, 22 by 45 feet in size; to be erected at West Congress street; to be of pressed brick and stone front, have the modern plumbing, mantels, gas fixtures, furnaces.

Architects Ohman & Almqvist: For A. G. Lubech, a four-story and basement double flat building, 48 feet front and 72 feet deep; to be erected at York place; it will have a handsome front of buff Bedford stone with copper bays and cornice, the interior to be finished in oak and Georgia pine, have the best of sanitary improvements, mantels, sideboards, gas fixtures, etc.

Architects D. E. & O. H. Postle: Making plans for two two-story and basement flat buildings, to be erected at Congress street near Central Park avenue; to be of stone front, have hardwood finish, mantels, sideboards, furnaces.

Architect J. M. Van Osdel: For H. Ericson, a four-story store and flat building, 25 by 81 feet in size; to be erected at 257 Elm street; the first story will be of stone and above of pressed brick and stone, have all the modern sanitary improvements, gas fixtures, etc. Also made plans for the remodeling of the Commercial Hotel at the corner of Lake and La Salle streets. It will be made into a business building, have steam heating, electric light, marble entrance on Lake street, hardwood finish, iron stairways, passenger and freight elevators, etc.

Architect B. S. Elmendorf: For J. H. Lee, a two-story and basement flat building, 25 by 60 feet in size; to be erected at Lexington avenue near Garfield boulevard; it will have a buff Bedford stone front, hardwood finish, mantels and sideboards, the modern open sanitary plumbing, gas fixtures, electric bells, heating, etc. Also making plans for a two-story flat building, 26 by 64 feet in size; to be erected at Homan avenue near Van Buren street; it will have a stone front, hardwood finish, mantels, gas fixtures, furnaces, etc. For F. Gilbert, a two-story, basement and attic residence, 25 by 70 feet in size; to be erected at Jackson boulevard; it will be of blue Bedford stone front, have hardwood interior finish, mantels and sideboards, gas fixtures, electric bells, speaking tubes, furnaces, etc. For F. Fonnegan, a three-story store and flat building, to be erected at Harrison street; to be of stone front, have hardwood finish, mantels, sideboards, gas fixtures, electric bells, speaking tubes, furnaces, etc.

Architect W. L. Klewer: For Jacob Schieswohl, a two-story, basement and attic residence, 35 by 57 feet in size; to be erected at the corner of Ridge and May streets; it will be of pressed brick and stone front, have all hardwood finish, the best of sanitary improvements, mantels, gas fixtures, electric bells, speaking tubes, hot-water heating, stained and plate glass, etc. Also four-story store and flat building, 25 by 85 feet in size; to be erected at North Halsted street; it will have a pressed brick and stone front, hardwood finish, mantels, sideboards, gas fixtures, steam heating, electric bells, speaking tubes, etc.

Architect W. R. Gibb: For Bullock Brothers, a three-story store and flat building, 48 by 65 feet in size; to be erected at West Forty-eighth street; it will have a pressed brick and stone front, the modern sanitary improvements, gas fixtures, mantels, sideboards, etc.

Architects Cowles & Ohrenstein: Making plans for a four-story store and flat building, 80 by 110 feet in size; to be erected at Blue Island; it will be of pressed brick, stone and terra cotta on two sides, have hardwood finish, mantels and sideboards, the best of sanitary improvements, gas and electric fixtures, elevator, electric light, electric bells, speaking tubes, steam heating. Also making plans for two three-story residences, 50 by 65 feet in size; to be erected at Fifty-seventh street for Messrs. Sladek & Goodjohn; it will have a pressed brick front with buff Bedford stone trimmings, the interior to be finished in hardwood and have mantels, sideboards, the modern sanitary improvements, electric bells and speaking tubes, electric light, furnaces. Also making plans for a three-story and basement residence, 30 by 60 feet in size; to be erected at Evanston; it will be of frame with stone foundation, have hardwood finish, mantels, sideboards and consoles, gas and electric fixtures, hot-water heating.

Architect Joseph C. Llewellyn: For William H. Stewart, three two-story, basement and attic residences, 50 feet front and 64 feet deep, to be erected at Sixty-first street and Lexington avenue; they will have handsome fronts of buff Bedford stone, hardwood interior finish, mantels, sideboards and consoles, gas and electric fixtures, electric bells, speaking tubes, etc. For Neill Brothers, a three-story apartment building, 25 by 70 feet in size; to be erected at 4840 Champlain avenue; it will have a blue Bedford stone front, hardwood finish, mantels, sideboards, gas and electric fixtures, heating, etc.

Architects Church & Jobson: For Frank E. Burley and Miss May Buckingham, twelve three-story and basement residences and two four-story flat buildings; to be erected at Thirty-fifth street and Calumet avenue; the residences will have a frontage of 264 feet, and have handsome stone fronts of various designs and different kinds of stone; the interiors will be all finished in hardwoods, marble and tile work, have mantels, consoles and sideboards of special design, the best of open nickel-plated plumbing fixtures, electric bells, speaking tubes, laundry fixtures and driers, gas ranges and fireplaces, gas and electric fixtures, electric light, steam heating, etc. For W. H. Colvin, Jr., they have finished plans for seventeen two-story, basement and attic residences, to have a total frontage of 337 feet; they will be erected at the corner of Woodlawn avenue and Sixty-fifth street; the fronts will be of different kinds of stone, the interiors to be finished in hardwoods throughout, have the best of modern open nickel-plated plumbing, mantels, gas fixtures, electric bells and speaking tubes, laundry fixtures, gas ranges and fireplaces, specially designed sideboards and consoles, steam heating. Also made plans for two handsome three-story residences, to be erected at Edgewater, for J. L. Cochran; they will be of frame construction with stone basements, have hardwood finish, mantels, sideboards and consoles, gas and electric fixtures, furnaces, etc. Also made plans for a four-story and basement apartment house, 35 by 90 feet in size; to be erected at Fifty-first street boulevard, for Ella James; first story and basement will be of buff Bedford stone, and the remainder of gray roman pressed brick with stone trimmings, the interior to be finished in hardwood and have special mantels and sideboards, gas and electric fixtures, electric light, steam heating, gas ranges and fireplaces, laundry fixtures, driers, etc.

Architect August Maritzen: For the Illinois Vinegar Manufacturing Company, a five-story factory, 95 by 205 feet in size; to be erected at the C. B. & Q. belt line between Washtenaw avenue and Rockwell street; it will be constructed of common brick, long leaf Georgia pine construction, have steam heating, electric light, 150 horsepower engine, two boilers, 72 inches by 18 feet; smokestack, 6 feet diameter and 125 feet high, 15,000-bushel capacity elevator, generating house, fermenting house, engine house, etc.; cost \$75,000.

Architect W. J. Van Keuren: For L. A. Babcock, a two-story, basement and attic residence, 35 by 50 feet in size; to be erected at Oak Park; it will be of

frame construction with stone basement, have hardwood interior finish, mantels and sideboards, the best of open sanitary plumbing, furnace, etc. Also making plans for a two-story flat building, 35 by 70 feet in size; to be erected at Austin; will put in all the sanitary improvements, mantels, gas fixtures, furnaces, etc. Also two-story double flat building, 50 feet front, to be erected at Oak Park for J. R. Payson; will put in sanitary plumbing, gas fixtures, mantels, furnaces, etc.

Architect Stiles & Stone: For M. P. Smith, a four-story and basement store and flat building, 25 by 90 feet in size; to be erected at 505 Forty-third street; it will be of buff Bedford stone front, have oak finish throughout, the best sanitary improvements, gas fixtures, mantels, sideboards, steam heating, etc.

Architect George C. Nimmons: Made plans for the remodeling of the Merchants' Building; will put in new store front on La Salle street at No. 92, raise floor to level with sidewalk, put in new plumbing, hardwood finish, marble work, electric light, steam heating, etc. Also making plans for alterations and new interior finish for barber shop for the Plankinton House, at Milwaukee; will put in new plumbing, electric light, steam heating, marble floor and wainscoting, ornamental plaster work, etc. Also made plans for a two-story flat building, 25 by 60 feet in size; to be erected at Armour avenue for S. T. Cooper. Also made plans for a two-story, attic and basement residence, 35 by 40 feet in size; to be built at St. Charles for A. A. Gates; it will be of pressed brick and stone front, have the sanitary plumbing, mantels, gas fixtures, hot-water heating.

Architect Jules De Horvath: For M. Zagers, a five-story store and flat building, 24 by 81 feet in size; to be erected at 405 Maxwell street; it will be of pressed brick and stone front, have the modern plumbing, mantels, gas fixtures, steam heating, etc. Also made plans for a three-story and basement apartment house, 165 feet front and 52 feet deep, to be erected at Sixty-sixth street and Woodlawn avenue; it will be of pressed brick and stone front, have hardwood interior finish, mantels and sideboards, gas and electric fixtures, steam heating, etc.

Architect W. H. Pruyn: For Dr. C. P. Pruyn, a three-story store and flat building, 27 by 85 feet in size; to be erected at 4326 Greenwood avenue; it will be of stone front, have hardwood finish, mantels and sideboards, the best of modern sanitary plumbing, gas and electric fixtures, steam heating, etc.

Architect H. D. Dean: For C. W. Hoff, three two-story residences, 24 by 46 feet each; to be built at 6435 to 6439 Greenwood avenue; they will have pressed brick and stone fronts, hardwood finish, mantels, sideboards, gas fixtures, furnaces, etc.

Architects Kleinpell & Borst: For William C. Foley, a block of four three-story houses, 70 by 70 feet in size; to be erected at Vincennes avenue just south of Forty-first street; to be of red mottled Roman pressed brick with stone trimmings and blue Bedford stone for the basement and first story; the interior to be finished in hardwood and have mantels, sideboards, gas and electric fixtures, gas ranges and fireplaces, hot-water heating, electric bells and speaking tubes.

Architects Lamson & Eichberg: For James T. Smith, a two-story flat building, 25 by 76 feet in size; to be built at 1614 Adams street; it will have a buff Bedford stone front, hardwood finish, mantels and sideboards, gas fixtures, steam heating, etc.

Architects J. F. and J. P. Doerr: For Christ Eigenmann, a three-story and basement store and flat building, 50 by 110 feet in size; to be erected at the corner of Archer avenue and Deering street; it will have two fronts of Bushnell buff pressed brick with Bedford stone trimmings, have hardwood interior finish, mantels and sideboards, gas fixtures, etc.

Architects Flanders & Zimmerman: For William Crilly, five three-story residences, 18 by 66 feet each; to be erected at 5543 to 5551 Indiana avenue; they will have stone and pressed brick fronts, hardwood interior finish, mantels and sideboards, the best of modern plumbing, gas fixtures, hot-water heating, etc.

Architects Murphy & Camp: For Andrew O'Donnell, a three-story and basement apartment house, 52 by 60 feet in size; to be erected at Indiana avenue and Forty-seventh street; it will be of buff Bedford stone front, with carved ornamentation, have hardwood interior finish, mantels and sideboards, gas and electric fixtures, laundry fixtures, steam heating, etc.

Architect Louis T. Shipley: For F. Swannell, a three-story building, 90 by 50 feet in size, and a two-story building 120 by 48 feet in size; to be erected at Kankakee; they will have pressed brick and stone fronts, the modern plumbing, gas fixtures, steam heating, etc.

Architect S. S. Beman: For Proctor & Gamble Company, at Ivorydale, near Cincinnati, Ohio, a three-story building, 100 by 300 feet in size, and a two-story addition to storehouse, 50 by 200 feet in size, etc. Mr. Beman designed the whole town of Ivorydale; they are all fine stone buildings. Mr. Beman is also making drawings for a machine shop, 280 by 120 feet in size; to be erected at Pullman; it will be of iron and brick with slate roof, have electric light, steam heating, etc.

Architects Bishop & Colcord: For Alderman Walter Merchant, four three-story residences, 84 by 65 feet in size; to be erected at Vincennes avenue, between Forty-ninth and Fiftieth streets; they will have buff Bedford stone fronts, hardwood interior finish, mantels, sideboards, gas fixtures, steam heating, etc.

Architect Thomas Wing: For C. E. Hurd, a four-story apartment house, 50 by 85 feet in size; to be erected at Cornelia street, west of Evanston avenue; it will be of pressed brick and stone front, have hardwood finish, mantels and sideboards, modern open nickel-plated plumbing, steam heating, electric light.

Columbus, Ohio.—Architect D. H. Burnham, Chicago: For Pennsylvania Railroad Company, a three-story pressed brick and terra cotta depot; size, 100 by 500 feet; cost \$500,000.

Denver.—Architect —: For Colvin Fleming, a two-story brick dwelling; size, 32 by 41 feet; cost \$5,500.

Architects Varian & Sterner: For E. A. Gilbert, a two-story brick dwelling; size, 47 by 47 feet; cost \$10,000. For E. R. Sykes, a two-story brick dwelling; size, 43 by 38 feet; cost \$9,000.

Architect William Long: For Jeanette Harris, a two-story brick dwelling; size, 32 by 49 feet; cost \$5,000.

Architects Wendel & Humphrey: For Caroline Reed, repairs on brick dwelling; cost \$5,000.

Duluth, Minn.—Architect August Maritzen, Chicago: For Upper Peninsula Brewing Company, a five-story stone brewery; size, 100 by 150 feet; cost \$125,000.

Galveston, Texas.—Architect N. J. Clayton: For Rev. P. P. Klein, Austin, Texas, a three-story stone college; size, 68 by 71 feet; cost \$15,000. For E. Pilot, Houston, Texas, a three-story brick store and office building, to be erected at Twenty-third and Market streets, Galveston; size, 65 by 120 feet; cost \$10,000.

Lemars, Iowa.—Architect O. H. Rounds: For Charles Flaughter, a one-story and basement pressed brick and stone store; size, 60 by 100 feet; cost \$10,000.

South Bend, Ind.—Architects A. W. Rush & Son, Grand Rapids, Michigan: For St. Joseph county, Indiana, a courthouse; cost, \$300,000.

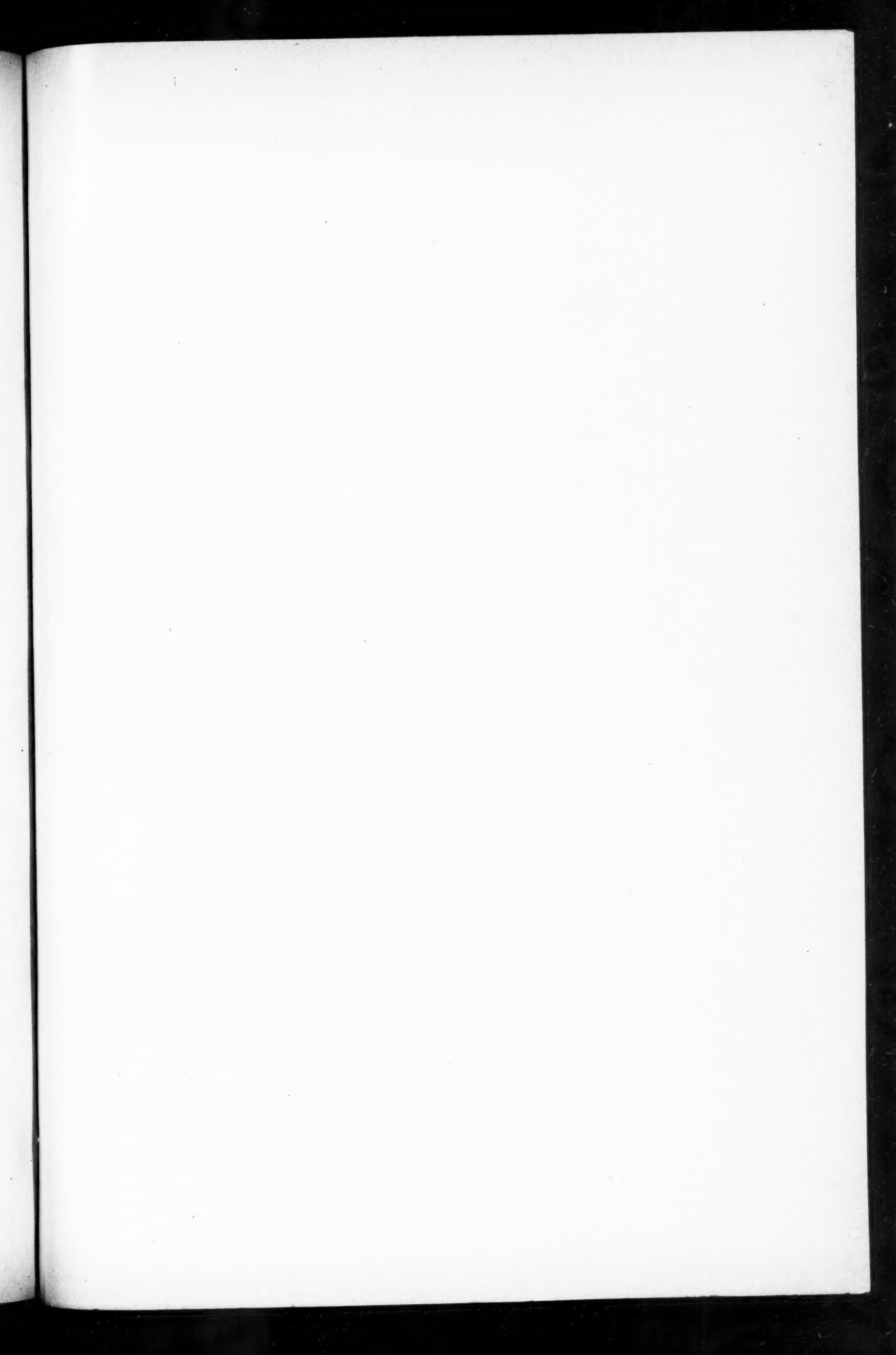
St. Louis, Mo.—Architect Isaac S. Taylor: For Liggett & Meyer Tobacco Company, a three-story pressed brick and stone factory; size, 2,400 by 216 feet; cost \$1,200,000.

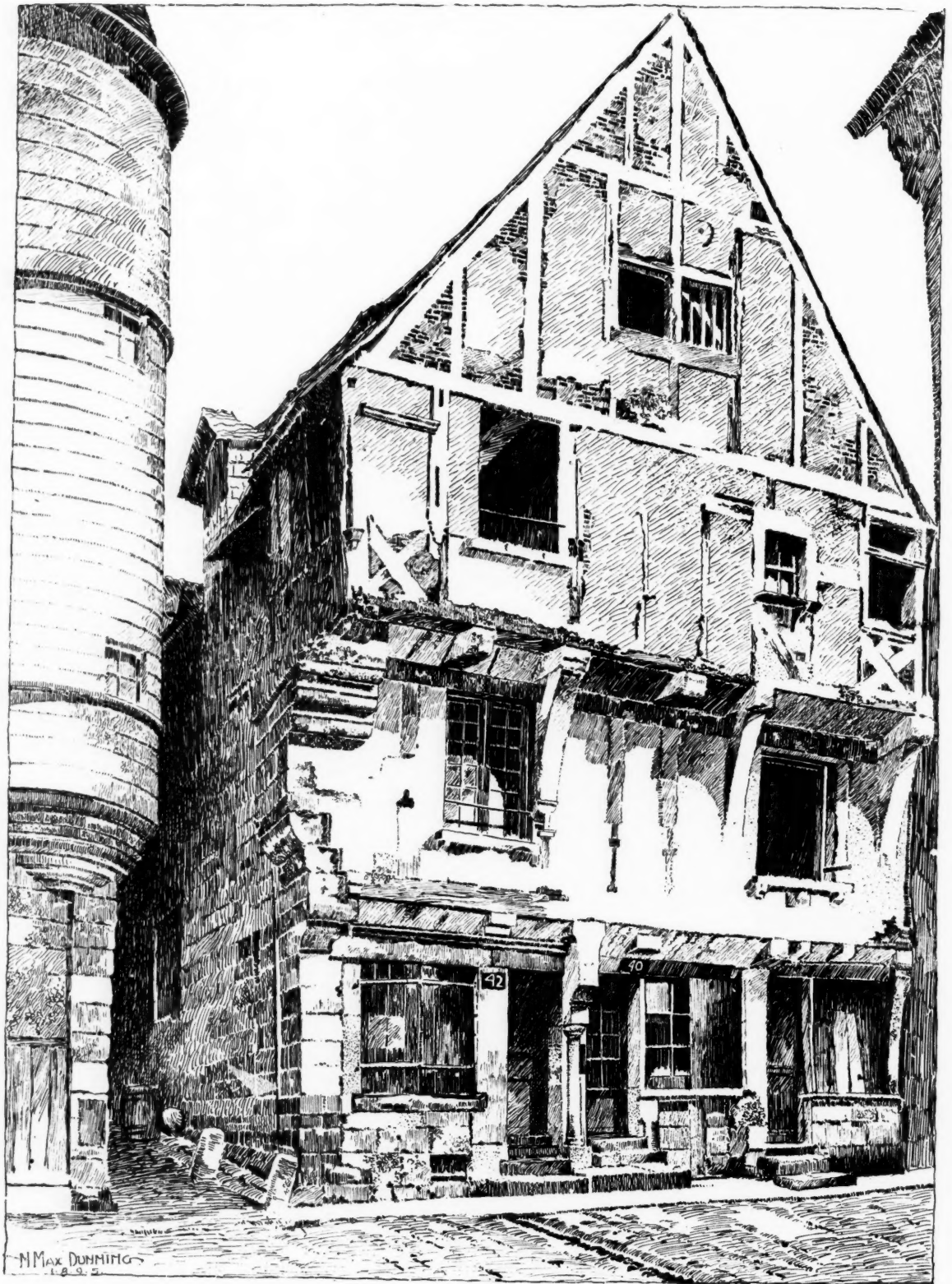
Architect J. B. Legg: For Barnes Medical College, a four-story and basement pressed brick and stone college building; size, 91 by 117 feet; cost \$50,000.

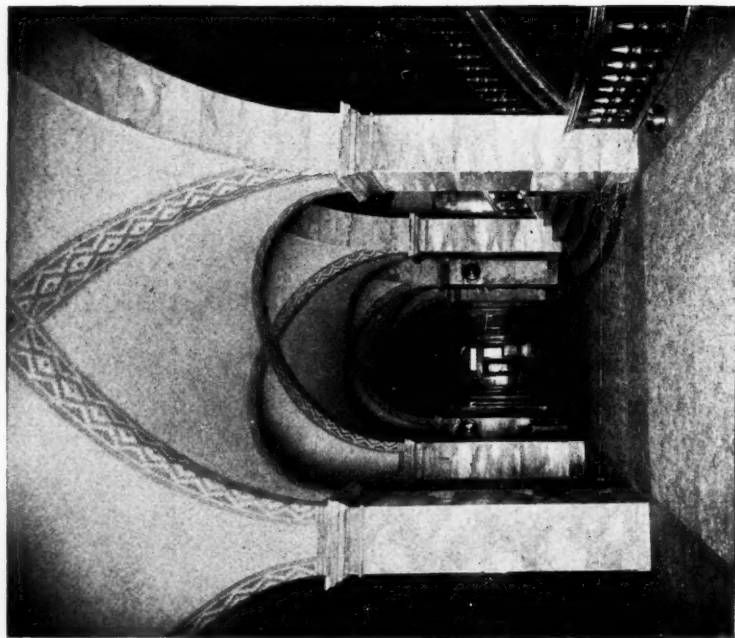
Architects Barnett, Haynes & Barnett: For P. M. Kiely, a two-and-a-half-story pressed brick residence; size, 38 by 41 feet; cost \$75,000.

Paxton, Ill.—Architect Paul O. Moratz, Bloomington, Illinois: For Middlecoff Hotel Company, a three-story pressed brick hotel; size, 75 by 120 feet; cost \$25,000.

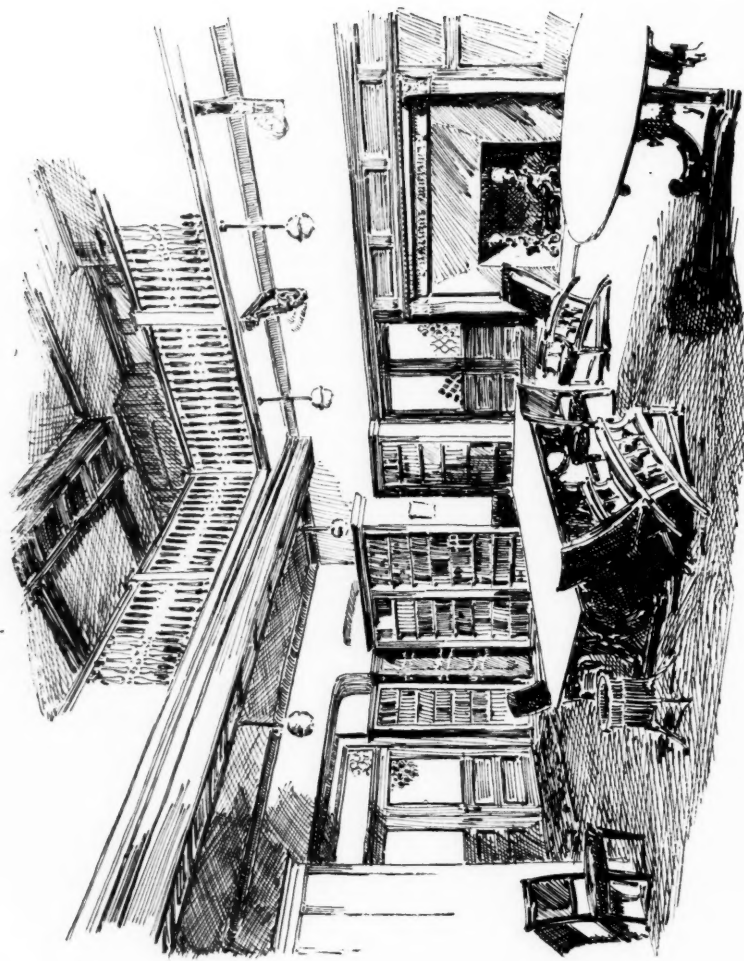
Pittsburg, Pa.—Architect W. S. Fraser: For Charles Lockhart, a six-story brick and stone fireproof building, to be erected on Penn avenue above Ninth street; cost about \$60,000; to be used for storerooms.



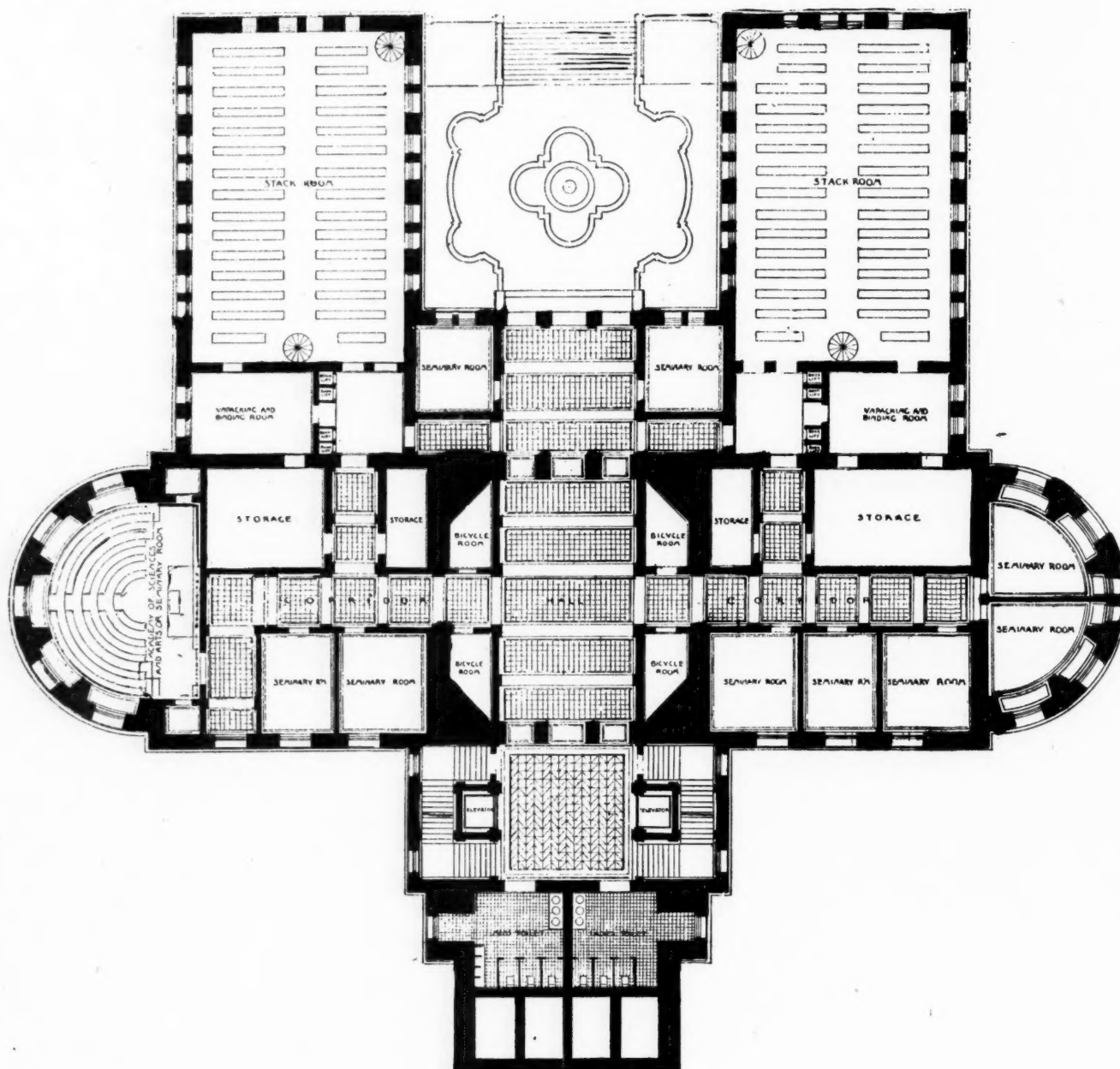




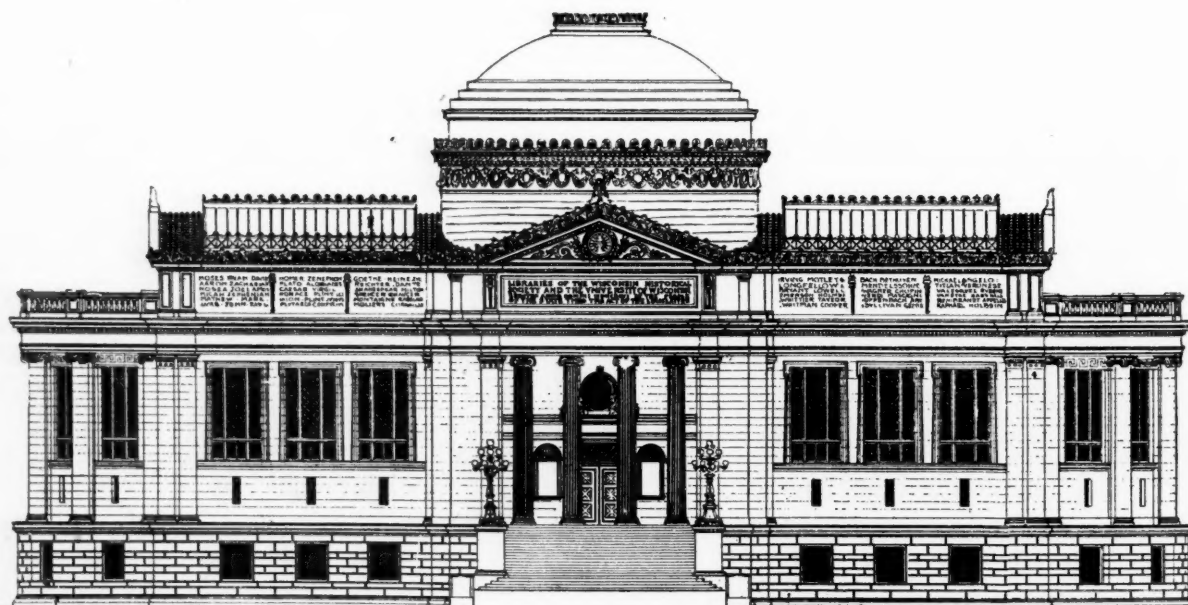
MAIN CORRIDOR.



LAW LIBRARY.



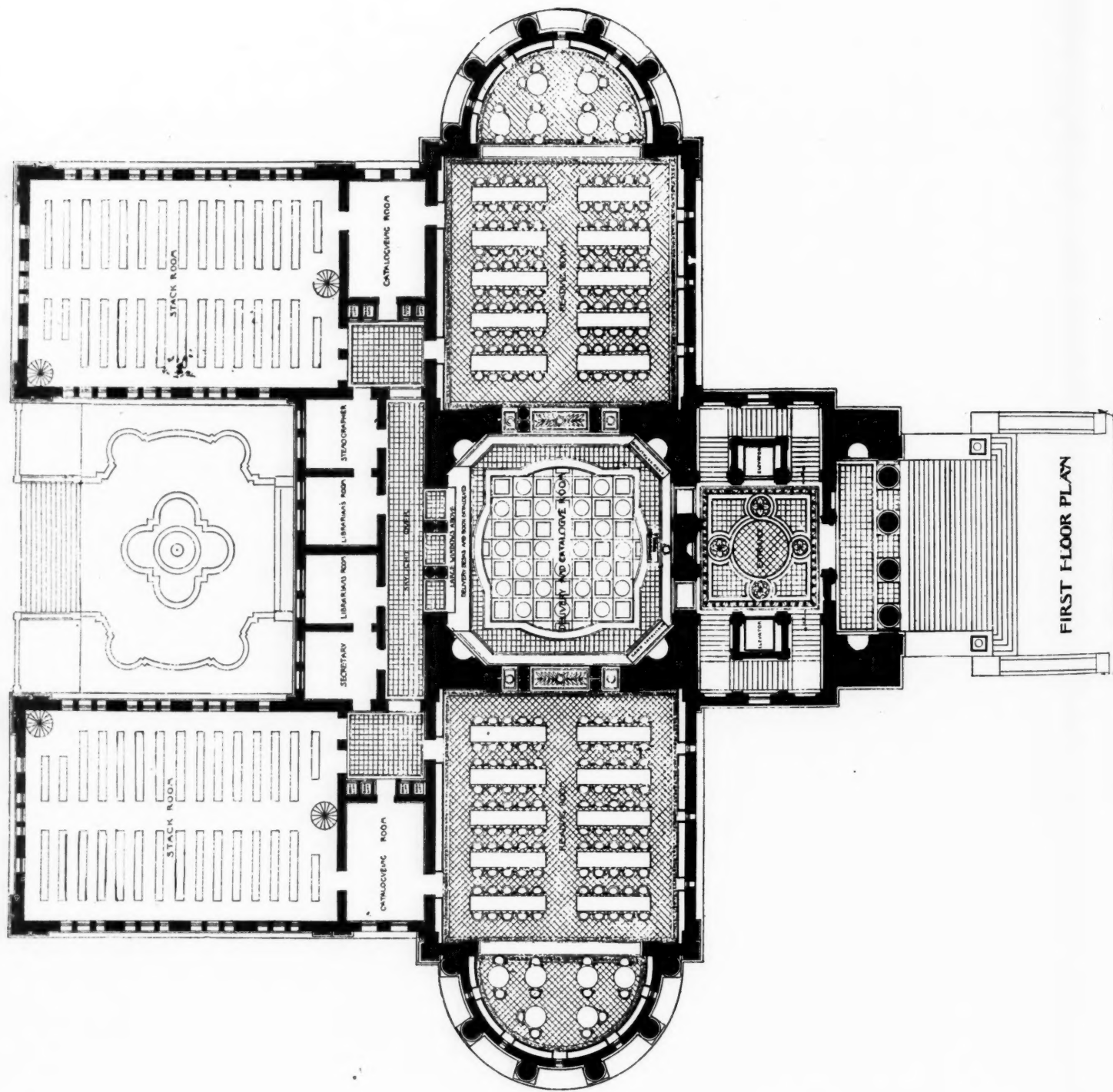
BASEMENT PLAN.



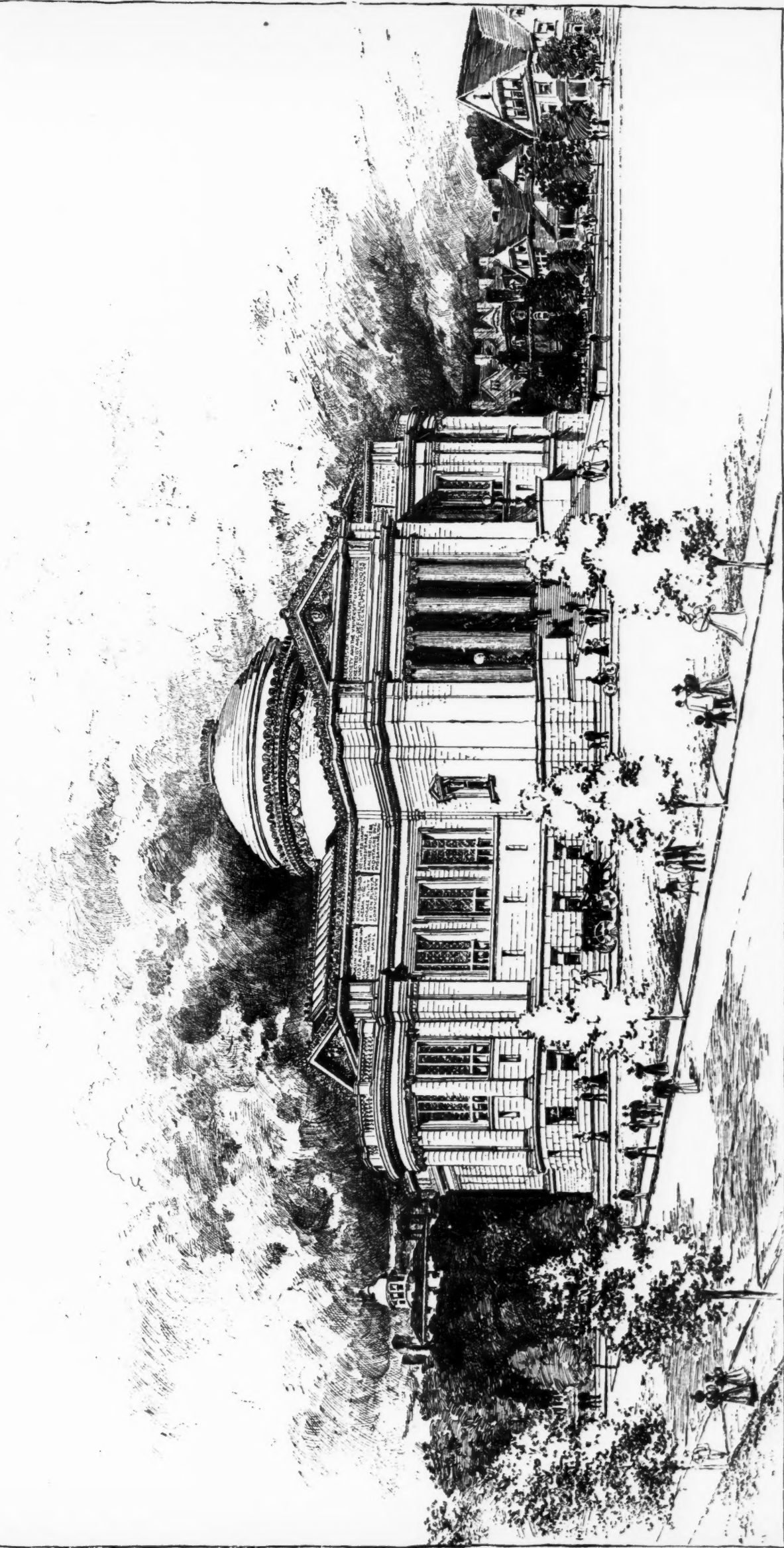
FRONT ELEVATION.

PREMIATED COMPETITIVE DESIGN, LIBRARY BUILDING, THE STATE HISTORICAL SOCIETY OF WISCONSIN, MADISON, WISCONSIN.

SUBMITTED BY PRABODY & STEARNS, ARCHITECTS, BOSTON.

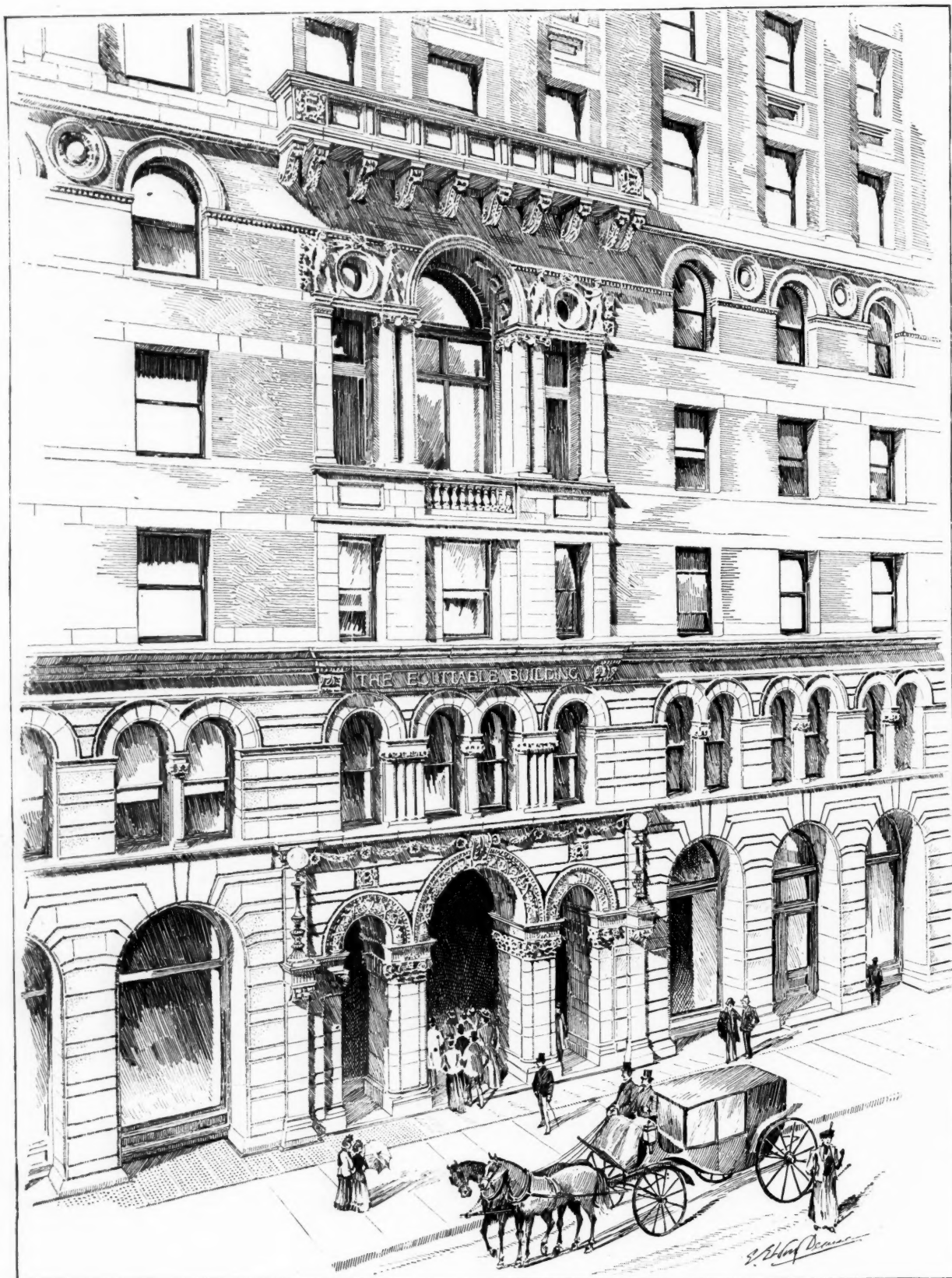


FIRST FLOOR PLAN



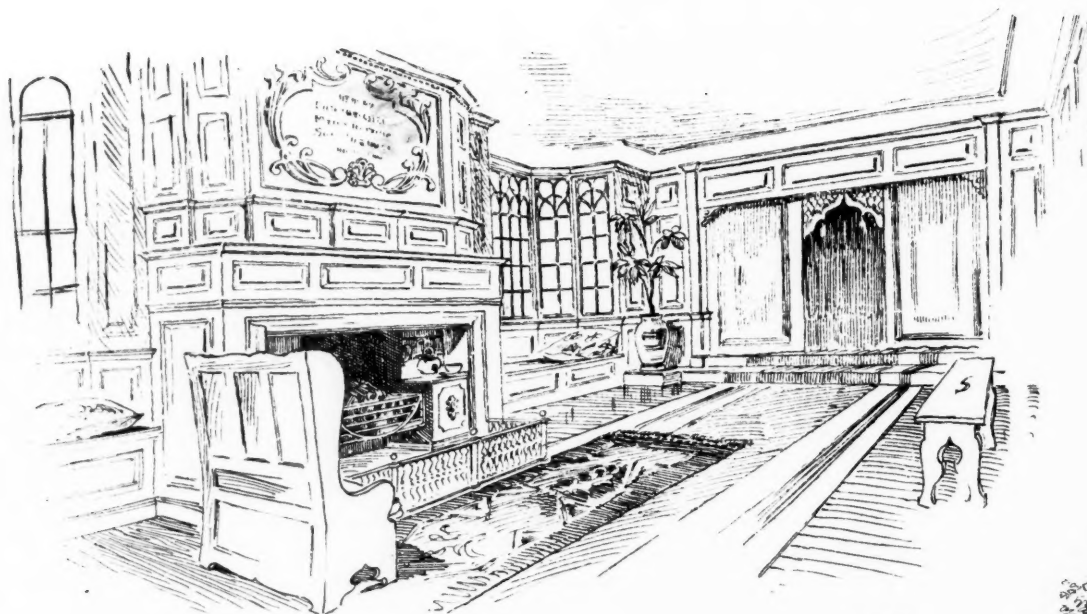
PREMIATED COMPETITIVE DESIGN, LIBRARY BUILDING, THE STATE HISTORICAL SOCIETY OF WISCONSIN, MADISON, WISCONSIN.

SUBMITTED BY PEABODY & STEARNS, ARCHITECTS, BOSTON.



ENTRANCE DETAIL, THE EQUITABLE BUILDING, DENVER, COLORADO.

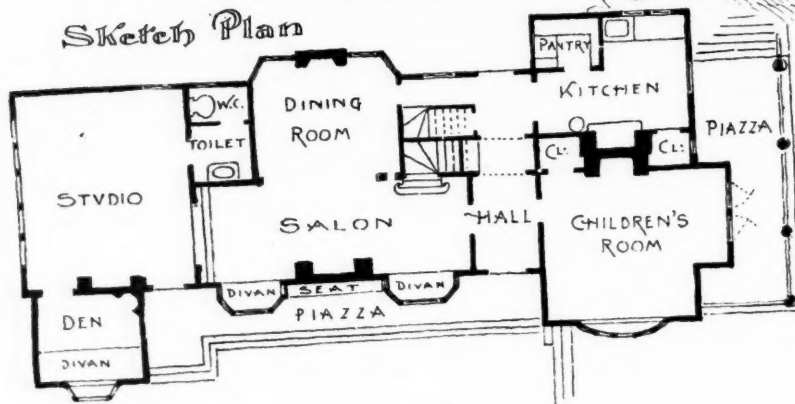
ANDREWS, JAKES & RANTOUL, ARCHITECTS, BOSTON.



Interior of Salon



Sketch Plan



View from S

Design for an artist's
"Summer Home" by
E. Eldon Deane Architect:
503 Fifth Ave. New York.



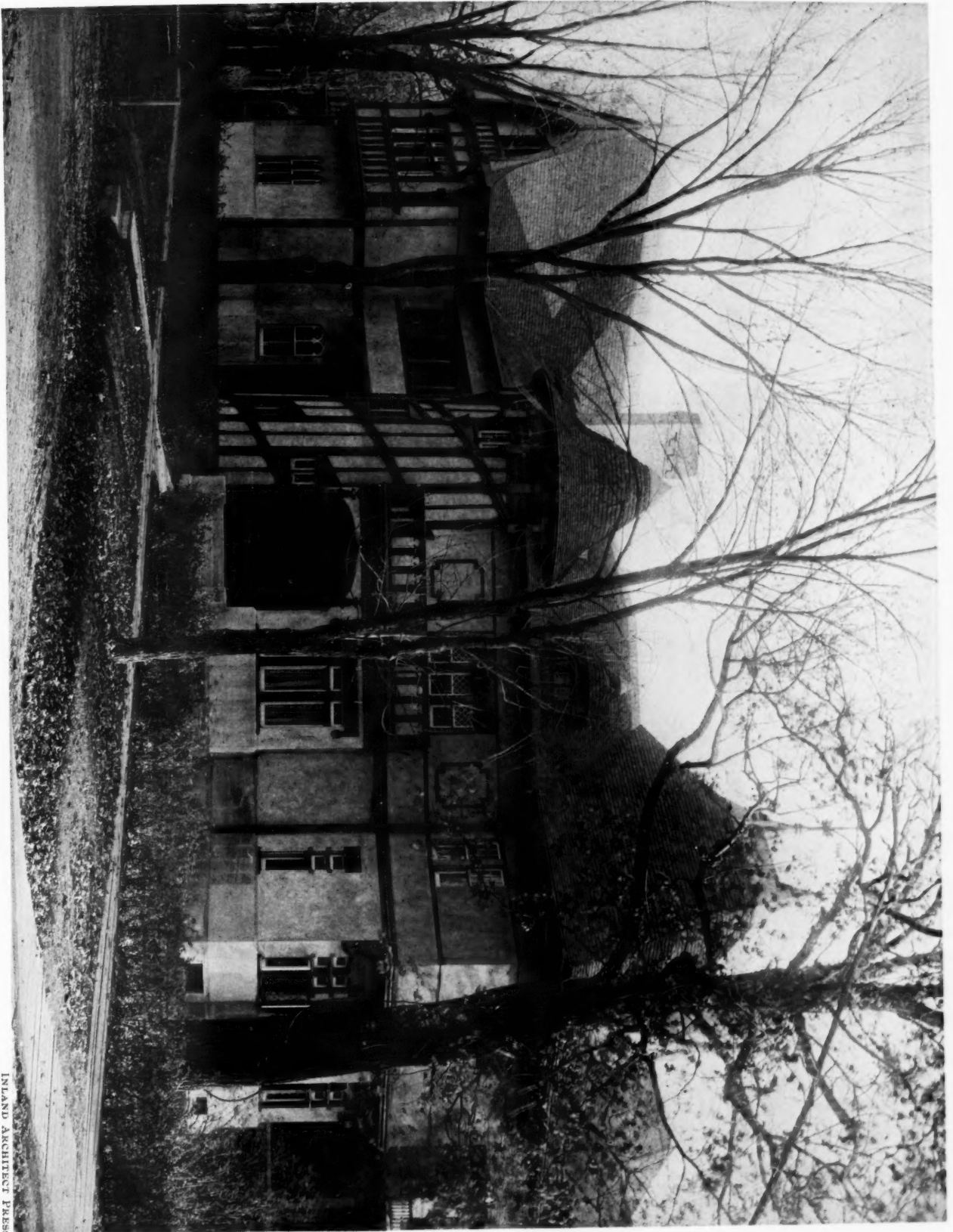
From South West

9 DEC 1891

VOL. XXVI.

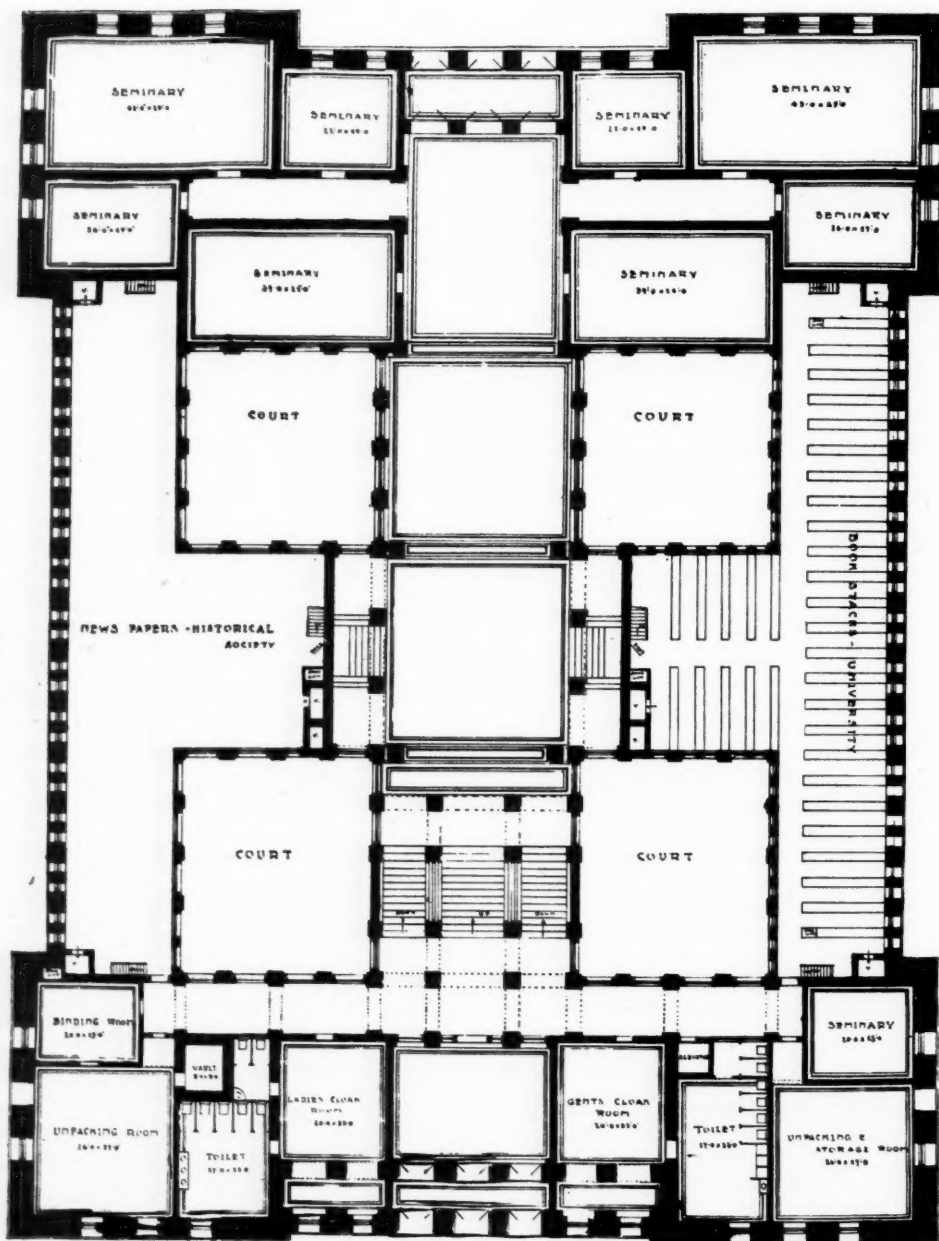
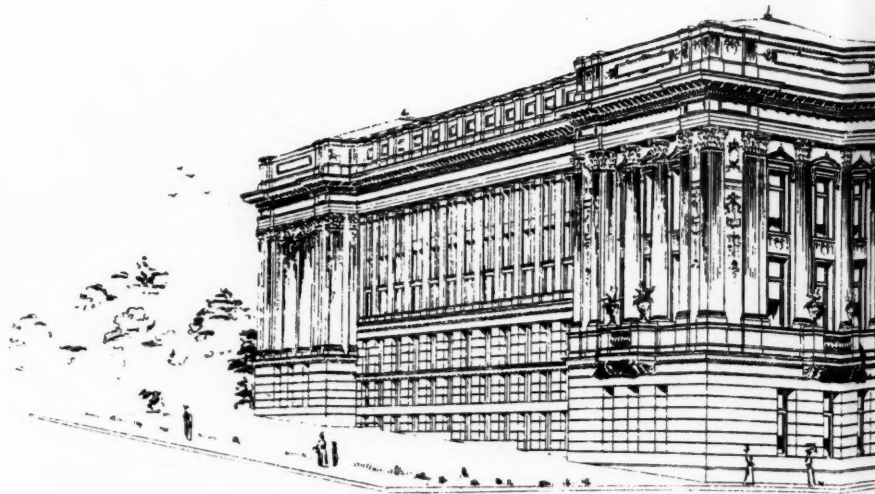
THE INLAND ARCHITECT AND NEWS RECORD.

No. 5

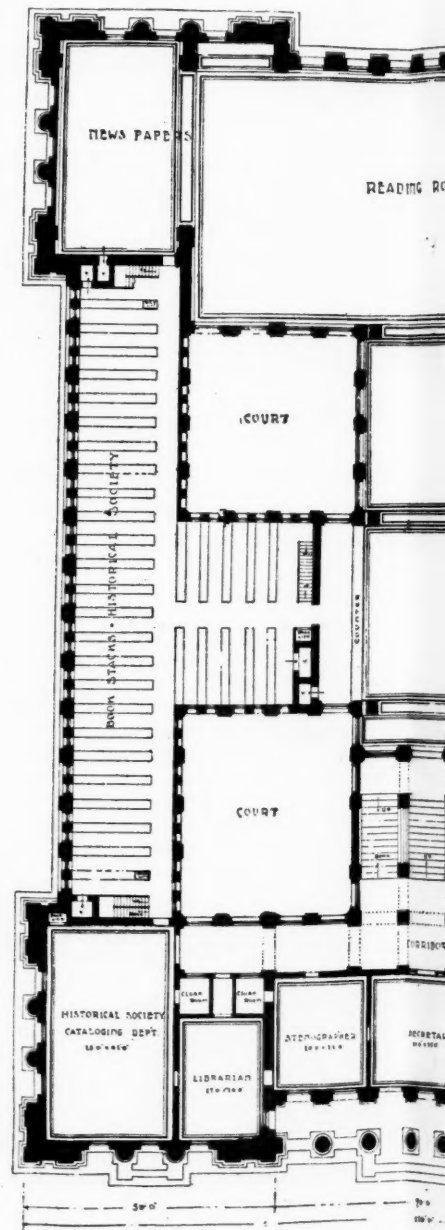


INLAND ARCHITECT PRESS.

NORTHWEST VIEW, RESIDENCE OF PROF. CHARLES F. BRADLEY, EVANSTON, ILLINOIS.
BOSWORTH & CHASE, ARCHITECTS.



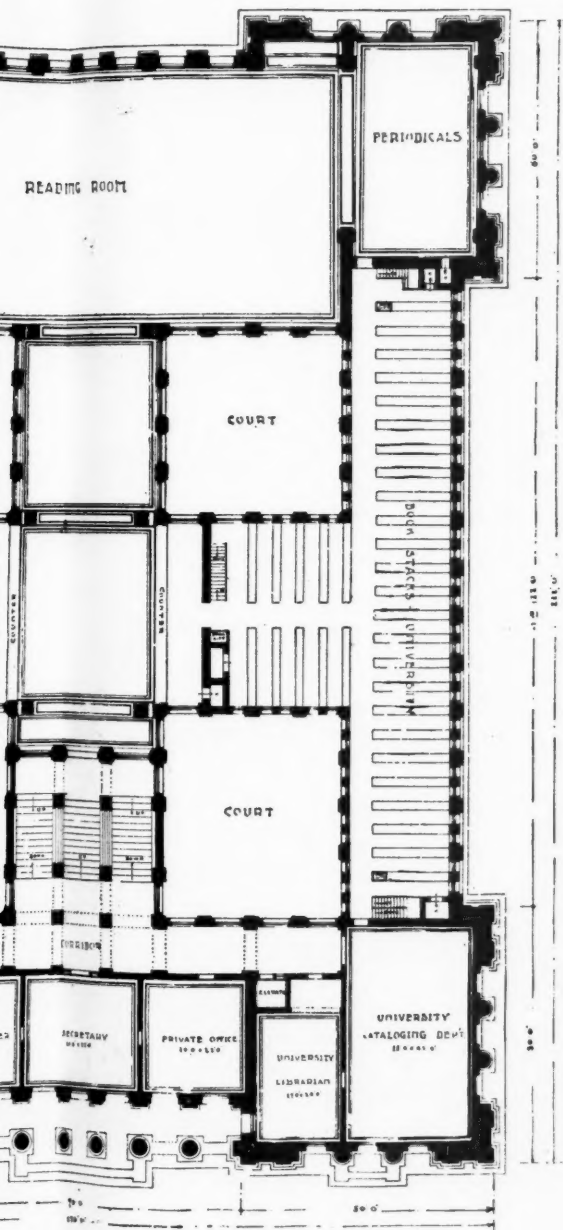
GROUND FLOOR PLAN



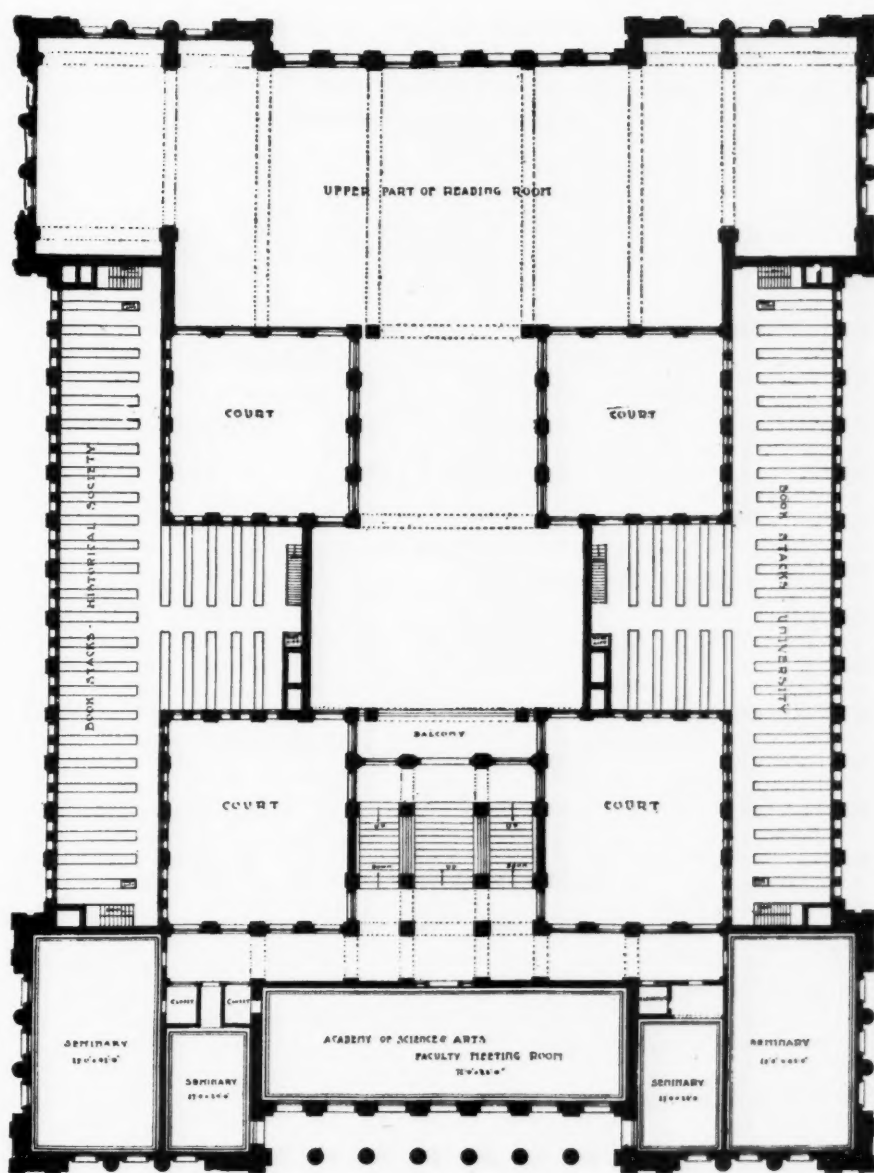
PLAN - FIRST

PREMIATED COMPETITIVE DESIGN, LIBRARY BUILDING, THE STAT.

SUBMITTED BY H. C. KOCH & CO, ARCH.



PLAN - FIRST STORY



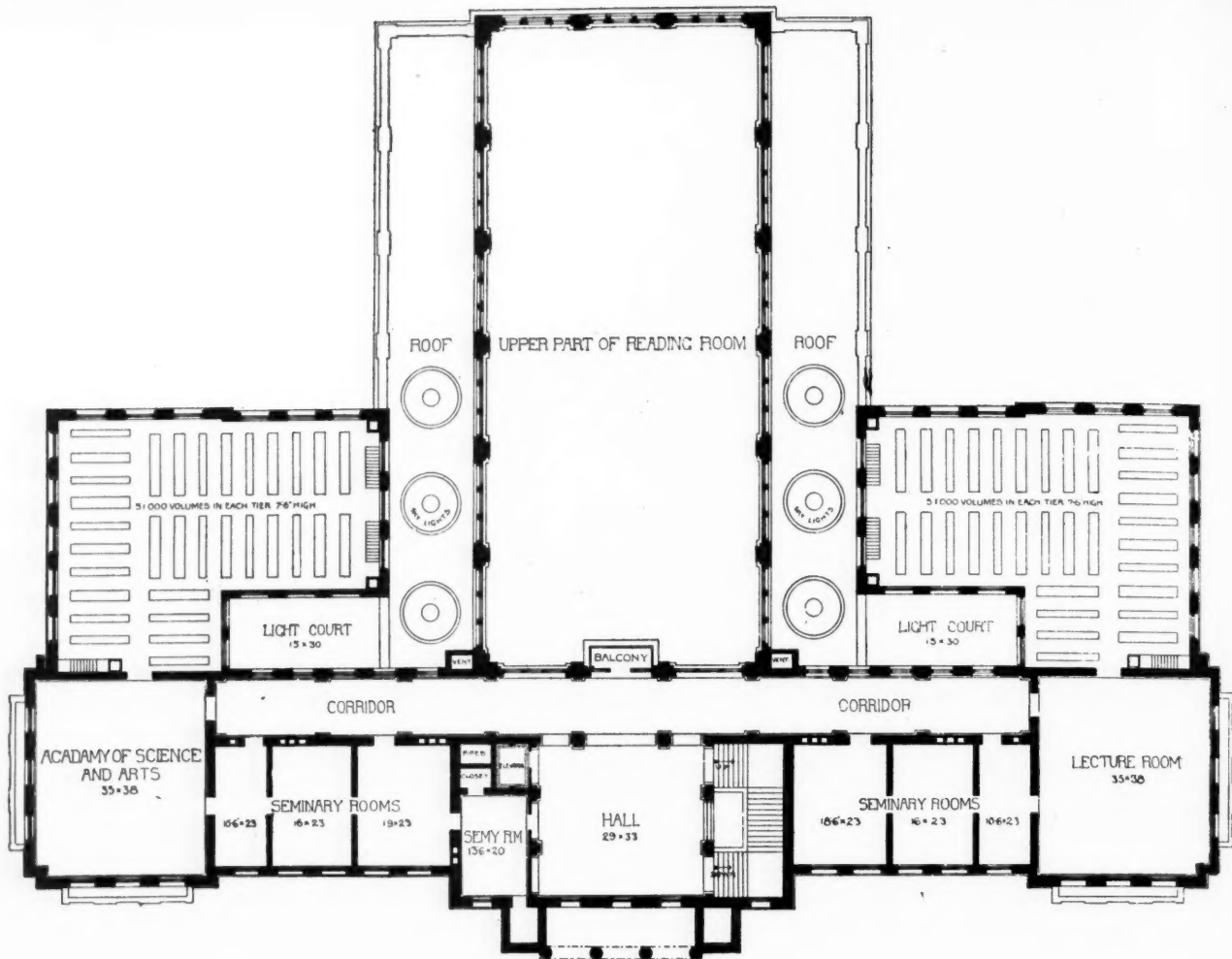
PLAN OF SECOND STORY

THE STATE HISTORICAL SOCIETY OF WISCONSIN, MADISON, WISCONSIN.
& CO., ARCHITECTS, MILWAUKEE, WISCONSIN.

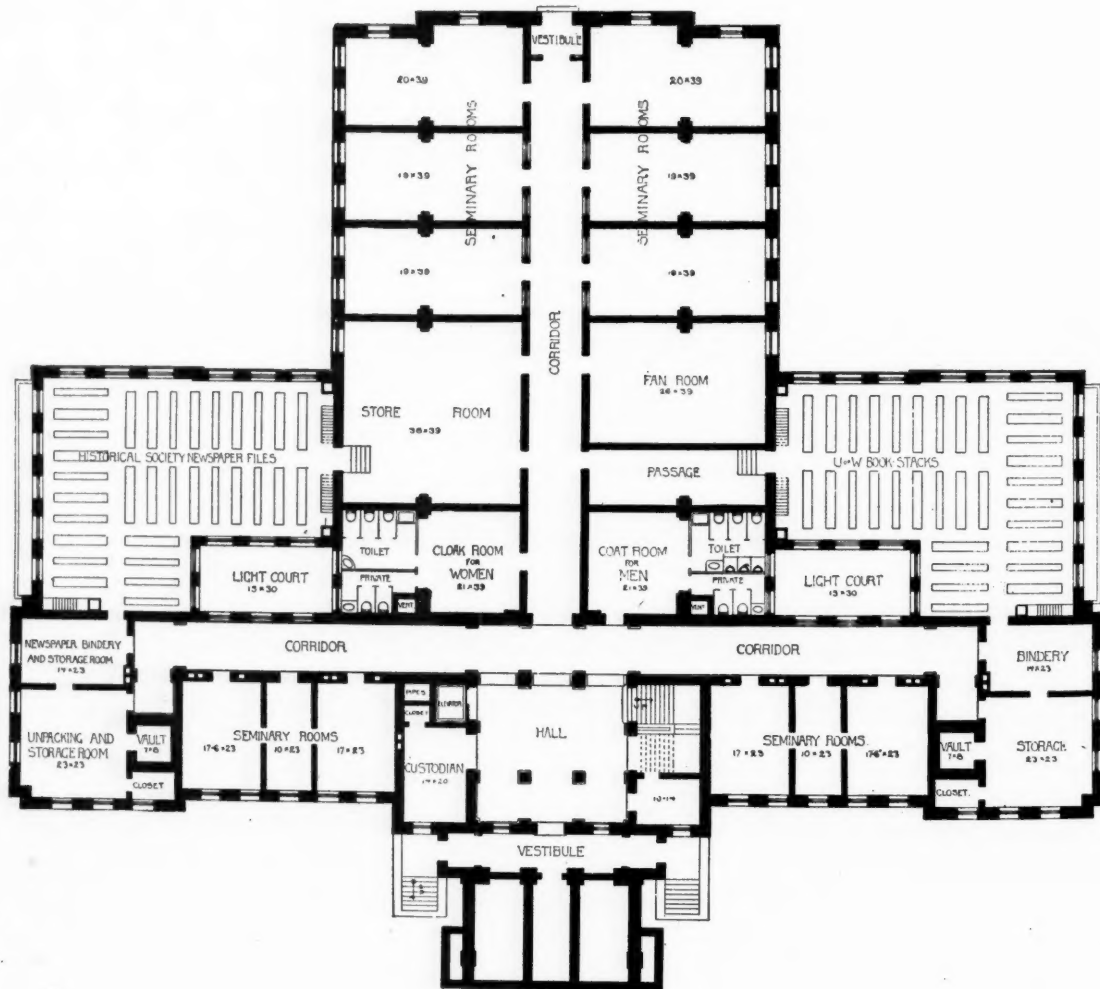


HOTEL BUILDING, ST. JOSEPH, MISSOURI.

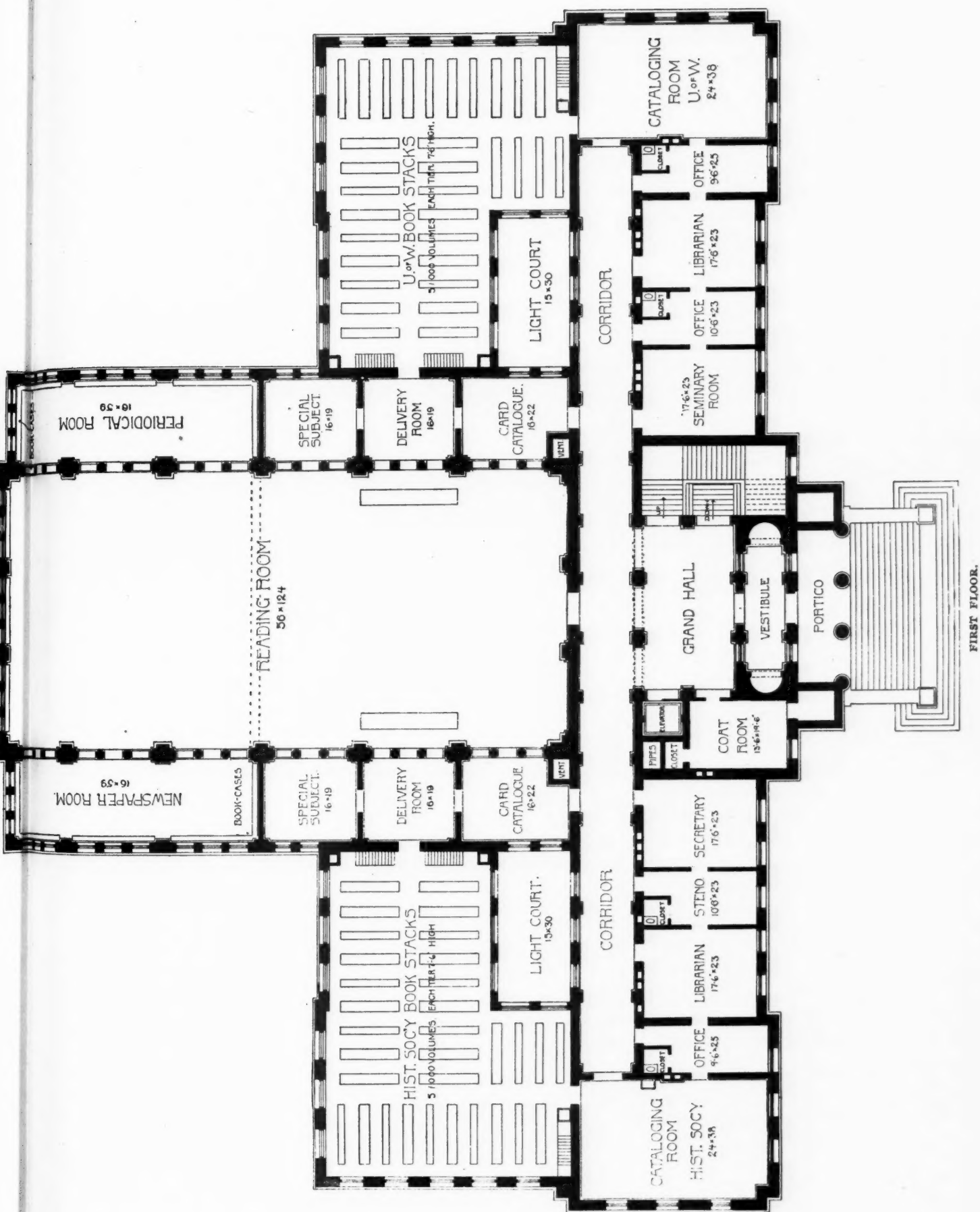
E. J. ECKEL, ARCHITECT.



SECOND FLOOR.

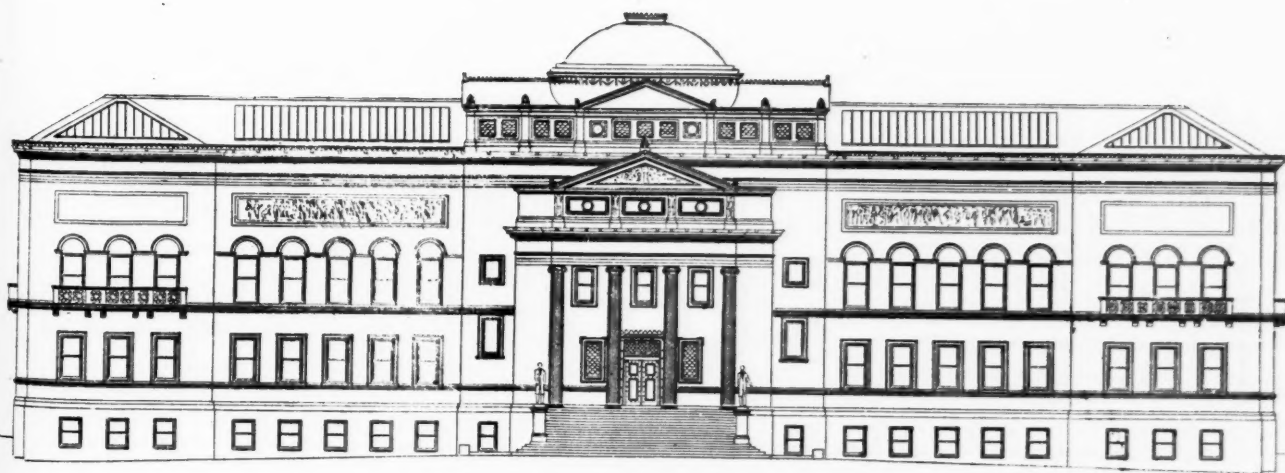


BASEMENT PLAN.





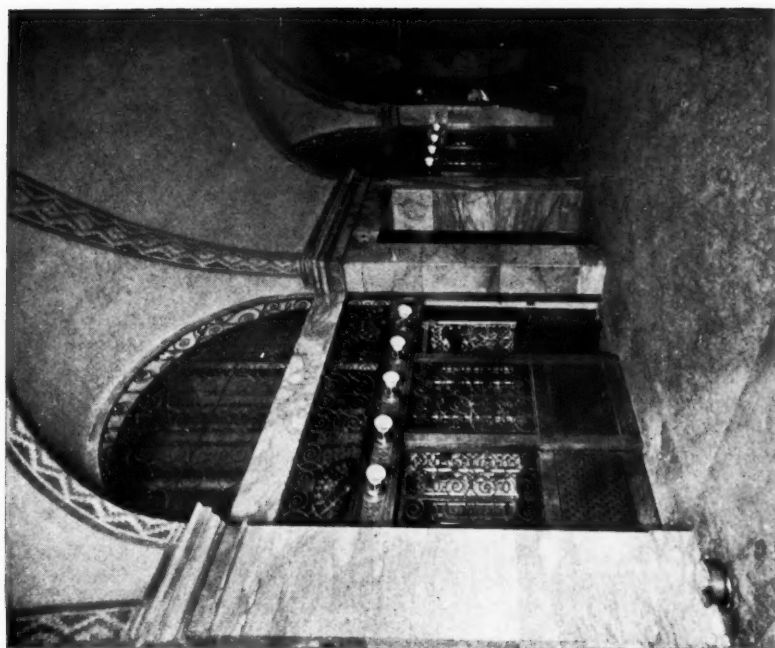
PERSPECTIVE.



FRONT ELEVATION.

PREMIATED COMPETITIVE DESIGN, LIBRARY BUILDING, THE STATE HISTORICAL SOCIETY OF WISCONSIN, MADISON, WISCONSIN.

SUBMITTED BY CHARLES S. FROST, ARCHITECT, CHICAGO.



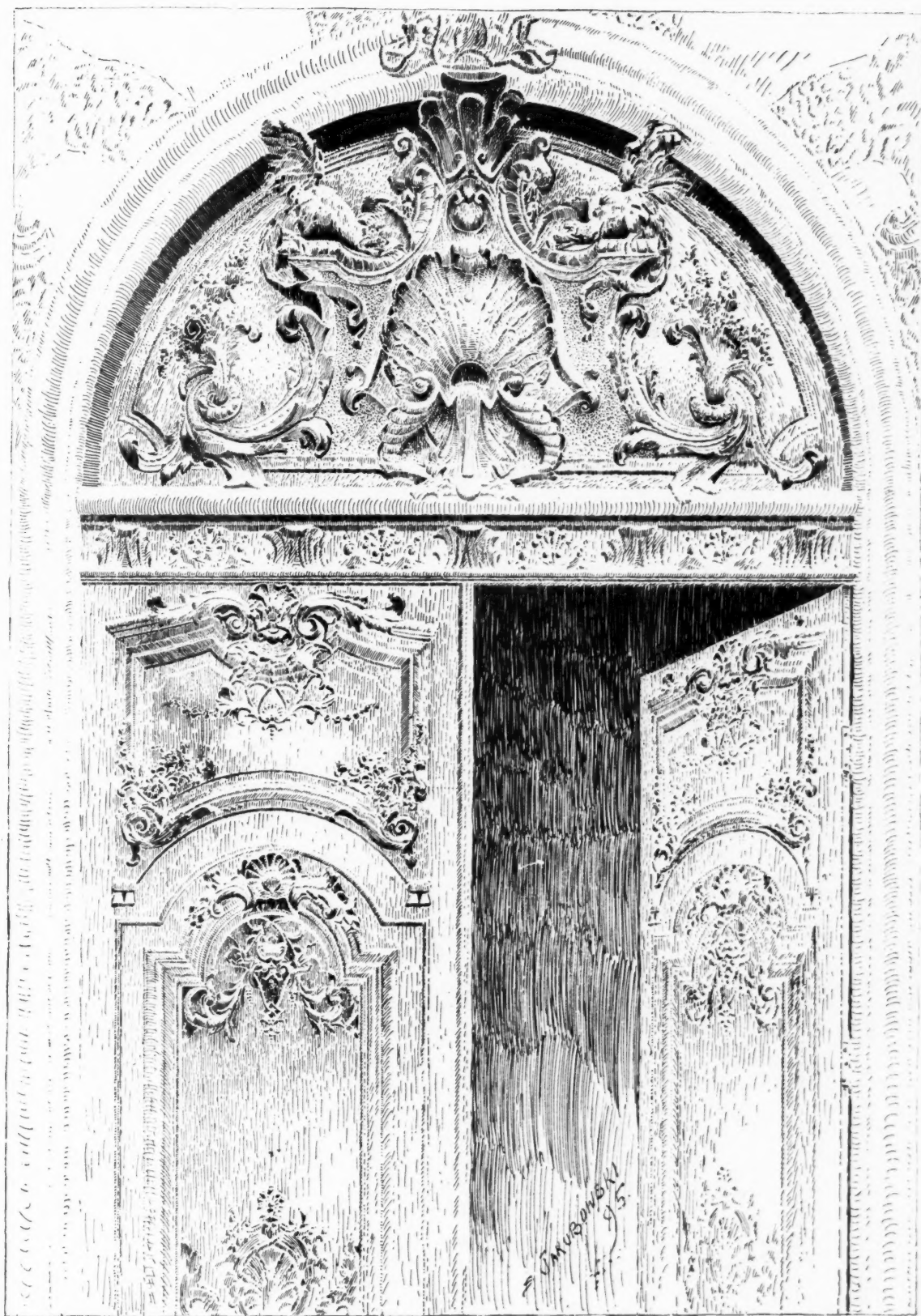
ENTRANCE TO ELEVATORS.



MAIN STAIRWAY.

INTERIOR VIEWS, THE EQUITABLE BUILDING, DENVER, COLORADO.

ANDREWS, JAMES & RANTOUL, ARCHITECTS, BOSTON.



DOOR, HOTEL GARIZOT RUE ST. LOUIS EN L'ISLE PARIS.

DRAWN FROM PHOTOGRAPH.