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THE

WESTERN ARCHITECT

AN ARCHITECTURAL MONTHLY

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INDEX

Volumn 10, 1907

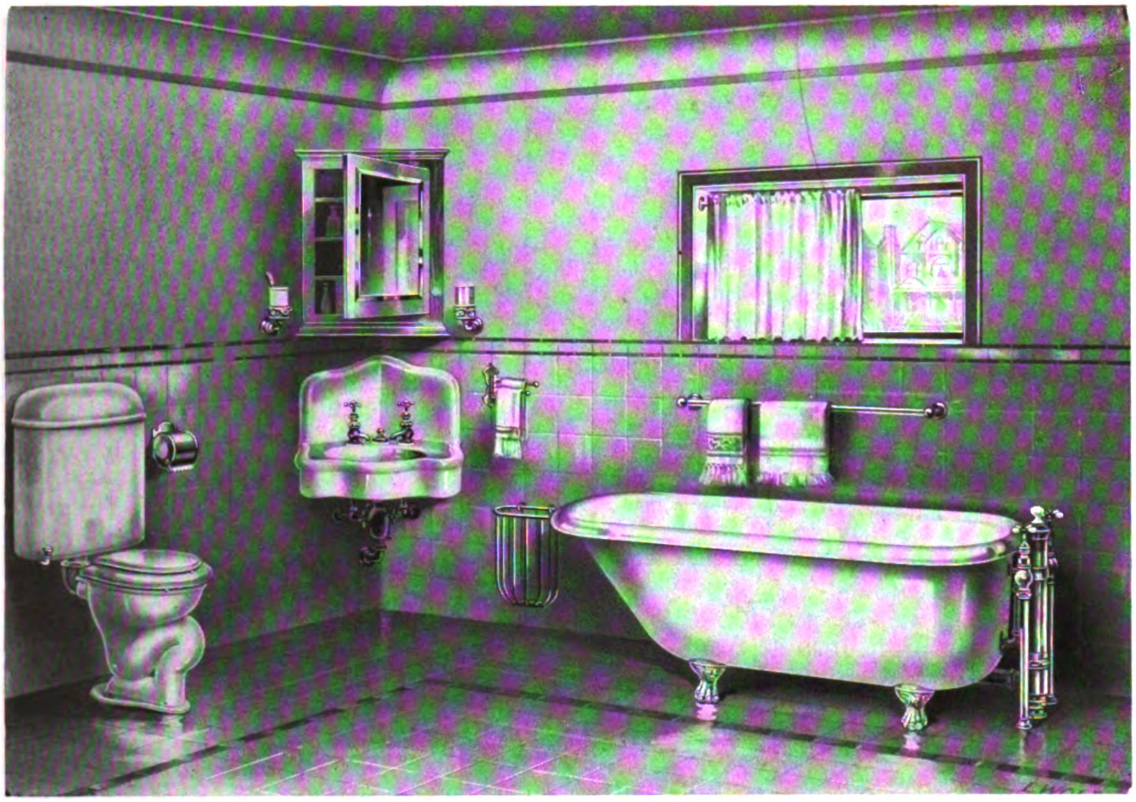
January—December.

TEXT

ILLUSTRATIONS

FIFTY TWO YEARS OF QUALITY

WOLFF'S PLUMBING GOODS



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The Western Architect

VOLUME X NUMBER 1

Contents January 1907

Illustrations

PUBLISHER'S DEPARTMENT

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ROBERT CRAIK McLEAN, EDITOR.

CEMENT WATER-PROOFING*

There are many methods in use for obtaining water-proofed results in concrete work, even though some of the methods give questionable but temporary results. There are, for example, a great number of washes on the market which are sold under the head of water-proof compound; but we all know that even the best white lead paint exposed to the weather eventually has to be replaced; therefore, I have no faith in water-proofing compounds applied in the shape of a wash. There is one other serious objection to a water-proofing wash, which is that the color of concrete work generally suffers from its use, and the company I represent has on file letters to the effect that out of five or six different water-proof washes tried by responsible parties, none of these gave satisfactory results.

There are also the methods of water-proofing with paper, tar, asphalt, pitch, etc., and in work done under these systems it frequently happens that where the paper laps, leaks are found and where pitch and asphalt and tar is used the concrete mass is separated and the strength of a floor or wall constructed of concrete is therefore impaired. For example, in water-proofing a concrete cement floor in a building, asphalt is sometimes used between the bottom course and the finishing coat. This prevents the finishing coat from adhering to the bottom course and with heavy use, in time, such a finishing coat is liable to separate and break.

Mr. S. B. Newberry, who is unquestionably acknowledged as an authority on cement chemistry and the uses of cement, has made an exhaustive study of water-proofing concrete work and has arrived at the conclusion that the material used for water-proofing concrete must be a substance which in no way affects the strength, color or setting qualities of cement. At the same time it must be a substance which is embodied in the concrete mass.

There is considerable talk in the cement journals of elastic water-proof compound, and some engineering papers even go so far as to say that concrete work cannot be water-proofed until an elastic water-proofing material can be discovered, that is, one which will contract and expand with the concrete work, in order that no cracks occur that would permit the passage of water.

Some of the cement journals have recommended the use of soap and alum as a water-proof solution; and in regard to this would say that I recently superintended the water-proofing of the Herbivora Building for the Cincinnati Zoological Co., Elzner & Anderson, architects, Cincinnati, O. That building was constructed of reinforced concrete and the roofs of the building had received a treatment of soap and alum mixture. This did not give satisfactory results and the building leaked in every section.

The trustees of the building decided to sheath the roof with copper at a great expense and the company which I represent, and which manufactures this water-proof compound I have here on exhibition, induced the Board of Directors for the Zoological Co. to apply a cement mortar coat to the exterior of their building, this mortar coat to contain a two-per-cent mixture of water-proof compound. I take pleasure in reading letter recently received from the Chairman Committee on Buildings and Grounds, Mr. Taylor, which shows the results obtained in the use of this material.

"The resurfacing of our new Herbivora Building with your Medusa Compound was completed early in this month and included all five of the domes and supporting walls above the first story. The work has been in progress since October and has been slow and difficult owing to the very complicated character of the roof surfaces; but the delay has enabled us to test it both with heavy rain storms and melting snow. The result is perfectly satisfactory under these conditions and there is not a sign of leak in any part of the roof or walls.

"When we applied to you last September, these roofs, laid with concrete after the ordinary method, were leaking in every section and we were facing the problem of leaving the animals in their old winter quarters and were seriously considering the great expense of a complete metal roof next spring. Our committee was more than skeptical of its success with concrete in any form and I confess that we undertook the responsibility of trying the water-proof compound with great reluctance. The result so far is all that we could desire, and if the roof does equally well under conditions of extreme heat and cold hereafter we can ask nothing better".

Probably the most wonderful accomplishment in the water-proofing line of late has been the water-proofing of a shot tower, by the Equitable Powder Mfg. Co., at Alton, Ill. I quote from the letters received from Mr. Wagner, the engineer on that work.

"The writer had some correspondence with your company last spring in the name of the Equitable Powder Mfg. Co., about "Medusa" Water-proofing Compound. The sample submitted by you for testing proved satisfactory and we purchased 500 lbs. from the Alton Roofing & Artificial Stone Co., who were having a car shipped them at that time.

"Our work of sinking an 80-foot well, 10 feet in diameter, for a shot tower, has proved a very interesting problem from an engineering standpoint.

"A very bad bed of quicksand was met with, and deeper down a great deal of coarse sand and gravel.

"The flow of water, which had to be kept out by pumping during the digging, varied from 2,000 to 20,000 gallons per hour.

"The concreting of this well has proved successful beyond our utmost expectations. We had hoped for but a small seepage; but with the use of Medusa Water-proofing the walls at the bottom, under pressure on the outside of 65 foot head of water, have dried out and show as white and dry as above the surface of the ground".

*Extract from paper read by R. R. Fish for the Third Annual Convention of the Cement Products Association, at St. Paul, January 18, 1907.

EXTERIOR OF CAR SHOPS, TWIN CITY RAPID TRANSIT CO. CHARLES H. FERRIN, ARCHITECT

A CEMENT CITY

An Immense Plant Constructed in Concrete

The Twin City Rapid Transit Company is one of the largest systems of electrical street railways in the country under one management. Besides a main line which runs from Stillwater on the east to Lake Minnetonka on the west, a distance of sixty miles, it covers with its lines the needs of the twin cities, St. Paul and Minneapolis, with a combined population of five hundred thousand people, with a service that for convenience, rapidity and multiplicity of lines is unequalled east or west. Its cars are all, without exception, of the largest type and of the latest improved construction. To serve this immense system, shops and barns occupying a vast area and of substantial, and what is even more necessary, thoroughly fireproof, construction, became necessary. The problem was a serious one to the company and brought to the company's architect and superintendent, Mr. Charles F. Ferrin, an extraordinary responsibility in choosing between methods. While the point of cost was a desideratum, the absolute safety from fire and the permanency of the structures was imperative. Mr. Ferrin visited the works of similar character throughout the country and added to a wide previous knowledge the latest experience of others. At Ivorydale, Ohio, for instance, he found the new shops of the Cincinnati, Hamilton and Dayton railway incorporating many new features in concrete installation. At Cincinnati the Ingalls building showed both what should and what should not be done in the installation of this material. Throughout the east the latest concrete work was examined, and upon his return Mr. Ferrin was convinced that of all systems the one of which concrete was a basis was the best for the construction of the buildings for his company. In his directorate were many who read of "failures" of concrete, and feared what they held to be experimental; but their confidence in Mr. Ferrin was such that his plans for reinforced concrete were adopted and the work commenced. The group of buildings now in process of construction are situated midway between the Twin Cities, are twenty in number and the plant will cost five hundred thousand dollars.

The work was commenced something over a year ago, but it necessitated 85,000 yards of excavation before the construction could begin and has been delayed from time to

LOCKERS AND TRAINMEN'S ROOM

Panoramic View of Part of Buildings Constructed by the Twin City Rapid Transit

time by the scarcity of labor. The foundations are of monolithic concrete construction, and vary in thickness from eighteen to twenty-two inches, according to the size of the building. The outer walls are built up of hollow blocks and veneered with concrete brick. The blocks are cast in a single piece and are two feet long, nine inches in thickness and seven and three-quarters inches high. The bricks are 2½x4x8 inches. This gives the walls a total thickness of thirteen inches.

Both the hollow blocks and the bricks are manufactured on the ground with machines made by Minneapolis firms. The blocks are the output of the Perfection Block machine, the invention of Mr. W. L. Dow, of Minneapolis, who is now president of the Perfection Power Block Machine Company, 501 Kasota Building, of this city. Mr. Dow was for forty years an architect, and has made a special study of concrete construction ever since it has come into such general demand. He takes great pride in the work his machines are turning out, the machine on this particular job far exceeding the guaranteed output of sixty blocks per hour. In corroboration of this the contractor, Mr. George Cooke, says that the output is about 800 blocks per day.

Each cement block is made under a pressure of 100 tons. This forces about 10 per cent more concrete into the block than is done by hand tamping, giving it greater density. The pressure also forces a thin coating of richer mixture over the entire surface of the block. A simple device provides for the escape of all air from the interior of the block. While the block is under pressure the center core is started by a foot lever and raised by the returning follower. Levers release the four sides of the molds when the block is removed from machine on the wooden pallet for curing, without being disturbed. All ornamental work in the line of moldings, etc., is also cast on the Perfection machine, using wood molds.

Interior of Blacksmith Shop

A test conducted at the University of Minnesota by Prof. William H. Kavanagh showed that a plain block made on Mr. Dow's machine cracked at 163,660 pounds and crushed at 167,200 pounds pressure. Two bevel-face blocks were also tested but gave no signs of cracking or failure at a maximum pressure of 200,000 pounds.

The facades are of concrete bricks, manufactured at the rate of 15,000 per day by five Peerless machines, made by the Peerless Brick Machine Co., of Minneapolis. They are hand tamped, face down; thus the user can sift in a layer of rich facing material, filling in the balance with something coarser and cheaper. Each machine is operated by one man, and it requires not to exceed two barrels of cement and one and one-quarter yards of sand to make 1,000 brick, nearly 1,500,000 having been laid to date, made from material made on the ground.

The Peerless bricks are made in the proportion of one part of cement to two of sand and gravel. This makes a

WAY BETWEEN MINNEAPOLIS AND ST. PAUL, MINNESOTA. CHARLES H. FERRIN, ARCHITECT

dense brick, which will absorb little moisture, but it will be still further waterproofed with a composition prepared by the contractor.

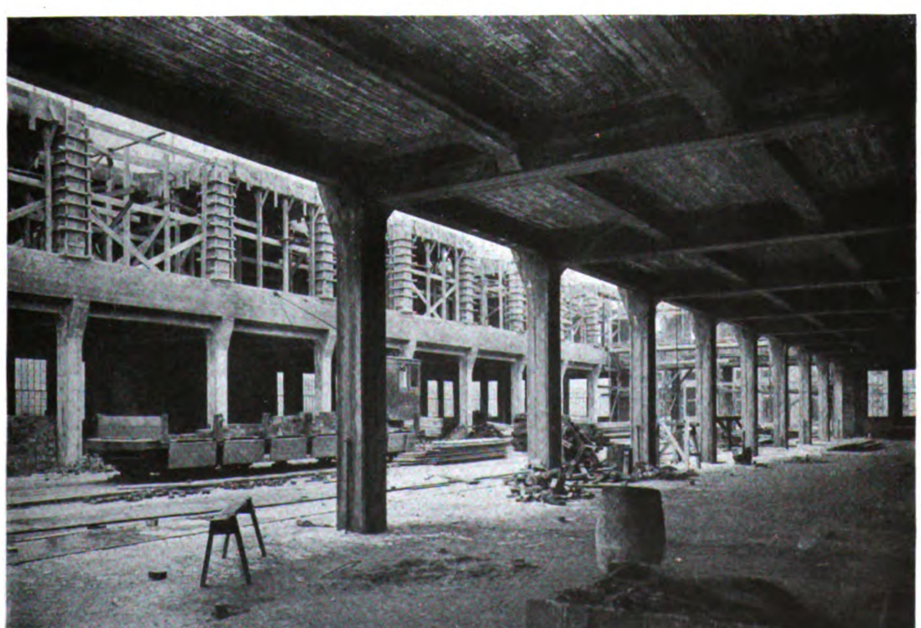
Beside the floors, roofs and walls, the girders used in this construction are of special interest. The girders over the trackways running into the buildings, and wherever unobstructed space is required, are of reinforced concrete. One of these is 58 feet long, and is reinforced with seven plain steel rods of 1½ inch diameter. Other beams are 50, 40 and 25 feet, and there are several of each of these dimensions. The sills are also of similar construction. Some girders are carried on monolithic pilasters, and others on pilasters built up of concrete brick.

As steel becomes more expensive the use of concrete monoliths and concrete brick columns and pilasters will increase, and when constructed under the supervision of capable engineers, with the proper care and stability given to the foundations, their lasting qualities will equal that of the "needles" that for thousands of years have stood in the Nile valley, and the girders which they support will remain intact when the destructive agents of time have destroyed the walls that surround them. This is the impression gained from inspecting the immense girders in the construction here described. The reinforcing with plain steel rods with a maximum diameter of ten and one-half inches, seems to give a strength sufficient to hold any load that may be imposed, independent of the concrete, and when added to this a concrete monolith that should sustain an equal weight, the stability of this form of construction is apparent.

In this series of buildings concrete is used in every part of the construction that it is possible to make use of this material. This only excepts the board floors laid on top of the concrete in a few instances, and the door and window frames. The Kinnear Manufacturing Co., of Columbus, Ohio, furnish the steel rolling doors, forming a fire-proof barrier between all departments and outside entrances. As a summary of the amount of materials used in the construction, there were 30,000 barrels of owl cement, 600,000 hollow cement blocks and 1,500,000 cement brick used in the veneering. The dimensions of the several buildings at present constructed are as follows:

Car station, 121x360; paint shop, 126x300; machine shop, 150x200; blacksmith shop, 60x300; mill shop, 75x200; foundry shop, 60x200; dry kiln, 75x150.

The cement used in this construction is a most vital factor, for upon its quality depends the entire stability of the structures. After careful investigation, backed by years of experience, the Owl Cement, manufactured by the German-American Portland Cement Works, LaSalle, Ill., represented by D. L. Bell, of St. Paul, Minn., was selected. Over 36,000 barrels will be used in the completed structure. It does not harden too rapidly, but, on the other hand, slowly obtains a solidity and tenacity of structure that



INTERIOR OF MACHINE SHOP

gives to the completed work a more granite-like hardness and a closeness of particles that in the completed work is comparatively waterproof. In the thousands of barrels used and the hundreds of tests they have been subjected to, no appreciable variation in quality has been observed, and in thus using it in this immense quantity, the most complete test for uniformity of manufacture has been obtained and can always be pointed to by the German-American Portland Cement Works as an unanswerable argument in favor of their product.

The foundations are of monolithic concrete construction, and vary in thickness from eighteen to twenty-two inches, according to the size of the building. The outer walls are built up of hollow blocks and veneered with concrete brick. The blocks are cast in a single piece and are two feet long, nine inches in thickness and seven and three-quarter inches high. The bricks are 2½x4x8 inches. This gives the walls a total thickness of thirteen inches.

The reinforcing, which throughout this description supplies tensile strength to every part of the construction, is supplied by the American Wire Fence Company. The vast area of floors and roofs are reinforced with the mild steel bars and fabric of this company, the immense quantity of which used in the construction, and the methods employed being shown in the accompanying photographs.

Of course the question of reinforcing was one of the most vital features in preparation for this immense construction, and it was only after the most exhaustive tests of strength and computations in the direction of economy that the American system was adopted.

All of these girders and beams are wrapped with high carbon wire fabric and the floors and roofs are reinforced with this material, the superb reinforcing product of the American System of Reinforcing, of Chicago.

As an example of concrete work, reinforced by a perfectly practical and economic system, this large acreage of structures has twice the usual amount of tensile strength, with ideal distribution of metal with concrete, including a continuous band on all sides of the work.

An eminent architect, Charles E. Whittlesey, of Los Angeles, California, who has executed some of the largest and most important concrete constructions in the country, in speaking of the possibilities in the use of concrete, says:

"This construction is particularly adapted to factory buildings, because of its rigidity and freedom from vibration so fatal to the life of line shafting and machinery. Concerning the durability of plain concrete, without regard to its reinforcement, everyone knows that it was the most imperishable building material of the ancients, though made only of hydraulic lime, which will not compare with our modern Portland cements for strength. When a child, I was taught that the Pyramids of Egypt were among the seven wonders, because of the immense size of the stones of which they were built, with no quarry within hundreds of miles; and the engineering problem was considered a marvel. It is now known that they are made of concrete; and were, undoubtedly, cast in the position they now occupy. Vitruvius, the ancient historian of Architecture and Engineering, wrote, before the time of Christ, of the immense value of concrete as a building material, and describes the works which were built of it centuries before his time. The dome of the Pantheon in Rome, 145 feet in diameter, was built more than twenty centuries ago, of concrete, and stands today.

"The questions are often asked: Is concrete a safe building material for superstructures? Is there more risk attendant on this construction than on others? These are grave questions and should not be answered lightly. No class of construction is fool-proof; and, therefore, rigid building laws, intelligent designing and competent supervision are assumed to be necessary for all kinds of construction for buildings of any importance. Last year several high brick walls collapsed in New York City, through carelessness in building. The same kind of accident has happened in Chicago several times, and in other cities.

"It is true that there have been a few failures by partial collapse on reinforced concrete structures. But, considering that work has been attempted in this material by builders having but a very superficial knowledge of the subject, it is a great wonder that more failures have not occurred. The buildings which have been erected of reinforced concrete in Europe and America within the last ten years, represent an aggregate expenditure of more than a hundred million dollars; about eleven millions in the United States. The average cost per building is probably under fifty thousand dollars, at which figure the number of buildings would be 2200. There have been not to exceed six collapses of a serious nature, and probably twenty more of slight consequence. This seems to the writer a very good showing, considering all the circumstances.

"Never in all the records of the past has there been a failure of any reinforced concrete building in which the cause was not traceable to either faulty design or changing the placement of the reinforcing members on the work contrary to the drawings and calculations."

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See pages VII, VIII, IX and X in this issue.

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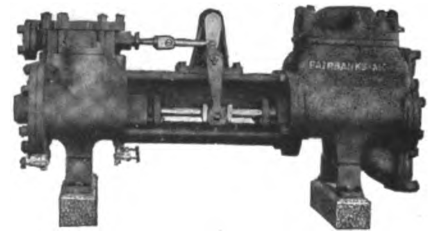

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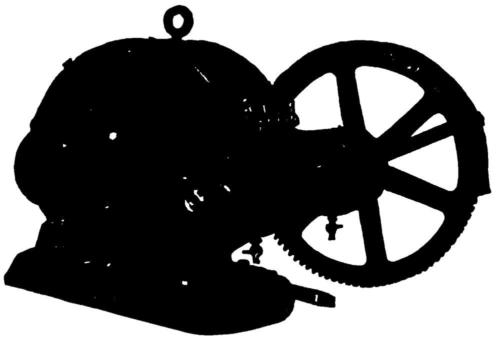

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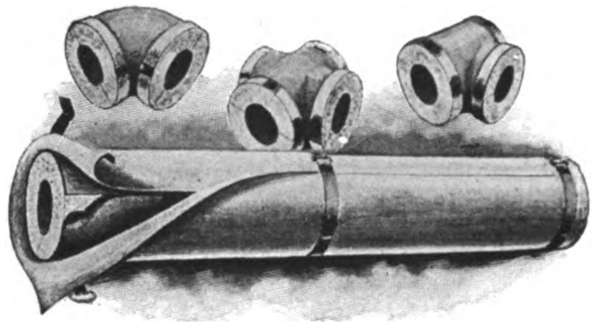

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ROBERT CRAIK McLEAN, EDITOR

Metric System Agitation in England

There is considerable discussion in England regarding the establishment of the metric system and this time-worn subject still has advocates who insist upon its adoption. A recent lecturer before the Society of Arts takes a negative position and after giving in detail the history of the meter, sees no adequate reason for its supplanting the yard of England and the United States, but many in favor of the abolition of the meter is in favor of the yard. The number of the people using the meter is estimated at three hundred and twenty-seven millions and the yard at four hundred and eighty-nine millions, with China, Russia, Japan and Turkey, with a population of six hundred and twenty-six millions, which use their own native measures. Their standards all approximate the foot measurement. The deduction of the lecturer, Colonel Sir C. M. Watson, is that "to change the measurement of any nation is a matter of great difficulty; to change the measures of the Anglo-Saxon race would probably be impossible". At the recent convention of the Institute the standing committee on Metric System reported as follows:

> The "Committee on the Metric System" beg to report through the Chairman, as authorized by a majority of the Committee, as follows:
>
> "In view of the fact that the coming session of Congress is unlikely to take any action on the question of the adopting, etc., of the 'Metric System', it would be useless and a waste of energy for the A. I. A. to prepare a memorial or take any action at this time".
>
> Respectfully submitted,
> (Signed by authorization) J. KNOX TAYLOR.
> (" " ") WM. M. ELLICOTT.
> LOUIS DECOPPET BERGH, Chairman.

Thus it is plain that majority of sentiment in the United States, like that of England, is in favor of letting well enough alone.

The North Dakota Paint Law Again

Comments on the North Dakota paint law by this journal, at the time the constitutionality of the law was in question, were possibly a little severe upon its promoters—possibly they contributed toward a more just application of the law than there was reason to fear. Bulletin No. 70, from the Experiment Station at Fargo, throws so much light on trade methods that some of its efforts to advise about paints may be forgiven; altho one cannot avoid the reflection that it would be better for an experiment station to make a few simple tests of the actual wear of different paints as a basis of such advice rather than to reflect the recommendation of agents of paint makers. Good faith appears, however, in the analysis of samples and reports of these are very instructive. Here we learn that all packages of white leads and bogus leads tested fall short in net weight, most of them by 10 per cent or more. Several brands of ready-mixed paints appear to be not only honestly made of good goods but of full weight and measure. In great contrast to these are numerous points put out by catalog or mail-order houses. One big Chicago house puts out a paint the liquid part of which contains as high as 24 per cent of water and is 15 per cent short in volume, while another big Chicago house is a close competitor for the swindling badge. Perhaps this will be carried off by a St. Louis house, which makes paints "especially for the job to be painted". A can of this tailor-made paint, size 3.37 quarts, contained 2.42 quarts of materials—and such materials! Of the liquid part 11.8 per cent was water, the balance mostly a very poor quality of linseed oil. No white lead appeared in the colored part, the ingredients of which are mainly selected for their cheapness. This bulletin is a good one for Architects to have on file.

Difficulties Attending Two Pittsburgh Competitions

Two competitions, both of which were planned to add to the architectural development and attractiveness of Pittsburg, have been jeopardized by those who would break in upon the impartial and beneficial character of the competition code favored by architects. In one case, that for a high school, the competition was decided and the award made, and because it did not meet the views of a member of the school board it was hung up till further notice. The other was still more redolent of jobbery, the controller of the county being the objector. Ostensibly because he was not consulted, he rushes into print and says that the competition cannot go on because he will pay no vouchers, charges the American Institute with being a "price combine" and objects to paying money where the plans are returned to competing architects, and in other statements not only makes himself ridiculous but shows a determination to obtain control of the contracts that the competition will lead to. He affects to believe that an architect's competing plan is a "bid", that the A. I. A. is a "union", and does not know that the supreme court of his state has declared that an architect's plans are instruments of service and belong to the architect. Whether it is worse to be a fool or a knave is an open question. Pittsburg is certainly suffering from the results of one or the other in the person of its controller.

The Franco-British Industrial Exposition

It now seems certain that the joint exhibition of industrial products of the United Kingdoms of Great Britain and of France is an assured fact, as the grounds have been selected, with ample transportation facilities and space for exhibition buildings. It will be held in London, in the locality known as Shepards Bush, at the terminus of the Central London railway, or the "Tube", and will occupy 140 acres. The largest building, that for machinery, will cover 321,066 square feet and be the largest structure ever devoted to that purpose in England. As Imre Kiralfy, he of extravaganza fame, has been engaged to co-operate with the management, it may be supposed that a large area will be set aside for sports, and the "midway" feature will be both novel and important.

Possibilities of the Turbine Type of Boiler

The turbine engine for producing power is rapidly taking a leading place in the utilization of steam. Its compact manner of using the steam to its fullest extent, its enormous increase in power and consequent economy of operation, brings it forward as a power producer that will probably revolutionize the entire field of steam power in almost every direction. The superiority of the Marine type is recognized by England in the construction of her battleships; and as the immense possibilities of its growth and horse-power development become recognized it seems destined to supplant almost every type of boiler now in use in this country.

THE AMERICAN INSTITUTE OF ARCHITECTS

Fortieth Annual Convention and Fiftieth Anniversary of its Foundation, held at Washington, D. C., January 7, 8 and 9, 1907.

ON January 7, 8 and 9 the American Institute of Architects assembled in convention at Washington and celebrated the fiftieth anniversary of its organization. Representatives of foreign societies from England, France, Holland, Germany, Greece, Italy and Spain and those of the affiliated arts and the architectural schools in the United States, united in congratulations either by representative or letter. While the brevity of the ceremony did not admit of extended historical reminiscence, a few of its more notable works should be recorded. Organized on April 5th, 1857, by about thirty architects of New York and Boston, but two of the charter members, Charles S. Babcock and Leapold Edlitz, now survive. Beginning as a purely professional society, in which the propriety of even discussing things so commercial as competitions and contracts was questioned, under the guidance of Richard Upjohn, Thomas U. Walter and Richard M. Hunt, ably assisted by those whose works have made their names famous in the profession, the policies of the architect and the ethics of his practice have been evolved and built up into a concrete form of architectural procedure under all conditions of general practice. The breaking out of the Civil War brought the first interruption to the society's progress and the panic of 1879 again affected its activity, and its apparent comatose state continued until, in 1884, the Western Association of Architects was formed in Chicago by the editor of this journal. The success of this association, which was immediate and signal, was due to the revival of building and the wish for a medium of interchange of professional thought and union of effort in the regulating of architectural work. The effect was beneficial upon the membership of the Institute, and in 1889 the two associations were consolidated, as it was termed, though because of the value of the New York state charter of the Institute, in reality the Western association membership was admitted to the Institute, though the constitution and by-laws of the former were made the rules of the reformed association. About this time the work of the Institute and of the Western Association, in the direction of reform in the design of government work and its distribution among architects generally, began to bear fruit, and in 1894 the Tarsney Act, the last of similar bills that had been urged from time to time upon Congress, was passed.

Next in importance should be mentioned the regulation of competitions, which, first established by a code adopted at the second convention of the Western Association, has since, through the wise and vigorous policy of the Institute, become so well established that the old free-for-all scramble is becoming rare and generally discountenanced by the profession.

It may be too much to claim that the present high standard reached in the conduct of the Supervising Architects' office is due to the Institute, but it is certain that its influence in the establishment of the competitions under the Tarsney Act and the general education of the public in the value of scholarly architecture in public buildings has done much in this direction. It is directly due to the splendid work of the Institute that the Capitol city has been placed in charge of a commission which, without official sanction, has renewed the original plan of the city laid down by Washington, and has established a rule which will be followed in the placing of buildings and the establishment of parks and avenues which will make the capitol of the nation one of the most architecturally advanced cities on the globe.

The fortieth annual convention of the American Institute of Architects being largely given to the celebration of its fiftieth anniversary, no papers were read and discussed other than the reports of committees. While the report of the committee on competitions was a marked advance and called for radical regulation to the extent of specific contracts between owner and each competing architect, as this was held but a report of progress and continued to the next convention, the report of the two committees on education and arts and crafts became the marked feature of the convention.

So strongly were these reports presented that it may be said that they mark an epoch in Institute history. No clearer review of the educational position occupied by the profession in the present, in the direction of schools or the advance made toward the union of the architect's design with its reproduction by the crafts, could be made than those presented by Ralph Adams Cram and Irving K. Pond; and while in slight details criticism was made by members of the convention, they took the entire assembly by storm, and it is certain that from the report of Mr. Cram will grow a National School of Architecture, located at Washington, and from that of Mr. Pond a closer relation between the architect and the craftsman who executes his work.

The report of Cass Gilbert upon the relation between the architect and the contractor should be read carefully by every architect in the country. It is largely the experience of one who has the analytical faculty to distinguish and the logical mind to criticise this relation, and an experience second to none in the country to draw from, for his work has been extensive both East and West.*

Among the interesting events of the convention the report of the committee on Octagon House, the permanent headquarters of the institute, by Cass Gilbert, should be mentioned. That gentleman has credit, though but one of the committee, of having secured contributions which removed all but six thousand dollars of the indebtedness. When the report was received, another committee, with Mr. W. R. Mead as chairman, was appointed to carry on the work. Mr. Gilbert suggested that the present was the best time to do this, and at the opening of the next session announced that the entire amount had been subscribed and the Institute owned its home. A resolution was passed tendering the thanks of the Institute to Mr. Gilbert and indicating that it was the wish of the Institute that no future directorate would ever allow a dollar of encumbrance to be placed against the property.

That much of the three days was given to sociability was a no less distinguishing and valuable feature. There were gathered from all parts of the country those members who, year by year, for over a quarter of a century, have attended its meetings and mingled with those who attended upon its deliberations for the first time. It was, as it always is, in these social gatherings of three or four kindred spirits, that the real policy of the Institute is formed and sustained. While no word upon the floor of the convention indicated the wish, farther than briefly spoken invitations to hold the next convention at Cincinnati, Chicago or Los Angeles, it is certain that the next convention must be held in the middle west. Some of the oldest and most staunch members, those whose loyalty to the Institute we remember would not allow them to join even a state association organized under the Western association, say with emphasis that there have been too many meetings in the East and too much of an inclination to continue the Institute's interests in the hands of a few, though they are of the ablest and best, and that even this does not balance the harm done by the seeming tendency to infringe on democratic procedure. The work of the past ten years was vitally important and could have been accomplished in no other way; but the time has come when the increase in membership and the close touch of the profession with the Institute by the profession in the Western states is of paramount importance. The delegate system, the continued meetings in the East with the majority of the board of directors in that locality, all with their undoubted economic value, are leading to criticism and estrangement from those who do not fully grasp the reasons; and this can be regulated in no better way than by holding frequent conventions as near the center of the country as is practicable and making it convenient for as large a number of members to attend as is possible.

*Mr. Gilbert's report was withheld from publication until a further date, under the following resolution, presented by Mr. Berg and approved by the convention:

WHEREAS: The existing condition outlined by the report of the committee "on the Relation of Architects to the Contracting System" is one which menaces the entire architectural profession and, if carried to its logical conclusion, would make impossible "the honorable practice of architecture".

RESOLVED: That this report be adopted as expressing, not alone the ideas of the members of the committee, but as well the convictions of the American Institute of Architects in Convention assembled; and that the Board of Directors be, and hereby is, instructed to receive, edit and print the report of the committee, together with the subsequent expressions of opinion on the part of members of the committee and of the Institute, giving these, at the earliest possible moment, such publicity as, in its opinion, is best adapted to protect the interests of the architect and of his client.

REPORT OF COMMITTEE ON ARCHITECTURAL EDUCATION.

RALPH ADAMS CRAM, CHAIRMAN.

THE problem af architectural education is so important, so far-reaching, and marked by such intricate ramifications, that we have been able hardly to do more than state the case, leaving to the committee of next year the more detailed study and the formulating of clearer inferences and conclusions.

It is an interesting fact and worthy of record, that this committee, made up of superficially diverse types, has found itself absolutely unanimous even in matters of detail. After some months of individual study, the Chairman asked each member of the committee to embody his conclusions and recommendations in the form of a tentative report. Such reports were received from Mr. Carrere, Mr. Kendall, Mr. Sturgis and Mr. Trowbridge. These were examined at a meeting of the committee and, with the report of the Chairman, were found to be identical in spirit and in matter. It would seem, therefore, that under the appearance of diversity, there is a body of profound and unanimous conviction that argues well of the architectural profession in America.

In order to establish a basis of judgment, we fixed first of all upon the working definitions of architecture and of an architect.

Architecture we defined as a Fine Art with three aspects: as a manifestation of pure beauty, as an enduring and trustworthy language that voices the existing best in civilization, and as an exact science through its structural relationships.

An architect we defined as one ranking in the class of men of culture, learning and refinement, differentiated from the others of his class solely by his function as a creator of pure beauty, as an exponent through material forms of the best secular, intellectual and religious civilization of his time, and as an organizer and director of manifold and varied industries and activities.

From these assumptions, it follows necessarily that the object of architectural education must be the breeding of gentlemen of culture, learning, and broad sympathies, who understand the dignity and the significance of art both as beauty and as language, who are perfectly proficient in the technique of the art they follow, and who can inspire, organize and direct widely different classes of men.

Such was our view of the general situation and our unanimous conviction as to the essential nature of any sound system of architectural education. Examining the various agencies in America in this light, and that we might see how nearly they approached, severally and in mass, to the principles indicated above, we found them to exist in two forms, viz: the elementary, i. e., the "architectural classes" connected with public instruction and philanthropic societies, and the "Correspondence Schools", and the Academic, i. e., the regular schools of architecture: the voluntary combinations under the control of certain groups of architects, such as the independent ateliers, and the concours of the Beaux Arts Society, and the American Academy in Rome.

The elementary systems we have been compelled to disregard for the time being, but we believe they demand the closest scrutiny, for while they may give a certain plausible dexterity to boys ambitious of becoming architectural draughtsmen, they cannot be considered as systems of education, since their methods are superficial and rudimentary, the taste they inculcate frequently questionable, while they do nothing towards creating the basis of broad, general culture which is absolutely and primarily essential. Furthermore, we believe that these elementary systems may, and in some cases do, accomplish serious harm through inducing boys temperamentally unfitted for one of the most noble and exacting professions to throw themselves into an impossible career through misrepresentations to the effect that "architectural drafting" is only a trade, to be acquired as easily and by the same methods as stenography. We believe the Committee on Architectural Education may be of great assistance to the elementary schools, and indirectly to the architectural profession by volunteering its friendly services in an advisory capacity, and we commend both this, and the close study of the systems themselves, to our successors in this Committee.

The Academic agencies may be divided again into two categories; one made up of those which aim to give a complete and final education, viz., the regular Schools of Architecture supplemented by the Roman Academy; the other of those whose object is to develop, through a special insistence laid on certain points, necessary elements in the equipment of an architect which students and draughtsmen have been unable to acquire satisfactorily through their collegiate or practical experience, viz., the ateliers, the Club classes, and the concours of the Beaux Arts Society.

Now, it is evident to us that none of the systems named above is, in itself, and independent of all other agencies, able to procure the combination of general culture, good taste, instinct for beauty and executive ability which make up the ideal architect. The architectural schools should, by their general training, do much towards the creation of broad and inclusive culture: they must ground their students in the history of art and civilization and the correspondence between these two things; they will give him his fundamental knowledge of the essential elements of architecture as an art; they must enable him to lay the broad foundation on which he is to erect his superstructure of professional capacity; but the crucial point, the development of good taste and the instant sense of beauty, they cannot touch through the scholastic agencies now marshalled to this end. We are unanimously of the opinion that this passion for beauty and this instinctive good taste may be inculcated, if at all, not through the methods of scientific pedagogy, but by the close personal relations and the keen enthusiasm that arise through the association of a group of students with a practicing architect, chosen by the free will of the student because of admiration for, and sympathy with, his principles, his personality and his achievements.

With the advantages of the atelier system comes a corresponding danger, that of a feudal following of one strong personality and an unconscious exaggeration of his peculiar theories and methods. This danger is counteracted by the system of general competitions between the students in the several schools and ateliers, where each man, as representing each system or impulse, finds himself on a field of battle where individualism is put to the test and stands or falls by just so far forth as it has acquired universality.

This combination of the atelier and the concours is to a large degree the method introduced and followed by the Beaux Arts Society, and we believe it essential in any scheme of architectural education; but so long as the atelier system is purely voluntary, and so long as the concours are conducted by a group of men without official status, and bound together by the traditions of one particular system and nationality of training, there is always the dangers of an unwholesome predominance of one set of ideas, to the unintentional exclusion of others of equal value but of different origin. Such competitions conducted exclusively by advocates of Gothic or of Art Nouveau might conceivably defeat their own just ends.

Believing, therefore, that these two features of the atelier and the general competition are essential elements in any complete scheme of architectural education, and that to have their fullest effect they should become a part of the curriculum of every architectural school, we urge on the several schools the wisdom of action to this end, and on the Education Committee of next year consideration of the question how a scheme of general competitions similar to those now conducted by the Beaux Arts Society, but official and universal, may be brought into existence.

In scrutinizing the several schools to ascertain in how far each seemed to be working towards the development of the typical gentleman of general culture with special architectural ability, and acting on an unanimous opinion that design can best be taught, at least in its higher aspects, only through the personal influence of practicing architects, while the instinct for beauty may be best developed by personal contact with those who already possess this instinct and the power to communicate it, we took the ground that the work of the schools should be considered primarily as a means towards the development of a man of general culture, and as an agency for establishing sound and basic principles of art, which, through intimate contact with architects themselves, should be developed to their highest estate.

Working on this basis, and using for purposes of general comparison the tables printed by the Committee on Education of the Architectural League, we found surprising variations as between six of the principal schools of the United States. Mathematics varied from 6.5 points at Harvard to 12 at Technology and Columbia; building construction from 5 at Harvard to 10.5 at the University of Illinois; languages from 7 at Columbia to 20 at Pennsylvania and the Institute of Technology; art theory and history from 7 at the University of Illinois to 18.5 at Columbia; freehand drawing and rendering from 5 at Illinois to 11 at Cornell, and design from 13.6 at Technology to 32 at Cornell.

While the tables referred to above should be used only as a basis for the most general deductions, we are convinced that they show indisputably that our schools are weakest in providing what we have called general culture. For example, the Massachusetts Institute of Technology stands alone in giving more than two points to general history, and here the points number only four, while mathematics is credited with 12, science 9, and languages 20, the latter branch of education ranking 50 per cent higher than even design itself. We desire, therefore, to urge on many of our architectural schools consideration of the question, whether they may not advisably diminish the stress now laid on purely technical education and strengthen that placed on all that tends towards general culture; and on those schools where, in the tables of the League, the points credited to esthetics fall below 30, consideration of the possibility of strengthening themselves in this particular direction.

So far as education in design is concerned, we found that the atelier system had been accepted in its entirety only by Columbia, while Harvard had introduced a modification that was working well, and seemed to us very significant. Participation in the concours of the Beaux Arts Society was authorized by the University of Pennsylvania, Syracuse, Cornell, Washington University, St. Louis and the Massachusetts Institute of Technology.

There is every reason to be encouraged by the present system of architectural study at Columbia, which has been recently re-organized on thorough-going "University" lines. Here the course is not divided arbitrarily into years, but into grades, and in each the student must acquire a given number of credits before passing to the next higher. Students are required to carry on their work in design in some one of the ateliers or studios officially recognized by the University. A choice of two courses is offered, one for the Bachelors' degree, the other for a Certificate in Architecture, the requirements of the former being more severe, while in the latter a course in structural design is offered in place of mathematics and engineering. Graduates of this school may pursue their studies in advanced design and research in foreign schools of architecture. The program consists in one major and two minor subjects: the first is one of design, and through an arrangement with France, is pursued in an atelier connected with the School of Fine Arts. One of the minor subjects implies travel or library work, the other is in the line of general culture, the courses at the Sorbonne being available, by arrangement.

It seems to us that the question has been taken up at Columbia with the broadest view and is being worked out logically and with every prospect of admirable results.

There are two points at Harvard that seems to us particularly noteworthy: the broad and lucid manner in which the theory and history of art are being taught, and the recent adoption of a modified atelier scheme. Four architects of established reputation set, in sucession, problems in advanced design; each criticises the working out at more or less frequent intervals during the space of a month, and in the end renders judgment. This seems to us a step in the right direction, though by no means to take the place of the true atelier system. It is, however, an indication of one way in which architectural schools that, unlike Harvard, are at a distance from the large cities, may acquire something of the indispensable element of personal influence on the part of practicing architects.

In our investigation of the subject, many questions have suggested themselves as worthy of serious consideration. We do not feel that our data justify us in making a specific report on these matters, but we name them and commend their consideration to our successors in this committee.

They are as follows:

What do the schools teach as to the expressive function of art in general and architecture in particular? i. e., as to art as an index of civilization, standing high or low in exact relationship to the civilization that brought it into being?

What is the attitude of the several schools towards the various styles? i. e., do they all, or any of them, teach that there are one or more styles which are sound and logical, while there are others which may or may not be interesting from an archæological standpoint only? If so, what?

What is taught as to the relationship between construction and function on the one hand, and design and decoration on the other? i. e., is this relationship clearly brought out in the case of Classical, Byzantine, Romanesque, Gothic, Renaissance and modern architecture, or is it ignored, each style being considered as an abstract thing, regardless of its aspect as a manifestation of the close community that must obtain between function, construction, design, and decoration?

What are the criteria of judgment of design in the several schools? do they vary, and if so, to what degree?

How much attention is given to the question of presentation in each school? And is there apparently an undue amount of time and labor given to this in certain schools, an inadequate amount of time and labor in others?

In view of the fact that the practice of architecture is rapidly becoming so specialized that it is apparently necessary that a student should decide at the outset as to whether he should follow the esthetic or the structural line of work, is it not desirable that the schools should divide their courses in such a way that a student might elect which one he would follow, artistic or structural, there being in the case of the former a maximum of æsthetic instruction and a definite minimum of structural education; in the latter a maximum of structural education, a definite minimum of that which is in its nature æsthetic.

To give general resume of our conclusions, we report as follows:

The object of all education is to make more effective units. For this, the fundamental equipment is that knowledge of the language, literature, and history of his own country as will enable one intelligently to take advantage of opportunities; and such knowledge of the literature and history and art of other countries as shall give a broad general knowledge of what civilization is. The possession of this knowledge is what is meant by cultivation.

When a man adopts a special branch of industry and thus limits his useful effectiveness to a distinct field, special training and knowledge are required in addition to general cultivation, which nevertheless remains the fundamental essential.

Schools of architecture are established for the purpose, first, of insuring the pupil in the possession of general cultivation; second, to give him a thorough technical equipment in the history and literature of architecture and in the laws that have been established by precedent; this, to make him familiar with present conditions and practice. In no one of these fields is his study completed in the school; he is simply started in the right way. In general cultivation and in a knowledge of the history of architecture it is essential that the student should be fully equipped, while his acquaintance with methods and practice may be, and indeed will be, largely acquired later.

It is on the first two, then, cultivation and the theory of design, that attention should be centered. Admirable as our schools are, it can do no harm to emphasize the point that they are training men to be intelligent architects, not skilled draughtsmen, and that manual dexterity is dearly bought if it is at the expense of intellectual equipment. Skill can readily be acquired with practice; nothing in practice quite takes the place of sound school training.

The schools should give the student a thorough grounding in the great architectural precedents and their application, and an intelligent understanding of them so that he may know why they became established and to what extent they meet modern requirements.

Of prime importance are the classic orders, not for what they are in themselves, but because they are the terms, the language, in which a very large part of our architectural heritage is expressed. With a thorough knowledge of the orders and their application in Greece and Rome, one is in a position to understand the varied expression of the Renaissance in Italy, in France, in England, in Spain and in her American possessions, and here in the United States.

Almost if not quite equally important is the knowledge of Christian architecture; the whole development that followed on the fall of the Roman empire, and which, through Syrian, Byzantine, Southern Romanesque and Norman finally culminated in the wonderful architectural monuments of the Middle Ages. The one is the history of a great intellectual and sensuous movement, the other of a great spiritual movement. In both is the sense of beauty very marked, in both is construction recognized as the basis of all good architecture.

The knowledge of these things is fundamental for the education of the architect; ability to apply the knowledge is essential for practice. The student may learn how to apply his knowledge in the school, even though the real application of it comes later. It is in teaching the student how to apply his knowledge that the architect can be of real use to the teacher. The man in constant active practice, to whom the school is but an occasional occupation, brings to his work a spirit, an enthusiasm, a point of view, which are essential for the development of the critical faculty.

We believe that the more important work of the school, general cultivation, and the theory of design, which can best be taught by the trained teacher, should be supplemented on the less important side, the practice of design, by the active assistance and co-operation of the architect.

If this is to be done in the most effective way, unity, both of aim and of action, is desirable for the principal schools of architecture, so that those in charge, who are necessarily most familiar with the work, themselves may determine on the best methods.

This unification we are almost inclined to consider the crux of the whole matter. Important as they are, methods must be secondary to impulses. At present, it seems to us, not only does the idea of general culture, as the indispensable basis, fail of its due recognition—the general tendency being towards the development of the specialist, or savant, rather than of the well rounded and cultured personality with a special equipment for architectural expression—but architectural education in the United States tends towards an undue individualism and centralization on the part of the several schools. Educationally, the architectural profession seems to be in about the position of the thirteen Colonies before the adoption of the Constitution—even before the ratification of the Articles of Confederation.

We believe that on the whole, Architecture is being taught in America with a broader view, and in certain respects more effectively than in any other country. Through co-ordination, a unification of standards, and co-operation, we believe that in a few years the education offered in this country might be looked upon as final, except for the absolutely necessary element of study and cultivation through travel and research amongst the inimitable monuments of the pagan and Christian past. We object to considering our own schools merely as feeders for the Schools of Fine Arts in Paris, and we look forward to the time when a great Post Graduate course shall be possible in America through a great Central School of Fine Arts in Washington. To make this possible, we must first of all achieve a certain amount of co-ordination, unification, and co-operation between all our now somewhat aggressively independent schools, and we believe that the first step in this direction would be the acceptance by all of the principle of general competitions, and the establishing of an official, central, and representative body that should put this principle into practice.

REPORT OF COMMITTEE ON APPLIED ARTS AND SCIENCES.

IRVING K. POND, CHAIRMAN.

The Committee on Applied Arts and Sciences was instructed "to consider on such questions as": First, "how to overcome the unsatisfactory conditions due to the severance of the intimate relation once existing between architect and the craftsman"; second, "how to facilitate the delegation of design to craftsmen"; and third, "how to secure some assistance to the architect in his work from the Arts and Crafts movement".

In order to know "how to overcome the unsatisfactory conditions due to" the cause above stated, it is quite necessary to understand the nature of the original conditions and the reasons underlying the changes which have led up to and still compel "the severance of that intimate relation once existing between architect and the craftsman." Even with a knowledge of the facts, power to do not always follows desire to do, and to overcome or to know how to overcome the unsatisfactory conditions is not within the power of a single committee, a single body, or a single generation. A partial knowledge, however, may suggest mitigations, where it cannot effect radical change. The intense apathy of the great public toward art, the general lack of knowledge or care as to what constitutes art or how art touches life, the utterly commonplace and devitalizing attitude on part of public and designer, of seeking the line of least resistance, of harking back to something which is well known and can be recognized on the instant—all of this conspires against the elevating of art standards; and the architect, if he would, cannot rise above the general flood of wilful and self-satisfied stupefaction. It seems perfectly demonstrable that in the greater periods of art everybody loved and appreciated beauty, whether actual producers thereof or not. The power to create and the capacity to appreciate beauty sprang from the conditions of life and inhered in all classes—at least the capacity for appreciation was general. The artists themselves, until the Renaissance, were drawn mainly from one class and that not socially a high one. They were banded as brothers; their training was from within and was developed by association; their minds were of about the same calibre; and mutual sympathy in thought and ideal made for the best. Class distinctions in art did not exist in the lofty periods as they do now. Even in our great democracy these distinctions are most clearly marked. The doers, that is, the craftsmen, are of the lower classes, the designers are a grade higher in the social scale, the architects are coming more and more from the cultured class, and unfortunately for art many of independent means are seeking the profession because the work is genteel. The art patrons and they who may dictate the monumental art of the world are of the moneyed aristocracy. The assumption of knowledge and the possession of power in the upper classes, begets in the mind of the worker a dull subservience which does not make for art and which on all counts is to be deplored. The general scheme of education is herein at fault, for it touches life but superficially and gives to "educated persons" a mere smattering of the non-essentials of art and to the workman a business knowledge, the sole end of which is its mintable quality. And life has not gained by that phase of modern education which devotes its energies to developing art producers. Once art was lived, now it is taught. "Schools of art" have come to be considered necessary. But schools do not seem to have justified themselves, while they do seem in no small measure to justify the proverb—"When schools come in, art goes out".

An irrational system of general education, then, and closely-drawn class distinctions, especially in the field of art production, would seem to be marked factors in this severance of ties between architect and craftsman. Realizing the great advantage to the art worker in the old intimate conditions, many great and rare minds have advocated an advance beyond the unsocial and wholly irrational tendencies of modern life, to an ideal existence under State socialism, viewing the matter as one falling in the range of political economy. It would seem that in this they have not been wholly justified, for the great creative periods of art and those referred to during which love and appreciation of art have been general, have occurred under varied forms of government and have been wholly independent of the nature of the governmental structure. The matter is one of social ethics, of mental development, and of social economics, and not at all of governmental forms. The socialism which shall bring joy in labor is not necessarily governmental, but it is greatly to be feared that the socialism which is governmental will operate to reduce humanity to one dead level of incentive, of capacity, of achievement, and may be of recompense, though that is of minor importance. The arbitrary apportionment of task which must almost of necessity accompany any system of State initiative and supervision of activities cannot otherwise than stunt personality and individuality. But this phase of socialism will hardly endure, for the annihilation of the distinctive functions of the various members can no more prevail in the body politic than it can in the individual, the body natural. For by nature and design (if we grant to the great universe a directing force) certain individuals, as certain members, are appointed—not condemned, but consecrated—to do certain work, and the pleasure and profit to the individual need not necessarily be in the work he performs, except as that work is necessary to the wholesome life of the body general. In other words, the feet are not to take upon themselves the work of the hands; the heart finds itself in deep and troubled waters when it takes upon itself the functions of the brain; the brain is incapable of doing the work of the heart. The effort of a new civilization should be, not to uproot individuality, not to smooth to a dead level the face of nature, the southern slope which catches the sun and the rugged eminence which shields it from the winds, but to make life tolerable where it has been intolerable, to make beauty bloom where no beauty has been, to minimize as far as possible the burden of irksome toil and to make the general conditions of life productive of the higher happiness. Through education and bettered environment the State may make the general life fruitful of sane enjoyment. A broader education, a wider sympathy, a deeper knowledge of the realities of life, a developed love of beauty in the mind of the race and a passionate zeal to express it, will reunite the sundered relation of intimacy which once existed between creator, interpreter, and laity; that is, architect, craftsman, and public.

Until an advanced state of art endeavor and of art appreciation has been reached, the architect need not seriously concern himself with the matter of delegation of design to craftsmen. The question is, rather, how far shall the personal equation be allowed to enter in the interpretation of a sketch by the craftsman. No broad minded architect shuts himself off from the suggestions of draughtsman or craftsman. But unless there be a singleness of thought and purpose in the minds of architect, assistant and interpreter, an understanding born of long seasons of sympathetic interchange of thought and idea, suggestions will tend rarely toward a unified expression. The wise architect will seek to have about him understanding and sympathetic assistants in all branches, but the architect need not seek to escape the travail of creation. Does the work bear down upon him? He must realize that beauty comes through stress, perfection through infinite pains, life comes even through death. The practical solution of the problem for to-day would seem, then, to be for the architect to bring himself as far as possible into the same relation with the craftsman that he holds with his assistant over the board, and failing that, should seek the craftsman whose work expresses a parallellism of idealism and motive, and, having found, employ that hand to execute the work and that mind to interpret the sketch.

The so-called Arts and Crafts movement, we must frankly realize, has not yet entered the stage at which it can be of much or of any assistance to the architect. The movement as such has not yet affected the great body of craftsmen. Artists and craftsmen connected with the movement have confined their thought and activity mainly to the design and execution of single and simple objects of use or beauty, such as pieces of furniture, household utensils, and bits of decoration. In most of this production the amateur spirit is manifested and not any of it bears upon the greater problem of architecture. Most of the artist-craftsmen have no intimate knowledge of architectural principles, which is to be regretted; and, too, they have had no architectural schooling, upon which they are to be congratulated, at least those of them to whom such schooling would mean the acquirement of an academic method and a frame of mind which expresses itself in the application of architectural deals to the various simple objects, rather than in a lucid recognition of the limitation of materials and a frank adaptation of form to use. It is the design and execution of stained glass for windows and ornamental metal work and carvings which the arts-craftmen are called upon occasionally to accomplish, that the want of appreciation of architectural and structural lines most manifests itself. Now and then arts-craftsmanship has undertaken to impress its spirit upon some modest example of cottage architecture, and has succeeded; but these are sporadic cases, and do not affect in any way the general tendencies. The architecture of the cottage, of the lesser house, of the villa, of the mansion, of the palace, is but a reflection of the greater architectural spirit, and until architects have learned to handle the greater architectural problems, and to solve them on their merits without reference to conventions established in other climes, under other conditions, the lesser architecture will suffer from and express the same want of capacity for freshness of invention and directness of thought, the same inability to more than rehash old motifs which find expression in the greater and the monumental architecture of the day.

It were unjust to place upon the architect the entire blame, for blame there is, in all this abuse of tradition. It were better to attribute it in the large part to the lack of taste and of knowledge which exists because of the certain deficiencies in our civilization, the lack of correct methods in education which fosters the general ignorance of and indifference toward all forms of art. The germ of hope lies in the attitude of some of the lesser architects, and in the Arts and Crafts movement—not so much in what it has accomplished as in the spirit which animates it. The movement portends an awakening to art consciousness. But great and monumental architecture must be the expression of a deep, broad, spiritual life, and cannot be built up by accretions to any movement, however vital, sincere and wholesome it may be. The lesser architecture must, in the final expression, follow and reflect the greater. Yet even to-day, while in special instances the architect may enjoy the assistance of the individual artist-craftsman, architecture in general reaps no advantage from the Arts and Crafts movement.

REPORT OF DELEGATE TO THE ADVISORY BOARD OF THE DEPARTMENT OF THE INTERIOR.

GEORGE B. POST, CHAIRMAN.

I was not aware that I should be called upon on this occasion, and therefore am not prepared to do anything more than report in the most informal manner. The Department of the Geological Survey received an appropriation for the purpose of making an investigation with regard to the entire question of coal supply, and the economic handling of the whole question. They have done most admirable work. They have also received an appropriation to make a series of proper and exhaustive tests with regard to the strength of materials in general, and an advisory committee was appointed to counsel the department with regard to the lines upon which the investigations should be conducted. The Institute was requested to nominate two members of this advisory board, and Mr. Eames and myself were honored and I attended one meeting in Washington, in the early summer, when the entire matter was more or less discussed. My advice to the Department was that the most important tests which could be made would be those for the purpose of gaining knowledge and, if possible, establishing constants and formulæ and computations of the strength of compound structures like reinforced concrete, and that experiments made with steel and long-leaf yellow pine should be extended to these other materials, for you all remember that the experiments made with long-leaf yellow pine particularly developed the facts that the constants which we had all been using since Thurball and Fairbanks made the experiments, were entirely faulty and that timbers in large sections had nothing like the strength we had computed them at. Now, it is possible with regard to stones and other materials than long-leaf yellow pine—certainly with regard to reinforced concrete—that the formulæ published by the representatives of patented forms of construction are equally defective. If so, the result will be quite disastrous. I believe this year experiments will be made with great care. I regret that subsequent meetings of the board occurred when it was impossible for me to be present, and although I have just received an appointment as chairman of an important sub-committee, I shall have to decline it, as my time is not my own, for I cannot come to Washington at the time it is necessary for the committee to assemble. I am sorry that I cannot give you more details or definite statements, but the members of the Institute should urge their representatives in Congress, both their Senators and Representatives, to see that adequate appropriations are made annually for the purpose of conducting these experiments to their ultimate end, and to furnish the profession with such data, so that they may be sure that the works they erect is constructed on sound premises, and that it will safely stand and bear the loads imposed on it. At the World's Congress of Architects at London last summer, I was forced to speak on this subject, as representatives of certain forms of construction had read papers with the inference that the special forms they advocated were accepted as the best and only practice in the United States. I told the Congress that while as an economic form of construction we were forced to use it, we looked upon reenforced concrete with a certain amount of suspicion, as using it in an amateurish way. And that our predilections were strongly in favor of materials of which we could definitely calculate the strength, rather than materials which we had to test after we had constructed with them. Also that we looked with disfavor upon any materials of plastic form, on account of the great care necessary in the selection of material and its mixture, and that our opinion on reinforced concrete was much in accord with that of the distinguished Samuel Weller with regard to veal pies—that they were wery good things—when you knew the lady as made them.

DISCUSSION.

Mr. Normand S. Patton, of Chicago: Mr. Post has spoken of suspicion as to whether the constants given by the advocates of patent forms of construction were accurate. I had occasion to use concrete and appointed a well-known company, whose work no one had ever called into question. They published certain constants. They put in the work much heavier than the minimum required, and actual tests then showed that the information was absolutely false and that the floors would not stand the loads. I conclude that the only course to pursue is to view with suspicion all patented systems of reinforced concrete and their agents, and that it is unsafe and wrong practice for us to allow the contractor to have any say as to the amount of reinforcement to put in. The only safe way is to employ an independent engineer to calculate the thickness and strength, so that the contractor shall not be allowed to use his judgment, and that reinforced concrete construction can be carried out without any resort to patent construction. Put it on the same basis as steel construction, that the architect shall assume the responsibility for the reinforcement, and let the contractor be responsible only for the quality of the concrete and the manner in which it is put in place. There are many buildings erected which have not fallen down only because they have not been subjected to the loads they are theoretically capable of bearing.

The President: A communication has been received by the Board of Directors from Major Hobbs, of the Watervliet Arsenal, that they have been conducting a series of experiments on reinforced concrete made at the Arsenal, but that they deem it extremely important to procure samples made in actual practice, especially of reinforced concrete columns, and they are prepared to send any architects the necessary instructions for selecting samples, and rods and end plates for packing, and they will bear the costs of transportation. They would break them at the Arsenal and transmit the reports of the tests to the persons submitting the samples and publish the reports of the tests in the government publications. They invite the Institute to co-operate with them in the work. The board took action so that the communication will be sent to the members of the Institute, drawing the matter to their attention.

Mr. Emile G. Perrot, of Philadelphia: In regard to the report by Mr. Post: I am chairman of the committee in Philadelphia which is working with the Building Department to formulate rules and regulations governing the erection of concrete buildings in that city. We have investigated all the formulæ and systems propounded by the contractors and inventors. We have put up about forty reinforced concrete buildings, none of which have fallen down. The architect should design his building and reinforcement by his own formulæ or worked out by intelligent engineers who understand the subject. An architect must perforce take up the position that he is the arbitrator of his own design. A prospective client said he didn't know whether he would employ an architect, as he had been told by a contractor that he made the drawings for the architect. So we are getting into bad repute. Furthermore, every patent system has its own axe to grind, and its agents make representations which are more or less strained in their truth, and I know of no formulæ which can be used as safely as a steel beam if the work is done up to the proper standard. The difficulty is not with the standard but with the workmanship. I have tested beams twenty feet fong, in which the strength did not vary more than 6 per cent. So my constant may be very close. The University of Illinois is making a series of tests in connection with the different universities, and Professor Talbert has issued some bulletins which give the results of experiment on a number of beams.

Cover Design to Menu of Banquet in Celebration of the Fiftieth Anniversary of the Foundation of the American Institute of Architects, by Edwin H. Blashfield

GOLD MEDAL PRESENTATION

The presentation of the first gold medal by the American Institute of Architects, for distinguished achievement and services to the profession, was made at the Corcoran Art Gallery, in Washington, January 8th. The recipient was Sir Aston Webb, R. A., F. S. A., of London, England, a past president of the Royal Institute of British Architects, who had come to represent his association at the convention and to receive the medal. The assemblage was brilliant in its attendance of ladies as it was distinguished in that of architects and notables of national celebrity. The function was held in the main hall of the gallery, at the foot of the main staircase, at the top of which, separated by a statue, were the British flag and "old glory"; and here were grouped Frank Miles Day, the President; William Bryce Mundie, First Vice-President, and other officers of the Institute, and on their right Sir Aston Webb, accompanied by Mr. Esme Howard, Charge de Affairs of the British Legation. Before this group were seated the most brilliant assemblage of ladies that has ever graced a function of the Institute, while behind and around, to the remote corners of the gallery, stood architects and guests who had come to do honor to this great English architect, the groups interspersed with ladies, who preferred standing with their escorts and vied with the statues in receiving the critical and appreciative attention of the assembled artists.

The presentation was impressive. Rising and addressing Sir Aston Webb, the president sketched the progress of architectural art that grew out of the traditions of the past in English architecture and its influence upon William Thornton, who designed the Octagon House, the Headquarters of the Institute, and "who stamped a definite and noble character upon the nation's capitol", and Thomas Jefferson and others in the early days, who gained their knowledge of classic art from English sources; following its history to the present, when the Institute wished to give evidence of its appreciation of the vigor and charm of English architecture by conferring its medal upon one of its younger but no less distinguished members.

The medal being presented and hung by a blue ribbon upon the breast of its distinguished recipient, Sir Aston Webb said: "I have come here to thank you in the simplest, directest and most heartfelt way I can and to assure you that the fact that you have given your first medal to a representative of the old country will always be remembered by them and by myself with deep sense of obligation, and I accept it with grateful heart on behalf of myself and my colleagues".

Mr. Esme Howard, the charge de affairs of the British Legation, also spoke and the orchestra interspersed the different speeches with American and English national airs, closing the function with "God Save the King".

THE BANQUET

The banquet tendered the guest of honor, Sir Aston Webb, guests of the Institute and members, though not as artistically gorgeous in its decorative aspect as that hall prepared for a like function two years ago, by Frank D. Millet, the banquet room in the New Willard Hotel was better suited to the purpose. It was hung with green vines and the tables decorated with roses. A long table at one side, with others radiating from it, gave a form which was suited to listening to the many brilliant after-dinner speeches. On the opposite side of the room the ladies were gathered in terraced rows of seats, and gave an added brilliancy to the distinguished assemblage.

The President, Frank Miles Day, acted as toastmaster and proposed the health of his British Majesty, King Edward VII, and President Roosevelt. This was drank standing, and when Secretary of State Root rose and proposed the health of the ladies, the assemblage again rose, when Mr. Root, motioning the audience to be seated, said: "No premature elevation, please; the ladies are welcome and it is hoped that they will continue to grace the banquet until its end, although their architect husbands seem so much inclined to the early perpendicular".

Mr. Root's speech was followed by that of Senator Henry Cabot Lodge, who spoke on "Architecture and the National Life". In a long and brilliant speech he said:

"American architecture represents the American people, their hopes, their aspirations. The New York skyscraper at first thought may seem abnormal and dreadful; but we have come to see that it is there because it is necessary to our conditions. It is an American thought—an expression of ourselves, of our growth—and I believe that New York, which is growing, which is now in an unfinished state, will grow some time into something beautiful, majestic, because it expresses the spirit of our people and our times. We are a new country, but not a new people, and it is right that from the older civilization from which we came we should borrow what was best, and it has been our problem to apply the old forms in consonance with our new aims and our new desires". Mr. Lodge then spoke of the old colonial forms of architecture, so simple, so ornate, and yet so useful. The forms for which we should strive now are forms conformable to our new and strenuous civilization, not bound by the forms which represented an age of other faiths and other forces. Of this sort he thought the nation's Capitol was a fine example. The Brooklyn bridge, too, he thought, was typically American in its strength, its beauty and its usefulness. For New York, the city of commerce, which, if it is to grow, was bound to grow upward, the skyscraper, he thought, was fitting and would grow into beauty. "But," said he, "in this, our beautiful city, which should be an example to all American citizens, I think that the poor attempts at skyscrapers are blunders, and I hope some day to see a law enacted which, in this city, the seat of our government, shall regulate the height to which buildings may go". He thanked God for the men who had laid out Washington, and had left for Congress and the people of this country a definite plan along the lines of which Washington, the city of all the people, might grow, a plan which provided for a wide park from the Capitol right through the main avenue.

F. Hopkinson Smith, who followed, disagreed with the last speaker regarding "skyscrapers", which he stigmatized as the "monstrosities of Broadway", and urged that the country build for beauty rather than for gain. Speaking of the statue by St. Gaudens, in the National Cemetery, which the sculptor never named, he related how he asked the sculptor what it meant, who replied: "What does it say to you?" "To me", replied Mr. Smith, "the beauty of it far transcends the beauty of the Venus de Milo. It typifies to me the figure of despair over a form of great loveliness, now dead. It seems to wait there in its frozen sorrow—waiting till the last trumpet shall resound, ready to ascend with the spirit into the realms above". "Don't let me disturb your thoughts of it", was the sculptor's reply.

Owen Wister, the author, followed Mr. Smith and spoke of art as indigenous to the soil, the tariff on art, and of the time, not far off, when "our architects should be all our own, redolent of our land, our traditions, our hopes".

Sir Aston Webb spoke briefly, and with an attractive intimacy that prevades all his addresses, apologized for not being an orator, and said that, in view of the speeches he had heard, he "felt like a very small English house, surrounded by American skyscrapers". He congratulated the Institute on achieving its fiftieth anniversary, "though for my part", said he, "when I won the distinction of having arrived at fifty years, I did not think it a subject for congratulation".

Speaker of the House of Representatives Cannon, the last of that group that represent the characteristics and regime of Abraham Lincoln, told witty stories, and in speaking of our advance toward an American literature as well as art, paid a tribute to the work of Owen Wister, which, he said, was good American literature; and this gave him an opening to condemn what he called "the literature of graft", which, he said, was made up very largely of guesses and containing one grain of truth to forty grains of romance. Our literature of today might be all right, but, for his part, he declared he would rather have an ounce of Fenimore Cooper, of Irving, of Thackery, or of Dickens.

George B. Post closed the banquet speeches with a response to the toast: "The American Institute of Architects", in which he reviewed some of its important successes during its fifty years of activity.

Another page in the history of the famous Octagon House was written on the afternoon preceding the banquet, when a tablet in honor of the founders of the American Institute of Architects was unveiled by Robert S. Peabody. Simple ceremonies accompanied the unveiling, which consisted of a solemn reading of the inscription and a few sentences of congratulation by Mr. Peabody. After the unveiling a reception was given, at which a distinguished number of guests mingled with the architects in the drawing-rooms of the old mansion.

These are, in the main, the events which most definitely distinguished the fortieth annual convention of the American Institute of Architects.

CONSTRUCTION OF A FIRE-PROOF EXCURSION STEAMER*

BY WILLIAM GATEWOOD, MEMBER S. N. A.

THE purpose of this description is to place before the Society the particulars of an adaptation of fire-proof construction in the building of the Jamestown, an excursion steamer for the Potomac river, which was built by the Newport News Shipbuilding and Dry Dock Company from designs prepared by them to meet the requirements of the Norfolk & Washington Steamboat Company, and was put in service in June last.

The vessel has a length between perpendiculars of 250 feet, length over all of 262 feet, beam over guards of 63 feet, beam molded of 38 feet, and depth molded of 14 feet 6 inches. Plates I to IV show the general arrangement of the vessel. Below the main deck are the barroom, pantry, galley and quarters for the crew. On the main deck are dining room, lobby, parlors and deck space for passengers, both open and enclosed. On the saloon deck are parlors,

*Paper read at the Fourteenth general meeting of the Society of Naval Architects and Marine Engineers, held in New York, November 22 and 23, 1906. [COPYRIGHTED.]

a few staterooms, toilets, a large enclosed cabin, and some open deck for passengers. On the shade deck are the pilot house and rooms for deck officers, and a large open deck for passengers, covered by awnings. The propelling machinery consists of compound inclined engines, 30 inches and 64 inches in diameter, with 66 inches stroke, operating feathering paddle wheels 17 feet 3 inches outside diameter. There are four single-ended Scotch boilers. The vessel is lighted by electricity. A speed of nearly 19 miles was obtained on the trial trip in Chesapeake Bay.

By the term "fireproof" is not meant that the vessel is incapable of destruction by fire, but that the amount of combustible material has been limited to such an extent, and what remains is so protected and distributed that the chances of a fire starting on board are greatly reduced; and the spread of a fire would be practically impossible even should one get a start.

No trouble was experienced in this connection with the hull below the main deck, as it was constructed of steel throughout.

The lower deck is built of steel plating 3-16 inch thick laid on beams spaced 27 inches to 30 inches apart, and covered with linoleum, brick, mosaic tiling or interlocking rubber tiling, as the use of the spaces rendered desirable. In the machinery space, the floors are of ribbed plate, set on steel angle supports. The main bulkheads are of steel plate, in thickness varying from 3-16 inch to 5-16 inch and stiffened with steel angles; and the main divisional bulkheads on the lower deck are also of steel plate 1-8 inch thick, with angle stiffeners. The minor divisional bulkheads on this deck are of corrugated steel plate of No. 18 U. S. S. gauge, with steel angle boundaries.

The main deck is built of steel plating 1-4 inch thick, on steel bearers spaced 24 to 36 inches apart, with the stringer somewhat heavier. The runners under this deck are of steel channels and the beam stanchions are of iron pipe. The covering on the main deck is of rubber tiling or linoleum. The adherence of the rubber tiling or linoleum to the steel deck was obtained by the use of the special cement which it is customary to use for this purpose. The linoleum on this deck where it is exposed to the weather is secured in addition by thin galvanized steel strips placed on top along the edges and across the joints, and secured through to the plating by brass machine screws. The latter arrangement is indicated by Sketch No. 1 on Plate V, and was considered necessary on the exposed deck on account of the liability of water soaking under the edge of the linoleum and thus spoiling the adhesion.

As was anticipated, much trouble was experienced in settling upon the design above the main deck.

The waist or bulwark is built of 1-4 inch thick steel plate with wood rail on top, stiffened by the bracketed steel angle supports of the saloon deck, and by intermediate angle stiffeners. Abreast the wheels and in way of the toilet and parlors amidships, the side was extended to the saloon deck by plating 3-16 inch thick, with angle stiffeners.

Air-cell asbestos is also fitted under the main deck over the boiler-room, engine-room and galley, resting on metal strips secured to the bottom flange of the beams, to help prevent the transfer of heat through this deck, a result accomplished on other vessels by their wood decks.

Boundary bulkheads on the main deck are constructed in a similar manner to the casings, and sheet steel pilasters are fitted over the standing-flanges of the angle or tee-bar stiffeners for appearance' sake, as shown by Sketch No. 4 on Plate V.

It was at first considered practicable to build the saloon and shade decks of light steel riveted to steel beams, but after several experimental sections had been built it was decided that exposure to the sun and weather, and the difficulties attendant upon buckling due to the riveting of thin material, would require a thickness of plating of not less than 3-16 inch. The weight of 3-16 inch plating rendered the use of such thick plating at this height out of the question on account of the reduction in stability which would have been caused thereby. It was decided, therefore, to use steel angle beams turned upside down, with a pine nailing strip bolted to the vertical flange and resting on the horizontal flange, and on this to lay 7-8 inch pine decking. The under surface of the decking was then covered with thin sheet steel, and a cornice of the same material was fitted over the nailing strip and on the other side of the beam as well, to give a finish. This steel ceiling was not smooth but was rolled with shallow corrugations. The cornice and ceiling were secured by wire nails. As will be seen by reference to Sketch 5 on Plate V, there is no wood left exposed on the under side of these decks. Steel face plates, stringer plates and tie plates are fitted for these decks, and the runners under the beams are of steel bulb angles, with iron-pipe stanchions.

Where the houses on this deck do not extend to the side, they are built of 5-32 inch thick plating.

The machinery casings are of steel 5-32 inch thick, with stiffeners alternately angles and tee bars, the latter serving as butt straps and fitted with flanges outside, giving a panel effect. The casings are lined in way of the boiler rooms with No. 24 U. S. S. gauge steel, to which is secured asbestos air cell 1 inch thick to prevent the radiation of heat into the passenger quarters outside.

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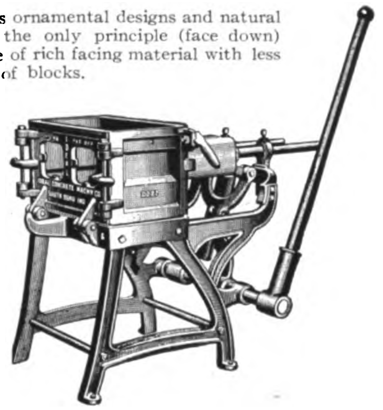

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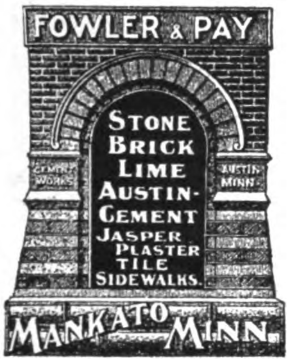

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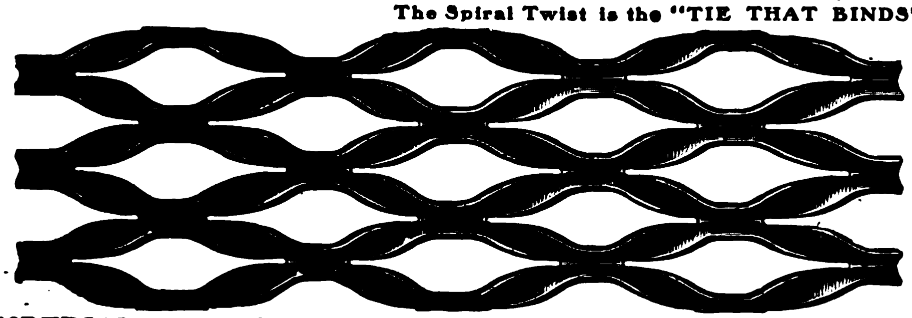

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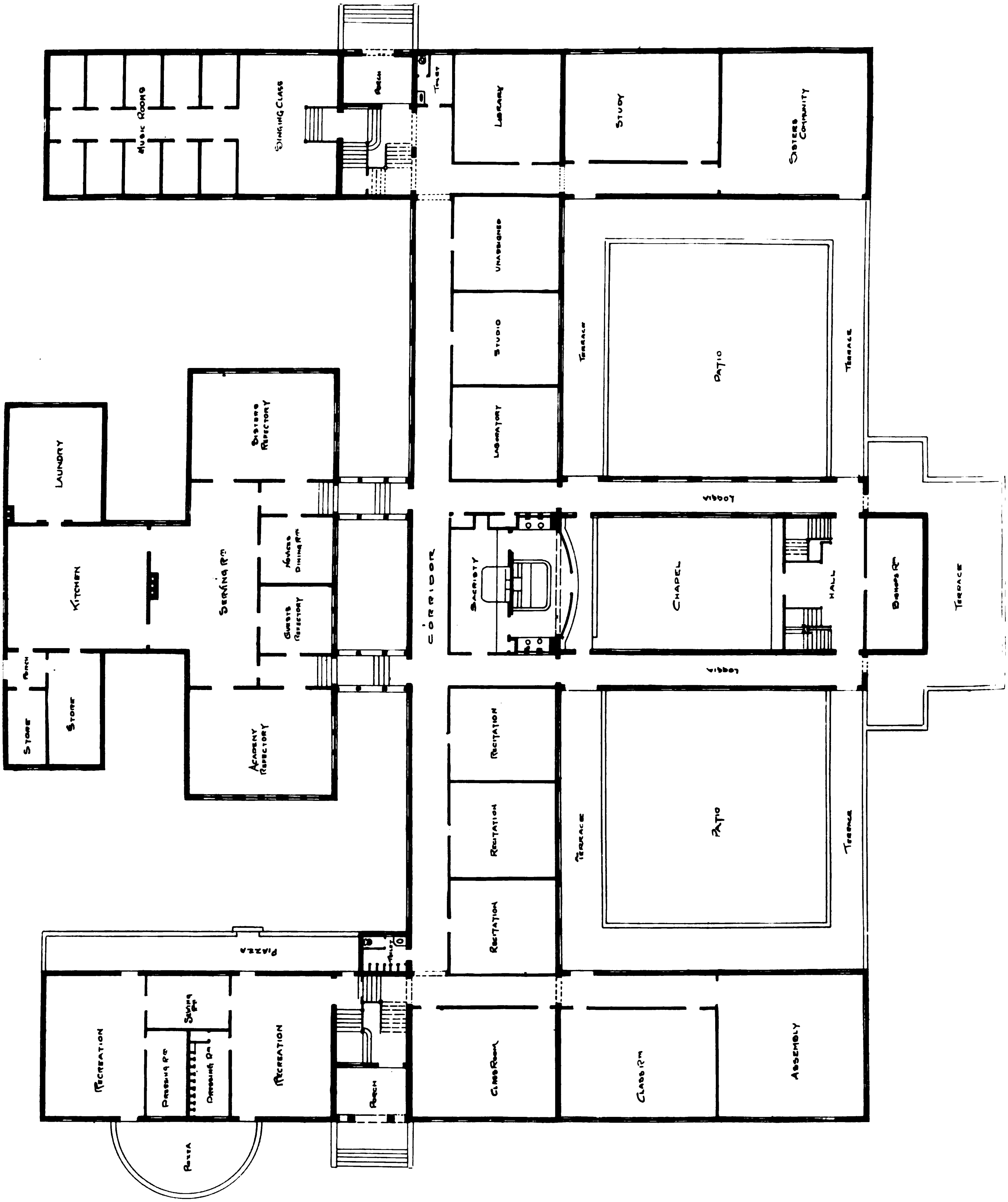
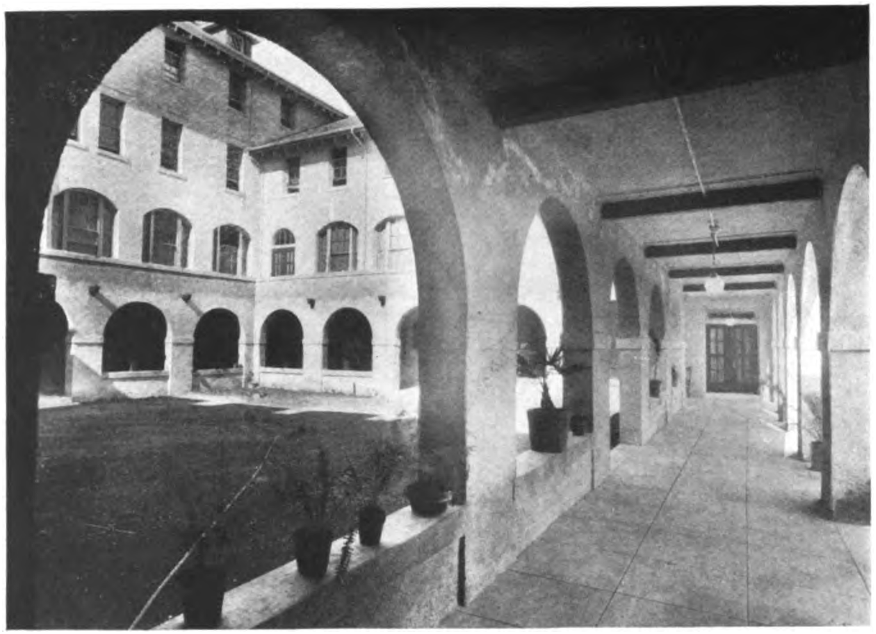


PLAN OF HOLLYWOOD CONVENT, LOS ANGELES, CALIFORNIA

MAGINNIS WALSH AND SULLIVAN, ARCHITECTS

HOLLYWOOD CONVENT, LOS ANGELES, CALIFORNIA

McGINNIS WALSH AND SULLIVAN, ARCHITECTS



DETAILS OF INTERIOR OF HOLLYWOOD CONVENT, LOS ANGELES, CALIFORNIA

McGinnis, Walsh and Sullivan, Architects

RESIDENCE AT LOS ANGELES, CALIFORNIA

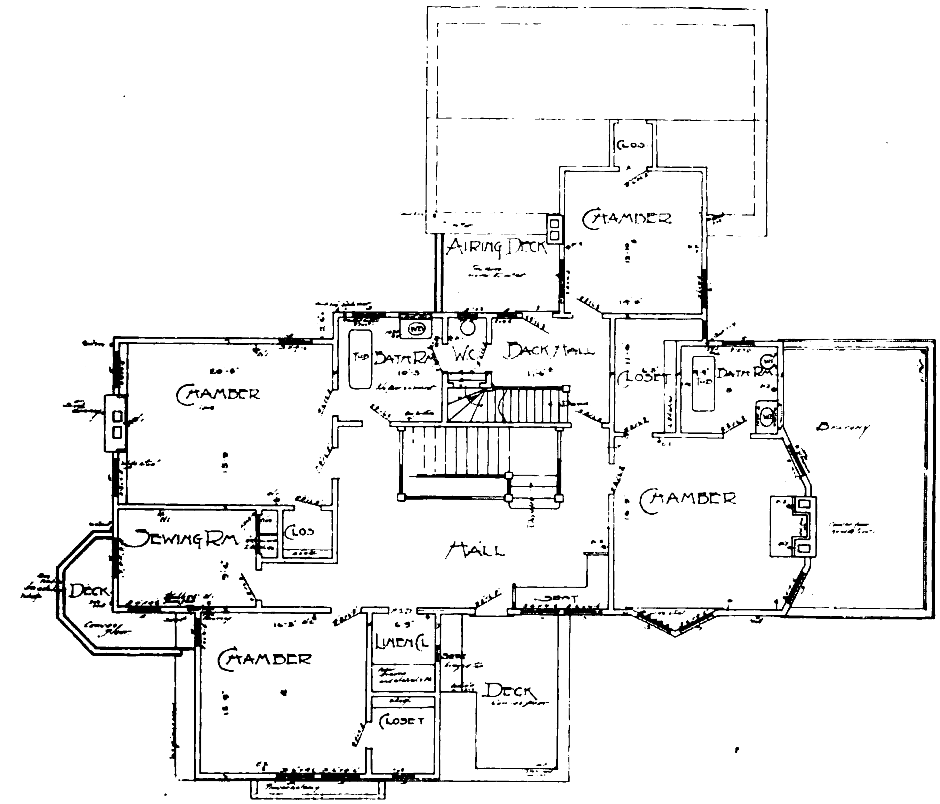
Dennis and Farwell, Architects

THE WESTERN ARCHITECT
JANUARY
1907

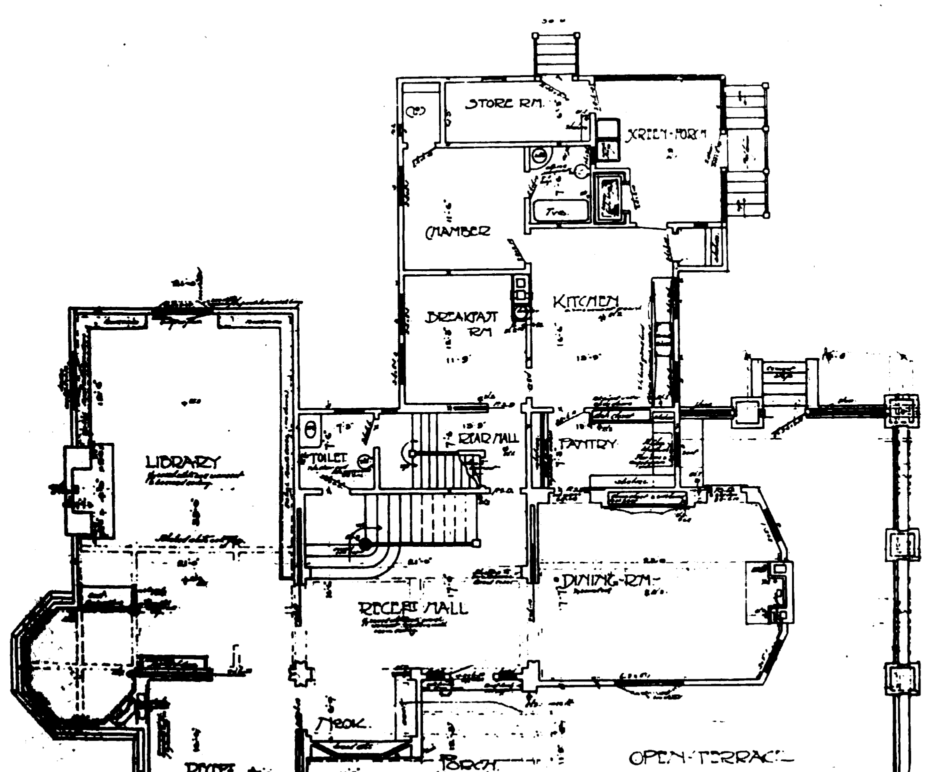
RECEPTION HALL IN RESIDENCE OF GEORGE I. COCHRAN, LOS ANGELES, CALIFORNIA

RESIDENCE OF GEORGE T. COCHRAN, LOS ANGELES, CALIFORNIA

TRAIN AND WILLIAMS, ARCHITECTS



SECOND FLOOR PLAN



FIRST FLOOR PLAN

RESIDENCE OF GEORGE T. COCHRAN, LOS ANGELES, CALIFORNIA

TRAIN AND WILLIAMS, ARCHITECTS

THE WESTERN ARCHITECT
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RESIDENCE OF E. B. MARSHALL, LOS ANGELES, CALIFORNIA

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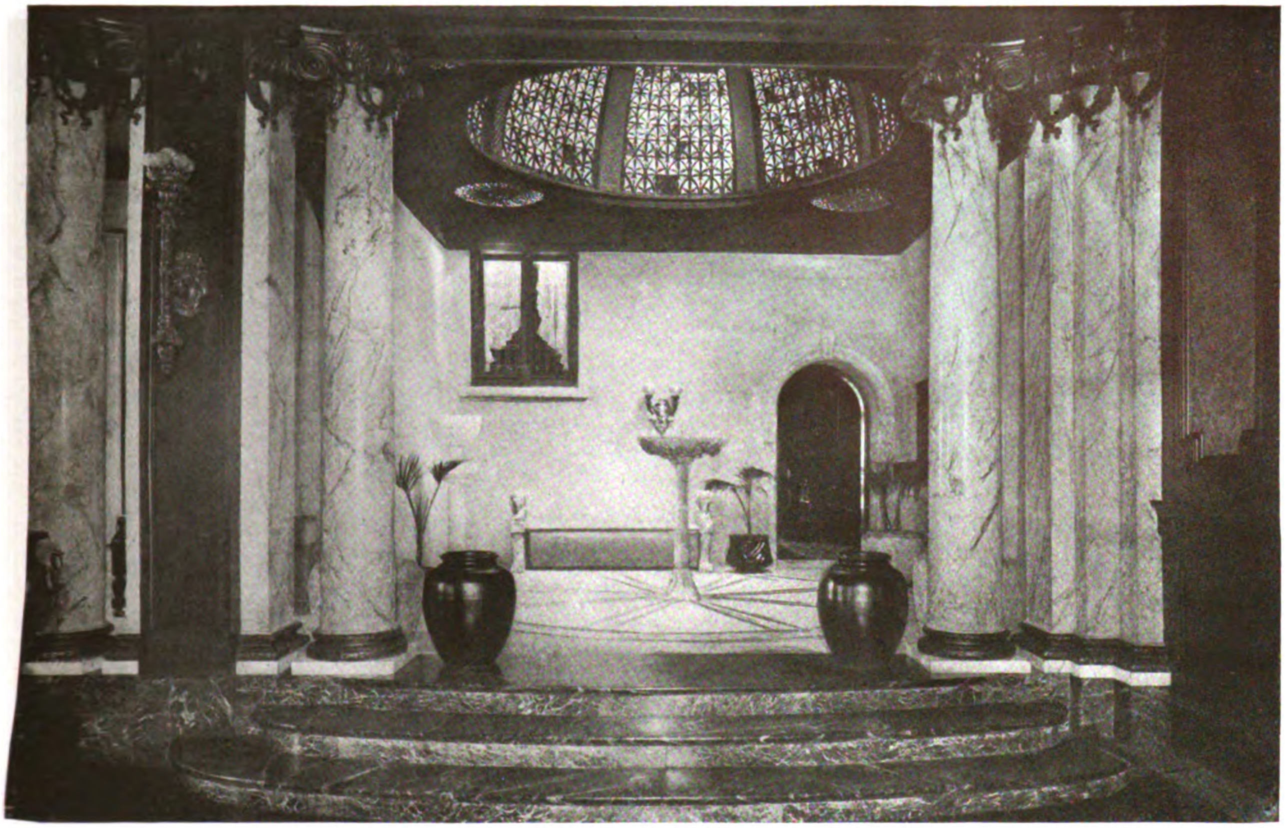
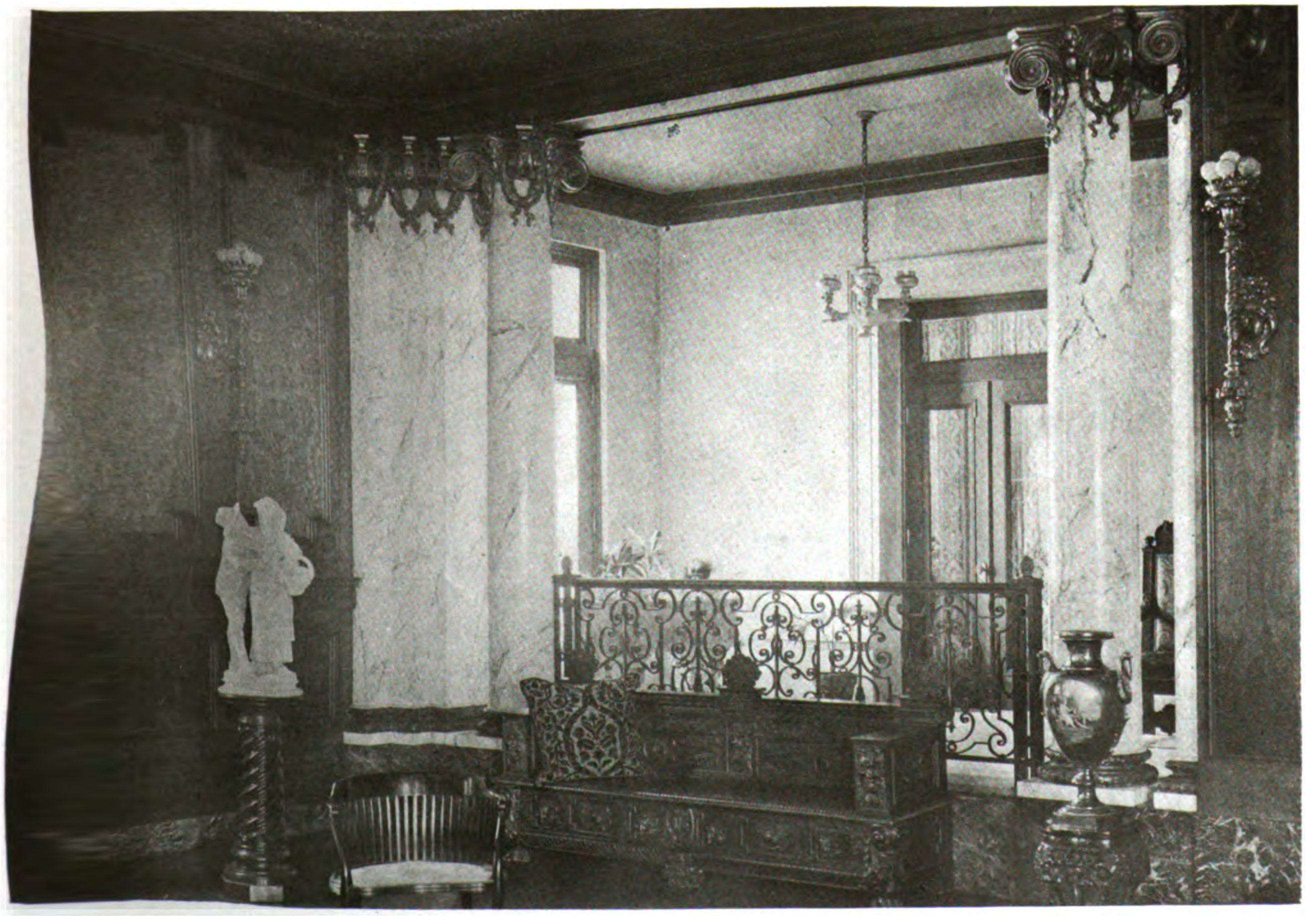


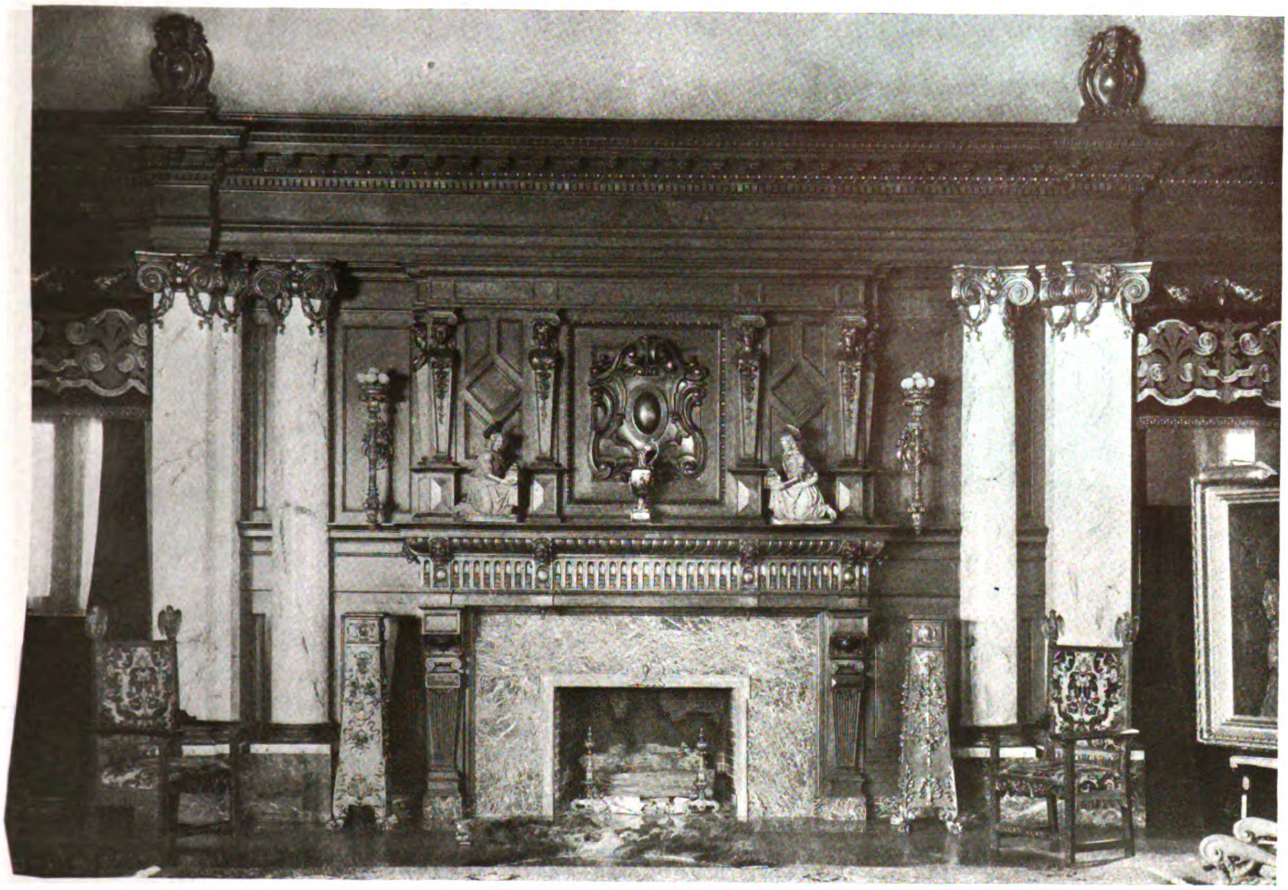
ENTRANCE (RIGHT)



ENTRANCE (LEFT)

ALTERATIONS AND ADDITIONS TO A RESIDENCE AT ST. LOUIS, MISSOURI

MAURAN, RUSSELL AND GARDEN, ARCHITECTS

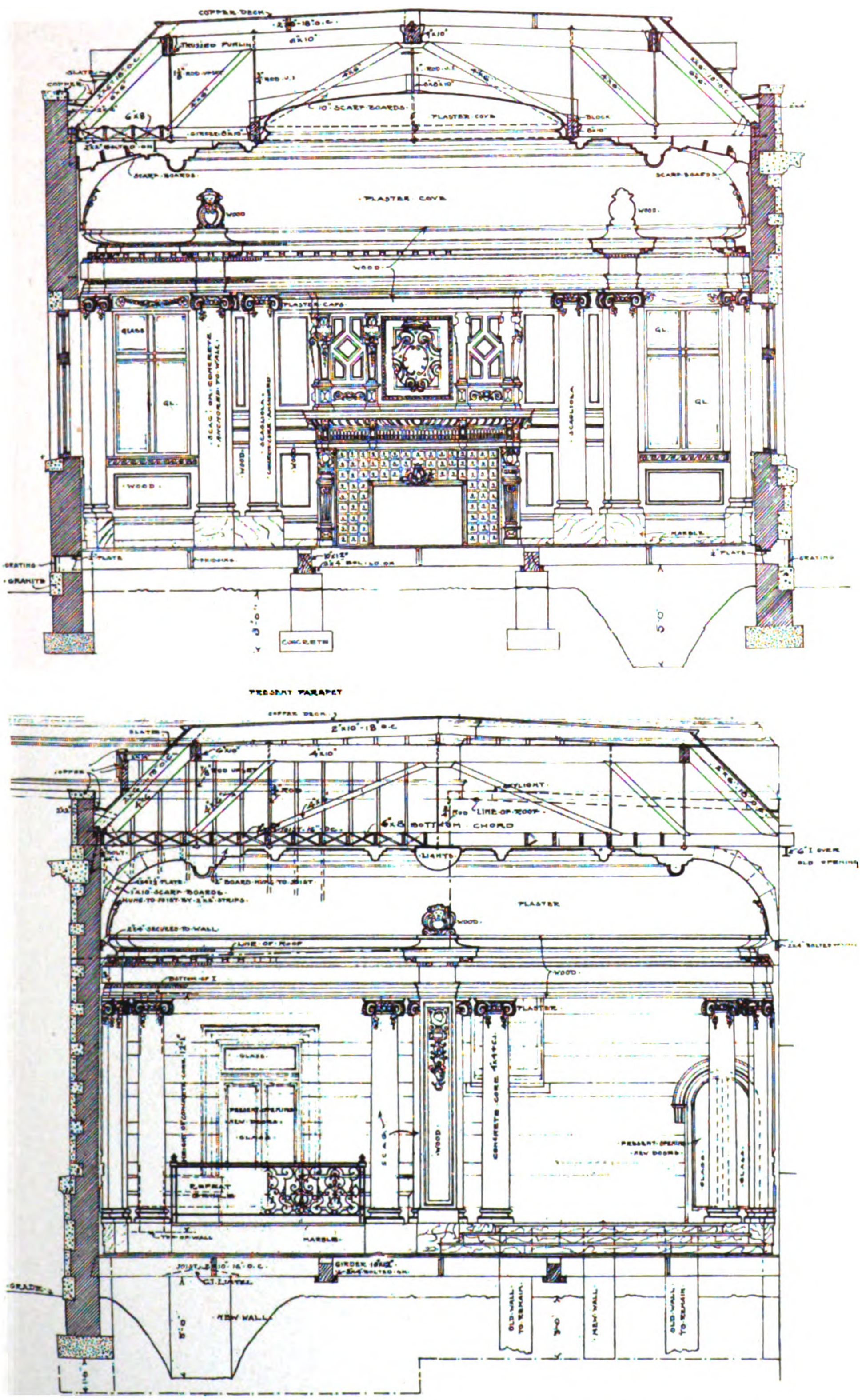


DETAIL OF MANTEL

RECEPTION ROOM AND MANTEL

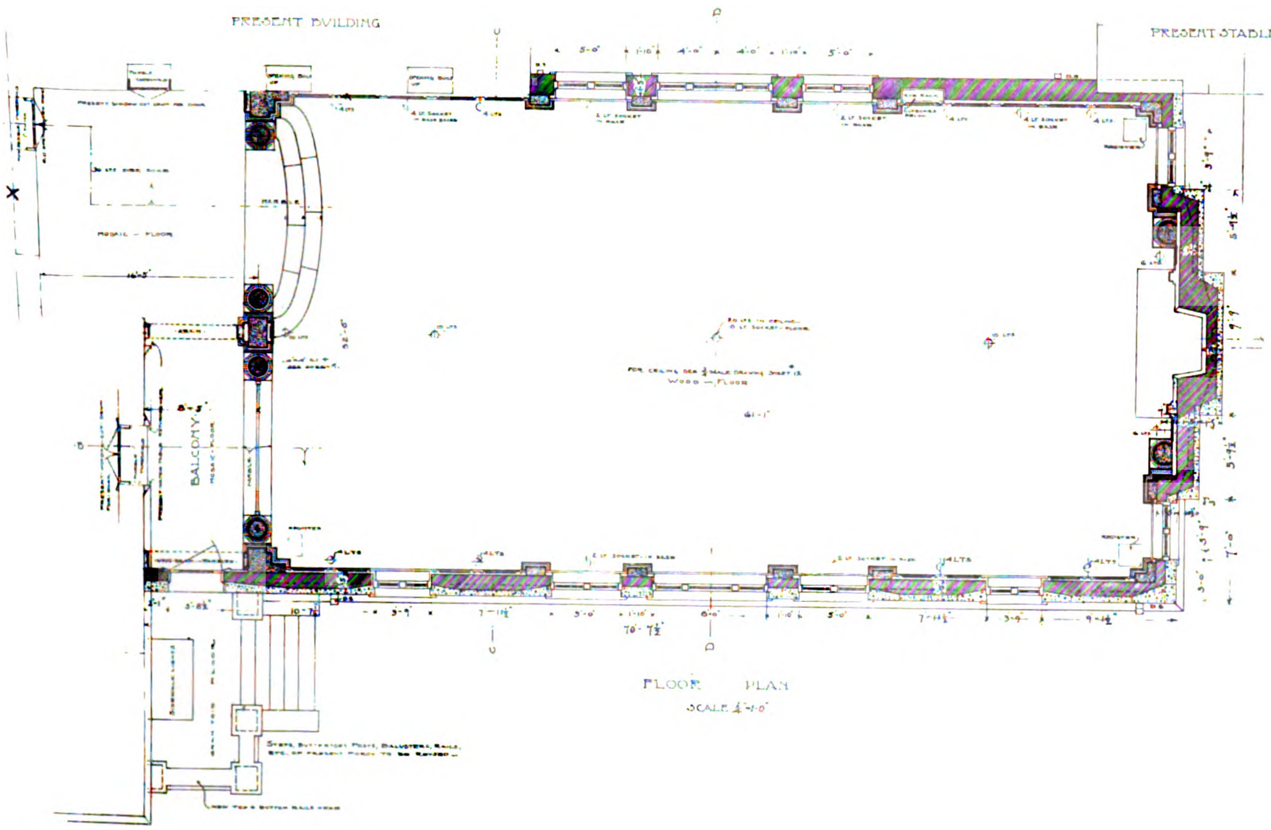
ALTERATIONS AND ADDITIONS TO A RESIDENCE AT ST. LOUIS, MISSOURI

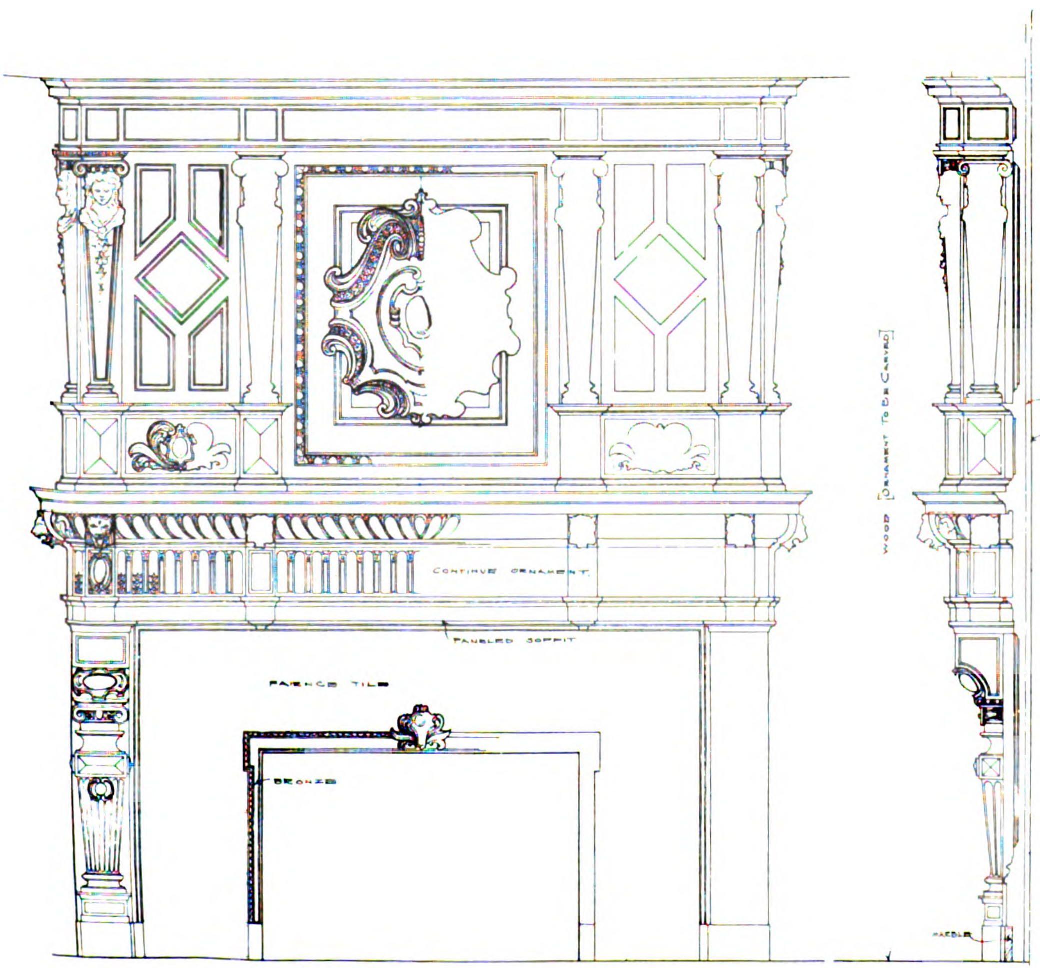
MAURAN, RUSSELL AND GARDEN, ARCHITECTS



SECTIONS OF ALTERATIONS AND ADDITIONS TO A RESIDENCE AT ST. LOUIS, MISSOURI

MAURAN, RUSSELL AND GARDEN, ARCHITECTS

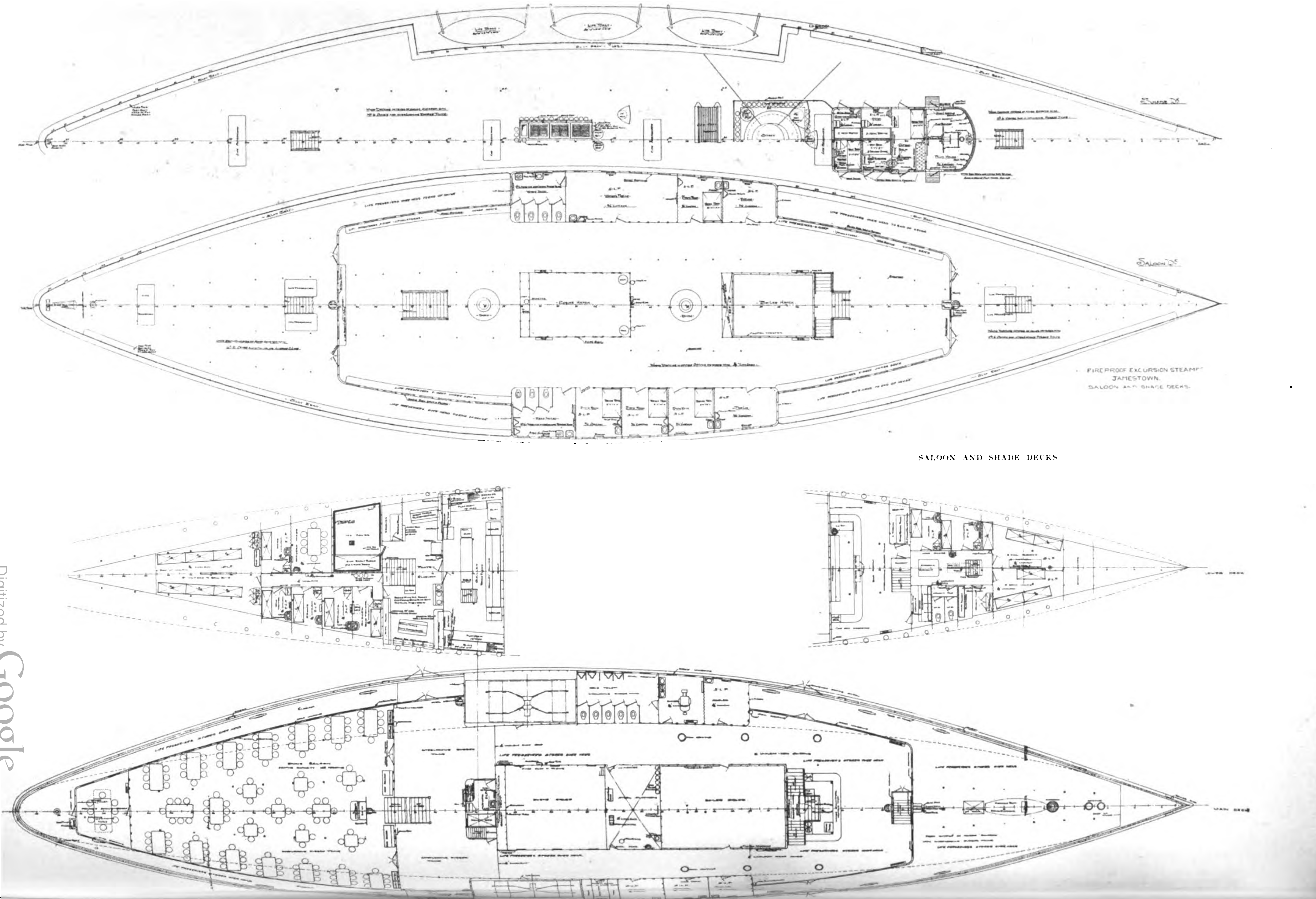




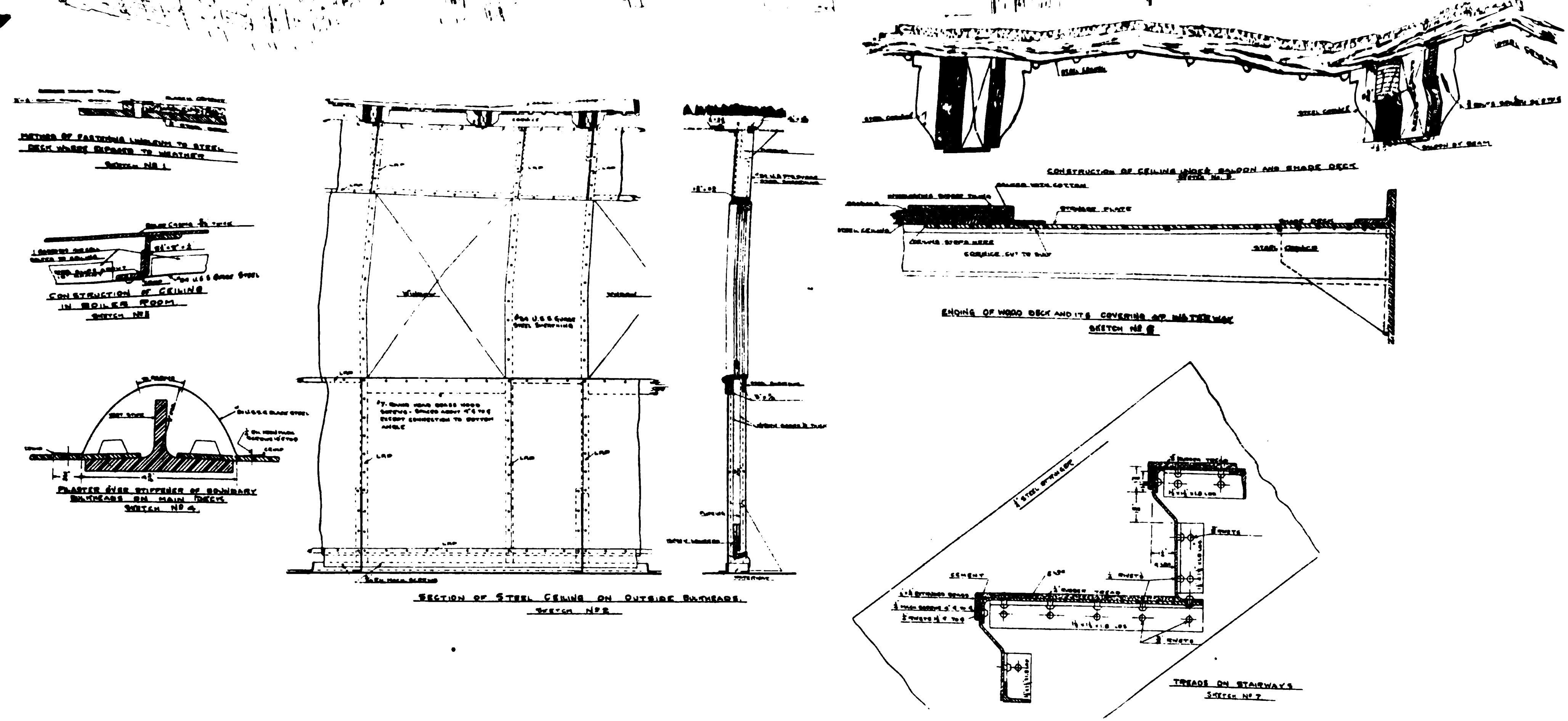
MANTEL DETAIL

ALTERATIONS AND ADDITIONS TO A RESIDENCE AT ST. LOUIS, MISSOURI

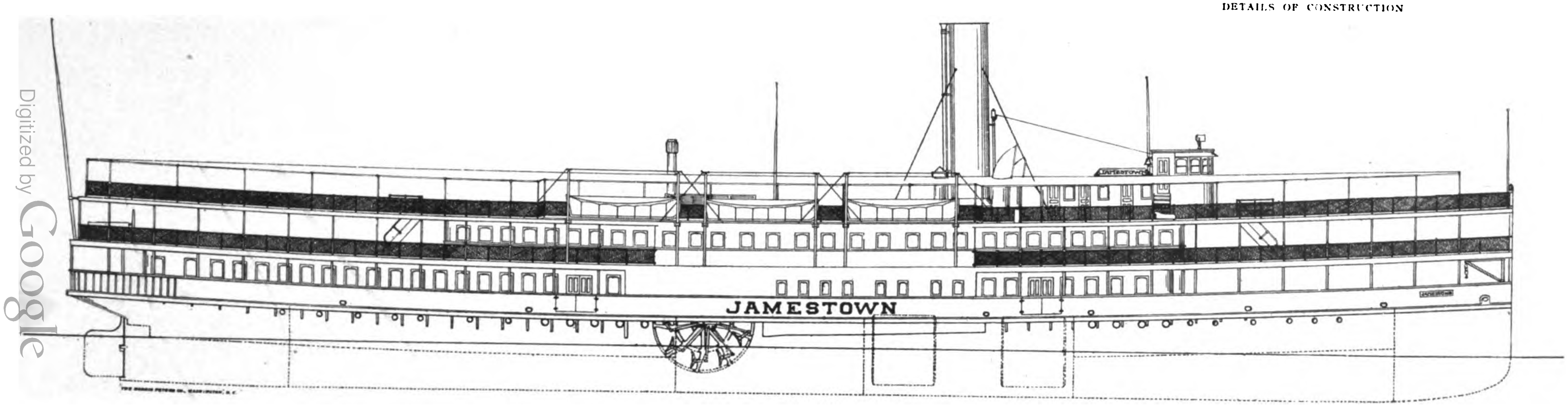
Mauran, Russell and Garden, Architects



SALOON AND SHADE DECKS



DETAILS OF CONSTRUCTION

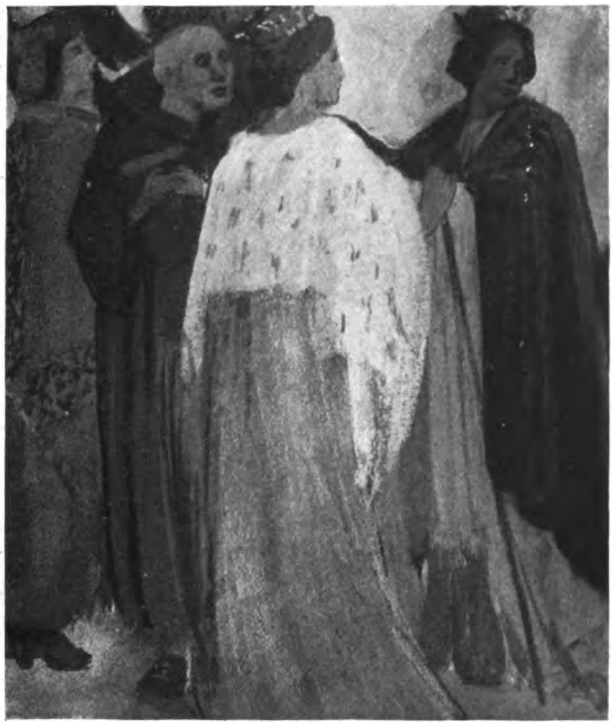


OUTBOARD PROFILE

FIREPROOF STEAMER JAMESTOWN

ILLUSTRATING PAPER ON "CONSTRUCTION OF A FIREPROOF EXCURSION STEAMER"

BY WILLIAM GATEWOOD, MARINE ARCHITECT, NEW YORK



STRAUSS PHOTO, ST. LOUIS

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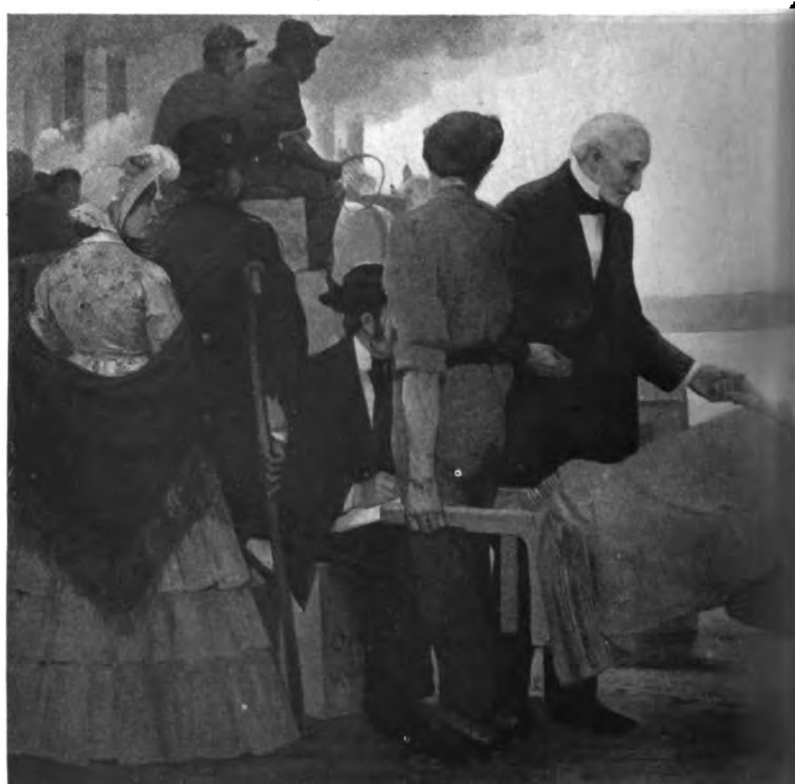

STRAUSS PHOTO, ST. LOUIS

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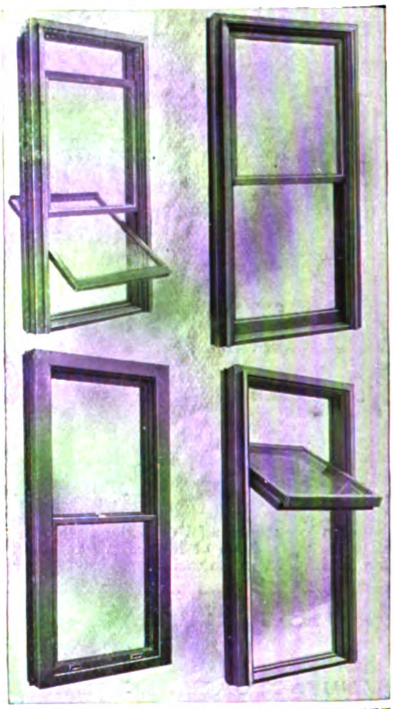

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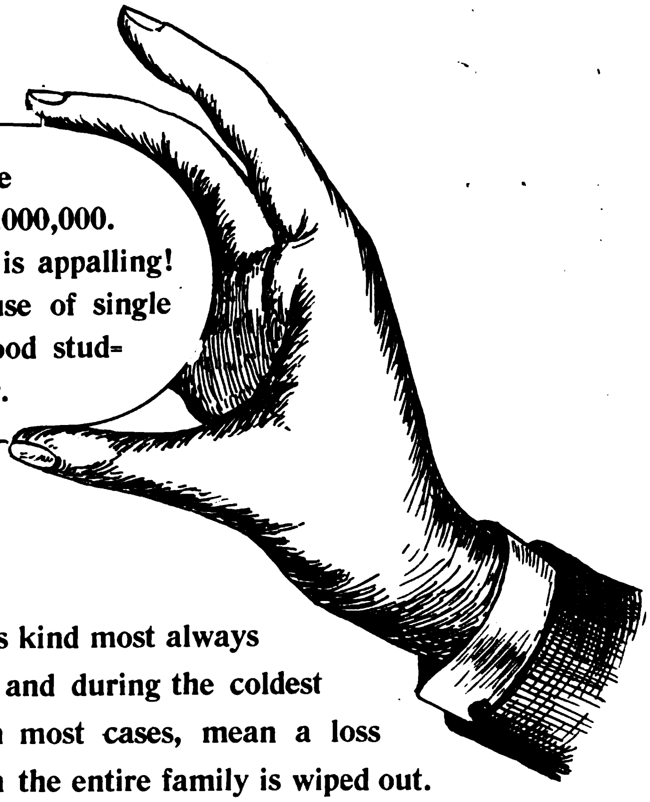
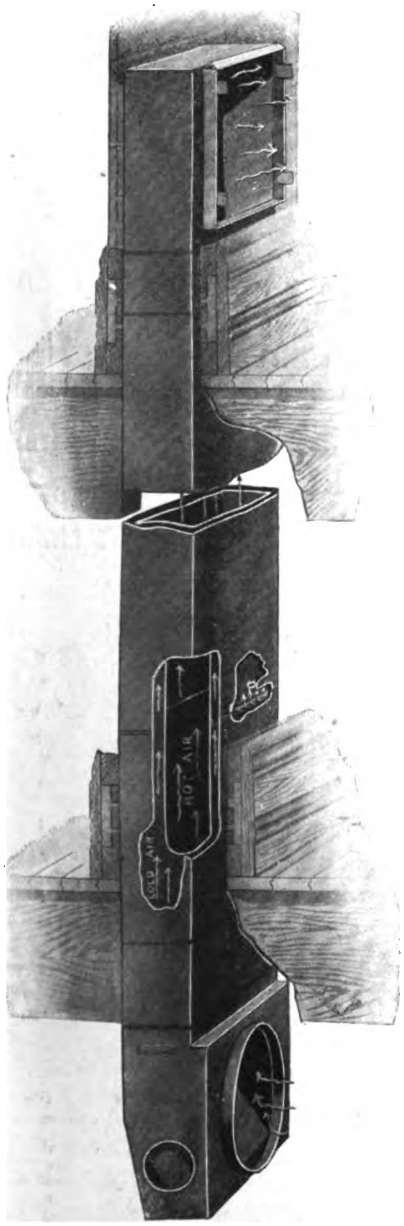
The losses through fire in the United States, of 1905, were $230,000,000. The losses of life by fire, 7,000. This is appalling! Most of these fires were due to the use of single furnace pipes that set between wood stud-dings and lath and plaster.





Fires of this kind most always occur at night and during the coldest weather, and in most cases, mean a loss of life and often the entire family is wiped out. These single pipes will first char the woodwork by which they are surrounded, and when the conditions are favorable, a blaze is the result.

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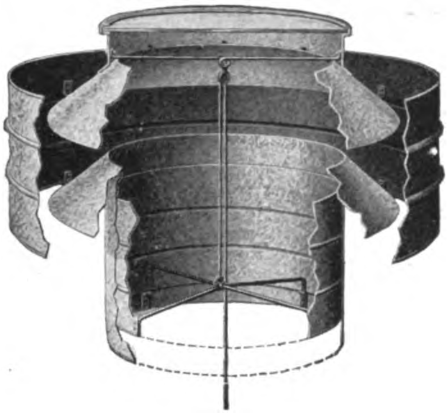

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The Western Architect

VOLUME X NUMBER 2

Contents February 1907

Illustrations

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ROBERT CRAIK McLEAN, EDITOR.

OF INTEREST TO ARCHITECTS

THE recent pamphlet issued by the Chicago Portland Cement Company shows an interesting lot of photographs of construction in Concrete, from bridges and dams to blocks and ⅞-inch thick roofing slabs. It is an excellent exposition of the possibilities of concrete and incidentally the use of the cement made by this, one of the oldest cement companies in the country.

THE "Star" inverted gas light is the latest development of convenient and economical illumination with gas. It is the result of years of experiment in the endeavor to produce an inverted incandescent mantle lamp that would work with perfect radiation. This has been accomplished in the "Star", which also has the advantage of being adaptable and readily attached to any gas fixture.

A VALUABLE treatise on the use and application of wire lath is issued by the Clinton Wire Cloth Company. It not only contains excellent photographs of the many ways in which the lath is applied, notably the furring and lathing in the arched ceilings of the Naval Academy of Annapolis, and other work, but gives brief specifications and other instructive information regarding the varied uses and fire-resisting value of wire lath.

WHEN the first fireproof windows appeared on the scene, the tendency was to use them for the same purpose previously served more or less ineffectively by shutters, and their use was restricted to the rear and alley elevations, that might be exposed to fire hazards from adjacent buildings. The recent great conflagrations in Baltimore, San Francisco and other cities has demonstrated that to be absolutely fireproof, even the skyscrapers must have their window openings protected on all sides. The most notable instance of this sort since the advent of the metal window frame and wire glass, was the magnificent Henry Sonneborn Building, just completed in Baltimore, which is fitted out from basement to the top story with the "Pruden" Fireproof Window, manufactured by the St. Paul Roofing Cornice and Ornament Co. There was over 29,000 square feet of window area in this building, and over 1,000 separate windows, making it the largest window contract ever awarded on a single building in the United States.

ARCHITECTS and Engineers in the Southwest will be glad to know that the Minneapolis Steel and Machinery Company have recently opened an office at 1300 West 11th Street, Kansas City, which, under the management of Mr. Louis Bendit, will place at their convenience the Munzel Gas Engine and Suction Gas Producer, manufactured by that firm. The extraordinary demand for this type of gas engine in the Southwest has made it imperative that a representative be stationed in that locality.

AN old-time firm which has had an important part in furnishing the stone used in the construction of buildings, bridges and general improvements of the Northwest, is that of the Breen Stone Company, whose general offices are in suite 620 Germania Life Building, St. Paul, Minnesota. This company has quarried thousands and thousands of cubic yards of building stone and macadam from its wonderful quarries at Kasota, Minnesota, which is thoroughly up-to-date and equipped with the very latest machinery. When architects need anything in the above line it will well repay them to communicate with the company at the above address.

THE phenomenal increase in construction in Minneapolis during the past year, and its surety of continuance, has induced several of the most skilled architectural designers to open offices for themselves. Among these may be mentioned Cecil B. Chapman, who has been long identified with the office of William Channing Whitney, Architect. A good man leaving a good office puts into practical operation the horticultural progress idea of making two blades of grass grow where one grew before. The public still have the artistic services of Mr. Whitney, augmented by that of Mr. Chapman, who is fully deserving of public confidence in his ability to design and construct, and the profession receives a valuable addition to its membership.

THE lumber business and interior wood-working interests of the Northwest are represented by many strong and substantial firms, who operate upon a large scale and under exceptionally favorable conditions. One of the most prominent in the interior woodworking line is that of the Osgood and Blodgett Manufacturing Company, of St. Paul, Minnesota, who manufacture and supply all kinds of Hardwood Flooring, Hardwood Interior Finishing, Sash, Doors, Stair and Cabinet work. The company constantly carries a large and complete stock of Southern, Coast and native lumbers, both hardwood and soft wood. The company, with its large resources and excellent facilities, is always ready to fill orders either large or small from architects, owners and builders throughout the Northwest, in the cheapest and most satisfactory manner.

THE iron-working industries of the Northwest have some notable establishments and one of the most important among them is that of the Northwestern Foundry. The plant covers one and a half acres, combining foundry, architectural works and yards. It is located at Third Street and Tenth Avenue S., on the Chicago, St. Paul and Milwaukee Railway. The business was established over a quarter of a century ago, by G. Menzel and Company, and in 1883 the firm was known as Menzel and Ferguson. Mr. Menzel, however, retired some time ago, and the firm is now composed of S. T. Ferguson, Pres.; J. F. Ferguson, Vice-Pres.; and E. S. Coffin, Secy. and Treas. The equipment of the establishment is first class in every respect. A prominent feature of their business is their Architectural Iron Work, and they have furnished the material for many of the largest and best buildings of Minneapolis, among which may be mentioned the Guaranty Building, Lumber Exchange, Andrus Building and the National Bank of Commerce Building. Any business given into their hands will be taken care of in a manner that will satisfy both the architect and contractor.

When Dr. Holmes advanced the proposition that "There is nothing that keeps its youth, as far as I know, but a tree and truth", the "Target and Arrow" brand of Taylor "Old Style" tin was just beginning to lay the foundations for a prosperous roofing business, with Father Time as the "agent of the owner". Now he would add that brand of tin to his estimate of perennial youthfulness. There is no secret process in the making of "Target and Arrow" tin, except honesty and close attention to details, which by some of the leaky tin roofs seems to be either secret or a lost art in some localities. The work of the National Association of Sheet Metal Workers, however, is making glad the waste places in its advocacy of honest tin; and if they persevere, even the saloons will be roofed with "Target and Arrow" or some other standard brand and the town will be "dry" above even if it is wet below.

Among the accessories to the complete equipment of school houses and public buildings where an audience gathers, the Hallen combined cloak and hat rack, manufactured by Peter Hallen, of Brookings, South Dakota, is most practical. Instead of the close, unsanitary cloakrooms usual to school houses, the installation of the Hallen rack gives a complete receptacle for all outdoor garments in a form that is most readily accessible, and at the same time convenient and sanitary, as they swing freely and are quickly dried when damp. It is made of soft steel with screen-wire partitions and is installed in the hall, doing away with the necessity of cloak-rooms that are so often placed under stairs or other corners where room can be found, but usually where they are most dangerous from a sanitary standpoint and risk from fire. It is made in three regular sizes, for primary, intermediate and high-school grades, and special sizes and heights when ordered, and is ornamental as well as of the highest utility.

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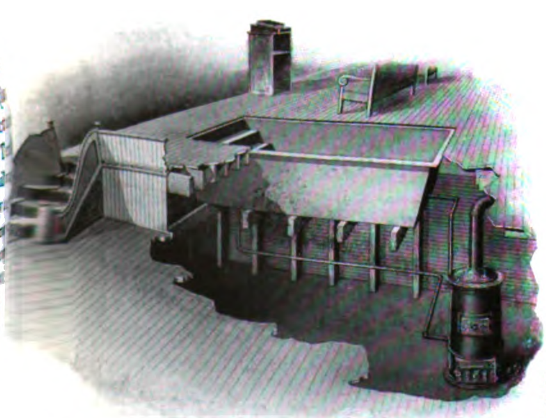

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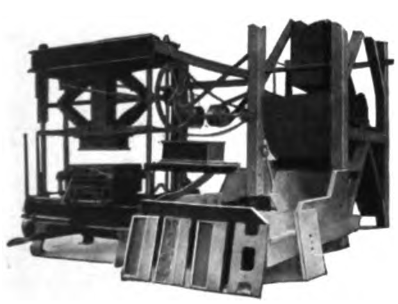

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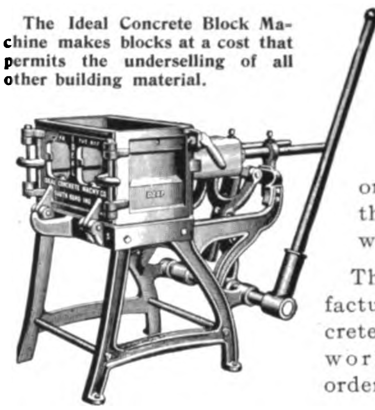

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ROBERT CRAIK McLEAN, EDITOR.

Phenomenal Building Statistics For January

While the building operations throughout the country for the month of January show a falling off of about fifteen per cent, this is largely due to the decrease of twenty-nine per cent in New York. Throughout the country, especially the South and West, even the high tide reached last year has been increased enormously and the manufacturers of all lines of building material can anticipate all the business their greatest capacity can supply, with a surety of its continuance for several years. Operations for January show a total of $32,257,552, as compared with $38,677,587 for January of last year. Aside from the deficit in New York, the operations are on a par at least with last year, and some of the cities scattered through all sections show that the demand for construction is still steady and growing, many showing a phenomenal increase. Indianapolis has increased 223 per cent, Duluth, 23; San Antonio, Texas, 148; Lincoln, Nebraska, 139; Cincinnati, 110; Columbus, Ohio, 106; Chicago, 16; Philadelphia, 43; Portland, Oregon, 48; Mobile, 35; Omaha, 37; Rochester, New York, 37; Washington, D. C., 63; St. Louis, 16; St. Paul, 12; Worchester, Massachusetts, 75; Pueblo, Colorado, 95; Atlanta, 56. The distribution of the building industry has never before been so scattered throughout the country as these statistics show, and the material manufacturers, and the architects who design the structures are certainly to be congratulated upon the rosy outlook for the year.

Practice Regulation Bills Before States

There seems to be a general movement by the profession toward securing state regulation in practice, in New York, Indiana, Wisconsin, Minnesota and Oklahoma, each having similar bills before their legislatures. That such regulation is beneficial there can be no doubt, and that it is agreeable to the profession and public is evidenced by the success it has met with in Illinois, which was the first state to adopt the measure, where it has not been seriously objected to by profession or people since its provisions and operation was understood. The bill now before the legislatures of the state of Minnesota, which is printed elsewhere, is a fair sample of the provisions which architects urge in behalf of the profession and the people. In fact, the measure is more largely, if not entirely, in the interest of the people, as the architect is purely professional in his practice and is "the agent of the owner", and the main purpose of such a regulation is that the owner may know that his agent is qualified and competent. Minnesota, which has always been in advance of other western states in regard to architectural practice and had a state association of architects in 1884, should pass this bill with the unanimous concurrence of both branches of the legislature.

Illogical Criticism of Architects' License Laws

One of our "esteemed contemporaries", in speaking of the attempt to pass an architects' license bill in a western state, decries the purpose, and assumes that the wish to place practicing architects under state regulation is voiced "by some body or clique of architects who imagine the meagerness of their own incomes is due to the fact that they are not tagged and labeled". The writer of this rather absurd conclusion should know, if he does not, that the assumed purpose of the examination and licensing of architects is to protect the public from incompetent practitioners rather than the pockets of a body or clique, and that "foreign" architects come under the law for the same purpose, and not to block out competition. There may be good arguments against state control in the practice of architecture, and if there are, they should be found and made use of rather than condemning the system with statements that have no basis in fact. As everyone knows, the fee is but to pay for the cost and maintenance of an examining board, and the examination to ascertain the extent of knowledge of the applicant, and no architect can object to paying the small sum required or demonstrating his knowledge, if a real good is accomplished, and the public is protected from the incompetent.

Fireproofing Applied to Passenger Steamers

In presenting drawings and description of fire-proof excursion steamers and ferry-boats, it is hoped that general attention will be called to the necessity of fireproofing and also showing the limitations of such construction on passenger boats. In modern navigation the greatest danger is from fire, the perfection of engine and the stability of hull making a total destruction from storm almost impossible, especially in inland or land-protected waters. There is no material so adaptable to the interior construction of vessels as wood and none that give so many possibilities for danger from fire. Lightness is imperative to a certain extent, and so is incombustibility, and these two qualities must be met as far as possible in all interior construction. As passenger business is rapidly increasing with the population, both in ferry and excursion lines, and new boats are being constructed to meet it, definite fireproofing standard should be set by marine law, and that standard raised to the limit of feasibility. The fact that boat travel is the safest known, and more people are killed on the streets of New York every year than are drowned in the combined marine disasters of the world, is no argument against a still further immunity if it can be purchased by strict laws in regard to the interior construction and finish of passenger boats of all descriptions.

Revision of New York City Building Code

New York is to be congratulated upon obtaining a capable commission for the revision of its building code, and the appointment of its members without political interference or affiliation. The commission is composed of Charles H. Israels, of Israels and Harder, and Electus D. Litchfield, Architects; Rudolph E. Miller, structural engineer; Charles O. Brown, sanitary engineer; Charles G. Smith, representing the Board of Fire Underwriters; George Vassar, Jr., and Theadore Starrett, builders; George Harsch and Thomas F. Cosgrove, mechanics; and William Blau, counsel. Its personnel gives assurance that a proper and thoroughly intelligent revision will be made, and it is hoped that the people understand the significance of this and fully realize its potential results to the city as well as to the building trades.

AMERICAN COLOR WINDOWS

BY JOSEPH LAUBER

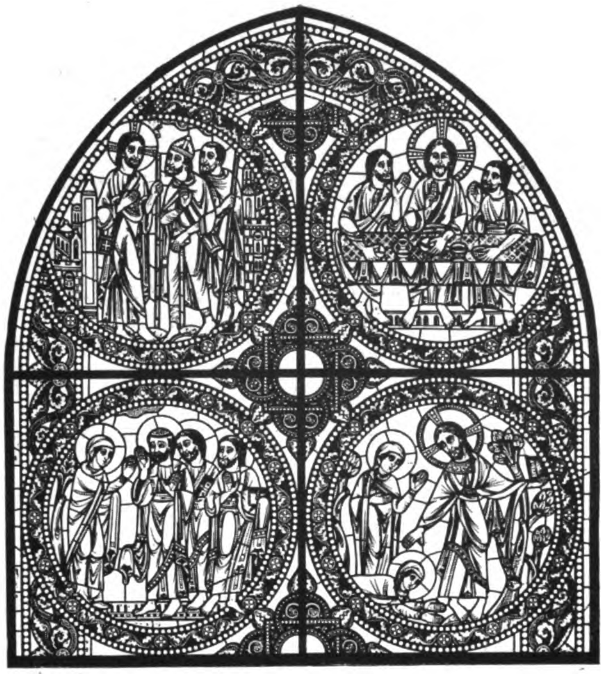
Window from York Minster

Note the scarcity of leading. Architectural parts nearly all painted.

A FRENCH ARTIST, traveling in the United States, remarked to a friend: "There are two phases of art in this country of which you have reason to be proud: your landscape men have an individual way of interpreting nature, especially the poetic side, and you are doing things in glass which call forth the admiration of those of us whose minds are not ossified by the traditional. Of course, a great deal of the latter work which I have seen is bad, but some is of surprising beauty of color and originality of treatment; we have nothing like it in modern work in Europe, and I wonder if your countrymen fully appreciate it".

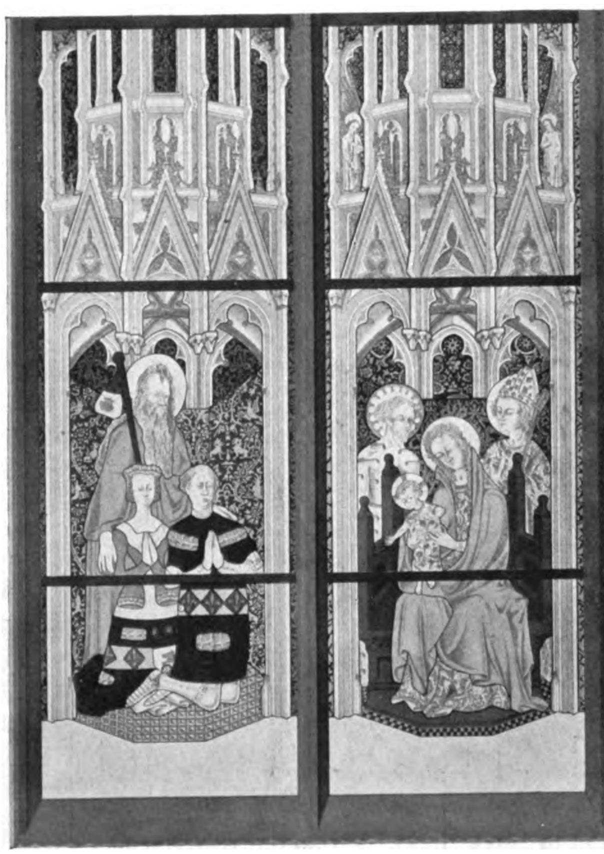
This leads one to the observation that the term "stained glass", so generally used, is a misnomer when applied to American glass, there being practically no staining done, as the pigments used are molten in, not only in even tints but in the utmost variety of blended tones. Let us consider for a moment the old and newer European methods:

In the twelfth century the palette of the artist in glass was very simple, red, blue, and clear being his chief colors. Later the yellow silver stain was invented. His colors were produced by the addition of metallic oxides in the melting pot, hence the name "pot metal". The clear glass not having the perfection of later make, was anything but clear. Neither did the colored glass have the evenness and transparency of the latter makes; but this was really to the artist's advantage. His "leading" was liberal and the design was further enhanced by the application of a monotone pigment which served the double purpose of ornamenting and enriching as well as stopping out



Chartres Cathedral—Twelfth Century

the light where it was not wanted. Later, the separate pieces of glass became larger; a plentiful use is made of the yellow stain; the pot metal as well as the white glass become clearer and clearer; the glass



Section of Window from Bourges

Presumably latter part of tenth century. Sparse leading.

Window in Chartres Cathedral
Late twelfth century. Leading in drapery arbitrary.

Window in Chartres Cathedral
Late twelfth century.

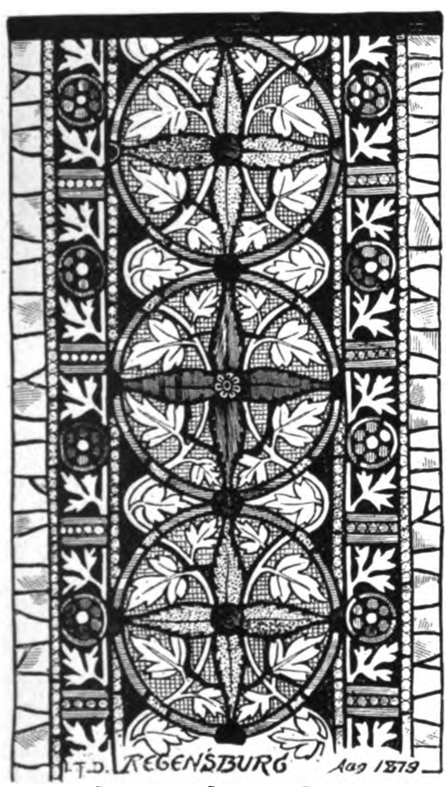
painter becomes more clever, in fact, so clever that, in the later renaissance, the period of the decadence of the art, a window was designed without any reference to the conditions of glass, or the use of leads as an integral part of the design, but more as a painting proposition, the leads being considered simply as a necessary evil to hold as large pieces of elaborately stained and painted glass together as possible. No doubt time has added to the beauty of the older glass. Note the iridescence of old farm-house windows, exposed many years to the rays of the sun; but compared with all the cleverness of the painting and staining of the late renaissance work, the earlier has, owing to the closer leading and the less mechanical perfection of its material, a charm and a vibration of transmitted light all its own.

The methods prevailing in England and the Continent have undergone very little change. "Cathedral glass", which is of an even color throughout, is chiefly used, cut in large pieces as compared with our work, and the folds of drapery, foilage, architectural detail, etc., are painted on these sections of tinted glass usually in monochrome, the lead being used rather sparingly and playing small part in the constructive lines of the windows' design, the flow of drapery or the intricacy of foilage. But as a large scale of figure is demanded in the average windows now-a-days, our friends across the sea found that richness of effect, when the large scale figure was made of the flat tinted material, was out of the question—the window had a thin and meagre look; in consequence, the expedient of adding a rich pattern in pigment to draperies, etc., was adopted to give more "quality" and "vibration".

Not long ago one of the foremost English artists came over here to see how his windows, made for

Marriage in Cana
Late thirteenth century.

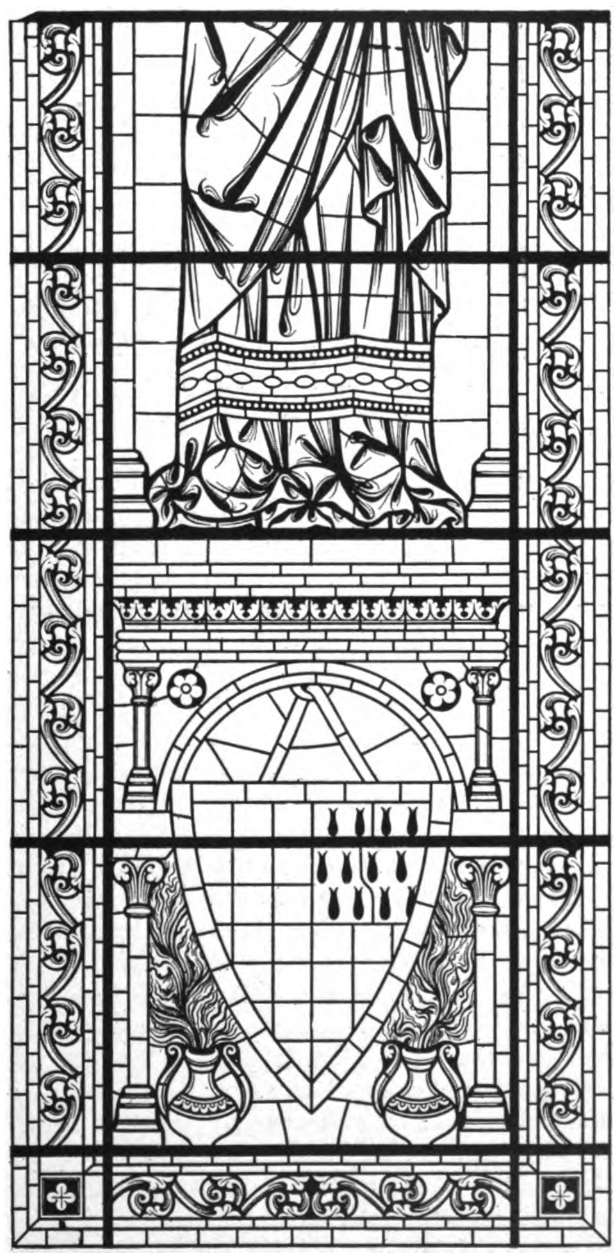
this country, looked in place. He expressed himself as very much disappointed, attributing the trouble to our "beastly atmosphere", which was so clear that his work looked thin and papery. It is possible, however, that they may have looked so by juxta-



Section of Grisaille Glass
Fourteenth century.

position with some of the best windows of American make, with their luscious depths and palpitating quality of color.

I will give only the merest outline of the technique as it has developed here, interesting as it is. Described fully it would take up the space of a magazine article by itself. In the first place, flat tinted glass is but little used, the colorings, of an infinite variety, being loosely blended in the manipulation of the glass in the molten state. Thus, for instance, we find, in one piece, tones from deep blue to greenish and golden; added to this is a slight density or resistance to light in the nature of an opalescence. The streaks and variations in this the artist uses for his purpose, and one can readily see that when judiciously selected and closely cut, and perhaps overlaid by other tints to produce greater depth or harmony, if skillfully and artistically done, the result may be very beautiful; but if these two latter conditions are lacking the result is aggressively bad, the beauty of



Window in Chartres Cathedral
Late twelfth century. Leading in drapery arbitrary.

Section of Medalion Window at Mans

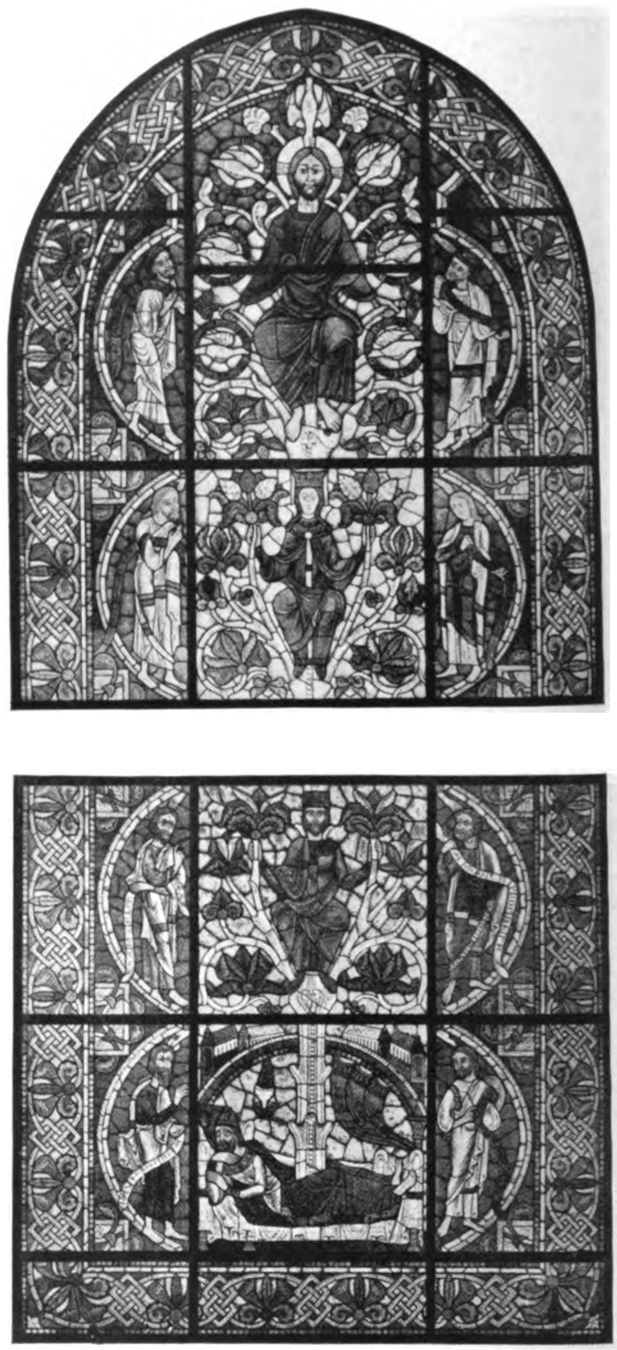
Architecture used as part of design.

the glass itself seeming to revolt at such handling.

The lead line plays a much more important part than in the European windows; as there is so little painting done, the leads, of which these are a perfect network in the better class of American window, should form the backbone of the design.

The most conscientious of our artists, after the sketch and full-size drawings are made, are apt to make a special drawing of the lead lines, giving much study to that part, so that, even if the window were made in clear, colorless material, the arrangement of lines would be handsome by itself. Leads vary from the width of a thumb nail to one-twelfth of an inch, and far from being a drawback in a window, as some people imagine, a well considered, vigorous line only adds character and masculinity to the artist's work. The monochrome painting of the flesh portions in the European window is superseded by the use of a full palette; the artist feeling that with the great richness of color in the rest of the window, the flesh tones should stand in adequate relation. Sometimes as many as three thicknesses of glass are overlaid (the techincal term is "plating") so as to bring about the greater depth and harmonization of color, our artists striving for tonal relation in a manner unheard of in the work of our European brethern of the past or present, although of late some attempts are being made in this direction by the latter.

What, then, all considerations of design apart, is the essential difference between our windows and those of European make? Even in the late Gothic work accidental variations in the color of glass were utilized, so there is nothing particularly new in that. Speaking broadly, it is the opalescence of the material, its greater resistance to sunlight, further the greater range of color gradation. Also the reduction to a minimum of the application of enamel colors or



Chartres Cathedral

Thirteenth century. One of the handsomest specimens of Jesse windows. Closely cut and leaded.

painted surfaces. In technique, as noted, the closer leading and overlaying of colors. It may be objected that a window should have no resistance to light. That may apply to some cities and climates, but not, as a whole, to ours. A cathedral glass window, in our atmosphere, unless heavily painted, is apt to look "thin". As to the profuse use of pigments, let me quote the excellent treatise of Lewis F. Day, a book written from the English view point at that:

"It is in the nature of things that colour upon the surface of glass cannot have the limpid depth and luminosity of colour, suspended, as it were, *in* the glass itself, and that to deepen the colour of glass by painting is to dull it. Enamel colour is, by comparison with pot metal, poor, thin and garish. Painted shadow is heavy, lacking at once the translucency of glass and the transparency of shadow, for its depth is obtained only by the density of the opaque pigment used". Further, in speaking of the refinement of painting on glass: "But ultra delicacy and refinement (which were the *raison d'etre* of enamel) and strong glazing lines, did not go well together—the leads were apt to look brutal, the painting to look weak by comparison".

(To be Continued)

ARCHITECTURE AND GARDENING IN A BUSINESS DISTRICT

BY CHARLES H. RAMSDELL

A RATHER new treatment of an office building and manufacturing plant has been given by the Cream of Wheat Company to its building recently finished in Minneapolis. The building gives office accommodations for the company and space for its power plant and also for the manufacturing of its product. Considerable space has also been reserved outside for a garden spot through which the employees pass to and from work. Being located in the heart of the city, the building and its grounds hardly give the appearance of a manufacturing plant.

The building is of six stories, built of yellow brick and terra cotta. The design is the work of Harry W. Jones and is admirable in all its details. But going beyond the erection of its well designed home, the company has given its surroundings something more than the stone sidewalk and paved streets about the usual city building. This work on its grounds was given to Warren H. Manning, the well-known landscape designer, and was carried out according to his suggestions and advice.

The plat is divided by the entrance walk, thus giving a more or less formal effect to the garden as a whole. The space available is too limited for work with trees or even large shrubs, so that herbaceous perennials and annuals have been used. This gives a foliage effect not so heavy in mass and still much preferable to a lawn with the building rising abruptly from it. The columns are to be draped with the graceful bittersweet and clematis where possible. The native wild grape is seen on the building itself.

It was desired to thus soften the building lines with vines, to afford a small lawn with border planting for its setting.

The city conditions are somewhat severe on plant growth. The shade of surrounding buildings, the dust and smoke, make the selection of only the hardiest plants imperative. A succession of flowers, according to season, is effected, and annuals are used at the borders to give a brighter effect in summer and fall, when foliage is otherwise dull.

The plants used include the peony, bleeding heart, golden glow, the dwarf spireas, tiger lily, a small number of low shrubs, snowberries and Indian currants; such annuals as geraniums, cannas coreopsis, salvia and lobelia. Therefore, one can find variety from spring till fall, from bleeding heart to salvia.

When one sees a spot of ground in the city thus utilized, one can hope for something else besides stone and brick, cement and pavement in the downtown district. And is not a bit of green, with plants and flowers, worth while to make one pause to enjoy it in the hustle and hurry of every-day business life?

THE PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS

The seventeenth annual convention of the Province of Quebec Association of Architects was held at Montreal, on January 24th, 1907. There was a good attendance of the provincial architects included in the 112 members of the association.

The council reported progress upon the conditions of the Library, the Sketching Club, which has weekly meetings during the summer and winter months, the work in the former consisting largely of study of old works for which both association and private prizes were given and the drawings exhibited.

The World's Congress of Architects was reported upon by Messrs. A. T. Taylor, A. Chausse and J. S. Archibald, who attended; work upon the passage of a by-law regulating the erection of buildings; report of A. Chausse, delegate to the A. I. A. convention; the duty on plans; scholarships; civic improvements and other matters of benefit to the members of the association and the public as well were considered.

The officers elected were: President, R. P. Lemay, Quebec; First Vice-President, D. K. Brown, Montreal; Second Vice-President, L. A. Amos, Montreal; Secretary, J. E. Vanier; Treasurer, J. R. H. Gardiner; Council Alcide Chausse; W. S. Maxwell, J. C. Marchand, L. Lemieux and Alp. Piche, of Montreal, and E. B. Staveley, of Quebec.

The report of the Quebec section showed a balance of $245.61 in the treasury and that of the Provincial association $4,183.96.

An enjoyable banquet closed the seventeenth meeting of the Quebec association.

ASSOCIATIONS

MICHIGAN CHAPTER A. I. A.

On January 17th, at the invitation of the Michigan Chapter of the American Institute of Architects, Mr. Henry V. Lanchester, architect, of London, England, addressed the chapter and friends in the hall of the Detroit Museum of Art upon the subject of civic improvement and its reference to the city of Detroit. While largely confined to special recommendation in regard to the beautifying of the city, much of the address had to do with the subject in general, and is applicable to all cities and conditions.

In regard to this Mr. Lanchester said:

"Only gradual and persistent effort, backed by a force of public opinion that is as yet almost entirely lacking, can overcome the difficulty arising from the objectionable results of manufacturing methods. We can but scheme the city so that they may obtrude themselves as little as possible. The official and recreative sections of the city should naturally take positions between the residential and commercial portions, and would offer a valuable means for reconciling the divergent characteristics of those sections. On the other hand, the educational portion should be somewhat more remote from the business center, and should extend as far as possible through the midst of the residence district, that the scale of its buildings and their surrounding open spaces may break the inevitable monotony of huge areas of private houses. Parks and open spaces, minor municipal buildings like primary schools and branch libraries, should be grouped to suggest an ordered dignity, that the social aspects of municipal life may not degenerate into a mere aggregation of people with sordid aims and limited outlook. Buildings should be placed so that they may weld into their surroundings, and when a number are grouped together an effort should be made to connect them structurally or otherwise. Rather than continue the present unhappy system of dropping public monuments about haphazard, like lamp posts, a loggia, podium or terrace might be suggested for the sake of its mass and continuous lines. No city can be considered complete without having the salient features of its history written on its stones. When this is done with true artistic perceptions, the feeling of citizenship and pride of community must be fostered. The interiors of public buildings, like the city hall, the courts, libraries, markets, theatres and railway stations should be decorated and made beautiful by the efforts of the best artists and sculptors, to elevate the standard of the popular taste and to interest the whole population in their social and municipal life. Municipal art commissions should have actual jurisdiction over all works of art acquired by the city, their location or removal, all designs of municipal buildings, bridges, fences or other structures to be erected on public land or extending on streets or parks and the selection of all art productions. In such matters as these, we may well be thorough-going socialists, and we shall reap our reward in the enlarged outlook for the individual and increased sympathy between all whom the clash of city life brings together".

Mr. Lanchester is a member of the Royal Institute of British Architects and came from England to attend the Semi-Centennial celebration of the Institute, at Washington, and before returning inspected architectural, industrial and municipal features of cities as far west as Detroit.

TWIN CITY ARCHITECTURAL CLUB

The annual meeting of the Twin City Architectural Club was held in the rooms of the Builders' and Traders' Exchange at Minneapolis, February 8.

There was a good attendance of members from Minneapolis and St. Paul, and the proceedings showed marked enthusiasm. Many projects for the development and advancement of the club in architectural knowledge were planned for the coming year. The following officers were elected:

President, A. R. Van Dyck; vice-presidents, N. E. Mohn, Minneapolis, and Ralph Mather, St. Paul; secretary, G. E. Wiley; treasurer, W. F. Maine; directors, E. M. Hartford and F. H. Wallis.

CHICAGO ARCHITECTURAL CLUB.

In the seventh annual scholarship competition of the Chicago Architectural Club the competition is divided in two parts, the program for the first part being given, the second part to follow at a later date. —The subject is for "a branch municipal court" and the general conditions for the first competition assumes that the city of Chicago will construct a building in each of the three sections of the city, to accommodate the branch municipal courts. An ordinary city block, approximately 400 feet, will be made available for these buildings and it is intended that the court building will be made the architectural feature of the square and that the vacant ground will be improved with grass, trees and shrubs. The building shall occupy the center of the square, but the competitor may or may not show the landscape treatment of the square. The details of the competition are issued by the club, the time limit being February 18th, 1907.

The donor of the prize of $500 is Mr. E. G. Elcock, of Hansel-Elcock Company, the winner to use the amount in European travel.

ILLINOIS CHAPTER A. I. A.

The Illinois Chapter of the American Institute of Architects held its regular monthly meeting on February eleventh. The principal business before the meeting was the report of the delegates to the semi-centennial convention of the Institute.

The Secretary reported that the chapter had received letters from three chapters stating that they had asked the board of directors to appoint Chicago as the place for holding the next convention of the Institute, and several others were expected to do likewise.

Mr. Irving K. Pond stated that the Board of Directors of the Institute had already acceded to this request, as at the meeting of the Board of Directors on February 9th, 1907, the convention was ordered to be held at Chicago some time toward the close of the year, the date to be hereafter decided upon.

ILLUSTRATIONS

Three mural panels in the city hall at St. Louis, Missouri, by Frederick Lincoln Stoddard, of New York, are presented. Two of them are from a series of four and represent the Louisiana purchase occupants—one, the young French peasant girl, who cultivates the fleur de lis in her home, while Spain, the real owner, gives protection by watering the plants. The other represents the transfer of the young girl (afterwards Louisiana) from France to the United States. While thus representing historical facts, the evident intention of the artist was to decorate rather than paint historical pictures. In January issue the two groups in the McKinley and Yeatman schools, by the same artist, are in the same vein. In the McKinley decorations the middle panel represents President McKinley at his desk, surrounded by female figures representing War, Peace, Mercy on the left, History just behind him, and on the right, Law, Justice and Truth, all typifying the moment in his administration when he was laying out his Cuban-Porto Rico policy. The wing panel to the right represents "America leading in the young Cuba", in the left the old world powers; Spain, with her hands stretched out to England, France, Russia, and the Church, as asking their aid and sympathy. In the Yeatman school paintings the treatment is of a realistic nature, so far as subject is concerned. Mr. Yeatman was the head of the Western Sanitary Commission during the Civil War, and he is represented in the act of receiving the wounded soldiers at the levee as they were disembarked from the hospital boats and taken to the hospitals. Two of his co-workers, Dr. Wm. G. Eliot and Mr. Partridge, are represented on the right. Mr. Yeatman was the head of the Provident Association movement in St. Louis, and his reception of a poor old woman and her little grand-child form the subject for the left wing. He was a man beloved by the whole community and especially by children, for whom he always had time, and his quaint old-fashioned gallantry to little girls is the subject of the panel to the right and is, in fact, the portrayal of a most usual occurence familiar to all who knew him. Following the paintings in the DeWitt Clinton school, in New York, by Mr. Turner, these are the first in schools of importance in the West. There is no place where mural paintings are so appropriate and can bring so large educational returns as in the decoration of our school buildings.

Statuary is represented by the equestrian statue of General John B. Gordon, by Solon Borglum, of New York, and "Pulling", a model by his pupil, Paul H. Manship. The latter is well worth more than passing mention, being the first group work of its designer. Paul H. Manship was born in St. Paul, Minnesota, twenty-one years ago last Christmas eve, is a graduate of the Mechanic Arts High School of that city, and from the time of his graduation until a year ago, when he went to New York with the expectation of studying at an art school, supported himself by making original drawings for commercial purposes. Although he had neither influence nor acquaintance in New York, he chanced to attract the attention of Mr. Borglum, who offered the young artist the rare opportunity of becoming a member of his household and working in his studio at Mamaroneck, Long Island. It is evident that Mr. Borglum has found in the young sculptor a student worthy of his aid and instruction, as "Pulling" certainly presents altogether unusual merit for the work of a young man who has had less than a year's technical training in his art. Young Manship is a nephew of Col. Luther B. Manship, of Jackson, Mississippi.

In the illustration of glass design by Joseph Lauber, an example of some of the best modern work is shown and will be followed by similar work of other artists. In thus presenting the three accessory arts, sculpture, mural painting and color glass, which with decorative tile are permanent features of our illustration pages, it is that the best examples of each may be constantly before those who design in rigid lines and give relief from the monotony of house and plan reproduction, and also to impress upon Architects and clients the fact that the best art in each is being produced by the artists of the United States.

Among the many fine photographs presented in these pages, by the Los Angeles photographer, William Graham, those of the Hollywood Convent, reproduced in January issue, are especially deserving of notice. His understanding of the climatic conditions in California is one explanation of the uniform clearness of detail in his photographs.

MINNESOTA ARCHITECTS' EXAMINATION AND LICENSE BILL

A BILL FOR AN ACT TO REGULATE THE PRACTICE OF THE PROFESSION OF ARCHITECTURE IN THE STATE OF MINNESOTA.

SECTION 1.—Within sixty (60) days from and after the passage of this act, the Governor shall appoint five (5) persons, which persons so appointed shall constitute a board to be known and designated as "The Minnesota State Board of Architecture". The persons appointed to said Board shall be members in good standing of the Minnesota Chapter of the American Institute of Architects. Two (2) members shall be appointed for the term of two (2) years; and three (3) members shall be designated to hold office for four (4) years, and thereafter upon the expiration of the term of office of the persons so appointed, the Governor shall appoint a successor or successors to such out-going person or persons, whose term of office shall have expired, to hold office for four (4) years. Each member shall hold over after the expiration of his term of office, until his successor has been duly qualified and appointed. Any vacancy occurring in the membership of the Board shall be filled by the Governor of the State for the unexpired term in like manner. The members of said Board shall serve without compensation of any kind from the State of Minnesota. Each member of said Board shall be entitled to ten dollars ($10.00) for every meeting of said Board, which shall be paid out of the fees and dues collected from the applicants and holders of certificates.

SECTION 2.—The members of the State Board of Architecture shall, before entering upon the discharge of their duties of office, take and file with the secretary of state the constitutional oath of office. The said State Board of Architecture shall, within twenty (20) days from and after the appointment, meet and elect from their number a President, Vice-President and Secretary-Treasurer. Said persons shall hold office for one year, until their successors have been duly elected and qualified.

That said Board shall, at said time as in this act provided, adopt a code of rules and regulations for its government in the examination of applicants for certificates to practice architecture in this state, and such other rules and regulations as may be necessary and proper, not inconsistent with this act. The Board may from time to time repeal or modify its rules and regulations not inconsistent with this act.

SECTION 3.—The said Board shall adopt a seal for its own use, which shall have the words "Minnesota State Board of Architecture" inscribed thereon, and the secretary shall have charge, care and custody thereof. The secretary shall keep a record of all of the proceedings of the Board, which shall be open to public examination at all times. Three (3) members shall constitute a quorum for the transaction of business of the "Minnesota State Board of Architecture". Special meetings of the Board shall be called by the secretary upon the written request of three (3) members, by giving twenty (20) days' written notice of said meeting, stating the time and place where said meeting is to be held, to each member of the Board.

The said Board of Architecture shall meet semi-annually at the State Capitol in the city of St. Paul, on the first Tuesday of January and July, for the purpose of transacting its business and at said time shall examine all applicants for certificates to practice architecture.

Any person shall be entitled to an examination for a certificate to practice architecture in the State of Minnesota, upon payment to the Treasurer of the Board when he makes application of a fee of fifteen dollars ($15.00), which fee shall be retained by the Board. Should the applicant pass a satisfactory examination, the secretary shall, upon the payment to him of the further fee of ten dollars ($10.00), issue to the applicant a certificate, signed by the President and Secretary, containing an impression of the Seal of the State Board of Architecture, setting forth the fact that the person therein named is qualified to practice architecture in the state of Minnesota in accordance with the provisions of this act and the rules and regulations of said Board. The annual fee herein provided for and said fee of ten dollars ($10.00) so paid to the secretary shall be retained by the Board.

The certificate to practice architecture shall contain the full name of the applicant, birth-place, age, date of issuance thereof, which said certificate shall be recorded with the Register of Deeds in the County in which said Architect has his principal place of business.

SECTION 4.—Any architect in good standing who shall show to the satisfaction of said Board that he was engaged in the practice of the profession of architecture, exclusively, for a period of two years immediately preceding the date of the passage of this act, and otherwise satisfies the Board of his ability to practice said profession, shall be granted a certificate without passing the examination on the payment of a fee of twenty-five dollars ($25.00) as herein provided, provided that such application shall be made within six months from and after the passage of this act. Every licensed architect shall annually pay to said Board a license fee of five dollars ($5.00).

SECTION 5.—After the expiration of six months after the passage of this act, it shall be unlawful and is hereby made a misdemeanor, punishable by a fine not less than twenty-five dollars ($25.00) nor more than one hundred dollars ($100.00), or imprisonment not to exceed ninety (90) days for any person to practice the profession of architecture without a certificate or license from said Board, or to sell or otherwise dispose of, for a consideration, any plans, drawings, designs or specifications for the erection of any building, or to advertise, maintain or cause to be maintained any sign, or card or other device, which indicates or might indicate to the public that he is an architect or licensed to practice said profession, or otherwise violate any of the provisions of this act.

Provided that nothing in this act shall prevent any person from making plans or specifications for buildings which are exclusively for his own use and habitation.

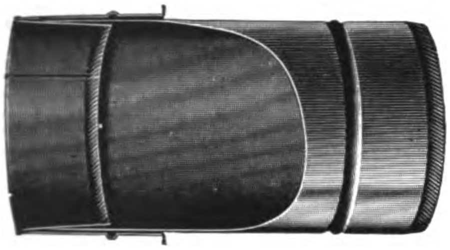
Provided further, that nothing in this act contained shall prevent the employment of any architect residing out of the state of Minnesota, to prepare plans or specifications for structures within the state, conditioned that he shall comply with the provisions of this act, except the Board shall, upon ten days' written notice to the secretary, call a special meeting for the purpose of examining said non-resident as to his qualifications to practice the profession of architecture.

Architects' certificates, issued in accordance with the provisions of this act, shall remain in full force until revoked for cause, as in said rules or herein provided for in this act. Said certificate may be revoked for dishonest practice, or gross incompetency in the practice of the profession, which will be determined by the Board after a full investigation of the charges, an opportunity having been given the accused to be heard in his own behalf, or by counsel, and said license or certificate shall not then be revoked, unless by four-fifths affirmative vote of said Board; and upon cancellation of said certificate it shall be the duty of the Secretary of said Board to immediately give written notice of such cancellation to the Register of Deeds of the County wherein the architect has his principal office or place of business, whereupon the said Register of Deeds shall mark the certificate recorded in his office: "cancelled".

After the expiration of six months, the person whose certificate was revoked may, in the discretion of the Board, be reinstated and a new certificate issued.

Every architect shall have a seal or impression, which shall contain the name of the architect, his principal place of business, and the words "certified architect", which he shall stamp on all plans or specifications prepared by him.

SECTION 6.—This act shall take effect and be in force from and after its passage.



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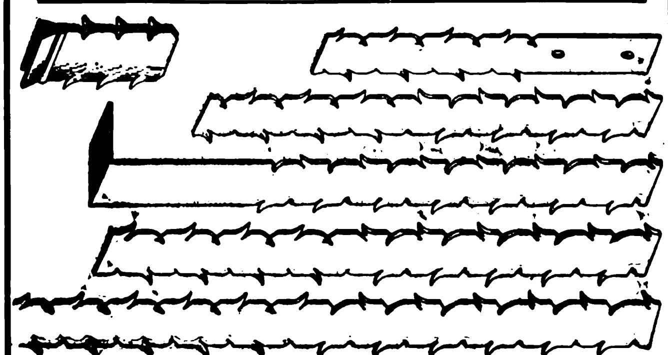

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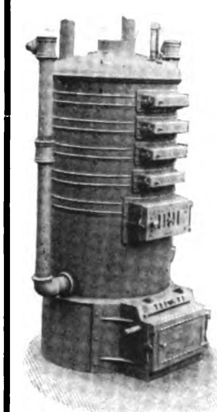

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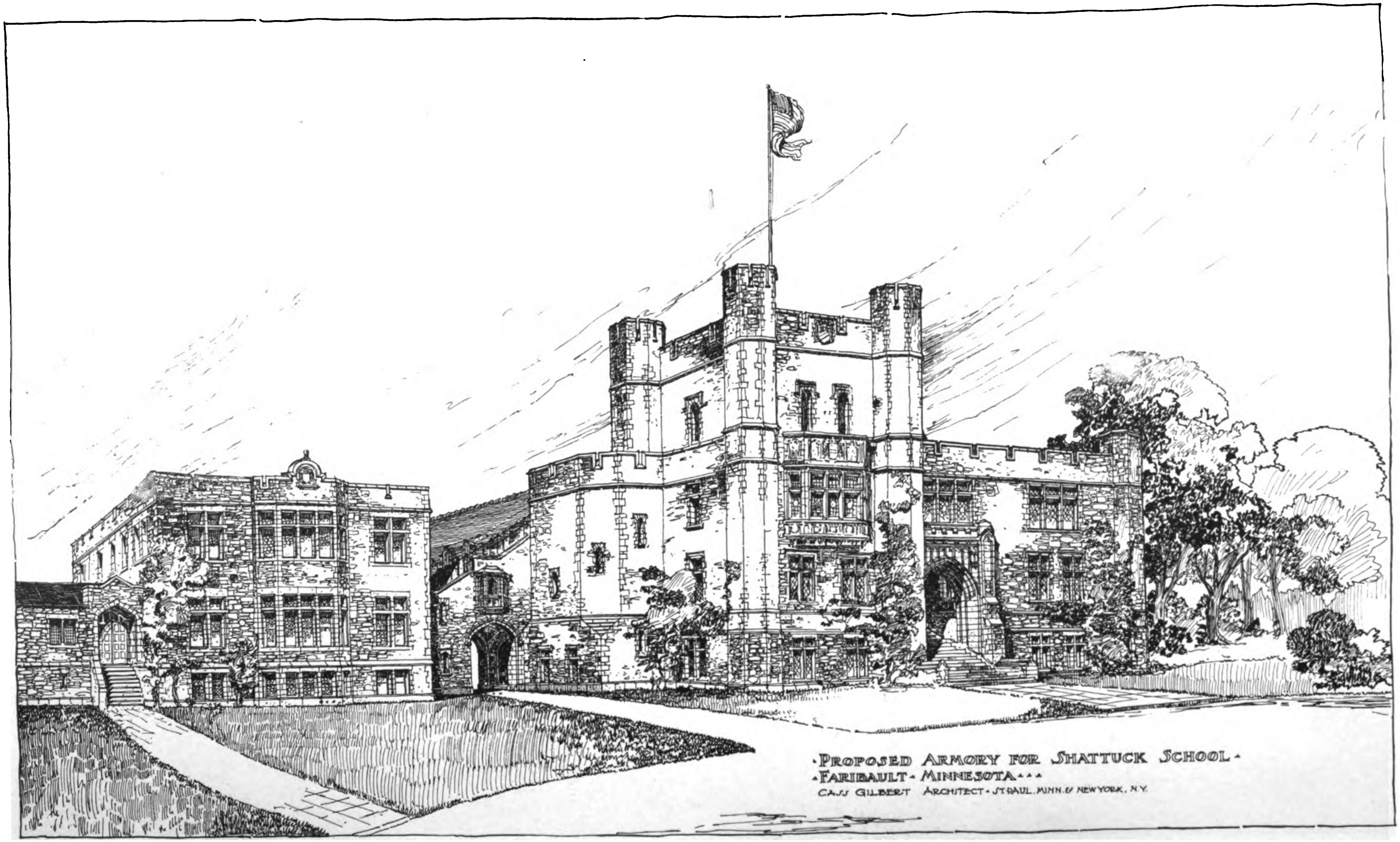
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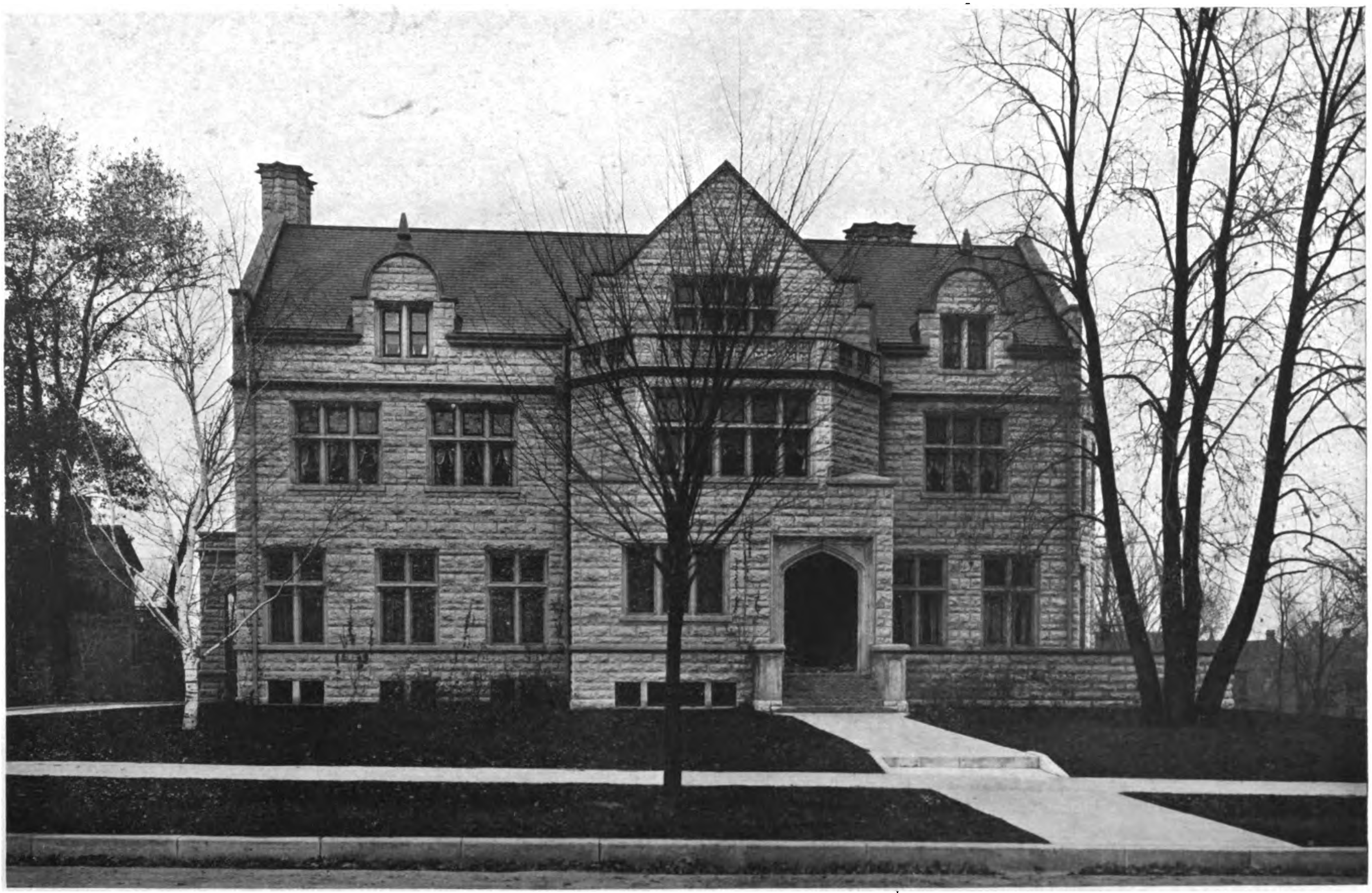

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THE WESTERN ARCHITECT
FEBRUARY
1907

REAR VIEW

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DINING ROOM IN RESIDENCE OF EZRA STIMSON, LOS ANGELES, CALIFORNIA

A. F. ROEHRIG, ARCHITECT

DINING ROOM, RESIDENCE OF EZRA STIMSON, LOS ANGELES, CALIFORNIA

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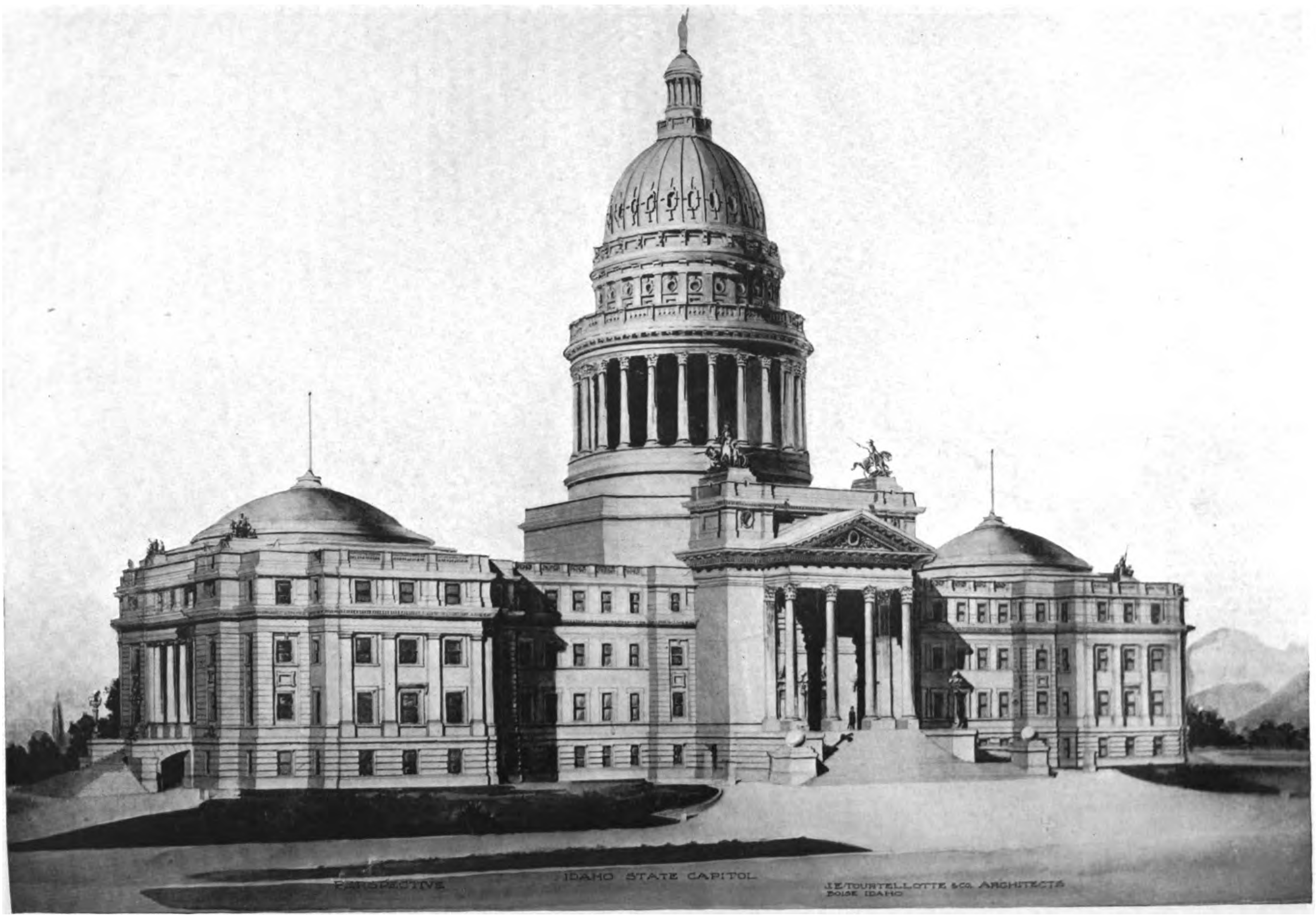

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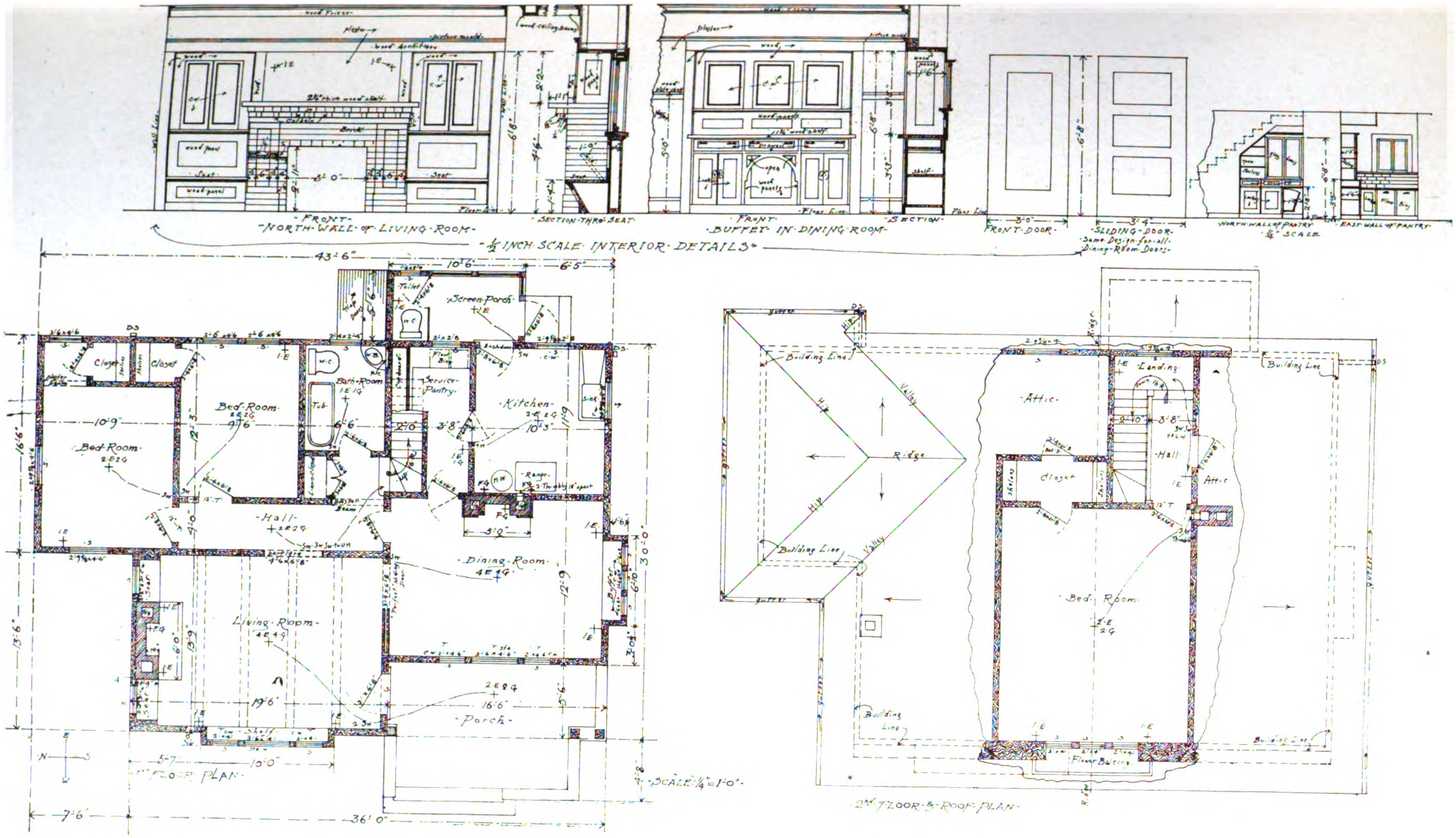

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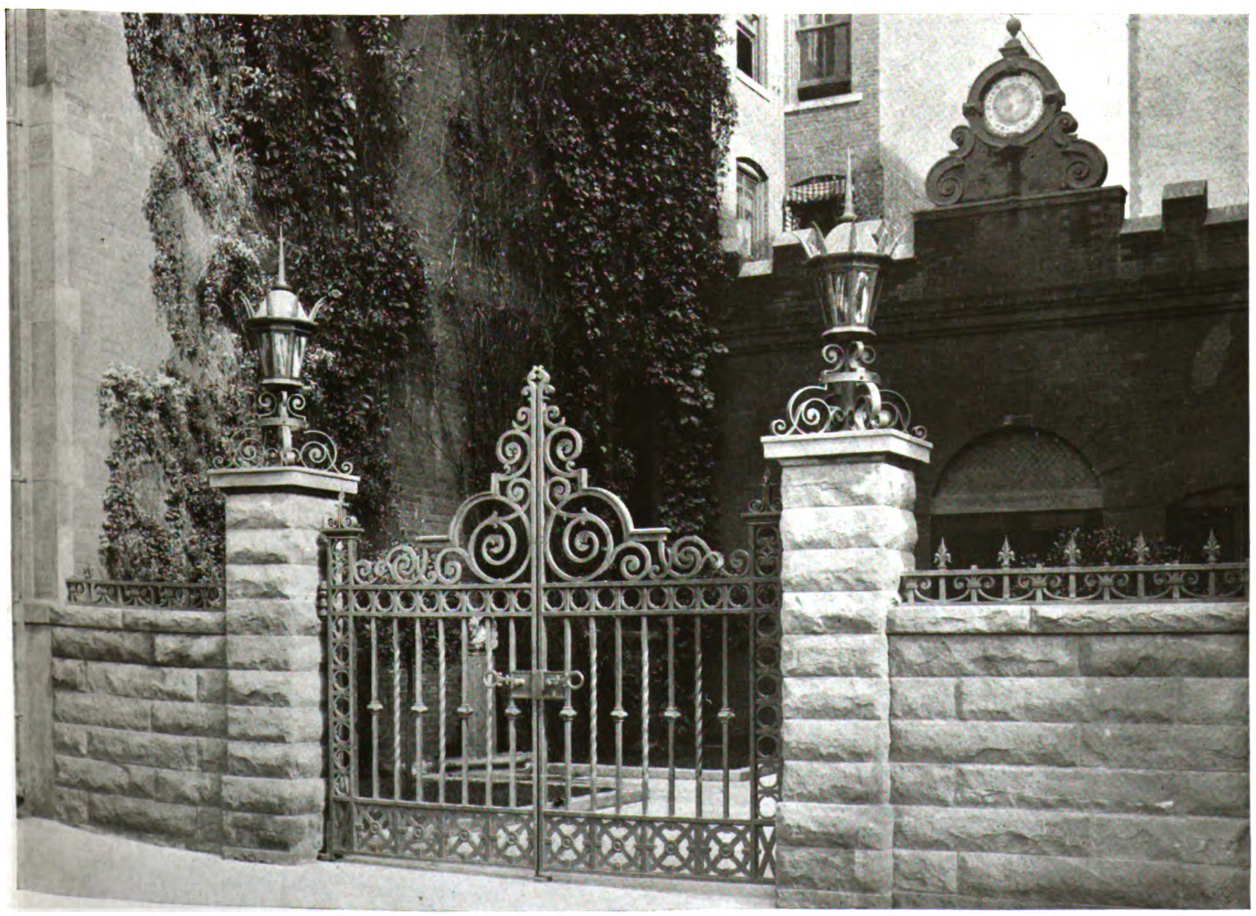

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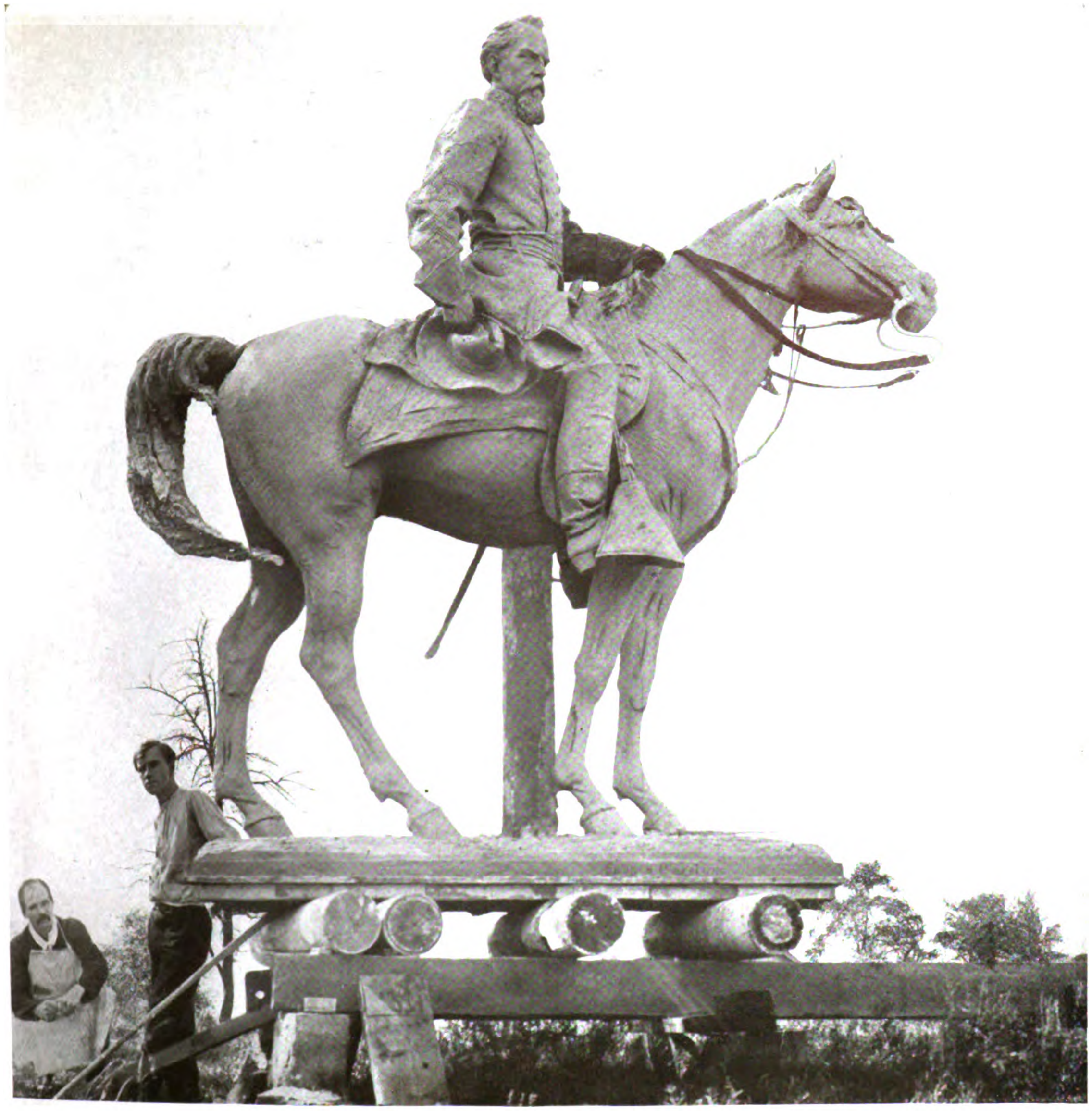

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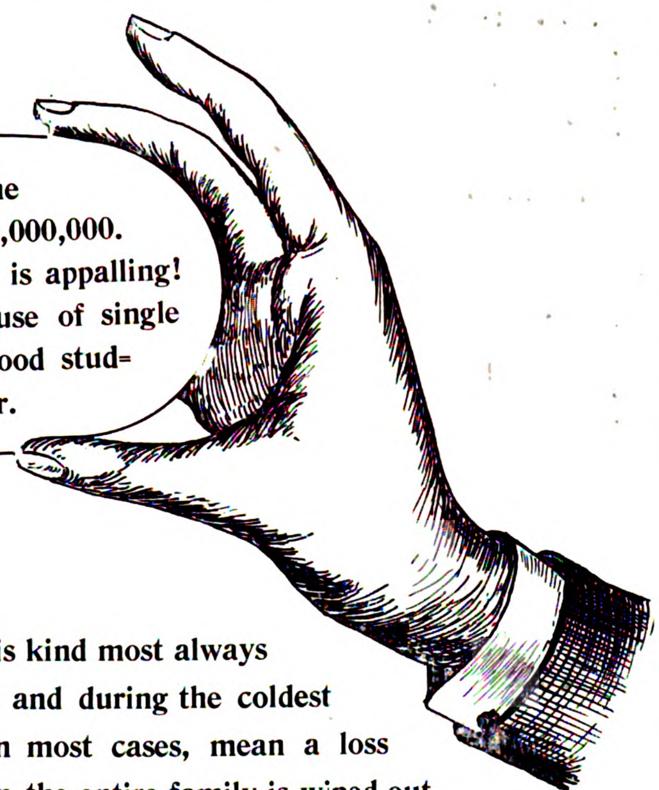
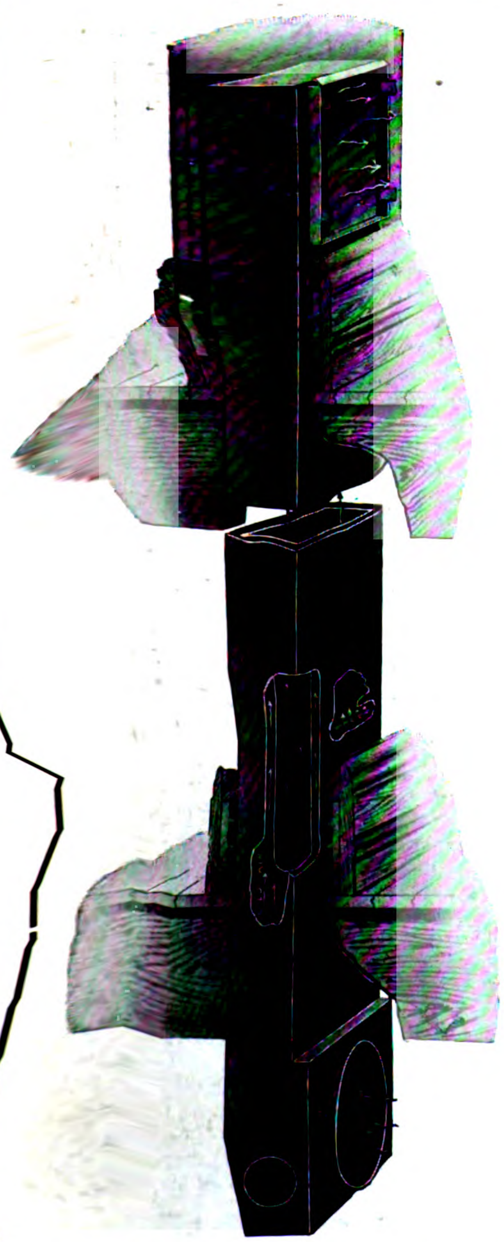
WINDOW IN TRINITY LUTHERAN CHURCH, LANCASTER, PA.

FROM COLOR SKETCH FOR A WINDOW IN RESIDENCE

Foliage, etc., most closely cut in leaded opalescent glass; background of clear glass; the natural landscape beyond playing its part



The losses through fire in the United States, of 1905, were $230,000,000. The losses of life by fire, 7,000. This is appalling! Most of these fires were due to the use of single furnace pipes that set between wood studdings and lath and plaster.



Fires of this kind most always occur at night and during the coldest weather, and in most cases, mean a loss of life and often the entire family is wiped out. These single pipes will first char the woodwork by which they are surrounded, and when the conditions are favorable, a blaze is the result.

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The Western Architect

VOLUME X NUMBER 3

Contents March 1907

Illustrations

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ROBERT CRAIK McLEAN, EDITOR.

BUILDING OPERATIONS FOR FEBRUARY.

Viewed in a broad way the building statistics from some fifty leading cities throughout the country for February, 1907, officially reported to The American Contractor, Chicago, and tabulated, are as satisfactory as could be expected by those who are well informed as to the building movement for the past few years. As compared with the corresponding month of last year there is, in the aggregate, quite a decided falling off. This was to be expected, since a constant increase was out of the question, particularly in cities where all records, all anticipations, have been broken and surpassed. In those cities, even, that have been subjected to the greatest loss, the business reported is still of great proportions, far in excess of anything recorded before the development of the building movement of the past four years. This is the waiting season, and developments as to labor, the price of material and other matters may lead to much more extensive operations in the near future. While no boom is in sight construction, in general, is in a healthful condition.

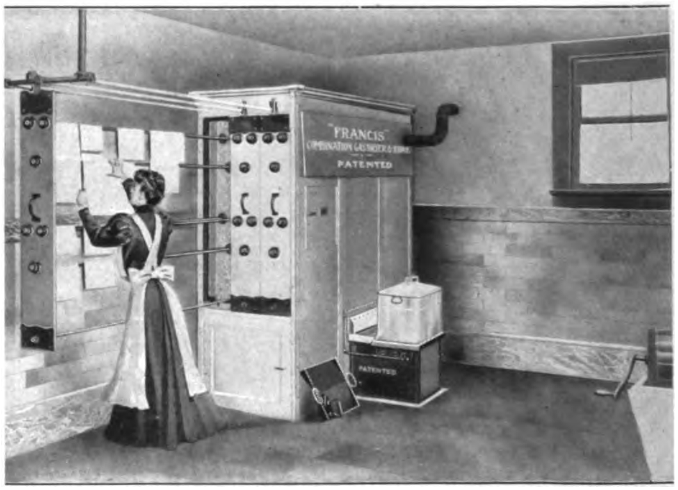
The percentage of gain in the leading cities, as compared with February, 1906, is indicated by the following figures: Atlanta, 100; Chattanooga, 57; Dallas, 43; Denver, 3; Detroit, 43; Duluth, 128; Kansas City, 29; Memphis, 57; Mobile, 924; Omaha, 17; Portland, 189; St. Louis, 4; St. Paul, 149; Seattle, 304; Syracuse, 78; Tacoma, 131; Worcester, 97.

OF INTEREST TO ARCHITECTS.

IN its circular, "Architect or Contractor, Which?" the Edward Smith Company of New York calls attention to a situation that is as common as general practice, yet it is not often placed before architects in quite so convincing a form as in this circular. It is the "or equal" phrase common to specifications, and shows that while the architect would supply the best material, the money at his disposal will, being it is to the contractors' interest to supply that which will yield the largest profit. While Edward Smith & Company, call special attention to the use of their varnishes and recommend direct specifications of them in order that the "or equal" phrase may not be taken advantage of, and an inferior varnish supplied by the contractor, the rule applies equally to all standard materials and appliances, and in this the architect alone should be the judge.

BERRY BROTHERS, the well-known varnish manufacturers of Detroit, Michigan, are placing on the market a floor finish called "Liquid Granite". We have their statement that it is a perfect finish for wood work inside or out, or for restoring oil cloth or linoleum, and as the firm of Berry Brothers' statements in regard to their varnishes have been proven absolutely reliable, this latest product of their works can be relied on to do all they claim for it in every particular.

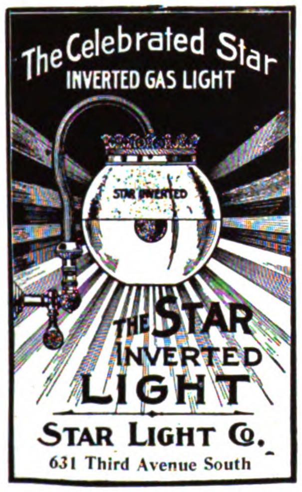
THE Francis Combination Gas Dryer and Gas Laundry Stove, which is manufactured, and has recently been put on the market, by the Chicago Clothes Dryer Company, is here illustrated. The economy of this apparatus is at once apparent when it is understood that the clothes are dried by



means of the Waste heat emanating from the Gas Laundry Stove. The cost of operating the Gas Laundry Stove ranges from about two to three and one-half cents per hour. The stove serves the purpose of boiling clothes and heating flatirons, and it heats the dryer or drying closet by what would ordinarily be waste heat; thus the expense of drying the clothes is practically nothing. These dryers are built in various sizes, suitable for residences, apartment buildings, hotels, hospitals, etc. The company reports a large sale of these dryers since their introduction, especially in its home city. A sample of these dryers has recently been placed in the display room of the St. Paul Gas Light Company, St. Paul, Minn., where prospective purchasers may have an opportunity of seeing it and investigating for themselves. Mr. C. Herbert Smith, 424 Hennepin Avenue, Minneapolis, is the representative of the manufacturers in that city and will be glad to furnish full particulars upon request.

An unusually interesting number of "Modern Sanitation", which is published by the Standard Sanitary Manufacturing Company, is issued for February. The bath in all its phases is reviewed from eblutions connected with modern athletics to the ancient baths at Damascus and Carthage. The practical articles on sewage disposal by J. J. Cosgrove, that are a special feature of this magazine, should be read by architect and layman alike. Though the aim is to popularize the products of the Standard Sanitary Manufacturing Company, the monthly issue that is sent upon application is many times more valuable, and in its particular line more interesting, than the "Woman's Flat Compendium," the "Ladies' House Elegant", or the current magazines of fiction.

The latest development in convenient, economical and brilliant gas illumination is shown in the "Star" inverted gas light, whose offices and general Northwestern distributing agency is located at 631 Third Avenue So., Minneapolis. The "Star" inverted gas light is adaptable to any gas fixture, and can be equipped with either clear or shaded globes. For the library, reading, drafting or engineering room, it excels any other known light, and as the manager of this journal uses it in his own home, he knows whereof he speaks. The light is the result of years of experiment and a great outlay of money, but the results obtained are so satsfactory in every way particular, that it seems as though the perfect light has been produced.



Stories are always interesting, and particularly when both remarkable and true, and it is in this that the pamphlet issued by the American Sheet and Tin Plate Company interests its readers, from its convincing title: "Terns Which Turns the Elements", to the data in regard to snow and wind loads which closes its fifty-five pages of interesting fact and valuable information. Not less interesting than the text is the innumerable illustrations of the tin-making process, from the transportation of the ore to the finished product, in the output of M. F. Terne plates, and text and photographs work together without statistics to give a clear idea to the reader, be he architect, builder, roofer or property owner, of its many processes which go to complete the roof that lasts. Its study is a liberal education as its make-up is a gem of typography.

The Benefit that the three-color-reproduction process is conferring upon the world is nowhere better shown than in the reproduction in color of the "Electric" flooring made by Cobbs and Mitchell Company, of Cadillac, Michigan, illustrated in their brocure "Modern Hardwood Floors". One immediately upon opening the pamphlet passes the hand over the surface of the illustrated page to learn if it is not the veneer itself that is pasted to the paper. The pamphlet is written by Henrietta P. Keath, and is supplemented by the illustration spoken of and description of the "Electric" maple flooring produced by this company. It is a superb showing of the quality of maple obtained in the Michigan woods and the flooring produced by this company.

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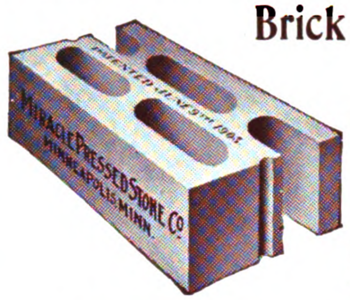

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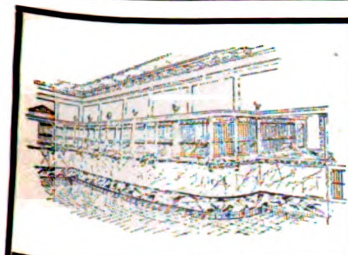

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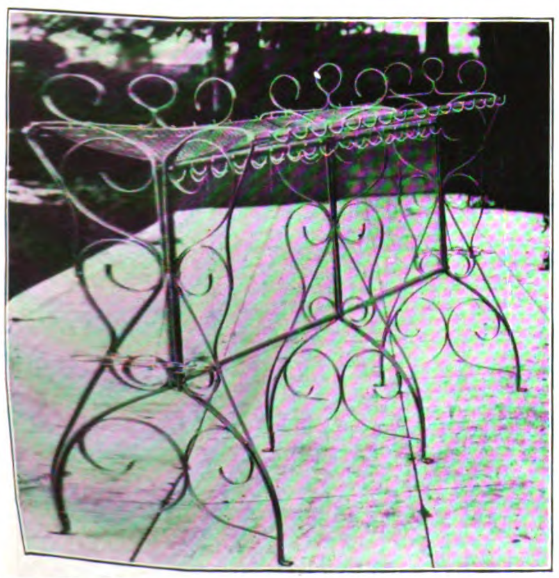

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A NATIONAL JOURNAL OF ARCHITECTURE AND
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ROBERT CRAIK McLEAN, EDITOR.

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NEXT CONVENTION AT WASHINGTON, D. C., APRIL 22-24, 1907.

More Regarding State License Laws

In opposition to the general movement toward securing legislative acts in several states providing for the examination and licensing of architects, a cotemporary recently published under the heading, "Unconstitutionality of Architects' License Laws", a ruling of the Supreme Court of the State of Washington in regard to plumbers' license law. It is apparent that the judge, who had evidently little or no idea what an architect is, or whether or not architects ever were licensed, used the word "Architect" in connection with the trades, which he thought it would not be absurd to license, so he spoke of the "architect, the carpenter, the tailor and the shoemaker". As he had previously stated that the doctor, the lawyer, the druggist, the dentist, the barber and the horseshoer had already received favorable consideration at the hands of the legislature, his opinion probably had bearing on these occupations rather than upon the licensing of Architects. It therefore appears rather "far fetched" to proclaim that his decision declared the licensing of architects to be unconstitutional. In Illinois, where the law has had its longest and most practical trial, the practice of the profession has been completely regenerated by the operation of the law, and has been placed on a par with other learned professions. But whether this is the opinion of others or not, the constitutionality of the law in Illinois has never been questioned since it went into effect ten years ago, though the Supreme Court has, as in Washington, abrogated the licensing of plumbers and horseshoers. When an architectural journal of standing will so confound the profession of architecture with the trade of the plumber, it is not strange that judges and other laymen will sometimes fail to see the difference.

Practical Municipal Education in Boston

A practical move in the direction of producing a live public sentiment in favor of further municipal improvement and the preservation of old landmarks is being made in Boston by a number of combined interests in the shape of a report published by the Boston Society of Architects. The society having called to its aid the Boston Chamber of Commerce, the Boston Real Estate Exchange, the Metropolitan Improvement League, the Boston Stock Exchange, the Boston Merchants' Association, the Boston Board of Fire Underwriters, and the Master Builders' Association of Boston, has not projected any set plan, or have any of the affiliated bodies endorsed any given recommendation, but all join in supporting the Boston society in its effort to present a number of projects, all having some bearing on the future healthful growth and æsthetic development of the city. While the purpose seems to be mainly to promote thought among the citizens, and with pertinent suggestion direct them in the right channels, the work promises to be full of results to the Boston of the future, and in many instances correct the mistakes of the past. The people cannot be compelled to build harmoniously or give up choice sites for parkways, but they can be educated into seeing the financial benefit that art well administered always brings to any enterprise.

Mad Dog Hysteria a Growing Disease

The epidemics of hysteria that one time took the form of witch hunting, still sweep the villages and towns of New England and spreads to other parts of the United States. Like revivals and other forms of emotional hysteria they usually are prevalent in winter. They now find expression in the most virulent form in "mad dog scares" and in spite of the protests of the sane newspapers, of which there are always a few that the hysteria germ does not reach, the dogs are indiscriminately sacrificed. As in the days of Cotton Mather, it required but a hint by an evily disposed person or an imbecile to start a witch-hunting crusade, it only needs a thirst-crazed dog and a mischievous small boy to set a whole town into the throes of a mad dog epidemic. That rabies is one of the rarest diseases known, and until Pasteur's wonderful "discovery" hydrophobia was comparatively unknown in France, as it is now in Germany, and in Constantinople, where dogs roam the streets in numbers it is entirely unknown, does not affect these epidemics of hysteria that are too common in the United States. Perhaps as such dementia needs an outlet, it is well that it centers on dogs, otherwise it might be the old and infirm or the babies that would be offered up to satisfy its horrible and insatiable desire to torture and destroy.

A Verdict in Favor of the Tin Roof

The National Association of Sheet Metal Workers of the United States, after a year or more spent in the investigation of the materials more commonly used for roofing purposes have, in view of its adaptability, fire protection, and durability as well as its easy application, declared in favor of the superiority of the tin roof. We do not attempt to decide how correct their deductions are, but the association not only has the courage of its convictions, but proposes to state these deductions from month to month in the advertising pages of the current magazines, and their estimate of the various points of merit upon which they are based. The association should be given full hearing and its deductions carefully considered by the profession. One point in favor of a belief in their honesty is found, from a publisher's standpoint at least, in the policy of paying advertising rates for the space occupied, instead of asking free insertion of their argument as reading matter.

Director of Works Alaska Yukon Pacific Exposition

Frank P. Allen, Jr., an architect and engineer, has been appointed Director of Works of the Alaska-Yukon-Pacific Exposition, which will be held at Seattle during the summer of 1909. Mr. Allen gained his exposition experience at the Lewis and Clark Exposition, at Portland, in 1905, where he had charge of the structural work. Mr. Allen was born in Grand Rapids, Michigan, and secured his early training in his profession in the office of his father, Frank P. Allen, Sr., who was an architect who also published books of plans of country houses. After taking a course in civil engineering at the University of Michigan he went to Chicago, where he spent six years, specializing on structural work for bridges, railroads and large buildings and proved himself very capable in his profession.

AMERICAN COLOR WINDOWS

BY JOSEPH LAUBER

(Continued from February Issue)

OF late an innovation has been adopted by some of the commercial houses, for which they claim the advantages of both the European and American methods, but which method has the virtues of neither and which has been evolved solely with an eye to profit, and if unchecked would signify the speedy debasement of our art. A full size working drawing or photographic enlargement of sketch is made; large sections of clear glass are cut on which a light tint of brown pigment has been spread; these are laid over the drawing, and the manipulator (I will not say artist) with a stiff brush or rag wipes out the high lights; for the depths he uses a brush and in black lines gives shading in the manner of a pen drawing; in the same way he even applies suppostitious lead lines. These sheets of glass are then leaded together and for the local coloring, sheets of opalescent colored glass are fastened to the back of the painted surface. Truly a cheap method, deceiving only those knowing nothing about the art of glass! Even a noble design cannot save such a window from the look of spuriousness.

Impressionism, as the word is popularly misunderstood to-day, namely, the placing of pure tints side by side and allowing the eye, at the proper distance, to blend them, is not so new a theory as some painters imagine—the primitives among the artists in glass have done this very thing, instinctively perhaps and not formulated. The older mosaicists have understood it. There is no deadness in their use of the tesserae; a green, for instance, is often made up of small pieces of blue, green and yellow and having a quality that is alive. Our modern artist in glass has found his own methods of achieving this scintillating quality found in the best mosaics, together with the beauty which transmitted light gives; his pieces of glass are not cut as small as the tesserae of mosaic but the glass itself has variation enough to compensate. But method and recipe alone do not save the day any more than in painting; the personal, artistic element, after all, is paramount. In design the American shows more freedom and less conventionality than the artists in glass abroad and some claim that for this reason it is not ecclesiastic enough. In connection with this the question arises in one's mind, how were the first church decorations evolved? It was not the acceptance of a formula, for such did not exist; it was an expression of the religious spirit of the time. Why, then, have we not the right to express ourselves similarly? In England, with its established church, the art of window making has become very conventional and formal; unless some artist of great note forces his individuality upon them, one English glass cartoon, whether by John

THE ST. AGNES MEMORIAL WINDOW IN ST. ANDREW'S P. E. CHURCH. NEW YORK. BY JOSEPH LAUBER.

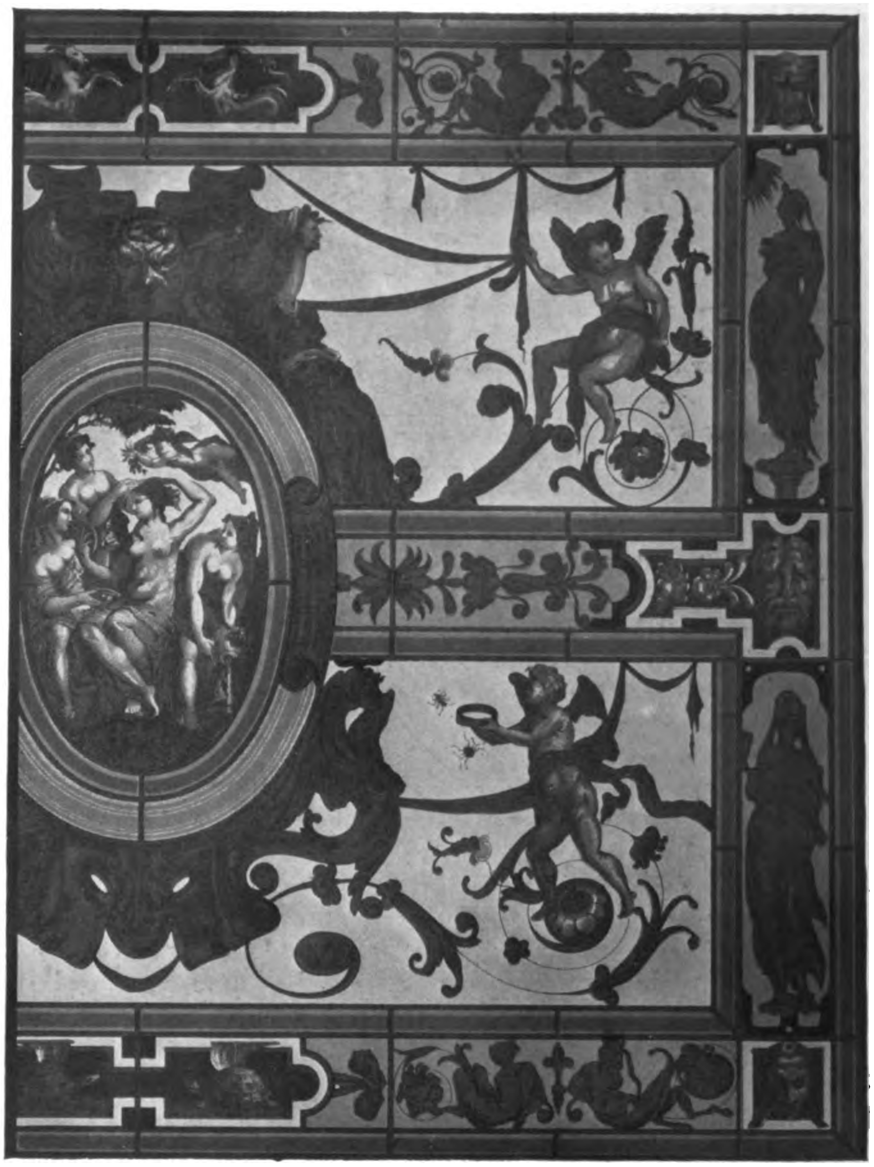
Jones or Harry Smith, looks precisely in style like another. Goethe says somewhere: "America, your advantage over Europe the old, is great; you have no feudal remnants nor dungeons", meaning, no doubt, that America is free to develop and give expression to her own ideals. Religious feeling in art is something so little susceptible of explanation, and so personal withal, that it cannot be reduced to a formula.

The artists of the quattro and cinquecento, for instance, by no means expressed themselves alike. Most of the predecessors of Leonardo treated the Madonna, to quote an example, as an ascetic, as a figure of renunciation, drawn in rigid and severe style. With DaVinci and in the period following we see in the treatment of this figure a subtle sensuousness, a joyfulness of motherhood, a more human quality. And each was true to its time.

Religious art, and by this term I would include church architecture, should impress the beholder with something akin to a feeling of reverence; in fact, all great art impresses us that way. But even if we cannot all have great art in our churches, at least the "near art" sort of thing should be avoided as a pestilence.

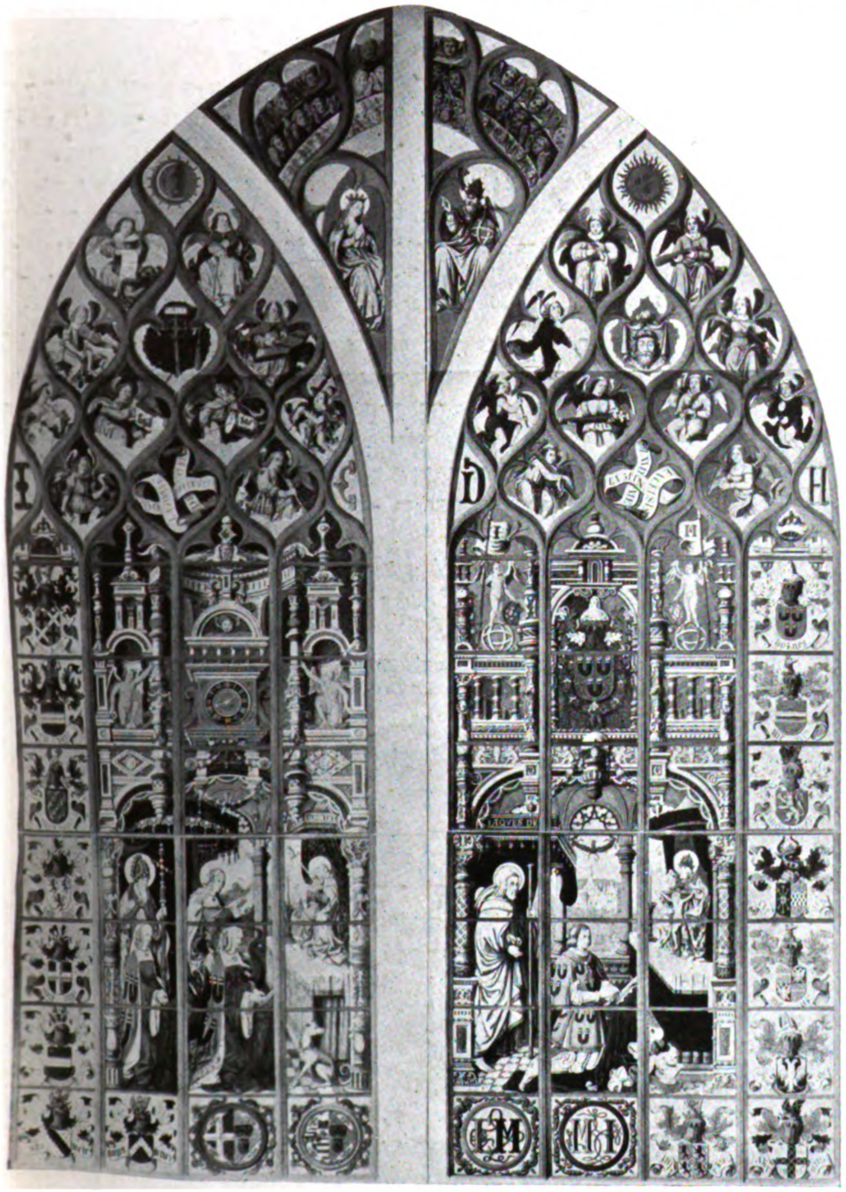
In advocating individuality of method and expression, the writer does not wish to be misunderstood, however, as to the question of style. As the artist's work becomes part of a building, it must, in its ornamental concomitants, etc., enhance the style of the edifice, not slavishly, of course. Because a church happens to be built on Byzantine lines it would be folly to expect a series of Byzantine figures in all the windows of the church. But in our desire for freedom a little too much has been made of the "Picture Window", or, in other words, a composition conceived entirely from the pictorial standpoint and not the mural or decorative one. Why seek to imitate something thought out and carried out in another medium, when glass has such splendid possibilities of its own? One of the best enconmiums which can be bestowed on a window, presupposing good design and color, is that it is "glassy", or characteristic of the medium employed.

A flagrant instance of how conditions are often ignored occurs to the writer. A certain western church had two chancel windows in place, four openings being provided, two on each side of the altar.



ITALIAN RENAISSANCE
In the National Museum, Florence

Two of these windows, both on one side, had handsome Gothic canopies surmounting a figure, and it behooved the one who was to erect the others to at least follow the proportions of these canopies; but the suave gentleman representing an "art-glass house" persuaded the trustees to do away with the canopies in the other two, and make all the upper space sky, in order to let his firm demonstrate their "superior brand of glass for skies". This brings up the all important question of unity in the decoration of our buildings. What shall we do to bring about this complete harmony so much desired by architects and artists? If I were the architect of a monumental building in which there was to be a great deal of mural art and on which a number of artists would have to work, I should want each artist



St. Jaques de Leige, Early Sixteenth Century
This window is a notable example of the decadence of the art. Nearly all brush work. Profuse use of Heraldry.

to do one room complete; and a large entrance hall, for instance, with corridors extending from it, should be under the absolute control of one artist who should control the work (at least as far as scale and color scheme goes) of his collaborators. Where colored glass and figure decoration in pigment are used in the same room, the closest collaboration is necessary, as colored glass in juxtaposition with pigment can absolutely kill the latter. But in churches where decorations are added from time to time, especially windows, conditions are different. Let us review those existing at present. Should any intelligent foreigner come to our shores and look for the art expression of our country, he would be apt to turn to our churches as one would do abroad. True, we have some museums (not near enough). Some of these also have a few pictures or other works of art of American origin; but the churches are everywhere and must, at least, in his mind, represent the art and other ideals of the people. What does he find? Things lovingly wrought as one finds them in the smallest village church abroad? He will not find many decorations in pigment or in bronze, but more or less glass, the design mostly cribbed from pictorial subjects, and as a rule no relation to place or surrounding observed. It looks as though an art which has potentialities of great beauty was doomed to rottenness before reaching maturity, owing to the rampant commercialism which has invaded the field. But in a great many churches we find good and bad indiscriminately mixed—a veritable hodge-podge. The cause of this is, in a large measure, the "memorial window", each donor evidently reserving to himself the right to put in place what he wants, irrespective of quality, scale, color or subject. We all know of the purchaser of paintings who knows nothing about art, but "buys what he likes". In that case the infliction is usually on himself and his friends and not on the general public, as when individual caprice, plus the bargain counter principle, puts a work in a public place. Some of the wealthiest churches in New York and elsewhere have allowed themselves to be led into this sort of thing; and now as they are waking up and realizing that a memorial once in place cannot be removed, they are hoping for a gas explosion in the church, so that they may begin over again on right lines. But what are the right lines? one naturally asks. Most churches have not the means to complete the decoration of their edifice from their own funds and necessarily rely on the gifts of memorials, and as very few vestrymen dare to oppose the wishes of the donor for fear of incurring his displeasure, therefore it seems that the only solution of the question is that the interests of the church in the adornment and artistic treatment of its building should be regarded as superior to the whims of the individual. A general plan, if not of subject, at least of scale, general character and, above all, quality of work, having been agreed to or established, would-be donors should be asked to conform to the lines laid down, in the interest of a harmonious scheme, or their contribution should be declined.

The first question a board of trustees should ask themselves is whether they want their church adorned by works of art or the commercial article, subject to competition at so much per foot. If the former, at least the same discretion should be exercised as in the purchase or commissioning of paintings for a private residence. The qualities necessary for an artist who is to succeed in this class of work are, first, technical knowledge—a thorough understanding of figure and ornament in their relation to architectural conditions; he must be a colorist and have freedom in composition, and last but not least, his work must be imbued with spirituality.

I believe that as in all the churches of this land righteousness is preached, it would be well if preachers would specify a little more, as the average man giving a window cares little whether a design is original or cribbed, in many cases prefering the latter, possibly because of the saving of expense in the preparation of an original. That the things plagiarized have rarely if ever been designed for glass does not seem to occur to him, nor is he enlightened by the bidder for the work, as the same crib may have been used many times before and the patterns are in stock!

Personally, I see no other alternative, in the effort to secure a harmonious result, than that those in charge of a building secure the services of a competent artist in an advisory capacity, not to supervise another's work (except as to scale and general color scheme), as no amount of supervision will cause any one of mean ability to do a good piece of work, but rather to pass upon the proposed executant of the work. Given the right man, let him inform himself of conditions, etc., and the result need not be feared.

ARATA.—The tittle to the third cut on page 17, commencing this article, should read "Section of Window from Bourges Cathedral, presumably thirteenth or fourteenth century.

A FIRE PROOF FERRY-BOAT*

BY F. L. DU BOSQUE, MEMBER SOCIETY OF NAVAL ARCHITECTS

THE study that has been given to the fire-proof construction of permanent structures has developed buildings that may be truly considered fire-proof, and this result has been brought about by the invention and combination of materials of fire-resisting qualities.

It seems to be the tendency each succeeding year for a greater number of people to congregate within a smaller area, not only in their homes and their business places, but on the vehicles they use for transportation. Accidents to vehicles for transportation have resulted in a considerable loss of life by fire, from the fact that these vehicles have been constructed of inflammable material, and transportation companies realize the necessity of building their passenger cars of materials that will not burn. The progress in this direction has been very rapid and so successful that it is extremely doubtful if wooden passenger cars will again be constructed for use on one of the largest railroad systems of this country.

The calamity of two summers ago, which resulted in the loss of over six hundred lives, impressed upon those engaged in the transportation of passengers by water the necessity of following the progress that has been made in the construction of fire-proof buildings and vehicles for transportation on land. By some of the transportation companies this feature was appreciated and an attempt to carry it out has in a measure been followed for the past fifteen years; on the ferries of the Pennsylvania Railroad Company no ferry-boats have been built during this period on which inflammable material was placed close enough to the sources of fire to be in danger of ignition.

As the subject of our paper is ferry-boats, we will confine our discussion to this type of vessel. Fires on ferry-boats have been frequent, but the consequences usually slight, because of the vigilance exercised by the employees and the means installed for the extinguishment of fire. The principal cause of fire has been the stowage of hot ashes in improperly constructed ash-bins or improperly constructed ash-pans beneath the boilers. Following in order may be classed imperfect electric wire construction; the accidental overturning of petticoat lamps; the overheating of the smokestack; and finally one of the most annoying of the many—the throwing of lighted matches beneath the seats by

*Read at the Fourteenth General Meeting of the Society of Naval Architects and Marine Engineers, held in New York, November 22 and 23, 1906.

passengers after lighting a cigar. Attempts to eliminate these causes of fire have been made by permitting no woodwork or other inflammable material below the main deck; by running the electric wires in iron conduits with sealed junction boxes; by forbidding the use of petticoat lamps above the main deck; by urotecting the stack with an iron enclosure, and by enclosing the space beneath the seats.

Recently another and more serious source of danger arises in the transportation of automobiles. Fire occurring on one of these on a ferry-boat would be very disastrous, as on most of the ferry-boats they occupy a space surrounded by the lightest and most inflammable materials that are difficult of access. After they were permitted to use ferry-boats a rule was established that they should be stowed at either end of the boat, so that they could be wheeled overboard in case of accident. That this rule was good is proved by the fact that it has been necessary to carry out the idea. The increase in the number of automobiles to be transported, however, makes it impossible to carry all of them on the ends of the boats, and ferry-boats designed in the last two or three years have the walls and roof of the space they occupy made of metal.

The above review would seem to indicate that fire risks have been taken care of, but new dangers are continually arising and it is clear that a ferry-boat to be free from danger of destruction by fire should be built of non-inflammable material or what might be known as a fire-proof type, because inflammable materials can be used in such a way that there is no possibility of their doing damage. The amount of flame that a piece of wood will produce per unit of time depends first, upon the surface exposed, and second, whether the surface is laid vertically or horizontally. It is evident that a stick 12 inches square, while it contains the same volume, will not produce as much flame as twelve boards 12 inches wide, 1 inch thick; also that the flames on a surface laid horizontally will not extend as rapidly as if this surface is laid vertically. These features must be borne in mind in the designing of fire-proof structures, as up to the present time it seems to have been impossible to eliminate the use of wood.

It has been thought by many that the danger of loss of life on a ferry-boat is very remote, principally because of the boat's short route, and the experience of the past supports this view. Nevertheless, all of us were appalled at the loss of life on the General Slocum. This boat had better opportunities for securing a landing-place for her passengers than a ferry-boat has, yet a combination of circumstances which it is unnecessary here to discuss resulted in the most appaling disaster that has happened to any of our harbor craft; and while it may be claimed that such a combination will not happen again, the fact is indisputable that the disaster would not have occurred had the boat been of fire-proof construction.

Extending further the ideas they have long had in mind, and appreciating the advantages to be gained from a fire-proof ferry-boat, the Pennsylvania Railroad Company prepared the designs of the boat illustrated in this paper and entered into an agreement with the New York Shipbuilding Company at Camden for its construction.*

Below the main deck the design departs but very slightly from the prevailing practice, and no woodwork is used in this part of the boat. Above the main deck steel plates and angles have taken the place of wooden stanchions, carlins and sheathing. Realizing that in this particular part of the boat wood would give sufficient strength with very much less weight than steel, it was necessary to closely study the strength of the various sections of plates and angles employed to build up the structure, and notwithstanding the fact that these sections were made as small as thought safe, it was estimated that the steel structure will weigh nearly thirty tons more than the wooden structure. This increase, however, is only about 5 per cent of the total displacement of the boat.

As a slight ornamentation of the cabins of a ferry-boat has been looked upon as necessary, an attempt to carry out this feature has been made by employing some of the materials mentioned in the fore part of this paper as being developed by the demand for fire-proof construction. The ceiling and side walls are almost entirely covered with a material known as asbestos building lumber, which is a composition of asbestos and Portland cement that is fire-proof, is not affected by moisture, has a reasonable degree of tenacity and can be manufactured in large-sized panels with a smooth and even surface which receives paint quite as satisfactorily as wood. This material is formed into panels by fitting steel mouldings of suitable design around its edges. These mouldings are a recent production and are made by drawing thin strips of steel 5-100 inches thick through roller dies that form the plates into the shape of section desired and of any reasonable length. The angles, grooves and coves are drawn so sharply that when painted the mouldings cannot be distinguished from the most perfect wooden moulding, and the section is so uniform that joints may be accurately made. The panels thus pro-

*As the drawings of a fireproof excursion steamer, similar to that here described, were published in January issue, the drawings of this boat are omitted.—EDITOR.

duced are fastened to the angle-iron stanchions supporting the walls of the cabin by means of narrow plates 1-8 inch thick.

The connection between this angle iron and plate is made with pieces of wood which are fastened to the angle bar with bolts, and to which the thin plate is fastened with ordinary round-headed wood screws. The panel frames are fastened to the thin plate which forms the ground of the wall in the same manner, the round heads of the screws being exposed to view. At these points a limited amount of wood is used, but it is protected from any external flame by iron plates, and the amount used is thought to be insufficient to cause any considerable damage. For instance, a lighted match alongside of an iron plate would burn itself out without doing damage, whereas, a volume of kindlings set afire would cause the plate to bend out of shape; therefore, it is apparent that somewhere between these two extremes a certain amount of wood can be used in fire-proof construction without dangerous results. It would have been possible to have made these fastenings with tap bolts, but the great additional expense was thought to be unnecessary.

The seats in the cabin are made of drawn steel mouldings, supported on steel angle bars. The window sash, window sills and frames are made of wood, but the wood used is completely covered with sheet copper of No. 18 gauge, and recognized as thoroughly fire-proof construction. The pieces of wood forming these parts are first moulded in the section desired, then loosely wrapped with copper, and both together are drawn through dies that press the copper firmly down on the wood and lap-joint the edges of the copper sheet. It is this lap-jointing that is the important feature in the operation. Wood covered with metal cannot be considered fire-proof if the edges of the material can be twisted away by heating, so as to allow the wooden surfaces to be exposed, and this particular defect has been the cause of destruction of many so-called fire-proof buildings.

The main deck of the boat is made of wood. In the cabin it is covered with interlocking rubber tile, which is fire-resisting material, but no such protection is afforded in the team gangways. Without enormously increasing the weight of the vessel it was impossible to find a substitute for wood that would be entirely satisfactory for this particular place. However, the surfaces of this deck are horizontal, are very easy of access, are constantly in view, and it is therefore thought that a fire occurring on them could not extend very far.

It is estimated that the cost of this boat has been increased about 7 per cent by the construction applied. The interest on this amount is only about 25 per cent more than would pay for fire insurance premiums, and the balance is more than offset by what might be called the cost of fire vigilance.

It is expected that the cost of maintenance of this iron structure will be considerably less than of a wooden one. The greatest enemy of steel is rust, but as the wooden joiner-work on ferry-boats is usually painted about once a year to keep up appearances, it is very evident that the steel structure will be amply protected from rust if painted this often.

Aside from fire protection, the boat is divided into water-tight compartments to prevent her from sinking in the event of a collision, and water-tube boilers have been used to generate steam, for it has been the policy of the Pennsylvania Railroad Company to use only water-tube boilers on their ferry-boats for the past ten years, as there is probably no one place where a boiler explosion would cause such a loss of life as on a ferry-boat, which on its trips frequently carries over one thousand passengers.

THE ARCHITECTURAL LEAGUE OF NEW YORK EXHIBITION

A VARIETY of design distinguished the exhibition of the Architectural League of New York, which opened in the American Fine Arts galleries on February 1st, and closed February 23. Beside the purely architectural drawings such as McKim, Mead and White's design for the Pennsylvania Railway Terminal Station on one hand, there was a design for a door knob by Miss Lillian Lind, which received the Avery prize.

Between these extremes of size rather than artistic conception was a most interesting exhibition, distributed through all forms of architecture and accessory art.

In architectural design the comparatively few perspectives were very interesting. Among them the imposing design for the Connecticut State library, by Palmer and Hornbostel attracted much attention; the drawings, by J. H. Freeland, for the Importer's and Traders' bank; Cass Gilbert's West Street building with its ornamental gable and clock; the water colors of country residence work, such as J. M. O'Connor's residence and gardens for Mr. Gould Brokaw, and the Tiffany House; the Princeton dormatories, by W. B. Morris, etc., all presented delightful details in design and drawing.

Mural painting was represented by works by Kenyon Cox, W. B. Van Ingen, Everett Shinn, Violet Okley, Howard Pyle, Maxfield Parrish, Frederick Marshall, and E. H. Blashfield; among which the Essex County Court House paintings, by Kenyon

THE GLORIFICATION OF NEW YORK CITY
Color scale sketch, by J. Mortimer Lichtenaur, which won the President's prize at the annual exhibition of the Architectural League of New York. Mr. Lichtenaur also won the President's prize in 1903.

Cox, Pyles' "Landing of Carteret", Blashfield's black and white of "Washington laying down his commission at Columbia's feet" and J. Mortimer Lichtenaur's "Glorification of the City of New York", were conspicuous.

In monumental work, the monument to the Prison ship Martyrs, in Fort Green Park, Brooklyn, by McKim, Mead and White, was the most attractive in drawings, design, plan, and the pergola accessory to the design of a column with broad approaches being a decided novelty in this class of design. The McKinley memorial groups, by A. H. MacNeil, were shown in the Vanderbilt gallery.

The Municipal Ferry Terminal at the foot of Whitehall Street, by Walker and Morris, is interesting from its solution of a civic problem as well as the point of design. In the same manner the power stations for the New York Central Railroad, by Reed and Stem are dignified, and the Jersey City Power House for the Hudson Company, by Robins and Oakman, avoids the factory building aspect too often found in such buildings.

Among the minor exhibits that are deserving of mention: The grotesques for the cornice of the West Point improvements, by Goodhugh and Ferguson, modeled by Lee O. Laurie, "A figure of a man spearing seals"; J. Davidsons figure, "Primitive Music"; each while not on the high plane occupied by Mac Neil, still are alive with artistic force full of poetic expression, and promise much for their designers.

Landscape design held a prominent place in the exhibition, and on the whole, the change from the somewhat tiresome prevalence of drawings of large projects, of academic competitions and school theses work, which has to too great an extent distinguished past exhibitions both of the league and other clubs is a decided improvement and should be repeated.

ASSOCIATIONS

OKLAHOMA STATE ASSOCIATION OF ARCHITECTS

The Oklahoma State Association of Architects, recently organized, is circulating a petition by a committee throughout Oklahoma and Indian Territory, asking public support in behalf of their plea for practice regulation, which is to be presented to the constitutional convention of the newly organized state. The petition is as follows:

"Whereas, it is the universal rule of this and other civilized countries to protect the people themselves and their interests by legislation governing the practice of the professions, and whereas, our own profession, being a most important one, especially at this time, being at the beginning, we believe, of great growth and improvement within our new commonwealth, and needing such provision by legislation, as will prevent unfit and improper persons from jeopardizing lives and property and from erecting such public and other buildings as will detract from the beauty and dignity of the new state.

Now, therefore, we, the duly authorized committee, appointed by the Oklahoma State Association of Architects, do hereby petition your honorable body that you incorporate into the constitution of the state of Oklahoma, a clause to read in effect that it shall be the duty of the state legislature to enact proper laws for the regulation of the practice of architecture in the state.

OKLAHOMA STATE ASS'N OF ARCHITECTS.

By the Committee: Arthur J. Williams, John V. Starr, Ed J. Peters, E. Coady, E. C. Smith.

"We, the undersigned, endorse and approve the above and urge the constitutional convention to at once make it mandatory on the legislature, at its first session, to enact such laws as will provide full protection to the people, require architects to take out licenses and prescribe the conditions under which the same are to be issued."

PORTLAND ARCHITECTURAL CLUB

Architects and architectural draftsmen in Portland, Oregon, thirty in number, have organized an architectural club and fitted out suitable rooms in the Ainsworth Building, where regular meetings will be held. The House committee is organizing a library of architectural works and current magazines for the use of the members.

PUBLICATIONS.

A HISTORY OF ARCHITECTURE. By Russell Sturgis, Am. Ph. D., Etc. Volume 1, Antiquity: Three volumes, $5.00 and $7.50 each The Baker & Taylor Company, New York, 1906.

The first volume of Russell Sturgis' History of Architecture deals with the buildings of antiquity, through to the end of Roman Imperial Architecture. The student of Architecture has heretofore found in Violet de Duc, Ferguson, and Atkinson the basis of his knowledge of the beginnings of architectural design and construction. The work of Sturgis, at last gives in the English language, an authoritive standard history, critical, practical and comprehensive; a condensation of the study of a lifetime, by America's greatest archologist. In his preface to the first volume, Mr. Sturgis says in part: "The history of architecture would be wholly a record and examination of the monuments, or of a certain selected number of them, if men had been less wasteful of their inheritance." "Of all the buildings treated of in the first volume, the Pantheon alone, is still in use for purposes akin to those for which it was built. A few memorial buildings also are still intact." "Under these conditions, only in part, can such a volume as this be thought a history 'from the monuments'". In part, it must needs be a history of the opinions as to the monuments, of many succeeding explorers and critical students. As it is fitting that only the close student should attempt to write the history of a time, or an epoch, so in architectural history; the historian must call to his aid the builder, who can, through his knowledge of building, interpret the meaning of the remains of a former construction; the decorator, who likewise can best interpret the meaning of a decoration, should in combination write the "history of the Monuments", and these in turn must look to the scholar for assistance in deciphering not only the hieroglyphics, but all the records of the past. It is this that Mr. Sturgis has so well done to augment his own vast knowledge, and thus, his history at once becomes a classic, and the last word, to remain until another historian of another generation or century appears to add to the knowledge he has gathered and recorded. Therefore, no architects' library can be complete without this history, and everyone interested at all in architecture, will need it as a true or at least the most authoritive guide to his studies. The first volume is in five books: The first, "Ancient Egypt"; the second, "Western Asia to 300 B. C."; the third, "Greece"; and the fourth, "Italian Peoples Before Roman Control"; and the fifth, "Roman Imperial Architecture".

A GLOSSARY OF TERMS USED IN ENGLISH ARCHITECTURE. By Thomas Dinham Atkinson, Architect. 265 Illustrations. London Methuen & Co., New York. William T. Comstock, 1906.

As the compiler of the History of Architecture, Mr. Atkinson is well qualified to give architectural definitions to those terms that have been applied to the forms used in design. In his glossary, he has evidently striven to condense as much as possible, and omit all inauthoritive names and provide a practical handbook by which the student can directly find the correct term to apply to all forms of classic detail. His extended notes on church architecture is particularly valuable, for while he does not go beyond the scope of a dictionary, he gives sufficient explanation to make his meaning clear and definite. Every draftsman or other student of architecture should have this compendium of architectural terms within reach.

"CONCRETE FACTORIES." A series of papers descriptive of the uses of cement and concrete as applied in the construction of industrial plants. 152 pages. Compiled by Robert W. Lesley, Associate American Society of Civil Engineers and Editor of Cement Age. Published by Bruce & Banning, 1 Madison Avenue, New York.

This book offers in condensed form a complete review of the principles underlying re-inforced concrete construction, and has the still further advantage of being understood by the layman as well as the engineer. It contains the report of the United States Advisory; Board on Fuels and Structural Materials, the report of the Sub-Committees on Tests; a translation of the French rules on re-inforced concrete, just issued by the Ministry of Public Works in France; and a number of profusely illustrated articles showing methods of re-inforced concrete construction, including all the well known re-inforcing systems.

A chapter on "Re-inforced Concrete Construction", by Walter Mueller, is a concise description on the many concrete re-inforcing systems now in the market, and other authorities complete the work.

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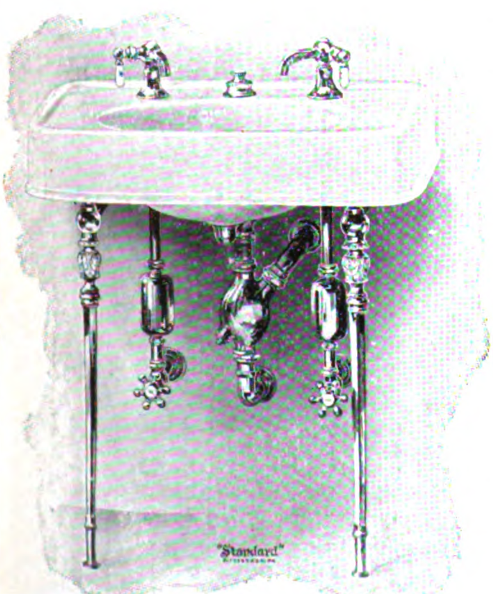

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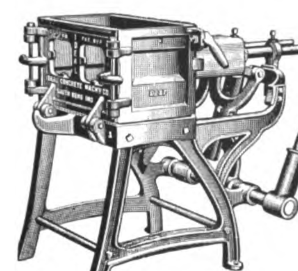

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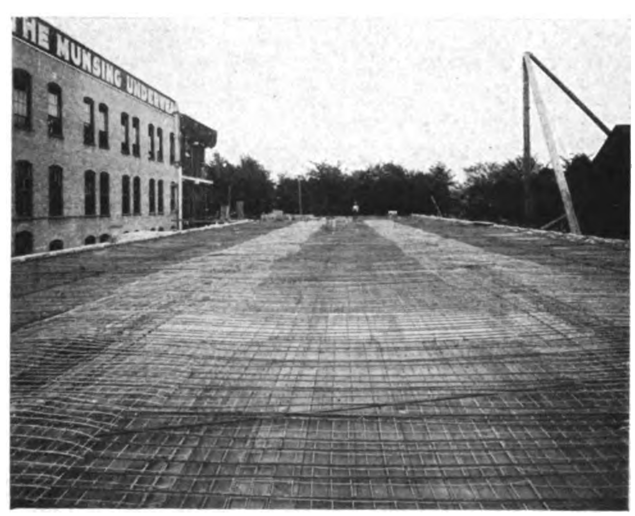

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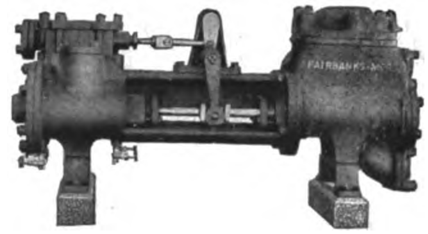

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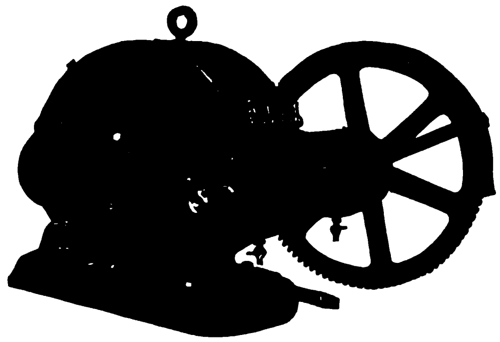

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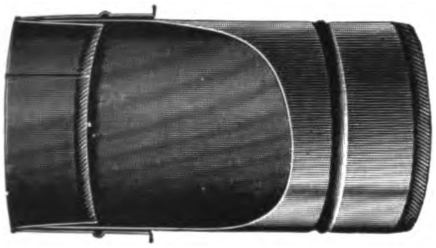

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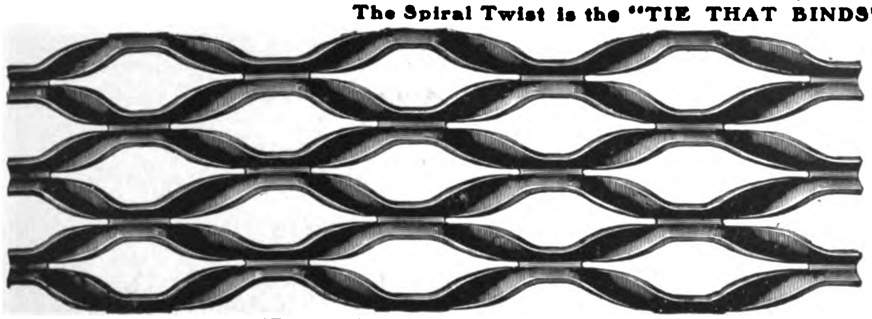

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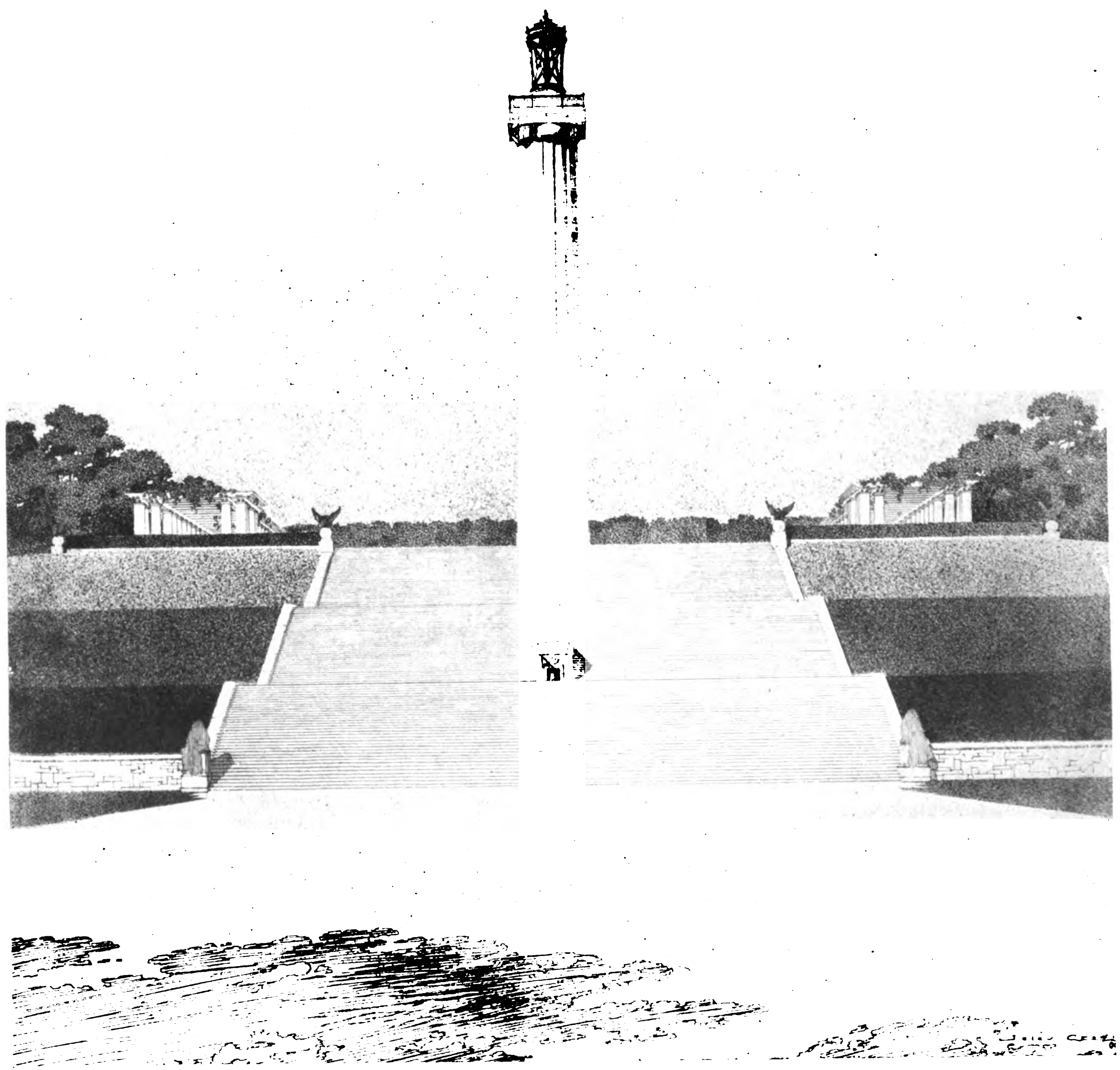
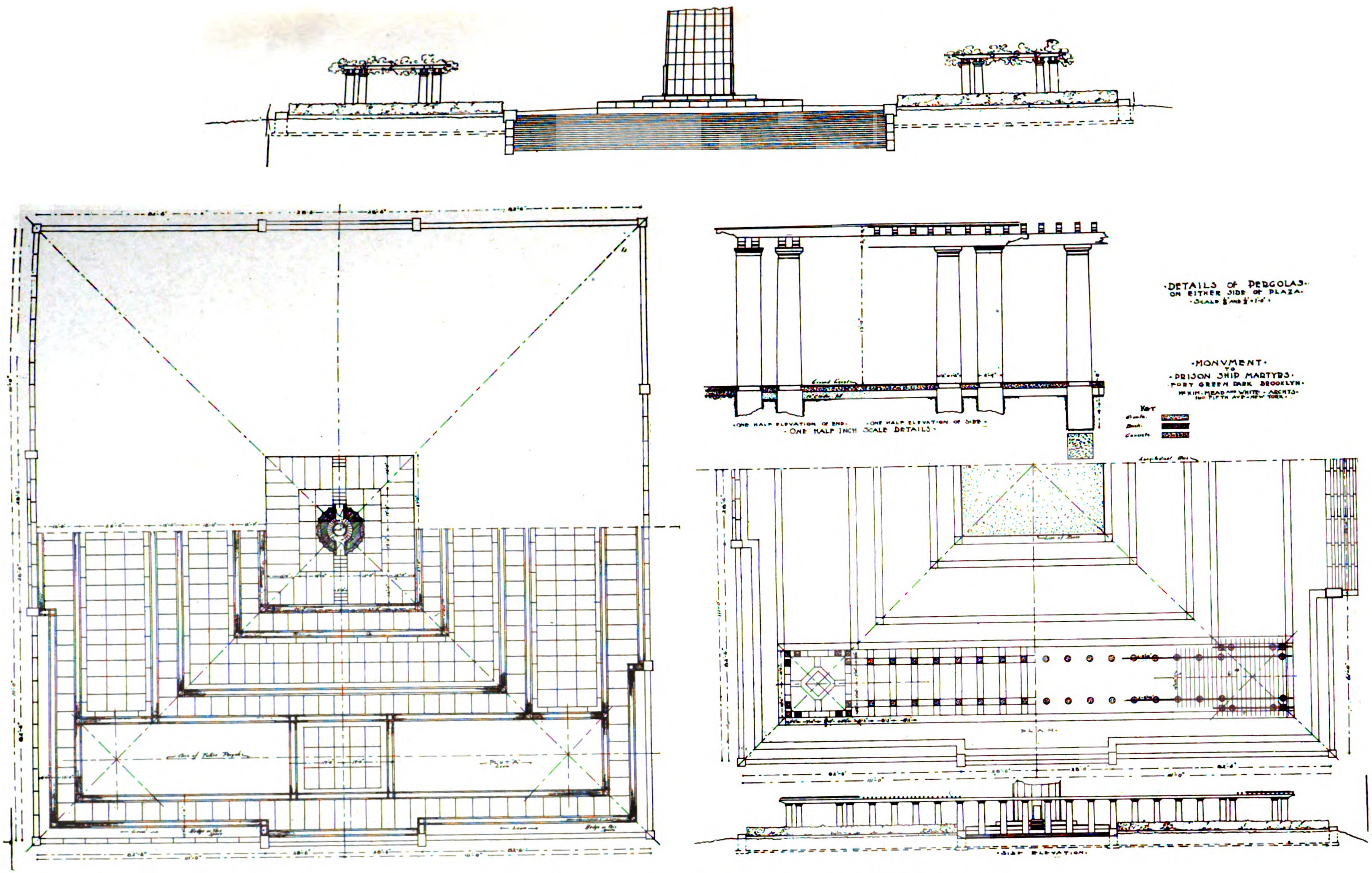


MONUMENT TO PRISON SHIP MARTYRS, BROOKLYN, NEW YORK

McKim, Mead and White, Architects, New York

THE WESTERN ARCHITECT
MARCH
1907



PLAN AND DETAILS OF MONUMENT TO PRISON SHIP MARTYRS, BROOKLYN, NEW YORK

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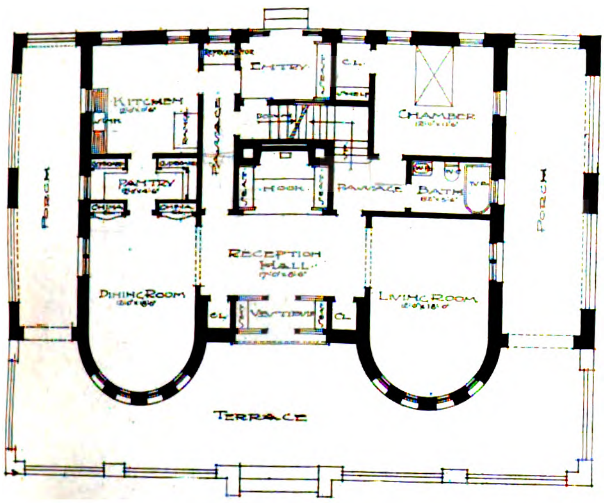
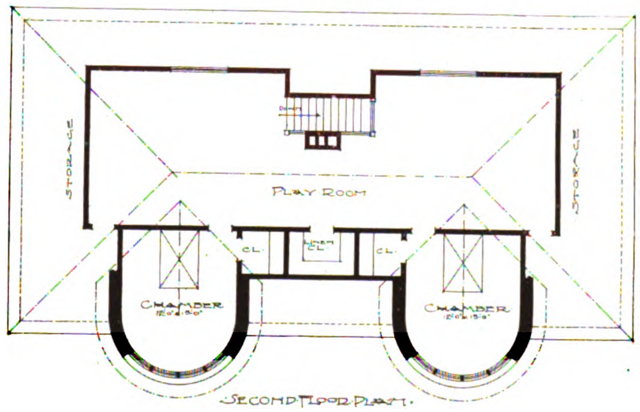
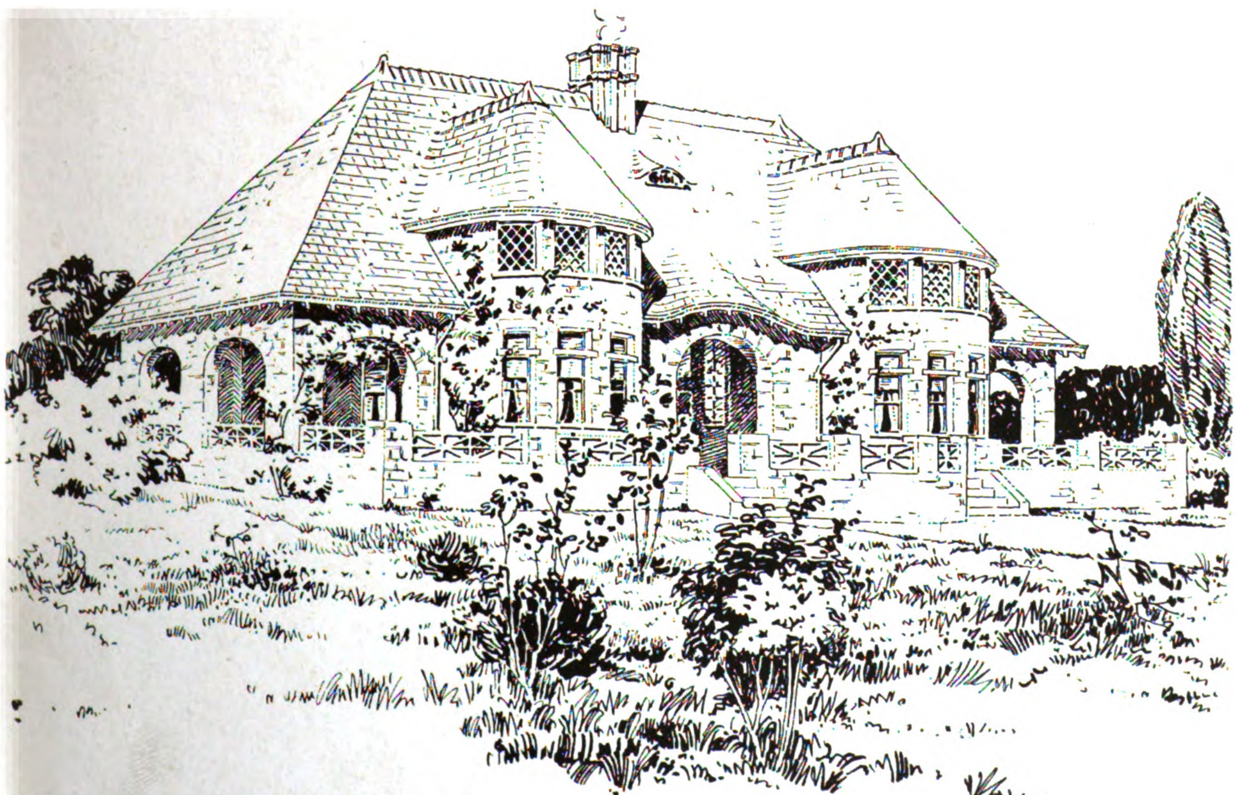


FIRST FLOOR PLAN.



SECOND FLOOR PLAN.



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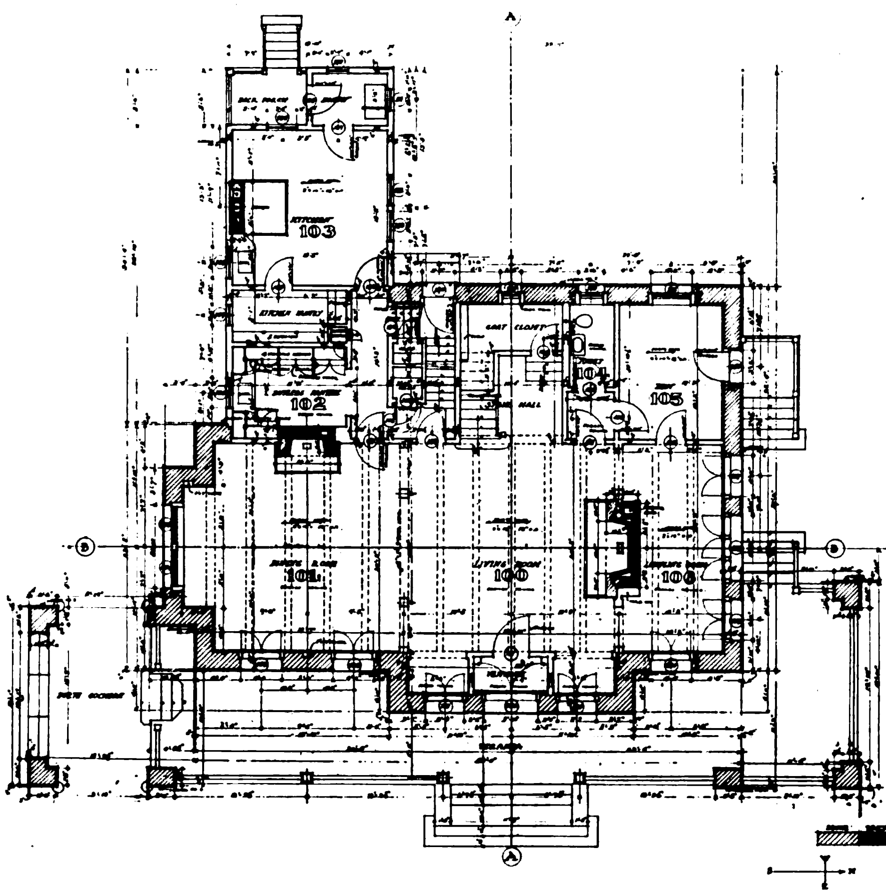
BUNGALOW FOR HENRY HARVARD HELT, LAKE MINNETONKA, MINNESOTA

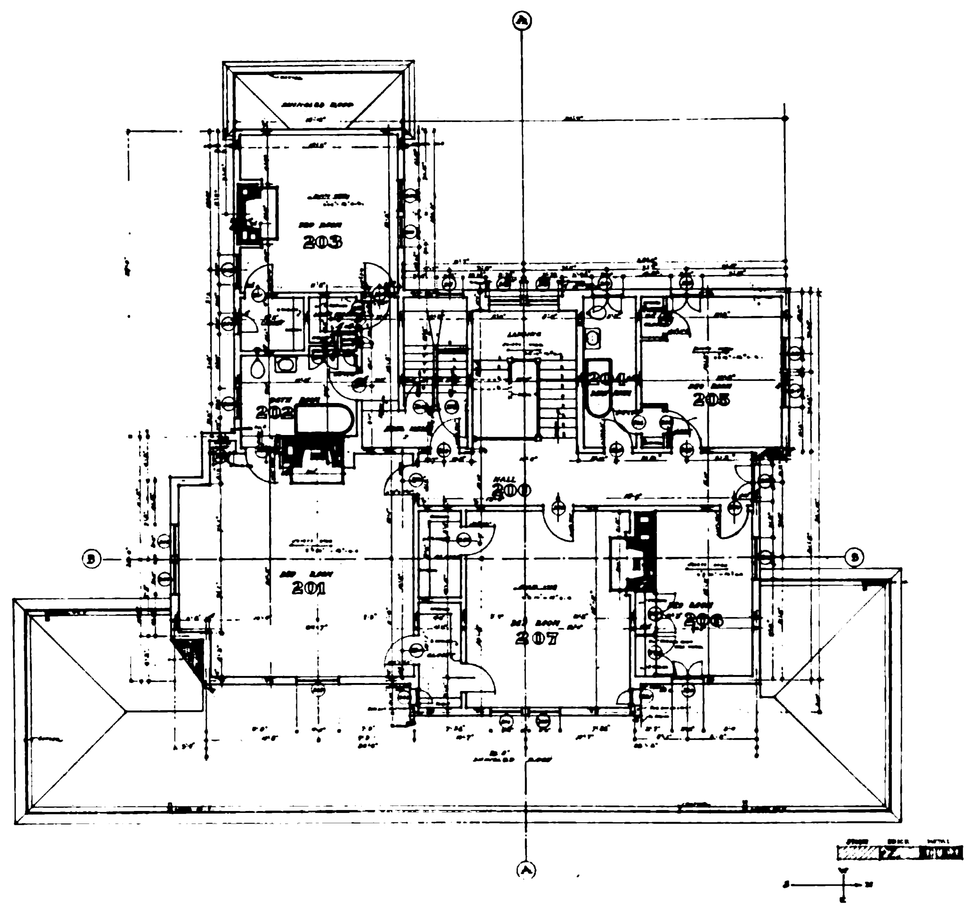
LUDWIG AND EICHENFELD, ARCHITECTS, MANKATO, MINNESOTA

ELEVATIONS OF HOUSE FOR MR. F. H. SNYDER, ST. PAUL, MINNESOTA

E. L. MASQUERAY, ARCHITECT



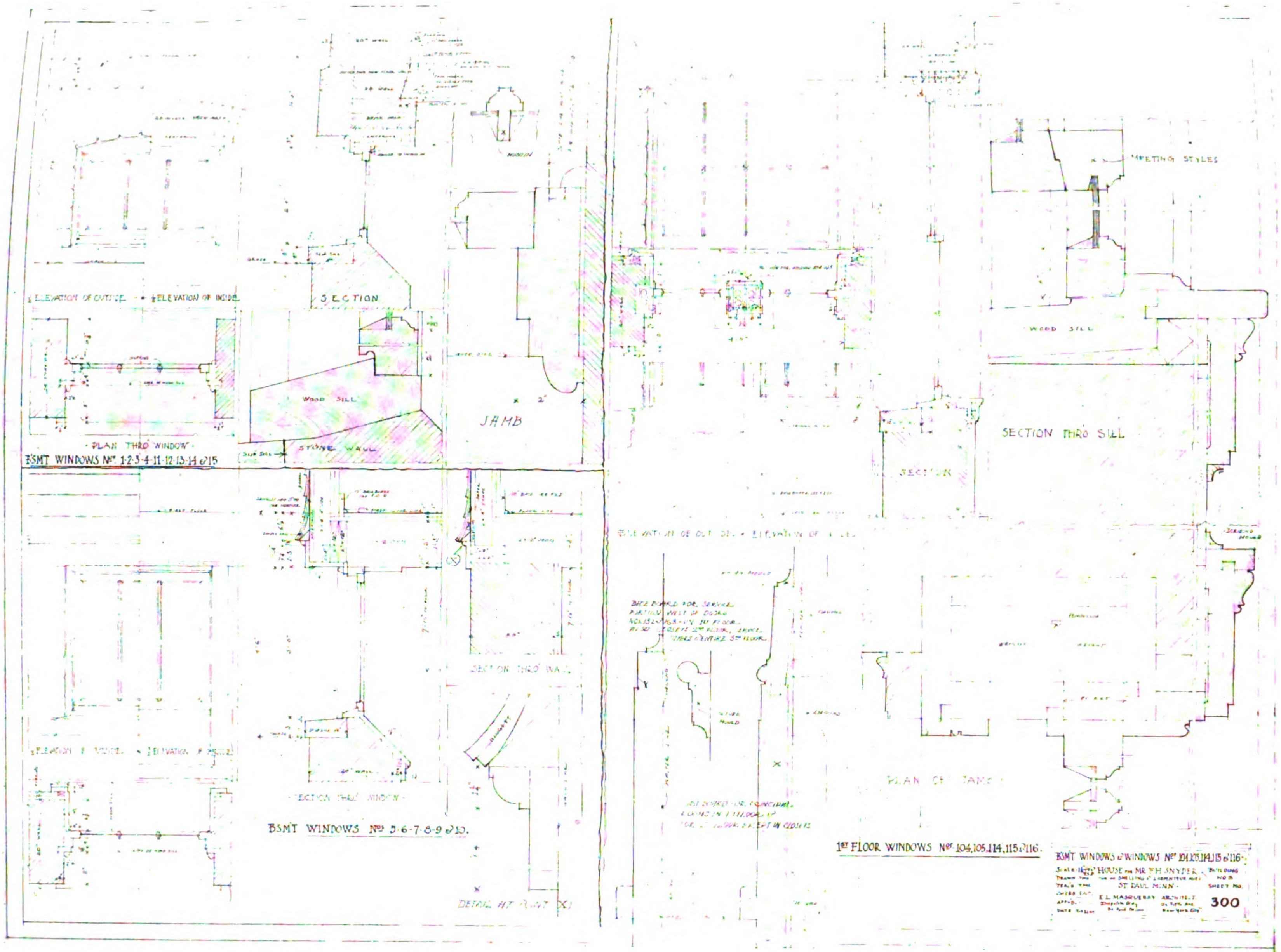
First Floor Plan



Second Floor Plan

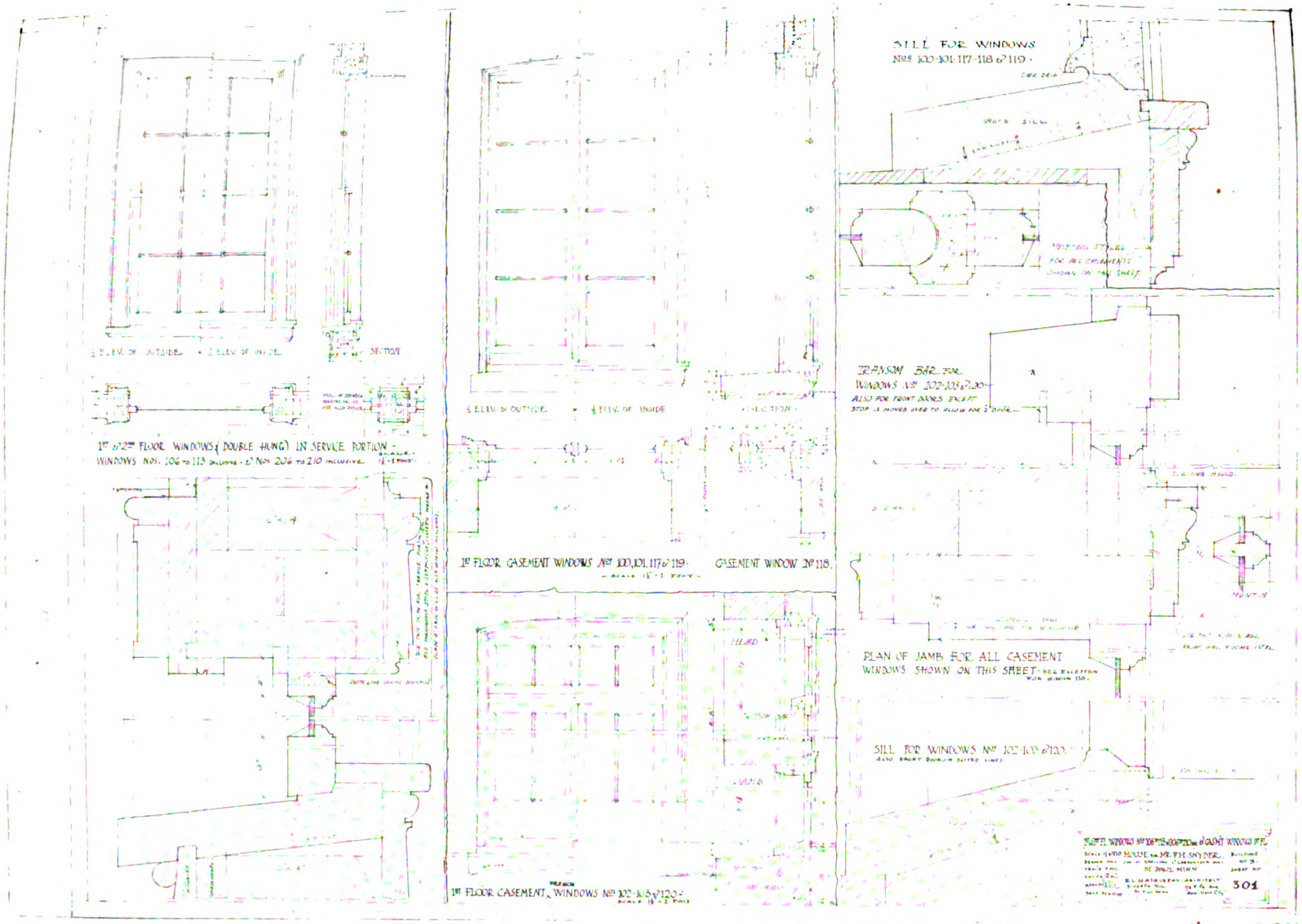
PLANS OF HOUSE FOR MR. F. H. SNYDER, ST. PAUL, MINNESOTA

E. L. Masqueray, Architect



CONSTRUCTION DETAILS IN HOUSE FOR MR. F. H. SNYDER, ST. PAUL, MINNESOTA

E. L. MASQUERAY, ARCHITECT



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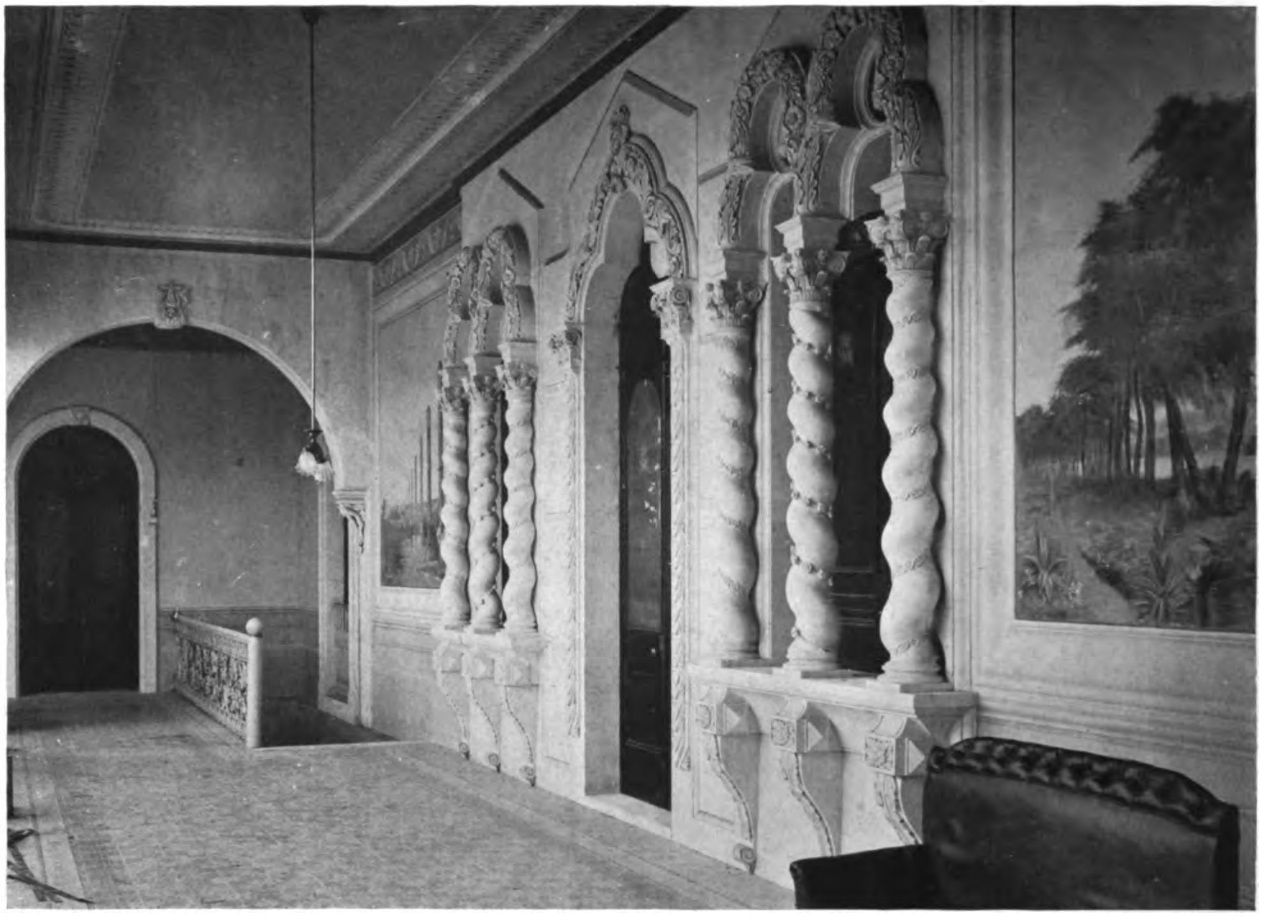
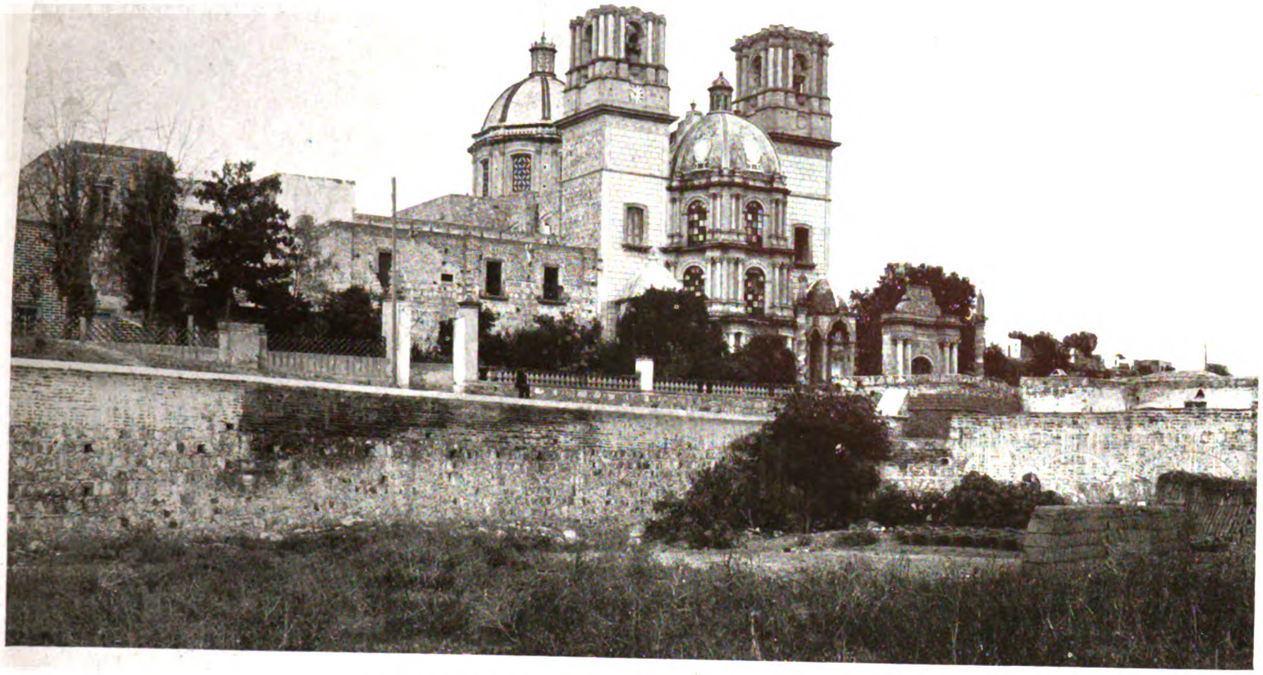
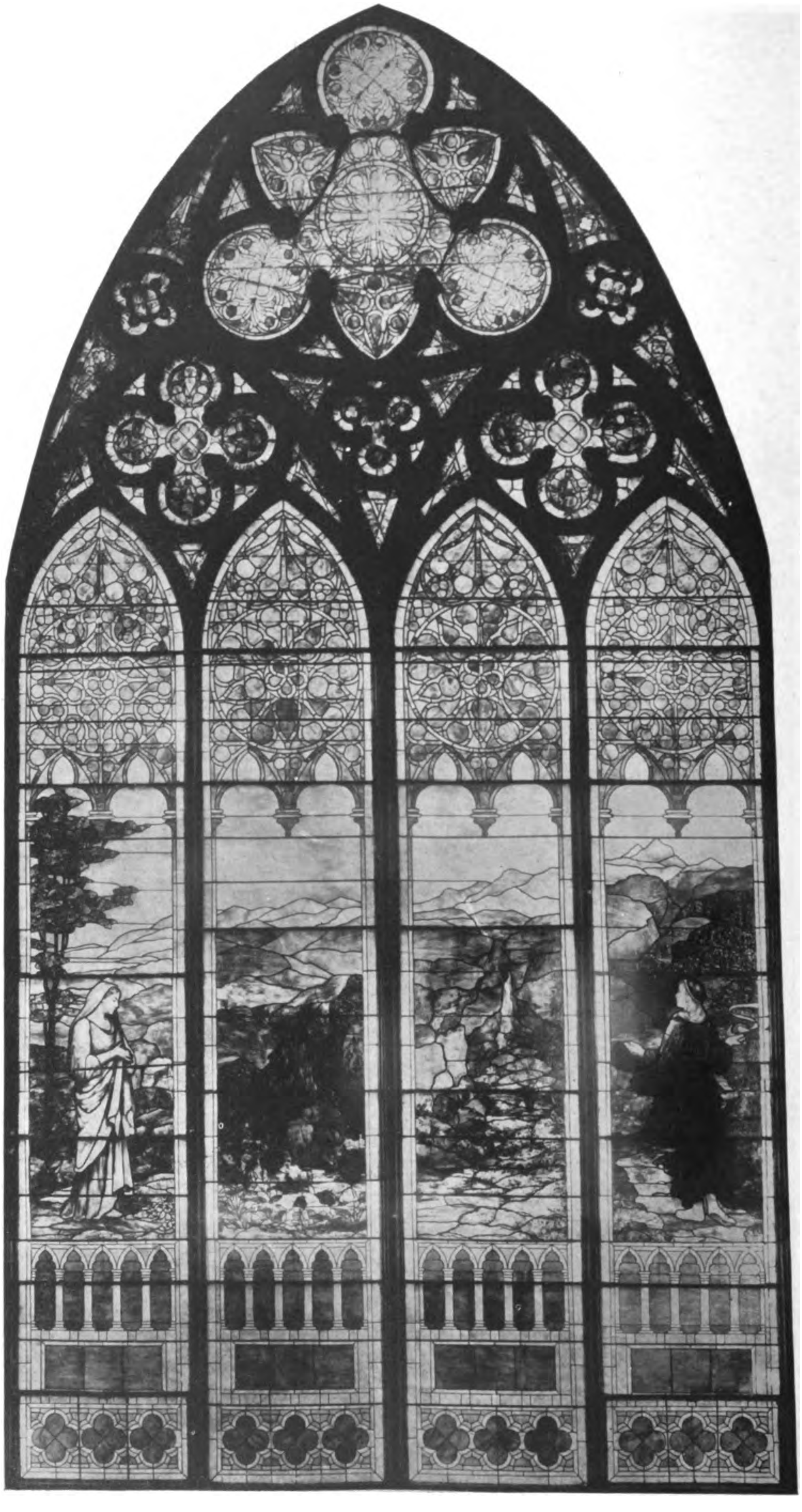


INTERIOR VIEWS IN PALACE OF SENIOR PEDRO ALVARADO, MEXICO CITY, MEXICO



CATHEDRAL AT LEON, MEXICO—BUILT IN 1500

PALACE OF SENIOR PEDRO ALVARADO, MEXICO CITY, MEXICO



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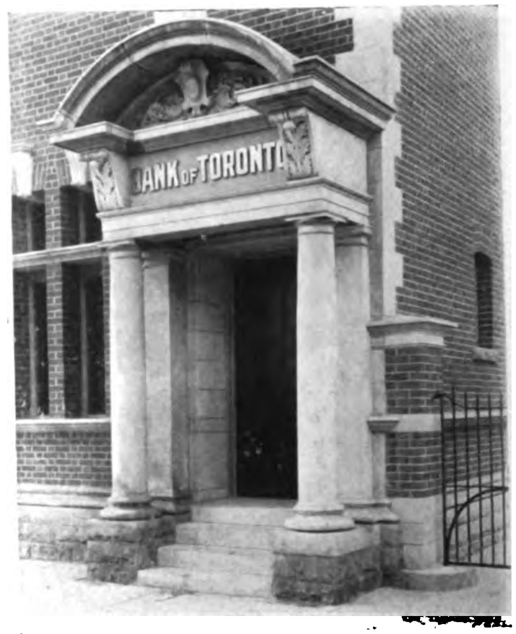

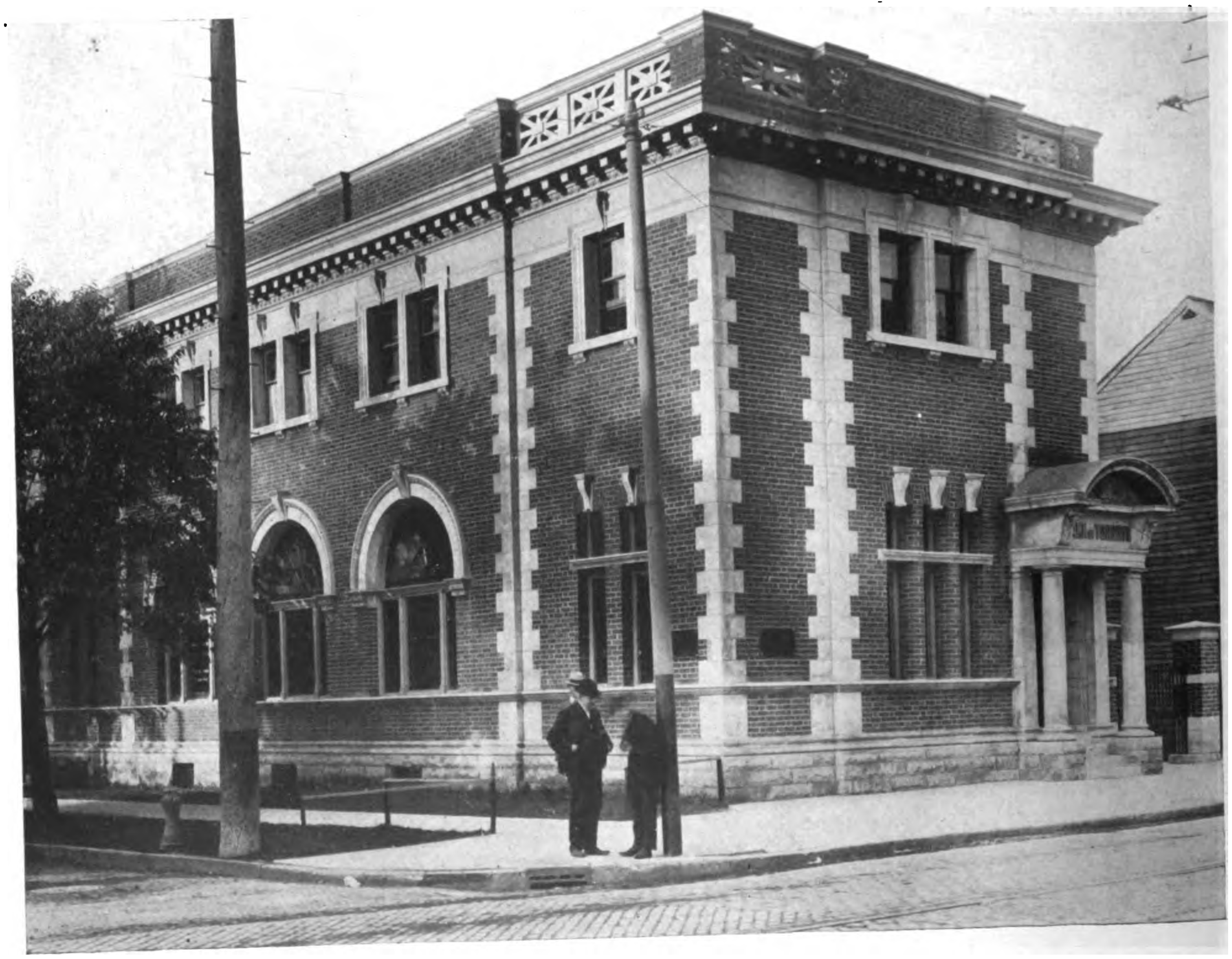

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The Western Architect

VOLUME X NUMBER 4

Contents April 1907

Illustrations

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ROBERT CRAIK McLEAN, EDITOR.

A GROWING WESTERN ENTERPRISE.

THE Minneapolis Steel and Machinery Company writes: "It is probably due to the publicity we are getting through our advertisement in your publication that we have had to make two large additions to our buildings in the past six months," which may be a remark containing a certain facetious element, but the increasing trade of the Mechanical Department of this company has made it imperative for them to add another large buildin of steel and brick construction to their already large plant. It was only a few months ago that they had to double the capacity of their foundry, and when the new building is completed they will have a total of over 12 acres of floor space within a yard area of over 20 acres. This concern, composed of a company of Minneapolis men, has given to that city an enterprise which is adding a new chapter to Minneapolis' fame in all parts of the country. From now on, whenever men think of suction gas producers and gas engines, steam engines or steel construction on a large scale, they will think of Minneapolis and the Minneapolis Steel Machinery Company. In the short period of a year, since they have secured the right from Germany to build the Muensel Gas Engine and Suction Gas Producer, they have installed over thirty plants and have orders in the shops for a great many more. The demand for this modern power plant has demonstrated beyond a doubt that the power users of the United States were glad to install a gas power plant which had passed the experimental stage and was ready to work from the start. It is such enterprises as this in the West that are making the Eastern people take notice.

INTERLOCKING RUBBER TILING.

MUCH of the credit for the enormous increase in popularity of Interlocking Rubber Tiling is due to the Pennsylvania Rubber Company, of Jeannette, Pa., who entered this field with a new and simplified arrangement of interlocking rubber tiles a few years ago. Appreciation of the wide variety of uses to which this material could be successfully applied, led the company to exploit its product vigorously, with the result that at present there is scarcely any class of building in which it is not found.

Some idea of the scope of its usefulness may be gathered from the fact that it may be seen upon the floor of one of the finest cathedrals in the country, and in one of the largest of the public art galleries, and at the same time in many kitchens, vestibules and bathrooms of the well-to-do.

The advantages claimed for this interlocking rubber tiling are so many and general that space does not permit their enumeration, but it said to outwear even marble, to form an absolutely water-proof surface, and to be so easily applied that any workman of ordinary skill can lay it successfully, though he may be previously inexperienced with it.

Ocean liners, lake steamers, ferryboats and yachts are large users of this tiling because of its non-slippery character, and the fact that it remains unaffected by constant wrenching strains. As flooring for elevators it is also popular for the same reasons.

THE FLOORS OF MINNESOTA STATE SCHOOLS

IN THE two magnificent Minnesota State Educational Buildings, of the University and Agricultural College, illustrated in our last issue, the immense area of floor space is covered by "Ideal" maple flooring, which is the specialty of the John C. Hill Lumber Company, of St. Paul. This means that the State of Minnesota, which has become famous throughout the country for the refinement of its architecture, does not stop with the selection of the best architects to design its structures, whether it be its capitol, school buildings, or hospitals, but each class of material must be the best in its class. This is particularly true in the selection of Ideal flooring for its school buildings. No other state has so complete an agricultural college, and the main building of the University has no superior in the West, and the floors over which the tread of thousands of students pass, must have that firmness and smoothness which could be secured in no better material than Ideal flooring, which has all the advantage of perfect selection and honest manufacture to make it the best wood floor possible.

OF INTEREST TO ARCHITECTS.

THE opening of new showrooms at 949 Penn Avenue, Pittsburg, by the Standard Sanitary Manufacturing Company was announced, by a most artistic pamphlet. It was printed on buff deckeled edged paper, enclosed in an artistic cover, with the half-tone cuts in brown ink, each page decorated with pen and ink sketches, illustrating the practical and also the artistic features, introduced by the Standard Sanitary Company in the design and manufacture of the superb plumbing fixtures that have made the Standard Company famous for fine sanitary appliances throughout the world.

AN exceedingly attractive pamphlet with illuminated cover has just been issued for distribution by the Expanded Metal and Corrugated Bar Company, of St. Louis, under the title, "A Few Illustrations of Work Done with the Corrugated Bar, Some Information About Corrugated Bars and Simple Formulæ and Tables for Use in Designing." To destroy the possibility of the development of the diagonal cracks through the slipping of the bar a continuous corrugated mechanical bond was deemed necessary by the producers of the corrugated bar. It is this principle that the pamphlet referred to demonstrates: first by a quotation from Professor Van Orum on "Fatigue in Concrete", following with several chapters on the principles of adhesion and bond, and then innumerable illustrations from the different types of Universal corrugated bars through a long list of photographs of all classes of completed work, from buildings of all kinds to bridges, viaducts, reservoirs, tunnels, dams, etc. In all of these the corrugated bar has been used successfully and the booklet gives an interesting review of the work in all its present and future aspects.

An elaborate hand book of instructions is printed by the Trussed Concrete Steel Company, of Detroit, for the guidance of superintendents, inspectors and foremen. It covers the entire range of re-inforced concrete installment including the duties of the inspector, forms, centering, and false work generally. Specifications for the handling and use of the reinforcing steel, the storing and inspection of the cement, sand and stone and gravel, as well as the mixing of the concrete, is given attention in detail. The placing of the concrete, the removal of the forms and centering and reinforced concrete joist and tile construction is also accurately specified.

From a commercial standpoint, the handmaking of home furniture or business office fittings by artists, a work in which William Morris won undying fame, is one of the notable landmarks of the Twin Cities. When one visitstet shop and craft house of John S. Bradstreet and Company, in Minneapolis, it is to realize that it is the artistic environment found here that is in itself an expression of the output, that makes the residences this firm has furnished, from New York to Seattle, bear that old-world charm that is as distinctive as the products of Kelmscott Manor, or the best shops of Europe have given to palace and cottage in the old world. Beside their specialties of designing, building, and furnishing interiors and remodeling homes, the Bradstreet company devote much attention to landscape gardening, designing and laying out Japanese gardens, and the collection and sale of the handicraft of the world in old and artistic furniture, tapestries, Japanese bronzes, and in fact everything that art demands and money can supply for the artistic completeness of the home. Architects everywhere will do well to consult Mr. Bradstreet in regard to the ir residence interiors, for his knowledge, from woods to their completed finish, is second to none.

Of the many stones and granites found in the State of Minnesota, that are more or less suitable for exterior or interior use, and foundations; the sandstone known as Kettle River, deservedly stands in first place among the building stones of the United States. The opening of the quarry at Banning, Minnesota, by the Barber Asphalt Paving Company, has made this stone so accessible that, through the installation of an immense power plant with gang saws and mills equipped with modern electrical appliances for quarrying, the plant is ready to handle the most extensive contracts for building stone, both rough and dimension block, or sawed in ashlars, sills, steps, caps and belt sources, also curbing, paving blocks and rubble stone. In thus preparing to meet every demand for Kettle River sand stone, as the stone itself has the ad vantage in color, grain and strength to meet all these requirements, the addition of the Banning quarry to the already developed stone resources of the state, should meet with the endorsement of the architectural profession and contractors to whom the certainty of prompt shipment means so much when a stone building is contemplated or under construction. The Chicago offices have removed to Minneapolis, located in the Security Bank Building, with C. E. Haldemar as manager.

SEE PAGE XXVII FOR TILING DESIGN

Roofing Tin versus Heavy Roofing Materials

TO PROVIDE the required support which all heavy roofing materials such as slate, tile, slag and composition roofs require, very heavy and substantial roof construction is necessary. This is a heavy expense which is unnecessary when Roofing Tin is used

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In time of conflagration or earthquake it is found that building roofed with Tin will, naturally, withstand the onslaught of the flames or the jar of the earthquake far longer than any other.

Heavy roofs soon give way and crush all beneath, while a roof covered with Tin, even with the supports removed, has many times been known to suspend itself and remain intact, thereby greatly helping the fighting of the fire by smothering the flames.

Such features as these cannot help but interest the far-seeing architect or property owner and we will gladly send more detailed information along these lines if you will write to our President, Edwin L. Seabrook, 2213 Chestnut Street, Philadelphia, Pa.

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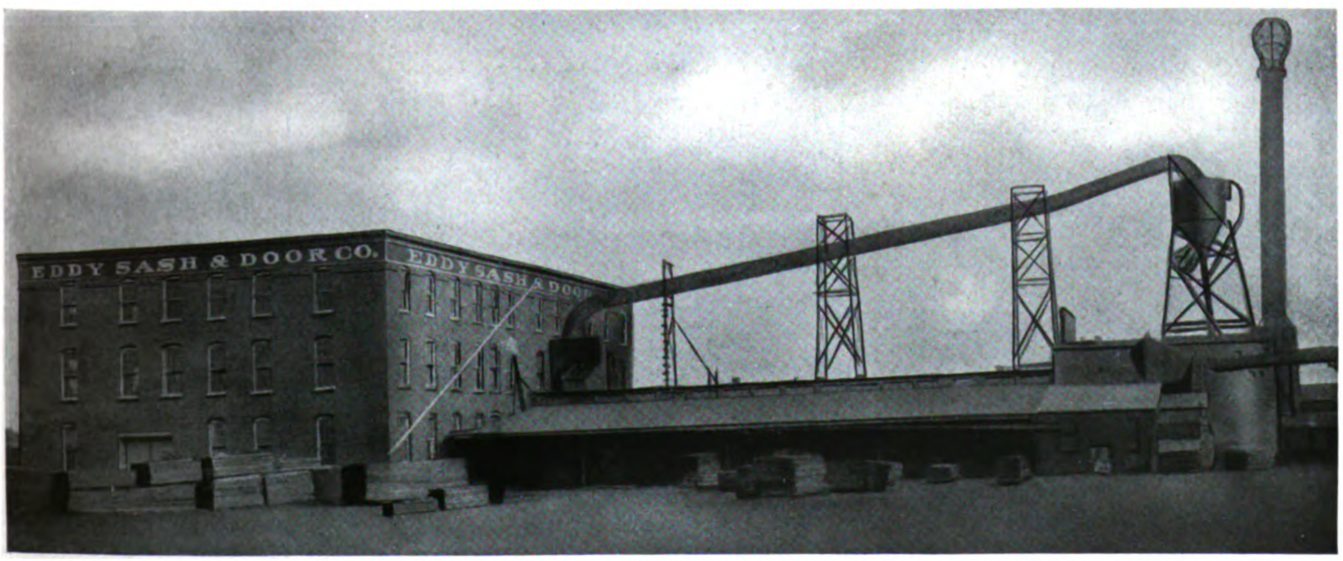

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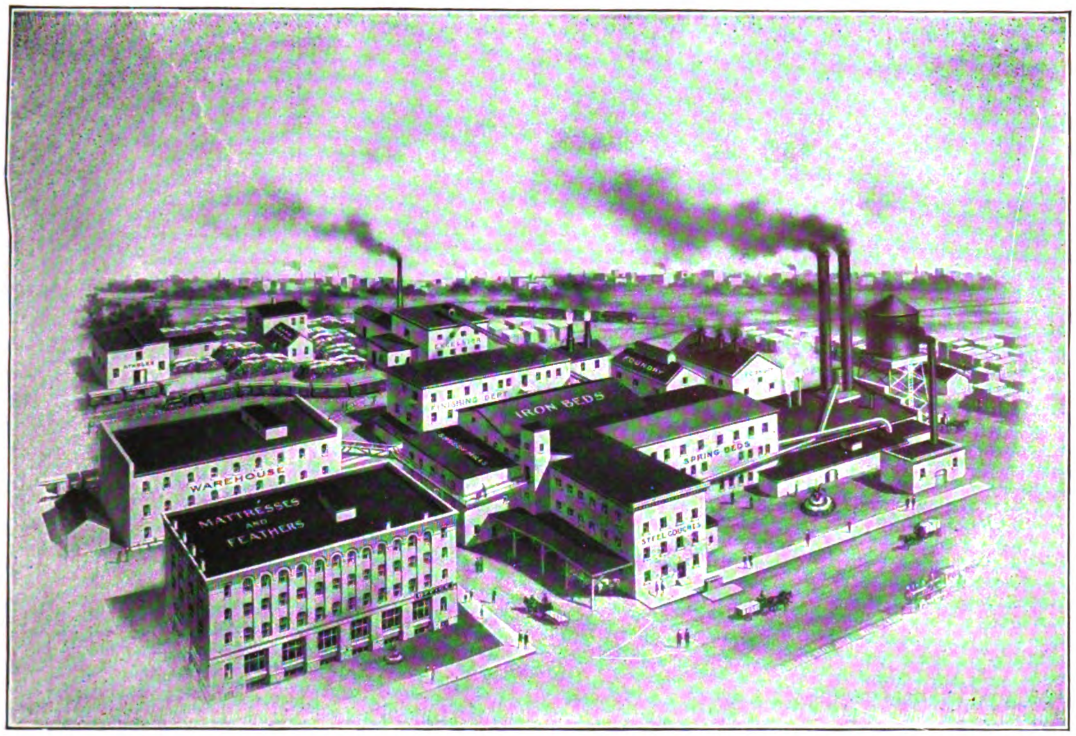

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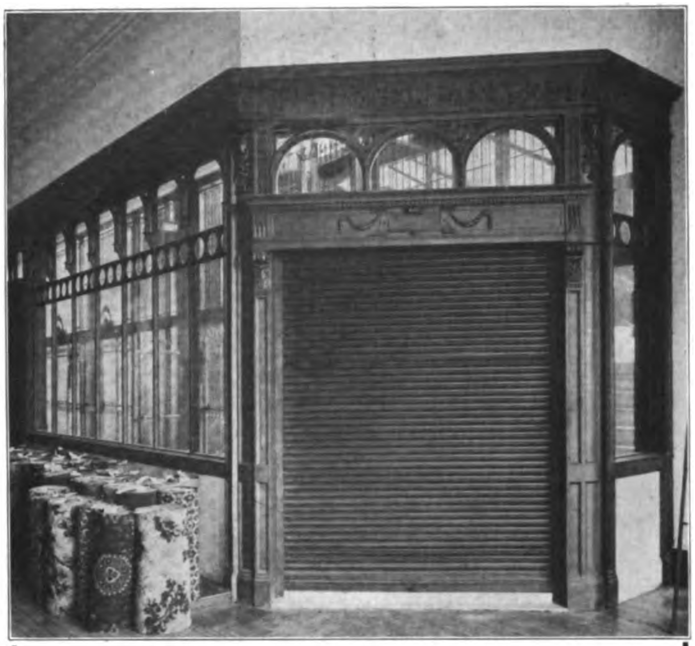

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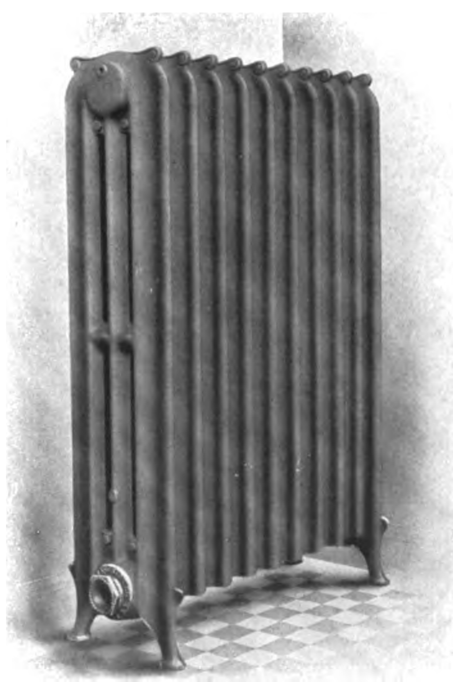

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The Western Architect

A NATIONAL JOURNAL OF ARCHITECTURE AND ALLIED ARTS, PUBLISHED MONTHLY.

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ROBERT CRAIK McLEAN, EDITOR.

W. L. B. Jenny Recovers From Recent Illness

The friends of William Le Baron Jenney, which means the entire architectural profession, will be glad to know that he is recovering from his recent illness. The attack of pneumonia, from which he suffered in February, has left him weak, but it is hoped that the freedom and pure air of Southern California ranch life will soon restore him to his usual vigor or body and mind.

A Dangerous Argument Against Registration

We object most decidedly to the attitude taken by the American Architect toward the state examination and registration of architects. It is not because we differ in opinion, but because of the specious, and if listened to by the layman, the dangerous arguments which it advances against the measure. The "tin tag" or the "ticket of leave" argument is harmless because it is ridiculous, but to call a license law a "very tight little trades union" measure when enacted by the state, and then to follow with a proposition that the American Institute of Architects becomes that trades union, is dangerously near confirming the too popular opinion that the Institute is a trades union and organized and sustained solely to enforce its schedule of charges. It has been difficult enough for the members of the Institute to impress the public with the fact that it is in no sense a union, though the charge bobs up in the public press whenever a convention is called, but to have the senior architectural journal acknowledge the corn thus candidly will make future denials weak if not wholly inert. We cannot be charged with any disloyalty to the American Institute of Architects in taking this position, as we have probably done more practical work in the support of architectural association than any other journal in the United States, but we not only believe that the profession to be established as such must be regulated, but that it must be done by the state rather than by the professional body. Let the belief that the American Institute of Architects is in any degree an arbitrary body become established in the public mind and its usefulness to its members and its standing before the public will be ended to all practical purposes. Our contemporary (that in this case is really "esteemed") should take a different line of argument if it cannot change its policy toward the licensing of architects. As we have said before, while a state regulation does not directly affect those architects that are thoroughly established in the profession, it does elevate the profession as a profession and gives the only standing the public can comprehend, and that is a legal one.

Prospective Public Demand For Architects' Registration

That the present tendency is toward the passage of state laws providing for the registration of architects before they are permitted to practice the profession is undoubted by those who watch closely the trend of state legislation. Heretofore, it has been those members of the profession which wished to establish a professional standard, looking toward public safety as well, that headed the movement toward securing such legislation. This interest exhibited by architects in many cases has been misunderstood, but it now appears that the movement is beginning to take its proper position as a demand from the people. The verdict of a coroners' jury at Farmington, Massachusetts, recently, which recommended the passage of "a law requiring architects to pass an examination before being admitted to practice," being an entering wedge that probably will be followed by others. This will relieve the profession of the necessary, but not altogether agreeable, duty of urging the passage of such a law before the legislatures.

Architectural League of America Convention

The ninth annual convention of the Architectural League of America will be held at Washington, April 22-23-24, and will be the guest of the Washington Architectural Club. Architects of eminence in the profession will present papers, and the activities of the club in educational lines will occupy the time of the convention to a large degree. The establishment of the office of Permanent Secretary will be discussed, and we would like to suggest that the mistake made by the Institute in ignoring the English solution to the problem is not electing an "honorable secretary", and hiring a secretary de facto, may not be repeated by the League. The secretary of the professional organization should be a representative of the best talent of that profession as the president. Such a man cannot give the necessary time to details, and a paid secretary, who has also standing in the profession, but so situated as to be able to devote his entire time to the work, should be engaged for the purpose of carrying out the details under the secretary. The League represents the growth and future of the profession in an individual sense, as the Institute stands for the profession in general, and its work has already brought into systematic form the educational growth of the draftsman, which was generated in the Architectural Clubs, but began development on academic lines with the commencement of the League activities in 1899. It has always been governed by the most energetic and intellectually strong spirits in the membership of the several clubs, and has won the approval and co-operation of the older architects, as well as the architectural schools, by the definite and progressive character of its efforts in the advancement of the draftsmen's interests, as well as the more ambitious work in the promotion of civic art and pure design.

An Ideal Competition Programme Issued

The announcement of the competition for the design and construction of the new building for the International Bureau of the American Republics, at Washington, D. C., brings before the Architects of all the American Republics, one of the most interesting and ambitious problems yet presented for competition in this country. The cost, some seven hundred and fifty thousand dollars, is defrayed by Andrew Carnegie, who presented that sum as a New Years gift to the American Republics, to provide a home for the International Bureau, an institution supported jointly by the twenty-one republics for the purpose of developing commerce and promoting peace. It is for this latter reason that Mr. Carnegie is most interested, and the competition is to him, and should be by the people as well, only second in interest to that of The Hague Peace Palace.

THE STRUCTURAL STEEL WORK FOR THE COOK COUNTY COURT HOUSE AT CHICAGO

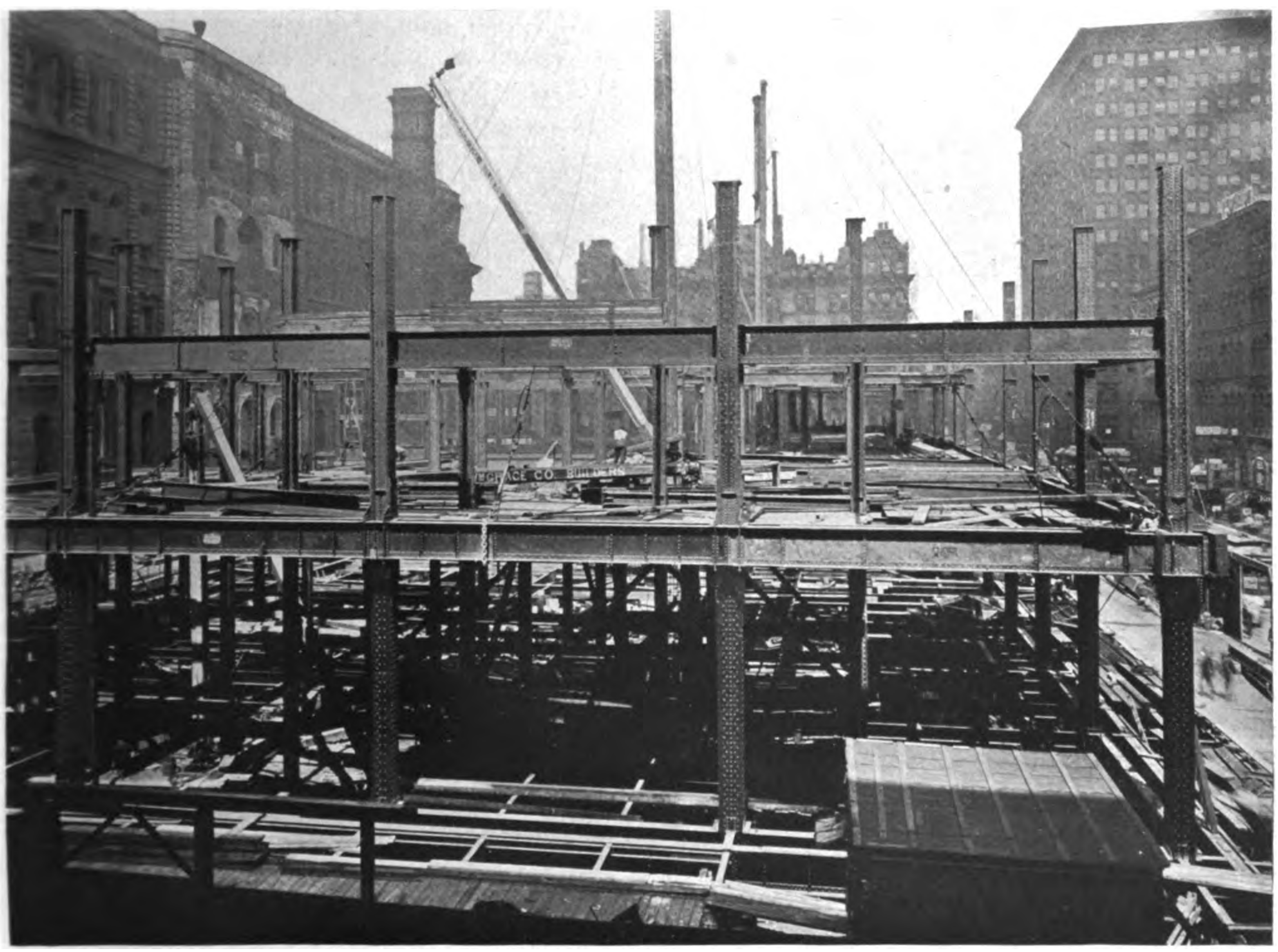
THE use of iron and steel for the frame work of a skeleton building is a distinct modern method of construction, in spite of the fact that iron has been used in buildings since the earliest times. For many centuries iron has been used in buildings in the form of dowels, ties, anchors and grilles. Even when used in this manner, prominent architects have opposed its use, as can be seen from the fact that Vignola is on record for having said: "Iron should not be used in buildings as strings", probably meaning thin iron ties.

The chief reason for this distrust was probably the liability of iron to rust. When properly protected, however, iron should last as long as the ages. In the British Museum, a blade of iron can be seen, which was found embedded in the mortar in one of the pyramids, at which place it probably had been laying since the earliest historic times. Because of such good protective qualities of mortar, every piece of structural iron and steel in the Cook County Court House has been completely surrounded by portland cement concrete and mortar in addition to two coats of the best steel paint known today.

The first building on record, in which iron has been used on a large scale, is the "Bourse du Commerce" in Paris, erected just one hundred years ago. In this building, the dome was constructed of cast and wrought iron. When this building was re-modeled eighty years afterwards, the iron work was found to be in an excellent condition.

The progress of the use of iron in buildings was very slow, until the first beams were rolled about fifty years ago. Floors at that time were constructed of brick arches placed between the iron beams. The bottom flanges of the beams were unprotected, and in every fire this construction was sure to fail. To guard against this, fireproof hollow tile arches were invented about thirty-five years ago. This construction had the advantage not only of being fireproof, but was also lighter and cheaper. Iron beams also became cheaper as soon as improved methods of rolling were introduced.

Since this time the progress of the use of iron for



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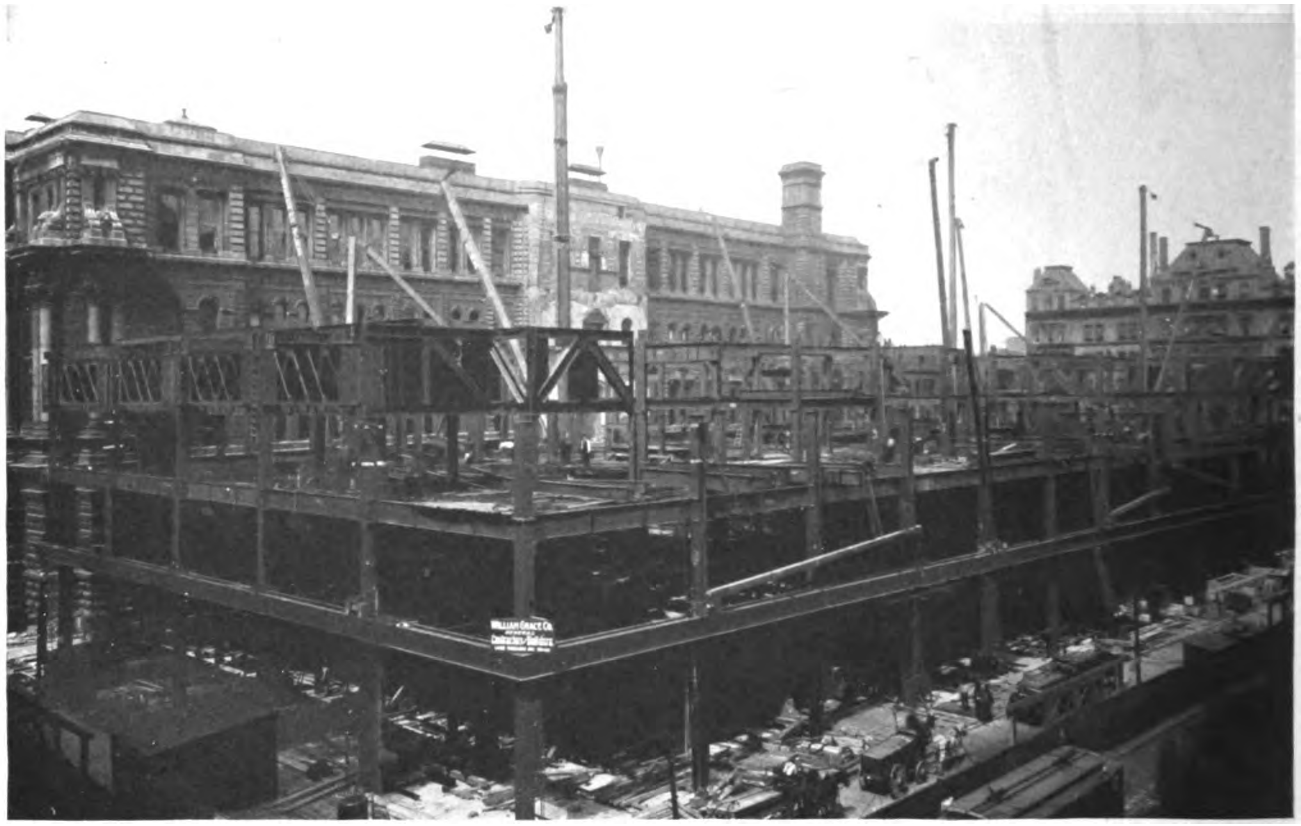


September 14, 1906

buildings advanced very rapidly, and an entirely new method of construction gradually came into existence. This method of construction is called the "Skeleton Construction". At that time it was called "The Chicago Construction" because the first buildings of that type were built in Chicago. This construction can be described as a skeleton frame of iron or steel that is made strong and stiff enough to resist safely all live and dead loads, both vertical and horizontal, to which it may be subjected. In the pure skeleton framed building, the outside curtain walls are carried directly by the steel frame at each floor, and all such walls are considered as part of the dead loads.

The Home Insurance Building, designed by Jenney and Mundie, approximated this method of construction, except that the outside walls were self-supporting. The Tacoma Building, however, designed by Holabird and Roche, was the first building built of the pure skeleton type of construction.

It is instructive to compare the oldest buildings of this type of construction with the Cook County Court House, which last building represents the most modern building of this type of construction. The improvements over the old methods may be seen at once. Take, for example, the design of the foundations. The early skeleton framed buildings were built on floating foundations, and some on pile foundations. Although these foundations were very carefully designed with low working pressures, and the live load almost totally ignored, there has been a very considerable settlement in many cases, and often the settlement has been uneven. To eliminate this danger, the entire weight of the Cook County Court House has been carried down to solid rock underlaying Chicago by help of portland cement concrete caissons.

There are 130 of these caissons, varying in size from 4 feet to 10 feet in diameter. The bottoms of the caissons are from 110 feet to 120 feet below the street grade. They contain 450,000 cubic feet of concrete or about twice the volume of the Auditorium tower.

In the early skeleton framed buildings, cast iron columns were used. Due to lack of rigid connections, cast iron has now been discarded as the proper column for tall buildings. In the Cook County Court House, steel columns in two-story lengths have been used. To obtain the necessary rigidity, deep plate girders running between the outside columns, are securely riveted to the columns. In addition to this, all of the floor beams connecting to the columns are riveted to the columns with eight rivets at each end, four of the rivets connecting to the top flange and four to the bottom flange of the beams.

The columns of the Cook County Court House, Holabird and Roche, architects, have been spaced about 50 per cent further apart than was the case in the early skeleton framed buildings. The smallest column is a 7-inch plate and angle column, and the largest column has the following sections:

8 Ls	6x4x15-16
3 Plates	14x15-16
4 Plates	20x7-8
2 Plates	20x15-16

all riveted together with 7-8 diameter rivets. This column weighs 720 pounds per lineal foot of length, and the total weight of all columns is 3800 tons.

Due to the thin top crust nature of the soil, the bottom of the foundations of the early skeleton framed buildings never were placed more than 15 feet below street grade. For this reason these buildings could only have one basement. Resting on concrete caissons, it has been possible to provide the Cook County Court House, not only with a basement, but also with a sub-basement. The floor of the sub-basement is about at the same level as the tunnels under the streets. All coal and other supplies may be received through these tunnels. The outside basement and sub-basement walls have been made of portland cement concrete 3 feet 4 inches in thickness. Inside of these walls, 20- inch steel beams have been embedded in a vertical position and are spaced about 2 feet 6 inches on centers. This construction has been made necessary in order to resist the large earth pressure that is increased by the weight of the adjoining City Hall building. At the bottom of the wall this thrust is resisted by concrete beams from 4 to 6 feet in depth, running from caisson to caisson. The basement floor beams have also been made strong enough to resist their portion of the earth pressure.

Other things being equal, deep beams of a wide spacing produce the maximum economy in the design of the steel beam floor construction. In the Cook County Court House, the floor beams have been made from 18 inches to 24 inches in depth, and have been spaced about 10 feet apart. In the early skeleton framed buildings, both the depth and the spacing of the beams were about one-half of what has been used in the Cook County Court House. The total weight of the floor beams and girders run up to 6,000 tons,

September 18, 1906

and the total weight of the steel work for the building amounts to 10,800 tons, or enough to fill 400 railroad cars.

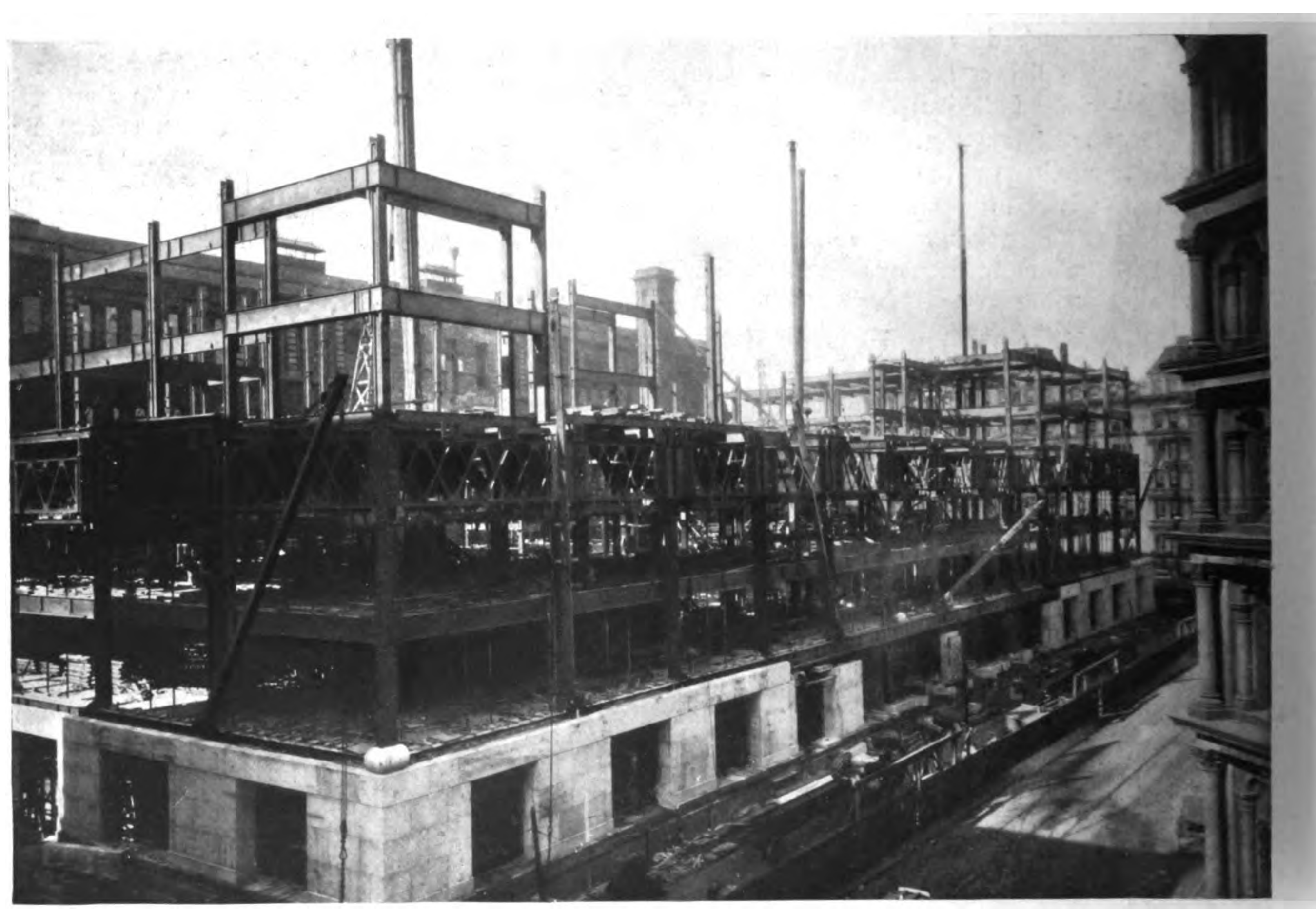
For architectural reasons, one column spacing was necessary in the lower stories. In the upper stories the arrangement and size of the court rooms in the wings have made another column spacing imperative. These different column spacings change at the vault story, where the columns of the upper eight stories are carried on deep trusses between the columns of the lower four stories.

The steel columns located back of the 9-foot diameter and 96 feet high granite colonade along the street fronts are supported in a similar manner on trusses between the columns below. The design of all of these trusses has been admirably executed. These trusses have been made a full story in height. The columns coming down from above, and the columns coming up from below, are riveted to these trusses the full height of the story, making an extremely rigid construction. With this stiff knee-bracing inserted to brace this construction laterally, this design should be fully as safe as if no irregularity had occurred in the column spacing.

The support of the granite, of the granite fronts has also called for many special and novel designs. In all cases, however, the spandrel girders are located more than 4 inches away from the granite facing and the space between the granite and the steel girders has been fireproofed solid with Portland cement grouted in place so as to bond together with the granite facing.

Another feature of interest is the manner in which the 10th and 11th story street walls above the granite column colonade have been supported. These walls are carried on heavy 36-inch deep double cantilever plate girders, projecting out over the steel columns back of the granite columns. By doing this the granite columns are relieved on any weight coming down from above.

It will be thus seen that the architectural treatment of the building has made it necessary to solve exceptional problems in the structural design of this building, and the manner in which these difficulties have been met, show clearly the elasticity and the possibilities of the skeleton framed method of construction.



October 22, 1906

WM. GRACE COMPANY, BUILDERS

CONSTRUCTION OF COOK COUNTY COURT HOUSE AT CHICAGO, ILLINOIS

HOLABIRD AND ROCHE, ARCHITECTS AND ENGINEERS

THE HERMIT ARCHITECT

BY H. V. LANCHESTER.

OUTSIDE the Chinese Empire, London is perhaps as conservative a place as can be found on the face of the globe; the Londoner never changes his ways except under severe pressure.

It may easily be imagined that the Architect, brought up on the traditions of the past, is unlikely to break with the habits of his predecessors, and this is in fact the case. Generally when the first client is captured, or the first competition is won, you will find the young architect looking around for a panelled room or two in one of the old Inns of Court or the streets adjoining them. Nothing less than two centuries old will satisfy his aspirations, and his instinct throughout is to harmonize his methods with such an environment.

Sometimes his distaste for suburban life will prompt him to fix his domestic establishment in one of these old houses, allotting a portion to his office. Indeed, many leading architects have continued this arrangement throughout their whole career. In any case, it is an established ideal to secure a certain degree of privacy. The principal is only to be seen by appointment, unless undeniable credentials are presented, and they will probably be investigated by a reliable subordinate before the visitor is admitted into the sacred presence.*

The intention, namely, that the train of ideas while at work, should not be disturbed for trifles, is admirable; but such methods are apt to irritate if carried to excess, or if, as occasionally happens, they are exaggerated through vanity and a desire to impress the uninitiated.

One man has been known to keep his telephone disconnected, saying that its use was to call up people he wanted, not for people he didn't want to call him. This may be regarded as an extreme case; more comprehensible was that of the man who, invited down to the country in January, replied that he wasn't going to catch his death of cold going out of town at that time of year, but if his client would wait till the spring, he should be pleased to run down and look into things.

It would be idle to pretend that these instances are representative, but the spirit of seclusion broods over the architects' office, the accepted view being that the exercise of the imaginative faculty is an operation to be carefully hedged round. This view can certainly be justified if the results show themselves as commensurate with the drawbacks attendant on such precaution, but it is to be feared that this is not necessarily the case. Be this as it may, it is improbable that any marked tendency to vary the recognized practice will develop itself.

*This statement by our London correspondent recalls the experience of John W. Root, in calling upon a prominent London architect. It was during a visit to London in 1888 at the time when the erection of "The Rookery" and several other of the first high buildings in Chicago had made the name of Burnham and Root internationally famous. In his inimitable way, Mr. Root, narrated how he was met in a small vestibule by a small boy in uniform, who took his card and disappeared within. Returning, he presented the architects' regrets that he could not see Mr. Root at that time, but requested that he call again. Determined to see the architect, and somewhat amused at the procedure, he repeated his call and was finally admitted. What seemed to amuse him most was that instead of seeing the drafting room with tables or alcoves stretching away to an extraordinary distance, with a large corps of draftsmen busily at work that his imagination had pictured, he was ushered into a small office and courteously received by the architect who, with the assistance of one draftsman, was working out the details of an imported design. Mr. Root also narrated that the representative of the Hale Elevator, who had been in London for several years, told him that he had not been admitted to the office of a single architect to explain his device, the "lift", still in use being the old plunger type. Upon Mr. Root's describing the eleven-story "Rookery Building", the architect asked in regard to the "lifts" and said, "Ah, but how do you get a hole deep enough?" That there is no marked tendency toward change in this recognized practice of seclusion seems to be verified by Mr. Lanchester' comment, which is an exact parallel of Mr. Root's experience in the late '80s. EDITOR.

AN INTERESTING HOUSE

A contributor to the Western Architect and other professional and technical journals is planning to build a house that promises to develop a new principle of construction along sanitary lines.

Having made a special study, for a good many years, of the subject of heating and ventilation, and now being connected with a medical journal which is giving much attention to the fresh-air (out-door) treatment of tuberculosis, he believes it is a good time to get a hearing (it ought to be world-wide) for a simple but effective means of properly heating and ventilating both the most modest and most pretentious house, thus giving the sick and the well the benefit of all-day, fresh-air-in-door treatment. He is confident that this can be done at a nominal increase of cost for the plant, with a considerable saving of fuel. With a rapid decline of faith in drugs, on the part of the medical profession and the laity, it is now recognized that not only consumption, but many nervous and other diseases can be wholly eradicated by living in properly ventilated houses in winter and in the open air in mild weather.

He speaks rather disparagingly of our text-books on ventilation, asserting that they have scarcely a practical word on how to ventilate a moderate-sized residence; and, he further says, he has been unable to find, East or West and in a long search, such a residence with a system of ventilation worthy the name.

He has planned a house that can be built with stock mill-work and low-priced labor (cheap construction generally) for $5,000 or $6,000, but which will cost, artistically designed and well constructed, with basement and attic finished, from $9,000 to $12,000. This seems to cover the average house.

As we cannot refute his charges against the text-books, nor deny his statement that a properly ventilated house of moderate size cannot be found, and as we have much confidence in his ability to accomplish, in some measure, at least, the end sought, the experiment possesses great interest for us, and we are sure it will possess no less for our readers. Moreover, knowing that he does not intend to seek a patent on his system, and that he is making considerable sacrifice to demonstrate it, we are also sure the architectural profession will gladly give him all the praise the success of his work shall merit.

The Western Architect will publish, in due time, the results of his work, with complete details of the entire plant and its working, and also of the house which is designed by an architect of high standing.

ASSOCIATIONS.

SAN FRANCISCO CHAPTER A. I. A.

The annual meeting of the San Francisco Chapter, of the American Institute of Architects, was held on February 19th, the following officers being elected: President, Albert Pissis; Vice-president, William Mooser; Secretary, Sylvian Schnaittacher; Trustees, Henry A. Schulze, William Curlett. Meetings will hereafter be held on the third Thursday of each month.

SOUTHERN CALIFORNIA CHAPTER A. I. A.

At a regular meeting of the Southern California Chapter, of the American Institute of Architects, held at Los Angeles, March 12th, the Chapter endorsed the proposed exhibit of drawings by the Architectural Club, to be held in May, which will, beside designs from the architects of the coast cities, include those exhibited at the recent exhibition of the Chicago Architectural Club. If proper arrangements can be made this exhibition should be a great success, both from the architects' point of view and in its educational value to the people of Los Angeles and vicinity.

UNIVERSITY OF ILLINOIS ARCHITECTURAL CLUB.

A unique banquet was given by the Architectural Club of the University of Illinois at Champaign on April 3d. The toast master was Prof. N. Clifford Ricker.

The toasts were not only characteristic of the men but pertained to those features of the Architectural profession to which a lifelong devotion by the speakers had made them most familiar.

Professor Ricker spoke on "Architecture"; Dean J. W. White, of the Engineering Section, of "Utility"; Prof. N. A. Wells, director of the Art Department, "Beauty"; P. B. Wight and H. B. Wheelock, Architects, and members of the State Board of Examiners, "Durability" and "License"; M. B. Cleveland, President of the Club, "The Professor"; L. J. McCarthy, "The Draftsman"; and Fritz Wagner of the Northwestern Terra Cotta Company and the nestor of architectural terra cotta designing in the west, in his inimitable way, responded to the toast, "Mischief." The conclusion of the toasts was a glowing horoscope of "Our Future" by L. C. Howell.

ILLUSTRATIONS.

The Whitehall terminal, which is its first municipal ferry landing, will give to New York City a system of slips that will replace the badly constructed and inconvenient ferry terminals so long in vogue, and will, when completed, become a model upon which all the ferry terminals of Manhattan Island will be based, and also serve to compel the reconstruction of all other landings. Mr. J. A. Bensel is Commissioner of Docks. Walker and Morris of New York are the architects, who have prepared the plans and specifications for the ferry house proper. The work on the slips, under structures, slips, decks, etc., is being done under the engineering force of the Department of Docks. Mr. C. W. Staniford is Engineer in-Chief of the Department of Docks and Ferries with general supervision over the whole terminal. The ferry sub-structures, slips, bridges, etc., of the westerly end of this terminal, namely, the two Staten Island slips, are now completed, while the substructures, ferry bridges, decks, etc., for the westerly or 39th Street terminal to South Brooklyn, are now in course of construction by the Department of Docks and Ferries. The whole building, as planned, is intended to cover both these easterly and westerly ends, and also two intervening slips, which are not built at the present time. The plans for that part of the building covering the three easterly slips, or those intended for the 39th Street ferry to South Brooklyn, are now completed. The detail plans, also for the westerly or Staten Island end, covering the two slips, are now being prepared for letting the contracts. The building is arranged to accommodate upper and lower passengers, the upper passengers on bridges or large promenades on the second story; the third story is arranged for office accommodation for the ferry or other city service, while the river front on the fourth story is arranged for a recreation structure. The building is generally of steel construction. The decks on upper and lower stories are of reinforced concrete with suitable top coverings, the sides being either of stucco or in various forms of metal architectural work.

In mural decoration there is a growing disposition to use modern motifs in representing modern industries. This is shown in the objection of a silk manufacturer to the old fashioned loom in a cartoon representing the silk-weaving industry, claiming with some degree of logic that the old fashioned machine had nothing to do with the present wealth derived from this industry. In the four lunettes, by W. B. Van Ingen, for the New Jersey State Capitol, at Trenton, New Jersey, shown in this issue, "Glass Blowing" presents in idealized form a modern glass furnace. "Architecture and building" represents a modern steel construction skyscraper in course of erection. "Iron and steel" shows a worker in metals with his hammer looking from and old fashioned structure at a modern hydraulic hammer at work; and "Navigation" is represented by a figure on the cross trees of a vessel with a glass in his hand.

The painting by Taber Sears, entitled "The City of New York as the Eastern Gateway of the American Continent Receives the Tribute of the Nations", a ceiling decoration in the aldermanic chamber of the city hall of the Borough of Manhattan, is meant to typify the fortunate and significant situation of that city. The central figure of the panel and her attendants represent Civilization, History, Commerce and Agriculture of the old world. Two figures, the Dawn and Evening, support a garland of its fruitfulness. Civilization extends a scroll to the white-robed figure of New York City who carries the mace of authority. At her left, stands the figure of a militant boy, supporting by his left hand a shield on which are the arms of the city, and in his right he carries the sword of state. Below the decorative bridge are seen in the distance the Brooklyn bridge and the masts and sails of shipping.

The outcome of the competition for a soldier's memorial for Allegheny county, at Pittsburg, by Palmer and Hornbostel, is shown in perspective. This competition was adjudicated by Prof. Warren P. Laird, and won on its merits, and the program carried out through the honesty and intelligence of the board of county commissioners and its chairman, who are deserving of the thanks of the Architectural profession for their attitude in the controversy that was precipitated by the Controller while the matter was under consideration.

It is seldom that the architect finds opportunity for designing a residence for so picturesque a situation as that upon which the residence of Mr. James A. Murray, at Monterey, California, is placed, and it is rare that the problem is so satisfactorily solved as shown in the design by Albert Farr, of San Francisco. A bold, rocky coast, barren and rugged, has been complimented by severe lines and harmonious color, meeting the natural conditions with a delightfully artistic harmony of design. The photographs, by Mr. Barker, are pictures in themselves, and to those who enjoy rugged nature, brought into harmony with architectural forms, will appreciate the work of the architect as shown by the photographs.

Among the many residences that have grown in skilled hands from the inspiration of picturesque surroundings common to many localities in Minneapolis, the residence of Mr. Cavour S. Langdon, by William Channing Whitney, is worth studying, not only in its exterior aspect, but in the simple and scholarly rendering of the interior design. Each line shows careful study and a decorative harmony prevails throughout. The exquisite work of the interior constructive artist is also deserving of cred t in seconding the architect in his work, in producing a harmony of tone and material that cannot be shown but only indicated by the photograph.

In Los Angeles, where the same general conditions prevail, both as regards location and architects, there are many homes designed on distinctive artistic lines. Among them the residence of Doctor Shipman, by J. J. Blick, and of H. C. French, by Hudson and Munsel, are shown for their exceptional artistic quality. The same may be said of the residence of Mr. E. G. Lewis, of St, Louis, of which Francis Dreschler is architect.

It is always interesting to study the design an architect makes for his own home. Here he is not hampered by the peculiarities of a client, though probably in most cases he has a far more exacting one when he is client and architect combined. The excellent results achieved by Mr. F. Von Beren, of Brown and Von Beren, architects, of New Haven, Connecticut, in his exterior design, will excuse any tendency to produce a hunting lodge effect which flavor the interiors. But the delightful manner in which the difficult motifs, if they may be called such, are distributed in nitche and wall gives a general attractiveness that must be a constant joy to the artist who arranged the general effect.

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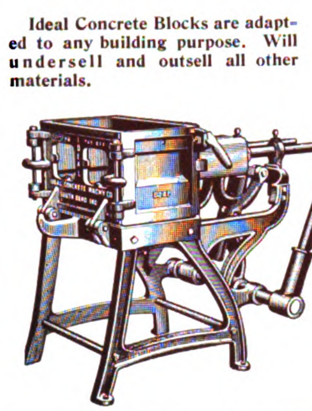

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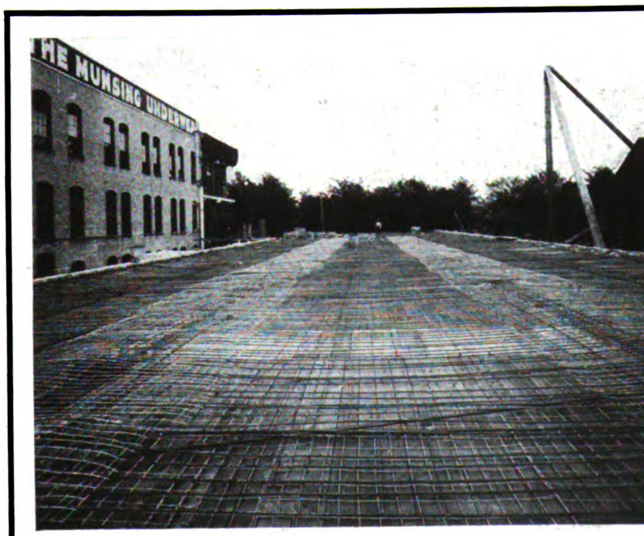

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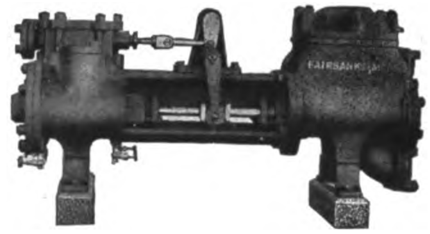

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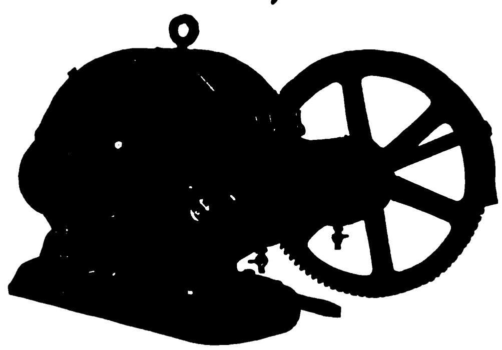

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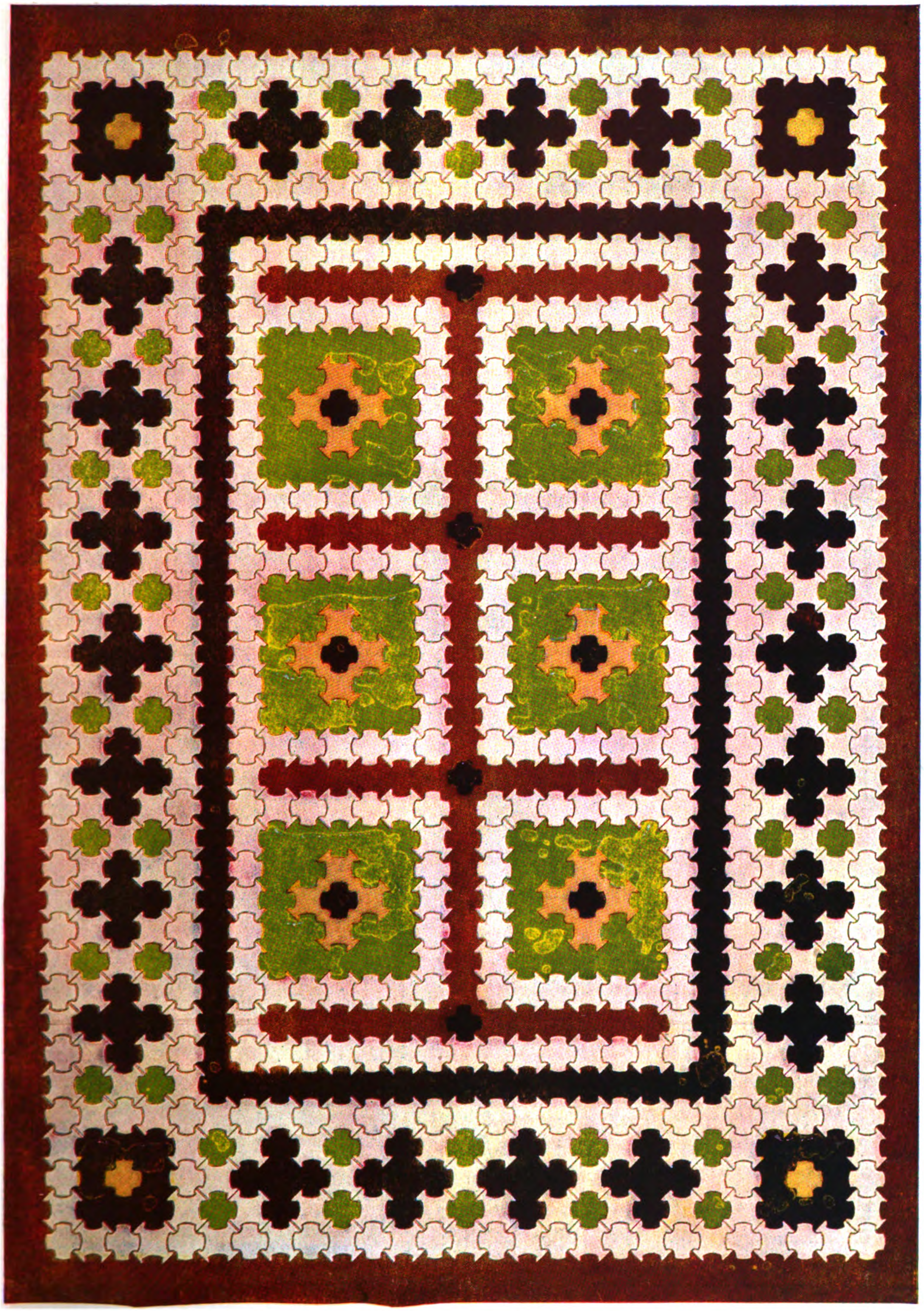

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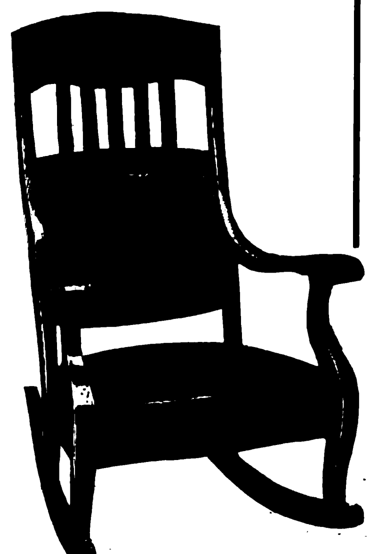

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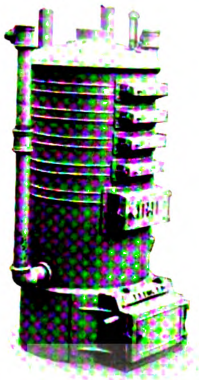

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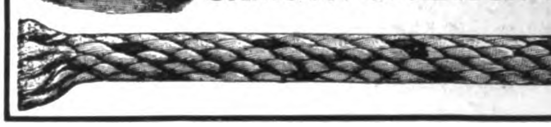

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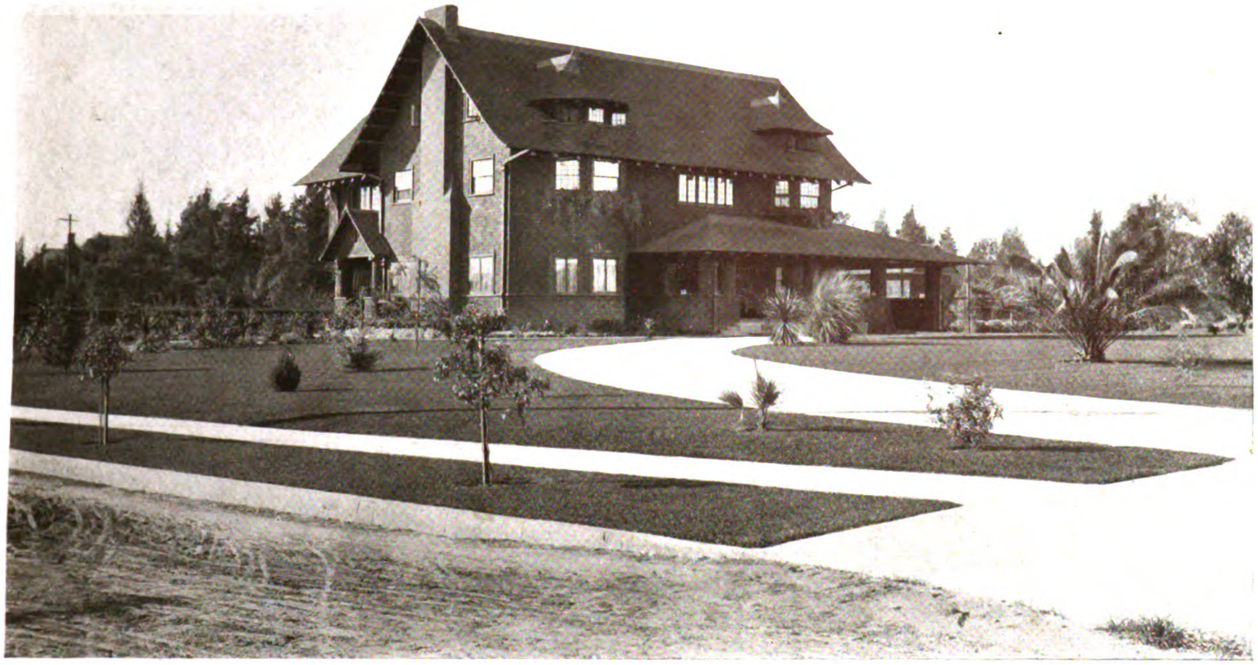

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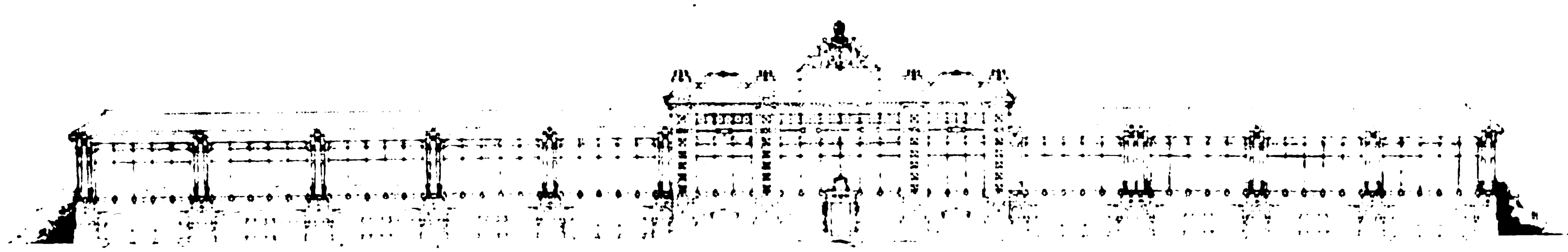
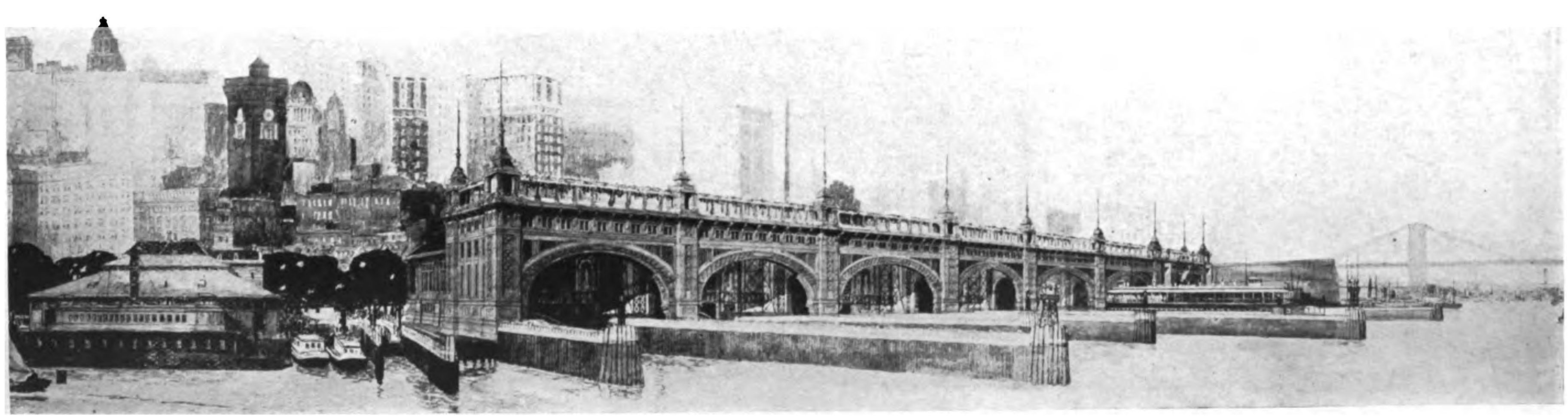


WHITEHALL STREET ELEVATION



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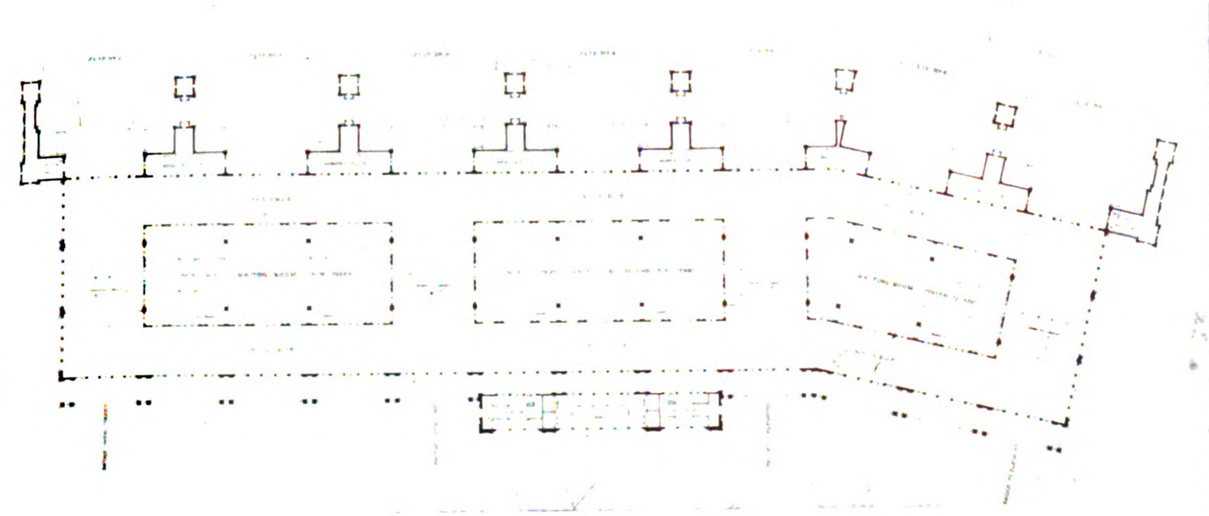

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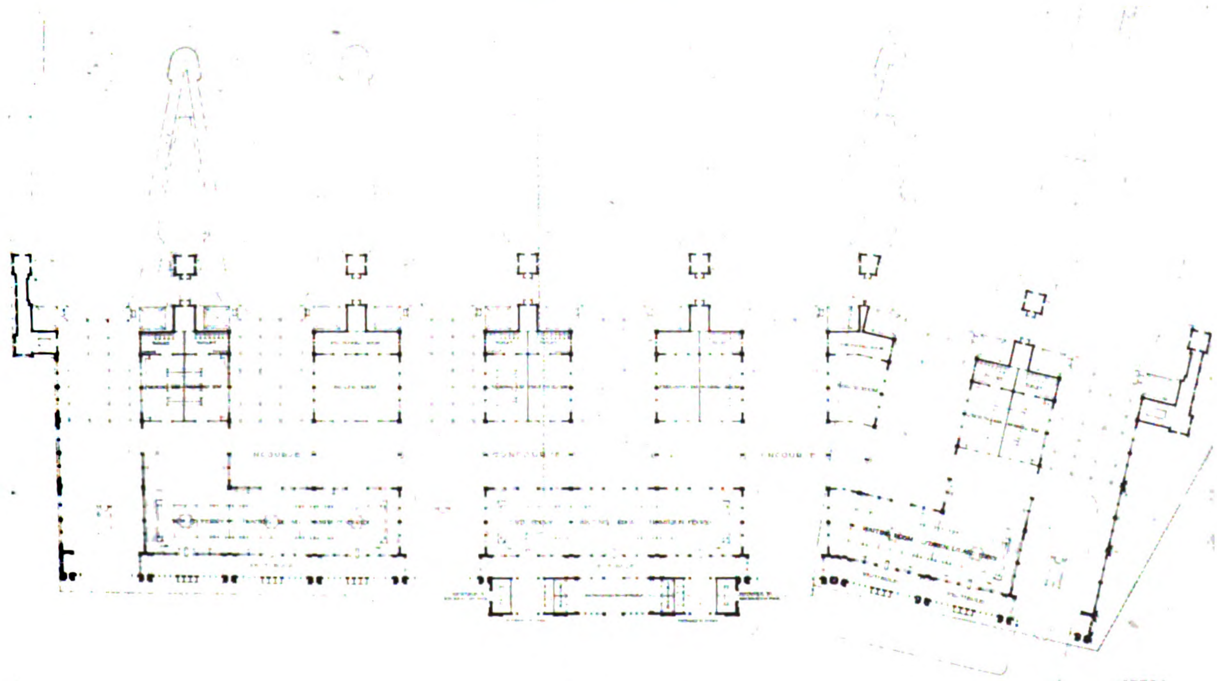

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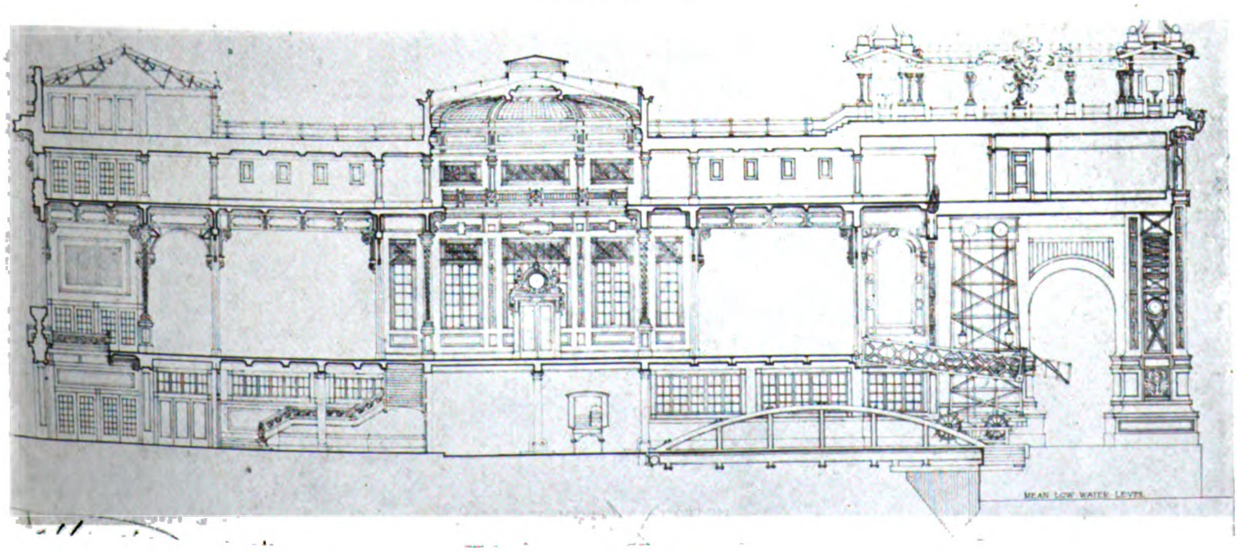

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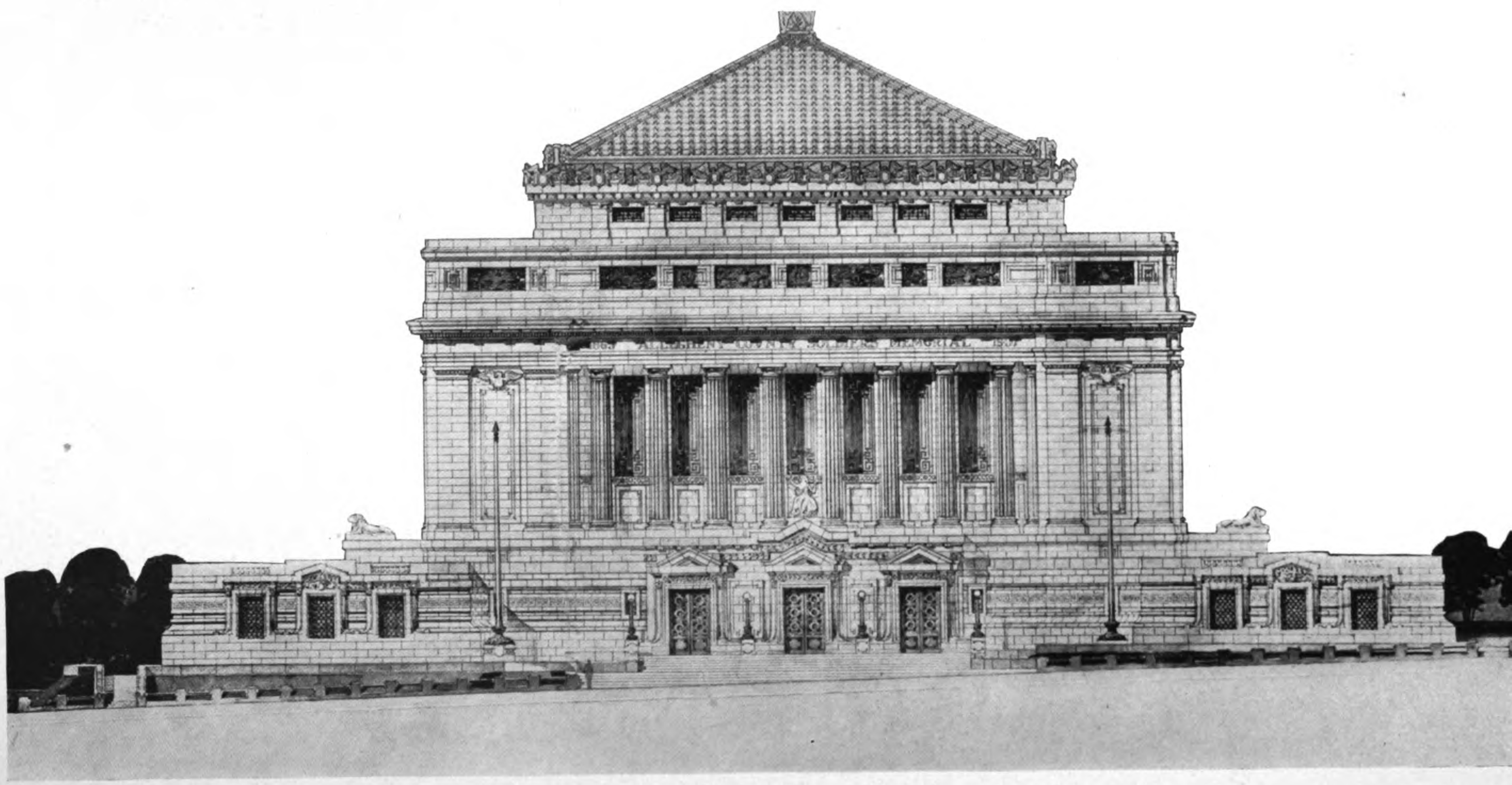

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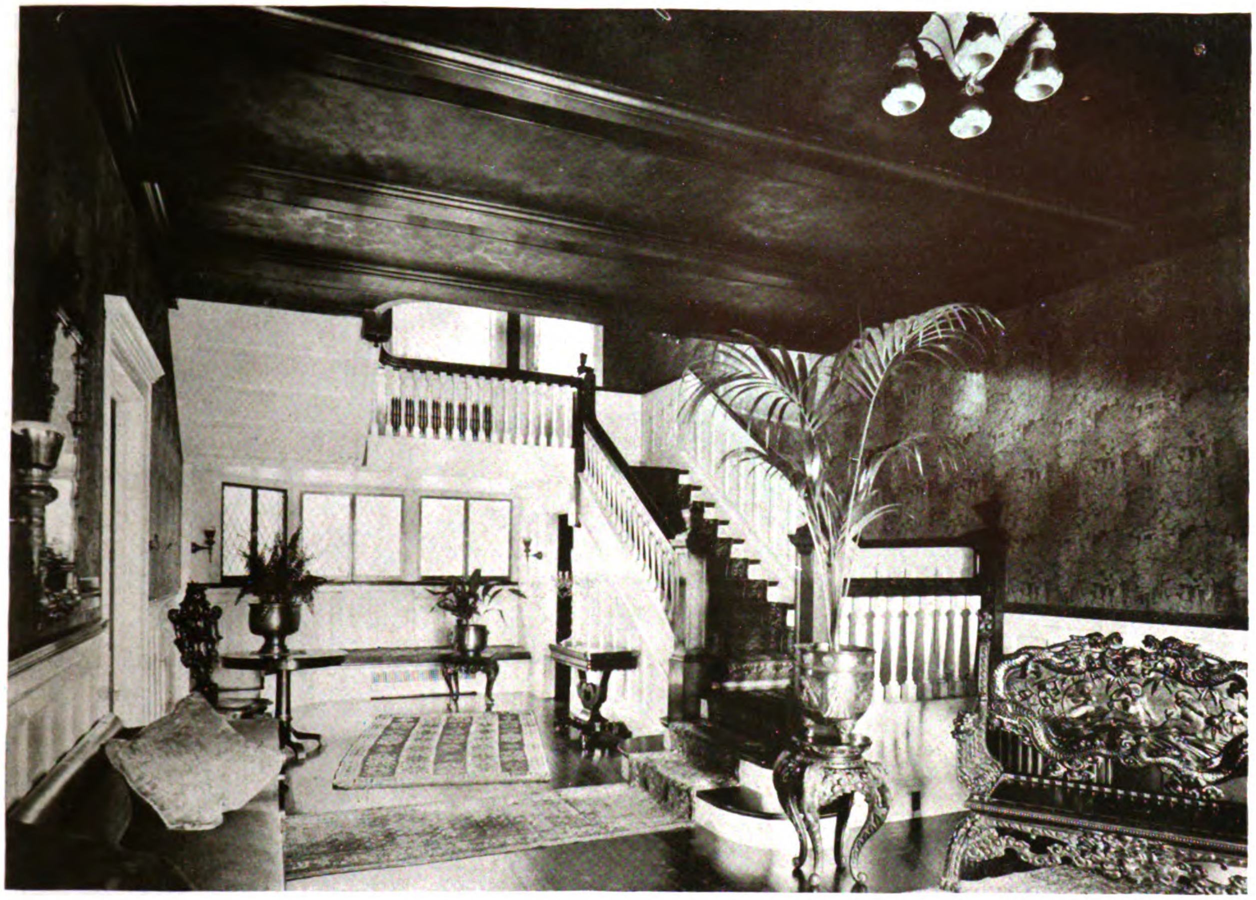

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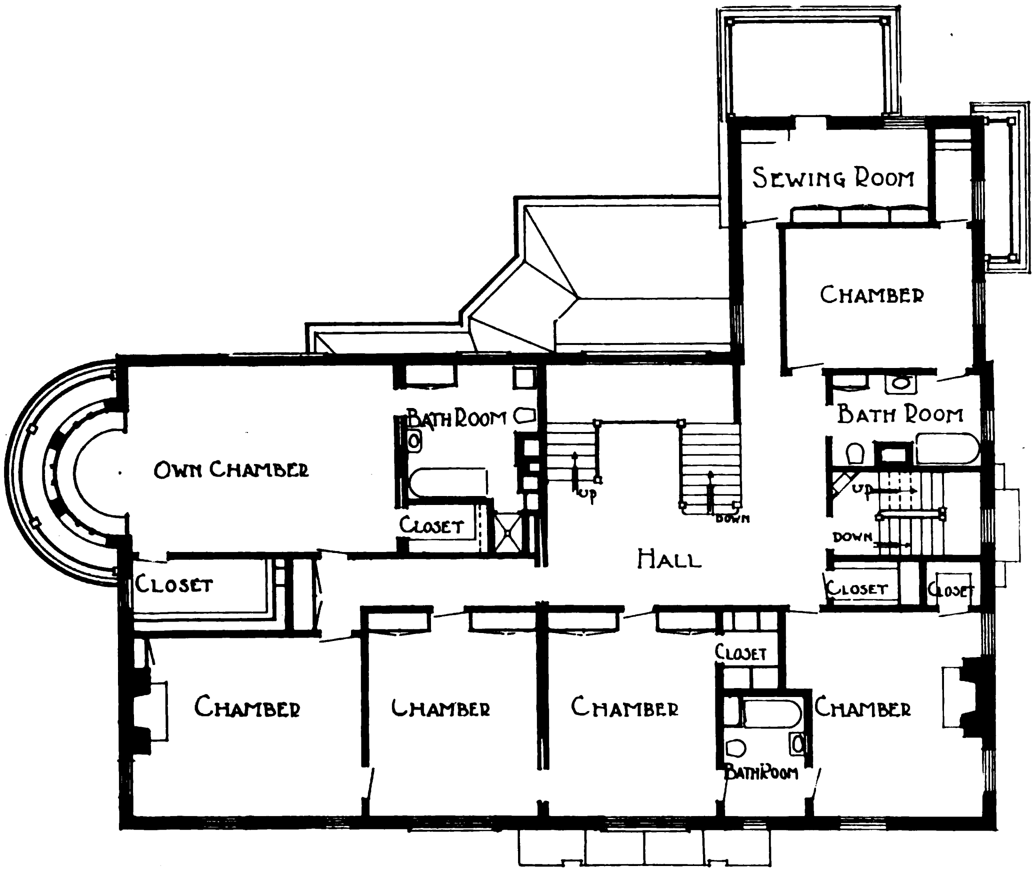

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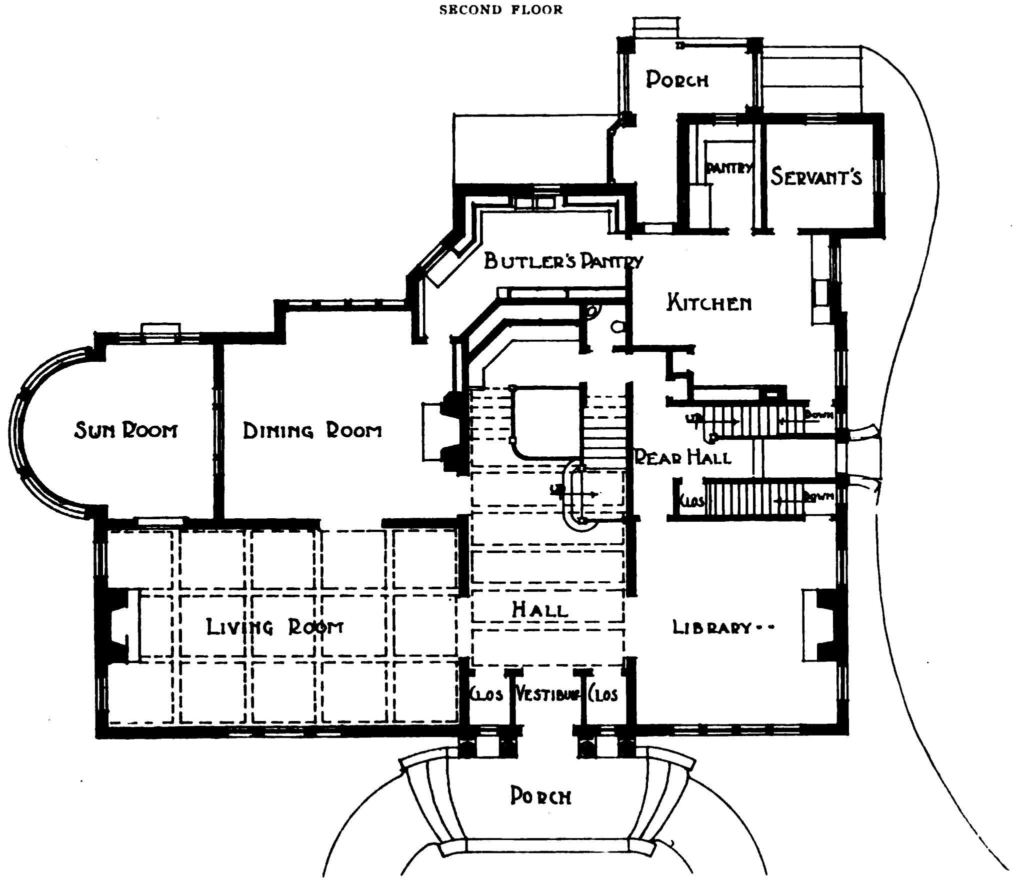

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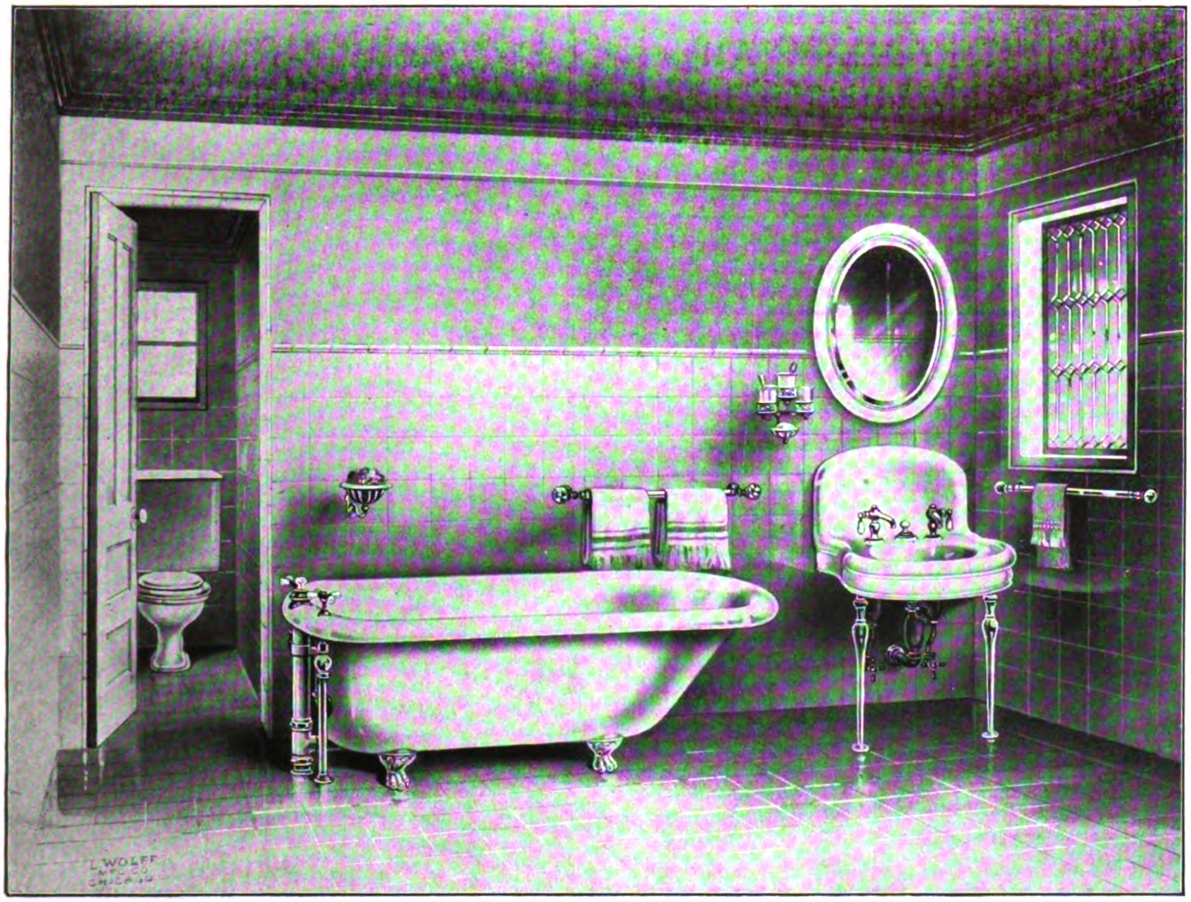

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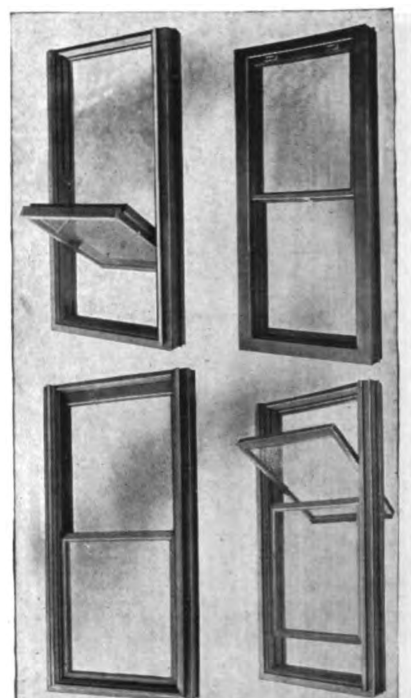

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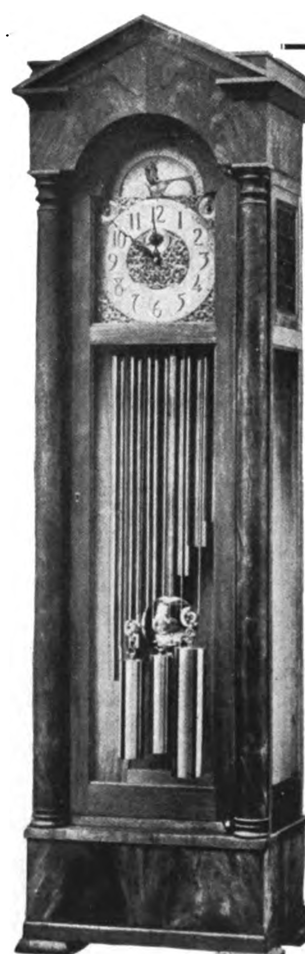

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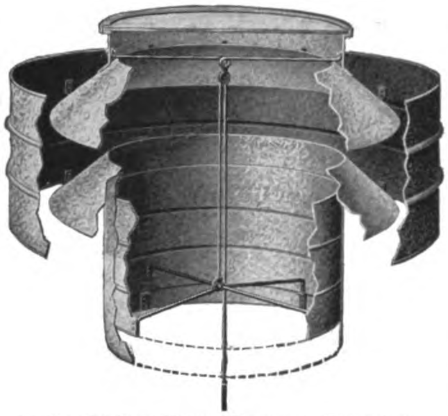

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VOLUME X NUMBER 5

Contents May 1907

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ROBERT CRAIK McLEAN, EDITOR.

BUILDING RECORD FOR APRIL

Building in forty leading cities for April shows an increase in the number of buildings and a decrease of 6 per cent in cost in comparison with the corresponding month a year ago. During the month just closed, permits were taken out for the construction of 17,840 buildings, involving $264,018,210, against 16,217 buildings aggregating in cost $68,244,654, an increase of 1,623 buildings and a decrease of $4,206,444, according to official reports to CONSTRUCTION NEWS. Were it not for the heavy falling off in Chicago for April of this year, the statistics in point of cost would show a gain. The decrease in operations in Chicago is readily accounted for. In April a year ago permits were taken out in Chicago for the court house involving a total cost of $4,500,000; Otto Young, for a 12-story mercantile building at 143 State street, $800,000; Congress apartments, $750,000, and the Pike building at 163 State street, $450,000. It will therefore be seen that Chicago is not falling behind but that the figures for April a year ago were abnormal. The most notable gain was in Portland, Ore., where permits were taken out for 392 buildings, involving a total estimated cost of $1,527,977, against 255 buildings and $571,808 for the corresponding month a year ago, an increase of 137 buildings and $956,169 over the corresponding month a year ago. This is $500,000 greater than any month in the history of the city. And coming just one year after the San Francisco calamity, clearly indicates the drift of affairs on the coast.

Portland is making remarkable headway. There is a notable revival in building tn the East. New York City, which has gone behind tremendously during the past few months, is now gaining and the decrease for the month was only 6 per cent. Brooklyn's gain for the month was 98 per cent. In Philadelphia permits were taken out for over twice as many buildings as in either New York, Brooklyn or Chicago, which usually head the list. The Quaker City's increase for the month is equivalent to 69 per cent. In Cleveland there is remarkable activity in small buildings. Permits were taken out to the number of 1,070.

A MODEL MANUFACTURING PLANT

Among the principal manufacturing plants located in the West, one of exceptional importance is that of the Flour City Ornamental Iron Works at Minneapolis. This concern as is well known, are exclusive manufacturers of ornamental iron and bronze, and have offices in Pittsburg, Cleveland, St. Louis Kansas City, Spokane, Seattle, Dallas, Boise City and Winnipeg.

The plant, which covers some 150,000 square feet, employs a large number of men and the immense amount of money the industry brings into the city annually, gives it a place among the most valuable and notable institutions of the city. A conservative estimate would place its business done outside of the city at 90 per cent, its products finding their way into some of the finest and largest buildings in the East and South, as well as the West, the volume at the present time amounting to nearly $500,000 for buildings in Washington, D. C., Pittsburg, Philadelphia, Detroit, Cincinnati, Cleveland, St. Louis, Kansas City, Seattle, Spokane and Winnipeg.

The General offices which are located on the ground floor contain a large and well organized force. Adjoining are the offices of the estimating and sales departments where some very interesting and fine illustrations of the company's work are exhibited.

The drafting room, which is located immediately over the General offices and estimating departments, is roomy and well lighted and occupied by a large corps of experienced men detailing the various kinds of work for the shops, and likewise in the pattern shop another large force of men are busily employed making all the necessary wood patterns for the foundries.

In the modelling rooms the fine and delicate ornamental work is first modeled in clay, then cast into plaster of paris molds, and finally cast into wax and then sent to the foundries.

Upon the second floor quite an extensive department is devoted to light iron work and here a very large force of experienced men are busily engaged in making and fitting the company's fine light work, and contains almost every kind of machine known for rapid and careful execution of high grade work.

The fitting shop takes in the ground floor of an entire block. It is equipped with the most modern and large machines and working tools that are required in fitting all the heavier work, such as stairs, store fronts etc. The foundries of which there two, both cover a very large space and are well adapted for iron and bronze foundry work.

The engine room is equipped with a 150 horse power compound Corliss engine which supplies all the power for the large air compressors, sand blasting, and for the different departments. This building is situated apart from the main buildings and is large and well lighted.

The sand blasting house which is situated a short distance from the engine room is very interesting. Here is where the company cleans all of its castings after they come from the foundries and before they go to the pickling tanks, and from there to the different departments.

The management is and will at all times be pleased to show visitors through its plants and invites correspondence from architects and contractors stating that no order is too large or too small for them to handle.

SOUND DEADENING TEST.

Many of our readers will remember the wonderfully successful results obtained by Prof. C. L. Norton of the Massachusetts Institute of Technology, in testing Cabot's Deadening Quilt in comparison with many other materials for deadening the musical studies of the New England Conservatory of Music. A partition 2" thick, made of metal stud, metal lath and plaster,

N. E. Conservatory of Music, Boston, Mass.
deadened with Cabot's quilts
Wheelwright & Haven, Architects

lined with Quilt, completely distanced five other partitions ranging from 3 to 6" thick and all much more expensive and vastly heavier. They will be interested to know that the results in the finished buildings have fully justified Prof. Norton's recommendations, for the rooms are so completely deadened that the singing and playing in one room does not interfere with that in the next. No such results have ever before been obtained except at enormous expense, and they demonstrate the value of Cabot's Quilt so conclusively that no other method of sound-deadening can be said to compare with it either inefficiency or economy. A two inch sound-proof partition means great saving of space in office buildings, where space is very valuable, it means immense saving in weight, and greatly reduced cost; and the two-inch partition is entirely fireproof. Quilt has been used in hundreds of school houses all over the country, with most satisfactory results, and no school building can be said to be thoroughly constructed unless it has well deadened floors and partitions.

Dormitories, N. E. Conservatory of Music
E. T. Barker, Architect

The Canadian Conservatory of Music, Ottawa, Can.
E. L. Harwood, Architect, Ottawa

The Canadian Conservatory of Music at Ottawa, Ont. used quilt in their new building on account of the good results obtained in the New England Conservatory, with the result as expressed by the musical director: That the building is internally sound-proof, and in this essential particular has exceeded the most sanguine expectation of both architect and directorate. Cabot's Sheathing Quilt was here used next to the studding in all partitions and between ceiling and floors with excellent results.

MULLIN'S STEEL BOATS.

The season approaches when the possessor of a Mullins Steel Boat, whether it be a row boat or a motor, appreciates the value of a boat of this construction. The wooden boat even where it has been carefully stored in a water and frost tight house must be painted and calked before it can be placed in commission. Not so with the pressed steel boats made by the W. H. Mullins Company, of Salem, Ohio. They drop into the water after lying all winter without shelter in the snow and are dry and staunch as when new. They are indestructible, cannot be sunk and are always in commission, and the 1907 catalog shows steel boats in variety to meet every want of the boatman. There is no doubt but that the Mullin's hauling boat is the "most profitable" boat for the sportsman that ever was or can be devised. The J. C. Shadegg Engine Company are the Minneapolis Agents for the Mullins Company.

OF INTEREST TO ARCHITECTS.

Some idea of the extent to which gypsum rock is taking the place of other materials in the making of wall plaster is indicated by the addition of one hundred acres to the large amount of ground already quarried for gypsum rock at Fort Dodge, Iowa. This tract has been acquired by the American Independent Gypsum Company, whose mill and works have been under construction since last October, and are now ready to place their output on the market. The mill calcine kettles, which indicate the capacity of the plant, are four in number, and as each kettle drys out ten tons of gypsum every two hours, ten hours a day for four kettles means 200 tons of plaster a day. A five-hundred-horse-power Corliss Engine supplies power, and ample track facilities are provided. The President and General Manager Mr. B. H. Ward is well known as a lumberman throughout the Northwest, and the other members of the company are well known in commercial circles. As an independent concern the American Independent Company will, through the established integrity and business qualities of its managers and directors, at once receive the confidence and its share of the trade from Architects and contractors throughout the Northwest.

The Sandusky Portland Cement Company is furnishing Medusa Waterproof Compound for the extensive concrete work involved in the construction of the plant of the Standard Steel Car Company, at Hammond, Indiana, where the machinery, foundations, and elevator and belt pits require to be made waterproof. The Medusa Compound is being used, also in the concrete mortar used in the Rapid Transit Tunnel, between New York and Brooklyn, and is specified for use in the new Olympic Club building, at San Francisco.

The American Home Architect is a new publication issued at Mankato, Minnesota, by Ludwig and Eichenfeld, Architects. It contains a number of articles of interest to the home builder and gives good advice in regard to the value of home architecture, the modern architect and his plans, and goes into such details as the building site, the best type of exterior construction, arrangement of rooms, the porch, etc. It is a brochure, that in a conservative and truthful manner presents in simple form the truths that underlie the best architectural practice, for the benefit of the architect and client alike.

One of the many attractive features that distinguish the "Soo" railroad lines is the well kept station grounds along the route. This result is produced by the policy of W. R. Calloway the General Passenger Agent of the line offering cash prizes each year to the station agents for the best gardens produced during the next summer. The decision is made from photographs and four substantial money prizes are awarded. The passenger department supplies the flower and grass seed, and for the past four years the stations on this line have, in consequence of this aesthetic promotion by Mr. Calloway, been the most attractive on any railway line in the country. This feature however, is more important in the fact that it shows the disposition of the "Soo" lines to not only to maintain a mechanically safe and convenient service but to give to its patrons pleasant surroundings as well, in this respect comparing with the architect who makes the landscape surroundings a part of his design.

THE National Association of Master Sheet Metal Workers, recognizing the fact that good tin is often damaged by carelessness or ignorance on the part of the roofer, has prepared a set of standard specifications. These are intended to cover the matter of workmanship only—the choice of the tin to be left with the architect, contractor or owner. These are said to be the first standard specifications ever adopted by the trade. The work of collecting the data was assigned to Mr. H. N. Taylor of the firm of N. & G. Taylor the "Taylor Old Style" specialists who is—a member of the Joint Committee on Tinplate. Architects will no doubt recall that this Committee is composed of four prominent roofers—Trustees of the National Association—and four leading manufacturers of tinplate—to investigate various matters of interest to the tin roofing industry at large. It is intended later to send a copy of the specifications to every architect throughout the country.

THE Pittsburg office, of Baker-Smith & Company, has sent a finely illustrated and printed pamphlet on the Heating, Ventilating and Power plant of the Carnegie Library Extension at Pittsburg. It is one of the most thorough expositions of modern heat and power installation that has ever been published, just as the building it presents is the largest in the country devoted to library and museum purposes, the floor space used by the public alone consuming over 600,000 square feet of rubber tiling, indicating in a measure the immense area to be heated and ventilated. The accomplishment of this work was in the hands of the Company's Pittsburg Manager, Mr. J. J. O'Sullivan, and it will long stand as representative of the best modern methods, as the building in which it is placed will, not only to this, but to future generations, present to the people of the world American architectural methods in design and construction at their best. It places not only Baker Smith & Company, but Mr. O'Sullivan, their expert representative, at the head of the heating and ventilating science in this country.

UNDER the title "A few conspicuous examples of buildings built or building during the past year for which the structural steel was supplied by the American Bridge Company of New York," a handsomely bound portfolio has been issued by this representative structural steel concern. It contains fifty-five pages of plates from skillfully made photographs, that number of buildings representing some of the largest architectural creations yet erected. It is not difficult to believe, in inspecting this handsome portfolio, that steel with its accompanying hollow tile fireproofing is, not only now but will continue to be, the material from which all the highest and most representative structures are built, because of its adaptability and the certainty of estimating its capacity from an engineering standpoint as well as its pliability in the matter of design.

ACCORDING to an article in *Brick* the only structures in San Francisco that successfully withstood both quake and fire was those built of sand lime brick. The instances given are a two story building that stood the test of the hottest fire and emerged in perfect condition; the side walls of the Monadnock building next to the Palace hotel which was also but slightly damaged, and a garage in the same condition located where not a single clay brick building remained standing for blocks around. This is accounted for by the superiority of bond in sand lime brick the mortar adhering more strongly than to other brick.

A BUILDING covered with roofing tin takes the lowest rate of insurance, while one covered with shingles, slag, gravel or composition roofing is forced to pay a greatly ***increased rate because of the great fire risk.***

This applies in every city in this country and throughout the Agricultural districts as well and, therefore, is a fact well worth your consideration if you are about to build.

There is nothing inflammable about a tin roof and fire brands falling thereon will soon burn themselves out. In our experience, we never knew a building covered with roofing tin to ignite from the top, while we have daily brought to our attention buildings covered with slag, gravel and composition roofs which have been completely destroyed through a spark falling upon the inflammable substances which are embodied in these roofing materials.

Not only does a tin roof give absolute protection to the upper surface of the building, against fire from without, but it confines and smothers the flames should fire start within the building. This is a very important point, particularly in closely built up sections. Should the walls collapse the tin roof will often sink down, practically intact, blanketing the flames, and preventing the strong upward draft which occurs where a roof is burnt through.

A circular which we have recently issued treats upon this subject with greater detail, and we shall be glad to send it to you if you will write to our President, 2213 Chestnut Street, Philadelphia. Pa.

National Association of Master Sheet Metal Workers

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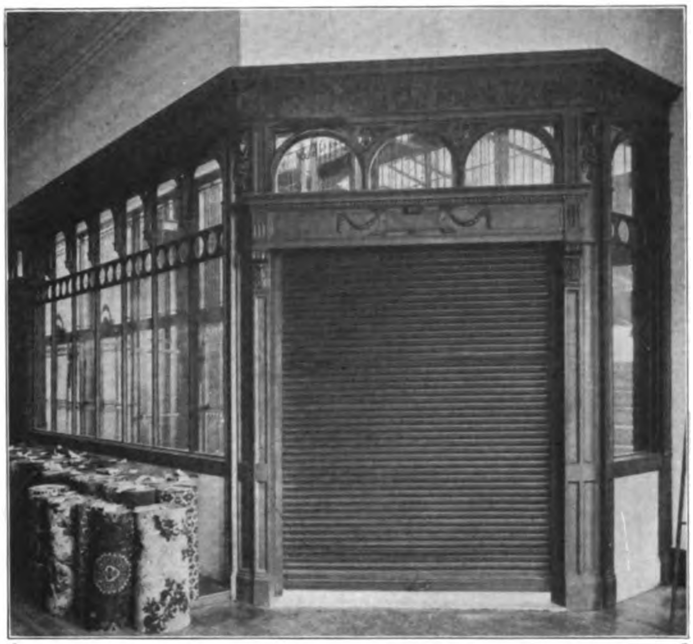

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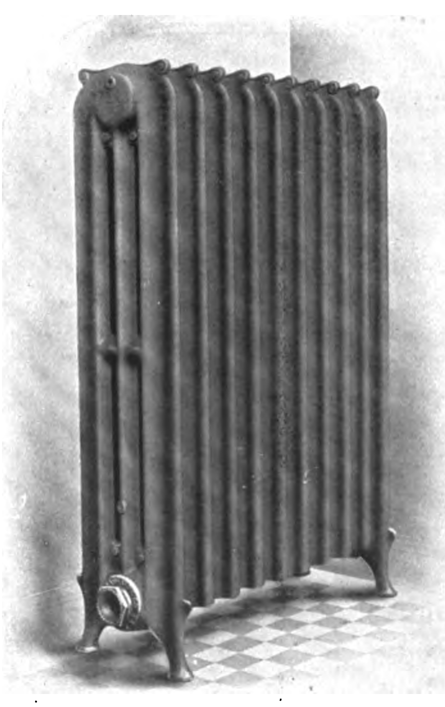

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VOLUME 10 | MAY, 1907 | No. 5

The Goose Killing Effect of Labor Unions

What may be called the unreasonableness of the present high cost of building is noted in the enormous increase of from forty to fifty per cent in the past six years. In 1900 wages were as high as vigorous strikes could make them, and much higher in many lines than business conditions would warrant. Materials were also as high as a strong protective tariff could make them, but since that time both labor and material has steadily advanced under the same beneficent influences. It is hoped that the laboring man has saved his surplus, and that the material-producer has not spent all his earnings in enlarging his plant, as the logical result of this forcing of prices is sooner or later a refusal of capital to be held up, and what will be called a panic, but only a lockout of capital, will set in, as a result largely of the robber tactics of the labor unions. There is little use in the prevalent spirit of "trust-busting" in relation to combinations of manufacturers when the labor trust, which receives three-fourths of the capital spent in construction, is a copper-lined, steel-riveted, and harveyized-steel-protected institution that is allowed to control the entire industries of the country.

Article Proportion versus Utility in Shop Windows

That question of how far artistic design should yield to commercial utility that has long confronted architects in the United States has been brought forcibly before the profession in London by the proposed remodeling of the famous quadrant in Regent Street by the substitution of buildings designed by Norman Shaw. The proposed improvement includes replacing the old and common place, yet well lighted, shop windows on the street front with a design in which the stone pier and pilaster with sunk in windows lend a proper architectural effect to the structure, but from the shopman's point of view are as inadequate for display purposes as a feudal castle might be. So strong has been the protest of the shop-keepers that the Architectural Association has taken up the question, and while its members do not advocate plate glass construction they are inclined to consider utility and to compromise on metal columns that express strength yet do not monopolize the much wished for view and light demanded by the shop-keeper in displaying his wares. It might as well be confessed at once that the two elements cannot be successfully joined. The most notable examples in Chicago which are the Fair building by Jenny and Mundie, the Schlesinger building by L. H. Sullivan and the Field store by D. H. Burnham and Co., probably show the extent to which Architectural effect and utility can be merged in the shop window problem and utility in each case is in supremacy, for the required massiveness of the superstructure cannot be merged into a solid base where so large a percentage of plate glass is required in the basic first story.

An Authorative Report on Fireproofing Methods

After the many statements regarding the fire resisting and fire proofing qualities of the two general systems of construction, steel frame and hollow tile versus reinforced concrete, as demonstrated by the San Francisco fire, most of them made by those interested in the system, a report is made by the American Society of Civil engineers that contains some remarkable statements and should, as far as possible, establish the cold facts in regard to the controverted points. But it does not do so because of the combination of shock and fire, each of which had an effect the degree of which cannot be measured accurately. While stating that "the steel frame offers the best solution to the problem," and that "steel frames were the least injured of any part of the various structures," the report offsetts this by stating that "all the evidence from the recent shock favors reinforced concrete. By judicious separation of the two elements shock and fire, and it is the latter with which builders generally are most concerned in our large cities, it clearly states that "concrete is destroyed by fire nearly as quickly as steel," and while stating that for columns "the fireproofing that will stand up best is red brick set in portland cement mortar," the entire trend of the report is an advocacy of all structural materials whether of steel or concrete being covered in a adequate manner by burnt clay hollow tile. There is therefore nothing new in this report except its verdict in regard to the "fireproof" qualities of concrete, and as the ornamental tile manufacturers are now turning their attention to the making of glazed ornamental tile for the facing of concrete, it is probable that these can be made hollow so as to obtain the same fire resisting quality as the hollow terra cotta tile of commerce.

New Orleans Indulges in a Skyscraper Controversy

New Orleans is in the throes of a newspaper discussion for and against the skyscraper. The Times Democrat, with seeming logic and certainly an array of reasons that are on the whole most convincing. holds that the high building is an imported idea and only urged because it prevails in New York or Chicago, while New Orleans, both in climate and temperament, is wholly against its unovation. The Picayune tries to show that it is only following the twentieth century idea of progress, and that whatever may be the detrimental effect from a standpoint of art or even of comfort, modern advancement in commercial greatness demands the high building. It is probable that the high building will be constructed whenever and wherever capital sees good reason for such investment, but New Orleans, as well as all other cities, will learn in the long run, that there is no permanent commercial greatness that is not based on a true art, and that art is the saving ingredient in all permanently successful commercial enterprises.

An Exposition of Safety Appliances in New York

The recent exposition of safety appliances in the American Museum of Natural History, at New York, is the first exposition of the kind ever shown in the United States. It included everything from scaffoldings to elevators and hoisting machinery, and safety devices for all labor-saving machinery, from textiles to sawmills. It is a valuable lesson for the employer and should result in the lessening of accidents among employees. It lacked one thing, and that was a device for eradication of carelessness engendered by familiarity that will cause the gentle workman to keep a proper distance from the buzz saw or put more than two nails in a scaffold.

Electrolisis in reinforcing steel in concrete

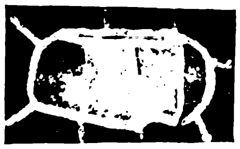
The recent report of Mr. A. A. Knudson to the American Institute of Electrical engineers revives the question of Electrolises in the reinforcing steel of concrete. His experiments, to us, seem to be far from conclusive, owing to their nature, his deductions being wholly taken from blocks of portland cement mixed in varied proportions, and set in varied periods of time, immersed in sea and fresh water into which was injected an electric current. While significant they do not prove the case, but they at least call for the investigation of engineers along more practical lines, and the proper provision to guard against the attacking agent that is daily becoming more liable in the increased use of electricity for power.

THE TILED PAVEMENT IN THE CAPITOL OF PENNYLVANIA AT HARRISBURG.

BY H. C. MERCER.

WE would ask the visitor who enters the new capitol of Pennsylvania at Harrisburg by the Rotunda, to ascend its marble staircase and standing upon the circular gallery above, to look thence at the painted ceiling, the marble walls and lastly at the tiled floor which is the subject of this article. Let him observe first that decoratively speaking, the pavement stands as a strong contrast to the wall in color. The pavement is red, the walls

GROOVED STONE AXE—The cutting edge of the pebble or other hard stone formed into the required axe shape by pecking with another stone and rubbing smooth, is necessarily dull. Hence to cut down a tree with one of these axes mounted upon a twisted withe, the Indian first charred the lower trunk with fires built around the base of the tree.



MOSAIC 268.

are white. The white of the wall becomes rich and lustreless because the floor is red. Had the floor been white it is contended that the interior of the building, in spite of its colored ceiling, and as in

MOSAIC 248.

ARROW HEAD—The Indian quarried jasper in the Lehigh Hills, at Vera Cruz, Macungie and Wieders Run. At Macungie he excavated pits sometimes 30 feet deep, digging over and disturbing several acres of the earth to this depth with stone spades and pointed poles, often cracking the native rock with fires built upon it, to abtain the raw material for the point of his all important arrow.

the case of most similar modern buildings, would have seemed cold and bare.

Next observe that the pavement stands to the wall as a further contrast in texture. The pavement is rough, the walls are smooth. The first is hand made and hand smoothed, the second is planed

CEREMONIAL MASK AMULET—One of the masks, grotesque, frightful, diabolic, worn in ceremonies by priests of the Leni Lenape or Delawares, is here represented from an original of wood two or three inches long with human face carefully carved and polished, furnished with Venetian glass bead eyes, and consequently made after contact with white men. Still preserved in Philadelphia the amulet was presented to the family of its present owner by Tedyuscung, the Delaware Chief.

MOSAIC 257.

and polished by machinery. Somewhat varying in size, reasonably square, and somewhat bevelled upon their rims like pancakes, the little red tiles, intercepted with comparatively wide spaces or joints

INDIAN ROCK PICTURE—Symbolizing the mystic forces of nature in a conglomerate shape of bird, reptile and demon, as in the wild worship of many primitive peoples, this wierd outline pecked with the points of hard sharp stones, two centuries ago at least by Indians, comprises one of a group of freshet worn figures on the east face of Big Indian Rock in the Susquehanna Rapids at Safe Harbor.

MOSAIC 341.

cleaned out below the general plane of their surface, and not set on a broad mathematical level yet giving a pleasing sense of reaction or leverage to the walker's foot, cast shadows and intercept horizontal lights across the entire Rotunda. Reaching out of the darkening corridors on either hand,

MOSAIC 249.

INDIAN MAKING FIRE—Twirl the two-foot long spindle, not twice as thick as a lead-pencil (of cedar buckeye, grease wood or slippery elm) upon the edge of the hearth stick, about a foot long or less, and two or more inches broad, (of cedar, pine, yucca or slippery elm), so that the charred dust thus frayed up by the twirling, runs over the hearth's edge down a notch previously cut, upon some dry surface, and until the smoking dust pile glows with an internal spark. Then touch the ember with tree fungus called punk, and blow the latter when aglow, against vegetable fiber (arborvitae frayed and scorched, cedar, or inner birch bark) for a flame in from eight to fifty seconds. Make your first experiments in a museum with original fire sticks, tested and well dried, or your ill chosen woods and timber will fail you when you seek to master the primeval craft of the Lenni Lenape, Choctaw, Cherokee, Apache, Ute, Zuni, Shoshone, Bilhula, or Klamath. The fire which it takes the Aino of Japan thus an hour and a half to make, had been produced by the dexterous Pueblo in a few seconds. But when you thus twirl the potent spindle after the fashion of the Masked Priest in the Mayan Codex Trojano, get two or three friends to help you, seizing it by turns, and after throwing water on the wood, with united desperate effort, make, if you can, the sacred fire of Zuni.

is spread the equivalent of a large Oriental rug, which if less varied in color than the carpet, is more so in its luminous interweaving of tinted shadows.

Along their surfaces in a manner almost as complex as do the pebbles upon a beach, exceeding the range of any smooth surface, and beyond that of the gleaming walls, the lines of the floor change and vary from light to dark and dark to light almost as we watch them while the sun changes.

Mosaic 359.

Porcupine (Erethizon deorsetus) — The largest carnivore hardly dares attack the irritating ball of arrows which constitutes the brisling defensive armor of the porcupine, who by a slash of the tail may defeat its attacking enemy with a suddenly injected mouth paralyzing volley of its sometimes deadly barbed quills.

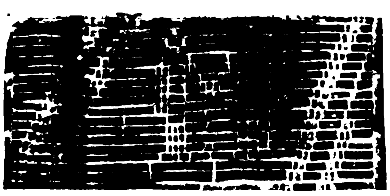
Tree climbing, greedy of salt, devouring the inner bark of elm, bass wood and helmlock trees for food, the non-hibernating animal who nests in a hollow tree, was hunted by Indians for food and for its quills valued as decorations for moccasin, belt, and pouch.

Had this floor been smooth as machine made tiles or machine smoothed marble could have made it smooth, even if red, then its smoothness augmenting that of the wall would, it is held, have dominated the interior. The inner structure save the ceiling, would have proclaimed too much and too far the percision of surfaces produced by mechanical power.

Indian Stone Spade—Having killed and dried a number of trees by "blazing" them, so as to admit sunlight into the forest, the Indian corn planter scratched holes in the primeval loam, working either with sharp charred sticks, or flat stones about six inches wide and one inch thick chipped into the form of spades as represented in the Mosaic.

Mosaic 244.

Here perhaps is a very notable, if little discussed triumph of the architect, who in his work, setting shadowy roughness against polished smoothness,

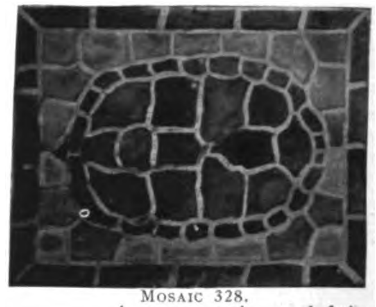


Mosaic 327.

Treaty Wampun Belt—Great belt of purple, black and white shell beads, representing an Indian shaking hands with a hatted European, reasonably believed to have been given to William Penn by the Lenni Lenape Indians at the famous Treaty under the Elm Tree at Shackamaxon in 1682.

Several thousand multi-colored fragments of unio or clam shell, about one quarter inch in diameter to one half inch long, were longitudinally pierced by Indians at immense pains with stone or bone drills. More precious than gold to the Red Man as "Wampun,' 'Peg,' 'Slawant,' 'Beak' or 'Ronoak," sometimes passing as money on strings, or used as seals to solemnize the acts of men, or at animal sacrifices, and as symbolic of war (where white meant faith, black meant battle, and red meant blood) in the form of beads, they were strung on vegetable fibre threads interwoven with animal thongs so as to form a belt.

produces a dominating counter balance over the planing and polishing of machines.



Mosaic 328.

Tortoise—Celebrated in white man's story and legend, venerated as an emblem of wisdom by the Indian, the sluggish unwieldy reptile, heavily armored above and below by carapace and plastron, resists without much effort the attack of many enemies; sometimes defying the tearing of the eagles beak and talons, as when, if the legend be true, a bird of prey, high in air, killed the Greek Poet Aeschylus by dropping a tortoise upon his head.

Rather here and now test the success of this contrast as you see it than search Europe for precedents. Many of the Italian marble pavements have been restored beyond recognition of their

Mask Of The Owl Man—The mosaic illustrates one of the ceremonial, horrible, human masks, symbolizing the ideas of birds, animals, reptiles, or the forces of nature, worn by Indian Priests and sometimes described by travellers, but rarely found by archaeologists, as recently were many such in the wood preserving mud of an East Florida swamp. The miniature, wooden original about three inches long, well carved and polished, with convex, silver discs for eyes, was given to the family of its possessor by Tedyuscung, the Leni Lenape Chief.

Mosaic 240.

original intent, most of the Gothic tiled pavements of Northern Europe are gone. In St. Marks at Venice, the rough floor does not contrast with

Mosaic 254.

The Opossum. (Didelphys Virginiana)—Sluggish, easily caught, persimmon loving, prehensile tailed death counterfeiting, related to the *marsupial* Kangaroo of Australia, prolific and carrying its four to twelve young in a breast pouch, the opossum, defying extermination by man, and hurting his human enemy by blood-sucking the latter's table chickens is here represented as climbing through the branches of a tree.

smooth marble but harmonizes with emblazoned mosaic panels. If at the Baptistery in Florence we find the contrast in question between rough floor and smooth wall, it may well be doubted whether the effect has not been produced by age and wear rather than originally intended.

Let this particular contrast here presented to us, pleasing and satisfactory as it is, stand for itself.

Mosaic 250.

Indian Making Spear Blades—After the manner of most primitive peoples in the stone age, the Indian begins to make the stone blade by chipping a flakable mass of natural jasper, as only he can chip it, into a leaf shaped pattern; by means of hammering with a quartzite pebble. Seated near one of the natural out-crops of iasper in the Lehigh Hills, the master craftsman, whether Delaware Nanticoke, Iroquois or Susquehannock, until about the year 1650, with a skill never equalled by civilized peoples, makes blades large and small, thin or thick, for use as arrow points, spear heads, knives, scrapers or per. forators.

It was produced intentionally and with all the more credit to the acrhitect, who, under the circumstances, ventured it.

Buttonwood. (*Platanus Occidentalis*)—The huge sycamore tree, seventy to one hundred feet high, with conspicuous scaley bark, is decorated over winter with brown button-shaped fruit; massive limbed with open shade, early bared in autumn, and with scaley bark glittering white, green and gray, along the river, the tree was the farmer's choice of old to shade the spring house.

Mcsaio 251.

Another notable technical characteristic of the pavement is that the four hundred or more clay mosaics which embellish it are constructed in a

Mosaic 266.

Indian Grinding Corn—In a stone dish, hollowed by pecking with another stone by means of the precious and laboriously made, slim stone cylinder, the pestle, the Indian woman pulverized grains of maize, dry or fire parched, into a meal, mixable with mashed boiled pumpkins, beans or chestnuts, and baked with dried venison or huckelberries, on a hot stone or in oak bark embers, thus originating the "Johnny," "Hoe" or "Ash" cake, of the imitative Virginia negro.

Mosaic 256.

Indian Picture Of The Rattlesnake—Not in America only, but throughout the world, the serpent, hated, worshipped and feared, pervades in thought and shapethe religious symbolism of primitive peoples. Here it is, the malignant head with open jaws, surrounded by a scaled coil of the deadly reptile (*crotalus horridus*) as scratched by a Mound-building Indian upon a breast plate of shell, that the mosaic reproduces.

unique manner. The tesseral, not rectangular as in Roman or Byzantine mosaics but cut in multiform shapes to suit the potter's process, and whose

Arrow Head—Although the irregular and eccentric unchipped stone flakes of the Easter Islanders, and prehistoric. Japanese, were not known in America, there was a great variety of form in the points of Indian Arrows, chief of which may be noted the barbed, for lacerating a wound, or the unbarbed, which would pull out easily.

Mosaic 269.

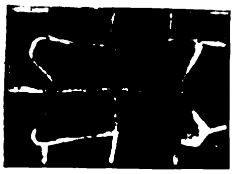
contours themselves help to delineate the design, are set in cement. After the manner of the leaded

Mosaic 255.

Indian Corn—Cultivated universally in the New World, protected from winter death by continual care, cooked by the Indians in many pre-historic ways not yet imitated, propagated far north of its Mexican birthplace, the world-wide, the prolific and super-nourishing maize, (zea maize) or the beautiful Indian Corn achieves a popularity as great in the eyes of civilized as of savage man. Civilization may not thank Indian for his great gift, but the discoverers brought maize in triumph to Spain; and because no European carved or painted design shows the plant before Columbus, because literature fails to mention it, this so-called *gukurutz* of Turkey, the *grano turko* of Italy, masking its American origin in Oriental names, testifies to the agriculture of the Indian. As excessively eaten by man in Lombardy under the familiar name of poletna, and cause of the disease called pelegra, waving its green fronds in Turkey, gladdening the plains of Asia and the clearings of the Congo, whether indigenous to darkest Africa or not, the plant may justly be regarded as one of the Indians greatest gifts to the civilized world.

glass design of the earlier stained windows, these clay pictures burned in grey, brown, black, red, yellow, green and blue clay, and strongly outlined in their painting of cement even ntended to harmonize with the red floor while relieving its monotony.

Generally rectangular but sometimes round ,extending by vestibule and corridor from the extreme



Mosaic 260.

Indian Gorget—One of the thin tablets of slate or shale, generally smooth and oblong, preforated with two holes, frequently found at Indian village sites in mounds, and when in graves, generally near the breast of the skeleton, and called gorgets, though the early travellers do not describe them in use.

north to the extreme south of the building, they are adapted in size to be easily and hastily focused by the human eye at a distance of five or six feet. None therefore were made larger than five feet in

Mosaic 281.

Indian Smoking Tobacco. (*Nicotiana Tabacum.*)—In small doses, and always combined with a large proportion of aromatic leaves such as those of the Bear berry, or the fine dried berry, or the fine dried and powdered inner bark of the Osier Cornel (*Cornus Stolonifera* or other herbs, but never pure, the Indian smoked *Nicotiana Tabacum*. If the Chinese did not indirectly learn the strange art from the Indians' immemorial practice, the latter certainly through Nicot, Hawkins and Raleigh, taught it to Spain, France, England, Holland and Germany, and even to the conservative Mohammedan, who did not mention the practice in "The Thousand and One Nights."

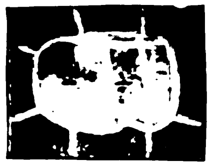
diameter, with their patterns in reasonable proportion, and because all clay pavements superficially colored with vitreous tints lose their tone by the wear of feet, the coloring pigments

Mosaic 241.

The Banner Stone—Found in Indian village sites, graves and mounds, from three to six inches long, transversely pierced, and worked by pecking, grinding and rubbing into two wing like projections, the mysterious stone here represented, belongs to a type of relics of the vanished indian and Mound Builder frequently found, but not having been explained by observation of the early traveller, called Banner Stone for want of a better name.

were here burned entirely through the body of the clay. Are the colors of these mosaics harmonious and suitable? Are the mosaics themselves properly placed in the floor? Are the designs justifiable, clear and executed within the limits of the craft?

While it may be doubted whether certain yellow, light grey, and green whites in the mosaics introduced as contrasts to the background itself and



Mosaic 289.

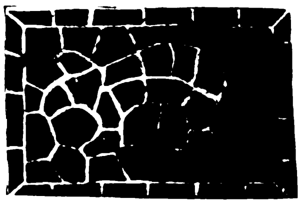
Indian Grooved Stone Axe—The stone axes of prehistoric Europe were perforated for the insertion of handles. A few grooved hammers or axes of stone have been found in Italy, and they occur in Australia, but the American Indian seems peculiar in having universally made these implements and mounted them by binding with rawhide thongs, handles of withes, or doubled or perforated sticks around and about the grooves worked upon the stone.

intermediate values between walls and background, do not stand out too vividly, perhaps no general criticism would strike the observer more strongly and seem to contend more forcibly against precedent than the fact that the pavement has no

Mosaic 280.

Indian Shooting With The Bow And Arrow—A few primitive races of the world were probably ignorant of the bow as the great weapon of war and chase. The kneeling Indian propels a deadly point of chipped jasper, (an arrow head) lashed and glued to the end of a stick, (the arrow) by the spring of a deer thong or gut, drawn backward from a flexible stick, (the bow); thus using the greatest of all war and hunting weapons ever developed by primitive man, yet unknown to the Australians who used the boomerang instead.

borders. As in many well remembered similar instances, the floor is not mapped out with a series of bands or stripes bordering the mosaics and binding them together at regular intervals.

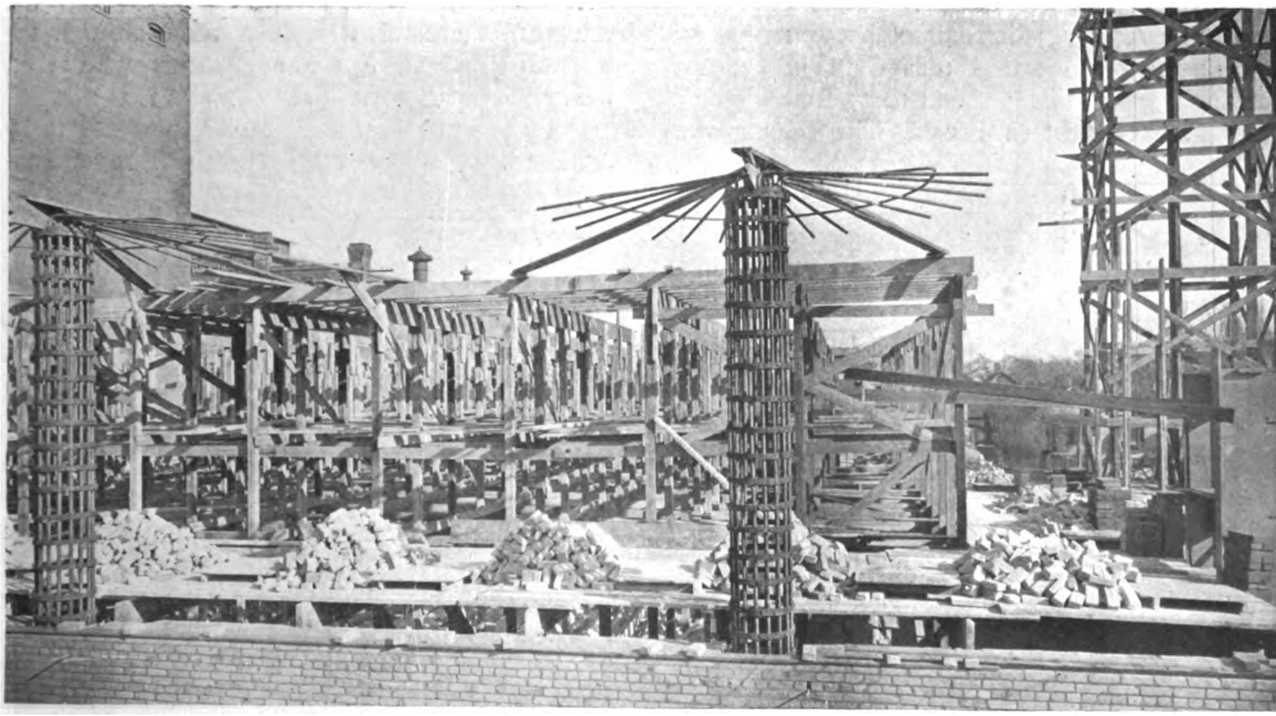


Mosaic 334.

Indian Rock Carving—One of nearly 200 other animal figures, probably a bear, pecked with a sharp stone by Indians against the side of Little Indian Rock in the Susquehanna Rapids at Safe Harbor.

Here the mosaics are not even as a rule framed as isolated patterns, and though they are reasonably aligned there is no mathematical or exact counterplacing.

(*Continued*)



TYPICAL EXAMPLE OF MUSHROOM COLUMN CONSTRUCTION

MUSHROOM SYSTEM OF CONSTRUCTION.

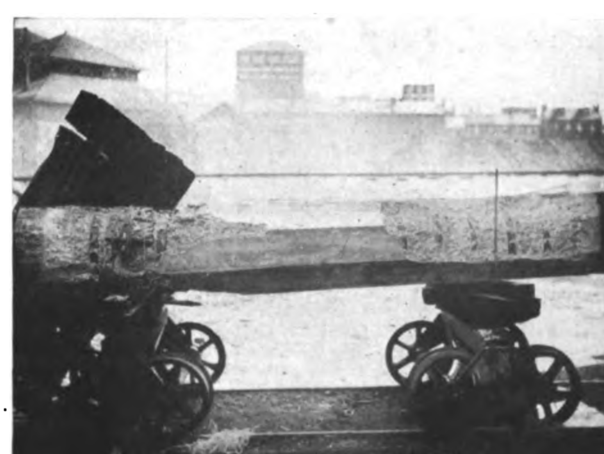
BY C. A. P. TURNER, C. E.

A NEW and novel system of reinforced concrete which has some advantages from the fireproof standpoint, and also the standpoint of the constructor in its ease of erection, and is also advantageous from the fact that there are no ribs to interfere with light or reduce the clear story heighth of the building, is called "mushroom" construction, and was first used in the construction of the Bovey building in Minneapolis.

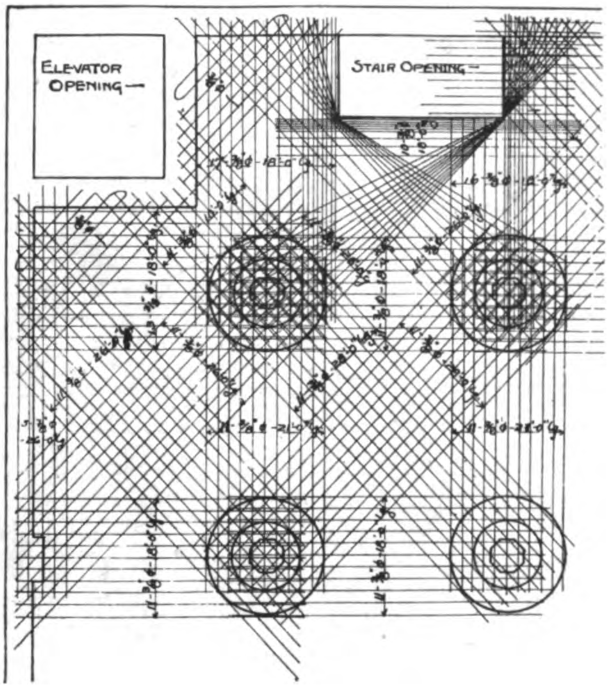
The essential feature of this new construction is the formation of a so-called mushroom at the top of each column, by extending its reinforcing rods, laterally, some four feet or more out into the slab in a radial direction and supporting on these, ring rods, which, in turn, carry the lighter reinforcement for the slab construction. The top of the column is enlarged, forming a neat capital, which assists in taking the additional stress which comes upon it in supporting the entire slab at this point. The slab reinforcement consists of parallel rods of small diameter, running between adjacent mushrooms, both at right angles and diagonally, and of a width equal to the diameter of the mushrooms. The slab rods are strung over the mushroom frames and are given the necessary sag to bring them near the bottom of the slab between the columns. They are further wired together at their intersections to form a netting and to hold them securely in place. In this manner, the steel reinforcement is well distributed through the slab, which is thereby made continuous in all directions.

The mushroom head is adapted to framing around almost any kind of an opening. For example a half-mushroom, a quarter-mushroom or a three-quarter-mushroom, as the case may be, can be made, the radial rods being folded together in a fan shape. The arrangement of the metal in the columns preferably consists of a fair amount of vertical steel, thoroughly hooped and banded by welded bands.

The strength developed by this type of construction has been well illustrated in a number of



FAILURE OF COLUMN AT 1,260,000 POUNDS TEST recent tests made at Phoenixville, Pa., on full sized columns 10′6″ long; diameter of hoops 14 inches; reinforcement of vertical rods eight in number, ranging from ⅞″ to 1⅛″ round rods; bands spaced from nine to thirteen inches. The column was

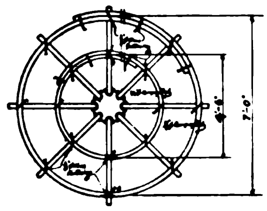


PLAN OF MUSHROOM REINFORCEMENT

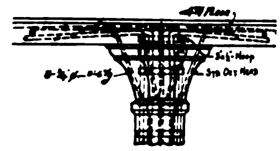
reinforced with eight 1″ round vertical bars, hoops spaced eight inches, center to center, 1⅝″ x 3-16″; additional wrapping of quarter inch wire, pitch two inch. The load at failure was 1,260,000 lbs. In this test the hoops broke first, then the vertical steel commenced to bulge.

The difference between the failure of this type of column and the straight Considere lies in the fact that the concrete does not commence to shell or crack at as early a period; that the total load, with the reinforcement noted, is over 8,000 lbs. per square inch of the hooped area, and indicates, as do all the other tests, how conservative the usual Considere formula is for figuring construction of this character, where the concrete is a fairly rich mixture and is put into place in a sufficiently plastic condition to get the best results.

The flat ceiling of the mushroom system gives free and unobstructed illumination from the windows; it permits the placing of partitions anywhere, without the interference of ribs, and it gives great stiffness and solidity, due to the unusual thickness of the slab, with consequent reduction in the transmission of sound. From the nature of its reinforcement, this system is particularly well fitted to be used in the construction of warehouses or similar buildings, where, due to the presence of aisles or passage ways for trucks between the columns, the load is concentrated around the columns just where the mushrooms with their heavy reinforcement are placed; and it is a rather encouraging fact that the heavier the loads to be carried, the more economical this form of con-



SECTION

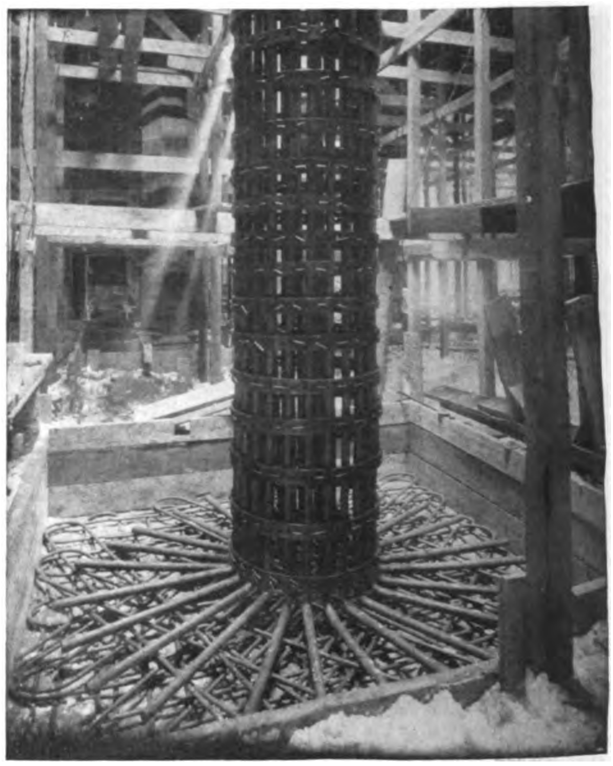


ELEVATION

struction becomes, as compared with the usual beam-and-slab method.

The mushroom system does not require expenisve forms for girders or ribs, with attending waste of lumber, but simply a smooth slab support, requiring very little time to construct and remove. The concreting can also proceed rapidly, due to the uniform slab thickness and the reinforcement of plain steel rods, of which very few are bent, and no stirrups are needed.

For warehouses, where the capacity of the floor is 300 lbs. per foot and columns 18 or 20 feet centers, the mushroom system of reinforced concrete is as



DETAIL OF MUSHROOM REINFORCEMENT

cheap as first-class timber construction; In illustration of this fact, Butler Bros., General Contractors of St. Paul, bid $10,000 less for the Lindeke-Warner building in that city on the mushroom system of reinforced concrete than they did on the Architect's design of timber construction. This building is 235 feet by 165 feet and seven stories in heighth, and Louis A. Lockwood of St. Paul was the Architect.

Where, owing to the character of the goods to be stored, sprinkler systems are used to keep down the insurance rates, the following statement from a letter received from a representative of a sprinkler system, may be of interest:

> "We note that the system, known as the mushroom, forms smooth ceilings without beams or panels. For your information and those who may be interested, we w.ll state that smooth ceilings, such as are formed by the "mushroom" system, permit of the spacing of sprinkler heads to cover the maximum amount of area possible, thus materailly reducing the cost of the equipment."

As to its fireproof properties, the fact that there are no exposed ribs to be unequally heated or concentration of reinforcing metal in the form of large rods inefficiently protected, gives this system a claim for consideration on the ground of superior fire-resisting properties, and the unusual thickness of slab substantiates the claim that it is a more perfect non-conductor of sound than any type of fireproof construction.

ASSOCIATIONS.

CINCINNATI CHAPTER, A. I. A.

The regular monthly meeting of the Cincinnati Chapter of the American Institute of Architects was held March 19th. The affiliation of the chapter with the Engineers, the Mechanical Engineers, and the Electrical Engineers' Clubs in engaging permanent quarters was concluded, the expenses to be divided between the several societies.

On March 21st the Engineers' Club was favored by the reading of a paper on 'Modern Methods of Fireproof Building Construction," by Mr. P. B. Wight, of Chicago.

CHICAGO ARCHITECTURAL CLUB.

At the annual meeting of the Chicago Architectural Club held on May 6 the following officers were elected; President, Herman Von Holst; First Vice President and chairman of Scholarship committee, C. H. Hammond; Second Vice President and chairman of exhibition committee, Herbert Green; Secretary and chairman membership committee, Hugo H. Zimmerman; Treasurer and chairman of Finance committee, Otto A. Silha; member of executive committee and chairman of educational committee, N. Max Dunning; member of Executive committee, and chairman of house committee, Leon Burghoffer.

TWIN CITY ARCHITECTURAL CLUB.

The Twin City Architectural Club is now represented by a Minneapolis and a St. Paul branch, each meeting once a week. At the last meeting of the Minneapolis Club a "Traveling Scholarship Competition" was held in which a free for all contest in design resulted in showing the facetious element in the club rather than draftsmanship, many of the cartoons presenting old architectural problems in new light to the great edification of the members.

At the next meeting the "prize winners" will present the drawings collected on their European trip and great things are expected.

The St. Paul branch held a meeting on May 15th at which Mr. Gille a gas expert, made an address upon the "principles of illumination."

PUBLICATIONS.

SANITATION OF THE MODERN HOME. A suggestive guide to the architect and house owner in designing and building a residence providing a healthful, comfortable and convenient home. Edited by John K. Allen, Member A. S. I. P. and S. E. Associate member A. S. H. and V. E. and Editor of Domestic Engineering. Domestic Engineering, Publishers, Chicago. 1907 Price $2.00.

In presenting this work on Sanitation in the Home, its author has done a distinct service to the public as well as to the architectural profession, in that he gives in practical form not only good advice in regard to methods, but suggests new ways for the solution of old and common problems. While the volume is a plain talk principally on sanitation, it takes in many subjects usually ignored or supposed not connected with that subject. The author shows that commencing with the building site with reference to air and light and the soil which supports it, through to even the arrangement of the furniture, all have a bearing on sanitation. In his foreword the author calls attention to the demands made upon the architect by the home builder for all the conveniences that go to provide perfect comfort and sanitation and the ample support given by the manufacturers in supplying them, but this volume goes further, for it gives the main plan or bill of quantities of those details which must be incorporated in order to give the home builder that which he desires yet does not know how to name.

The average owner would hardly think that the present and future value of the lot, or its value for securing loans, had much to do with its sanitation, the care for storm waters or subsoil drainage, or many of those things that lying under ground and not seen, and therefor can be slightened or cheapened, would all effect both the money value of the house and the health of its inmates. But these subjects are as carefully and intelligently treated as the direct subject of heating or closet connections. Mr. Allen modestly refers to twenty-five years of journalistic experience in sanitary work, but those who know his careful study of sanitary matters during that time, (longer than any other writer on sanitary subjects in this country,) and the fund of practical knowledge thus gathered, together with his honesty of purpose and unbiased judgement, will give his book that place among the standard authorities which it deserves and the architect will recommend its study by his client before he tries to convince him that his plans are not elaborate simply because htey are complete..

GUERIN PRINTS Twelve paintings of Architectual subjects, by Jules Guerin, reproduced in colors by the University Art Shop, Evanston, Illinois. Price sixty dollars per set of twelve prints.

The most important, as well as the most successful effort to reproduce architectural subjects in color ever undertaken in the west is this set of twelve paintings, by Jules Guerin, comprising the Capitol at Washington, the White House, the Congressional Library, the Smithsonian Institution, Washington Monument, Old Trinity, Columbia University Library, Independence Hall, Chateau of Langeais, Chateau of Amboise, Chateau of Luynes and Chateau of Azay-la-Rideau.

Jules Guerin is famous for his mastery of color, and particularly happy in his expression of early morning with its misty lights and shadows and atmospheric effects. Added to this is his ability to grasp the dominating spirit of architectural design and place it on canvas with a harmony of color and expression that is only approached by one other painter. The Capitol in the first flush of dawn, his picturesque delineation of the commonplace Smithsonian, the stupendous night effect of the Monument and his forceful portrayal of the mystery as well as the warlike character of the feudal chateaux, all give to his works, and in their marvelously accurate reproduction, an art value that places them in the highest rank of architectural art portrayal.

These paintings are eminently suitable for the adornment of the home or the decoration of the architect's office, schools or libraries, and in the latter instance the value is enhanced by their historical quality which, either in a patriotic sense or in the transition shown in the chateaux from the impregnable feudal castle to the stately and beautiful habitation redolent of a refined and cultivated taste and a quiet life, all are a permanent education as well as an artistic joy to the beholder.

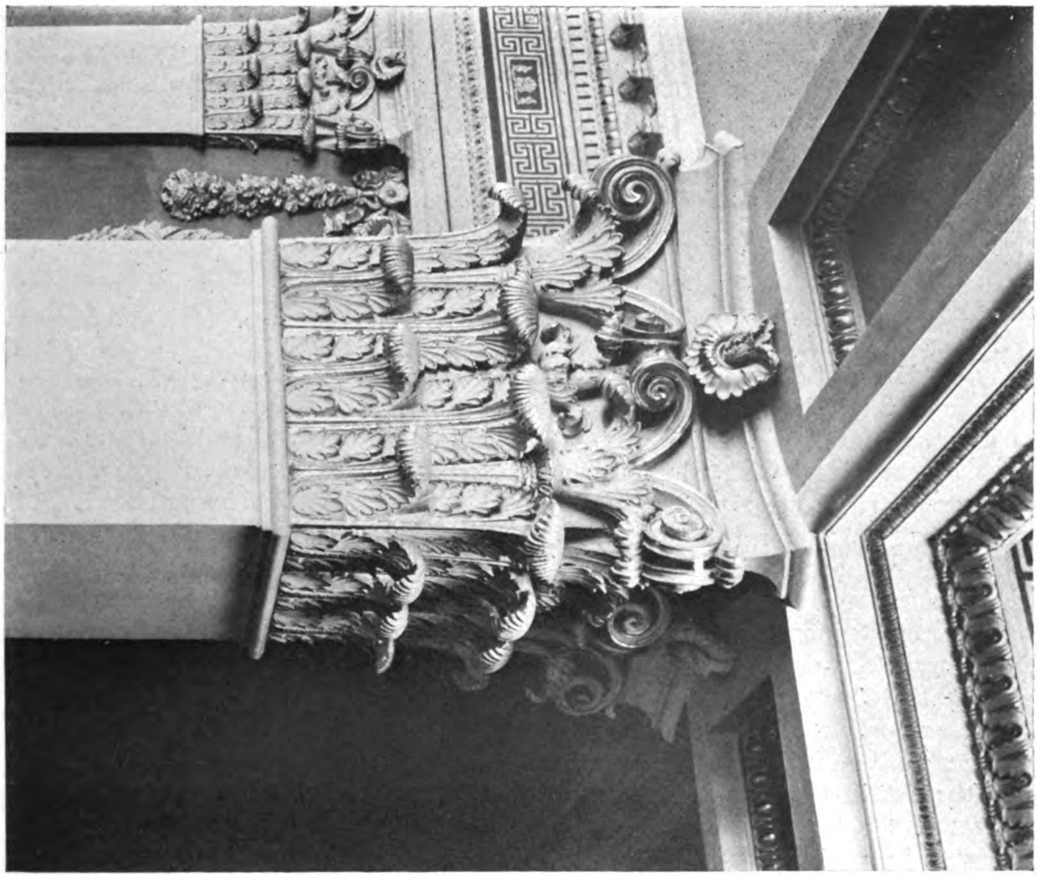
MODERN PLUMBING ILLUSTRATED.—A comprehensive and thoroughly practical work on the modern and most approved methods of plumbing construction. The standard work for plumbers, architects, builders, property owners and for boards of health and plumbing examiners. By R. M. Starbuck. Fully illustrated by fifty-five full-page plates, made expressly by the author for this work. New York: William T. Comstock. One large 8vo volume; cloth; pp. 392. Price $4.00.

This is an eminently practical work, representing the best modern practice in plumbing and water supply. On the questions of drainage and sewerage the author has followed the requirements of the City of New York and other important cities, as well as the requirements of the United States, in all matters of drainage and sanitation.

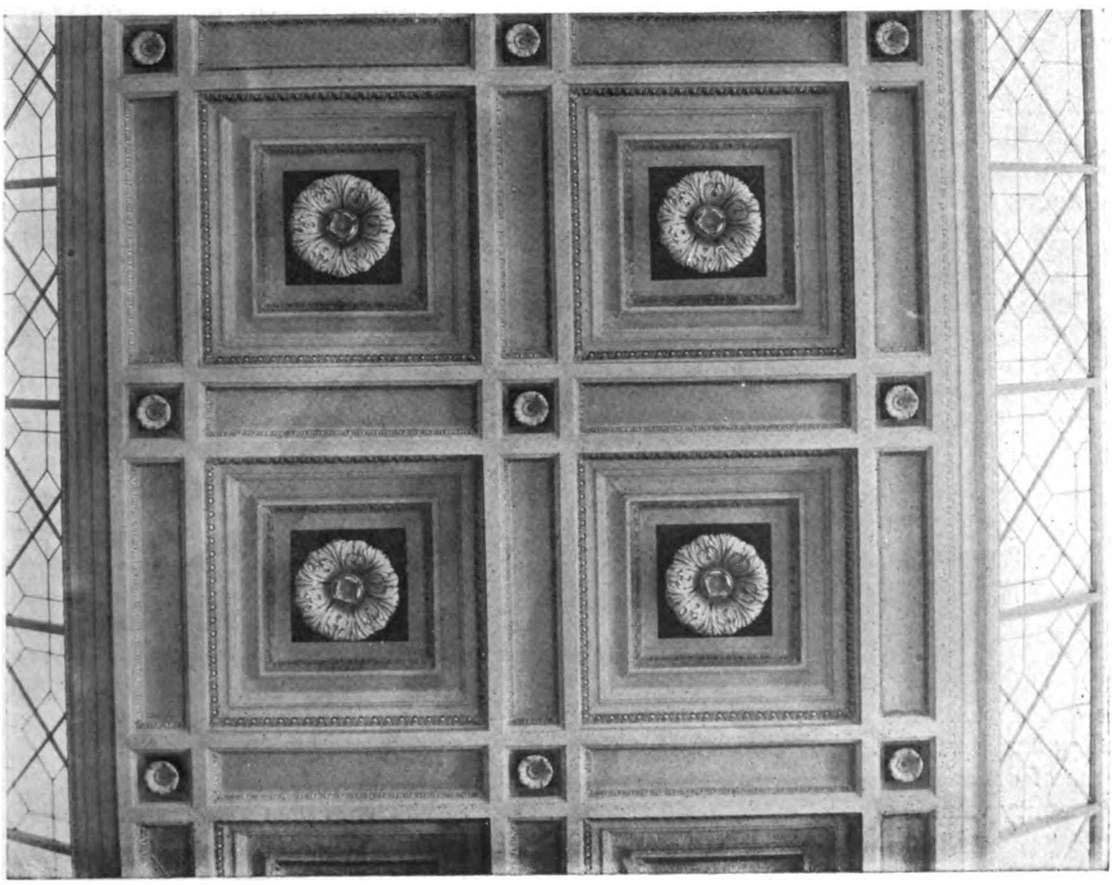
In a word, the book represents the latest and best modern practice, and should be in the hands of every architect, sanitary engineer and plumber who wishes to keep himself up to date on this important feature of construction.

BURNT CLAY PRODUCTS in fire and earthquake. Issued by the manufacturers of burnt clay products Brick Construction Association, Los Angeles, California. A review of the effects of earthquake and fire upon fireproof constructions, illustrated by numerous photographs.

Following the eleborate portfolio of photographs entitled "Trial by Fire in San Francisco" which was reviewed in these columns in December last, a similar volume on a similar subject, "Building Clay Products" is received, issued by the manufacturers of burnt clay products, the Brick Construction Association of Los Angeles, California. In quarto size pages it presents 84 photographs giving details of the effect of fire and earthquake upon brick and reinforced concrete. Like its predecessor, it is an indictment preserved for all time against the use of concrete in general, and in unskilled hands in particular, for all forms of structural work beyond any but the support of quiesent loads, and by numerous photographs accentuates this, and the attendant evil of supposing that concrete will not be destroyed by fire. Under the legend "the truth hurts no sound reliable material" a careful illustration of instances in support of the contention is made, and while the argument of the photographs may be in some degree specious, they are there, showing that brick walls and arches stood intact while the concrete work in floors and roofs connecting with them had not only cracked and fallen but in many cases disintregated. The testimony of the camera may be specious in a degree because in the combination of earthquake and fire, both known to be freaky in their action, it is impossible in most instances to estimate just how far the destruction by one was dependent on the other. But volumes such as these mentioned, while they may be published with a certain bias by the advocates of a certain material, are of immense benefit because they add to the general knowledge of the problem, and serve at least as a basis of further investigation. Construction methods, and the new uses of old and well understood materials are changing every day, and there is no field that is more capable of development or of mistakes being made, and none upon which general knowledge is so necessary. Therefore the advocates of burnt clay products and chemically organized artificial stone are alike endebted to the Brick Construction Association for the compilation and distribution of this elaborately illustrated volume of photographs.



DETAIL OF COLUMN



DETAIL OF CEILING

DETAILS OF FIRST NATIONAL BANK BUILDING, MINNEAPOLIS, MINNESOTA

ROBERT W. GIBSON, ARCHITECT, NEW YORK

ILLUSTRATIONS.

The First National Bank Building at Minneapolis, occupies a magnificent site at the corner of 5th Street South and 1st Avenue in the best business section of the growing city and not far from the place where the Bank formerly did business in quarters of insufficient capacity. The new edifice is from designs by Mr. Robert W. Gibson, Architect, of New York, and represents the latest experience and ideas in bank plan and construction. Superintended the construction for the owner, Ernest Kenedy, Architect of Minneapolis.

The new building is a stately, classic composition one story in height Corinthian in style, about 40 feet high, with square pillars with windows and wall panels between. There are twelve pillars on the longer front and seven on the shorter. A portico of six round columns ornaments the principal facade and covers the entrances. Over the main cornice parapets ten and twelve feet high mask the attic story which provides for air spaces over the ceilings so that the total height is about 40 feet. The Interior shows a similar order all around the walls with a coffered ceiling having three grand skylights. All the details and proportions are of a Colonial character.

Entering through revolving doors in the portico there is seen a hall about 150 feet by 70 feet with a row of pillars upon the rear or opposite side which support the roof with an artistic repetition of the portico motive while they also provide for the introduction of future galleries to meet the increasing demands of business.

Beyond these columns are placed directors' room, stairs, vaults and machine room, etc. The officers' departments are arranged along the front walls at the windows next the two streets, and beyond these, along near the windows, are the various clerical departments carefully placed according to the best scheme of control by the executive.

Close to the President and Vice President are placed the cashier and assistant, and next the credit and discount offices which need the most direct supervision, and beyond these the tellers and bookkeepers, etc., extending entirely around the hall in the usual modern arrangement. A ladies' department, having special rooms, completes the series at the front where the officers' departments are reached again after going the whole round. The public lobby is therefore a central space giving ready access to all departments and affording ample room for customers without undue increase of distances.

The money vault is of most modern construction. It is made of chrome steel and reinforced concrete, with superb lock work operated by time pieces, and with a level floored vestibule; stands behind the tellers' cages..

At present the building is divided by a partition wall which separates one third of the interior for rent to a suitable financial institution with a proportion of basement space and a separate entrance under the main portico.

There are no other rooms for rent, it being preferred to secure for the Bank the best window spaces of the street fronts, and in general the dignity of the exclusive use of its building for banking purposes only.

The construction is of fireproof materials in most modern methods. The exterior is of light colored freestone without much ornamentation. The interior shows marble floors of Colonial patterns and marble and bronze counter screens of very handsome design and metallic furniture and cages, with desks and wainscottings of Colonial Mahogany. All such details as ventilating, heating and sanitary appliances are of most advanced description carefully devised with regard to simplicity and automatic operation.

The decorations and all the finishings are reserved and simple rather than ostentatious. The whole structure reflects the motive of the artistic house for a dignified business, conceived in a conservative spirit. It gives great satisfaction and is perfectly adapted to its purpose.

Among the principal contractors connected with the construction and furnishing of this building which should be mentioned in this connection are C. F. Haglin, the General Contractor; The Northwestern Mantle Company, marble floors and screens; Smith & Wyman, Interior wood finish; Flour City Ornamental Iron Works, bronze railings, screens and doors; H. Kelley, Ventilation, heating and sanitation; W. I. Gray & Company, electrical work; Gust Lagerquist, electric elevators; John S. Bradstreet & Company, decorations and desks; L. Paulle, office fittings; Diabold Safe & Lock Company, the vaults and vault doors.

As an example of modern cottage design, both in its exterior and interior finish, the home of Mr. Walter N. Carroll is presented. The exterior is shown from three different points of view, each harmonious in composition to a greater extent than is usual, while the interior presents a complete scheme of design throughout. The plan also calls for commendation and in its entirity the house with its adaptation to its surroundings gives many suggestions in plan and design.

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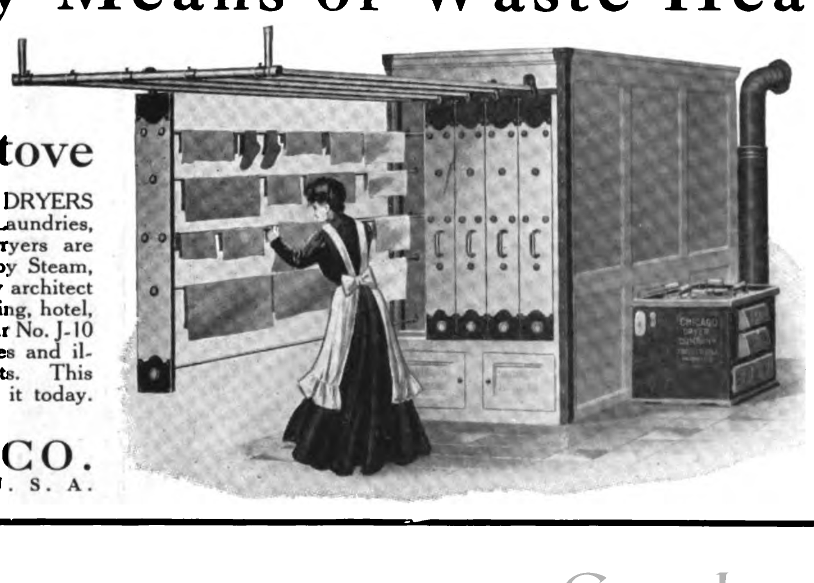

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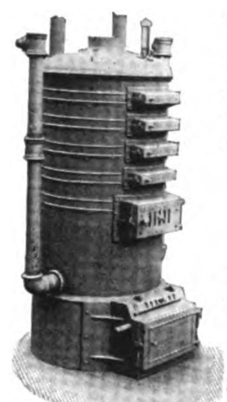

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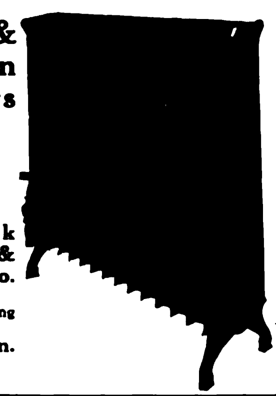

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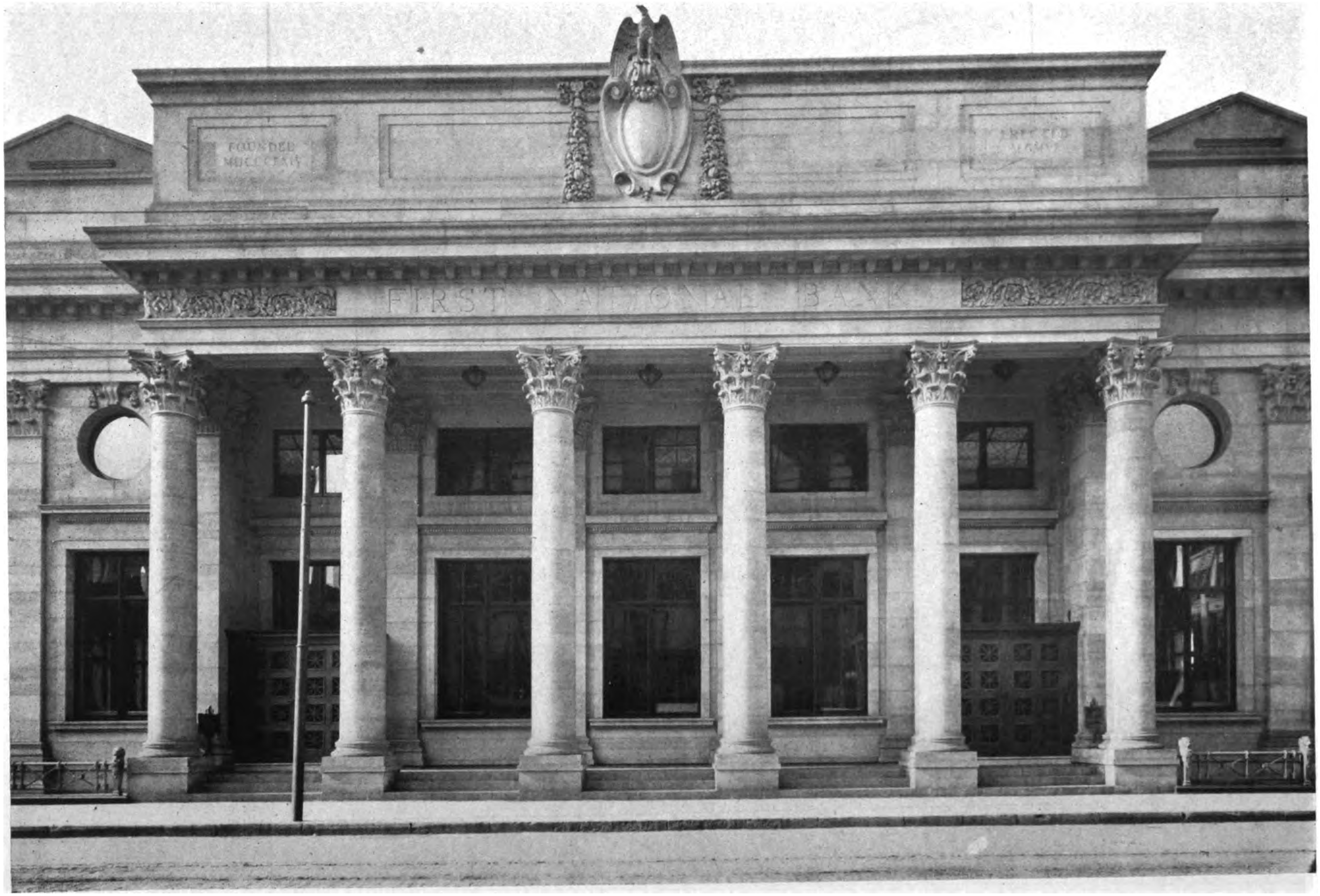

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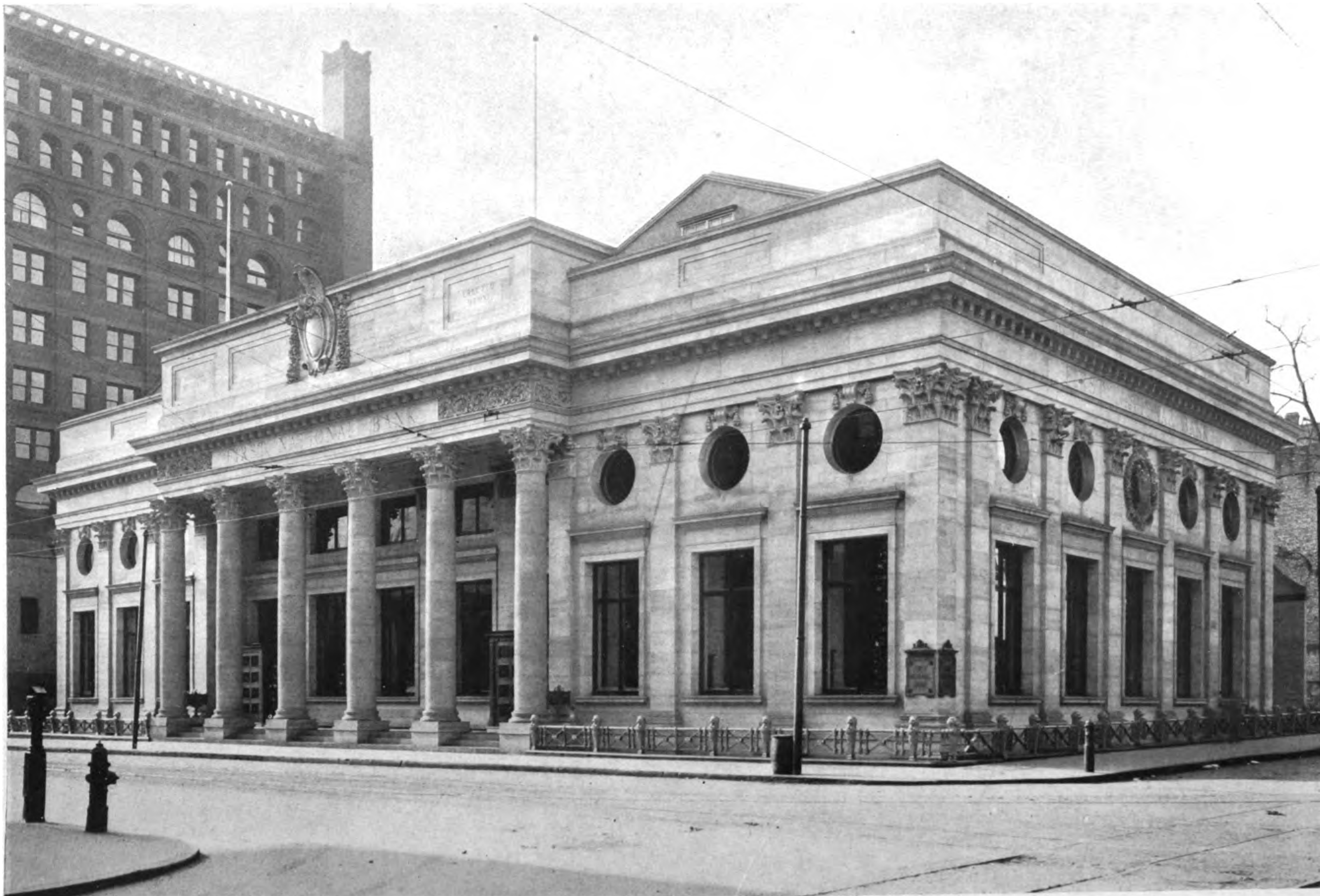

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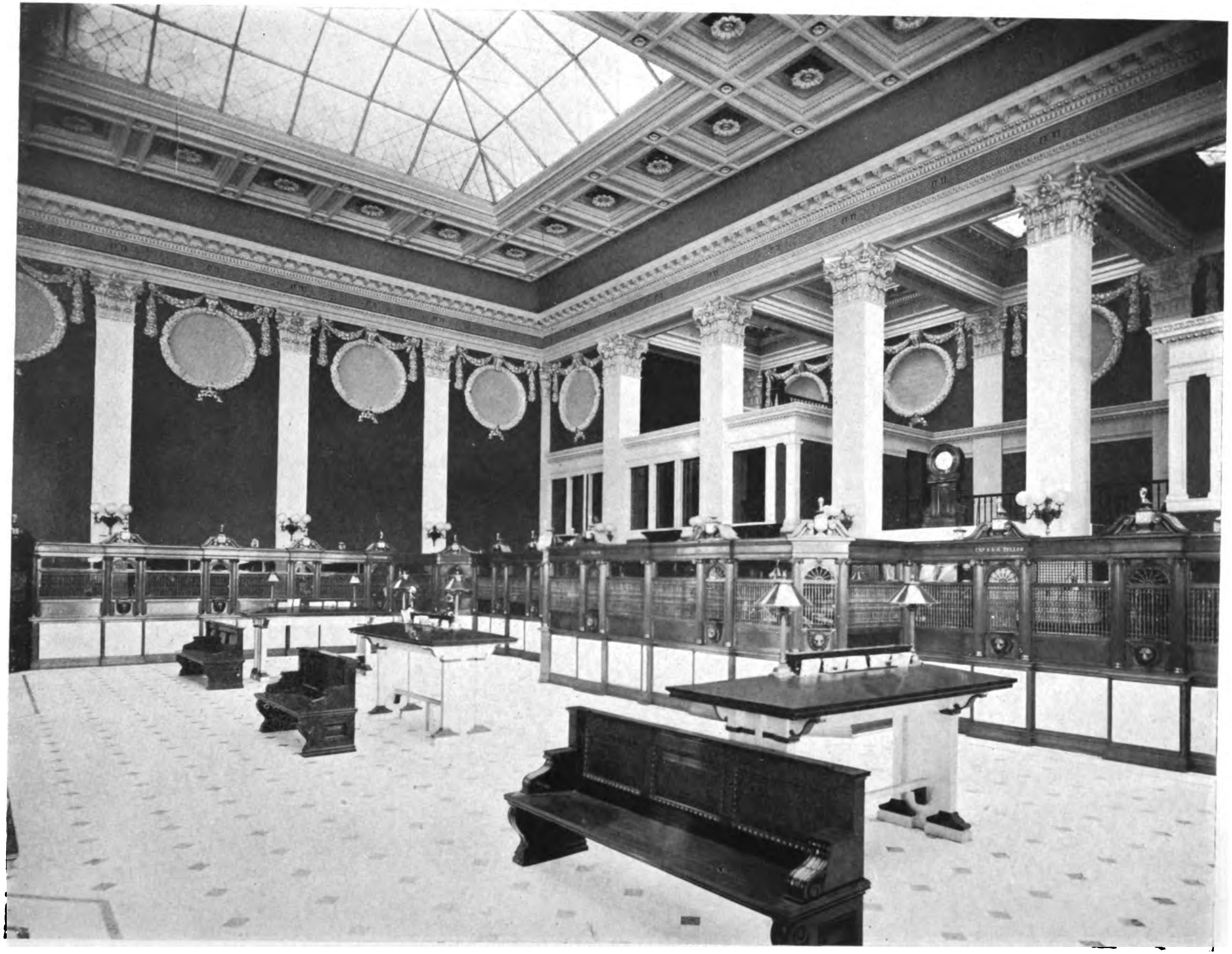

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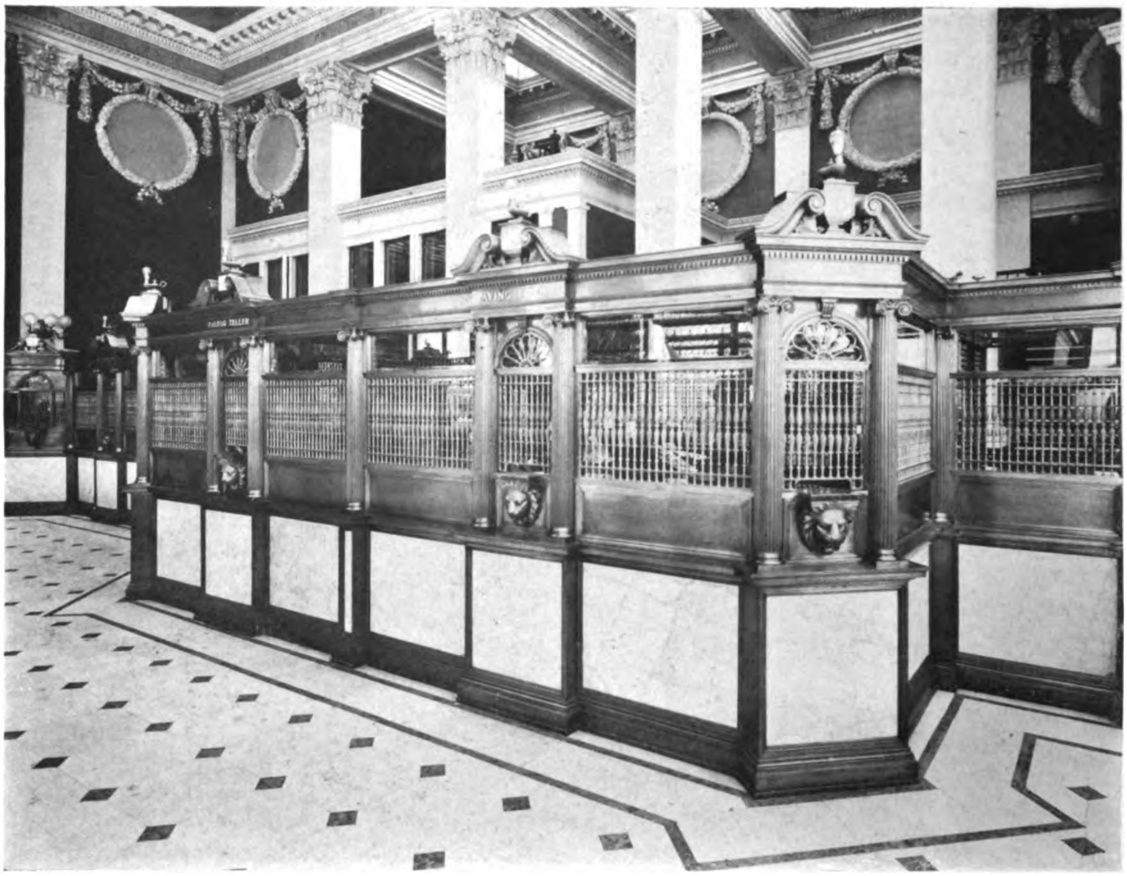

DETAIL OF BANKING ROOM

DIRECTORS' ROOM

INTERIOR DETAILS OF THE FIRST NATIONAL BANK, MINNEAPOLIS, MINNESOTA

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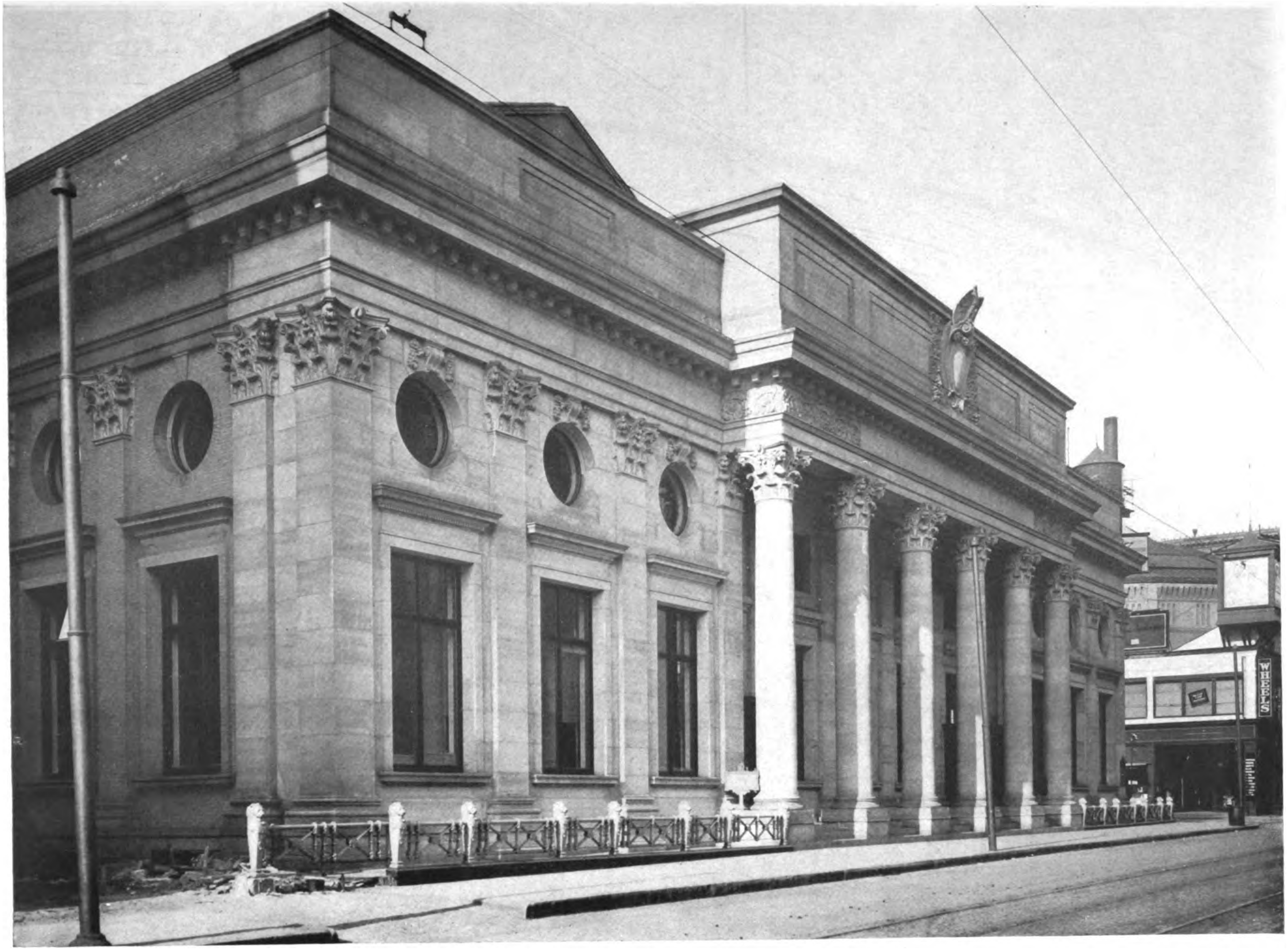

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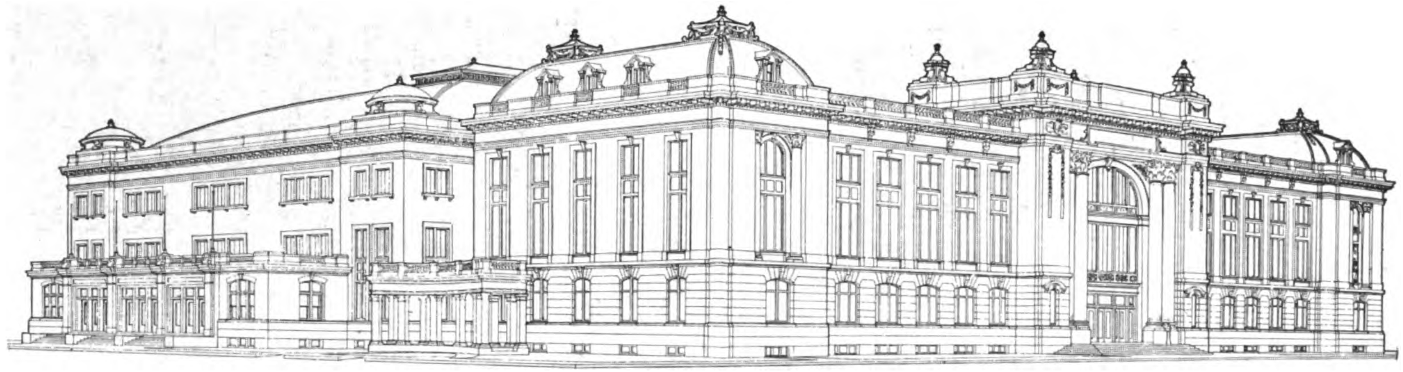
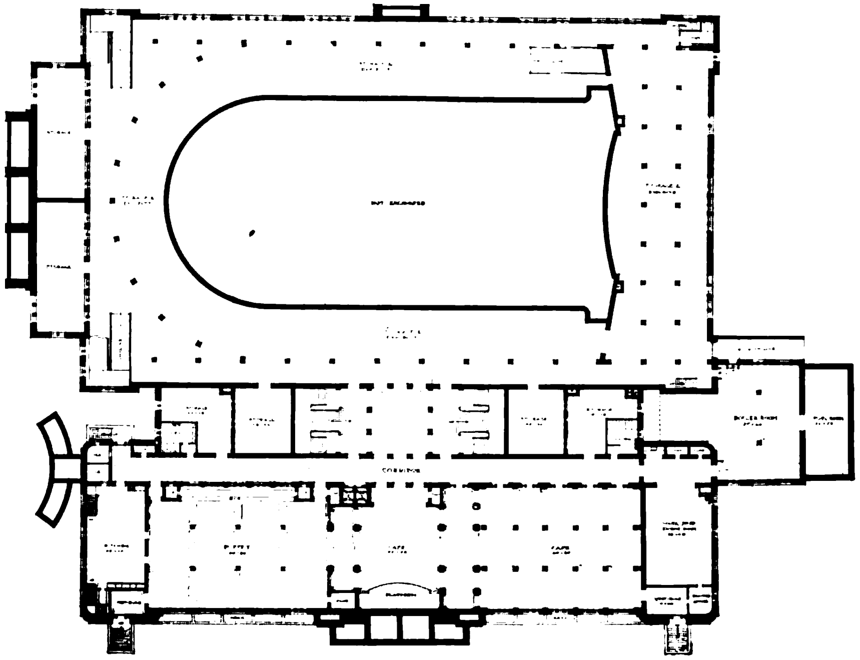
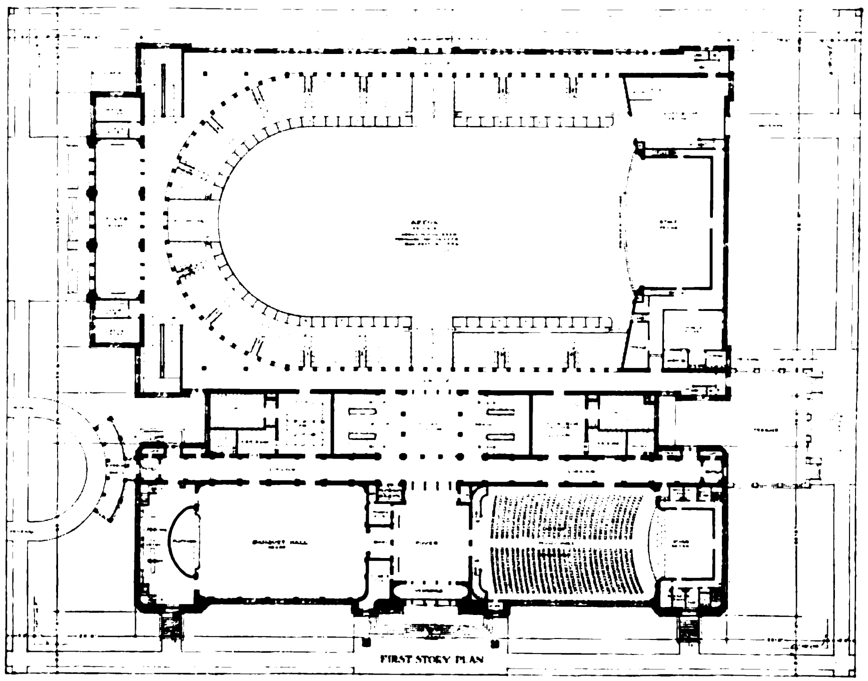




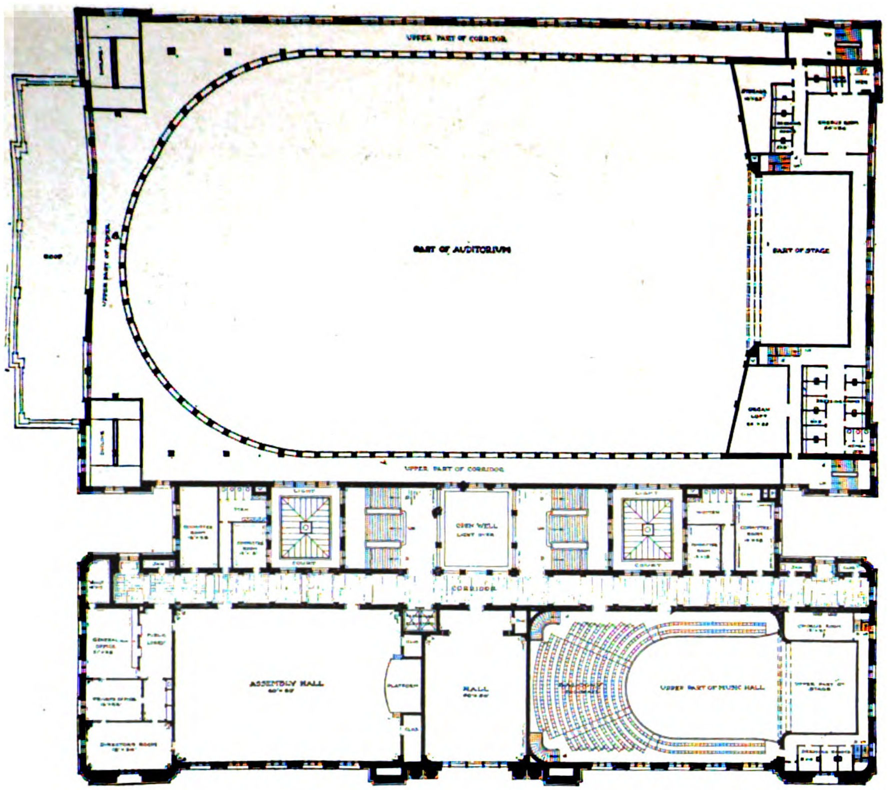
BASEMENT PLAN



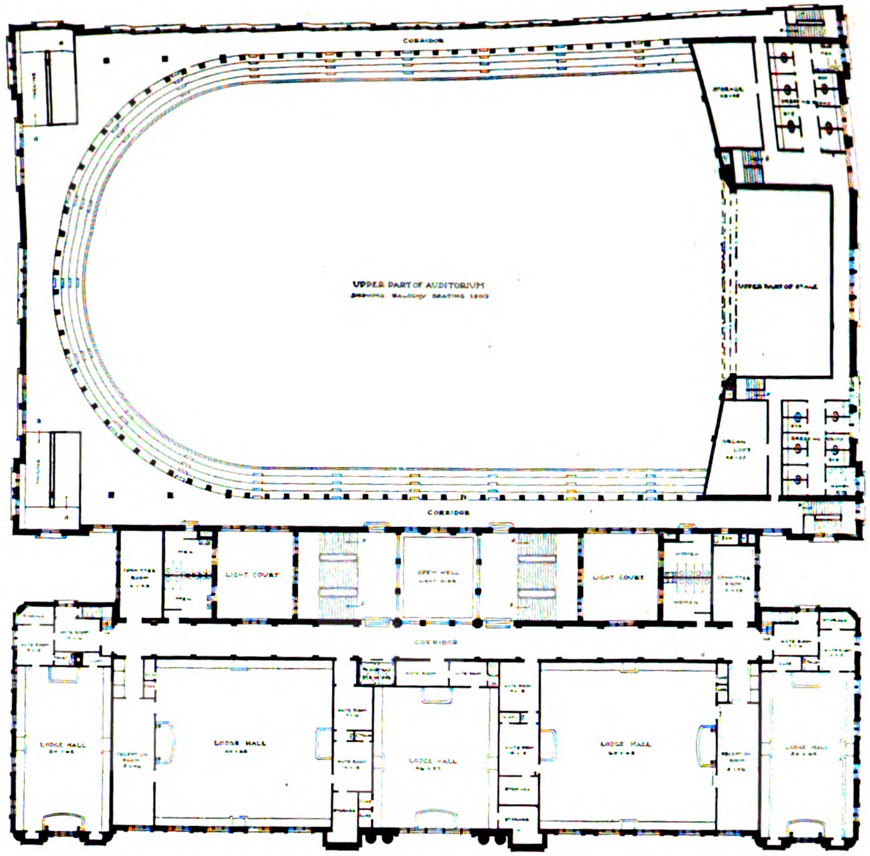
FIRST STORY PLAN

GENERAL PLANS OF ACCEPTED COMPETITIVE DESIGN FOR AUDITORIUM, MILWAUKEE, WISCONSIN

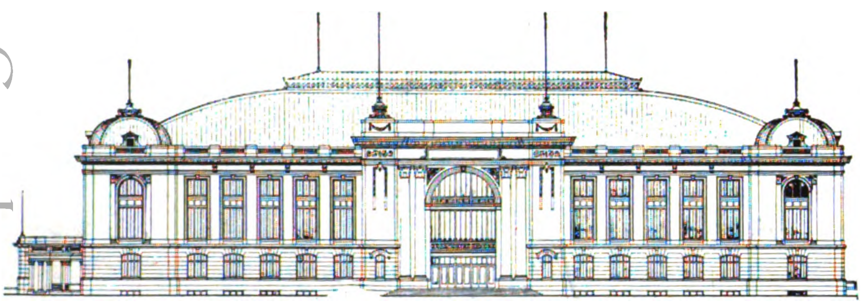
FERRY AND CLAS, ARCHITECTS



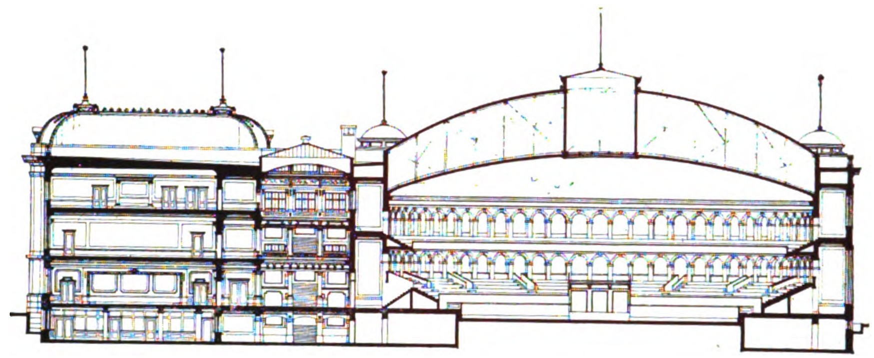
SECOND STORY PLAN



THIRD STORY PLAN



PRINCIPAL FRONT



TRANSVERSE SECTION

GENERAL PLANS OF ACCEPTED COMPETITIVE DESIGN FOR AUDITORIUM, MILWAUKEE, WISCONSIN

FERRY AND CLAS, ARCHITECTS

REAR VIEW

SIDE VIEW

RESIDENCE OF WALTER N. CARROLL, MINNEAPOLIS, MINNESOTA

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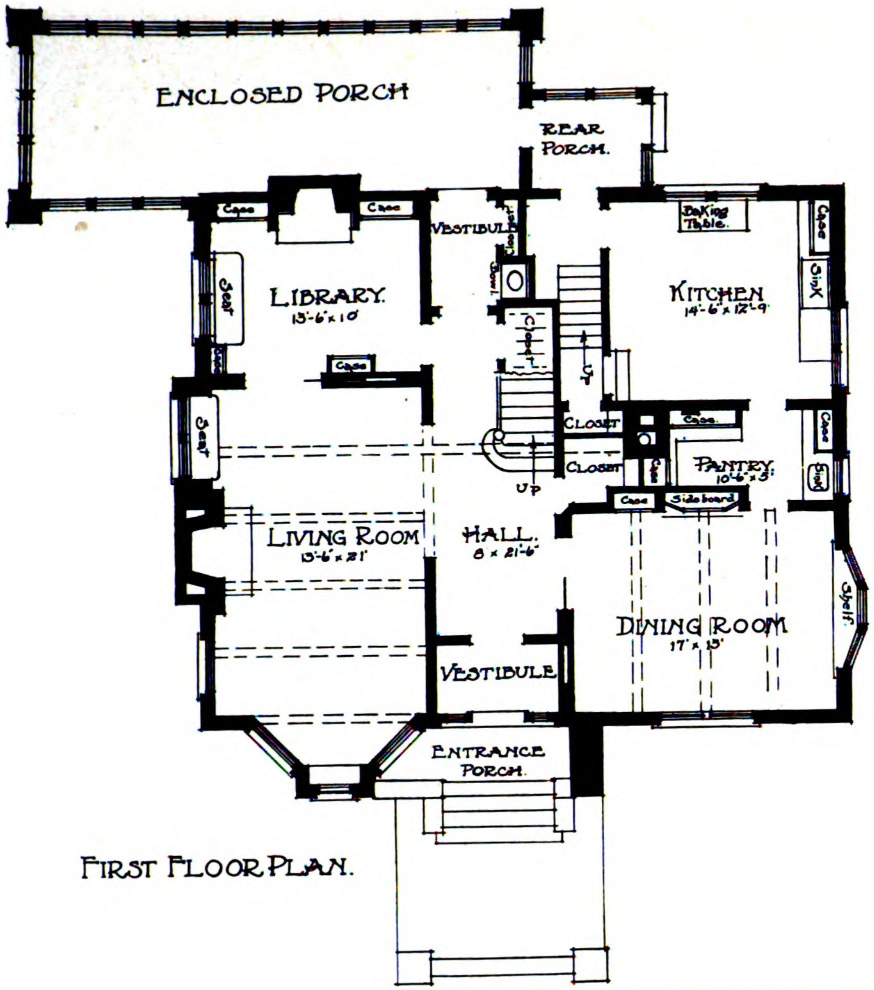
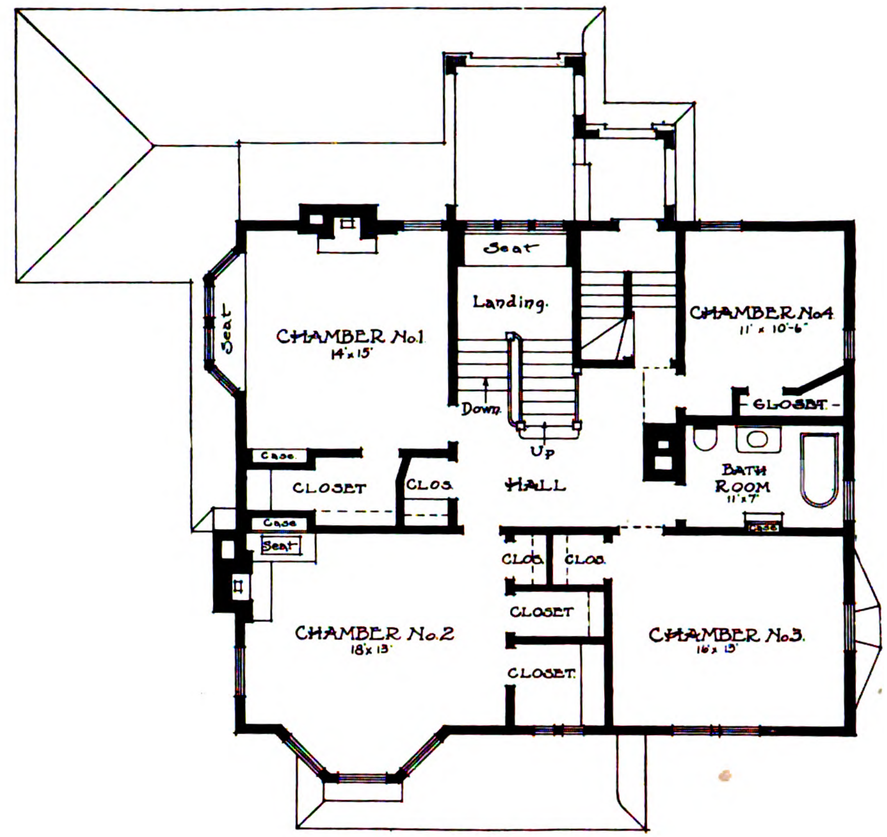


FIRST FLOOR PLAN.

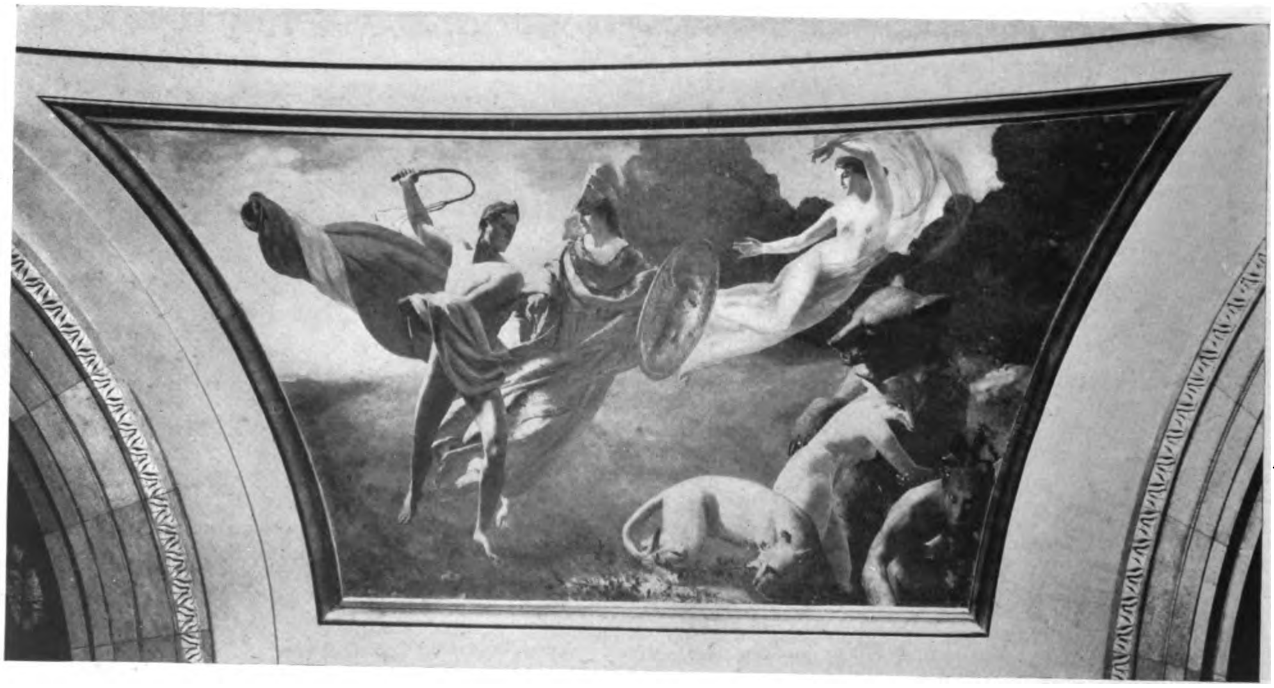


SECOND FLOOR PLAN.

PLANS OF RESIDENCE OF WALTER N. CARROLL, MINNEAPOLIS, MINNESOTA

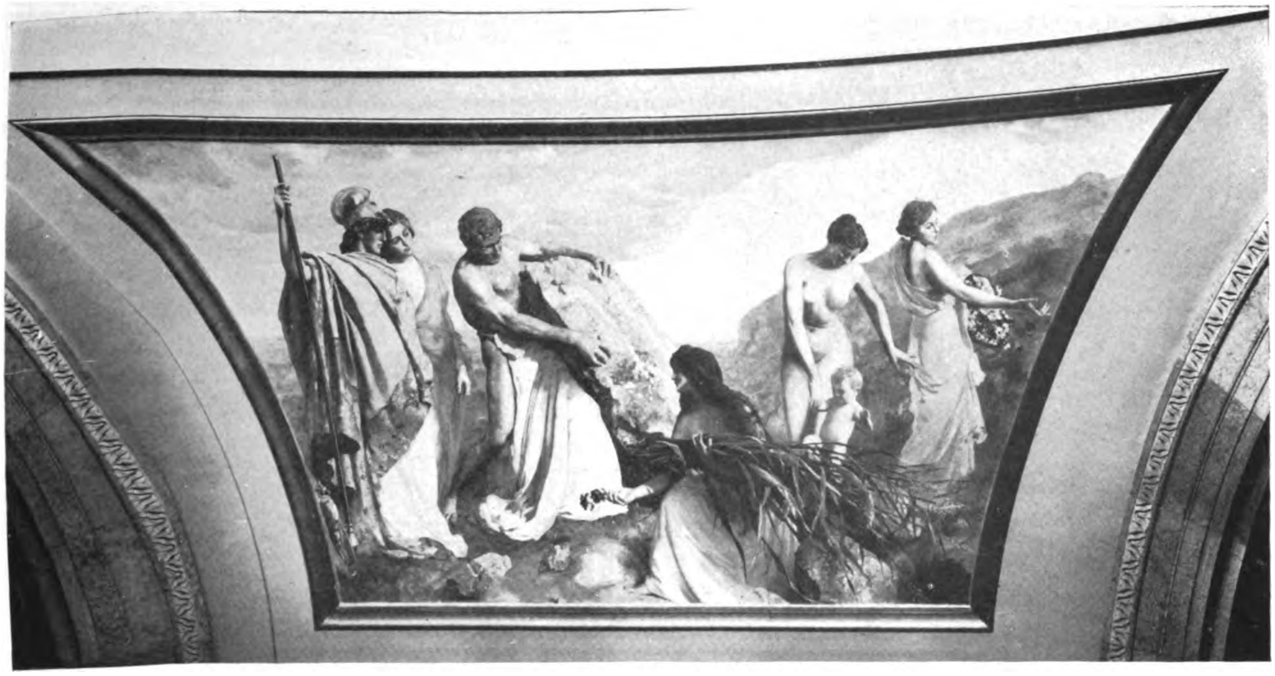
WILLIAM M. KENYON, ARCHITECT

1 The "American Genius" leaves home. Held back by "Timidity" he is led forward by "Hope" and "Wisdom"

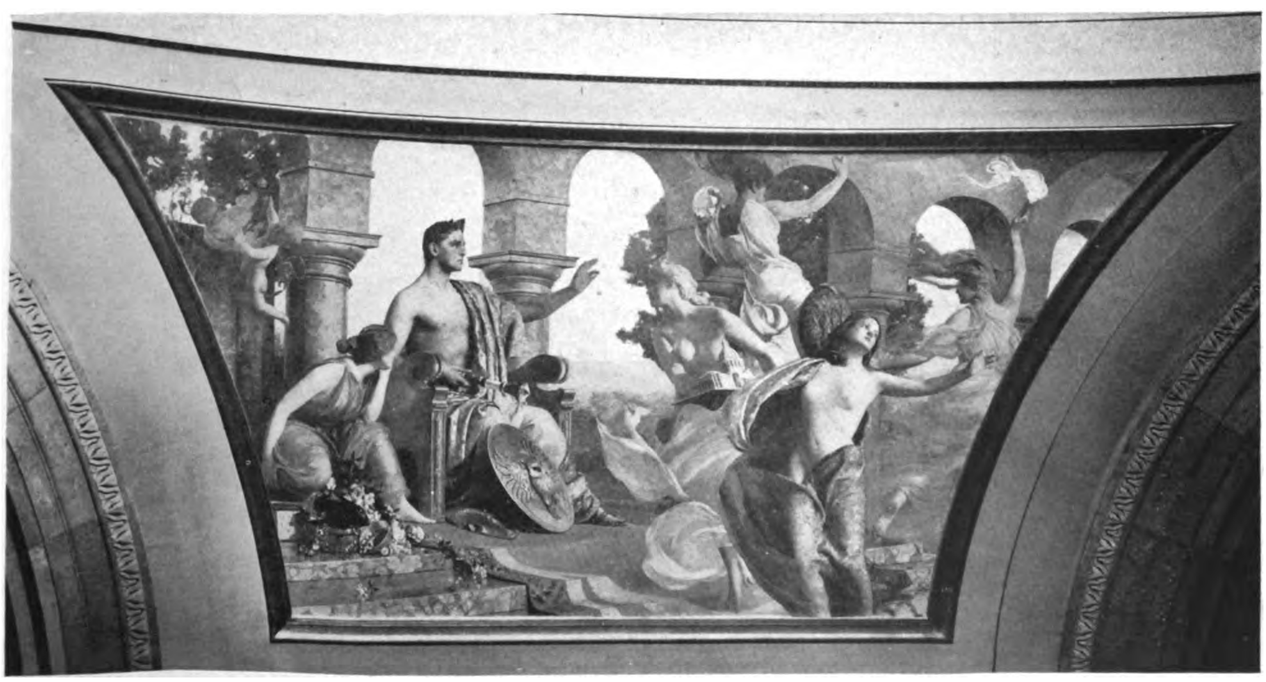


2 The "American Genius" lead by "Wisdom" and "Hope," scourges from the land savagery, cowardice, sin and stupidity

THE CIVILIZATION O
FOUR PAINTINGS IN THE ROTUNDA OF 1
BY EDWARD SIMMONS.



3 The "American Genius" lifting the stone and breaking the soil, directed by "Wisdom" and "Hope" and assisted by "Firtility"



4 The "American Genius" having acquired "Wisdom," with "Hope" beside him, commands the four winds to bear abroad the products of the state, wheat, minerals, the fine arts, etc.

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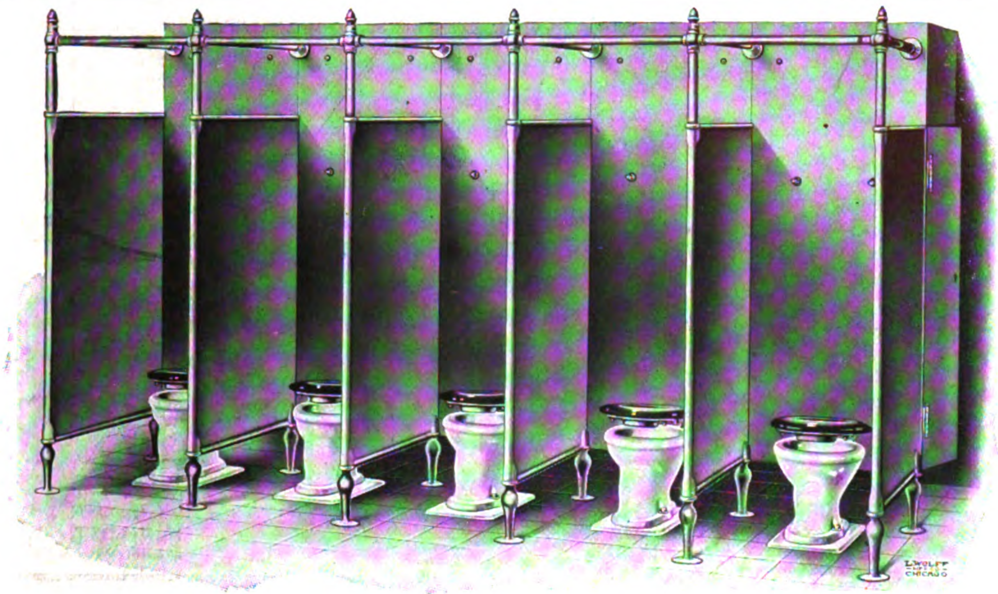

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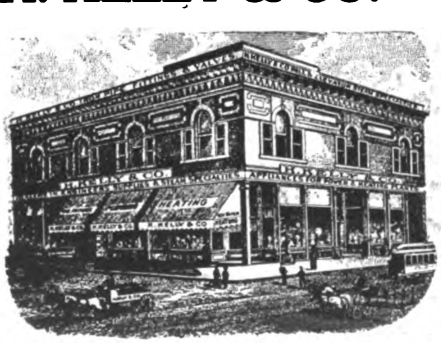

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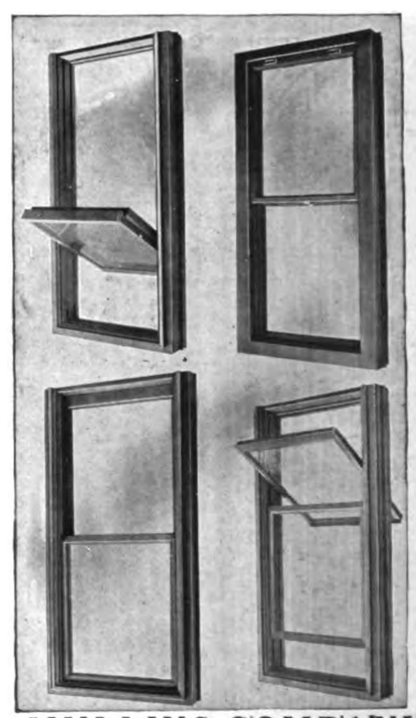

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VOLUME X NUMBER 6

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ROBERT CRAIK McLEAN, EDITOR.

IN THE FRONT RANK.

For years the East has asserted its supremacy as the seat of all the learning this country was able to impart, but gradually the vast, illimitable, ever-changing West, full of the spirit of the enlightenment and progress that has dominated the last half of a wonderful century, found expression in the establishment of schools and colleges, covering every department of education. These institutions, while small and comparatively unknown for the first years of their existence, have gathered strength and vigor from their environment, and have demonstrated their right to exist and prosper regardless of Eastern competition, to such an extent as to virtually enforce recognition.

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W. K. MORISON & CO., Minneapolis. Hardware trimmings.

Among the banking institutions of the Northwest the Security National Bank of Minneapolis, which is illustrated by 15 photographic plates in this Number of the WESTERN ARCHITECT, is recognized as one that stands for financial stability and conservative-investment, and has thus become oneof the main foundations of the financial structure of the vast region tributary to the Twin Cities.

In order that the new building which the growth and importance of its financial transactions made necessary, might fitly represent the principle of financial solidity of the bank as an institution, it was given am inposing design on plain and substantial lines.

The architects chosen were Long & Long of Minneapolis, the general Contractor C. F. Haglin, and the contracts for the work were distributed with a view to obtaining the services of the most reliable contractors and the best materials and appliances that are known to bank and office building construction and finishing.

The exterior walls are of white enameled brick, furnished by the Tiffany Enameled Brick Company. The Tiffany company was the first concern to make a perfect enameled brick in this country. Twenty-five years ago all white glazed brick were imported from England, the American brickmakers not being able to produce a brick that would not craze in the extremes of temperature to which our climate subjected it. The Tiffany Company under the direction of Mr. Van Inwagen, who originally directed the company, and was a chemist of considerable scientific attainments, after several years of experiment solved the problem, and has given the country a brick that is equal to any made in England or Germany.

The immense amount of steel beams and other structural iron used in the construction of the Security Bank Building was furnished by the Minneapolis Steel Machinery Company. This local concern, the largest plant of its kind west of Chicago, is well equipped to furnish structural iron for every purpose, and has always in its yards an ample supply of standard sections for skeleton steel construction, as well as beams required for those forms of reinforced concrete floors such as are installed in this building.

The floors are of reinforced concrete suspended from the steel floor beams. The reinforcing is composed of ½ inch wire fastened to holes punched in the lower flange of the steel beams running transverse and longitudinal about eight inches from centers. The system forms not only a substantial floor but renders the floors perfectly deadened. This is the largest extent of floor space constructed in any office building in the city and consumed over 20 tons of inch and half inch wire in its construction, furnisheg by the American Steel and Wire Company of Chicago.

The walls throughout are finished in adamant. This plaster has obtained so firm a position as the best finish possible for interior walls of every description that it needs no description or comment further than approval of its excellent appearance in the offices and halls of the Security Building. It is the product of the United States Gypsum Company.

The Standard portland cement manufactured for general use by the Universal Portland Cement Company of Chicago and Pittsburg was selected for all cement work. A large quantity of this cement was used in the reinforced floors of the building where a perfect setting and thoroughly reliable cement was imperative. Its use in the Security Bank is a strong endorsement of Unive:sal portland cement and a guarantee of its tested quality in reinforced construction as well as in the foundation work of the building.

One of the noticeable features to which the attention is attracted in the office portion of the building, is the interior finish, which includes the window frames, doors and the trim generally. The wood used is cherry with a fine mahogany finish, and its quality and lustre imparts that distinctive richness of effect as well as solidity which gives a substantial aspect to the offices and halls throughout the entire building.

The effect of the finish of the offices is augmented by the "Ideal" maple flooring in all offices in the building, furnished by the I. Stephenson Lumber Co., Wells, Michigan, through the J. C. Hill Lumber Company of St. Paul. In many cases this has been stained to match the mahogany finish. Maple flooring depends much upon its selection and manufacture for its excellence, and this is a specialty with this great lumber firm in the production of "Ideal" flooring. The close joints and almost inperceptable joining, with variagated tints of the wood, combine to make it not only Ideal in name but an ideal flooring for every purpose from the office building or factory to the finest residence or church.

The heating plant as well as the sanitary equipment was in the hands of H. Kelley & Co. The arrangement of and distribution of direct radiation was largely the result of carefully studied conditions of window exposure, all portions of the building having exterior windows. The radiators are generally located beneath them. The system of steam circulation employed is well adapted to the conditions of so extensive a building with condensations to be returned to a central point. The supply mains are paraleled throughout the building by return mains which connect with a return header in the engine room in the basement. The operation of the steam plant was found the past severe winter to be generally complete and satisfactory.

All the radiation installed is under automatic temperature control, for which the Johnson System of temperature regulation is used. A single thermostat is generally used in the offices while in the banking rooms the radiators are operated from thermostats placed in convenient positions to indicate the average temperature. This system is now recognized as being a standard temperature regulator and is that adopted for the great Carnigie Extention building heating plant at Pittsburg.

The decorative effect of the banking rooms is supurb. Here the marble columns and wainscot is complimented by figured panels in ecru bordered by a wide band of pearl gray with a framing band of gold, forming a frieze between the pilasters around the banking room. The ceiling is enameled white touched with gold between the marble panel beams, the entire effect being light and rich, giving an airy and attractive appearance to the interior. The decorative plaster work was executed by the artists of the Architectural Decorating Company of Chicago.

The halls of the office floors and entrances are wainscoted in marble, with a green marble base corresponding in tone with the general finish. This is finely polished and installed in a workmanlike manner such is always produced by the Northwestern Mantel Company of Minneapolis, which is credited with the work.

There are distributed on each of the ten office floors of the building a system of toilet rooms that give ample service to the occupants. These are fitted with L. Wolff & Company and J. L. Mott Iron Works make of aparatus, and are not only complete in every particular but special care has been given to the installation, the whole work being extremely creditable to the house of H. Kelley & Company of Minneapolis.

A glance at the photographs of the interior of this structure will show the supurb quality in design as well as the quantity of the oranmental iron installed. From the bronze doors at the entrance, the elevator guards and entrance grill, to the "cages" and office partitions, all exhibit the best class of ornamental iron work to be found in the west, and its execution is more than creditable to the Flour City Ornamental Iron Works that produced and installed it. The works of this concern were described in detail in the last issue of thiis journal and it is to their complete equipment and expert workmen that the credit for this extensive and complete exposition of ornamental iron work belongs.

The photograph of the exterior shows to a marked degree the advantage of using perfectly clear glass in office windows. When one notes how each window gives a clear reflection without variation, not only the large plates of the bank windows but throughout the entire facade, and compares it with the distorted appearance of windows of inferior glass, the uniformity of the product of the Pittsburg Plate Glass Company will be understood.

The special bronze mail boxes and shutes of the Cutler Mailing System are not only a convenience to the tenants of the building but ornamental as well. The boxes here installed are designed to correspond in detail and artistic effect with other decorative features of the interior.

The hardware was designed with particular reference to the solid and substantial character of the building, and harmonizes with the finish and trim. A uniform door knob and escutcheon in bower-barffed iron is used throughout the office portion, and bronze in the bank entrance doors. This was supplied throughout by W. K. Morison & Co., of Minneapolis.

THE CHEAPEST AND BEST TRIP.

When the "where to go" look comes into a man or woman's face the person is apt to dream dreams of mountain, lake, and woods, with visions of the Yellowstone or the Atlantic or Pacific seaboards. When the dream is ended and sonethimg is looked for that will give all the pleasure of the dream and still meet with the bank balance of the dreamer, he is fortunate indeed who learns of that route of the Georgian Bay boats and the Grand Trunk System in which the great lakes form a principal part.

Starting from Chicago, the "Soo", or Duluth (in the former case by the boats of the Northern Michigan Line changing to the Georgian Bay boats of the Northern Navigation Company at Mackinac Island, or the Soo by the Soo railroad which is now publishing exceptionally low rates from Minneapolis and other western points) the most magnificient inland water trip (that has all the charms of the Pugit Sound or the Maine and martime coasts) with the greatest variety of scenic grandeur both natural and human, is encountered.

The great inland sea a day out of sight of land, the Soo Canal, only rivalled by that being constructed at Panama, the grand hotel at Mackinac Island the greatest resort west of Newport or Mount Desert, and then days passed among the islands of the north channel and the Georgian Bay.

For a short trip of a week, from the Soo through the Georgian Bay and return, the cost is less than board at a city hotel, for the entire expenses of seven days continuous travel on a supperbly appointed steamer is but $25.00, and the rate is proportionate if the traveler wishes to go further. For a longer trip in the exceptionally appointed trains of the Grand Trunk System takes the traveler to Toronto, the Queen city of western Canada, and to Niagara Falls, and on to Kingston on the bay of Quinty at the east end of Lake Ontario. Here, leaving the train, a steamer ride through the famed thousand islands and down the La Chene Rapids to the magnificent city of Montreal, and the half mediaeval city of Quebec, gives in a comparatively short distance, some of the greatest natural sights, and a visit to the most interesting cities, on the western contient. Then the Grand Trunk System again and Portland, Maine is reached in a few hours. Here is Casco Bay, and a choice between the resorts of the Atlantic seaboard or a boat or rail trip of a few hours to Boston.

Thus briefly sketched is the ronte of all routes in the diversity of experience and unusual sights covered, that a trip across the contient, the Yellowstone, the mountains, California with the Yocemite and the coast resorts cannot equal in interest, even though a much greater expense is not considered.

It is the trip of trips for the invalid, because it is made without exertion, and to the robust man in search of recreation it is a game and fish preserve in its side lines and stop overs the entire distance. It is the greatest trip that can be be produced on this continent, and Europe has none that can equal it in all that goes to make up a perfect holiday of travel.

POSITIVE AND FINAL.

The following letter from N. D. Frazer President of the Chicago Portland Cement Co. will explain its self.

Chicago June 27 1907

Editor Western Architect,
Dear Sir:-

Some of the Chicago papers of Wednesday, June 26th, contained an article to the effect that this company had consolidated with other cement producers in the LaSalle Valley, Articles stated that Mr. A. J. Earling, President of the G. M. & St. P. Ry., had figured largely in the negotiation. The statement is absolutely false. No such negotietions haye or will be considered by this company. As further evidence of the untruthfulness of the report, whether malicious or otherwise, we submit the folowing telegram:

New York, N. Y. June 27th 07

Chiacgo Portland Cement Co.,
Chicago.

I know absolutely nothing whatever about any negotiations between the Marquette Cement Co., the Chicago Portland Cement Co. or the German American Company, and I have certaitly had no part whatever in any negotiations that may certainly had no part whatever in any negotiations that may have taken place between those compnies or any other cement companies refererd in the Chicago Tribune and the Chicago Inter Ocean.

A. J. Earling.

The Chicago Portland Cement Co. and its President N. D. Frazer are well enough known to the architect and conlsadors material dealers of the counlvy as well as A. J. Earling President of the C. M. St. P. rialroad, to make the abouve work authoritative and final.

Rightly Roofed Buildings is the title of a handsome sixty-page book just received from the Cortright Metal Roofing Co. It is printed in two colors throughout, on fine coated paper, and profusely illustrated with half-tone photographs of prominent buildings covered with Cortright Metal Shingles. The object in issuing the book is, as the first paragraph says, to furnish an illustrated Guide for the seeker of the best to be had in roofing, be it for the residence, church or school, and whether he be the Architect, Contractor Roofer, Carpenter or Owner. Every one in any way interested in roofing, should send for this book. The articles it contains are well written, and full of bright ideas in regard to the roofing problem, and a postal to either the Philadelphia or Chicago office of the Cortright Metal Roofing Co. will bring a copy free of all charge.

See corresponding page in back of this paper.

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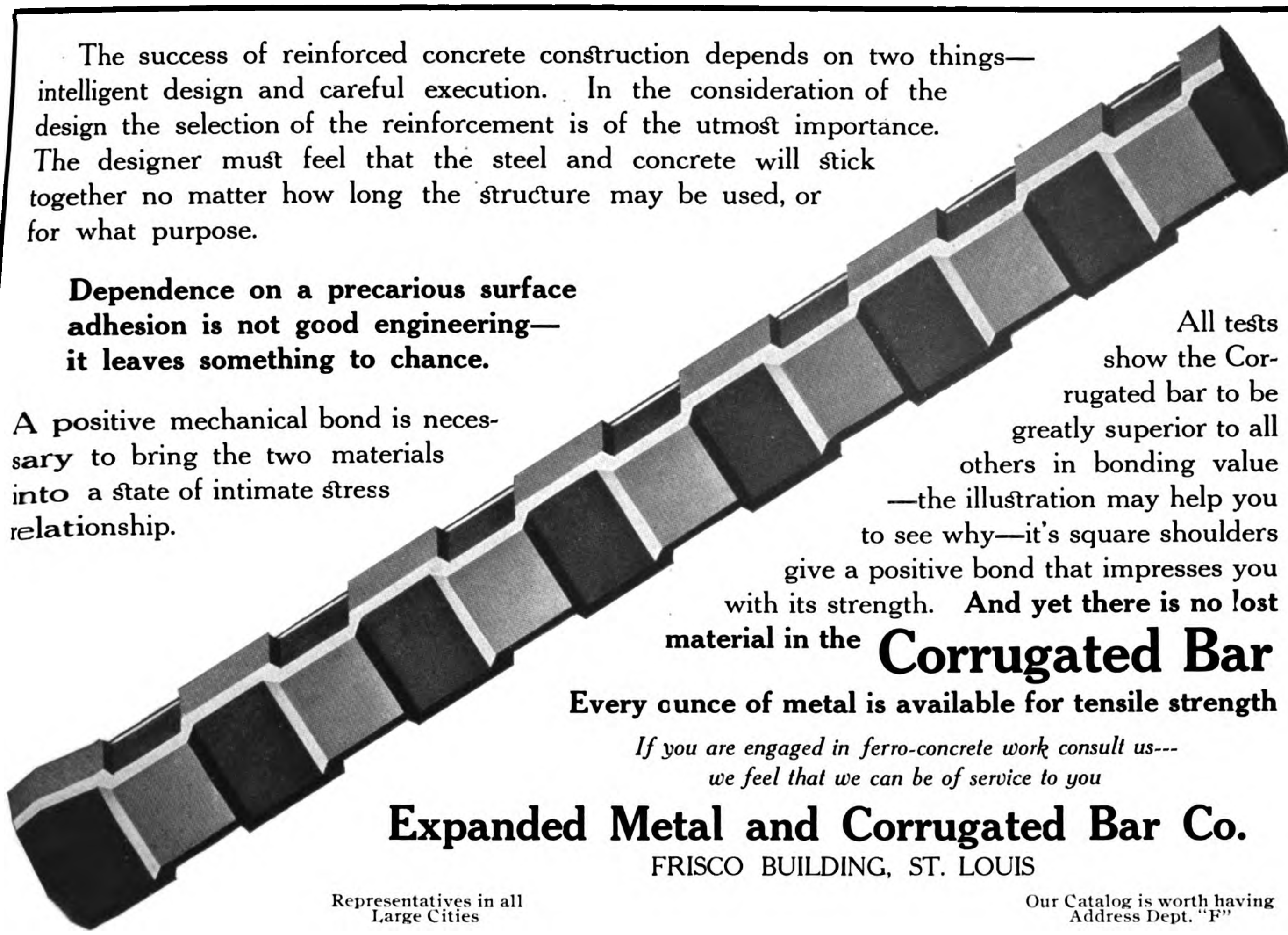

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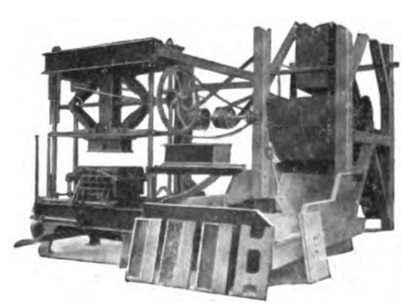

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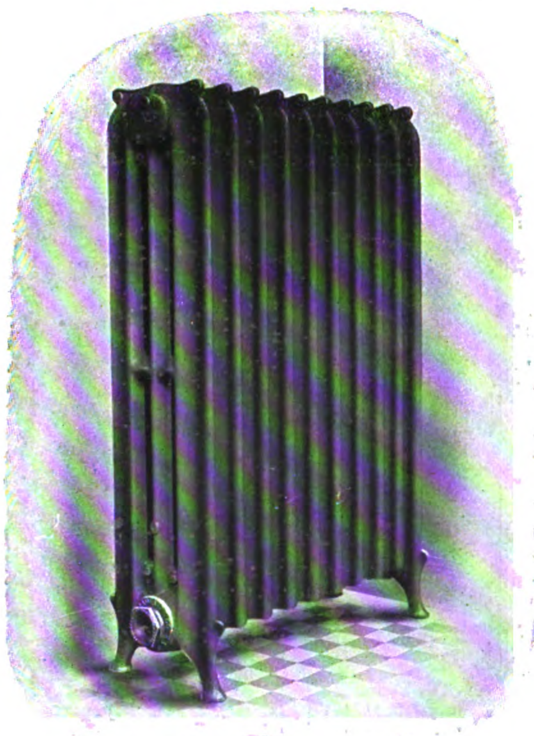

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ROBERT CRAIK McLEAN, EDITOR.

Death of Wm. LeBaron Jenney, Architect

WM. LEBARON JENNEY, Architect and Engineer, died at Los Angeles, California June 15 at the age of 74. For thirty years Mr. Jenny had been so active in his professional work and so prominent in national and international councils that his loss will be felt alike among his former associates in Chicago, at the conventions of the American Institute of Architects, and the assemblage of the World's Architects at the next international congress. In many respects his entire life was exceptional in architectural annals. With a desire from boyhood for the profession of civil engineering rather than architecture he was signally accomplished in both. As his fortunes led him as an engineer through extraordinary experiences in the greatest of civil wars, they also placed him at the head of the architectural profession from the inception of all high structures in this country, till they found their ultimate perfection. His life was one of joyousness, humor, and kindliness, and appreciation of the good of the present rather than a serious estimate of the future, and the importance of his part in it. When General Grant sent him on one occasion from the cabin of the gunboat upon which they were passengers, to see why the boat had stopped, he found that it had left the overflowed river and had lodged in the top of an immense tree. Returning to the cabin he reported that the boat had climbed a tree and resumed the game of whist the incident had interrupted. A young man had started an architectural journal and appeared for the first time at a convention of the Institute to report the proceedings. The dignity of the occasion was augmented by the assembly meeting in the senate chamber of the state capitol. In the midst of these formal proceedings who but Mr. Jenney would have thought, and what is more acted on the impulse, to rise and beg leave to introduce that young man to the assembly, an innovation on custom that was never repeated in a similar manner in the twenty-five years he afterwards attended those conventions. Mr. Jenney's kindliness and generosity as well as a distinct wish to advance the profession lead him at the beginning of his architectural practice to look upon his draftsmen as students rather than employes, and to his encouragement and rudimentary teaching many architects owe their launching into a profession in which they afterward achieved a leading position. The story of his life; quaint, interesting and simple as the life it represents; written by himself in the days when the infirmities of the body were beginning to obstruct the processes of the mind, which we print on other pages, was told to oblige a friend rather than for publication. Like the autobiography, the story or reminiscence of the atelier which we print in the July issue that the two may form a slight memorial of one whom every member of the profession who ever met his genial smile respected and loved, was also written to oblige a friend rather than to put his good deeds on record. But whether his own writings or words of others they can no more than dimly suggest the true significance of the life of Mr. Jenney. He did his work as he saw it and the honors that came to him were not heralded by himself but remain a heritage to the profession he adorned.

Some of the Works, Honors and Records of Mr. Jenney

Among the architects and engineers who enjoyed Mr. Jenney's teaching early in their careers are D.H. Burnham, William Holabird, Martin Roche, A. H. Granger, Normand S. Patton, W. A. Otis, and H. Van D. Shaw, of Chicago, W. J. Dodd, of Louisville and D. Everett, Waid of New York, each of whom have risen to the first place in the profession, and there are many others, the record of whose names have been lost, while W. B. Mundie and Elmer Jensen who became his partners were not far beyond a knowledge of rudiments when they entered his employ as draftsmen. Beside being a member ex officio of the International Congress of Architects, Mr. Jenney was a member of the American Institute of Architects since 1872, a past president of the Illinois Chapter, and a member of the Southern California Chapter A. I. A., and an honary member of the Chicago Architectural Club. He was one of the most honored members of the Loyal Legion the most select organization of officers of the Civil War. It is notable that Mr. Jenney's last work was the Illinois Vicksburg memorial, which, erected where as engineer on the staff of General Grant he erected forts during the war, will stand as a memorial to his patriotism, as his civic works will commemorate his talent as an architect. Mr. Jenney during his active life read four papers before the American Institute of Architects. In 1885 "The construction of a heavy fireproof building on a compressable soil," in 1891 "The Chicago construction, or tall buildings on a compressable soil;" in 1894 "The wind pressure in tall bildings of skeleton construction," and in 1897 "Whistler and Old Sandy in the fifties."

The Facts Regarding Skeleton Steel Construction

The passing of Mr. W. L B. Jenney suggests the historical data existing in regard to what has been named skeleton steel construction, that marks the one architectural triumph of the close of the nineteenth century. It is singular yet true that the date of its birth or its parentage has never been accurately recorded. A Minneapolis architect claimed a "patent" and sought by plans and dates to substantiate the claim, and assess a royalty upon all structures of this description of construction. The first suggestion of such a structure we remember, was while calling on John W. Root who was designing an office building for Mr. Walker, a capitalist of Boston, for the lot upon which the Schiller theatre was subsequently built, then occupied by a livery stable. Mr. Root explained that "the structure would be of steel frame and the panels in the outer walls would be filled in with ornamental terra cotta." For some reason the work was not carried out and those plans must still be in the vaults of D. H. Burnham and Company. It was about this time that the Home Insurance building was designed by Mr. Jenney and the office building of skeleton construction, as it has since been designated was erected by both Chicago and New York architects. The fact is, that the skeleeton steel building was not an invention, It was an evolution, and is not directly the product of any man's ingenuity so much as the necessity for high buildings being met by the ability to procure channel and I beam steel, and the invention of the hydraulic elevator to make such buildings practical. Each building then as it does now, solved some special engineering problem, and experience has prefected the crude beginnings. Mr. Jenney deserves the credit of having first evolved a system by which the size of piers could be lessened and the dividing of expansion and contraction movements independently between the several floors, useing this Bessemer steel beams for the first time in the United States. Like the elevator, however, another element entered into the practicability of the scheme, and that was a fireproofing material that would work in conjunction with the steel. This was found in burnt clay hollow tile, and manufacturers of this fireproofing made every effort to improve its use, with the result that every demand of the architect was met by the makers.

AUTOBIOGRAPHY OF WILLIAM LE BARON JENNEY, ARCHITECT.

WRITTEN IN 1906 FOR THE WESTERN ARCHITECT.

BORN IN FAIRHAVEN, MASS., SEPT. 25TH 1832. FATHER, WILLIAM PROCTOR JENNEY OF THAT TOWN, MOTHER, ELIZA GIBBS, DAUGHTER OF CAPTAIN ANSEL GIBBS OF FAIR HAVEN AND LUCY LE BARON OF PLYMOUTH, MASS.

MY early education was at my native town of Fairhaven and at Marlboro and Andover Mass. On leaving Andover 1849, the California gold fever was at its height, and finding the old ship Friendship, Capt. Scott, about to sail from Buzzard Bay to San Francisco, I took passage in her and sailed September the 2nd 1849. The passage until off the "Reo de La Plata" was very fine. The usual sea life was seen, all of which was novel and interesting to me. There were whales of several species, Mother Cary chickens that seemed to dance on the water. There was fish of many varieties, the paupaue, dolphin, albercore, and the skipp jacks, which from time to time played under the bows of the ship, and were some times caught, much to my interest. After living so long on salt food I naturally craved something fresh, the Captain seemed quite as much so, and had his cook make paupano sausage balls which were not very good, but quite as much so as those of the penguin, which I shot off Cape Horn. We were now in rough weather. We went near enough to the Cape to see the ice peaks, of which I made a pencil outline. After being knocked about by head winds and moderate gales we finally were able to catch a fair wind, and squared away for the north, up the coast of Chile, and soon reached the vicinity of Valparaiso. Then one evening as the sun was setting it fell a dead calm, and the captain discovered that the ship was slowly being washed on shore by the heavy rollers. The ship had been a whaler, and had four whale boats on the davits, which were quickly lowered and manned. The sailors were old whalers, and consequently good oarsmen, and they were soon able to hold the ship, by their oars and hard pulling. As the sun went down, a light off shore breeze sprang up, our sails filled and soon we were far enough away to be out of danger, and were headed north for Valparaiso. We entered the harbor about nine o'clock and came to anchor. The captain invited me to go on shore with him, which I was glad to do. On landing I rushed up and down the principle streets hoping to find an ice cream saloon, which I soon succeeded in doing. It was filled with small round tables at which were seated fashionable dressed ladies and gentlemen. I entered and seated myself, and immediately a waiter placed before me a menu card, and a handsome silver vase with open worked cover. What could it be for? On looking about I saw there was a similar one on each table. I reached the cover and found it to be full of a light grey powder, evidently not to eat, though I was greatly tempted to taste it, but finally decided to see what the others did with their urns. I took the menu card and selected a cream, pointed at it with my finger, in the absence of any practical knowledge of Spanish. The waiter understood, and quickly brought it, and with the aid of other signs, I obtained a cup of chocolate. Still the silver urn was untouched so I decided to leave it. When a gentlemen came from his table, touched his hat to me, saying "Pardon me", raised the lid of my silver urn, took from his case a cigarette rubbed away the top of the ashes, and displayed a large piece of burning torch wood, from which he lighted his cigarette. "Gracias Senior", again touched his hat and left the room. Having no cigarette I followed.

I walked down to the landing were I found the Captain and the crew waiting for me. Then we were soon on board ship. I spent a very pleasant week at Valparaiso. It was mid-summer, Christmas to New Years day, a general holiday. Fruits in the greatest abundance. The rides about the city were delightful. The ground around the bay rose rapidly to the top of the hills, where were located the finest residences, where I was invited several times to luncheons, and treated most sumptously. There was a botanical garden of considerable dimensions, where I found a large variety of fruits and flowers mostly semi-tropical rather then tropical, much as we have in California.

I left Valparaiso in January, and sailed northward passing the Calipagos Islands keeping well to the westward to avoid the regions of calms, which prevail in the latitude of these Islands. I reached the Phariolone Islands, opposite the entrance to San Francisco bay in early February and entered the Golden Gate, passing through and immerging into the bay the 22nd of February 1850, as the U. S. "Sloop of war" Vandalia was firing the Washington birthday salute. That evening I went over the town with some friends from the east, visiting numerous gambling houses, which seemed to be the only business of the place. I stayed in San Francisco doing nothing until the 18th of May 1850, when the town which was built almost exclusively of pine lumber and tent cloth, was utterly destroyed in about three hours. The only building remaining was the detached brick building of the Wells Fargo Express Co., which had so well escaped that the next morning after the fire everyone desired to build with brick. (As in San Francisco last May they desired to build in steel skeleton construction, which I had long before considered and so stated fireproof, earth quakeproof and cyclone proof.) Having nothing to interest me in San Francisco I took passage on the clipper ship William Sprague of Providence, R. I., Captain Jesse Chase for New York via Sandwich Islands, Manilla and possibly China.

As we sailed out of San Francisco Bay through the Golden Gate, the clipper ship, Mechanic, came sailing after us and being a faster ship with more sails spread, she soon passed us, and running into a strong current, was put about, sending her jibboom through our spanker tearing the sail from top to bottom, and bending the gaff like a bow. As the sail was necessary the mate ordered a new sail to be bent. The second mate leaped on to the gaff, the mate called out to him, "Do not trust yourself on that spar until you examine it and be sure that it is all right." The next instant the spar fell to the deck with the second mate, the surgeon rushed up immediately and declared his leg broken. The surgeon set it and put the patient to bed. The next day the surgeon found that his patient was hobbling around on a pair of crutches he made himself, the surgeon was indignant and told him he would have nothing more to do with him. Unfortunately a week after, when we run into Honolulu Bay he was taken to the hospital with his leg in bad shape to the disgust of the surgeon who endeavored to explain it at the hospital. We left him, when we left the island a week later en route to Manila.

We were forty days crossing the Pacific. Then we entered the straits of San Barindeno, and worked our way through the straits for nine days, passing out of the straits north of Mindoro into the China Sea. As we passed this large island a heavy black cloud gathered on the summit of the mountains near the center of the island, and the captain was uneasy expecting momentarily a heavy squall. Instead of this it proved to be a tempest. A sharp flash of lightning and a severe clap of thunder came out of the clouds, to be followed in less then five minutes by another, even more severe, followed by a steady wind strong enough to force us to reef top sails. Before dark we ran into Manila under double reef top sails at the beginning of the typhoon. The water was so rough that the boatmen would only take one passenger on shore at a time. As the captain had to go to "enter" the ship the boatman promised to come for me the next morning, which he did not do, as the typhoon was then at its height. The next day was fine. I took board at the hotel where I found a pleasant party of Americans. In the afternoon the ship Reindeer came in under jury-mast, having lost all her spars in the typhoon just over. In the evening the officers of a Russian frigate which had come into port during the afternoon had a banquet. Shortly after midnight when the jollification was at its height the rain and wind commenced. The hotel was covered with half cylinder Spanish tile around which the rain beat, filling every seam with water, so that I was soon driven from my room. As I came out into the hall there was a shout from the guests, "So Jenney, you are the last to be driven out. We have been betting how long you could stand it". At daylight an examination showed that the billiard room was the only room where breakfast could be served. After breakfast a party of us rowed over to Cavite where a number of ships had been blown. The typhoon season was now over and we had no more storms. After breakfast I rowed to Cavite, with Captain Chase to see the vessels that had nearly blown on shore. They were pitching heavily in a soft mud flat covered by thirteen feet of water. The ships though drawing several feet more, the mud was so soft no damage was done. The city of Manila is an old medieval city, of about sixty thousand inhabitants, with a wall, a parapet, drawbridge, portculis gates with battlements and defences as in the old medieval cities of Europe. The streets there are narrow, the houses built with sliding sash windows all around the second story. Instead of glass the sash are glazed with pearl shell washed on the bay shore, split into thin flakes and cut into panes four by four. They admitted a soft mellow light well adapted to the climate. I saw in Manila but four lights of glass. They were six by eight in the door of a barber shop. Manila is at the mouth of the Pasig River, that flows from Lagona Bay for twenty miles or more to the bay of Manila. The Lagona de Bay is a lake of some dimensions where there are many islands. These are stocked with game, deer and buffalo beside there are many dangerous crocodiles. The buffalo is a very dangerous animal to hunt, seizing every opportunity to charge upon the hunter. On the large island of Mindore is a new animal almost unknown to science that would seem to resemble both the buffalo and the pig. The fruits in the Phillipines are most excellent, numerous and varied, the mango is very delicious, a bright lemon color both the skin and the pulp, the flavor is peculiar and delicious, with a suggestion of turpentine , strange as it may seem that anything could be delicious with even the mildest flavor of turpentine. The custard apple is another delicious fruit, the size of a grape fruit, filled with black seeds a little larger than those of an ordinary apple, with a custard delightfully flavored with vanilla. In addition to these there are the usual guava, banana and a few others. If one is fond of hunting there is plenty of game, deer, pheasants, and smaller birds. I knew a naturalist who traveled with his Malay servant. One day they were hunting together with two fine deer hounds. Having brought an animal to bay they rushed forward to see what it might be. They found the two dogs in a gully, into which they leaped and the naturalist discovered that he had leaped into the coil of a large boa constrictor. that instantly raised its head and grabbed his arm. He immediately drew his hunting knife and jabbed it repeatedly into the head of the snake which shortly succumbed, relaxed its hold and fell at his feet, dead. He gave the dead snake to the Malay servant who took it to the market and the next morning it was sold in steaks. They are said to be very nice, but I have not cared to taste one.

About eight miles up the Pasig river, from Manila are the rope-walks where are made large quantities of rope from manila hemp, which is obtained from a fiber of a banana that grows on the island. One evening I stood by the side of an enormous bunch of bamboo growing by the side of the rope-walk, when a large flock of quail circled around and lighted at the foot of the bamboo. This same fiber of the banana produces the warp of that beautiful dress goods which with a silk filler is called hosea, so bright and glossy. There is another dress fibre known as the pina cloth which is a beautiful ecru color that makes embroidery very soft and white hardly to be excelled. The girls are very fond of embroidered scarfs and handerchiefs of this material, and will save up their money, economize so as to pay even $100 for a scarf, and the young dandies will do the same for an embroidered shirt which is worn outside of the other garments, and are often embroidered to the very end.

In September 1850, I sailed on the William

Sprague for New York, down the China sea through the straits of Java, stopping for a run on shore at Anger Point on the east shore of Java where is seen the celebrated and enormous banyan trees, whose branches extend down and take root around the tree trunk so as to look like a forest.

In the afternoon we sailed around Java head and shaped our course, for the Cape of Good Hope. The wind was particularly fair and strong enough for fine sailing, ten knots an hour, day after day, so that we soon rounded the cape and sailed northward to St Helena. Napoleon having died some years before, there were no objections to foreign ships, but we made no stops shaping our course for New York, which we reached early in January 1851, after a trip of seventeen months.

When in Manila I learned that there was a fine opening for an engineer and decided to study engineering and Spanish, and as soon as I found myself capable, to return to Manila, which I considered a very delightful location.

I entered the engineering department at the Harvard University, taking board with an elderly widow where there were two sisters from Cuba whose brother was in the "Ecole Centrale des Arts at Manifactures" the civil engineering school of France, at Paris. They gave me his address and I wrote to him and learned the great value of the school, far superior to Harvard. I immediately commenced the study of French employing as a private teacher the professor at Harvard, and took the special studies I felt I required in order to pass the severe examination in order to enter the school. The next year, I went to Paris and put myself in a preparatory school of the Ecole Centrale, worked hard for three months when I presented myself for examination, and was accepted as a student to enter the following September, the beginning of the school year. My lack of knowledge of French bothered me greatly. I took private lessons on sundays and holidays and practiced all I was able with the students, so that I found myself advancing rapidly .Still the first year in the school was a trying one. I entered with a hundred and sixty, and forty were discharged at the end of the first three months as incapacitated. At the end of the year I passed the final examination and was admitted amoung the first hundred, to enter the second year. I spent my vacation with a fellow student a Mr. Edward York of New Orleans, whose mother had rented a villa at Montreau,where we had some very fine shooting. The family was a very lovely one consisting of Mrs. York, her son Edward my classmate, his three sisters, a young brother, and a Polish staff officer in the French Army. One of these sisters, the eldest, some years later went with her mother to Mexico with the Suite of the Emperor Maximilian where she married an Aide-de--Camp of Marshal Bazinet. The youngest married in Philadelphia, a Mr.Stephans and wrote that admirable history with "Maxamilian in Mexico." The middle one, Mary, married the son of Cannon Kingsley and lived in Chattanooga, Tenn., after the war.

After passing a delightful summer with these charming companions I returned to Paris and entered the last or third year with some sixty others. Then came my struggle for a diploma. I was obliged to deny myself the theatre and opera, balls and receptions, and after passing a laborious year I succeeded finally in winning a diploma. They were awarded in September and that night I took the cars for Geneva, where I joined a party of Americans, a Mr. and Mrs. Roelofson, his brother a Mr. Holmes of Cincinnati and one or two others, starting for a trip through southern France, which we found most delightful. We should have gone into Italy and was already at Champnery when in the evening as we were talking over our trip over the Alps to Milan, one of the party was taken very ill. We sent for a doctor who told us the next morning that he could go the following day, but matters so arranged themselves that we were forced to abandon our trip and take steamer for the United States.

On arriving at Fair Haven, I received an offer of a position as engineer on the Tehauntepec R.R. across southern Mexico, which I reached via New Orleans and the Gulf of Mexico. Col De Russey, a fussy old Frenchmen was chief engineer. He fortunately had a most excellent valet who relieved us of most of his fussiness, which finally culminated to my advantage. We were in the heart of the Cordiriilas at the town of Albarrio. We had just finished dinner at the French hotel kept by one Lafonte, who had had considerable experience in France. We were seated under a large tamarind tree on cross leg camp stools, when Lafont came out of the dining room door on to the steps, for all doors opened outward, with a newspaper in hand which he naturally offered to Col. de Kussy who took it with much pleasure, kindly thanked him and reseated himself on his camp stool. He was immediately absorbed in his paper to such an extent that he did not notice an enormous very lean pig, who was wandering in the vicinity. But the pig having nothing to distract its attention caught sight of de Russey on his camp stool, rushed forward nose well advanecd, which was inserted under the cross legs of his stool, and with a loud grunt, hoisted de Russey headlong, plowing the sand with his nose and filling his neck and eyes. Well, what was said is not fit for the sabbath school book. As de Russey pulled himself out of the sand he finished his sunday school exercise, which would be usually written with dashes and capital D's. with "Have a canoe for me at the landing. I go to New Orleans immediately. What is four thousand a year to be rooted over by by a pig. I take no more chances. Jenney, I make you chief engineer. Jenney and I give you my horse. Goodby," and he was gone. An hour later an Indian brought me his horse, so that I found myself chief engineer and the owner of a fine horse, thanks to the pig to which I touched my hat thereafter whenever I passed one.

I held this position of chief engineer for three months, when I was ordered to settle all matters on the Isthmus and to return to New Orleans. On arriving there I found a telegram from my old friend Roelofson with whom I had traveled in Switzerland, on leaving "Ecole Central." The telegram read, "Meet me at Philadelphia, Continental Hotel next Wednesday and I will make it to your interest to go with me to Paris," which he did. The next

Wednesday we were on the steamer for Liverpool, I having accepted the appointment of an American company, working with them for some months to install some machinery.

There was inaugurated in Paris a society known as the "Bureau of American Securities in Europe" for sale of railroad bonds and other securities, the collection of interest, forclosure of mortgages etc. The members of society were among the most celebrated men, each in his line scattered throughout the United States. W. T. Sherman, later Lieut. General Sherman, was elected President with a salary of ten thousand a year. I was appointed one of three engineers to pass opinion on the value and locations of different railroads and all other engineering problems that might be presented. My friend William Robertson, was elected Vice President. He and I were instructed to go to the United States and see Gen. Sherman who was Principal of Louisiana Military Academy at Alexandria on the Red River. After working with him for three days we succeeded in spite of the board of trustees in obtaining his acceptance, although they largely increased his salary, and agreed to build a house for him. War had not as yet broken out, but matters were rushing rapidly that way.

We had scarcely been in Cincinnati but a day or two, when General Sherman appeared. On entering my office he exclaimed, "I could stand it no longer, they are a parcel of rebels ready to rush to any extreme. The night I left New Orleans on going to my room at the St. Charles, passing an open door, hearing voices I looked in. I saw Tooms, whom I did not know, Kirby Smith and Tim Sherman, whom I did know, so I walked in. The conversation was solely on the prospective war. I said "Tooms, how absurd it is of you to bring on a war over this subject of slaverly. You know perfectly well that as the northern troops march south they will liberate the slaves behind them," 'That is all true Sherman,' said Tooms, ' were it not that the U. S. troops will never march south of the Mason and Dixon line." ' "You are wrong," said Sherman to Tooms, "the U. S. troops will come down here, and as we agree they will liberate the slaves beh'nd them".

Sherman said to me "the war is upon us, we will not go to Europe as we proposed. I go to St Louis to-night to arrange my affairs so that I may enter the army, if so desired." I did not see him again for months. In the meantime Congress met, increased the regular army and appointed Sherman Col., of one of the new Infantry regiments. I received a letter from him saying "I have just accepted the Colonelcy of the thirteenth U. S. Infantry. You get in the army as soon as you can. Use my name in any way you like but get in." The next day Gen. George B. Mc Clellan arrived in Cincinnati as the commander of the department of the West. I called upon him and armed with Sherman's letter, my diploma of the Ecole Central, and a letter of introduction that I had worried from Major Hatch, whose family I had known very well in Europe, and which I thought would take me to the General's presence, which it did. The General, after looking over my letters asked me to call again at nine A. M. on the morrow, and he would have a place for me. I did so. Was introduced to his chief engineer, just arrived, Capt. H. W. Benham, Engineer of the regular army. That evening at four o'clock we left together for Cairo at the mouth of the Ohio, on the Mississippi, which we were to fortify; our spies having reported a gun boat at Columbus some twenty miles down the Mississippi. After looking over the ground in the three states of Illinois, Ohio and Missouri, Captain Benham traced a plan and designed the fortification which we immediately commenced to build, using irishmen for laborers which the Captain was authorized to do. We had made but little progress when Captain Benham received notice from the War Department that he was appointed Brigadier General and assigned to duty in West Verginia. I was left to carry on the fortifying of the river junction. General J. D. Webster formerly Topographical engineer U. S. A., was placed officially in charge in order that he might receipt for money. He was too busy with other matters to pay any attention to the detail of my work, so I went on the best I could until General Freemont who commanded the department, came to Cairo, accompanied by Mrs. Freemont, whom I saw for the first time. I was introduced by General Webster as responsible for the engineer work that had been done. He and Freemont were quite complimentary and asked me what commission I held. I replied that I was Civil assistant, appointed by General Mc. Clellan, and he said that I must have a commission and that he would see to it, which he did. A day or two later I received an appointment as first Lieu. Vol. Engrs., by order of Sec. of War J. C. Freemont. Genl. Commanding. The next morning General Hallack assumed command of the department and the next mail brought me a letter, stating that my services being no longer required, I was thereby discharged "by order of the Sec. of War, Hallack, Gen. commanding." The next day I received another big envelope informing me that my services being specially required, "W. L. B. Jenney, First Leut. U. S. Vol. engineers was hereby retained in service until further orders," so in three days I was commissioned, discharged and reinstated as First Leut, Vol. Engr's, U. S. A., without affecting my actual duties. Shortly after this General Grant arrived and took command at Cairo. The enemy were making some movements between Paduchah and Columbus, General Grant failing to get any answer to his repeated requests, to be allowed to march against them, learning through his spies that they were about to send a Confederate force to take possession of Paduchah, decided to forstall their movements and sent a considerable force to take possession of Paduchah himself, leaving General Charles F. Smith in command. I was sent to do any engineer work required and immediately fortified the roads leading out of Paduchah towards Columbus, the Confederate stronghold, which was in command of one of their best Generals, Sydney Johnson. a West point Col. who commanded in Utah where he was relieved by General Charles F. Smith. These officers now confronting each other were about of equal reputation. On the first day of January 1862, General Grant organized an expedition up the Tennessee to Fort

Henry accompanied by a fleet of gunboats. The water in the river was very high, which enabled the gunboats to so command the fort that they quickly destroyed it. Col. Mc Pherson and I had accompanied the cavalry so that we were the first of Grant's army to enter the Fort where we found General Mc Pherson who had ridden in with me, Captain Phelps U. S. N. and a Confederate garrison. as prisoners. Captain Phelps had with him only a boat's crew and was very uneasy fearing the prisoners might see how greatly they outnumbered their captors, but soon the head of our infantry column entered the fort and Captain Phelps' mind was set at rest, though what the Confederates might of done with us had they decided to make capture, it is difficult to decide. The next day our troops marched across the isthmus to Fort Donaldson to which we laid siege with more or less slight engagements until Saturday morning when the enemy made a general sortie on our extreme right against the river above the fort, with so much vigor that all was thrown momentarily into confusion. By noon the battle ceased by mutual consent.

The day before our gunboats had attacked the batteries, which were very strong, located on a high and steep bluff below Dover, the guns being placed in very deep embrasures so that the gunboats had but little effect. Adml. Foot U. S. N. commanded, was slightly wounded, and had sent for General Grant during the night asking him to call upon him Saturday morning for a consultation, so that at noon that Saturday he was just coming on the field where this battle was raging. As he met the General officers, Oglesby, Mc Clelland, Lew Wallace and Charles F. Smith, from the latter he received a true military account, but from the others the general cry "we are all cut to pieces," Grant looked around seeing a dead Rebel soldier on the ground almost at his horse's feet, he ordered one of his staff to dismount, empty the soldier's knapsack which was done, when Grant explained. "They are beaten. Men do not make sorties with all their bedding, clothing and three day's rations. They are trying to cut their way out and surrender to-night. Turning to the three division commanders he says, "Get your troops in order and be ready to assault as soon as I give the word, they have evacuated this end of the Fort, hoping to cut their way out which attempt has completely failed. I am going to see General Smith on the left, will soon be back." He saw General Smith told him what he knew, to which General Smith agreed and arranged his troops for the assault that General Grant had commanded. General Smith, put the fourth Iowa in line of battle at the foot of the slope pointing with his sword at the enemy's parapet, stretched along the crest of the ridge saying, "Men I want you to take that fort, if you cannot do it, step to one side, I will call upon another regiment". Every voice seemed to cry out in chorus. "We can do it". "Allright" said Smith, "come on." Grant watched this assault until he saw General Smith enter the Fort, when he rode to the right and met Gen. Ogglesby, Lew Wallace and Mc Clelland, and said "Just as I expected. Smith and I agreed that all the enemy were at this end. His assault met with no resistance whatsoever, not a shot was fired at him. You three take your commands and push your way to the river banks. Do not stop till you are there, then report to me."

This was done, but before they reached the river. Forest with his command of Confederate Cavelry, had sneaked along under the river bank and escaped. General Grant had his head quarters in the laundry of Mrs. Cruft's plantation. We had just finished dinner when a staff officer came in and reported that we had possesion or the river bank just above the Fort, that no more could escape. We all slept on the floor under one row of blankets. The night was very cold and the big fire was kept up in the laundry fire-place until morning, when General Smith entered, reported that he thought they wished to surrender. A staff officer had just come in with a letter for General Grant. Grant read it. It was the celebrated letter from Floyd C. S. A. to Grant, asking armistice to arrange terms to surrender. 'Tell him no terms with Rebels,' said Smith, twisting his moustache while warming his back. Grant called for writing material which were supplied. Grant finished his letter and says "General Smith I have taken your ideas, but have changed the language. "The only terms I can make are immediate and unconditional surrender. I march at once upon your works.'' He handed the letter to Smith, who pulled it under his belt, remarking "he accepts that at once, or you will hear my guns," as he strolled out of the room. General Grant turned to me and ordered that I ride to the right and order General Mc Clellan and Lew Wallace to march immediately on Dover, which I endeavored to do, but the roads were a glare of ice and I could make no progress, except by riding in the underbrush. When I reached the right, I found our troops marching into Fort Donaldson. I entered with them and soon reached headquarters of the fort, where I found General Grant and all his division commanders; General Floyd, General Pillow and Buckner of the Confederate Army. General Grant and Floyd were seated, the others stood around as listeners. That night after General Floyd had ceased telegraphing to Nashville, telling of his "glorious victory over the Yanks," he turned to Pillow and says, "I used to be Sec. of War and it will never do for me to surrender. I am going to Nashville on a little steamer I have under the bank. General Pillow, I turn the command of Fort Donaldson over to you, sir." General Pillow replied, "I except the command of Fort Donaldson, sir, but it will never do for me to surrender. General Butler, I turn the command of Fort Donaldson over to you, sir.'' General Buckner replied, "General Pillow, I accept the command of Fort Donaldson. Gentlemen I'll tell you what I shall do. I shall wait until morning, when I will turn the command of Fort Donaldson over to General Grant, sirs.'' Upon which he laughed loudly. Two days later we went to Nashville, General Grant and staff, where we found a curious state of things, The governor fled, the members of the legislature fled the commander of the Confederate troops andthe troops all fled. Police guards gone. The only law preservers were the fire department. The negroes had taken possession of the confederate warehouses, and toted off provisions etc., until the fire department by the free use of water sent among them with force had driven them away.

That night just as the moon was rising we tried to get away from Nashville, to run down the river to Dover. The river was very high overflowing its banks, and in front of the city was filled with steam boats going and coming. Our old stern-wheel steamer B, had difficulty in getting off, stopping, backing and going ahead until finally the planks began falling off and the paddle-wheel was reduced to spokes, and the steamer could make no headway against the current, and the Captain was obliged to tie up to the bank. A passing gunboat knowing that we had General Grant on board, stopped and took us off, and we proceeded on our way up the river. The full moon threw the shadows of the left bank, which was high and covered with trees, entirely across the river, so that the pilot left the river and steamed over a plantation which he discovered by seeing the top of a large apple tree above water. Trying to get back into the river he ran at considerable speed into the forks of a very large apple tree sending the bow of the boat high upward. Grant and staff were all in the cabin and the shock upset us all, and tumbling us all into the rear of the cabin. As soon as I could gain my feet I ran up on deck and in an instant I saw the condition. As I re-entered the cabin, General Grant said "Jenney what has happened?" I replied, "Nothing General, except that the gunboat tried to climb a big apple tree and is firmly wedge in the forks." Notwithstanding the carpenters and sailors worked all night with saws and axes, trying to cut us clear at daylight we were still firmly wedged in the forks. A gun boat coming up the river, stopped and pulled us off when we went on our way rejoicing. Many anecdotes are told about Grant, but none more extraordinary then that he climbed a tree in a gunboat.

On reaching Dover, General Grant was ordered to report at Cairo. Hallack was very jealous of Grant, who had won all the reputation for the capture of Forts Donaldson and Henry, followed immediately by the fall of Nashville, and well he deserved it. He was already promoted by Mr. Lincoln who loved a man who would win a battle, but Hallack hated him, and accused him of leaving his command and going to Nashville without orders; which was not true, for on reaching Nashville he found it occupied by his own troops, under General C. F. Smith.

As General Grant was leaving Dover he sent for me, and told me that he was going to Cairo, that he left the Army in command of General C. F. Smith, and that he had offered him his staff, but he had applied for Jenney only, as he had no engineer, He immediately wrote me an autograph order for me to report to General Smith. As he handed it to me he said, "You are going with the first soldier of the U. S. Army, a man whose reputation I value more than my own," which was true. Grant fairly loved him, never gave him an order, but told him what he intended to do and asked him his co-operation. A few days later General Smith embarked all the troops within reach and started up the Tennessee, intending to destroy the railroad bridge at Tuca, which was only four miles from the river. It was raining and had been for several days, so that the river overflowed its banks and it was impossible to land the troops so as to reach this railroad bridge. We landed some five or six regiments, but we found we could not penetrate inland, as the country was covered with water, so we reembarked these troops as soon as possible,fearing that they would be cut off from the boats by high water. We run down the river as far as Pittsburg Landing and tied up to the bank. General Sherman was in command, General Smith having landed at Savanna, Tennessee, where he had established headquarters. General Sherman asked me to take a steamboat and run down the river to Savanna, and report to General Smith to whose staff I belonged, the s'tuation, and say to him that he would not disembark the troops without his order, which I was to return and convey to General Sherman as quickly as possible. To make my report more intelligible,I was to look over the ground before leaving. I started in half an hour, and was back by daylight, with orders to General Sherman to get the troops into camp at Pittsburg landing, which was done. In a few days General Grant had returned and with General Smith, his second in command, made headquarters at Savanna, Tennessee, at the house of Mr. Cherry. I was sent to forts Henry and Donaldson to dismantle these forts, and to ship all the guns and amunition to Cairo, to fortify Columbus, and the mouth of the Ohio. Before leaving I was instructed by General Grant to make a map of the camp at Pittsburg Landing, locating every regiment. While doing this I lost a handsome pair of dividers I had brought from Paris, these dividers lay on the field in the earth for forty years and were found as the engineers were laying out the National Park of Shiloh and returned to me. I went under orders as stated to Forts Henry and Donaldson, reported to the commanding officers and with the assistance of details they furinshed me loaded guns and ammunition on boats and sent them to Cairo to General Cullum, the chief engineer on the staff of General Hallack.

I then turned up the river to Savanna, Tenn., where I arrived on a beautiful Sunday morning, April 7th, the first day of the battle of Shiloh. As I stepped off the boat I met Capt. Hilliar of the staff who told me that there was a dreadful battle raging at Pittsburg Landing. Afterwards known as Shiloh; that he had come down for Gen. Buel and his army to hurry them onto the field. A half hour later I saw General Buel leaving Savanna to join General Grant. Learning that General Smith was at Mrs. Chery's I called immediately and found him in bed suffering from a severe hurt he had received from his foot slipping from a seat of a boat on which he had stepped, scraping his ankle and shin bone so that he could not step upon it. He said to me, "Go to Pittsburg Landing and report to General Grant," to whose staff I belonged, that I was only lent to him during Grant's absence, "How I wish I could go with you. General W. H. L. Wallace is commanding my division". That same evening General Wallace was brought to Mrs. Chery's house mortally wounded. We telegraphed for his wife, and two days later he died in her arms.

I hunted up my horse, my orderly and servant and embarked on a steamer for Pittsburg Landing. At daylight I found my boat against the river bank. I landed and reported to General Grant, whom I found surrounded by his staff. General Webster, his chief of staff says to me. "Jenney you have come on a glorious day, but yesterday we had a dreadful day, we were greatly outnumbered. Last night General Lew Wallace joined us with several thousand men and this morning General Buel is joining us rapidly." After riding around the lines and saying a few words of encouragement to the commanding officers, General Grant returned to a clear knoll in the woods near the landing, when he said to the staff, "I will make headquarters here where I can be found if wanted." He said for me to watch the landing and when the troops arrived, which was part of Buel's army, which arrived at Savanna during the night, to get them off the boats as quickly as possible and send the boats back to Savannah for more troops and to lead the commanding officer to a knoll he had pointed out to me on the Corinth road where I would find one of his staff to to take them where he would direct. This I did, working rapidly from nine A. M. to four P. M., taking on to the field some fifteen thousand men.

At four P. M. one of the staff called to saying, "General Grant wishes you would get Buel's cavalry that are on the opposite river bank and taken them out to him at the little Shiloh Church, that he may push the enemy." This I tried to do, but found that every steamboat was entirely out of fuel. They had hurried up and down the river so fast that they had neglected to replenish their fuel at Savannah. I rode from boat to boat interviewing the captains, when Lieut. Moulton of Grants staff as chief commissary hailed me, "Jenny what is the the matter?" "I want a boat with fuel to bring over the cavalry from the opposite bank, to pursue a flying enemy." "I will do it" said Moulton, 'Thanks, and I will see the General knows that I am indebted to you." He called for a gang of roustabouts, knocked in the heads of the tiers of hams and bacon, threw them in the furnaces and soon I had the cavalry on the road to General Grant. Some months later, when Moulton's returns came back from Washington they were indorsed by the third auditor of the Treasury " dissalowed. To be stopped, from General Grant's pay. No appropriation for firing steamboats with hams and bacon". General Grant smiled and took a pen and wrote, under the Auditors endorsement, "Please say to the Secretary of the Treasury, that I will burn every ham and bacon in my commissary warehouse, to win a battle any day. U. S. Grant."

At the end of the war Congress passed a resolution, relieving all Generals commanding armies, from all such charges. Shortly after the battle of Shiloh, General Cullum "chief engineer" Staff of General Hallack, came to Savannah, called on me and said, " Mr Jenney, you will doutless hear from Washington in a few days, in a manner very satisfactory. Good day;" and he was gone. The next mail brought me a big letter from the war department, informing me tht I was appointed by President Lincoln, Captain and Aide de Camp, in the regular army, to report to General Grant. This made no change for me other than additional rank and pay, for I was already Staff engineer to General Grant.

Shortly after Shiloh, Corinth surrendered. The Confederate army retreated South to Blackland, General Rosecrans was ordered to push his army after them. Having no engineer he asked General Grant that I might be sent to him, which was done, and I remained on his staff until I joined General Sherman at Memphis, at his request. His engineer Capt. Hoepner was sent to St Louis on sick leave. I took the next train from Corinth to Memphis, and joined the staff of General Sherman. I built a fort at Memphis and accompained General Sherman down the river to Vicksburg. and was engineer of the fifteenth Army Corps at siege of Vicksburg. After the fall of Vicksburg, I accompanied General Sherman to Chattanooga to assist General Grant to fight the battle of Mission Ridge. The next year General Sherman sent me to Nashville, Tenn., to relieve General O. M. Poe, the ranking engineer officer, that he might take the field as Chief Engineer, on the Atlantic campaign just beginning. In a few months, when Atlanta was captured with loss of General Mc Pherson, a great favorite with both Grant and Sherman, and a great loss to our army. General Hood of the Confederate army, marched around Atlanta and rushing north layed siege to Nashville, during the very severe winter of sixty four when everything above ground was covered with a glare of ice, so that our troops could not move even had there been no enemy. General Sherman was at Savanna, Georgia, and he ordered his staff to join him, following after him up the coast of Newbern and Goldsboro where we learned of the assassination of President Lincoln, and shortly after the surrender of General Lee, and the peace of Appomatox.

The war was now over, the troops were marched to Washington for the grand review, then General Sherman was ordered to St Louis where I remained for a year, making the map of all Shermans' Campaigns and movements during the war. This I took to Washington and by order of General Grant, who was President, it was ingraved and published by the war department, and later in General Sherman's Memoirs.

At this time I was brevetted Majorof Vols . for styled valuable services during the war. Seeing no further service that I could render, I resigned in 1866 and went to New York. I was offered the "chair of engineering" at the New Brunswick college in New Jersey, which I refused as I was appointed manager of the Humbolt Oil works and engineer of the Mc Kean county Coal Mines at a much larger pay. I excepted these.

In 1867 I married Miss Elizabeth H. Cobb at Cleveland, Ohio. After settling the affairs of the aforesaid companies, I visited my old home in New England and from there went to Chicago where I found many old army friends who offered me plenty of work if I stopped there, which I did, and formed a short partnership with Sanford E. Loring, who shortly was called away and I was alone,with considerable work on my hands. In 1876 I was appointed professior of Architecture and design of the University of Michigan, which position I held until 1880 when I resumed practice in Chicago.

In 1884 I was appointed Architect of the Home Insurance Company of New York and ordered to build in Chicago a tall fire-proof office building with the maximum number of small offices, above the bank floor. Mr. Martin the President, stated that he was aware that this would reduce the piers between windows to a size too small to carry a load above. "What will you do?" I replied that I would study and would report as soon as I reached a conclusion. Later there was a meeting of the building committee and principle officers of the company in my office in Chicago. I presented my designs and proposals. I explained the skeleton construcion which was at that time unknown. Mr.Martin said "Where is there such a building". I replied that there was none; that they would have the first; that the steel construction was a simple engineering problem. General A. C. Ducat took the floor, stating that he was an engineer before he was an insurance man, that he had studied Mr. Jenney's drawing from the beginning, that he had said nothing as yet, but was now ready to recommend them constructively and economically and would suggest that they be adopted and approved, and that contracts should be awarded. Such a resolution was offered by the chairman of the committee, it was carried unamiously and the first steel skeleton constructed building was launched. The following day the contracts were made. The building was finished something more than a year later attracting a great deal of attention and many comments in the Eastern professional journals, where it was known for two years as the Chicago construction.

In 1893 it was decided to hold the World's Columbia Exposition in Chicago. D. H. Burnham was appointed Director of Works. Fred Law Olmstead, Landscape Architect assisted by Mr Codman. The following architects were appointed to the several buildings respectively. R. M. Hunt Administration building; George B. Post, Liberal Arts; Van Brunt and Howe Electrical Building; Adler and Sullivan Transportation; Henry Ives Cobb Fishery; W. L. B. Jenney, Horticulture; Charles B. Atwood Fine Arts, Peristyle and Music Hall; Holabird & Roche, Stadium. The exposition was a grand success, most highly enjoyable, ending in a grand banquet in the music hall where there were many brilliant speeches. A World's congress of Architects was held during the Exposition of which I was Vice-Chairman and Robert Craik Mc Lean now editor of the Western Architect, was Secretary.

In 1887 I attended my first International Congress of Architects at Brussels. In 1900 I attended the second one at Paris. I read a paper on steel skeleton constructions. On my return to Chicago, I received notice of my appointemnt as Corresponding member of the Society Central des Architects Francais, Paris. I was elected to membership in the American Institute of Architects in 1872.

In 1894 I formed a partnesship with W. B. Mundie. We afterwards in 1896 took in Elmer Jensen and Robert Dwen. In 1906 I moved on account of sickness, to Southern California. That same year the Southern Calfornia Chapter of the A. I. A. elected me honorary member of their Chapter.

Beside being a member ex officio of the International Congress of Architects, Mr. Jenney was a member of the American Institute of Architects since 1872, a past president of the Illinois Chapter and a member of the Southern California Chapter A. I. A., and an honorary member of the Chicago Architectural Club, he was one of the most honored members of the Loyal Legion the most select organization of officers of the Civil War.

It is notable that Mr. Jenney's last work was the Illinois Vickburg memorial, which, erected where as engineer on the staff of General Grant he erected forts during the war, will stand as a memorial to his partiotism, as his civic works will commemorate his talent as an architect.

ILLUSTRATIONS

The Railway station at Allegheny Pennsylvania for the Pennsylvania Lines, Price and Mc Lanahan Architects of Philadelphia, and R. Trimble, chief engineer of maintenance of way, Pittsburg although located where but one effective view can be obtained, is one of the most interesting in detail in the country. It is constructed of reinforced concrete with brick veneer walls. In the arrangement of tracks a dual service had to be considered as beside the through traffic to and from Pittsburg a large and increasing suburban traffic termininating in Allegheny had to be provided for. The engineer in charge should also be congratulated upon his success in constructing the building without interfering with the trains, both through and local, that used the tracks, and with no inconvenience to the traveling public during the entire time of construction.

The photographs by Graham of the residence and Italian garden of Mr. Robert Marsh of Los Angeles, California by Alfred F. Rosenheim not only show how successfully that architect has solved the problem, but demonstrates his sympathy with the surroundings which so largely enter into the effect of the design. This residence gave an opportunity for doing unusual things in a most artistic manner and one that was fully appreciated and skillfully met by the Architect.

In the composition of the four mural paintings placed in the dome of the Capitol of Minnesota by Edward Simmons, which space did not allow mention of when published last month, this remarkable collection of mural decorations by some of the best artists in the country is completed. In "The American Spirit Civilizing the Northwest," the conception is admirably carried out and in each painting there is an atmosphere which appeals to the observer, while in drawing the artist has been successful in a marked degree in meeting the peculiar angles of the dome in which the paintings are placed.

Tiling Design—Pennsylvania Rubber Tiling—see corresponding page in front.

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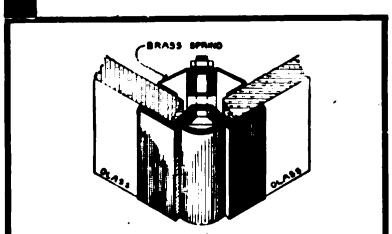

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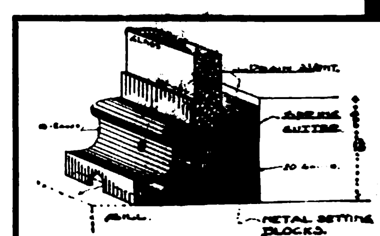

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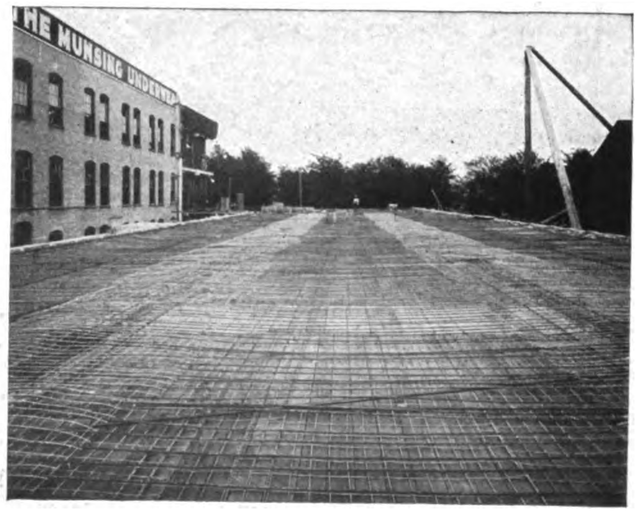

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LONG & LONG, ARCHITECTS

THE WESTERN ARCHITECT
JUNE
1907

PHOTOS BY EDMUND A. BRUSH

LOBBY, LOOKING TOWARD OFFICE DESKS

THE SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA

LONG & LONG, ARCHITECTS

DIRECTORS' ROOM

PRESIDENT'S ROOM

SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA

LONG & LONG, ARCHITECTS

PHOTOS BY EDMUND A. BRUSH

PHOTOS BY EDMUND A. BRUSH

FRONT OF LOBBY

THE SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA

LONG & LONG, ARCHITECTS

VICE PRESIDENT AND CASHIER'S DESKS

SWITCHBOARDS AND TELLER'S CAGE

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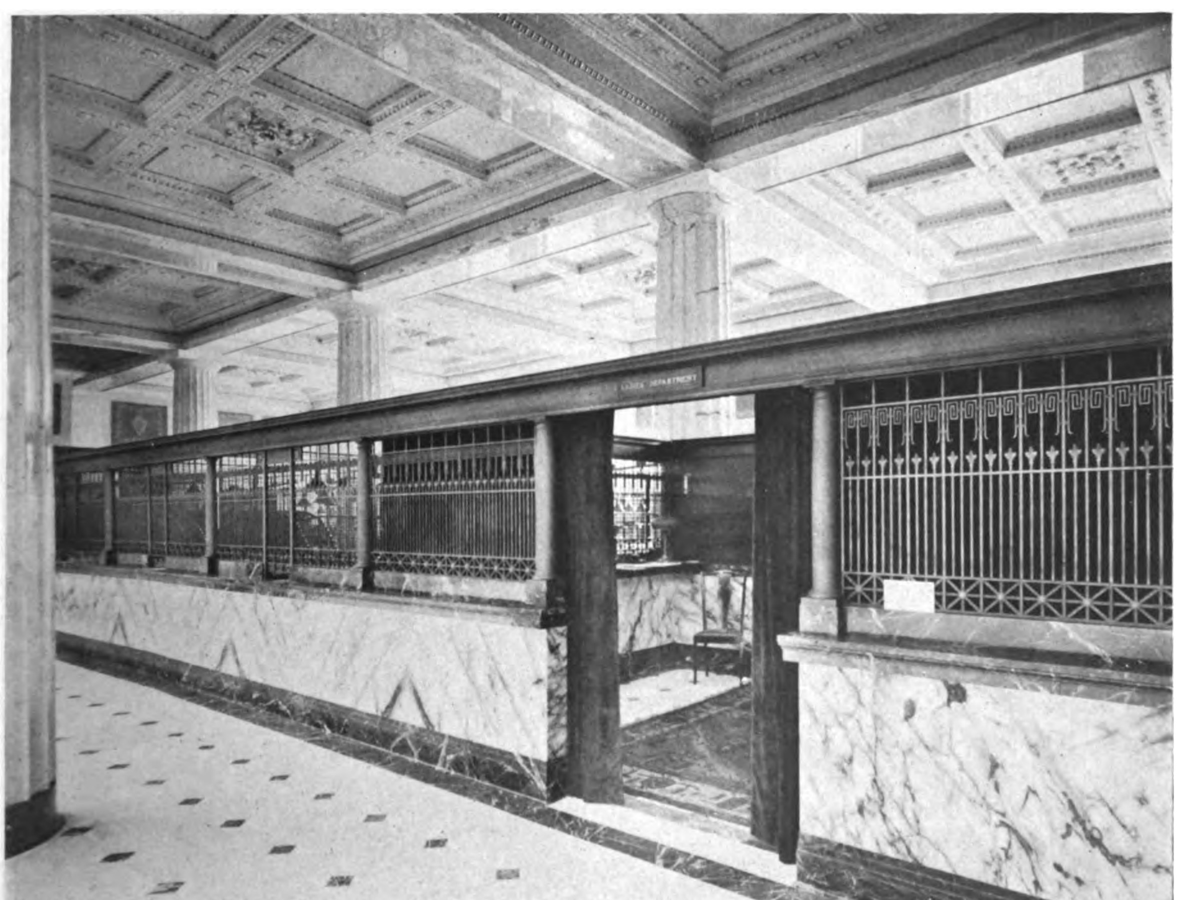
THE SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA

LONG & LONG, ARCHITECTS

LADIES' DEPARTMENT



ENTERANCE TO LADIES' DEPARTMENT

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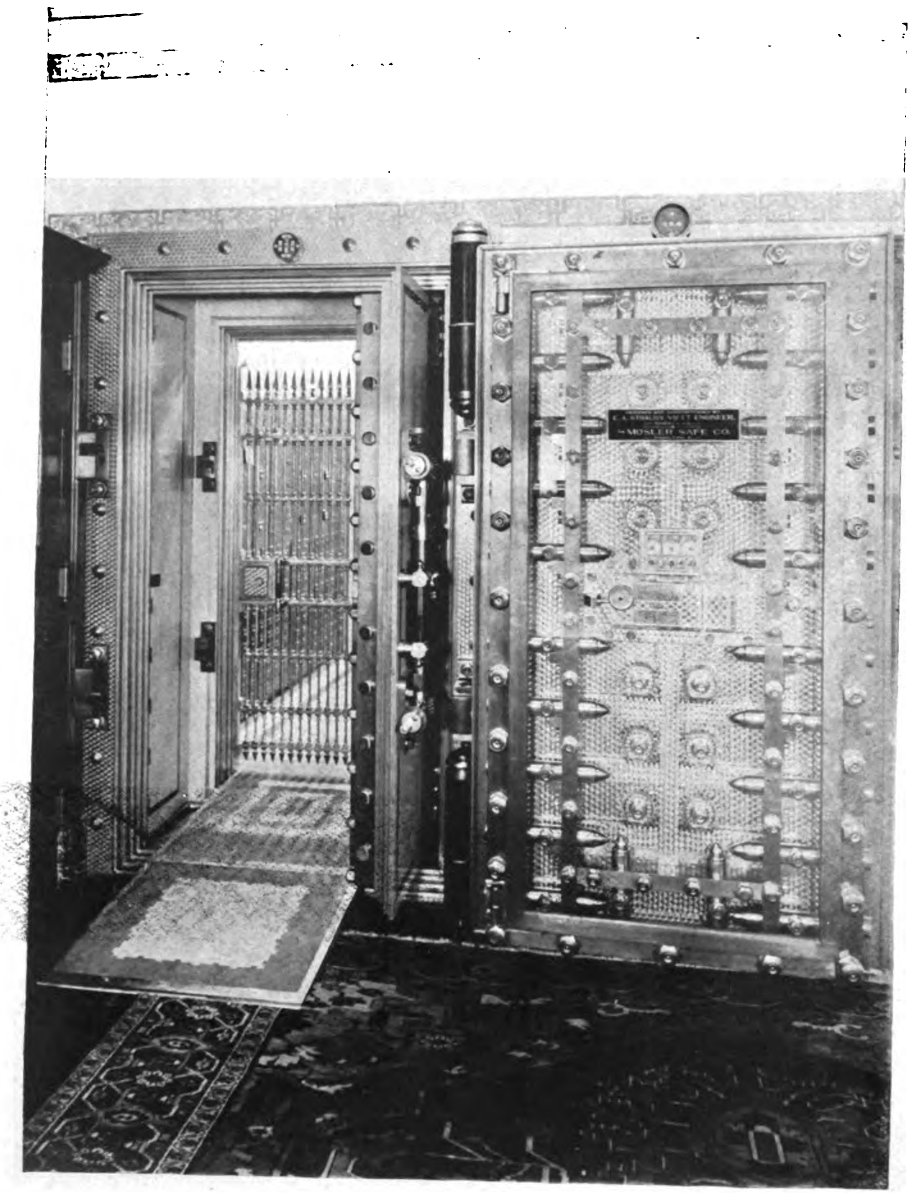
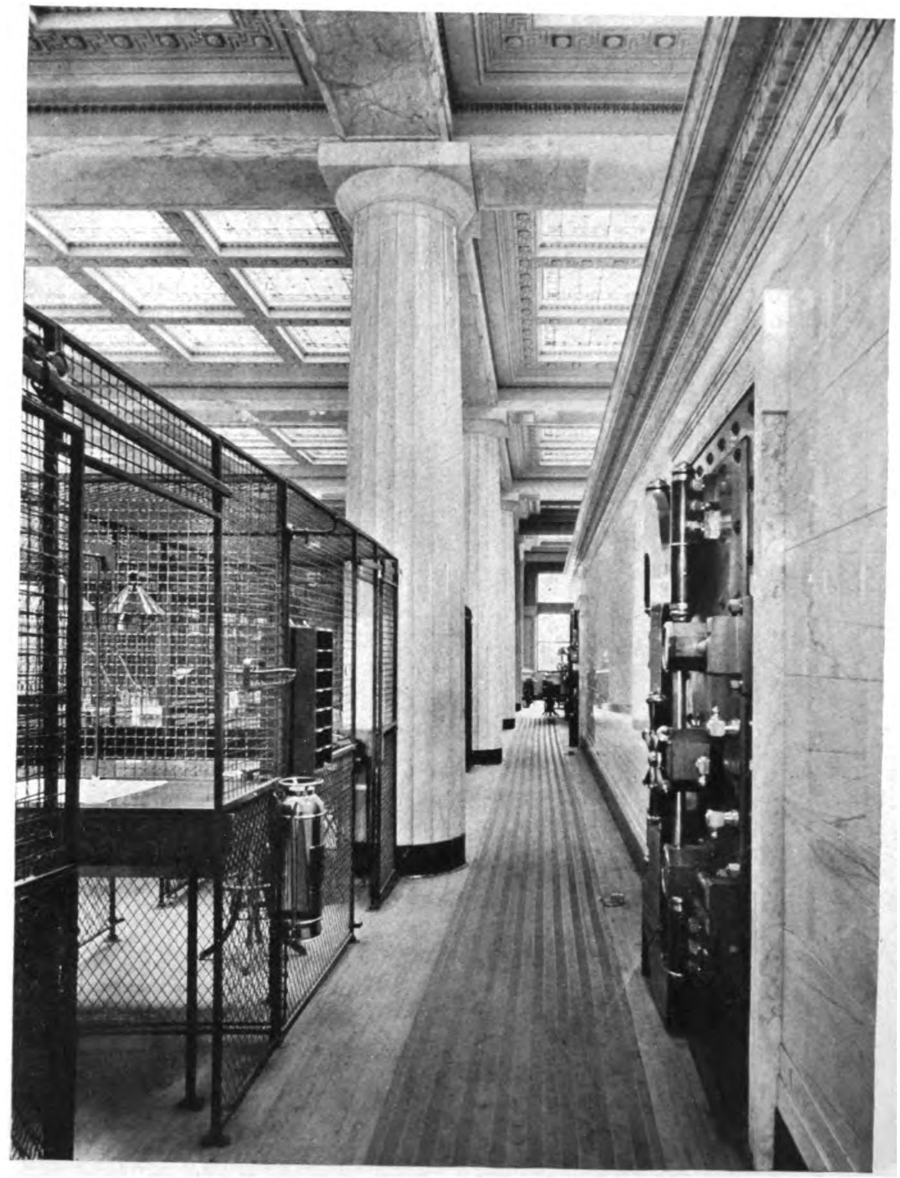


SAFE DEPOSIT VAULT



FACE OF VAULT

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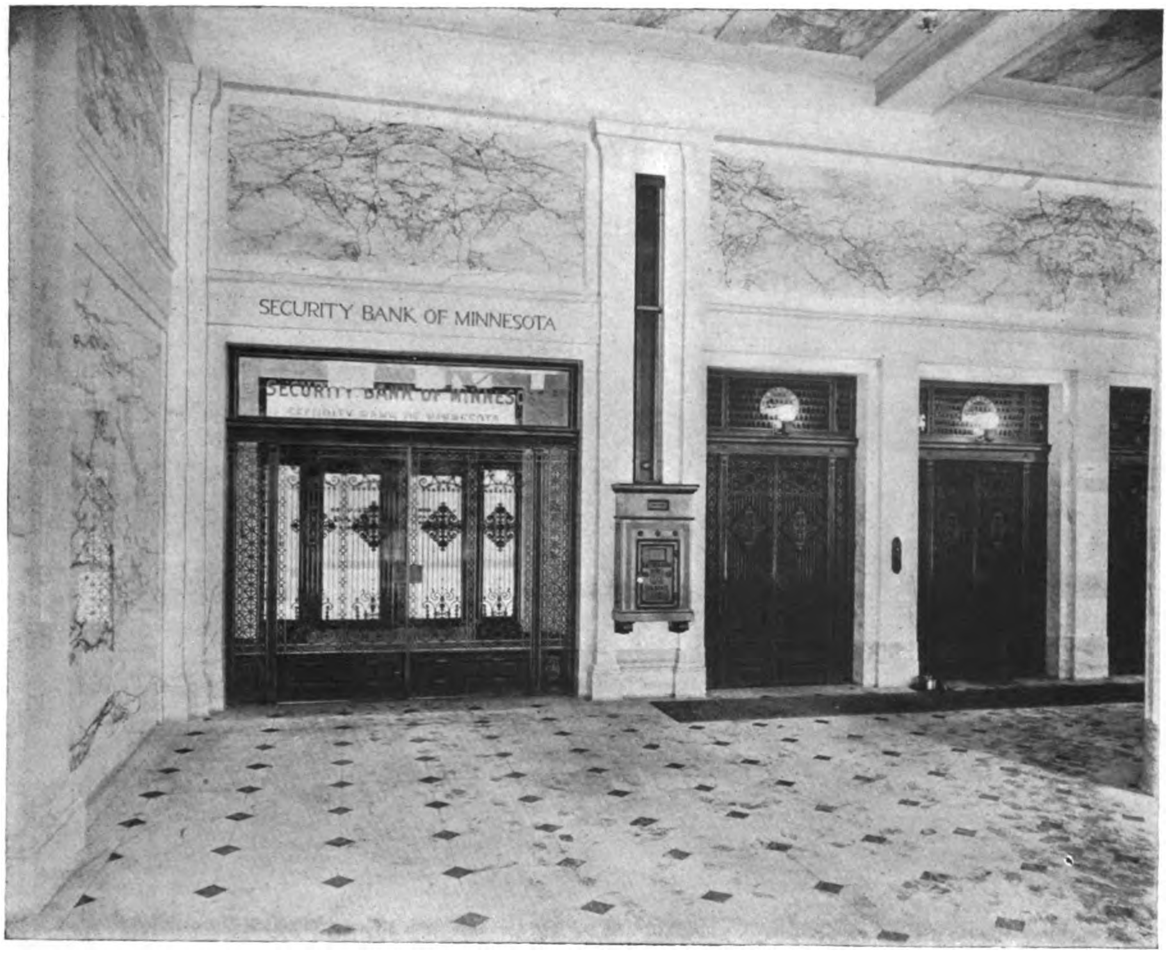
LONG & LONG, ARCHITECTS



ENTRANCE TO BANKING ROOM

LOBBY, LOOKING TOWARD TELLER'S CAGE

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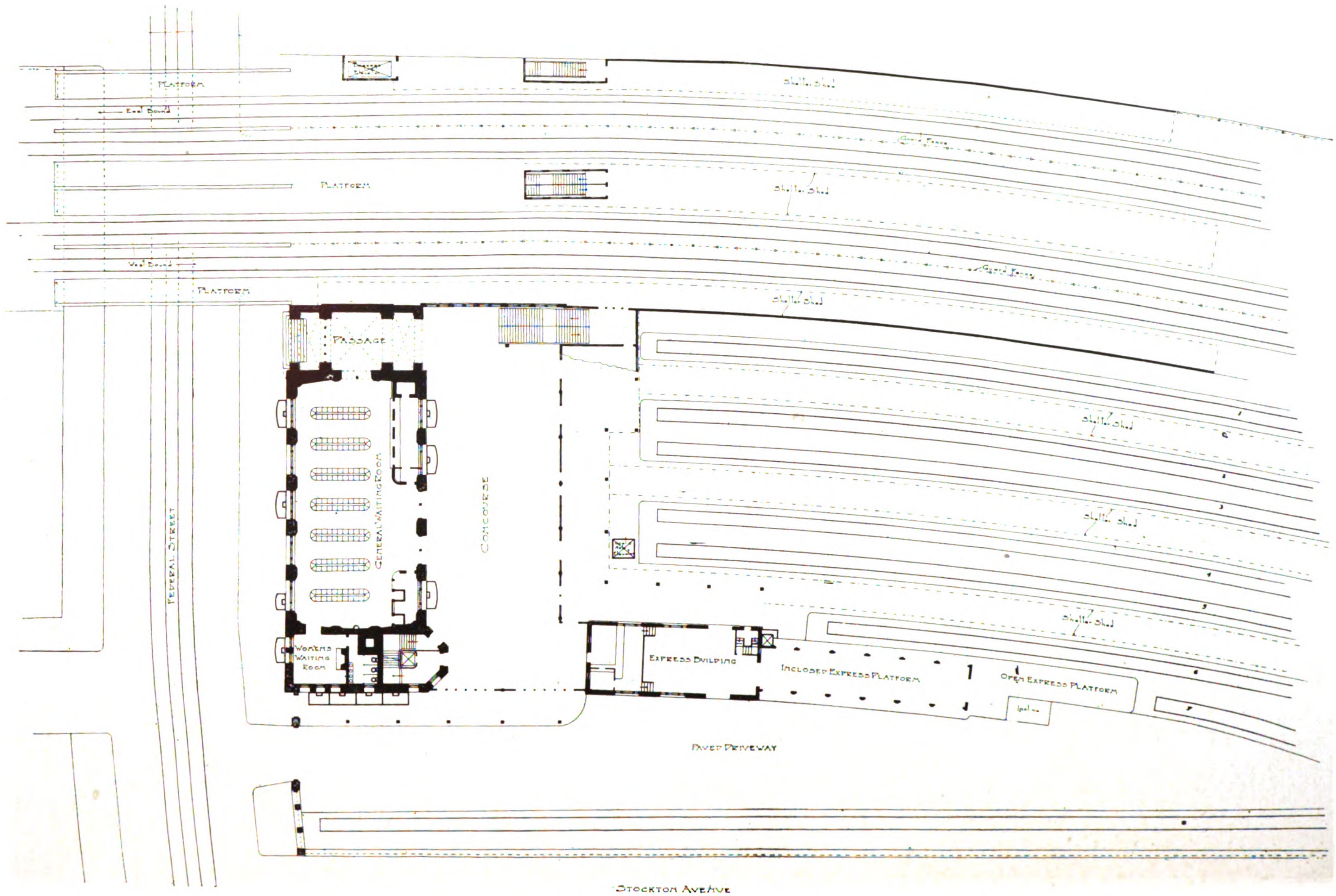

PLANS OF PASSENGER STATION FOR THE PENNSYLVANIA LINES, ALLEGHENY, PENNSYLVANIA

PRICE AND McLANAHAN, ARCHITECTS, PHILADELPHIA, PENNSYLVANIA

R. TRIMBLE, CHIEF ENGINEER OF MAINTAINANCE OF WAY, PITTSBURGH, PENNSYLVANIA

THE WESTERN ARCHITECT
JUNE
1907

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LOBBY, LOOKING TOWARD SECOND AVENUE
THE SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA
LONG & LONG, ARCHITECTS

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GENERAL VIEW OF LOBBY

THE SECURITY NATIONAL BANK, MINNEAPOLIS, MINNESOTA

LONG & LONG, ARCHITECTS

VIEW FROM NORTH EAST

VIEW FROM SOUTHEAST

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VIEW FROM NORTHWEST

VIEW FROM WEST

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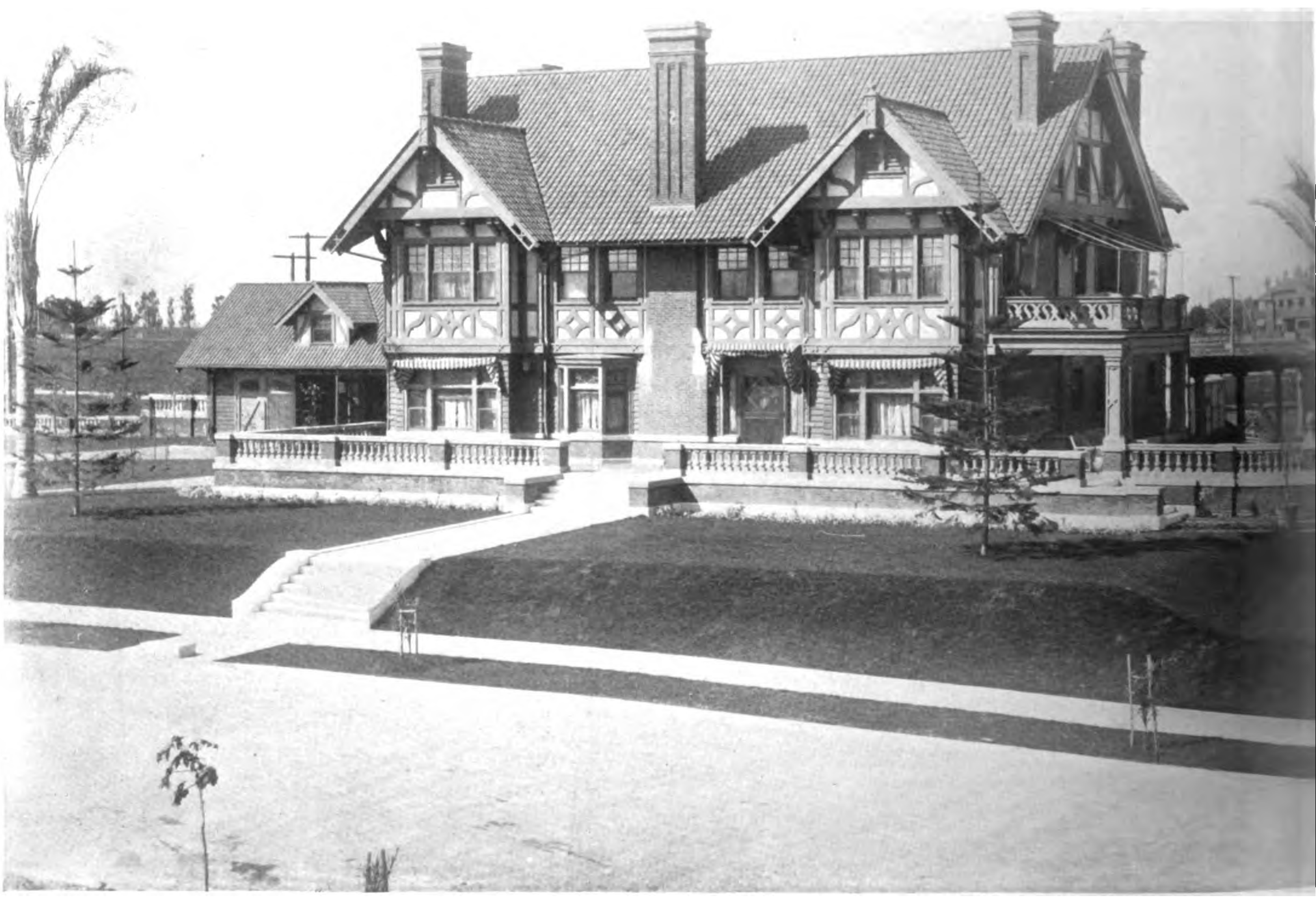
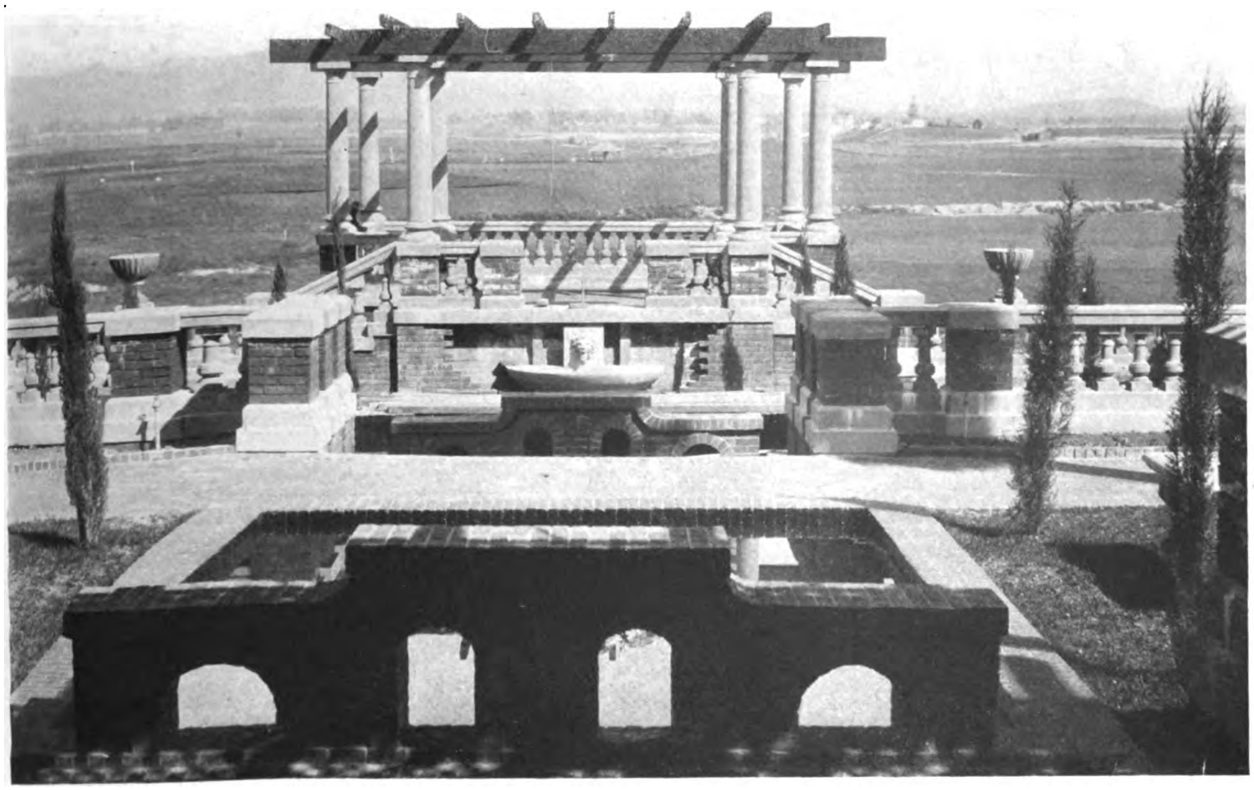
DETAIL OF UPPER TERRACE

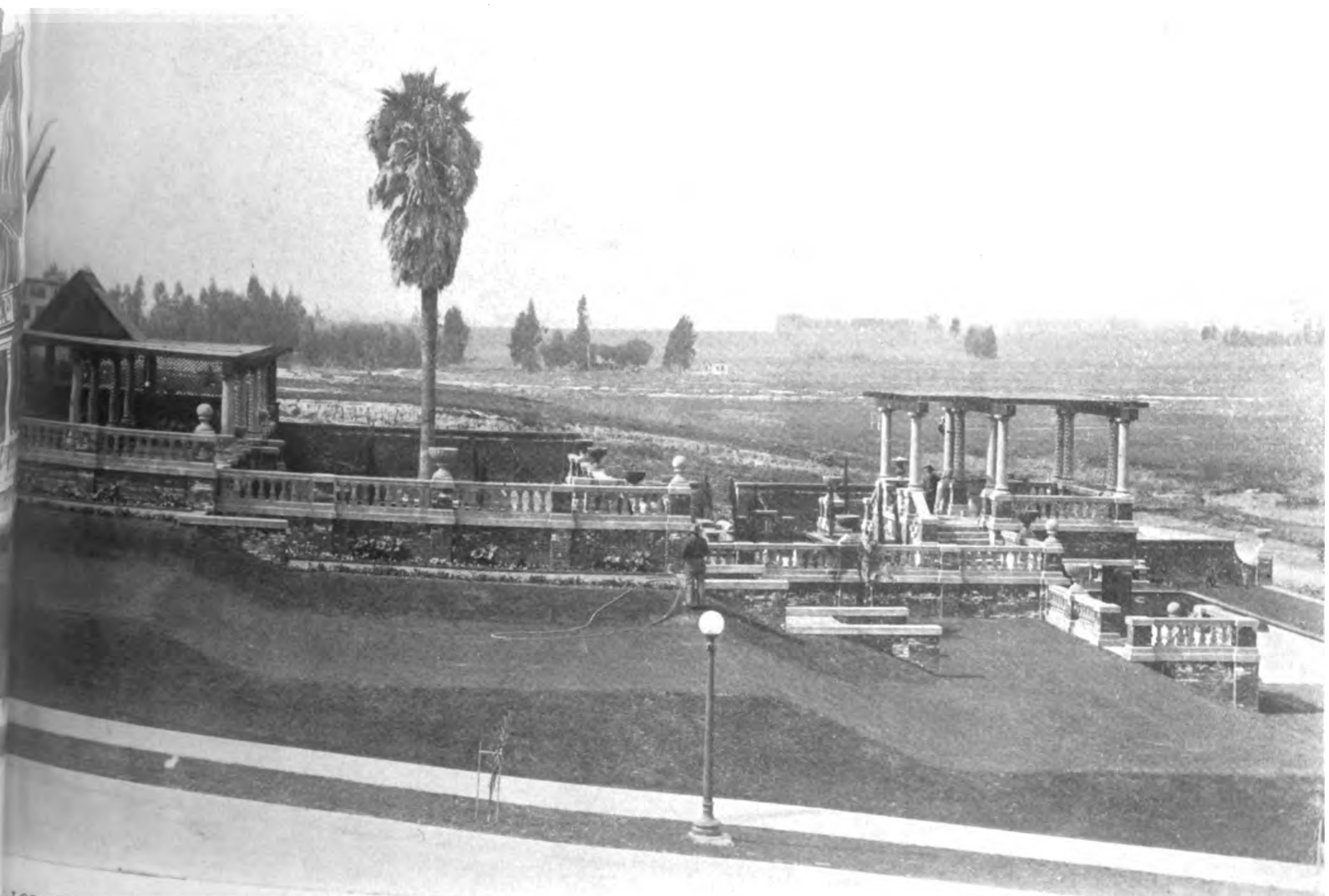


RESIDENCE AND GARDENS OF MR. ROB

ALFRED F. RO



DETAIL OF LOWER TERRACE



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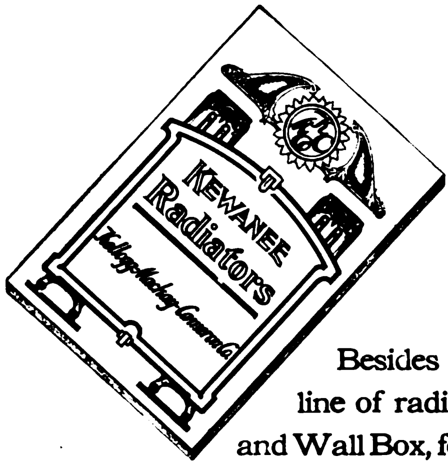

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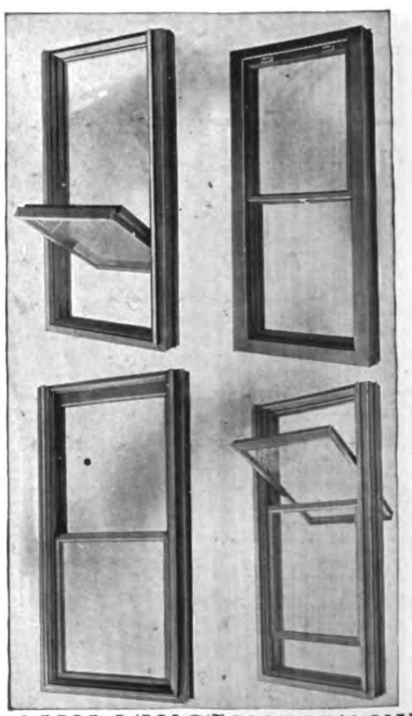

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ROBERT CRAIK McLEAN, EDITOR.

ABOUT PLASTER BOARDS

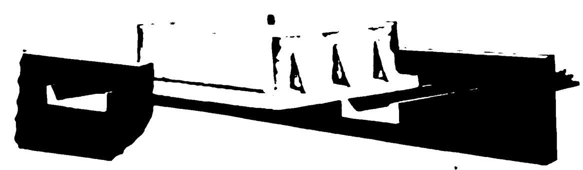
For a great many years the problem of proper support for plaster has been given much attention by architects, seeking to find an efficient substitute for the common inflammable wooden lath construction. This construction requires a long time to dry out on account of the great amount of water which is required and the dampness frequently does much damage by warping the timbers and trim. The plaster with its open backing of lath is porous, and permits the ready passage of heat and cold, making necessary additional insulation for outside walls and even then, houses are cold in certain corners and exposed-rooms. The bond between the plaster and the lath, is not always satisfactory, and ceilings, especially in old houses, fall, to the peril of the occupants of the house. All told, the ordinary wooden-lath-and-plaster construction has not been satisfactory. Metal lath has been frequently used and the very best grades are as unsatisfactory as wooden lath, while the cheaper grades are very inferior due to their liability to rust and thereby deprive the plaster of the intended support.

Of late years a method for applying part of the plaster in sheets or slabs combined with felt, so that part of the plaster thickness could be nailed directly to the studding, has been enjoying great popularity. This device is known as the Sackett Plaster Board. The simplicity of it is admirable, as it consists of nothing more or less than sheets of wool-felt combined with alternate layers of plaster, so as to make light weight boards about one-quarter of an inch in thickness. These boards can be sawed like wood, and fastened to the studding with ordinary nails. They make a smooth solid wall without interstices on which can be applied the final finish of plaster. Sackett Plaster Boards are fire-proof, more so in fact than metal lath, which is very thin and readily heated. They are good sound deadeners and are always tight, thereby providing excellent insulation against heat and cold. The finishing plaster unites with them perfectly, and the work is quickly done, effecting a great saving of labor.

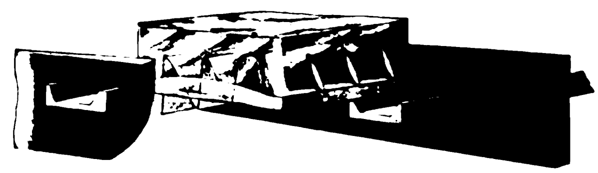
Sackett Plaster Boards have now been in use for several years, and have been especially in demand for large hotels and public buildings, where the comparative cost of materials has been most carefully studied out. There is considerable sale of them to farmers who use them without plaster for insulation against cold on their barns and poultry houses. For a like reason they are extensively used in refrigerating plants and for fire walls in factories. The cost is about the same as that of the wooden lath and plaster construction.

A PERFECT VAULT LIGHT

The vault lights which were installed at the First National Bank Building, recently completed at Minneapolis, and illustrated in this journal in May last, have attracted considerable attention. They are made by the American Bar-Lock Company of Philadelphia, and are rapidly taking the place of all other makes



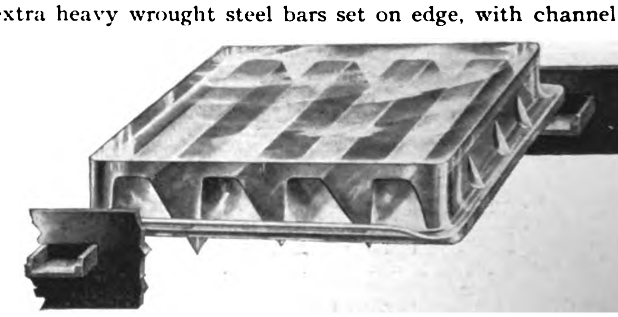
because of their scientific construction. In the three illustrations are presented the ordinary forms of construction of these prismatic lights. This bank is only one of a large number of buildings which have been equipped in Minneapolis and St Paul with these vault lights and they are fast becoming the standard light in all the cities of the west, as three point prisms and arch-



plain lights have been in common use in the East for years.

The frames of white procelite are vastly superior to galvanized and other frames as they are not only white, durable and ornate, but being free from shadows greatly aid in the diffusion of less light from the prisms.

Aside from the prisms and the procelite finish the construction of the bar is important. It is made of interlocking extra heavy wrought steel bars set on edge, with channel bars



run through them at right angles guaranteeing greater strength, glass surface, diffusion of light, and immunity from corrosion and leakage than any other form. On this account it is superior as a ceiling light over basement appartments, as it gives a perfect illumination while the floor above can be used without loss of space or inconvenience by slippery surfaces.

This can also be said of the sky-lights that in many cases form one side of a handsomely appointed store or establishment where the sale of fine fabrics requires a large amount of clear daylight. In fact the inspection of any executed work of the bar-lock system will show that the most complex lighting problems can be as successfully met as those of the everyday sidewalk or vault illumination in which it has won a place for premier excellence.

AMYL VENIR

The soft subdued effect in all interior decorating and finishing is enjoying a fast growing popularity. Not only has fashion decreed it, but the artistic tastes of the people are demanding it. The Adams & Elting Co. of Chicago have recently made the notable discovery of a formula hitherto unknown in America, affording the output of the greatest enamel ever placed upon the market.

Amyl Vernir is a preparation that cannot fail to make a strong appeal upon its own merits. It is a washable, durable enamel made in many beautiful shades, surprising in their rich refinement of effect. It is a covering in every way equal, and in many points superior to water color calsomine and so like it in appearance, that the difference is impossible to detect without close examination. It will withstand the severest wear, is not affected by climatic changes and may be scrubbed and cleaned indefinitely with boiling water and soap. This new enamel has a wonderful body and covering capacity, flows on smoothly and dries hard as marble; absolutely will not check, peel or blister and leaves no brush marks or imperfections of any kind. A particularly noteworthy feature is the fact that it may be used over old finishes and a single coat will produce, without sanding or rubbing, the same beautiful finish that heretofore has been impossible with less than three coats of material.

Amyl Vernir is prepared in two forms, Satyntone and Gloss and is being recommended as an article filling a long realized need. Age will not injure the soft satiny effect of the satyntone, or destroy the brilliancy of the gloss. The Adams & Elting Company should be complimented upon their noteworthy contribution to the paint specialty line.

OF INTEREST TO ARCHITFCTS

Among the recent technical books is a 5x7 volume of some 28 pages entitled "The New Century System of fire proof Construction", published by The Banning Company, 225 Fifth Avenue, New York. Although issued in the interests of the New Century Contracting Company, of New York, it is compiled along the lines of a treatise on the use of terrà cotta and reinforced concrete as applied to fireproof residence construction. As such it presents valuable data both as to comparative costs and as to parallel points in the various types of residence construction. Generously illustrated with characteristic photographs of various buildings in course of construction, and diagrams, the book is of unusual typographical excellence, and is of interest to architect, engineer, and layman alike. A copy can be obtained free by applying to the New Century Contracting Company, 1 Madison Avenue ,New York.

For every one hundred pounds of cement used in making concrete, one and one half pounds of Bitumen-Emulsion is sufficient to make foundations impervious. This new waterproofing compound, Wunners Bitumen-Emulsion, is applied by mixing a small quantity in ready made cement mortar or concrete. It is imported from Germany where it has long been used successfully in meeting all requirements for perfect waterproofing compound, withstanding as high as fifty feet of water pressure, and stopping leaks by the use of strawboard to keep the mortar in place until it has set.

New Ideas for Home Decoration by John Taylor, illustrated with ten designs in color by John Ednie. Published by H. B. Wiggin's Sons Company, Bloomfield, N. J. is the title and style of a brochure containing a short sketch of the history of wall decoration, in which the author discourses on "the idea," "style," "color," "medium," "execution" and "effect," in wall decoration and follows discourse with example, the illustrations being well nigh perfect specimens of three color process work. There are in the pamphlet many valuable hints on style and effect that are in the main trite, but placed before the reader in a logical and convincing manner, so that whether the particular scheme of decoration either of form or material is followed, or the seeker for decoration light wishes to express himself in some other medium, he will express it better and in a more harmonious manner after reading this brochure.

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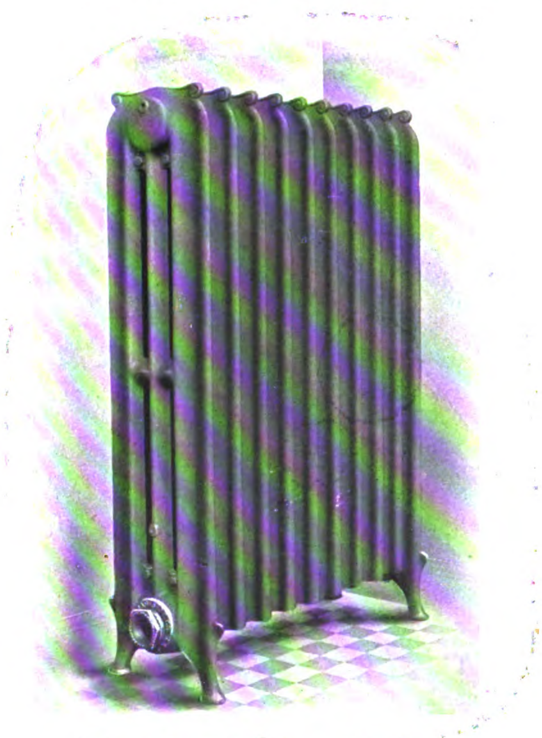

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ROBERT CRAIK McLEAN, EDITOR.

Definite Form Taken in Chicago's Civic Plan.

Ever since the Columbian Exposition at Chicago there has been a steady movement toward securing for the city a definite plan upon which municipal improvements could be based, in which would be united the greatest practical utility combined with civic beauty. The leader in this movement and its most determined supporter has been and is D. H. Burnham. Although carrying on one of the largest architectural offices in the world and almost continually called upon to give his services in the promotion of civic matters in other cities and abroad, he has still found time to prepare suggestive plans, both in drawings and in specifications for his home city. It seems as though a part of his work in this direction was about to assume a concrete form in the beautifying of the lake shore. Though it has not been generally known to the public, some six or eight years ago Mr. Burnham was assured of the support of perhaps a dozen of the most influential citizens of the city, and against all opposition, or rather selfish negativeness of the people in general, enabling legislative acts have been secured, and under the nominal control of the Commercial club the plans will be given a definite direction. As this, like all other projects of the kind, will take one or two generations to complete, the most necessary, and at the same time the most difficult point in the work is to secure permanency of plan, a method by which the general plan once made, can be "nailed down" so that future governments cannot alter or dissipate the work of those that preceeded it. But. Mr. Burnham's method of drawing tentative plans and explaning them by stereopticon before different bodies of the more thoughtful and educated citizens, together with examples of what the cities of Europe have done in this direction, has succeeded in imparting a general enthusiasm among the people. As Mr. Burnham is about to visit Minneapolis at the invitation of the Commercial club in the interest of civic improvement, it is not too much to hope that a like interest will be spread among the people of Minneapolis, although it may take many such notable occasions to accomplish the work of public education. The same selfishness, the same looking after and reaching out for the present dollar, regardless of the city's future good which characterized the locating of the new post office, is so strong that it takes the greatest optimism to believe that any good can be accomplished until a change has been wrought in those who at the present time control public affairs. Chicago can be the greatest city and Minneapolis the most beautiful on the continent, but neither will reach that point in any degree while the small souls of commercial men look first to see where their own dollar making interest lies, regardless of the future generations that will call them blessed, or the opposite, when they are gone, and only the results of their selfishness or their patriotic civic pride remains.

The Gookins Civic Plan For Chicago Revived.

While the movement represented by Mr. Burnham is assuming concrete form, not less so seems the utilitarian project of subways to relieve the street congestion that is daily increasing. While all sorts of projects for the exploiting of the city because of its immediate necessity for better traction facilities, have been tried and found to be the selfish scheming of those who sought to obtain quick riches at the future cost of the people, the present movement which takes the shape of an ordinance, is fortunate and should be readily granted, because it is part of an unselfish movement that was inaugurated like the other, about the close of the Columbian Exposition. James F. Gookins, with a European reputation as an artist and the practical mind of an architect and engineer, saw clearly Chicago's opportunity for artistic and commercial greatness, but also with the conviction that one could not succeed with out the other. For fifteen years he worked upon the plans and then sought the necessary financial co-operation. The great monied centers in the metropolis were approached, their engineers spent weeks upon his plans and they were reported in every way feasible and practical if the proper ordinances could be obtained from the city. This was certain, for as certain as that those who invested in the huge undertaking would find safe investment, so sure would the people find greater financial returns from the contemplated improvements. Perhaps the greatest misfortune the city ever sustained was the death of Mr. Gookins just as the financial contracts were about to be closed. The plan contemplated not only all that Mr. Burnham comtemplates in his civic plan, and the subways for which an ordinance is now asked, but every utility that means a transformed city on the lines which a clear sight into the future would demand. In the hands of those promoting this ordinance the revival of this plan is assured, for through the master mind is gone the plan still lives, and it should be preserved so that each generation may add a feature toward a complete whole. If this is done it does not matter who happens to be the active agent of the present, there will always be those who will lead if the civic pride of the few can be made to dominate the selfishness and shortsightedness of the many.

Why Building Inspectors Permit Fire-traps.

Like most of the cities in the United States, Minneapolis seems to be governed by the votes of her common council rather then the building ordinances. With a building inspector that is capable and honest, who endeavors to see that each provision of the ordinances relating to building are complied with, his work is nulified by special permits voted by the council that not only make the fire risks greater, but work an injustice to those who live up to the letter of the law. The latest instance is in regard to the remodelling of a frame fire-trap erected when lumber was cheap and proper building ordinances unknown, and which should have been razed years ago for the good of the surrounding property. Now a parsimonious owner with some influence with the council seeks to obtain a special permit that will enable him to make further use of the structure and turn it into an 'hotel''. In one item alone, that of protection of windows where the ordinance plainly calls for wire glass on all but street fronts, he wishes to be allowed to save the extra expense. In regard to this wise provision of the law the public does not seem to know that it is one of the most important in the entire building code. The International Society of Building commissioners has kept most careful tab on the fires of the past year, and in a recent bulletin makes the statement that 44% of all the fire losses of the year are directly attributable to the lack of proper window protection. In a conflagration like that of San Francisco nearly 100 per cent of the damage is directly attributable to that same cause, for in that case we know of but fourteen separate and distinct fires occurring in the city on the memorable morning. Had the buildings adjectent to these been made invulnerableby protected windows those fires would have resulted in but insignificant blazes. Shutters and the usual automatic closing affairs, constitute but make-shift protection at best; the one assured and universally approved system of window protection is a metal or incombustible sash filled with wire glass., and where the danger is particularly great, on narrow alleys, etc., there should be two thicknesses of wire glass. Some day it will be made criminal for an owner to have a fire loss where it is occasioned by a plain violation of the general building ordinance, and if those of the common council who vote the special permits are included in the liability, these evasions of a law, that is at best none too stringent, will become rare. These violations of the building ordinances of Minneapolis, and some of the make shifts and schemes for utilizing buildings that should have been razed by the fire department long ago, are not only a menace but a disgrace to the city, and it is the city council that is largely responsible for them.

The Yellow News Sheet and Architectural Services.

Because an alleged news sheet is "yellow" is no reason why it should be a plain unmitigated liar as well, but that is usually part of its yellowness. The Chicago Examiner prints a heading,"City pays $180,000. for forty minutes work by two clerks" refering to the engagement of Holabird and Roche to "duplicate the plans" of the county building for the Chicago City Hall. And it would not be necessary to notice the statement were it not for the fact that the calibre of intellect that will read a conglomeration of sensational epitome such as that referred to will take such statements for truth. Like the lawyer who told the court that his client "could not be present for several reasons, one of which was because he was dead", the statement is false because the county did not buy the plans of the courthouse, but the architect's services, the plans being his instruments of service and his personal property, and the city did not pay for such clerical work which was proposed by a notorious member of the council. If the county had them in its possession, and "two clerks could copy them in forty minutes", and the city hall was built from the plans, Holabird and Roche could go into court when the structure was finished and collect five percent, less superintendence, or about $168,000. Alderman Cullerton, who made the extradinary proposition to copy the plans, has long been reputed to be an expert in most lines of municipal legerdemain but this question being a professional one, showed an ignorance equal to the willful misconstruction of the sheet that published the ridiculous statement,. The porbity as well as the widsom of the majority of the Chicago city council was indicated by the Vote of sixty-two to three, engaging Holabird and Roche as architects and John Meigs Ewin as superintending engineer.

UTILITY VERSUS ART IN RETAIL STORES.

EXAMPLES ILLUSTRATED ON PLATE PAGES.

THE "irrepressable conflict" that always exists between architectural form and utilitarian purposes, which enters more or less into all classes of commercial buildings, is most pronounced in the designing of large retail establishments. At present the scene of the controversy most important in its results, seems to be in London, and relates to the remodeling, or rather the rebuilding, of the famous Quadrant in Regent Street.

As set forth by our London Correspondent it seems that Nornam Shaw has been called upon to design the rebuilding of the Regent Quadrant. His designs are magnificent, and architecturally are a credit to that great English Nestor of design. But the question that the Regent Street tradesmen are asking is, "Are they business?" Regent Street has long been the chief retail dry goods street, like Fifth Avenue in New York or State Street in Chicago, and with them the almost universal answer to the question is in the negative.

The Commissioners of Woods and Forests, who are reconsidering the matter, are the ground landlords of practically the whole of Regent Street, and it is their present intention to rebuild the Quadrant on the lines of the elevation of the new hotel on that street designed by Norman Shaw which is now approaching completion. The objection to this design, the first story of which consists of a series of heavy stone piers and round arched openings 20 feet wide,from the shopkeepers' point of view, is quite obvious. It was well represented in a paper which Mr. Mervin E. Macartney, architect, recently read before the Architectural Association, in which he said:

> We can now fairly judge of the actual work. I confess that I view it with mixed feelings, the predominant one, admiration for the architect and the Office of Works; but together with this is present a haunting sense of fear that it is too good to last. I cannot devest myself of the feeling that it is not twentieth-century architecture. I wish it were. All things are lawful, but is it expedient that we should deliberately set ourselves in opposition to the tendencies of the age? Bad as they may be they form a part of the essential spirit of the times. Now, I consider this design to be the finest effort of modern times, and I pray for its success. In principal. too, it is absolutely right, but the old remark of the cynic 'I don't believe in principal, but

oh, I do in interest', comes forcibly to my mind in this connection. If you are letting shops you must consider the interest of the shop keeper. Do not think that I would advocate the plate-glass construction: but I think there is a via media, by the use of metal columns, which would overcome the difficulty. For the eye is gradually being accustomed to estimate the strength of metal at its proper worth and not require that great bulk for its satisfaction which it does in other materials. It is not alone in this country that we are 'up against' this question. European and American architects are equally confronted by it. In the States I have seen some ground-floor shop fronts that seem to me in a great measure to solve the problem. They had bronze columns that both were and looked strong enough to carry the superincumbent structure, and yet were not offensive in design nor obstructive to the display of goods.

The plan of battle, and also a prophecy of the result is set forth in these remarks. It will not be an abject yielding to the utilitarian shopkeeper or the triumph of old forms bent to new purposes.

The recent tendency to make shop windows large as is possible is a demand brought about by the improvements required by our advanced civilization, and these windows must be as near flush with the street as is possible. It is not enough to say that in Mr. Shaws design there is more square inches of window space if his stone piers project and destroy its effect, while from the shopkeeper's standpoint it is not arehitecture but lingerie display that should attract and hold the eye of the passer by. If this feature of free if not obtrusive view is not supplied like any other commercial want, the interested purchaser will certainly go where he can procure what he wants. In Chicago the architects have met the question with more frankness, and skill too, than in any other city. The genius of Louis H. Sullivan is known and recognized in two continents; the work of D.H.Burnham and Company in the designing of the greatest emporium for retail trade in the United States, a skill that has already taken Mr. Burnham to England to plan a like establishment for London; and Jenney and Mundie, the head of which concern has not only held a leading position in design in Chicago but is credited with the projection of the skeleton frame,(which makes it possible to mingle utility with design,) each has designed for Chicago retail structures that no matter how far they may come from satisfying the architectural critic, show that the combination of art and utility with further study and compromise, can be made still more harmonious as well as effective.

As will be noted in the photographs shown for this purpose from selected examples by the architects mentioned, each designer approached the problem from a different point of view, yet each kept before him the one requirement, the largest glass area compatable with design and structural strength. The photographs were taken on a Sunday when the streets were comparatively deserted and the air clear, and the display effect is lacking through the drawn curtains. This may alter in some degree the effect of the large open spaces below the succeeding stories, but on the whole each facade is well worth careful study; and if each designer will meet the problem honestly and without prejudice it is possible that not only Regent Street, but all others where the commercial spirit seeks for the gathering of its dollars and regards not art, may still be saved to those who wish to see the advancement of architectural design and still serve the commercial purpose. For it is not only true that commerce must supply the material by which architectural incentive is given expression but that all permanent progress in a commercial sense must have art as an accessory in its upbuilding.

EXPERT OPINION ON EARTHQUAKE PROOF STRUCTURES.

THREE of the best known experts on structural materials in the United States sum up the hopeful, yet practical lesson that has been learned from the terrible disaster at San Francisco that cost 500 lives and a property loss of $500,000,000.

Acting in co-operation with the Technologic Branch of the Geologic Survey of the United States Goverment, these experts visited the scene of desolation and ruin wrought by the earthquake and fire, shortly after the catastrophe. Captain Sewell officially represented the War Department at the time; Professor Frank Soule was acting in behalf of the Geological Survey, and Richard L. Humphrey, now expert in charge of the Structural Materials Division of the Survey was on the ground representing the National Advisory Board on Fuels and Structural Materials.

Their reports tell San Francisco and other cities of the world how to be prepared for earthquakes and also how to prevent general conflagrations. The experts find much carelessness in building methods, not only in San Francisco, but also throughout the entire country.

The conclusion of Captain Sewell in regard to the most efficient type of building for San Francisco contains some striking suggestions.

"For very tall buildings", says Captain Sewell, "the best type of construction is undoubtedly a steel frame, but it should be thourghly braced, much in the same way as the Call Building. The steel bracing in this building undoubtedly saved the masonry. In buildings such as the New Chronicle and the Monadnock, the effect of the vibration was really counteracted by the masonry, and the masonry was much shattered. Some of it was precipitated into the street from the New Chronicle, the Rialto, and other buildings. Naked steel frames of the same type came through without serious damage, but they did not have the additional stresses due to the vibration of a great load of masonry floor construction and contents in the upper stories, as did the finished buildings."

"In my judgment, to secure best results, the steel frame should also be inclosed with walls of reenforced concrete, in which case it would be almost impossible to throw the walls off. The proper artistic treatment of this material would seem to be very important problem for the architects in a place like San Francisco. Its great utility in earthquake shocks cannot be denied. Where steel frame buildings are to be finished with ordinary masonry walls, however, complete bonding of all face bricks with full header courses should be absolutely required; no other form is adequate. Nothing but portland cement should be allowed in any portion ol the structure. The masonry should be tied to the steel frame in the very best possible way, and much more securely than is ordinarily the case.

"For buildings of moderate height, say up to 125 feet as an extreme limit, re-enforced concrete alone can undoubtedly be so designed as to give very good results when subjected to either earthquake or fire. But the bracing of a re-enforced concrete building of any height, to resist earthquakes, is a matter for serious study.

"Any building of considerable height, in an earthquake country, should have as little mass in the superstructure as possible, consistent with other necessary qualities. But this limiting of mass does not mean that the fiimsy floors and partitions heretofore in use should be continued. In fact, to make the building proof against both earthquake and fire, it is probable that they will have to be at least as heavy as they have been, but changes in distribution of the mass could advantageously be made, and would be made by any careful and skillful designer.

"For the ordinary commercial building where brick walls and wooden joists would ordinarily be used, I am of the opinion that re-enforced concrete is the safest and most practicable solution in a place like San Francisco.

'Where re-enforced concrete is used, throughout, whether the building is very tall or not, great care should be taken with the design and execution of the connections between columns and members of the floor system."

Professor Frank Soule declares in his report that the failure of some of the methods of fire-proofing in San Francisco is directly traceable to the commands of owners to their architects to cheapen, as far as practicable, the fire-proofing and the construction generally, in order to secure greater interest on their investment. "This cheapening," he declares, "has often occurred in spite of the protests of the designer, and it is in an entirely wrong direction; for rates of insurance are largely reduced with improvements in fire-proofing; and as the cost of the steel frame and its proper fire-proofing seldom exceeds twenty-seven per cent of the cost of the building it seems wise to protect the other seventy-three per cent. with adequate materials."

On the best type of buildings for San Francisco, Professor Soule. says: "In a country subject to earthquakes, a strongly framed and well founded wooden house, of two or at most of three stories in height, with non-disintegrating plaster and finish, light tile chimneys and ample fire prevention and protection, would seem to be the ideal type of residence structures.

"The high, steel frame office buildings have shown that in order to resist perfectly the bending moments and shears induced by the swaying due to the earthquake movements, such buildings should be stiffened in their joints and connections by the best riveting combinations, and knee and other bracing, particularly at or near the ground floor. This requirement is of the utmost importance, and so also is the one that the swaying referred to should be diminished by the liberal introduction of diagonal and wind bracing throughout. The proper bracing in the lower stories has sometimes been omitted, upon the demand of owner or lessee, to afford more glass or light space, but such design has a weakening effect and should be discouraged.

"Columns, exterior and interior, should be put in more liberally in future upon the first and and second stories, and the strongest joints and connections should be adopted in order to resist the bending and shearing. There improvements will greatly stiffen the steel frame and prevent the cracking of the walls.

"With such strengthening, the high steel structure will safely endure an earthquake of even greater severity than that of April 18. This kind of building has proved its worth and has come to stay. It has been tried and has not been found greatly wanting. Minor improvements, as advocated, will produce a perfect structure.

"Mill construction with brick will undoubtedly be used in many instances, for a considerable time to come, but the lesson taught us should be learned that the materials should be first-class press brick, well wetted, and cement mortar,and that all parts should be thoroughly tied and anchored together. This rule has been found by our experience to be a most important one to follow in all brick and stone construction and its neglect in the past has resulted in much loss and ruin."

AN OLD ATELIER IN CHICAGO IN THE SEVENTIES.

A LETTER WRITTEN BY WILLIAM LEBARON JENNEY, ARCHITECT, IN 1906 TO THE EDITOR OF THE WESTERN ARCHITECT.

I HAVE spent the morning looking over your letters since that of last February, when you wrote me that you were editing the Western Architect and sent me the first number I had seen, with a most charming letter recalling my first office in Chicago after the Chicago fire, when we were commencing to rebuild.

It was in the just completed Portland block corner Washington and Dearborn street. As you remarked I had a number of students, as you may call them, for their connections with the office somewhat resembled those of students in the French atelier, though not as completly as it might today, for the Society of Beaux Arts Architects was not then organized, which offers to these atelier students or draughtsmen, most of the advantages, of the Paris Beaux Arts schools but with the advantages of living at home and earning their way instead of incurring the heavy expense as at Paris; much of which are necessary, and the temptation to other expenses is great, although one may say that they are not of absolute necessity. They count however at the end of the month, for one while in Paris should take advantage of all the city offers.

If the Paris atelier student is a foreigner he should engage a teacher of the language. If fond of music he should take advantages of the opportunities. While in my atelier in Chicago in the '70's the student earned his expenses with no charge for instruction, or very little for there were some evenings schools that I encouraged the draughtsmen to attend, I also loaned them books, and recommended those that could be obtained from the pub'ic library. I taught them to look over the illustrated books. and study the differnt styles until they could easily distinguish one from the other, then to study and draw out the several orders until they were sure not to mingle them in their work so that I think that they could have advantageously entered the classes of the present Beaux Arts Soceity and engage in the competitions that so closely resemble those of the Ecole des Beaux Arts at Paris.

Unfortunately when I was in practice in Chicago from 1868 to 1904 The Society of Beaux Arts Architects, if organized, had not come to my notice or I should have urged my draughtsmen to take advantage of it. Though as it was, with the assistance of some of the evening schools, many of them turned out well, and are now in successful practice for themselves, and have earned a reputation as first class men, although we worked under some disadvantages. One thing I worked to teach, that "it is by no means sufficient to draw well, it is still more important to know what to draw". The student who gave me the most anxiety, was the best draughtsman I had, in fact he was a very superior draughtsman. He rendered one large pencil drawing and one very large pen and ink perspective so well that I had them framed for samples of workmanship and them hung conspicious in the office. His trouble was as I often told him, he did not know what to draw. I gave him the plans of a $6000 cottage to work up the elevations, which he did, and when he showed it to me I laughed and told him that he had managed to get some ten different styles in this $6000 cottage. Evidently if he had had more money he would have given more, and I put him at work studying books of design.

The competitions of the society of Beaux Arts was just what he wanted. His rendered drawing in the atelier would have differed widely from his sketch, enloge, which would have thrown them hors de concours, which the architect in whose office he was would have pointed out to him. In class B one must receive two mentions in order problems before he will be permitted to do plan problems. The society of Beaux Arts architects have also a class in modeling and in drawing from the casts. An examination in general history and a competition in two prizes in planning. I had two assistants who were engineer graduates of the engineer departments of one of our large universities. I was a long time teaching them to be practical and exact. I was draining a small park surrounding a villa. The excavation was to be paid for by the cubic yard, and I put one of these engineers in charge of the work with orders to calculate the amount of the excavation, He brought me the results of his calculation which was so enormous as to show at once that they must be wrong, I asked him if he was an engineer. "Yes he had a diploma. But in common language what is an engineer? He is a man of exactitude, is he not?'"'Why yes, certainly.." "Please look over the amount of this excavation, forty two thousand yards, which I think is about ten times too much. That is not engineering," said I.

Another was designing a roof truss. He placed tierods so that they pulled unequally and twisted the truss badly out of shape. He saw his trouble and arranged with the contractor to remedy it, which was done. Both of these engineers are now in practice as sucessfull architects and are highly esteemed professionally,.

There is much "Esprit de corps" among the students of the Ecole des Beaux Arts much as at West Point Military Academy. They founded in 1894 the American academy in Rome.(See the January number of the Western Architect, 1906, The Chicago exposition had been an educator, the necessity of a higher architectural education, suggested the founding of the academy at Rome mostly by Beaux Arts men who naturally turned to the French goverment schools, in Rome in the Villa Medici as a model on which to establish the American school. The French school established since 1666 has been of incalculable service in the advancement of France art. Up to the present time the American Academy has been supported by the voluntary contributions of its founders and friends. Its principle work has been the administration of various scholarships, of which there are many, and their number rapidly increasing, assisted by the society of Beaux Arts Architects. The principle prize is called the Paris prize, which gives the student winner, by authority of the French goverment, the privilege of following and taking part in the competitions in the first class in the Ecole de Beaux Arts, and in addition a sum of $250 paid quarterly during the the two and a half years of his study abroad. (See Western Architect March 1906 page 32)All these means of educating enterprising and ambitious students of Architecture, are now available as they never were before, and even those who do not succeed in winning the great prizes can hardly fail to derive an educational benefit from the effort, so that to day in our large cities where there are capable architects in whose offices the young students can work, and by evening study, and the employment of every available moment, on the competitions, he will doubtless succed in winning some of them. And if he succeds in winning one of the large ones so that he can travel abroad and enter the academy of Rome, his education of a high class is assured at minimum expense. None of these advantages were available when I established the "old atelier." I remembered painting on the glass of the door of the draughting room "Studio" the Italian for atelier which attracted some attention. I had one student who I felt sure had missed his vocation. He took no interest in architecture, showed no taste and was making no progress, so it occurred to me that the sooner he left the atelier the better for him. Thinking to discourage him I give him my Vitruvius to read and called his attention particularly to the paragraph "What an architect should be." As you are aware Vitruvius thinks not only that he should be conversant in all that had been done previous to the Christian Era, the time that he lived, about 75 B C, but he should also know all that was known at that time, and should be well cultivated in all the practical arts and sciences. He should be a gentlemen and an honor to polite society, as he would be forced to visit his clients and their families. He should know music both vocal and instrumental, well read in the classics, in poetry as well as in prose, in history, philosophy etc.

The student read carefully all that Vitruvius had to say, laid down the book with a sigh saying, "If that is what is expected of an architect it is too much for me, I shall resign." Which he did, and became an eminent lawyer which seemed more to his taste. We have often laughed over this espiode.

In an article by Professor A. D. F. Hamlin on the education of an architect, he says: "the ideal is never to be realized, so varied are the kinds of knowledge required of an architect of to day, that life is scarcely long enough to acquire it all, so that the finest school is one of careful selection and judicious compromise." The best instruction is that of the school followed or preceded by the apprenticeship of the atelier. The combination of the atelier and the competition of the societies of Beaux of Arts architects, is calculated to combine the two and push the students rapidly to usefulness.

In the early fifties when I first arrived in Paris to attend the Ecole Centrale des Arts et Manufactures, I met a number of Americans, among others Edward May the painter. We visited the new Louvre then being erected by one of the well known goverment architects for Louis Napoleon. I was shown the Parvilion Bibliotiquet, which was under the superintendence of Richard M . Hunt who had recently passed the Ecole de Beaux Arts. Six years, or so later returning to New York he called upon his friends to see if they could offer any thing to encourage his remaining and opening an office. His education was so superior to that of any previous student that had returned that he was made to believe he has been wasting much of his time. Fortunately it occurred to him,at the request of two young, now well known, architects Mr. George B Post and Henry Van Brunt assisted by O D Gambrill, to open an atelier in New York city. I have often heard all three of them tell their experiences in his atelier. Fortunately at this time the architecture of the 10th Studio building was awarded to Mr Hunt. and from that time on his success was assured.

There was a style and elegance about Hunt's designs that soon made him sought for. Later when the Worlds Columbian Exposition was under construction to these three men, Hunt ,Post and Van Brunt were awarded three of the largest buildings, and having my self another, many a pleasant breakfast, lunch and banquet we had together, during the construction of the fair, when all the old instanses were recalled. I well remembered a breakfast on the yacht club restraunt. Frank D. Millet was seated by the side of Col Rice U. S. A. in command of the Columbian guards. Suddenly they both leaped from their seats and embraced with much enthusiasm, explaining to those about them that they had not met since the battle of Plevna, where Col Rice was the Envoy of U. S. and Millet represented the the Illustrated London News. Here Millet was the artist of the exposition, devised the color scheme planted the Island, rose garden, and the director of all artistic functions, while Col Rice commanded the guards. During the exposition the reception room of McKim, Mead and White was the head quarters of the constructions committee in New York. One forenoon we were welcomed by Mr. Burnham and St Gaudens. Burnham had offered to St Gaudens the designing of the great electrical fountain, which he said he was forced to decline, owing to a previous engagement, leaving him no time to devote to it. Burnham, finding he could not get St Gaudens, asked him if he could recommend any one. "Yes and one that will do it as well as I. He assisted me often and I will guarantee his work, In fact will work with him. His name is Mac Monnies" A name far better known to day then it was then. "Where is he", said Burnham "Down below,'' was the answer, "I will have him here in a moment, only when he comes in please circulate about and I will introduce him one at a time, for he is very diffident, and if I make a formal introduction he will not say a word."

We did as St Gaudens requested and MacMonnies expressed himself, as most delighted, and that he should take the next available steamer for Paris, where he could get models and the necessary accessories; for he proposed to do the work as carefully as if it was to be cast in bronze, which he did to the admiration of his brother artists. At that time Mr. Prettyman was in charge of the color scheme. We all lunched with Mc Kim in the Player's Club. Hunt was endeavoring to get the color of the building settled. Each one was asked what he recommended. They talked a light buff. a light cream nearly white, and other terms to express a very light warm color. At length Hunt porposed that each one should go out into the club rooms and bring back something very near the color he would offer as the color of the buildings. And so they did, and as there were some twelve of us there was spread on to the table some twelve samples of very light buff, all practically identical.

In Chicago the architects of the exposition made head quarters at Mr. Burnham's office reception room. Hunt was awarded the design of the Administration building ,and was treated by us as architect in chief, and as if in his own atelier. We elected Post as chairman for all business matters, and everything went very smoothly. Each architect seemed pleased and desirous to help the other. To these facts are due the success of the designing of the exposition.

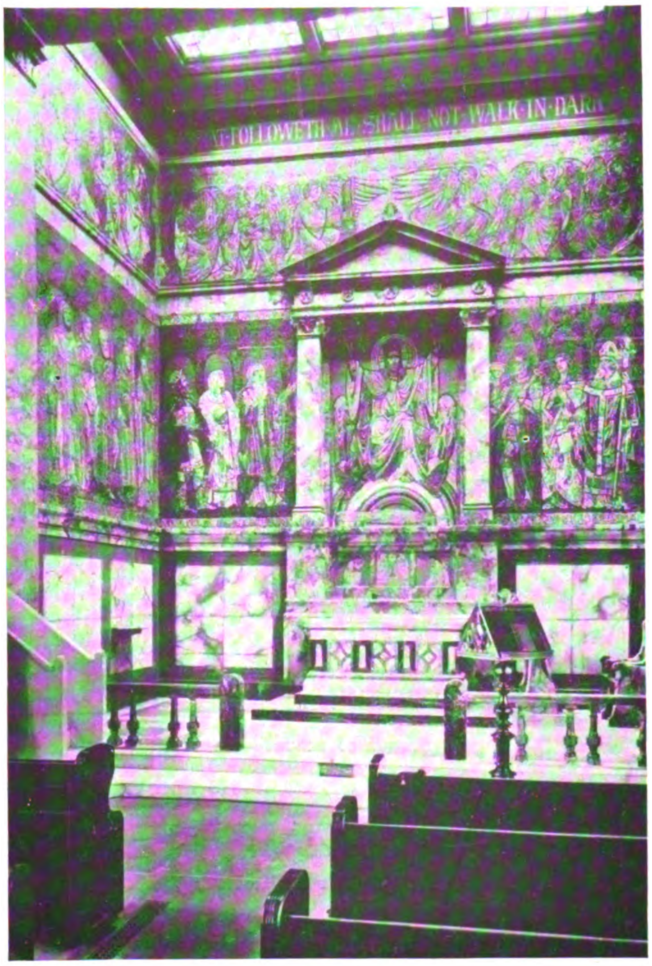
To return to the atelier I had three students who were French, speaking but little English. I have always regretted that I did not put this circumstance to a practical use and teach all my students French, for it would have been a great benefit. French more than any other is the architectural language. The Ecole des Beaux Arts is in Paris. The records of the international congress of architects are kept in France, and the headquarters are in in Paris, meeting each third year. The one recently held in London was the seventh, the one previous was held in Spain, all the others were held in French speaking countries, where all the preceedings were in French, and almost every attendant spoke French. Here were assembled many of the distinguished architects of the world, whose acquaintance one is delighted to make, and proud to remember. I think it will be generally admitted that the first architectural society of the world is that of the Royal Institute, of British Architects. The second The Society Central des Architects Francis. The next the American Institute of Architects. It is certainly most advisable for all architects to become members of as many of the leading societies as practicable, commencing at home. It is certainly well to begin the study of French as early as possible. Once a student can read French, which he can learn to do fairly well in a few months, he then can advance steadily, and will himself see his progress, so that ere long he will speak as well as read easily, which he will find much to his advantage on foreign trips.

Among the architects and engineers who enjoyed Mr. Jenney's teaching early in their careers are D. H. Burnham, William Holabird, Martin Roche, A. H. Granger, Normand S. Patton, W. A. Otis, and H. Van D. Shaw, of Chicago W. J. Dodd, of Louisville and D. Everett Waid of New York, each of whom have risen to the first place in the profession, and there are many others, the record of whose names have been lost, while W. B. Mundie and Elmer Jensen who became his partners were not far beyond a knowledge of rudiments when they entered his employ as draftsmen.

ARCHITECTURAL TILE WORK IN ENGLAND.

ONE of the distinguishing features of English architecture is the extensive use of tiling or ceramic mosaics not only as a covering for floors and walls in many parts of the building, but as an exterior decoration as well. In passing through the streets of London or other English cities, one frequently sees cafes, theatres, restaurants tea-rooms or other places of refreshment or recreation decorated on the exterior with bright colored, gay and elaborate glazed tile. Butcher shops, dairies, fishmongers, and pharmacies with tiled floors, walls, display counters, and even tiled facades, are a common sight; and the attractive, substantial, cleanly and sanitary appearance of these shops is most refreshing to the eye.

In the English hotel tiling is everywhere in evidence on the floors and walls of vestibule, corridor, lobby, waiting-room, smoking-room and dining-room; not to mention the bath-room, toilets, kitchen, butler's pantry, laundry and engine room, which in England are almost always furnished with sanitary, non-absorbent, washable tiled floors and walls. Church aisles, railroad station floors, and the floors and walls of vestibules, corridors and halls of



CERAMIC MOSAIC PICTURES IN CATHEDRAL AT LIVERPOOL.

public buildings are nearly always covered with tiles or ceramic mosaic work. Some of the most elaborate religious pictures on the alters are worked out in beautiful ceramic mosaics.

The English hospital is almost invariably tiled, and usually advantage is taken of the decorative possibilities of tile work in order to relieve the monotonous monochrome appearance of the white tiled wall. In the childern's ward for instance, the walls are nearly always covered with pictures in tile work, which are a source of much delight to the little patients.

The large public baths seen in even the poorest quarters of London, are usually tiled throughout which is a great help in keeping them in a clean, sanitary condition, in spite of their frequent use by many of the poorest specimens of English humanity. One of the strangest places in which to find

CORRIDOR OF SEDGLEY COLLEGE.

an extensive use of tiles on fioors and walls, is th- police station. Yet there are in London, police stations, the interiors of which are almost come pletely covered with most artistically decorated tile and ceramic moasic work.

The English are a practical people, and unlike the Americans, they give far more thought to the probable duration of their buildings than to the rapidity of their construction. They recognise that the floors and walls are the most abused part of the building, and consequently the first part that is likely to show signs of wear or decay, and so they usually cover them with a hard, inorganic, non-porous, fire-proof washable material such as the baked clay tile.

In America we tile the bath-rooms as a matter of course. The same sanitary considerations which led to our adoption of non-porous germ-proof floors and walls in the bath-rooms, have in England led to their adoption in kitchen, butler's pantry and laundry as well.

The artistic and durable properties of tiling have led the English to adopt them also quite generally for theis porches or vestibules.

The use of tile in America is increasing rapidly but it is still far less general than in England.

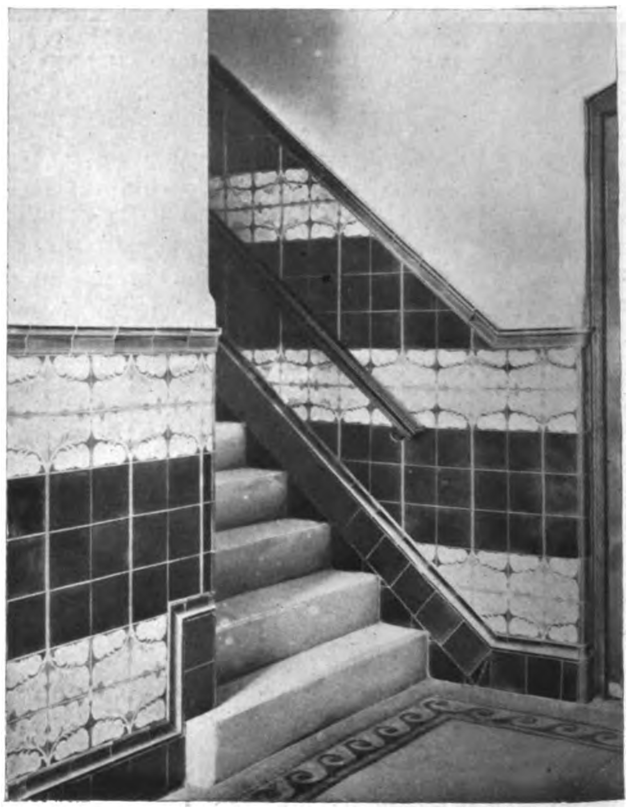
ARCHITECTURAL DESIGN

BY F. W. FITZPATRICK

WITH keenest expectancy, most of us have awaited the evolving of a design for the new cathedral of St. Peter and St. Paul at Washington. For some good reason or other, it was deemed desirable by the Diocesan authorities, to employ an English architect, Mr. G. F. Bodley, presumably, because of that gentleman's most successful handling of Gothic Architecture in his own country. With Mr. Bodley is associated Mr. Henry Vaughan, of Boston. Well, the design has arrived and has been approved by the powers that be, but, in my humble belief, is a distinct failure.

Studied per se and as far as detail goes, the thing is academically correct, a good specimen or copy of the best examples of Gothic Architecture as it was interpreted somewhere around the Fourteenth century. It tells us absolutely nothing of our own time and condition and faith; it is utterly meaningless and worst of all—for we could pardon it anything else—it is not adapted to its location.

It is harsh in outline, boxy and square, however rich may be its details and correct its interpretation. The building would admirably fit conditions in some



TILED WAINSCOTING OF MANCHESTER BATHS.

crowded Continental city where it would be expected to wedge in between narrow confines, dominate comparatively low buildings all about it and be impressive only from a nearby view, the only one to be obtained of it, a careful study at short range of its beautiful details. But here in Washington the conditions are entirely different. The site of the Cathedral is almost a park; it has broad acres in which to deploy its charms. It is upon a commanding eminence and will be seen for miles, and it adds absolutely nothing to the picture! All you will note will be a 'huge, hulking form". There is no more outline to it for distant effect, than there is to a shot-tower or to the most ungodly of towers in Washington, that surmounting the Georgetown car-barn.

The site challenged, begged something picturesque, lofty, diversified and pleasing in outline. One would naturally expect a cathedral of many flanking chapels, a great central spire-crowned tower and minor turrets and spirelets, an interesting sky-line, but nothing of the kind has been vouchsafed us. We "asked for bread, and they have given us a stone." Though of course I may be hypercritical, and may have expected too much, but it does seem to me that Mr. Bodley has committed the great American offense, that of designing a building utterly regardless of where it is to be situated.

Though Mr. Egan's cathedral of Pittsburg is not entirely without sin, it would be more "cathedrally" in appearance, present a more pleasing outline and in every way be better suited for this Washington location than is Mr. Bodley's design, while the latter might not be any improvement on the former for the Pittsburg location, it would certainly fit in there to much greater advantage to itself and to its surroundings, than it does on Cathedral Hill in Washington.

With all due respect to Mr. Bodley, it seems to me that our Washington Episcopalians might have stayed nearer home and not done worse.

Just by way of illustration of what some of our architects can do, glance at the Palmer & Hornbostel design for the new Pittsburg Court-House tower. It was a case of saving Richardson's masterpiece from absolute "visual annihilation" by reason of the huge skyscrapers surrounding it, of adding adequate rooms to the building and at the same time not spoiling or in any way changing the original masterpiece. It is in perfect harmony and consonance with that structure, grows from it naturally, there is nothing forced or artificial about it, but it in itself is a mammoth skyscraper, affording all the rooms that can possibly be needed and all the while asserting the pre-eminence of the State over the individual, by over-topping and commanding all about it. Methinks these gentlemen and a few others could have given us a cathedral that would have better fitted its location, typified its purpose and shown the architectural progression of the country and the times than does the design just completed by our English confrere.

It is all very well for us to lean back and criticise others' efforts, but while doing it, it is but wise and seemly, to do a little introspecting as well. And have we not to admit that as designers we are not doing what could reasonably be expected of us, and that which we, above all men, have the power and the opportunity to do? What a paucity of expression there is in our architectural language, what endless and senseless repetition we indulge in, and how meaningless are the forms we insist upon using!

I am not clamoring for any "nouveau-art" or wonderful originality, but I am heartily disgusted with, and sick of what we use, and re-use, and tickle ourselves into the belief is Architecture. And I am not using the "we" and the "our" in any editorial sense, pointing the finger at the other fellow; I mean the terms in their most comprehensive interpretation, and feel that I am as great, if not a greater sinner than the rest of you.

Look at our State Capitols, for instance. They are like the circus, also of American origin, when you see one you have seen them all. Some a little uglier than others, but all out of the same box, and our churches and our business blocks. We have a few pet notes on a keyboard, and keep strumming at these most persistently, fondly believing we are making music, whereas, the discord is as nerve-racking as that of the proverbial boarding-house piano.

Our commercial structures, apartment houses, hotels, etc., now run to the classic in detail. Some are really attractive but even those pall on you after careful inspection. It is the same old game, the same cards, though perhaps the position in the hand is a trifle different. Or, leaving metaphor alone, one building has a main cornice on the last, but one story, with an attic above. The next has the same cornice surmounting the whole and with the top story worked into a frieze, but the same old consols, the same modillions, the same everything. And the entrances, seemingly of a hundred varieties, can all be sifted down to most painfully narrow limits. It's like humor. They say that there are but eight original jokes in the world and in all times; all that passes muster as a joke is but a variation on one of these eight. This would be forcibly impressed upon you if you made a long car trip, from New York to San Francisco, without a break, for instance. You will hear in smoking-room and dining-car, jokes galore and stories without end, each told with much shaking of sides and generally as a personal experience. You will be thoroughly convinced that there are fewer than eight jokes and further than that, before you reach San Francisco you will want to shoot a man who evinces any desire to tell you a story. So it is with Architecture. Look over the illustrations of the work done in the past three or four years, and you will agree with me. I am simply tired of the stories we are telling and of the delusive cajoling we are giving ourselves that we are telling them with some slight modicum of originality.

Some of us, occasionally, make a superhuman effort and do something that is more of less out of the hackneyed lines. Sullivan, for instance, has probably done more than anyone else in the country, in an endeavor to get away from the stereotyped forms that neither express the purpose of our buildings, nor tell the truth as regards their structural materials. But the danger in that lies in getting excited over the operation and feeling it incumbent upon us to always do something original when almost invariably, we are apt to drift into the outre, the merely extraordinary, exotic, forced, unnatural and frequently idiotic apotheosis of an idea, and we then become what a professional original story-teller generally is, an unmitigated bore.

I have no cure for panacea to offer, but I am just simply tired of the way we are doing. I see the fault, the error of it all, the folly but have not the ability, nor do I feel the confidence sufficient to point out any one absolute and guaranteed remedy. One little suggestion, however, may be in the right direction. We have had good training, know what Architecture purports to be, and we certainly have the intelligence to properly face and cope with any problem that presents itself. Let us take more time with our work; let us be great enough to do less business, and make less money, and give our work in consequence, less of the ready-made, shop appearance and more individuality, more careful study, more self-criticism, than we have been doing in this era of commercialism, and I cannot help but believe that we will produce better results for our clients, more satisfaction for ourselves and an Architecture that will be more sane, if it is not actually a National Architecture.

ASSOCIATIONS.

ARCHITECTURAL LEAGUE OF AMERICA.

At the Executive Board Meeting of the Architectural League of America held in Toronto on June 19th, the permanent head-quarters of the Architectural League were established at 729, 15th St., N. W., Washington, D. C., and Mr. H. S. McAllister, a former Secretary of the Washington Architectural Club, and now Vice President of the same, was appointed permanent Secretary of the League. The Executive committee announcees that all communications with the League may hereafter be directed to Mr. McAllister at that address.

T. SQUARE CLUB EXHIBITION.

The T. Square Club of Philadelphia opened the first of a series of special exhibitions, which will be held from time to time under the auspices of the Club, in the Academy of Fine Arts from June 29th to July 7. The exhibition consisted of the 125 drawings submitted in the New York State Educational building at Albany, and the Union Theological, Seminary of New York competitions. This exhibition will be followed by those of the St Louis Public Library and the Bureau of American Republics competitions.

PUBLICATION

"THE USE OF THE NATIONAL FORESTS." By Frederick E. Olmsted. A publication just printed by the Department of Agriculture; is a brief, clear manual for public information as to the forest policy of the National Government.

It is too true, as the short preface to the public says, that "many people do not know what National Forests are. Others may have heard much about them, but have no idea of their true purpose and use." It is the object of this publication to explain just what the National Forests mean, what they are for, and how to use them.

It explains how the forests are created and how their boundaries are drawn. Their direct use and value are shown from the point of view of the homeseeker, the prospector and miner, the user of timber, the user of the range, the user of water, and other users of forest resources. How the Forests are intended for use, for the production of usable products is fully explained, and for the establishment and maintenance of homes; how on all of them the timber is protected from fire, the water flow is kept steady, the forage on the range is increased and guarded from abuse; and how, in addition, they serve as great public playgrounds and as breeding places and refuges for game. Finally, the management of the National forests is described at length.

Here it is that the great usefulness of the forests is brought out most clearly and strikingly ;for the forests are managed by the people in their own interests, and every means is used to meet the desires and wants of the forest users half way, by dealing with them in the main directly on the ground and in all cases with the utmost practicable dispatch and freedom from red tape.

In a word, the special interest of this manual lies in its showing that the forest policy of the Government, both in principle and in practice, is for the benefit of the ordinary man, for the benefit of every citizen equally. There is still a tendency to think of the National forests as "preserves" closed to use, and to leave the public lands exposed to unregulated individual exploitation. Where these misapprehensions still prevail "The use of the National Forests" will go far to correct them.

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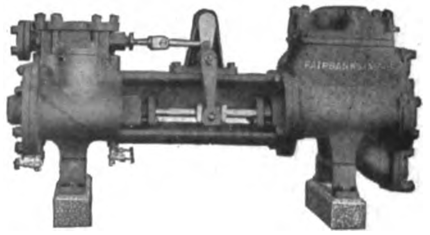

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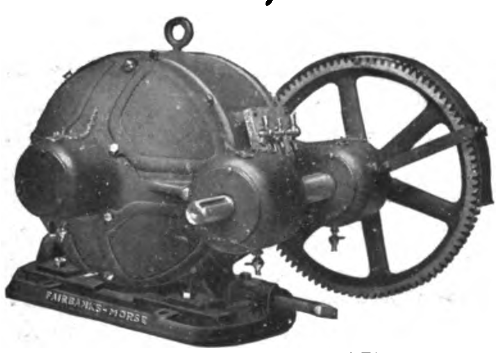

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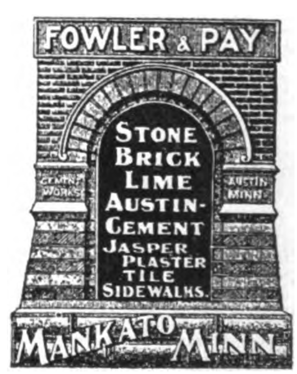

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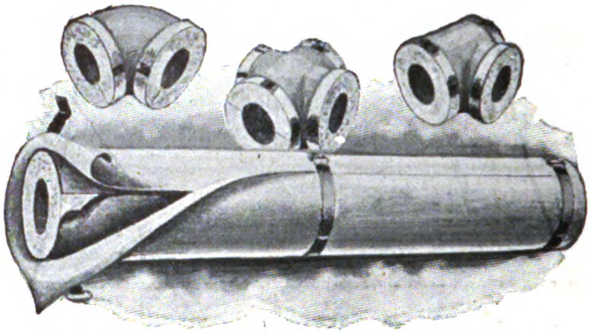

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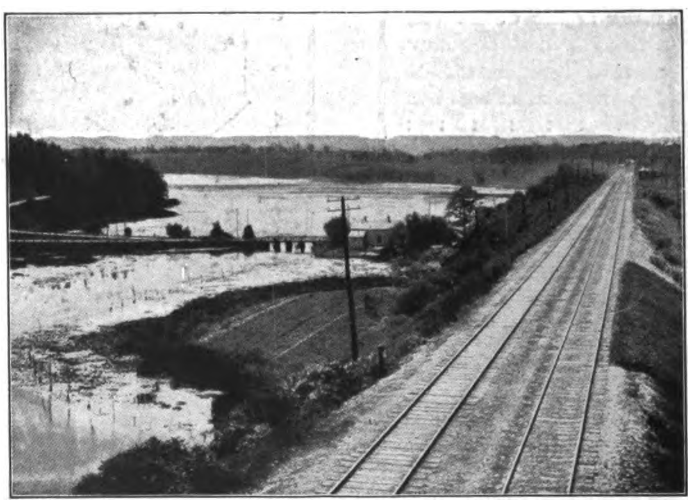

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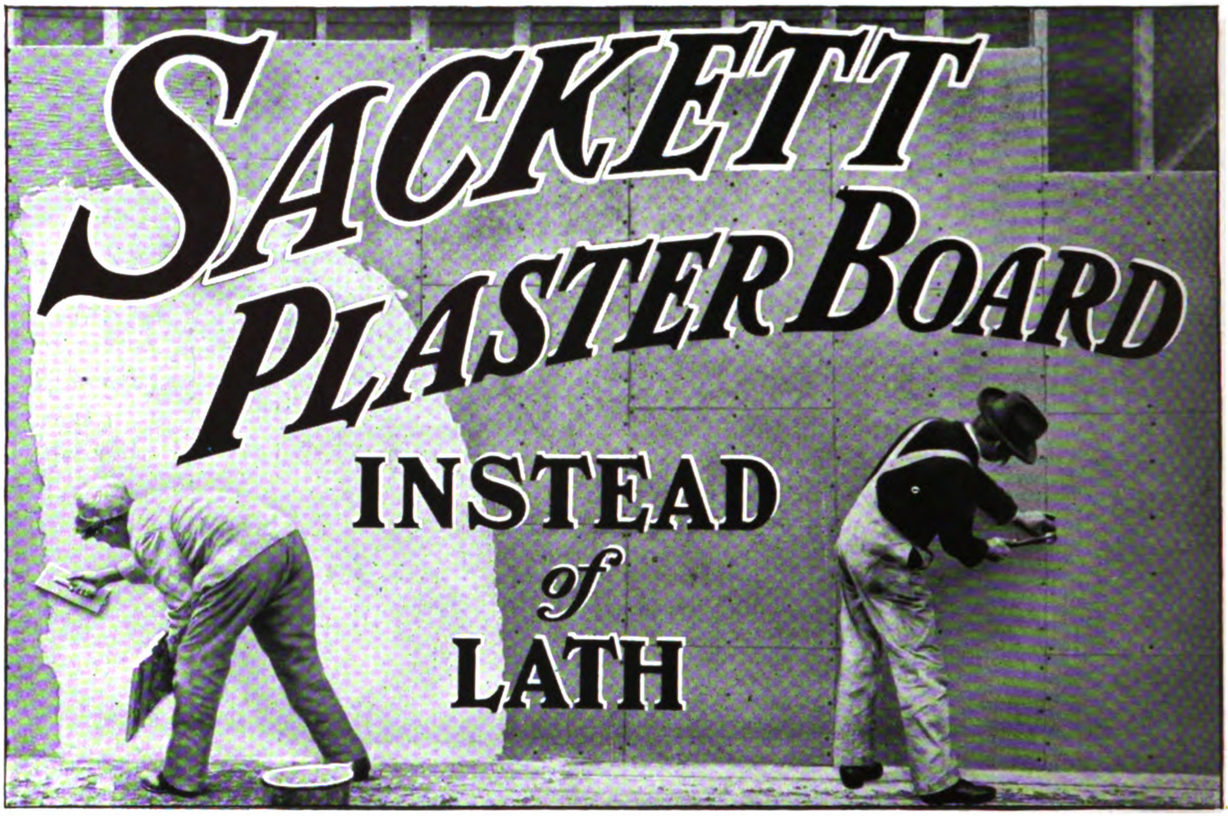

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DETAIL OF STORE FRONT, THE FAIR, CHICAGO
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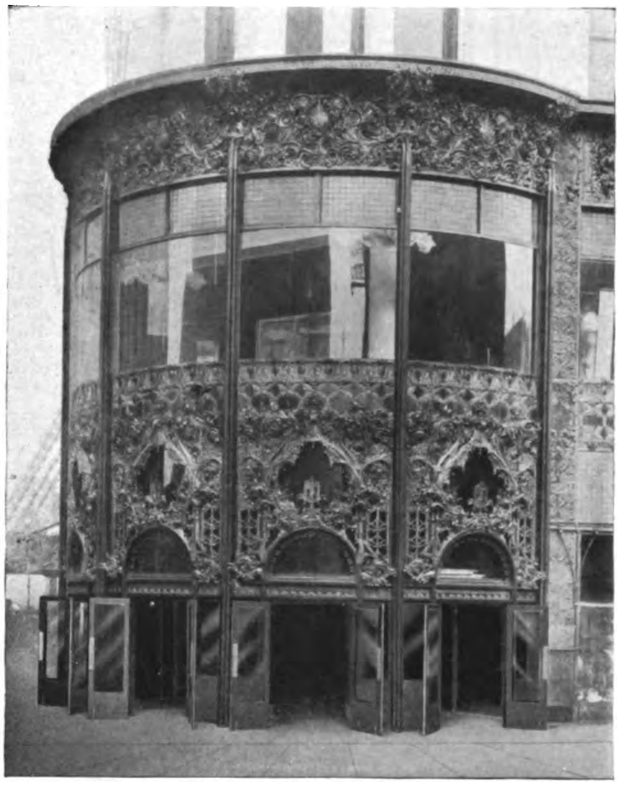
ILLUSTRATING ARTICLE ON STORE FRONTS ON PAGE 69



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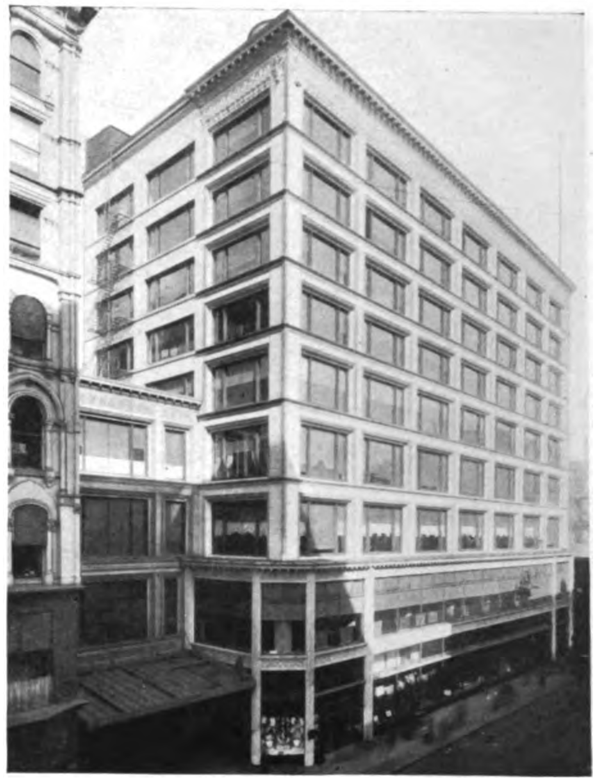
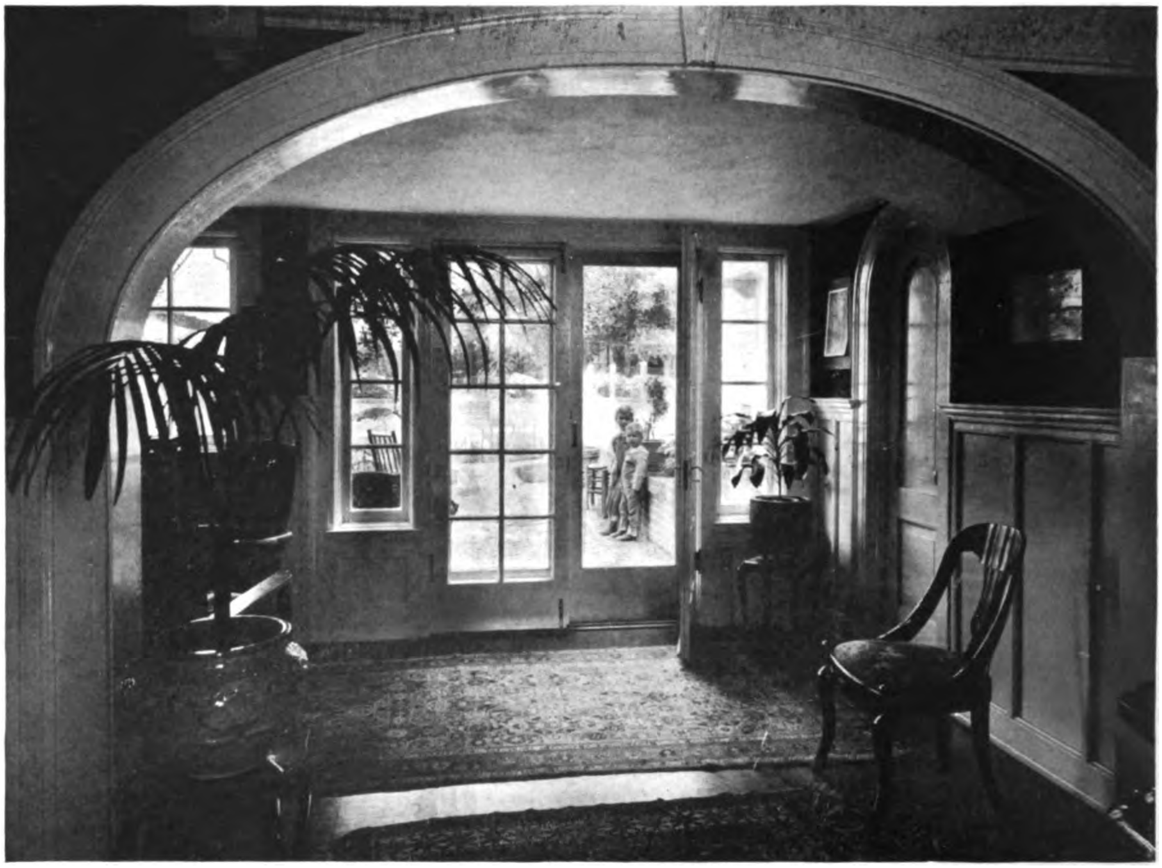


MARSHALL FIELD ANNEX

DETAIL OF STORE FRONT OF CARSON, PIRIE SCOTT & COMPANY, CHICAGO

LOUIS H. SULLIVAN, ARCHITECT

ILLUSTRATING ARTICLE ON STORE FRONTS ON PAGE 69



VIEW SHOWING GARDEN IN REAR

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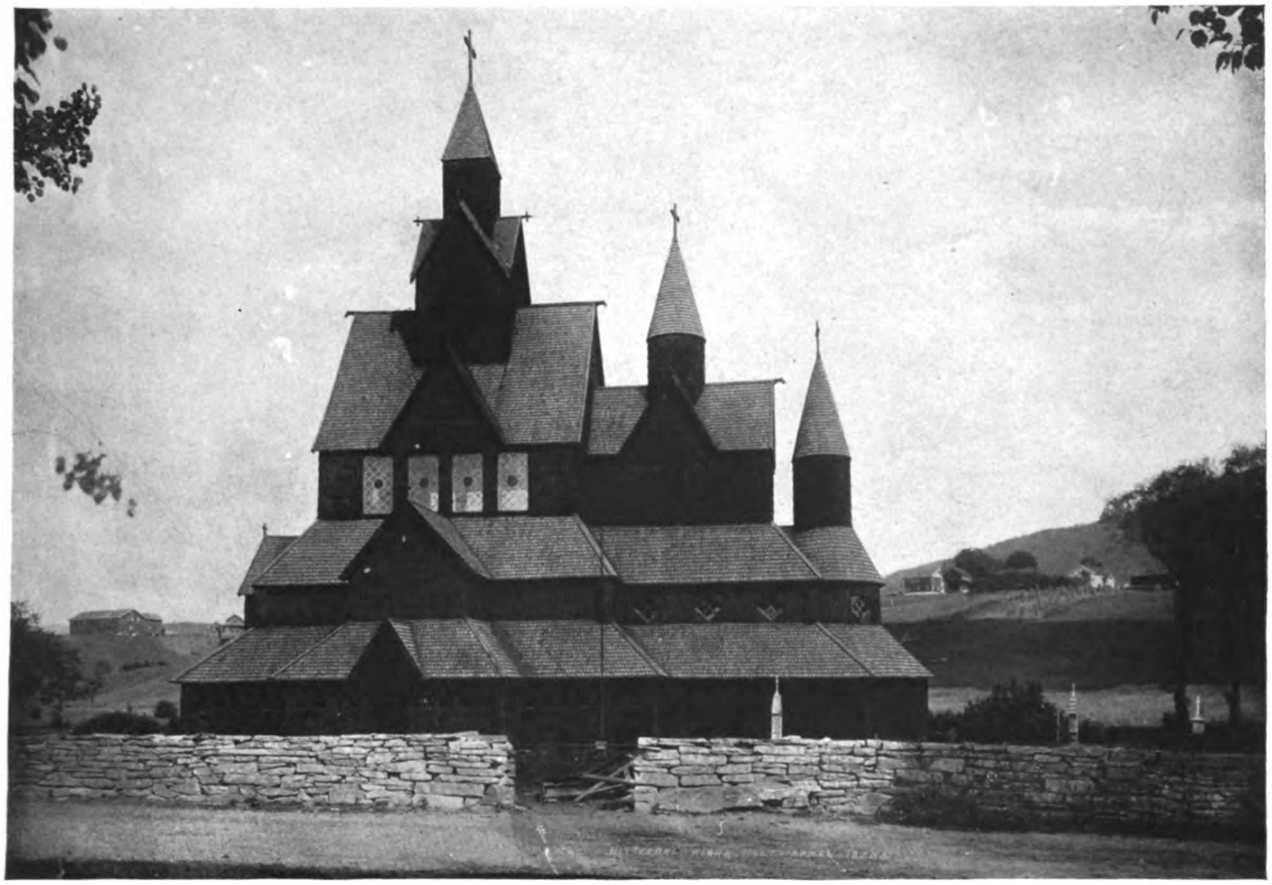

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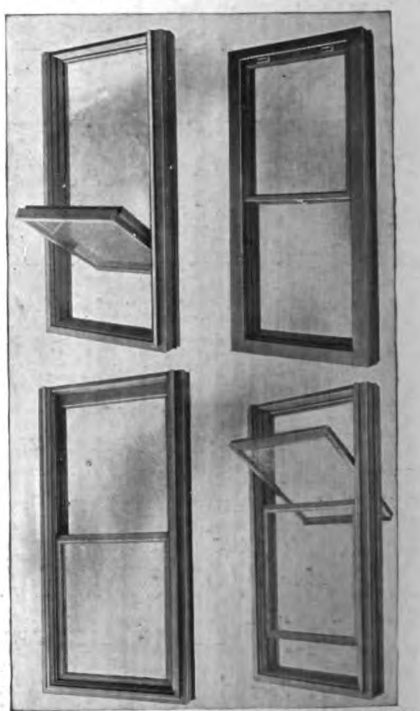

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ROBERT CRAIK MCLEAN, EDITOR.

Mr Alvin W. Varner, formerly with the Prizer-Painter Stove & Heater Company, has accepted a position with the United States Radiator Company of Dunkirk, N. Y. to travel the territory of Ohio, Michigan and Indiana. Mr. Varney is a practical heating engineer and his many friends will wish him success in his new position.

Among the practical books which are published from time to time in the interest of standard systems used in building construction, none has appeared recently more worthy of a place in the catalog library than that just issued by the Burt Manufacturing Company of Akron, Ohio, on oil filters, exhaust heads and ventilators. This company is the largest manufacturer of oil filters in the world.

MR. S. D. ROLLINS the Minneapolis representative of Kellogg-Mackay-Cameron Company of Chicago has forwarded a copy of the recently issued four hundred page catalog and price list of the firm for the use of the trade in selecting and ordering the boilers, or heating and plumbing supplies manufactured by them.It is an exhaustive profusely illustrated catalog of the goods carried in stock, and gives full directions upon every conceivable point that may interest the architect, contractor or owner.

Mr. J. C. Gould, formerly of Minneapolis is now representing the Huttig Manufacturing Company of Mascutine, Iowa, as sales agent for Huttig Green Flag Rubber Roofing in the south, with headquarters at Birmingham. The peculiar composition of this roofing which makes it adaptable to the most severe changes of temperature has caused it to become popular as a roofing material of the best class in the northern states, and so great is the estimate in which it is held for strength and duribility south of the Ohio River, that the Tuscaloosa, Alabama court house has just been roofed with it, and that after another material had been specified. A combination such as Mr. Gould as sales agent and a roofing material with the known qualities of Huttig Green Flag Rubber Roofing is hard to beat in any climate north or south.

In an architect's handbook on wood finishing, a description of house finishes manufactured by The Standard Varnish Works of New York, (which is also the International Varnish Company of Canada,) with some practical hints in regard to the use and qualities of varnishes and specifications for their use on the different varieties of woods are found, that should be obtained and preserved by both architect and finisher everywhere. The Flatine cabinet finish, and floor finish, seems to have all the requisites and excellences of a perfect flat finish that has the proper degree of elasticity as well as durability to recommend it. These varnishes were designed to meet the increasing demand for a varnish that will produce a flat or rubbed effect without the attendant labor and expense of rubbing. They may be applied directly to the natural or stained wood, or over a paste filler on open grain woods, or over a first coated on close grain woods, or over varnish (that has first been cut down with steel wool, ors and paper). In other words they are to be used in the matter of application, like any regular varnish. They contain no wax.

The Sandusky Portland Cement Company of Sandusky, Ohio, have just made a shipment of a carload of their Medusa Water-proof compound to the Water Works Department, Municipality of Bombay, India, and are advised that the material will be used in the cement mortar coat to be applied to the interior walls and floor of the Malabar Hill reservoir at that point. This is probably the largest reservoir in India and the adoption of this water-proof compound by the engineer in charge is a great compliment to the product.. It is also being used and is specified in the following work: Exterior plaster of the Coliseum, Niagara Falls, N. Y. to prevent discoloration and efflorescence caused by the spray of the Falls. In the Crystal Ice and Storage Company's reinforced concrete tanks and the Hygeia Ice and Storage Company at Poughkeepsie, N. Y. in remodeling plant. The new Baur Bros.'s Bakery at Pittsburg, Pa., has just been completed and was water-proofed throughout with this material. The material is also being used in the American Car and Foundry Company's plant at St Louis, Mo. and the Pendleton Investment Company at that point is using it in all concrete residences being erected by them. It was used in the floors of the Davis Estate Building in St Louis with most excellent results. The new Olympic Club at San Francisco is making its swimming pool foundation and cellar entirely water-proofed with this material. Any one interested in water-proofed concrete work can obtain a most interesting pamphlet on this subject published by the above named company.

To the architect who looked to the local carpenter to supply screens for his completed building, it may be interesting to know the extent of the screen making industry which is illustrated by the Milwaukee house, the Willer Manufacturing Company. The work of this concern reaches an enormous output and its product is supplied throughout the world. A carload valued at five thousand dollars was recently shipped to Honolulu for the government buildings there, the screens for the government buildings at Fortress Monroe cost $3,500. Three thousand dollars worth go to sanitoriums at Battle Mountain New Hampshire and Hot Springs, South Dakota. Fort Totten, New York and Fort Crook, Nebraska, the state Agricultural college of Minnesota and many other large institutions call for large numbers of screens that can only be made in a large factory and on a substantial and accurate basis which ensure their lasting qualities and mechanical fitting and operation. A factory that can supply such orders and to the satisfaction of government and state inspectors, it is logical to suppose, can fit out a five room cottage or a flat building with the same facility and quality, and presumably at a less cost, than the local carpenter who does not make a specialty of their manufacture. The illustrated catalog of this concern is also a revelation in the numberless variety of screen frames and window guards that this house manufactures, meeting any design or condition with a perfectly harmonious and practically operative screen, with special waterproof lock corner joints and sto_ wiring that make the Willer screens the best that can be pro_ cured.

THE School of Architecture of the University of Pennsylvania has ready for distribution the edition of its illustrated "Review" for the year 1906–07. The gratifying reception which the former edition met with has led to the preparation of a larger number of copies of this issue. The work is a quarto volume, consisting chiefly of illustrations of the work done in the various courses at the School of Architecture, including the Four Year Regular Course, the Fifth or Graduate year, the work of the elective course in Architectural Engineering, and the work of the Two Year Special Course in Architecture. Owing to the great expense of preparation of this issue, it can only be distributed among those who have a real professional interest in its subject matter. As an evidence of this interest, application should be accompanied by 24cts. in stamps to cover the cost of distribution. Orders for the "Review" should be addressed to Professor Warren P. Laird, School of Architecture, University of Pennsylvania, Philadelphia, Pa.

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The position of Minneapolis as one of the foremost distributing points for building material and supplies for the entire Northwest, has induced The Berger Mfg. Co., of Canton, Ohio, who are so well and favorably known to the architects and builders of the country from Maine to California as manufacturers of sheet metal material for roofs, walls, ceilings, etc., to locate a distributing branch for their business in this western metropolis, for the more convenient handling of their immense growing trade in this section of the country.

Among some of the more important products which this house is now introducing to those interested in building operations, may be mentioned their "Prong Lock" System (wireless) of steel studding and furring for fireproof walls, partitions and ceilings, which are perfectly solid and rigid before the plastering begins, creating a most efficient fireproof system. Some of the strong points of this "prong lock," are that aside from being fireproof, it is also "sound proof" and "vermin proof". It is very economical to erect, requiring not only less mortar, but also less labor, besides it is light in weight, absolutely solid and adaptable to any kind of building.

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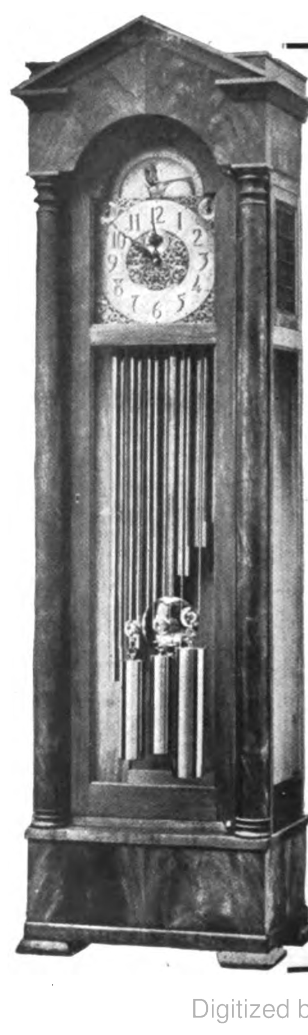

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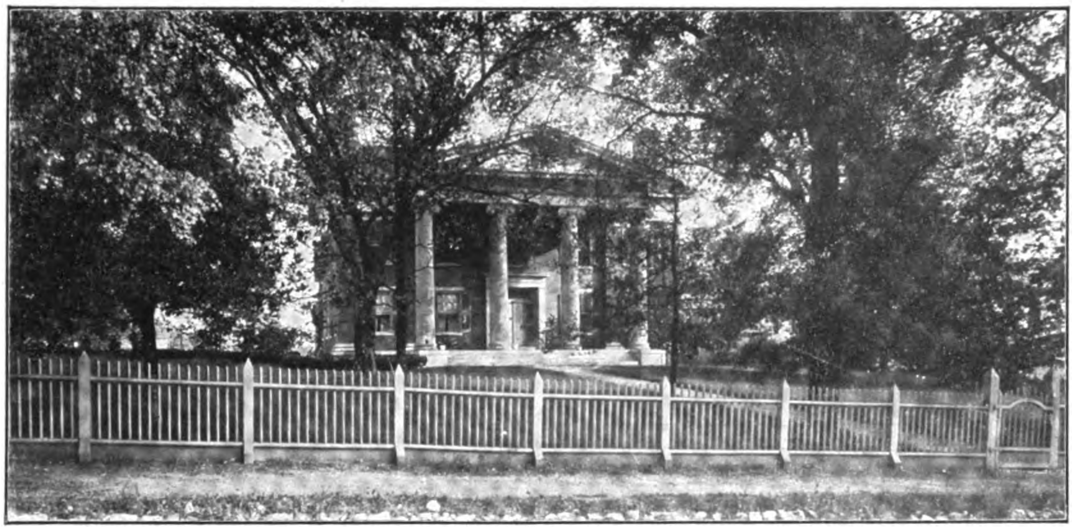

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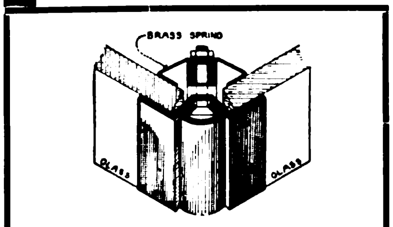

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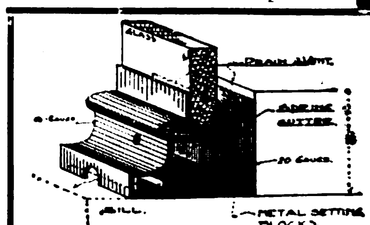

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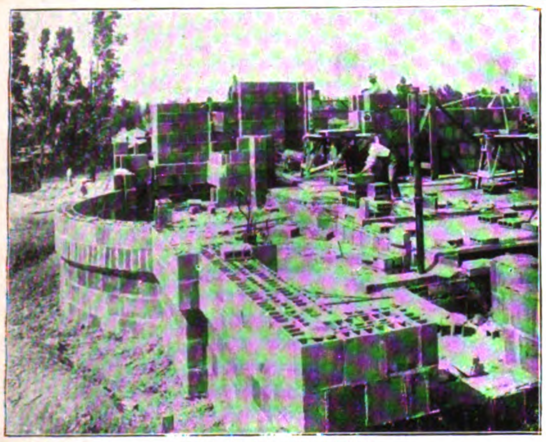

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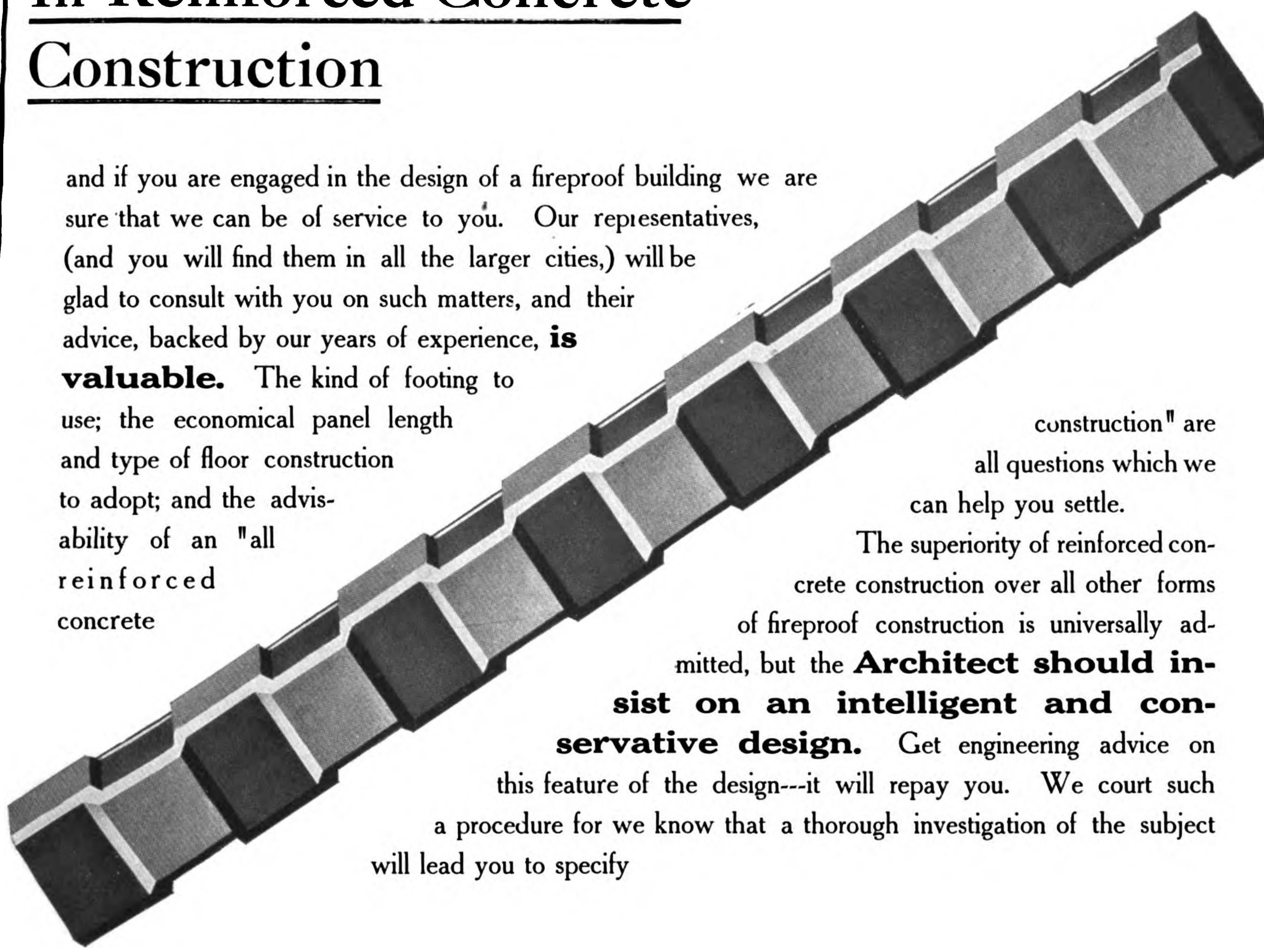

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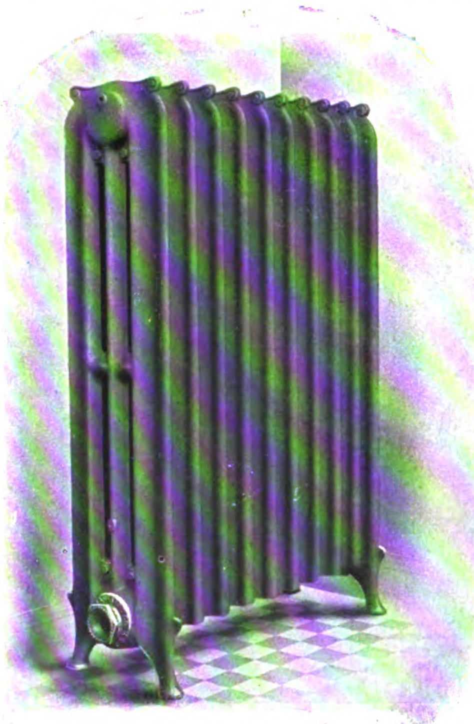

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ROBERT CRAIK McLEAN, EDITOR.

A Warning in the Fall of a Concrete Structure

Emphisizing the warnings that the architects and engineers as well as this journal, have reiterated in regard to the necessity for carefui planning, close inspection and honest work in connection with all reinforced concrete work, the arrest of the contractor and subcontractor a of three story and reinforced concrete building at Philadeldhia is announced. The cause of the collapse of the structure,is charged to the too early removal of supports, which, like the "heart failure" diagnosis of the medical fraternity, covers a multitude of ailments. The sub-contractor places the blame on the contractor, who, he says, ordered the roof supports removed, but the asserted presence of bad concrete and also faulty construction would indicate that the time of removal had little to do with the collapse. The concrete engineers of the country are making strenuous efforts to regulate reinforced concrete practice, and every accident (?) of this kind aids them in their endeavor to bring this somewhat recalcitrant but undoubtedly valuable building system into a safe and practical form. The failure of concrete buildings, while they in one direction are apt to turn the public mind against them, in another will teach that the material has its uses and advantages, but that it is in no way a cheap system of construction, but must be handled from start to finish by honest and skilled, men and that time and care are as large an equation as good cement properly mixed, and each part and process must be watched by those upon whom the responsibility for any failure may rest.

A Hope for Progress in Present Day Design

The recent culmination of three important competitions following the appointment of Mr. G. B. Bodley, of London, with an American associate, as architect for the Washington Cathedral, brings up the question of design in a paper, printed last month, by Mr. F. W. Fitzpatrick, Architect, of Washington. There may be nothing particularly new in Mr. Fitzpatrick's plea for a harmonious setting or for a slavish following of old precedents in meeting new conditions, but these too prevalent faults in the designing of modern buildings cannot be too often brought to the attention of the profession. It is probably an influence akin to sunspots, that is at present retarding all artistic and literary growth. The literary man rides in an automobile; keeps a dozen engagements in a day; has the pressing demand to spend wealth where formerly he did not need it or disregarded the fictitious pleasures it might bring, and so in these latter days he cannot give the time to careful composition and full contemplation that was the heritage of the writers whose names will live as long as the language. It is the same in architecture. We have architects that are endowed with as great talent even genius, as those of the past, but their lives are not spent in one long contemplation of the beauty of form or mass or detail. Their most serious study in the freshness of their youth was tracing the lines drawn by architects long dead, and even their undoubted talent cannot conceive true architectural beauty after an evening spent in society and a quick automobile ride to the office in the morning. For want of a better name, we call it a commercial age, and the best we can hope for perhaps, is that out of our advanced thought and changed conditions will gradually grow a new sentiment, not the same but better and more beautiful, and a utility greater than has gone before, and instead of looking for motif or precident the architect and the literary man will "draw the thing as he sees it, for the god of things as they are."

The Fireproof Quality of Cement Blocks

In the report of the committee appointed by the National Fire Protection Association at its annual convention last May, to "investigate cement for building construction," several important details regarding concrete constructions are found. While the formulation of a standard was deferred "in the hope that the field of experience and laboratory tests would develope a general line of practice which might be found both safe and practical," this year's investigations seem to confirm the view that well made blocks are suitable for small buildings where no high temperature or long continued fires are to be expected, "but the hollow form in which they are made absolutely precludes their being classed as highly fire resistive, or suitable for fire walls, or for any buildings that may be subjected to severe fire." It was found in the fire tests, made that practically all the samples cracked or broke from unequal expansion of the various sides. Accordingly a small solid block the size and shape of an ordinary brick could be used in the same way, but because of the disintregrating effect of access of heat make them less fireproof than bricks of common clay. It is such tests, and reports as these that will finally solve the problem of the concrete block, and while it will not decrease, but rather add to their use, it will place them where they belong, and as practice has long established where clay brick should and should not be used, so will cement blocks find their natural and their far best place in building economy.

The Crime of the Pennsylvania Capitol Architect

That we have not taken the opportunity to unqualifiedly denounce the architect of the Pennsylvania State Capitol, is because we have not heretofore seen evidence that he deserves it, though we have denounced the manner in which he accepted the commission. There is one point to his credit, and that is he secured artists of the highest rank to execute the sculpture, mural paintings and tile mosaic floors. Once commissioned, these artists went to work faithfully to carry out their commissions, and in all the investigations and exposures that have attended the completion of the structure, no word has yet been spoken that in any way shows the slightest veniality on the part of the artists engaged. On the other hand while the mural painter received the barest day's wages for fourteen of the finest mural paintings that have been executed by any American artist, with no apparant recognition of his art in a financial way, and the tiling was recompensed on much the same basis, the sculptor has been treated in a manner that recalls the disregard for art common in the dark ages. We believe that Mr. Huston was a mere tool from the beginning, and like most tools feared to say so, and thus the life of one of America's most promising sculptors was certainly shortened if not placed in jeopardy. It is no excuse to say that Mr. Barnard was not business like in making his contract, or that the architect who was a tool and not an artist could not "deliver the goods." The onus of the whole experience of Mr. Barnard rests upon the State of Pennsylvania because it allowed politicians and their tools to outrage art in its representative; a crime a million times greater than any mere "graft" in the stealing a few million dollars from a public that has only dollars, and is without enough honesty, much less appreciation of anything artistic, to punish both commissioners and architect, for the high crime of sacrificing an artist, whose finger is of more value than they and all their progeny, by their disgusting pilferings.

THE TILED PAVEMENT IN THE CAPITOL OF PENNSYLVANIA AT HARRISBURGH.

BY H. C. MERCER

(Concluded from Page 50, Volume X, Number 5)

We have aseries of clay pictures scattered with only reasonable balance over the entire area. The whole question of the necessity of stripings upon pavements is raised. Those who hold to the formal necessity will never quite forgive this omission. On the other hand it must be admitted that great freedom in the size, number, and arrangement of pictures was gained by this casting aside of tradition, while the whole general effect is so low in color that bandings in the same scale would not have greatly altered the effect. Passing over these questions and confronting the designs one by

MOSAIC 290.

INDIAN TUBULAR TOBACCO PIPE—Perforate a stone six to eight inches long, at immense pains, by bow drilling it from either end with a hollow reed helped by sand and water. Enlarge the hole at one end or both. Rub round and polish the whole tube and you produce as the Indian produced it one of the earliest forms of tobacco pipes through which as seen in the pre-historic manuscripts of Yucatan the masked Indian priest in certain ceremonies, blew the smoke of odoriferous herbs to the four world quarters.

CATALPA. (*Catalpa Catalpa*)—Native of the warmer forests of the Gulf States, transplanted from the South to the Pennsylvanian woods, the large leaved, heavily white flowered Candle Tree, or Indian Bean, or Catalpa, as the Cherokees called it, has escaped from cultivation in the North, to scatter its winged seeds and shine with its white and purple tinted flowers in shady woods and along the banks of streams.

MOSAIC 287.

MOSAIC 278.

THE SPIDER—Type of Nature's mystic power, first instructor of man in weaving, aerial rope-maker sinister, indomitable, potent, transmitter of the primeval fire of the Cherokee across the "world water" on his gossamer web, the spider, encircled by the lines of his masterful skein, is here shown as carved by an Indian upon a brooch of shell.

MOSAIC 297.

ARROW HEAD—The ancient Egyptians and Scandanavians and the Mexicans, possessing fine grained flint or volcanic glass called obsidian, were probably more skilful in the art of stone blade chipping than the Northern Indians of east-ern North America, who were seen to produce their stone blades in various ways; by precussion, by flaking with pebble hammers, by leverage, or by direct pressure with deer antlers or bone points.

INDIAN QUARRYING JASPER—With crow bar made of a young tree burned down, charred at the end and hacked to a point with a stone axe, the Indian quarryman pries a mass of jasper, cracked by fire, from the native ledge, as at Durham in Bucks County, at Macungie and at Vera Cruz in Lehigh County, with its 250 pre-historic diggings. He is working at the bottom of a pit eighteen feet deep.

MOSAIC 323.

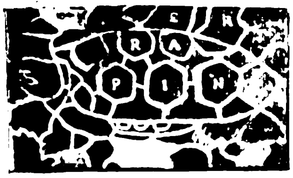
MOSAIC 322.

INDIAN BROOCH INSCRIBED WITH A CROSS SYMBOL—Whether derived from thoughts of the four points of direction, from primitive exorcisms, from the worship of reproductive forces or otherwise used as a symbolic decorative form far antedating the discovery of America by Columbus, the handiwork of the Indian sometimes shows the cross emblem. Here the mosaic reproduces the native design scratched upon a shell gorget.

INDIAN ROCK PICTURE—Man, bird or or demon, made probably by Susquehannock, Delaware or Iroquois Indians, by pecking with sharp hard stones upon the face of a large water-worn boulder known as Big Indian Rock in mid-Susquehanna at Safe Harbor, cut near a group of Thunder Birds, symbolic eagles, animals, bird tracks and a human head, on the east face of the rock.

MOSAIC 340.

one, it remains to be asked whether they themselves express each its own idea within the proper limitations of the potter's craft, which does not willingly burn flat pieces of clay larger than a foot


Mosiac 330.

Potter Terrapin. (Pseudemys Rugosa)—Having learned to eat tortoises in general from the Indian, who continually roasted them on open fires as archaelogy shows, the white man digs the hirbernating red bellied native of terrapin Pennsylvania from the sub-marine mud of fresh water streams, and throwing him alive into boiling water, cleans, cooks and eats him, eggs and all. Outranking for man's food all national dishes save the canvass back duck, the reptile is threatened with extermination in Pennsylvania where he is easily confused with the yet more esteemed salt water terrapin (Malacoclemmys palustris). When the meat of the latter sells from five to seven dollars per quart in Philadelphia, the vendor may stir in fifty or seventy per cent. of the bones ,flesh and eggs of the "potter;" whereupon few epicures can detect the cheat.


Mosaic 324.

Rattlesnake As Pictured By Indians—The head with open mouth of the fearful rattle snake (*crotalus horridus*) surrounded by a coil of the scaley body ending in its rattle highly conventionalized after the manner of other designs found in Indian Mounds, and upon wooden masks excavated in Florida, the mosaic here reproduces a carving deeply scratched upon a breast plate of shell by the Mound-building Indians.


Mosaic 326.

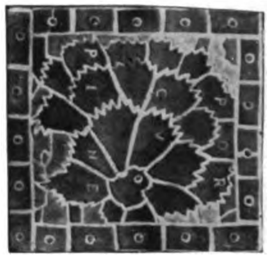
Indian Basket Maker—Only less important to primitive man than the plastic clay utensil, is the basket as here plaited by an Indian woman in one of many masterful plaits. Sometimes water tight, decorated with designs, conventionalized, balanced and artistic, in pattern, the Indian basket was usually superior in make and decoration to the wares of civilized peoples.


Mosaic 322.

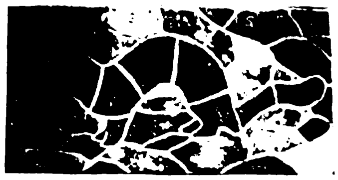
Indian Brooch Inscribed With A Cross Symbol—Here the mosaic reproduces a native design scratched upon a gorget or breast plate of mussel shell. Whether it is derived from the four points of direction, from primitive demon worship. or from ceremonies based upon the blowing of winds, the handiwork of the Indian produced at a time antedating the discovery of America by Columbus sometimes to the great surprise of early travellers showed, as in the case illustrated, the emblem of the Christian Cross.


Mosaic 299.

Indian Rock Carving—One of the animal figures, probably a panther, pecked by Indians by pounding with a sharp stone against the smooth, freshet-worn, eastern side of a large boulder, known as Big Indian Rock, in the middle of the Rapids of the Susquehanna at Safe Harbor.


Mosaic 349.

Porcupine (Erethizon Dorsatus.)—Rolled into a ball of poisonous barbed bristles destructive to the tongue and mouth of wolf or wild cat, the porcupine defends itself against ferocious enemies far exceeding it in strength. Tree climbing, greedy of salt, devouring the inner bark of elm, linden and hemlock trees for food, sometimes gnawing the bones of cave buried animals for sustenance. The non hibernating aniaml who nests in a hollow tree was hunted by Indians for openfire roasting and for its quills.


Mosaic 345.

The Weasel. (*Mustela vulgaris.*)—Sometimes turning all white in winter, brown backed, keen scented, night hunting, wholesale distroyer and bloodsucker of rats, mice moles, frogs, birds and chickens.


Mosaic 237.

The Crow. (Corvus Americanus.)—Not from his striking color and figure, his anatomy or his habits, according to the bird book, might the non migrating incomparably sagacious grain eating crow claim distinction, but rather from the fact that he stands supreme among birds as victorious in an eternal life struggle against the human maxim, man condemned but man practiced that might makes right. Marshalled in destructive flocks guided, guarded and generalled, scouting, watching, venturing, despising, the scarecrow, evading trap and poison, gauging gun range as it extends, the ever present crow, defying the northern winter, and defeats, despoils the human spoiler, from the exact standpoint of the latter. *Homo Sapiens.*

Mosaic 344.

Indian Rock Picture. Thunder Bird with Forked Tail—One of about twenty figures of men, animals and their tracks, reptiles, birds and demonic symbols, pecked with stones by Indians upon the sides of Big Indian Rock, near the much more profusely inscribed fellow boulder Little Indian Rock, in mid-Susquehanna at Safe Harbor. The grinding of driftwood in freshets slowly erases these weird and sinister symbols of a vanished race, placed in the midst of roaring and dangerous rapids.

Mosaic 350.

The Muskrat—The amphibious, prolific muskrat, inhabiting lakes and streams, invading cultivated lands, threatening dams and canals, destroying the water-lily and lotus where they had flourished before, defies man's effort to dig him out and exterminate him, and increases rather than disappears before the same civilization which, in exetrminating the blood-letting mink which had filled the water rats, galleries with blood in the past, has withdrawn from the life struggle the muskrat's worst enemy.

Mosaic 335.

White Children Rescued By Indians — For a time Penn's roseate dream of loving brotherhood between European and savage, typified by the famous treaty of the Great Elm, seemed realized. Not yet over-reached by the land purchase known as the Indian Walk, still uninjured, unangered, unsuspecting, the Red Man with no wrongs to revenge, mingled kindly with the foreigner. Early in the eighteenth century, two little white children named Chapman, lost in the forest near Wrightstown, Bucks County were kindly rescued by Indians and restored to their distressed parents.

Mosaic 336.

Red Fox. (Vulpes Fulvus.)—Sly, stealthy, slit-eyed, night hunting, cleanly, devourer of birds, chickens, mice, moles, squirrels, fish, beetles, or fruit, less swift than his European cousin, whether as the Red Fox of the north or the Grey Fox of the South, the celebrated animal, either burrowing in the earth, or living in rocks and hollow trees, is respected and hated by man.

Driven into nets or dug out for extermination until about 1650 in Britain, the fox began to alure the red coated hunter and his hounds by the end of the 17th century. These forward, pratically protected as a target for sport, glorified by his destroyer in the fun of pictures, horns, hounds, red coats, Irish Reels, club rooms and balls he becomes the type of the National sport of England transferred to America.

Mosaic 338.

Rattlesnake. (Crotalus Horridus.)—Less poisonous than the Cobra of India, or the Fer de Lance of Martinique, devourer of small rodents, the deadly rattlesnake where he survives in the Appalachians from New Hampshire to Florida, is justly dreaded by man. About four feet long, sluggish, coiling, rattling, reluctently striking, the brown or blackish yellow diaper striped snake, was avoided and venerated by Indians and white men and but very rarely concileated by snake loving mountaineers who dare to pick up the fanged reptile in their hands.

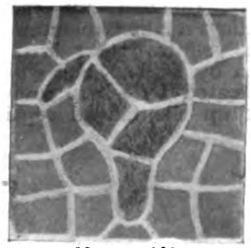
Primitive Tobacco Smoking—Not probably until in ceremonies and exorcisms, the smoke of odoriferous herbs had thus been blown by Indian Priests to the four world quarters through tubes of stone or clay, would sporific tobacco be preferred to other plants, or as *kinnikinnick* when mixed with bear berry leaves, or Osier Cornel under bark, be smoked for pleasure by the Indian inventor of smoking.

Mosaic 325.

Mosaic 337.

The Racoon. (*Procyon Lotor.*)—Cousin to the bear, hybernating in winter, feeding on shell fish, mussels, birds turtle eggs, insects, nuts, fruits, frogs and corn, soaking its food in water, this gray brown animal with white striped tail, dwelling in trees, hunting at night, and a good swimmer, is easily tameable as a pet by man, who has not exterminated him in Pennsylvania.

in diameter, and is limited in its colors, forbids modelling underfoot, and excludes all painting with a brush, demanding that all colors shall be burnt through the entire body, and which further excludes lelicacy of form while demanding strength and width of cement intervals so as to hold the pieces together. In answer to all this it may be said that the potter's effort was in the first place, to keep the work easily within these limits, and in the second to produce patterns which belonged to and grew out of the pavement, in other words produce decorations rather than pictures. In striving for this so as to produce a pattern say of a bird, a plant, a fish, a human being, the pattern should express its meaning to the visitor without ceasing to be a true decorative unit which cannot be restfully walked upon. Here arose the question between a picture on the one hand, and a decoration on the other hand. Granted that upon a pavement there would be more freedom in the drawing of patterns



Mosaic 339.

Indian Symbol Of The Human Head—As a probable representation of the head of a man with protruding scalp lock, the mosaic shows one of the many figusre pecked in outline with hard sharp stones on the east face of Big Indian Rock, in the Susquehanna Rapids at Safe Harbor.

Indian Drawing Of The Spider—Aerial rope-maker and weaver, poisonous, indomitable, potent, the spider has commanded the vinerating attention of the savage. Here the mosaic reproduces a drawing of the Indian who conventionalizing the outline of the insect with great skill, scratches it upon the concave face of a shell, used as a breast plate or gorget.

Mosaic 332.

Indian Representation Of The Rattlesnake—The maligant head with open jaws surrounded by a scaly coil of the deadly rattlesnake, is here represented as scratched by a Mound building Indian upon a gorget or breast plate of mussel shell.

Mosaic 338.

than upon a wall where the outlines would need to harmonize with the structural forms of windows, pilaster, arch or cornice, it may be questioned whether many of these patterns have been sufficiently conventionalized. On the other hand the new method of constructing the mosaics resulting in the cutting up of the whole pattern into a series of blocks bound together by rather broad outlines of cement, some delineating the contours of the design, and others balancing the former without doing so, results in an irregular network of outlines and lines which have removed the pattern no matter how realistically drawn, from pictorial realism.

Lastly, granted that the work is decorative, is it significant, does it speak to the mind as well as to the eye, presenting us with a meaning, historical or symbolic, that harmonizes with the meaning of the building itself and can be clearly explained in words.

GERMAN AND AMERICAN ARCHITECTURE

BY HERR ERNEST VON INHEN, GERMAN COURT ARCHITECT

IT IS with great diffidence that I venture to lay before you some views of my own on the modern development of architecture in Germany, feeling that as it is not possible to give a comprehensive survey of the domain in question, I must be content to submit to you my conclusions without enabling you to judge whether they are sufficiently supported by facts. I am encouraged, however, by the belief that it may be of interest to hear upon this subject the opinion, not of an art historian, but of an architect who has himself passed through some of the phases of modern architecture and who has felt the influences that have led to many of its changes.

Now, the future of architecture as a fine art is inseparably bound up with the vexed question of architectural style, and with regard to the development of style, a review of what the past century has produced would not at the first glance seem to encourage a very bright outlook on the future. There is no doubt that much of the best artistic power of the nineteenth century was wasted in fruitless search for style in architecture and the industrial arts adapted to the age. Though the great invention of that century brought about a more rapid and frequent interchange of thought between nations than was ever possible before, we have seen in our own time, as a consequence of these fruitless endeavors, a greater diversity in the architectural aspect of Europe than there was at the beginning of the eighteenth centruy. No one country has been able to establish an acknowledged supremacy in architecture, as when France at the commencement of the Gothic period, Italy during the Renaissance, and France again in the eighteenth century, took the lead and was more or less closely followed by the rest of Europe, nor does at present any such supremacy seem to be in prospect.

"It seems strange, indeed, that a century which has contributed more than any other in the world's history to the advancement of science, and which has been so fruitful in inventions that have im-

First; A paper read at the opening ceremony of the Carnegie Institute at Pittsburg.
Second; An interview published in the New York Times.

measurably increased the wealth and power of mankind, should have been stricken with barrenness in this one domain of architectural inventiveness. We architects are accustomed to be asked reproachfully why our age has produced no style of its own, as former periods have done, and we are often told that our art has fallen from its high estate and that the best among us have sunk to the part of more or less conscientious copyists. In my opinion this reproach is unjust, and the chaotic state of modern architecture may be accounted for, without assuming that our architects have been lacking in the inventive qualities possessed by former times. The unsatisfactory state of things in the nineteenth century has been brought about by two causes. First, by the destruction of an ancient society and an old accumulation of wealth by the French Revolution, and the Napoleonic wars, and, secondly, by the sudden growth of a new society and new wealth acquired for the world by the introduction of steam power and the inventions which followed in the wake of this great innovation, bringing about a sudden demand after a long standstill—a demand to which the artistic inventiveness of no age would probably have been equal under the given conditions.

At the commencement of his reign, his majesty decided that the buildings to be newly erected in Berlin for the crown and for the state, should be designed in a style harmonizing with the noble architecture of the Royal Palace and of the Arsenal.

Not only the designs for these buildings, but all those of great importance for all departments of the state, are now regularly submitted for his approval and are influenced by his wishes. Continuity of effort I believe to be the principal condition of progress in architecture, and I consider my country to be most particularly fortunate in possessing in this critical period, a far-seeing patron of art so powerful as to insure steadiness of purpose, as far as monumental architecture is concerned.

It is, therefore, a hopeful view that I take of the future development of German architecture, and there can be no doubt that in Germany the misfortunes that caused artistic decline in the nineteenth century had a more disastrous effect than in any other country, for none had suffered so severely from. the great European wars in England and France. Political unity has brought about greater artistic unity. As far as I am able to judge, the development of style in both countries has been following lines almost parallel to our own, the result of a century's trial given to different styles, being a decided leaning toward the classical architecture of the eighteenth century, based, as with us, on a more complete understanding of that style, and ,therefore, on a greater mastery of the possibliity of a greater freedom of treatment than ever nineteenth-century architects attained to, who attempted to work in the style of a former period.

I may sum up my argument by saying that in my opinion there has been in the history of architecture, a progressive, though sometimes interrupted, development of style as an expression of the architectural requirements of society from the fifteenth century up to the nineteenth, and that in order to progress still further, we must start from an advanced point that had been reached before the continuity of progress was interrupted. Yet if we would not stand still, we must constantly work at the adaptation of old means to new wants which have risen, and are arising, in our time. In domestic architecture much has been done in this respect, especially in England, and of late years in Germany, But in no country is progress more likely to be brought about in this way than in the United States, where architects have already shown themselves well able to grapple with new architectural problems arising from new requirements, as in your admirable libraries, or from new methods of construction, as in your giant commercial buildings, and when the opportunities offered to architects are more frequent and the means at their disposal greater than in any country or in any age. The advancement of art has always been promoted by the peaceful rivalry of nations, and I therefore feel sure that the art of European countries can only gain by our finding, as we certainly shall, in the United States of America, a competitor as formidable in the domain of art as they are in commerce and in industry.

ARCHITECTURAL DEVELOPMENTS IN THE UNITED STATES

I see the greatest hope for a magnificent architectural future for America. You are at work meeting conditions. That is the thing that architects have always to do. No nation can achieve a national architecture whose artists say, ' Let us build in the Gothic style,' or, 'No, let us build in Romanesque; that is better.' A country has simply to begin and build; it will start with what style it believes best suited to its particular problems, but it will develop just as it appreciates its needs. I have my idea as to what historic style is best suited to be the foundation of your architecture, but you may find another to be the best one. That doesn't matter. The point I make now is, that you in America are earnestly striving to meet the particular problems of buildings fitted for dwellings, business houses, and public halls in America—problems different in many respects from any hitherto attacked by architects—and you are meeting these problems with a surprising degree of success, considering how brief has been the time during which you have been at it.

New York is most impressive in the daring and untrammeled spirit in which it is thrusting up its gigantic fabrics into the air. Consider, whoever before undertook to erect what is almost a city under a single roof on such a plot of ground as that on which stands that 'Flatiron building'? And how brilliantly you have dealt with a similar problem in the Times building.

You do right, precisely right, to treat these tall buildings frankly as towers. That is exactly what they are. Already you have the campanile of Giotto standing in the most conspicuous point along your thoroughfare, and, I believe, other great towers reproduced in other parts of the city.

Your problem has been to make the most of every inch of land. The concentration of the people in the city has brought conditions from which architects of former years have been free.

I must say that I believe that the limits of high buildings will soon be reached, and that their multiplication will soon cease. You are closer, possibly, than you think, to the point at which it will be impossible to transport more people to and from their work. It is all very well to have these immense towers here and there, and perhaps gathered in considerable number in some parts of a town. But if the streets are to become great canyons lined with solid blocks of towers, it will be eventually impossible to get their inhabitants in and out. Then the the question of daylight will be one incapable of solution. You will, I think, find it advisable and necessary to limit the height of buildings, as we do generally in Europe.

But to return to the question of style. People often ask why we have no style today, why we are all adrift as to the most elementary principles of the art, and reveal so often the most execreble taste.

The reason, I believe, is this: Until within the last few years architecture has had no chance. The nineteenth century was one of war, and of disturbed social and political conditions and of general poverty.

Now that we are prosperous again and minded to build, we shall do well if we go back to the eighteenth century and begin again where architects left off. Why begin at the beginning? Why puzzle again over the problems which earlier centuries have definitely settled? I consider that there are certain things pretty well determined in architecture. The sixteenth century definitely discarded Gothic as a style for domestic or commercial architecture. Conditions of life have altered since the days when Gothic was properly employed, and it is mere slavish imitation to build in it now. I do not speak of ecclesiastical architecture. Religion is essentially unchanging, and its aspirations express themselves in permanent forms and stretching from age to age. But domestic life is not to-day what it was in the Middle Ages, and commercial life in its modern sense is a new thing in the world.

My belief is, that the world was right in agreeing, as it did, that the classic form was the one which might best be progressively adapted to the needs of modern life. In the eighteenth century, it had reached the highest development, for its purpose, of the classical style. My feeling is, that we are wise in going back to that point, not to rest in its acachievement, but to progress from it, having in mind always the necessity of studying our particular problem and in dealing with it freely and creatively, yet with intelligence informed of the history of past architectural endeavor.

The information is acquired. The creative spirit is more a native gift. It is the evidences of it that fill me with confidence that great architectural triumphs will be wrought in this land of the west.

THE RELATION BETWEEN SCULPTURE AND ARCHITECTURE

BY GEORGE JULIAN ZOLNAY

IN comparing the different epochs in the development of art, it appears that at various times the relation between sculpture and architecture was better understood and therefore more intimate than it is at the present day. One of the causes responsible for this lack of unity between the sister arts, is the very small number of statues used on modern buildings; even in Europe—excepting perhaps Budapest,—decorative figures are rare compared with certain periods of the past.

Under these circumstances the architect and sculptor naturally lack experience in properly handling these two elements, and it is not surprising that the result is not always satisfactory. On the other hand, when sculpture is combined with architecture, some sculptors are apt to imagine that their share is so important, that it ought to be the dominating factor in the work. They seem to forget that, unless their statutes are conceived and executed in a manner to become, by virtue of a certain architectural quality, an integral part of the structure, they are

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incongruous and harm the building in its artistic essential, which is unity of expression.

If we analize the historic cycle of architecture, we find that the Gothic period, more than any other, has produced the most perfect union between statue and building; and those who criticise and make fun of Gothic statues as being stiff, lifeless and devoid of nature, far from discrediting these great works of the Middle Ages, only exhihit their profound ignorance of the fundamental precepts of all good art: The immutable law of unity, which in this case requires above everything else a certain formality and architectural character of any statue placed upon a building. It would be just as absurd to place a naturalistic figure against an architectural background, as it would be to make up a Corinthian capital of naturalistic vines and cabbage leaves.

The logic of this statement must be found in the fact that, although architecture derives its elements from natural forms, these original forms of nature are necessarily modified, conventionalized and made sufficiently formal to produce a perfect sense of strength and repose, known as monumental quality which distinguishes good architecture from bad architecture.

This being the case, it follows that the decoration of these architectural elements, like the elements themselves, must be formed in character; therefore, a decorative statue, by its very nature being an allied element of the architectural ensemble, must be formal, as a naturalistic treatment of it would disturb the harmony of the entire conception.

But how can we produce formal statues without destroying the elements of life and truth, which must underlie even the most formal representation of the human figure. While there is no set formula by which this can be accomplished, there are a few precepts which at least will facilitate the task.

First of all, there is the artist's mental attitude born by the conviction that, his work being the accesory of an architectural problem, his first consideration must be to make it part and parcel of that problem. This may not seem to be of very great importance and by its very simplicity, may fail to carry conviction; when we bear in mind, however, that art is primarily mental, we must recognize the tremendous force of this factor.

As this mental attitude bears upon the conception and composition or design of the figure, so in the mechanical treatment or design of the figure, so in the mechanical treatment of the work, the great law of masses will determine the ultimate result.

Once convinced of this truth, it would seem a simple matter to conquer the mysterious impulse of putting on as much detail as the surface can hold. Nevertheless the seemingly easy task of avoiding over-elaboration is so tremendously difficult, that we cannot master it without the greatest efforts. Gradually, as our work matures, the power of restraint grows strong enough to check this inherent tendency, and it is this restraint which is the foundation of all great art: The real difficulty in our professions is not to acquire the ability to produce the component parts of the work, but to be able to refrain from exhibiting our dexterity.

Over-elaboration is a fatal mistake, logically as well as practically, for it always conveys a sense of hidden weakness, whether in reality it is there or not. On the other hand, no matter what we may think of the lack of discrimination by the public, it can safely be assumed that such subterfuge is soon discovered. The people, as a mass may not be able to express their observation in concrete form or definite language, but there is no good reason to think that they do not feel it. At all events, it cannot be denied that superfluous ornamentation or detail, as the case may be, is detrimental under all circumstances. It reduces the effectiveness of light by breaking up the surfaces; it conveys a feeling of weakness, and lastly, it unnecessarily increases the cost of the work which, prosaic a matter as it may be, is of considerable consequence.

What we have found in the Gothic period, is repeated by the sculptors and architects of the Renaissance, and in both cases, the wonderful unity of their work must be attributed to an additional factor which probably is the most powerful of all. The architects and sculptors of both periods, but more particularly those of the Renaissance, knew each other's profession. Michael Angelo was a great an architect as he was a sculptor; so was Sansovino, and most of the great masters of the fifteenth and sixteenth centuries. Each having mastered his co-worker's art, perfect unity of the combined work was assured in advance, and it would seem fair to assume that if we were to bring about the same conditions to-day, we should be able to repeat the achievements of these great periods in art. There is no reason why we should not be able to bring about the same conditions. We have the constantly growing wealth of the country, wealth as the world has never seen before, and the time is rapidly approaching when the wealthy will no longer be satisfied with a residence as we understand it now, but will want a palace.

The masses will not remain content with a purely utilitarian aspect of our cities, but will demand a City Beautiful, all of which will require the combined work of architect and sculptor, who, when the time comes, should be ready for this logical development of the aesthetic side of our national life. To effectually prepare them for it, we must give the student of architecture opportunities to acquire at least a working knowledge of sculpture, and for the sculptor and painter establish in every art school, courses on architectural principles similiar to those at the Imperial Art Academy of Vienna and the Saint Louis School of Fine Arts, where the students receive systematic training in the artistic application of architecture, which in its highest form is the epitome of all the arts. This done, we may look forward with confidence to the great American Renaissance, which, considering our vitality and resources, should surpass the Golden Age of Michael Angelo in scope and splendor.

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PITTSBURGH ARCHITECTURAL CLUB EXHIBITION

From present indications the coming exhibition of the Pittsburg Architectural club, which is to be held in the art galleries of the Carnegie Institute in November, will be the most important yet conducted by that club and one of the most artistic and complete ever held in this country. The committee in charge of the exhibition, which will be the fourth of its kind held by this club, includes: Richard Kiehnel, chairman; D. A. Crone, vice chairman; Stanley L. Roush, secretary; James M. McQueen, treasurer; M. A. Vinson, business manager; John T. Comes and Benno Janssen. Thomas Herron will be chairman of the committee on entertainment and L. B. Lee on securing exhibits.

The exhibition is free and purely for professional and educational purposes. It will consist of drawings and plans of the most prominent buildings in the world, of the handsomest recently erected and of architectural designs of various kinds. There will be a gallery devoted entirely to interiors, showing the growth of the new movement to replace the old-time stiff and conventional interior decoration of both public and private buildings with up-to-date and artistic designs. There will be a gallery devoted to poster art as applied to architectural subjects. Descriptive drawings from the leading technical schools will show the latest trend in the teachings of the architectural schools. The latest developments in European ideas in different classes of architecture, will take up almost a complete gallery. A most artistic and beautiful feature of the whole exhibition will be the section showing the more recent statuary and sculpture used for architectural decoration both at home and abroad.

NORTH CAROLINA ARCHITECTURAL CLUB

The North Carolina Architectural Association closed its annual convention yesterday afternoon at the Jamestown Exposition, after electing officers, selecting the next place of meeting and going through with a great quantity of routine work. Charlotte, N. C., was selected for the convention next year, after numerous ballots, and the following will serve as officers for next year:

President, Charles C. Hook, Charlotte, N. C.; vice-president Charles W. Barrett, Raleigh, N. C.; secretary and treasurer, Franklin Gordon, Charlotte. N. C. The members of the Board of Directors are: Charles McMillen, Wilmington, N. C.; C. L. Hartge, Raleigh, N. C.; Charles C. Hook, Charlotte, N. C.; Charles W. Barrett, Raleigh, N. C.; Franklin Gordon, Charlotte, N. C.

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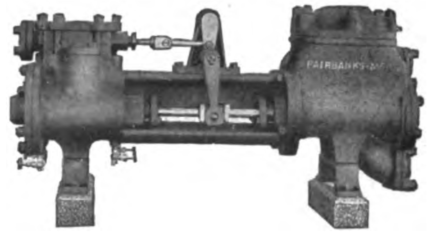

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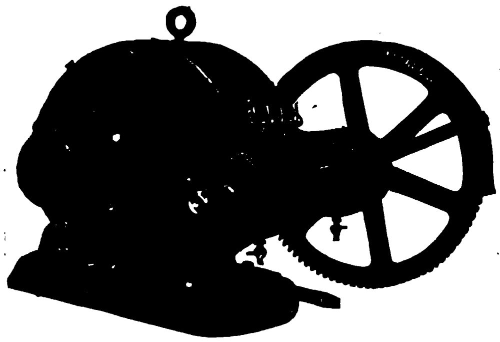

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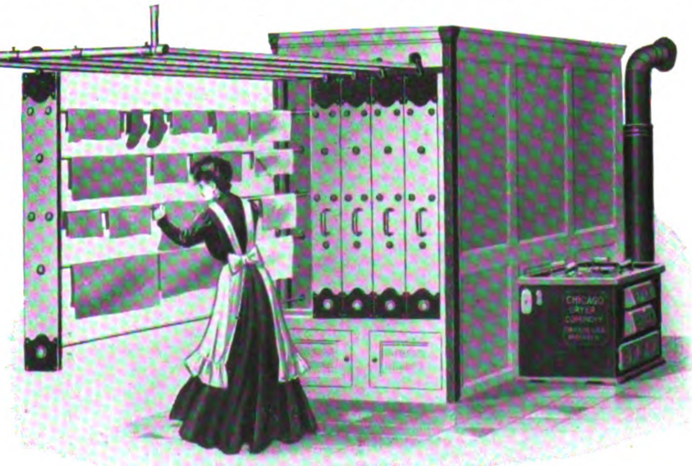

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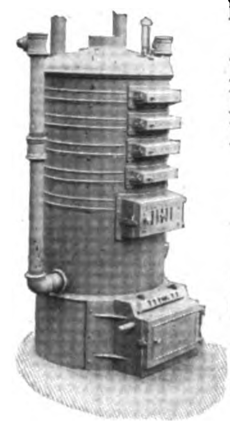

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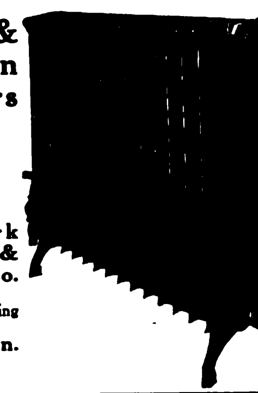

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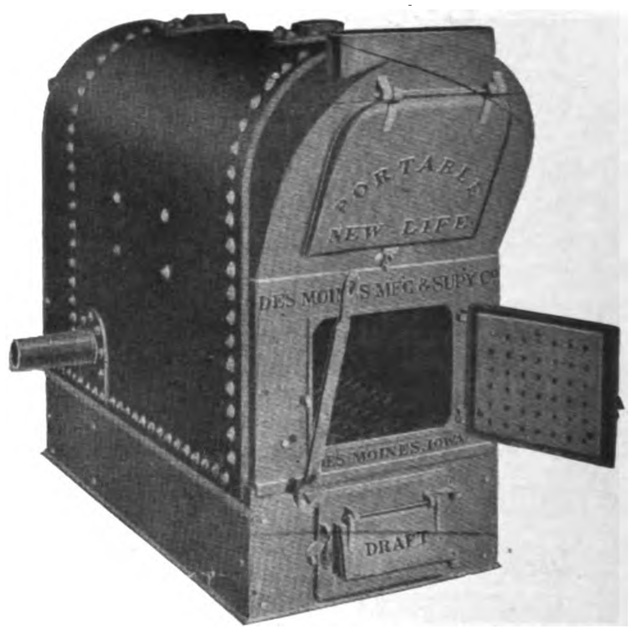

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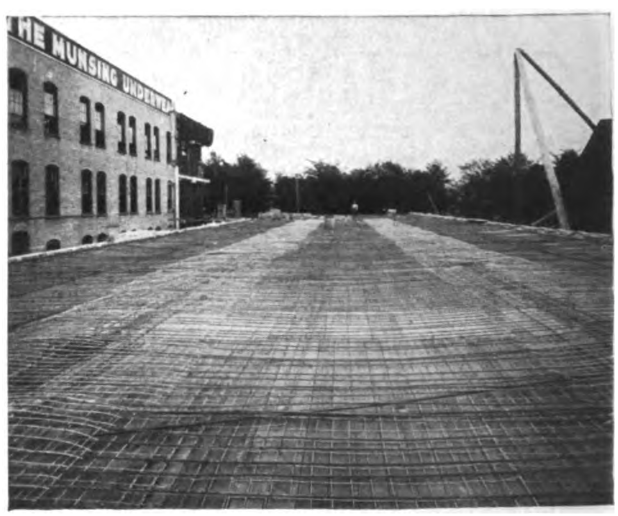

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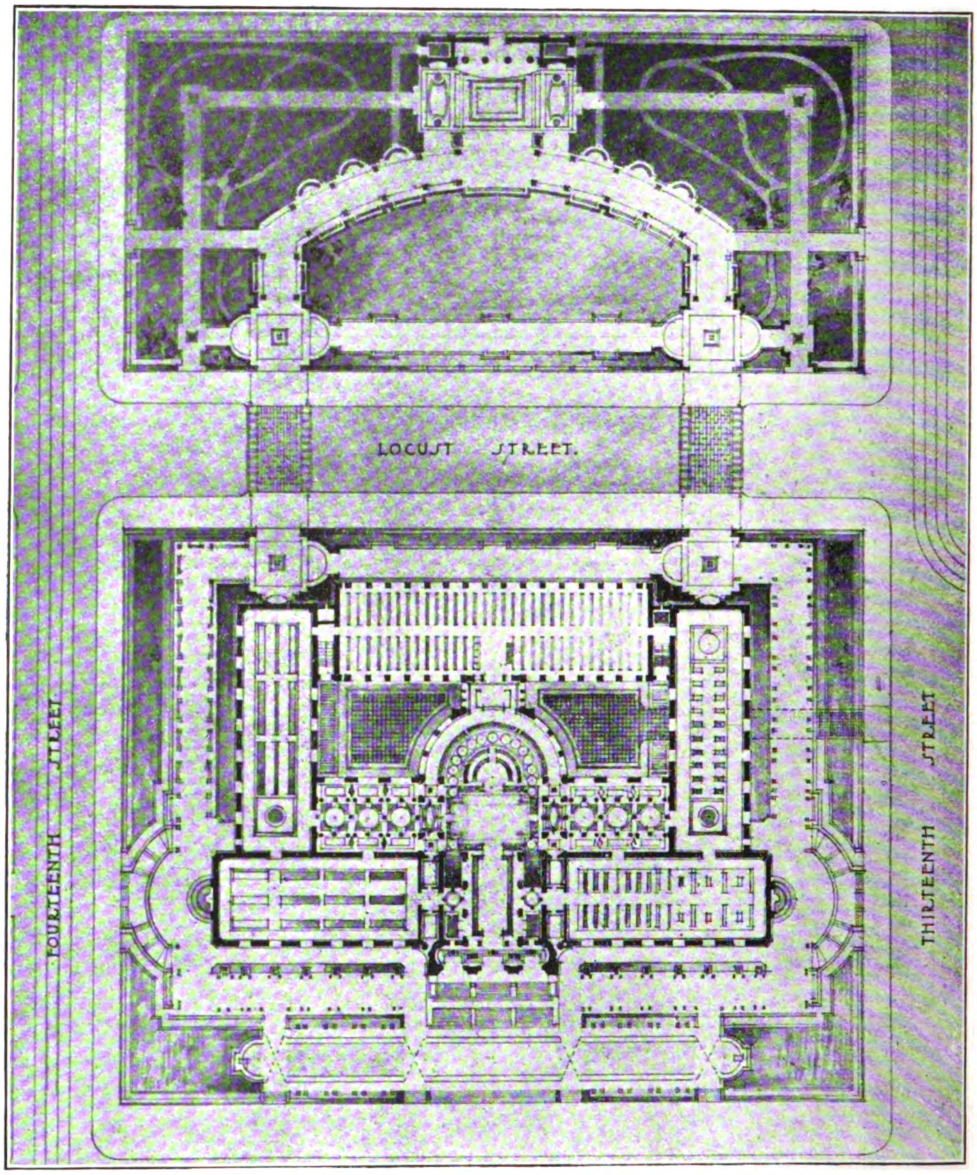

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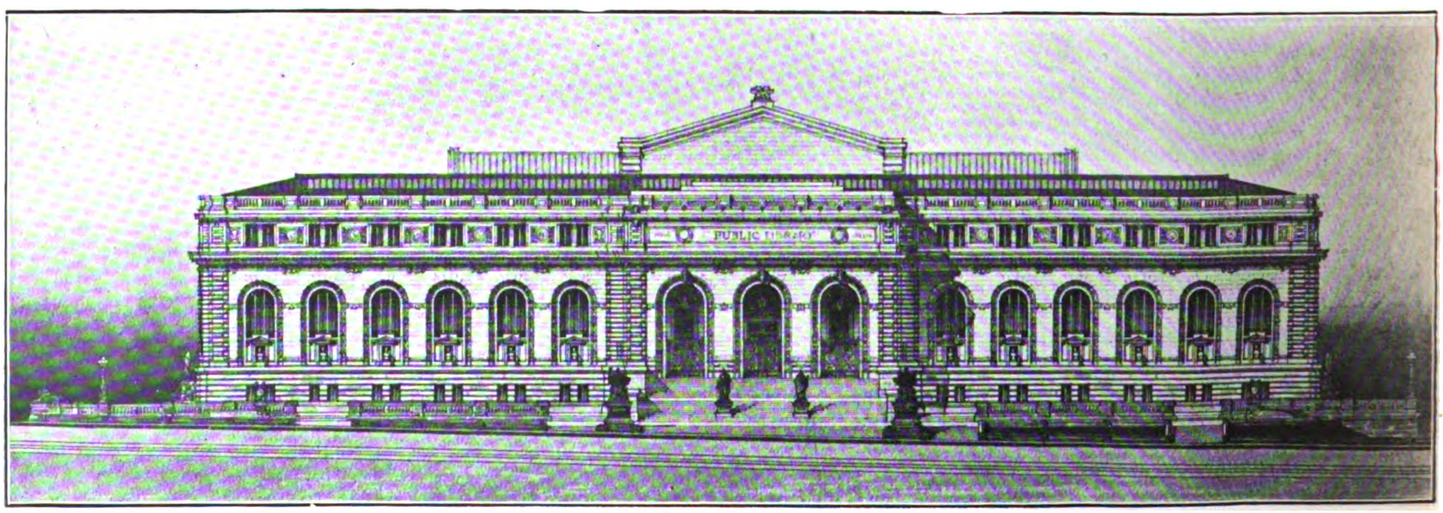

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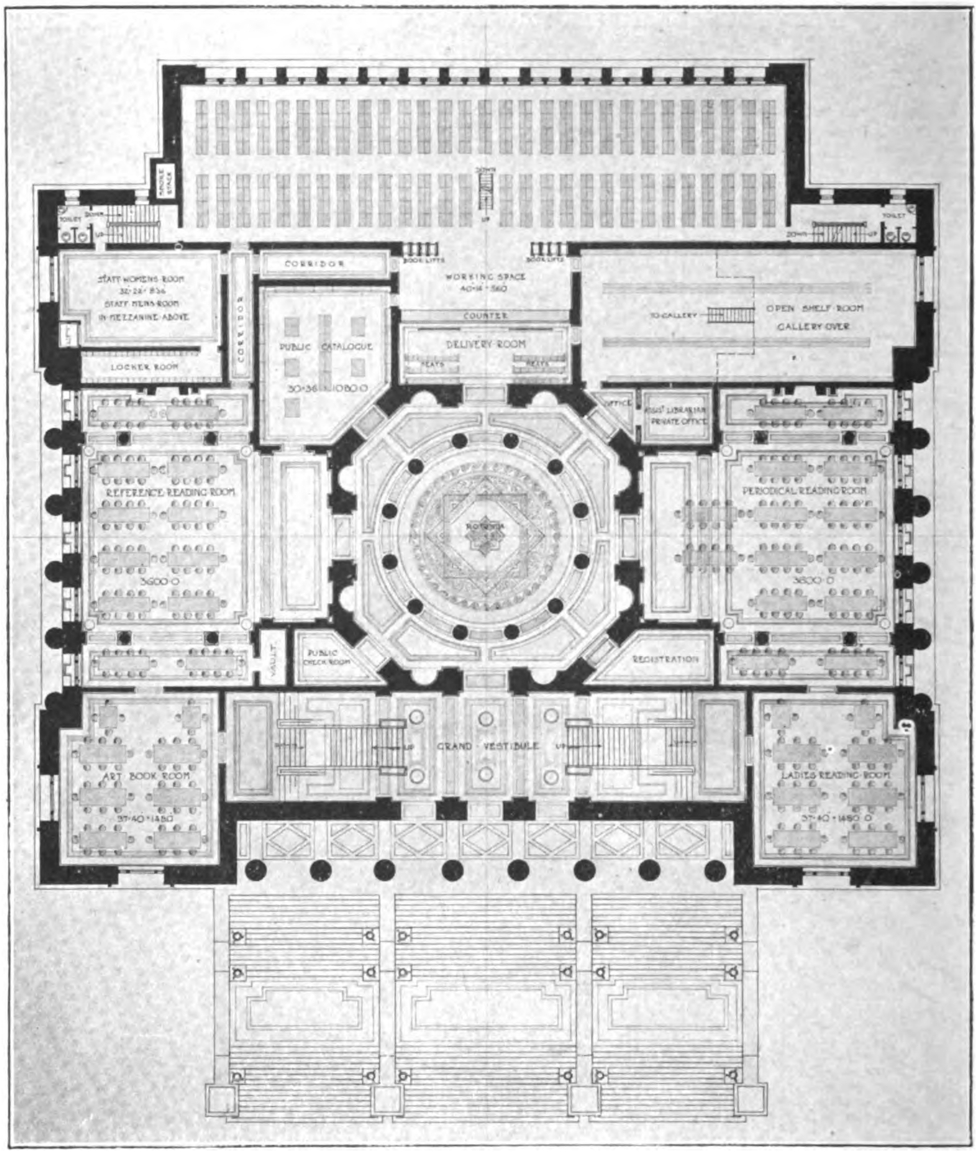

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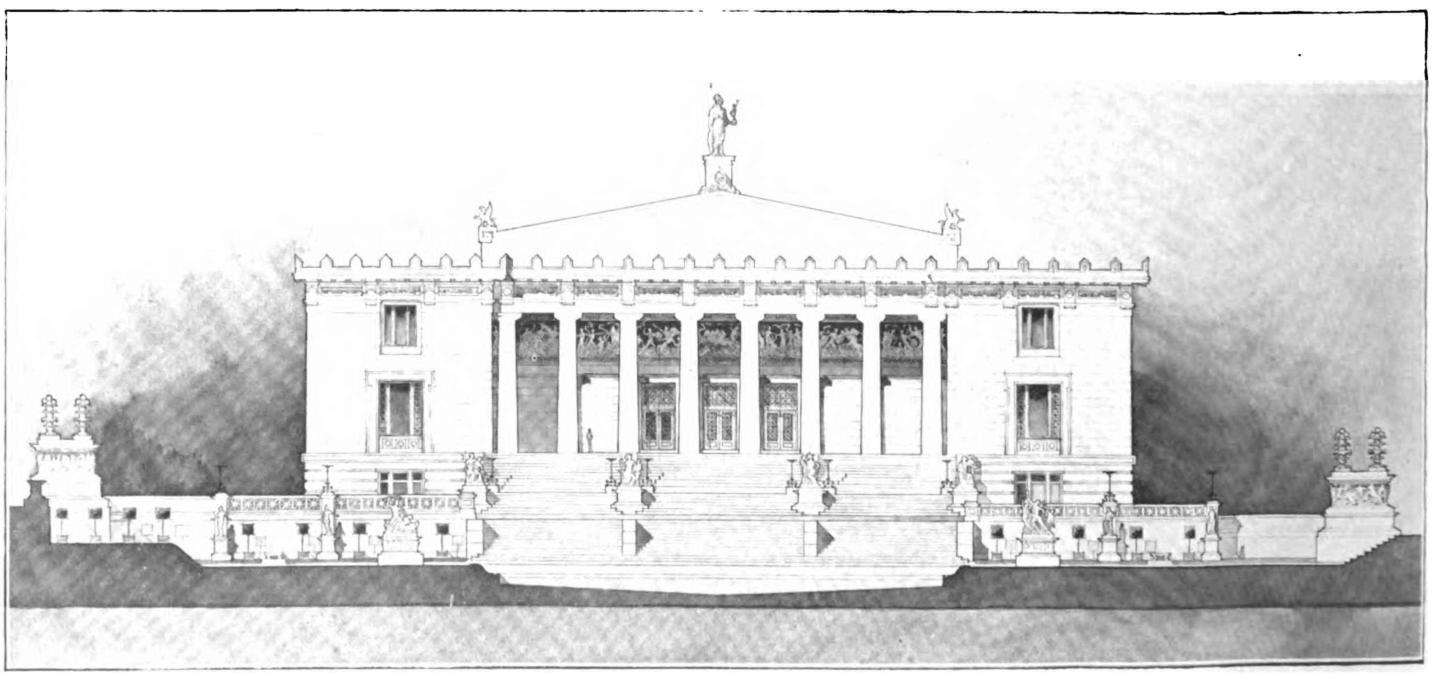
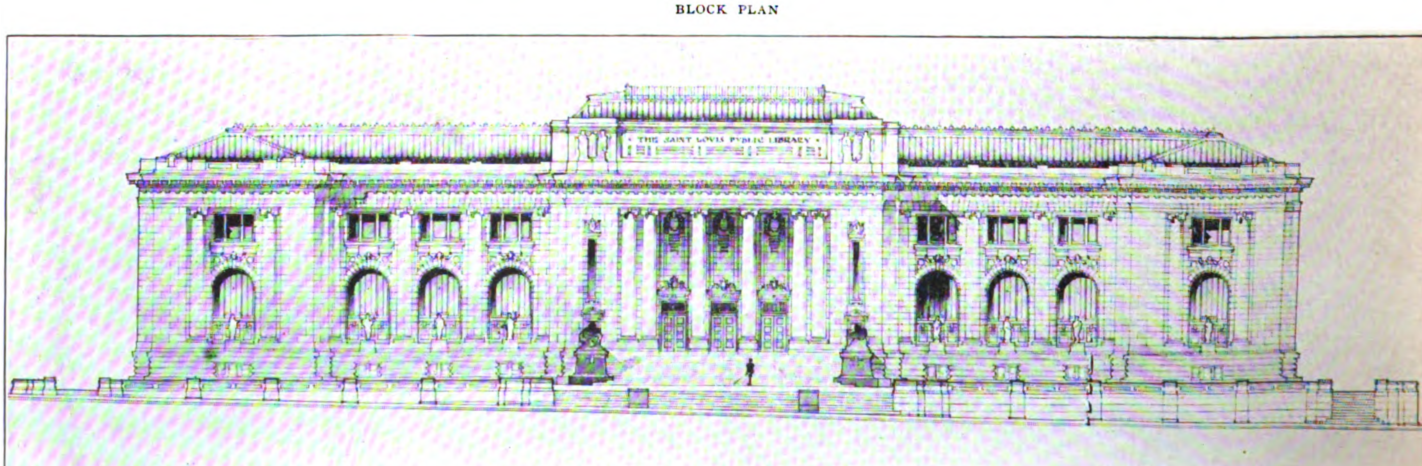


COMPETITION DESIGN

FRONT ELEVATION

BARNETT, HAYNES & BARNETT, ARCHITECTS

BLOCK PLAN



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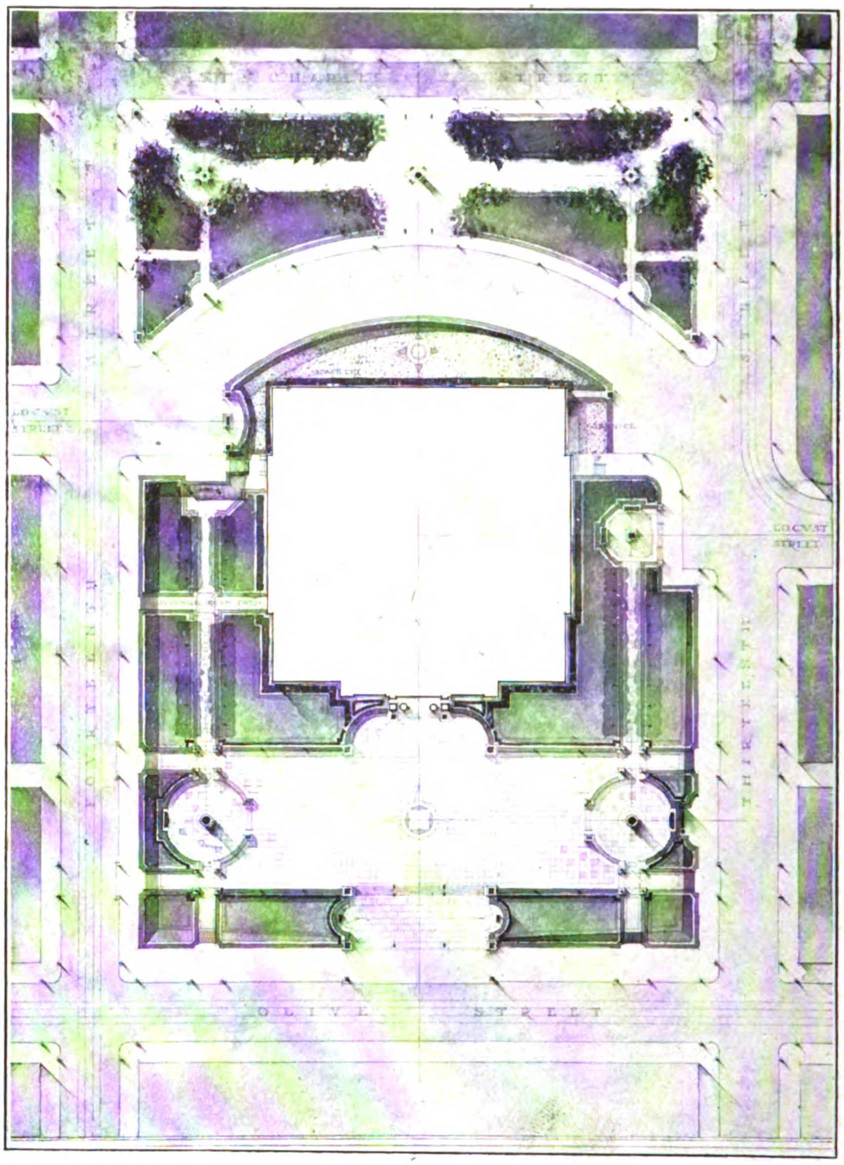

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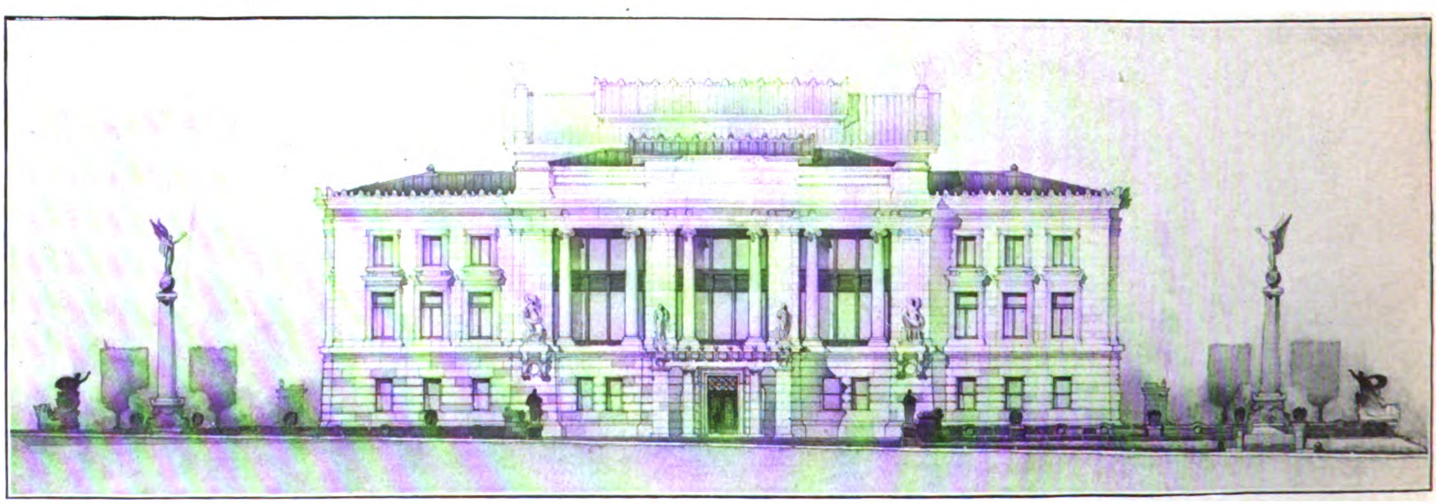
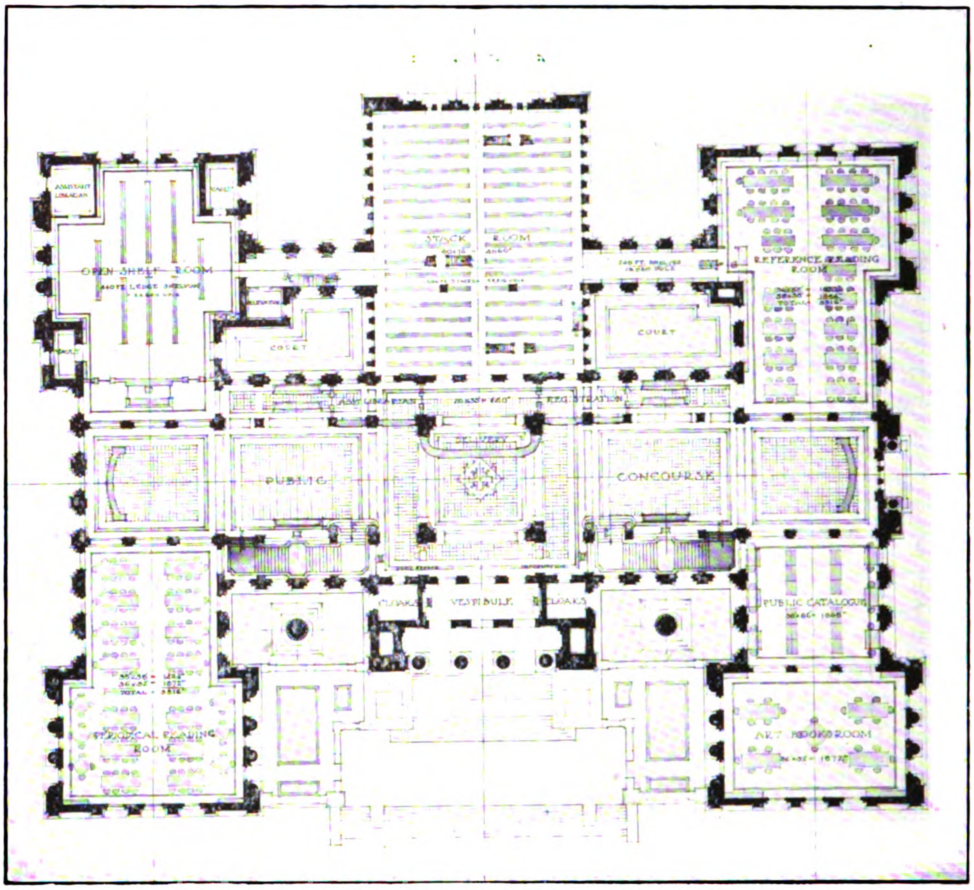


COMPETITION DESIGN

FRONT ELEVATION

MAURAN, RUSSELL & GARDEN, ARCHITECTS



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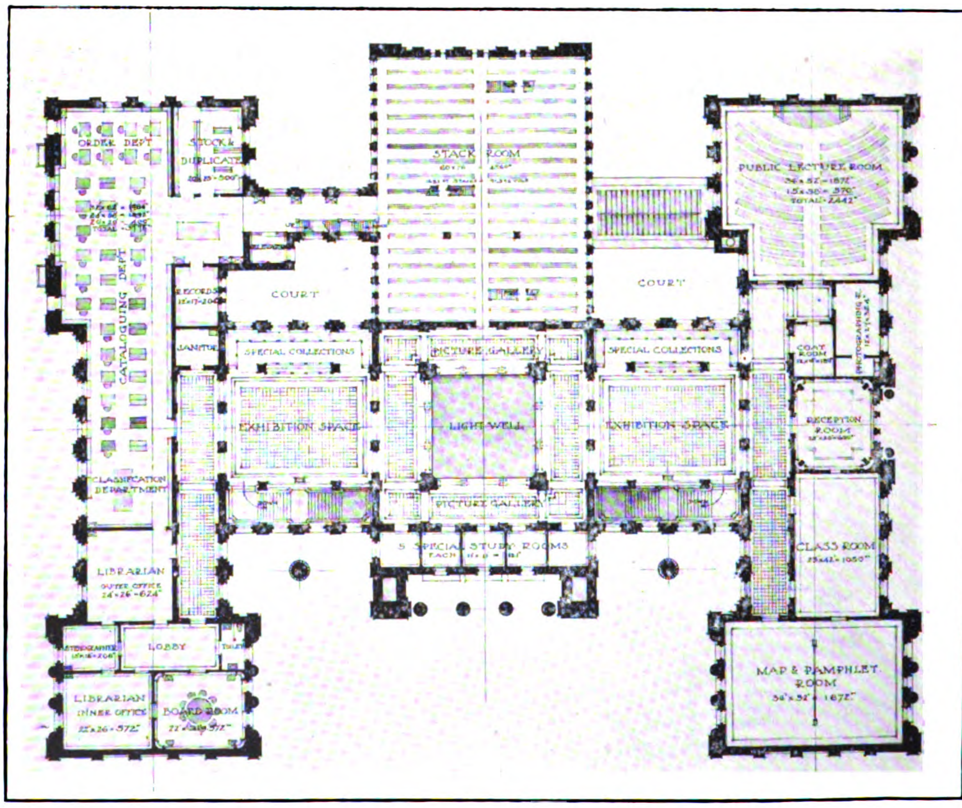
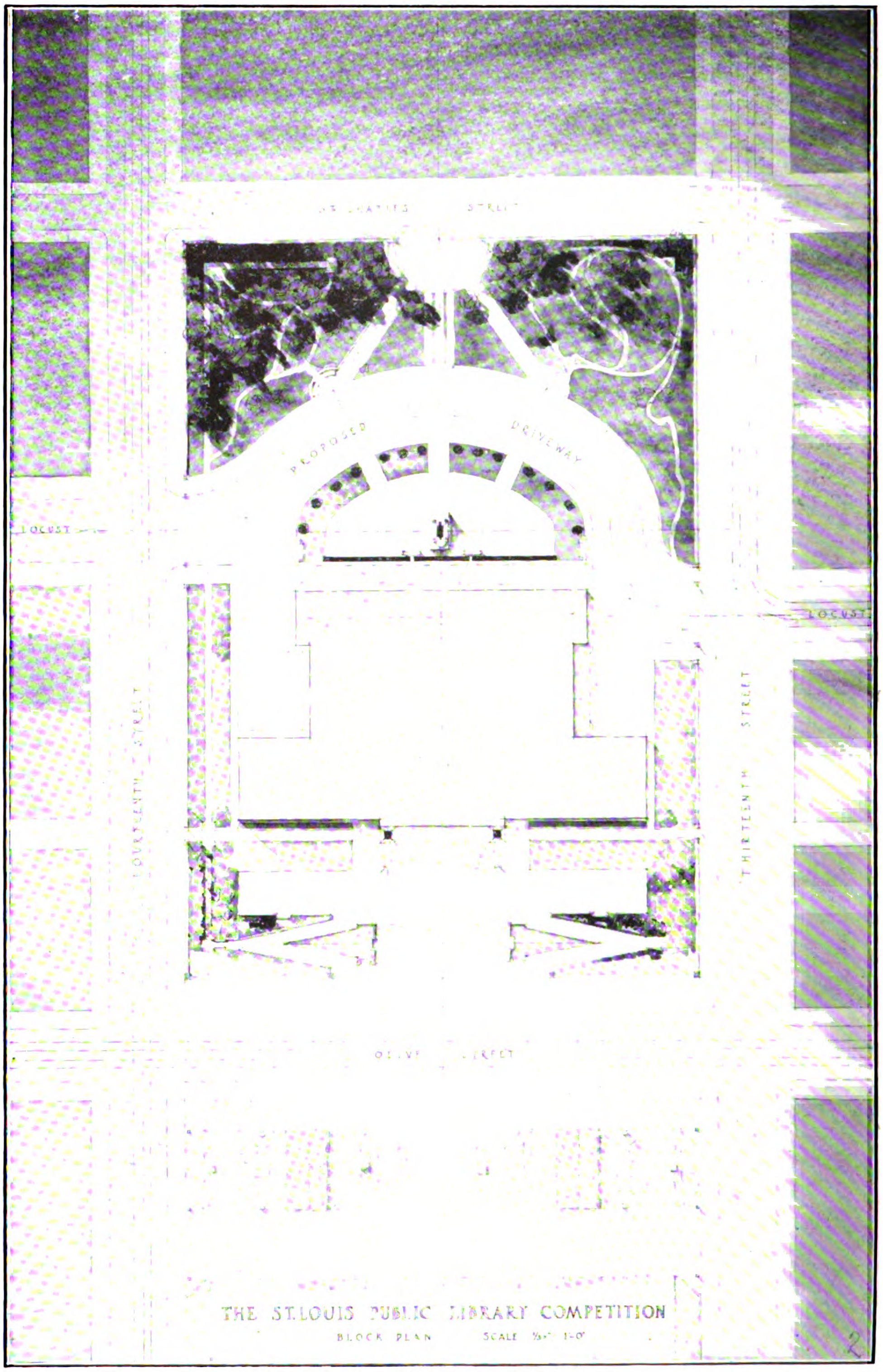


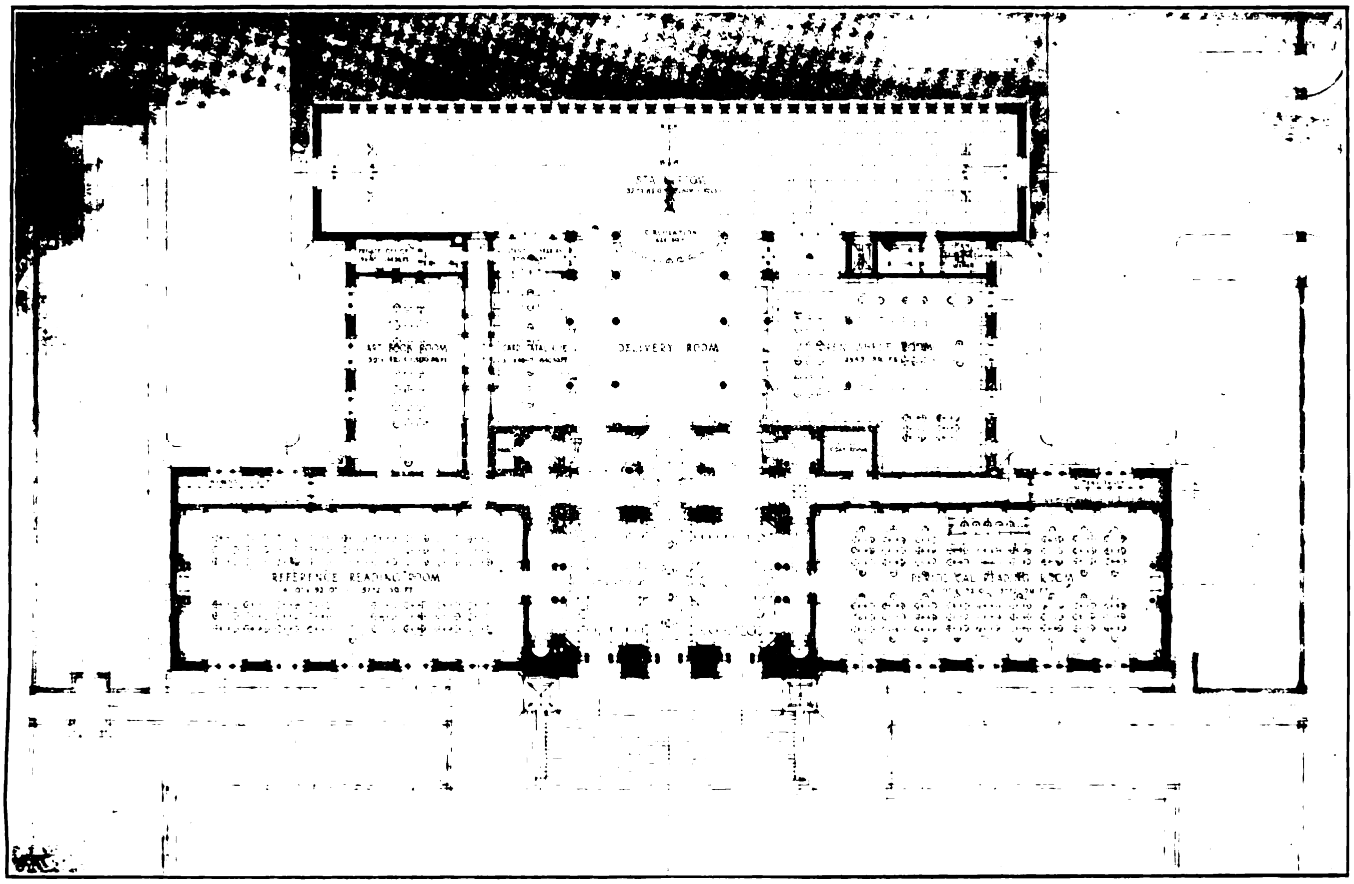
SECOND FLOOR PLAN

T. C. LINK, ARCHITECT



BLOCK PLAN

WM. B. ITTNER, ARCHITECT



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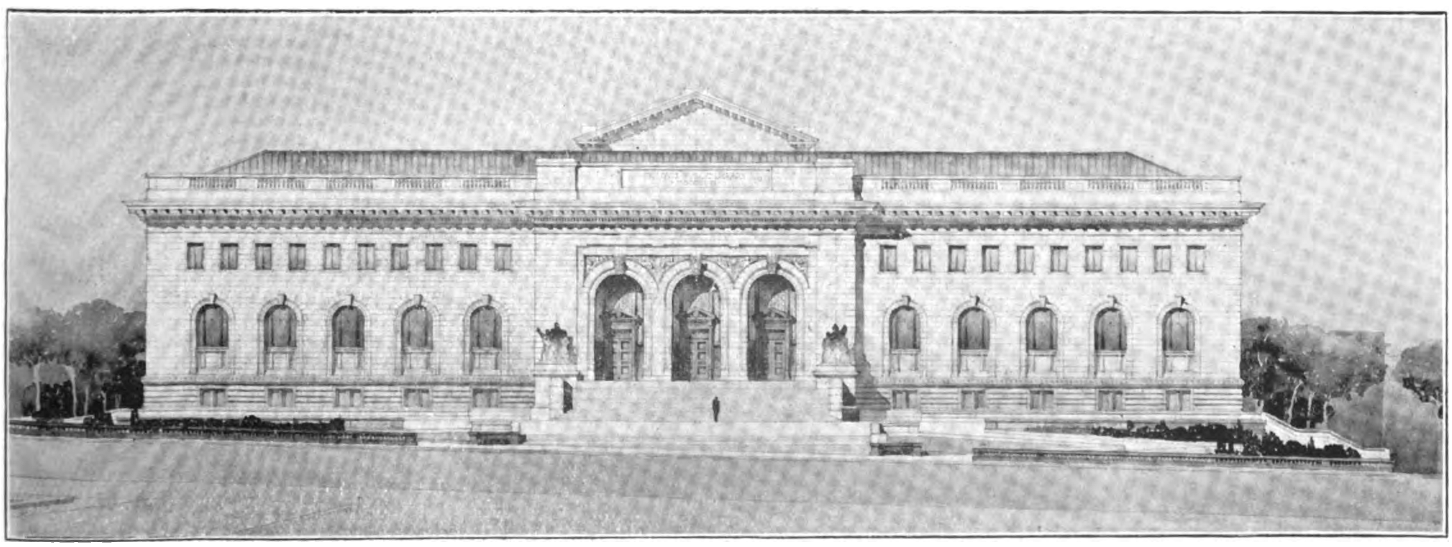

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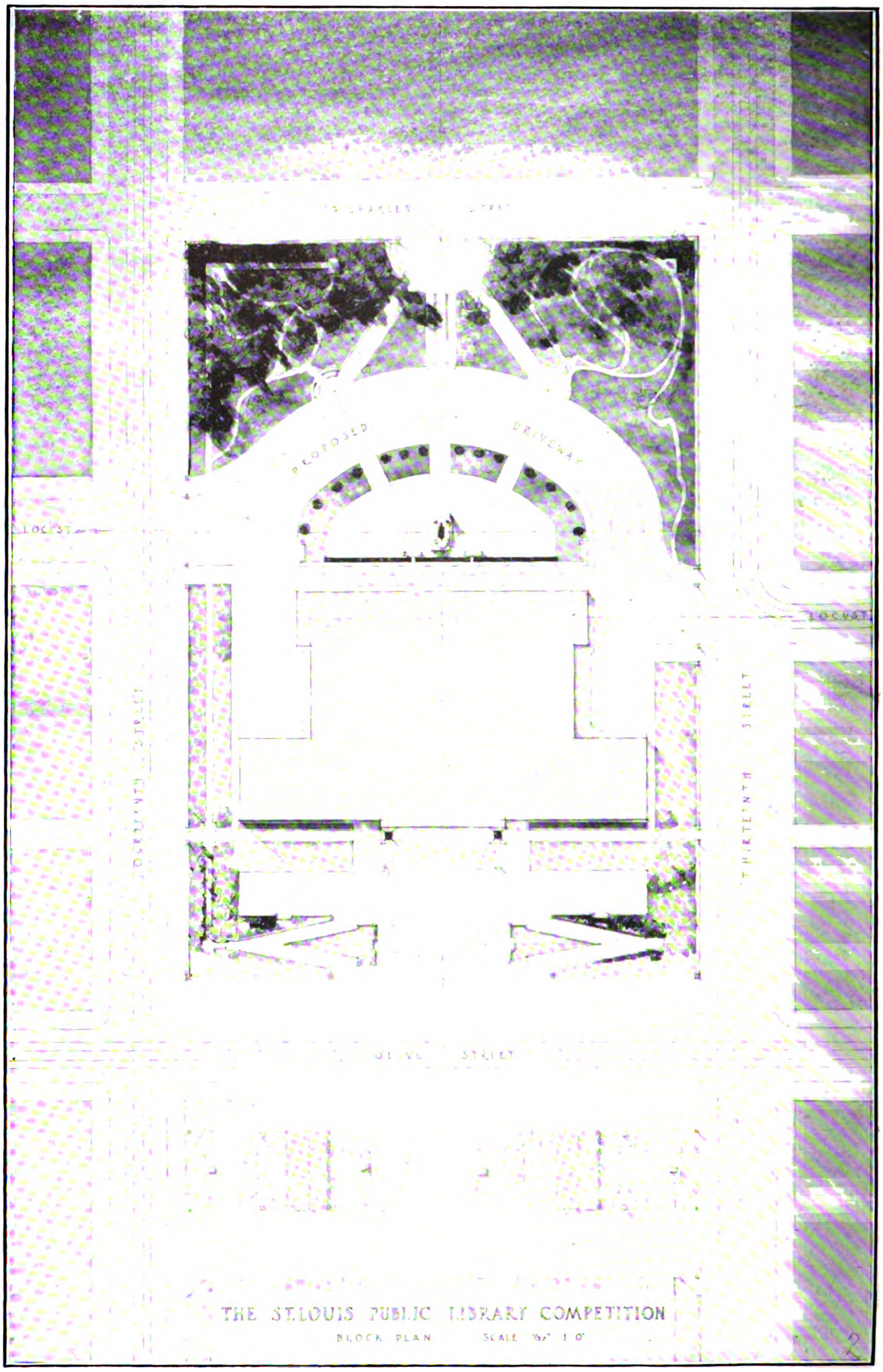

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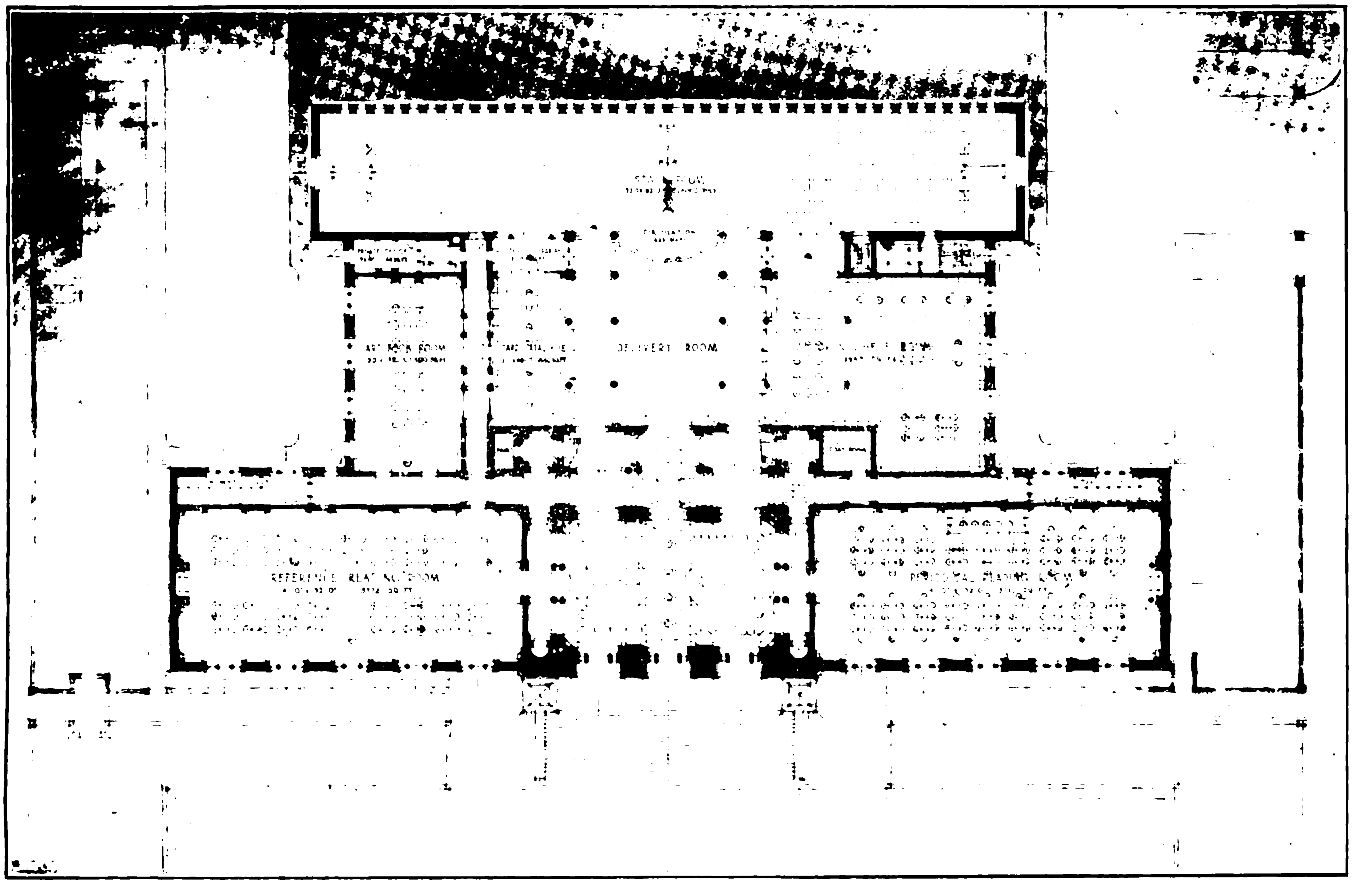

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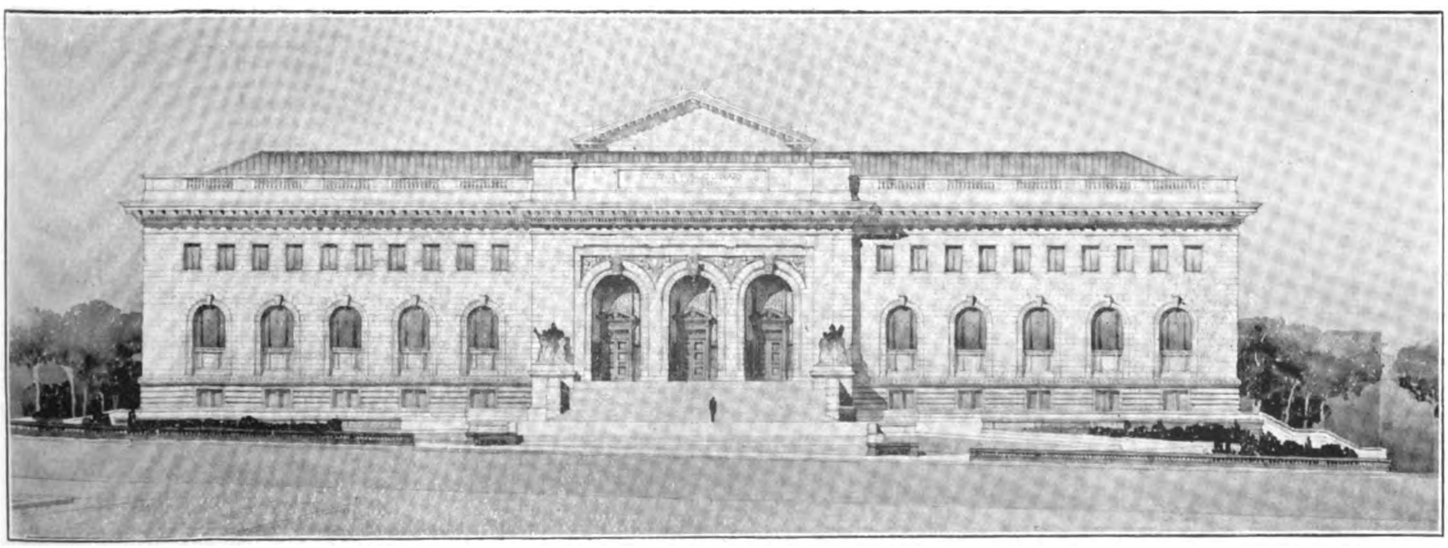

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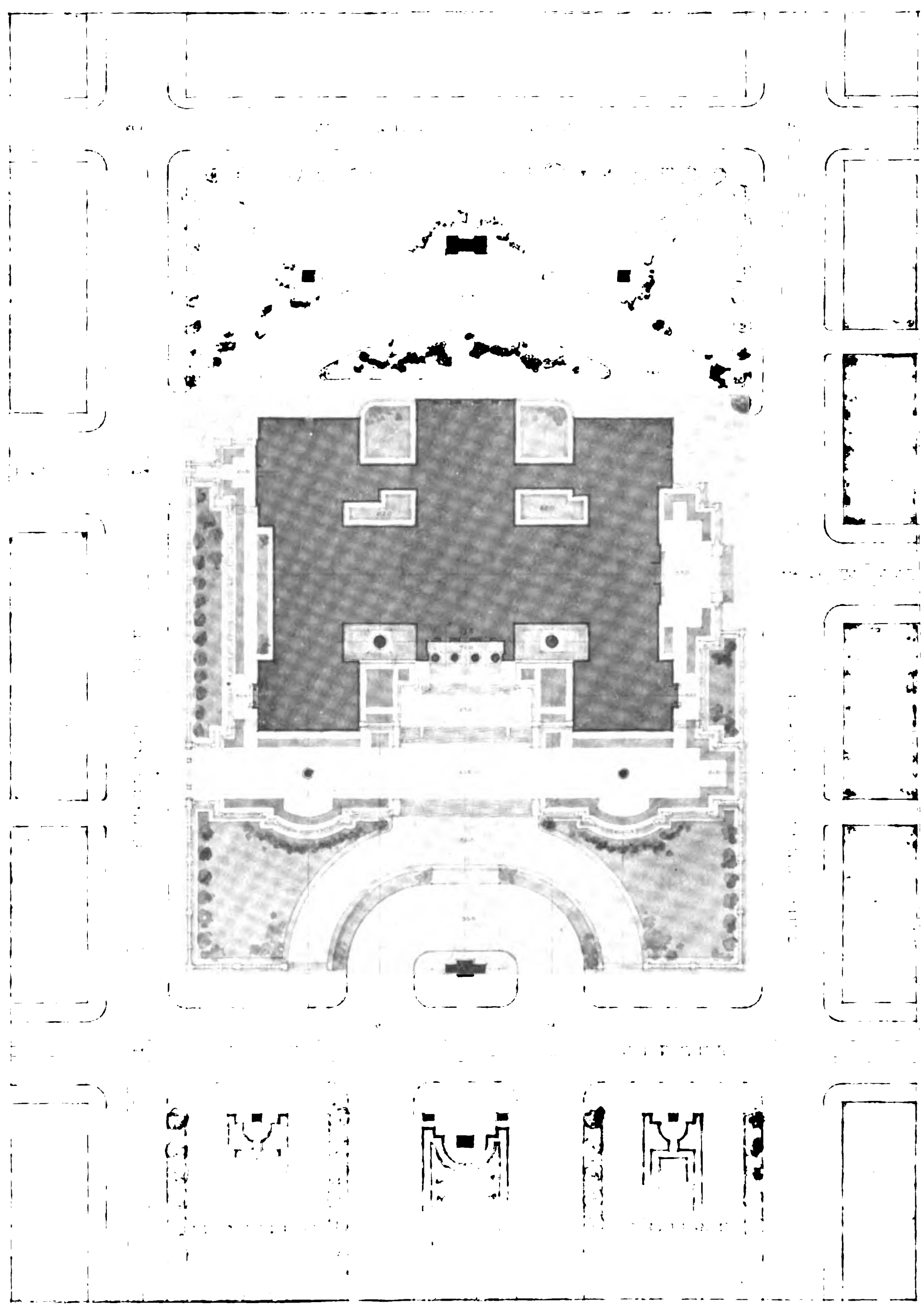

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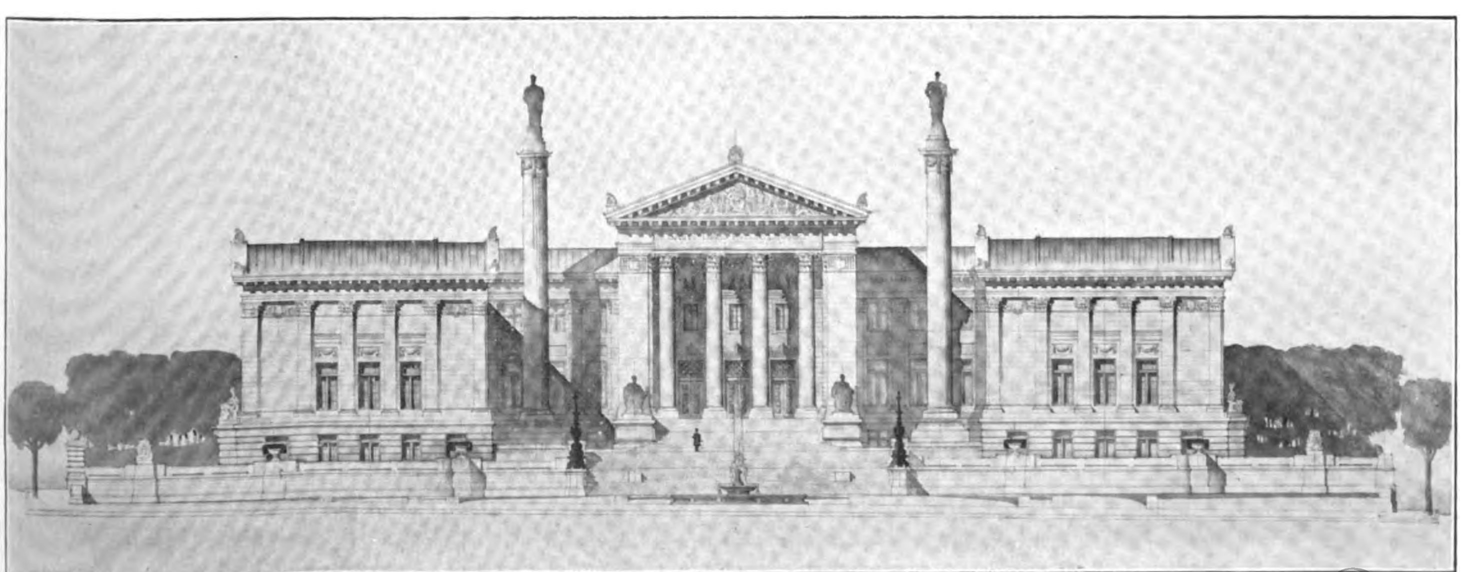
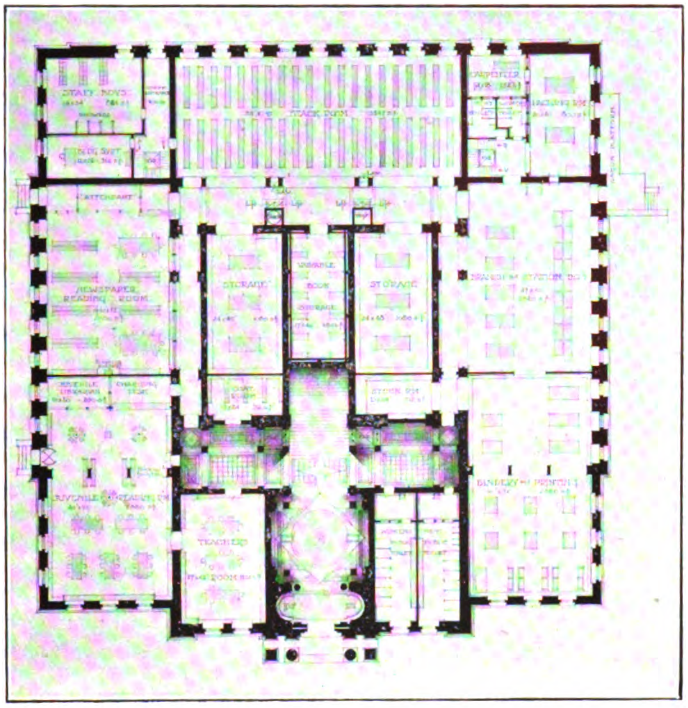
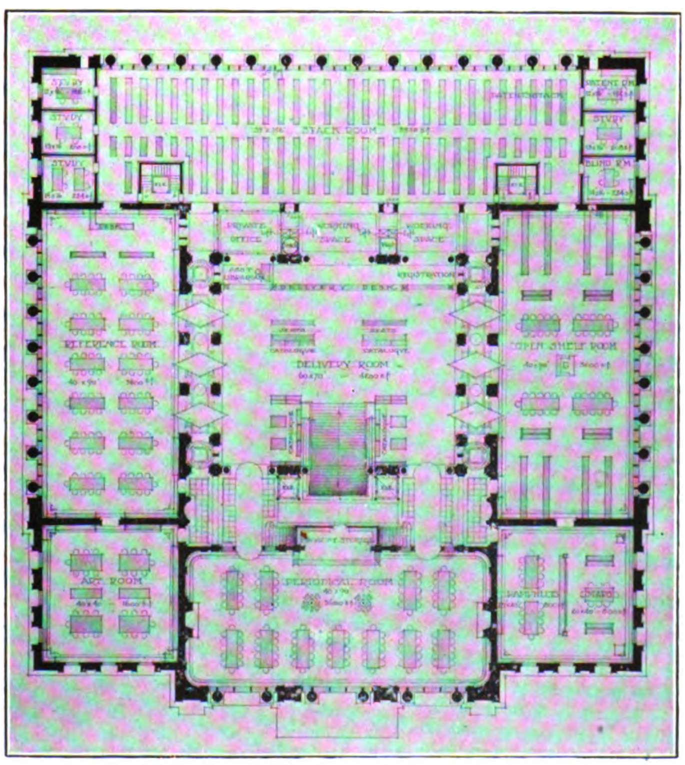


COMPETITION DESIGN
FRONT ELEVATION



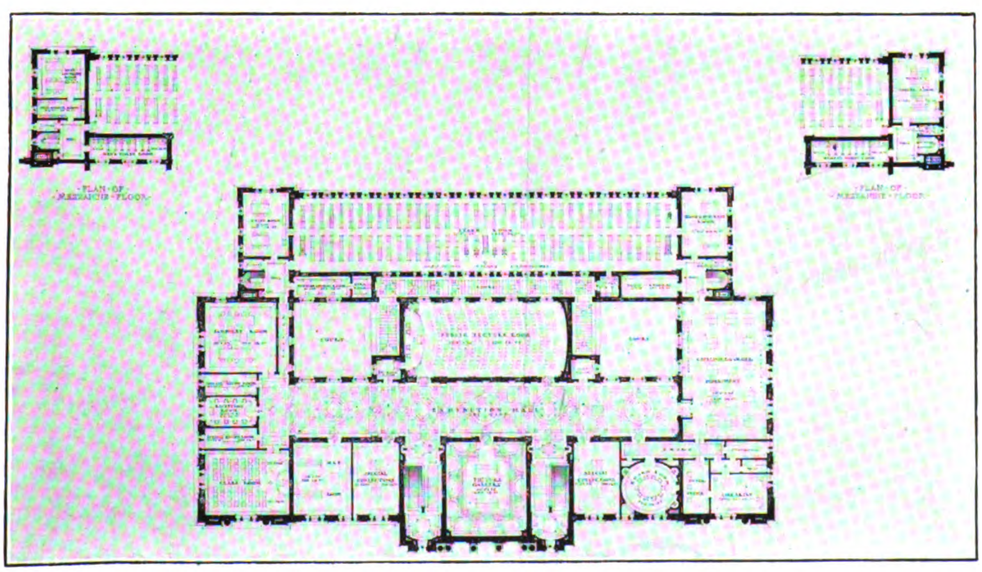
GROUND FLOOR PLAN



MAIN FLOOR PLAN

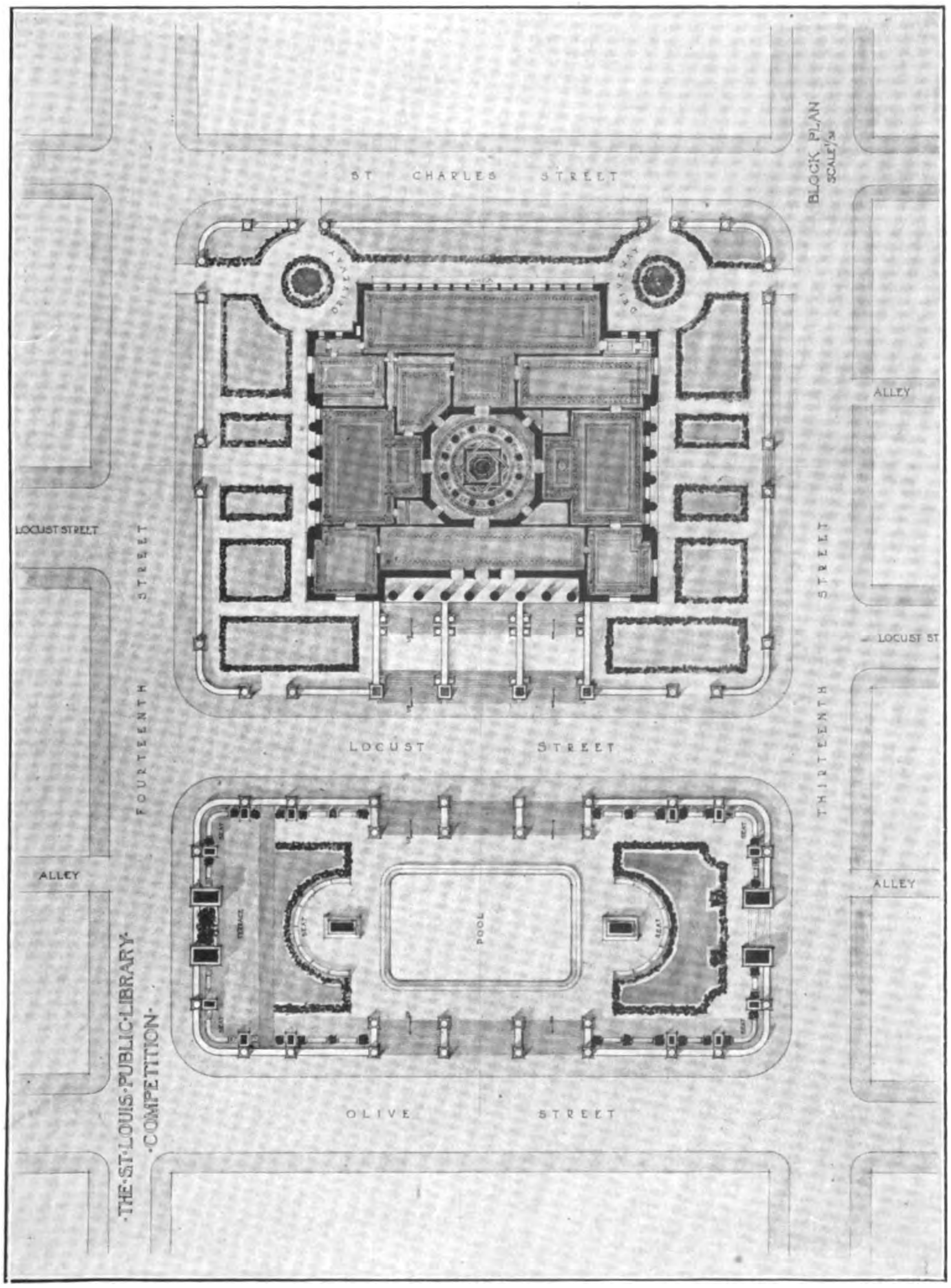
MAURAN, RUSSELL & GARDEN, ARCHITECTS

FIRST FLOOR PLAN



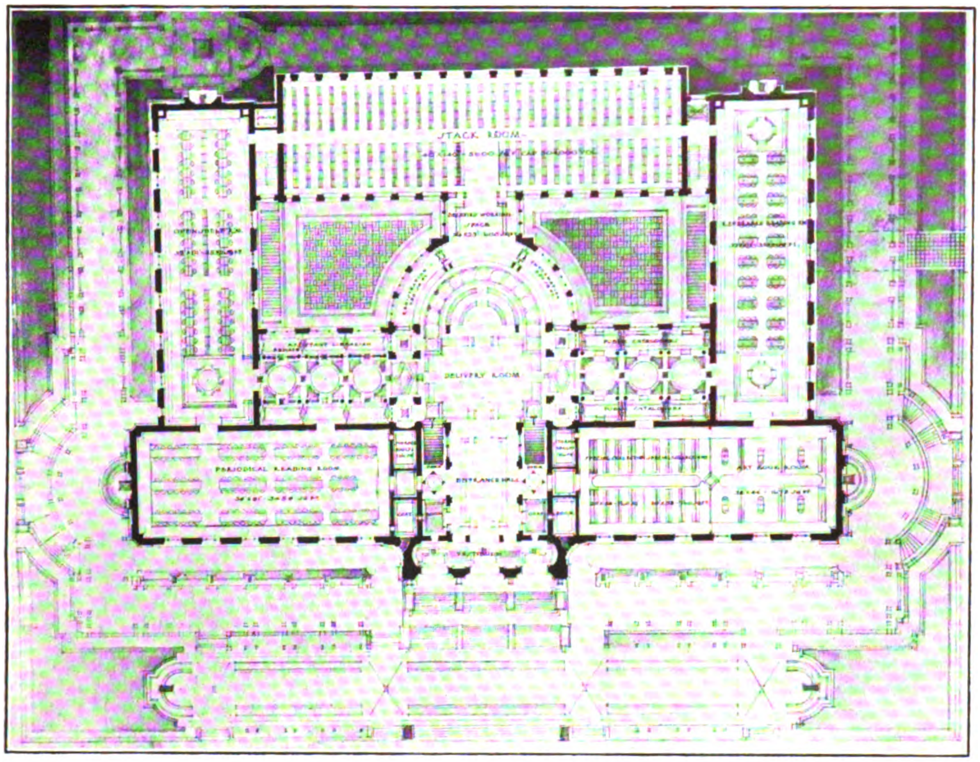
SECOND FLOOR PLAN

EAMES & YOUNG, ARCHITECTS



BLOCK PLAN

BARNETT, HAYNES & BARNETT, ARCHITECTS



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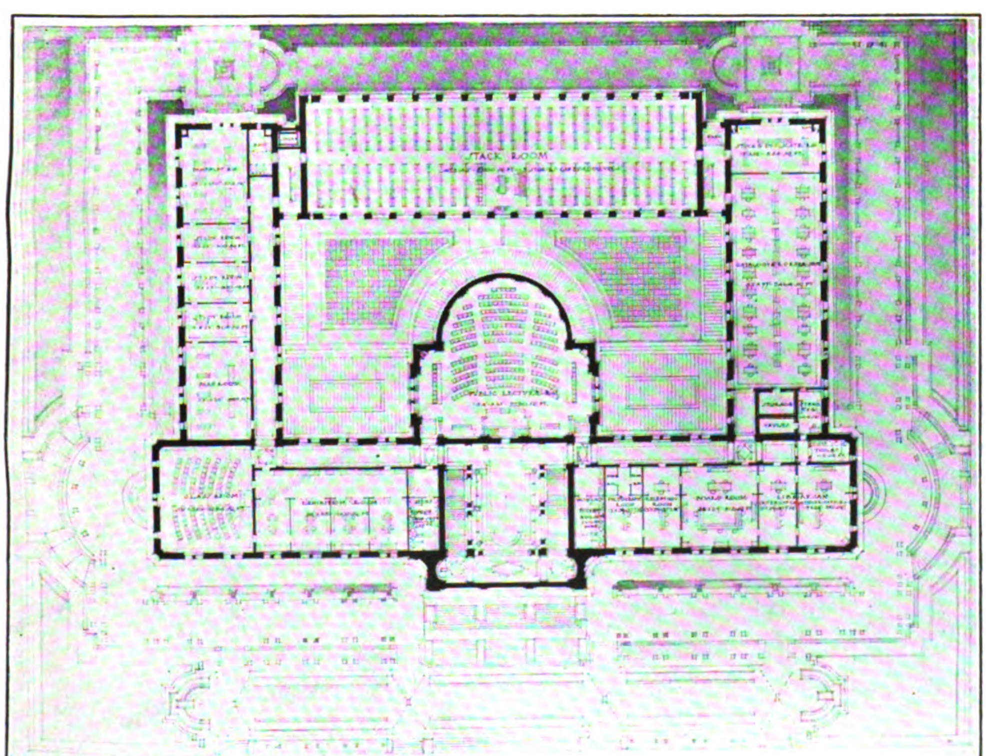


SECOND FLOOR PLAN

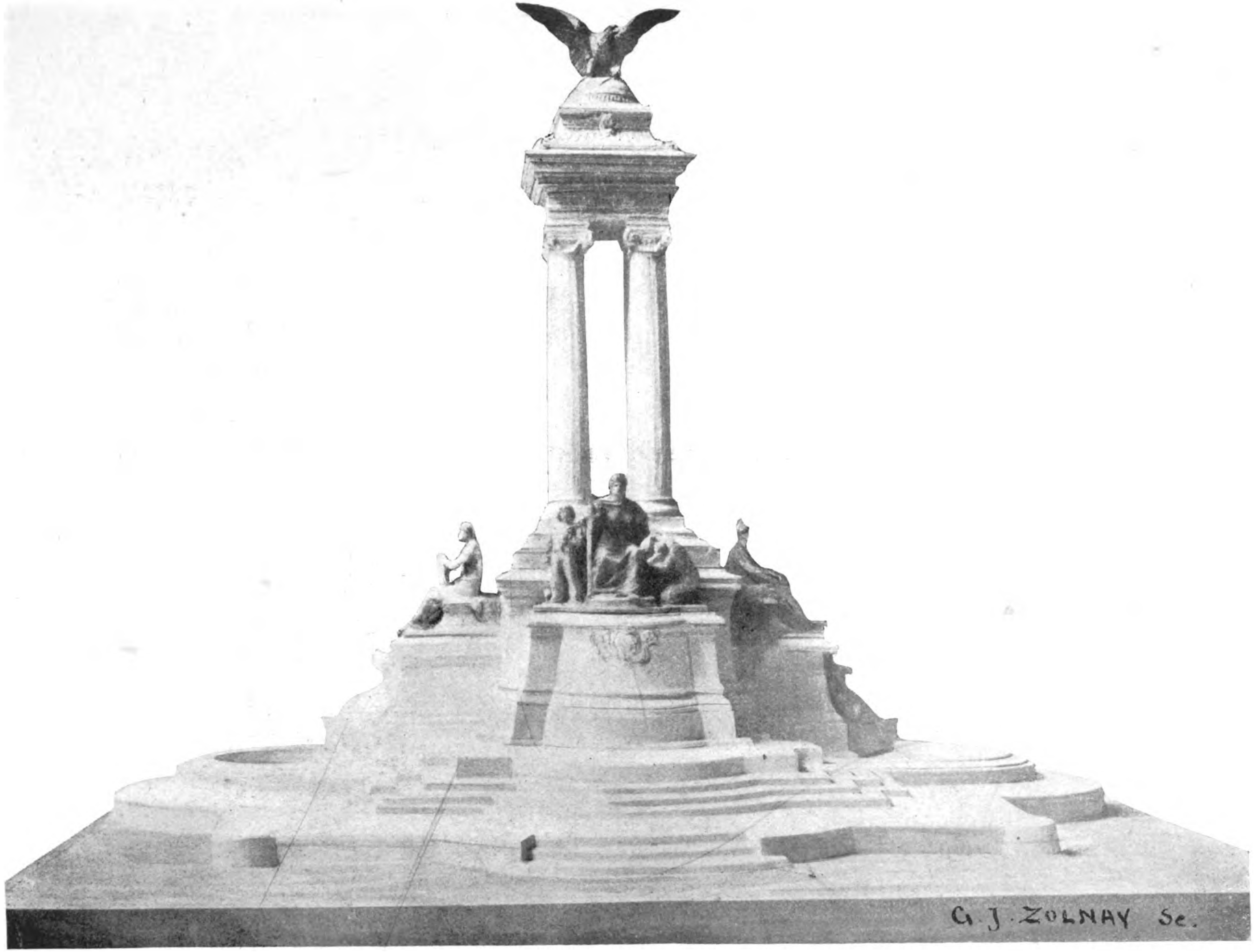
ACCEPTED DESIGN IN ST. LOUIS PUBLIC LIBRARY COMPETITION

CASS GILBERT, ARCHITECT, NEW YORK

THE WESTERN ARCHITECT
AUGUST
1907

PROJECT FOR A FLAG STAFF

TRANSPORTATION BY RAIL



PRIZE MODEL, MAINE MONUMENT COMPETITION

SOME WORKS OF GEORGE JULIAN ZOLANY, SCULPTOR, ST. LOUIS, MISSOURI

THE WESTERN ARCHITECT
AUGUST
1907

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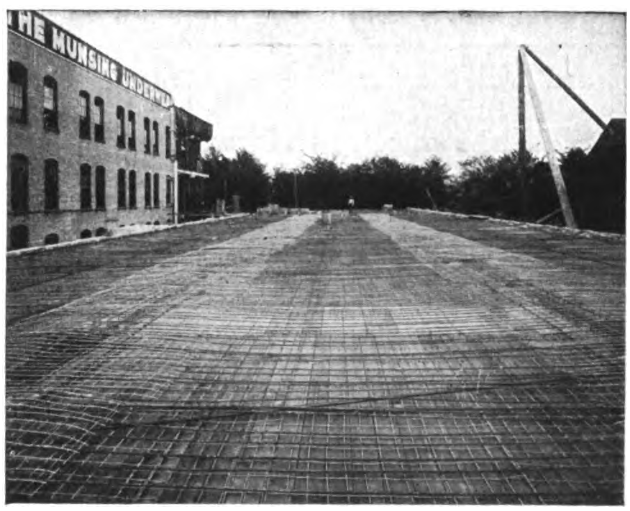

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The Western Architect

VOLUME X NUMBER 9

Contents September 1907

Illustrations

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ROBERT CRAIK McLEAN, EDITOR.

BUILDING IN FORTY-TWO CITIES FOR AUGUST

Building in forty-two of the principal cities for August shows an increase of 48 in the number of buildings and a decrease in cost of 11 per cent. According to official reports to CONSTRUCTION NEWS, permits were taken out in August for the construction of 12,000 buildings, involving a total estimated cost of $47,930,691 against 11,952 buildings, invovling $53,852,560 for the correspond ing month a year ago, an increase of 48 buildings and a decrease of $5,921,869, or 11 per cent. Of the forty-two cities, there were increases in twenty-two up to as high as 344 per cent and losses in twenty up to as high, in one instance, of 69 per cent. It will be observed that the losses are confined to the larger cities and also to localities in which building has been conspicuously active.

The tide was all one way in the larger cities. The decrease in New York was 16 per cent, Brooklyn 22, Philadelphia 6, Chicago 17, St. Louis 32, Cleveland 8. Pittsburg was a notable exception. It shows a gain of 111 per cent. In the foregoing building has been extremely active for many years, but it is notbelieved that with the prevailing high rentals it will suffer much of a decrease, or that there will be any depression which will last for any length of time from the present aspect of affairs. Conditions in all the cities mentioned are upon a basis too satisfactory to permit a long continued period of inactivity in building. In another class of cities which have not been conspicuous as active building centers there are material decreases, including Salt Lake City, 69 per cent, Mobile 66, Louisville 37, Pueblo 26, Denver 34, Washington 19. In the Northwest building is very active; St. Paul had an increase ot 69 per cent, Minneapolis 9, and Milwaukee 9. Construction continues active in the north Pacific coast cities, Portland leading with an increase of 24 per cent, and Spokane 4. San Francisco and Los Angeles are not doing so well, the former suffering a loss of 49 per cent and the latter 9 per cent. The interior cities are prospering. A large number show a handsome gain over the corresponding period a year ago.

OF INTEREST TO ARCHITECTS

Mr. J. C. Van Dorn has been appointed Northwestern sales agent of the Universal Portland Cement Company with headquarters at Minneapolis.

THE increase of business of the Flour City Ornamental Iron Company of Minneapolis has necessitated the building of a new brick fitting shop, sixty by one hunderd and forty feet, including new equipment.

THE artistic and workmanlike appearance of the chairs made by the B. L. Marble Chair Company attracts attention everywhere they are enstalled, whether it be in a private office or the senate and representative hall of a state capitol. They are uniformly high grade, and made in special patterns of the best materials, from quarter sawed oak to mahogany.

A CHURCH equipped with cushions made by the Minneapolis Bedding Company requires a minister of exceptional power and an earnest audience to prevent somulence during the service. This is oweing to the honesty of their manufacture as well as to their high quality, which is a guarantee of comfort and permanence.

IF the builders of hospitals would invariably use Samuel Cabot's sheathing quilt as a deafener they would not only confer an unestimable boon upon unfortunate humanity, but save money in heating bills as well. It has the highest insulating power, is warmer than back plaster, and is decay, moth, and vermin proof, beside being as near perfect as a deafener as human ingenuity can devise. The skeptical can be convinced by applying to Samuel Cabot Inc. Boston, or agents in all large cities, for reading matter.

THE numerous articles now running in the standard periodicals upon the subject of encaustic tile is calling public attention generally to this form of decorative construction. The gas burned unglazed encaustic tile made by the Star Encaustic Tile Company of Pittsburg, has been found most durable and sanitary for floors in residences and public buildings, as well as for mantel facings and hearths.

To anyone who has examined the steel beams of viaducts and other places where rust is prevalent, and found the steel in many cases disintregrated, the necessity of a perfect paint covering is apparant. This is found in the Mexican graphite paint manufactured at Saginaw, Michigan by the United States Graphite Company. It perfectly prevents rust and is not affected by gasses, steam, smoke, water or heat and cold, and can be used to advantage on wood as well as iron and steel.

THE refinement of comfort, as well as health, lies almost entirely in proper ventilation, and it has been the good fortune of the Johnson Service System of Milwaukee to establish a system which is generally accepted as standard by the architects of the United States. The equipment of schools has been made a special feature of their work, and it is difficult to estimate the benefit the adoption of this system has been and will be to future generations.

BRONZE and steel is so generally used in the ornamental construction in public buildings, offices, banks, vaults, libraries, etc., that the best designers and metal workers of this country are engaged in producing art metal for our buildings, employed by the Art Metal Construction Company of Jamestown, N. Y., which has won a distinct place among the most reliable producers of ornamental bronze and steel work. Architects have found that in their specialty they cover the entire field, so that prompt and accurate work by them can be relied on.

THE use of concrete piling is being specified more and more commonly in the erection of structures in and about New York. A recent example is the branch of the Carnegie Library now in process of construction at 742 Tenth Avenue, where the product of the Raymond Concrete Pile Co., of 71 Nassau Street, is being used. The architects are Messrs. Babb, Cook and Willard.

ONE of the twelve floors in the new courthouse at Chicago is designed as a "vault story". Between the third and fourth regular floors, it is devoted entirely to vaults for the safe keeping of valuable documents and records. The precautions that have been taken to put the precious papers absolutely out of danger from fire are, perhaps, without parallel. Every column in the building is covered with two inches of porous hollow terra cotta, bound by copper wire. All pipes are set outside the column protection, and are themselves protected against fire by another covering of three-inch hollow tile. The partitions and floors are made of this same fireproofing material. Around the vaults containing the public documents the tile partitions are made double thick. The windows on the "vault story" and on the fire escapes are provided with metal frames and wire glass to resist fire from without.

THE Open-Hearth Steel Works, Rolling-Mills and Black-plate Plant at Cumberland, Md., of N. & G. Taylor Company of Philadelphia, are a good example of a plant designed entirely for a special line of work, included in the manufacture of tin-plates of the highest grade. This old established firm, probably the largest independent manufacturers of tin and terne plate of all kinds, has been quietly improving and enlarging these works, and perfecting the processes of manufacture, to obtain products suitable for a variety of special purposes. And some admirable results have been secured in special bright tinplates for drawing and stamping purposes, made on a base of soft open-hearth steel. The experience of this firm as American manufacturers of tinplate dates back to the establishment of the industry in this country. The Cumberland Works were acquired seven years ago, to provide the facilities for obtaining special grades of blackplate, and the experience gained in these years is at the disposal of those users of special tinplates who may have found difficulty in securing a satisfactory quality.

FOR the past twenty-five years the name and trademark "Sampson," has stood for the best quality and form of sash cords, and it is deservedly the standard cord for all pulley work in relation to windows and ventilators. It is not so much the braided form in which it is made, but the honesty of material and skilled workmanship that enters into every foot of the manufacture of Sampson Cordage Works, of Boston, that makes it the most lasting, as well as, pliable of all sash cords. Architects and carpenters know this through long experience, and its cost is just what it is worth and therefore the cheapest in the market. The new booklet describes and illustrates the large variety of ropes and cords made under the trademark, "Sampson."

BUILDINGS containing an aggregate of over fifty acres of floor area are now under construction on the "mushroom" reinforced concrete system of C. A. P. Turner, Engineer, of Minneapolis. In Philadelphia, the five story building for Grellet Collins at 6th and Cherry Sts., 116′ x 100′, being constructed by John G. Brown, Contractor; in San Francisco, the Alling Construction Co. are putting up the Western Meat Co's. plant; in Chicago, on Jackson Boulevard, one of the finest buildings in that city is nearing completion; in Evanston, Ill., a large fire proof warehouse is being erected, for which Holabird & Roche of Chicago are the Architects; in Milwaukee, the Hoffman building has been completed; in Milwaukee, Wis., a large candy manufacturing plant, seven stories high, is under construction, for which H. P. Schnetzky is the Architect; in Green Bay, Wis., the Northwestern Tile Co. are putting up the Minahan building, for which H. C. Kock & Son are the Architects; in St. Paul, there are three buildings now under construction and one is being started in Minneapolis. In Regina, Sask., a contract has been closed for a large business block and another in Wichita, Kans., By this it can be seen that this new system of reinforced concrete construction seems to be meeting with the favor of architects, generally, throughout the country.

Ready For Distribution

THE "Tin Roofer's Handbook," issued by this Association, will be sent free, post-paid, on request, to any Architect, contractor or engineer.

This textbook on tin roofing should be in the library of any one who specifies building materials. Note the following chapter headings:

"Tin Roofing---A Brief History"
"Advantages of a Good Tin Roof"
"Standard Working Specifications"
"Practical Hints"

This "Handbook" will be mailed to architects throughout the United States during September. If you fail to receive a copy write to the President of this Association, using your letterhead, or enclosing business card, and one will be sent you promptly.

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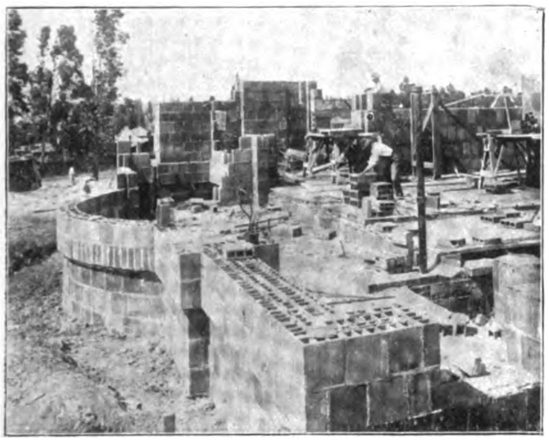

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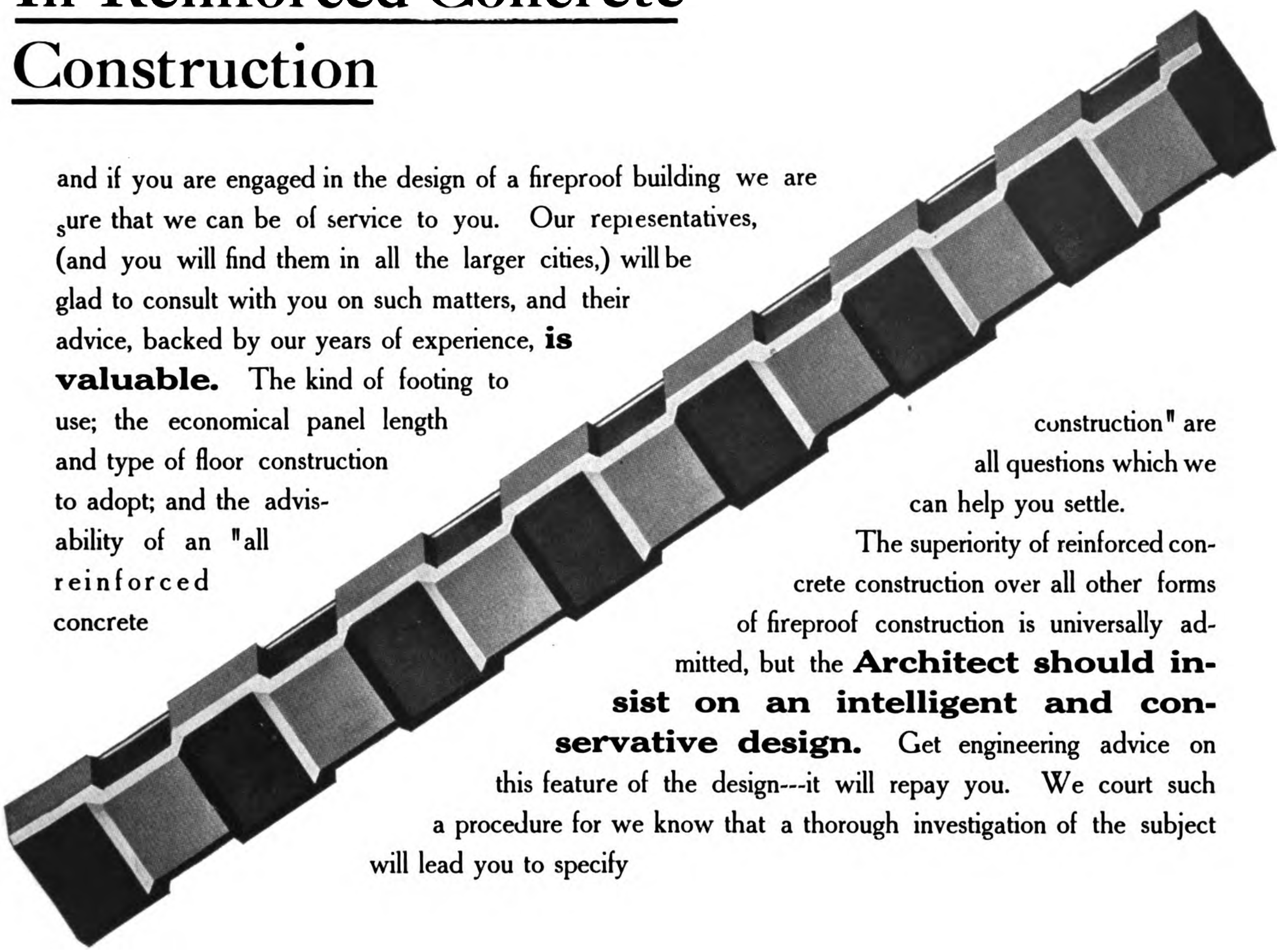

and if you are engaged in the design of a fireproof building we are sure that we can be of service to you. Our repiesentatives, (and you will find them in all the larger cities,) will be glad to consult with you on such matters, and their advice, backed by our years of experience, **is valuable.** The kind of footing to use; the economical panel length and type of floor construction to adopt; and the advisability of an "all reinforced concrete construction" are all questions which we can help you settle.

The superiority of reinforced concrete construction over all other forms of fireproof construction is universally admitted, but the **Architect should insist on an intelligent and conservative design.** Get engineering advice on this feature of the design---it will repay you. We court such a procedure for we know that a thorough investigation of the subject will lead you to specify

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There are no depressions or cups in the corrugated bar to form air pockets on the under side into which it is impossible for the concrete to flow.

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Frisco Building, St. Louis

The Western Architect

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VOLUME 10 SEPTEMBER 1907 No. 9

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BY

THE WESTERN ARCHITECT PUBLISHING CO.

(INCORPORATED)

ROBERT CRAIK McLEAN, EDITOR.

Permanency of the Present Building Activity

The enormous drop in stocks of all descriptions, the rapid fall of the price of copper etc., has lead some of the pessemistic to predict a general drop in business progress through out the country. But if the statistics of building are carefully scanned from month to month, and the markets of products that are not controlled by centralized combinations, it will be noted that there is little fluctuation, and the work of the country, whether in building or railroad earnings, is sustained by a steady demand supported by genuine commercial prosperity with which the fluctuations of the stock market has little to do. In fact it is a healthy and progressive movement that tends to separate legitmate from illegitimate financial standards, that will do more to perpetuate a steady growth of business than otherwise, and the result will be a slow and natural fluctuation if it comes at all.

The Home Rule Principle in City Government

What is called "Home rule" is the basis of two charters, recently voted upon by the cities of Chicago and Minneapolis, and no matter what their fate may have been in the hands of the voters it seems to us the best principle for city government. Like the word "Cypher" which was adopted for a name by a bohemian club in Chicago, a city under home rule can be made anything that the people choose. If they are intelligent and progressive, the city will progress, if the contrary the people have only themselves to blame for inconvenience and disorder within its boundaries. As a rule the people can be trusted, and popular direction is better than autocratic rule. The people in both cities have a future before them that is unique even among American cities. Chicago through years of delay in public improvements finds herself crowded with inconveniences that belong to two or three decades ago, and a population that needs all the advantages that the most advanced civilization can present. Her advancement is opposed by just those elements that thrive on disorder, and care nothing for the future, if in the present they may add dollars to their credit. The fine wave of civic pride that met the disaster of the great fire and took up her rebuilding with energy and faith in the future still exists, but is swamped in a sea of little men of mean aims and desires, and every great plan that ignores present profit for future prosperity is lost in the opposition of selfish interests by soulless men. Minneapolis stands on a different plane. She has all the future before her with a fair field for civic advancement. She has her selfish and selfseeking citizens too, but even these can look at Chicago and realize what this brings a city to that will not listen to the call of civic pride, and builds now for the city of the future. "Home rule" gives this opportunity and also its reverse. If the choice of a lot for a post office is directed by the selfish interests of those who own property in its vicinity rather than with a view to future convenience and beauty, or a street is filled with firetraps because influence with a likewise corrupt council will permit them, the city reaches its rightful and legitimate place, just as on the contrary a wholly unselfish policy on the part of those who guide the cities destinies, will make her the most progressive and livable municipality in the land.

Fact Behind Pennsylvania Capitol Scandal

Why, among the eighteen patriots of the state of Pennsylvania selected for trial in connection with the capitol construction investigation, the architect and the builder are included it is hard to surmise. Everybody who cares to know in that state understands that the prime movers in the enormous expenditure were politicians, and not professional men who were only weak enough to do as they were told. For years the state treasury has been in the hands of a thoroughly corrupt political circle of financiers who could always secure a "loan" on any species of collateral, or upon none at all probably, that they chose to present. The unfortunate and wholly unexpected election of an honest treasurer, and one not in affilliation with the coterie in power, created a panic in their ranks, and the building of the capital came to them as a special providence. Here was something that the millions of shortage could be charged to—and it was charged; and that is all that there is about it. The architect designed the best he knew how. The material was supplied by reputable firms, but all were required to aid, or at least not obstruct, the "bookkeeping" that required charges by the pound and the cubic foot. It is time that the state of Pennsylvania ceased trying to load the iniquities of its politicians upon the architectural and building professions. For whether it is a building committee at Harrisburgh, or a comptroller at Pittsburgh, their entire design is not the protection of the public funds, but a reaching out for all they can secure of public building moneys, and make scape goats of those who design and build for the public, and are for the time the conservators of those funds that have been set apart for the work. However, a healty investigation of these eighteen alleged accomplices may unearth the real "nigger in the fence," and through their evidence aid the people in placing the responsibility upon those who made the original inroad upon the State Treasury.

Suit on a Broken Contract by a Sculptor

The suit instituted by J. Q. A. Ward against certain members of the Society of the Army of the Cumberland for alleged breach of contract in rejecting his sixth and last model of the Sheridan Equestrian Statue, brings up the question of how far private lay objections to a work of art should be recognized. It is understood in this case that the widow of the great general was dissatisfied and hence the rejection. Mr. Ward is a scupltor of undoubted ability and while we have not seen the six rejected models it is presumable that a majority of them at least, would meet the approval of any committee of artists that might be named. That the objection of a relative who would find in the artists work many departures from the life pose and intimate characteristics, is not strange, as the sculptor seeks to present a heroic and ideal character, but as the statue in memory of the man belongs to the people, and the artists work belongs to art, it should be left to artists to judge the art merits of any statue, and the decision should rest on this alone. However, it seems quite proper to us that Mr. Borglum should take the commission under the circumstances and we can only hope that he will not have the same experience as his brother artist before the statue is finally completed.

Ethical Question Brought to Practical Test

While we have criticised trades unions for refusing to work for trival reasons such as setting a stone that may have been lowered to its place by an engine stoked by a non-union man, etc., it seems that the architectural profession is becoming in a like manner arbitrary when a prominent firm of architects forbids the use of tobacco by all workmen on a two hundred thousand dollar Y. M. C. A. building. Of course as "agent of the owner" this may be in line with the architect's duty, but with the public, which does not understand this relation, the seeming trivialty of the order rest upon the representatives of the profession. There seems to be enough cause for disagreement between builder and workman without adding others relating to the latter's conduct in politics, religion, appetite or the color of the hod carrier's hair.

AUGUSTUS ASPET SAINT GAUDENS

THOUGH the general ill health of Saint Gaudens made his tenure of life uncertain for several years, his death has that sense of shock and loss that always attends the writing of finis to any truly great career. In the subtle art of sculpture his was that one soul that in many generations comes to shine upon the world of art, and makes seemingly mediocre all that is done by contemporaries. It is such art as his that seems to emphasize what such as he must feel; that

> * * * We are but resting places in the flight of
> strong winged genius
> That creation's dawn gave to the world.
> We work because we must, til time is gone. * * *

And now that his temporal self has left us, his spirit which lives in his works remains for an inspiration to those who still seek to place in marble and bronze those high conceptions that are caught and held for all time by the true artist. And so we cannot regret Saint Gaudens. We can only be glad that we knew him, and that he has left the greatest impress upon his art of any sculptor of our time.

Augustus Aspet Saint Gaudens was born in Dublin, Ireland, in 1848. His father was French, a poor cobbler from Provence, and his mother was Irish. The family came to New York when Saint Gaudens was six years old. In due time he was apprenticed to a cameo cutter with whom he labored most assidously for a long time, becoming an expert at the trade and supplementing his labors with night study in design and sculpture at Cooper Union. In 1867, the year that Napoleon III gave the first universal exposition, his own hoarded savings, together with a little help from his father, sent him to Paris where he worked hard with some of the greatest sculptors of those days. At the Ecole de Beaux Arts he profited by the teaching of Jauffray. He had but little money and he made the most of it. When the war of 1870 broke out he went to Rome and while there, in fashioning some angels for a tomb, his ability and workmanship attracted the attention of ex-Governor Edwin D. Morgan, of New York state, who gave him his first lift, one of his first efforts being a bust of the late Hon. William M. Evarts. In 1872 he returned to America and since then has lived alternately in New York and Paris, maintaining studios in both cities. He was most thorough and painstaking in his work, and it is said that he was twelve years designing the Robert Gould Shaw memorial on Boston Common, destroying model after model that failed to come up to his exacting idea of perfection.

When we compare American art in 1907 with what it was in its crude beginnings, along in the late '70's we shall find that in a final estimate, not a little of the progress and advance have been given it by this dead sculptor, who had the rare power of putting souls into his bronze and marble bodies, so that they being cold and inanimate, yet spoke and had a message for whomsoever looked upon them. In that formative period in France and Italy he appears to have worked patiently toward the expression of a temperament which outside influences could stimulate but could not mold for their own likeness. The style which the young sculptor brought back with him to this country is said to have been remarkable for its blending of polish with freedom. Upon his return to New York he married Augusta F. Homer of of Boston, and began a series of remarkable works. Among his first productions medallions are conspicuous, and these attracted attention because of their delicacy.

Thus in range, St. Gauden's work is extraordinarily wide, with the limitation that it contains scarcely any study of the nude. His "Diana" on the tower of the Madison Square Gardens was designed to be seen from a distance, from which only the outline and pose have effect, and cannot be cited as an example of what his powers in the subtler problems of the modelling of the nude might have been. Outside of this limitation, his work, both in the round and in low relief, is comprehensive. It may be divided into three groups: his portrait plaques and medallions in low relief, such as his portraits of Dr. McCosh, Robert Louis Stevenson, the children of J. H. Schiff: his figures of an ideal character, such as the caryatids for the residence of Cornelius Vanderbilt, the "Peace of God", and the angels for the Smith tomb: and his monumental works in heroic portraiture, such as the "Deacon Chapin" and the statues of heroes of the civil war—Farragut, Lincoln, Gen. Logan, Robert Gould Shaw, and Gen. Sherman. But while these heroic and speaking portraits will live as long as the nation, it is in the misticism of his "Grief" at Rock Creek cemetery and "The Puritan" at Hartford that the charm of his genius and the highest plane of his art will be found.

He died on August 4, at his home at Cornish, New Hampsihre, where, a member of the illustrious colony of artists gathered there, he had his studio. His last work was the designing of eagle and double eagle coins for the United States government; so that from cameos and medallions through a glorious range of sculpture, he came back to the low relief, and in each thing that his hand created the sculpture world and the public have an enduring heritage that is as long as his art.

STRUCTURAL DESIGN OF ORDINARY BUILDINGS*

BY BENJAMIN E. WINSLOW, M. W. S. E.

THE structural design of buildings is a matter of the proper selection of loads and safe working stresses more than anything else. After the loads and safe working stresses are selected, almost everything else follows as a matter of course for ordinary buildings.

Most authorities agree on the formulæ, by which the strength of beams should be calculated. Formulæ based upon the common theory of flexure are almost universally used. Formulæ for calculating the strength of columns vary greatly, but still the proper formula to use for any given case is well established, and in this paper no attempt will be made to cover this field, as it is well covered in the regular course of structural mechanics given at our universities. On the other hand, when we come to the proper selection of safe working loads, ultimate and safe working stresses and factors of safety, there is altogether too great a variation to be found.

The minimum safe working live loads in lbs. per square foot of floor are often established by law. Thus, the ordinance of New York and St. Louis specifies 150 lbs. for the first floor of office buildings, while the ordinance of Milwaukee specifies 60 lbs., For schools, the ordinances of Boston and Baltimore specifies 150 lbs., while the Milwaukee ordinance specifies 50 lbs., and for warehouses the ordinance of Boston specifies 250 lbs., while the Chicago ordinance specifies only 100 lbs. Such a wide range of the minimum live loads allowed for buildings used for the same purposes, but located in different cities, is unwarranted, and only causes contempt for the ordinances, and does a great deal of harm.

A similar wide range is required by law for the safe working stresses for the same materials. For the extreme fiber stress in compression of cast iron, the Boston ordinance specifies 8000 lbs. per square inch, while the New York ordinance allows 16000 lbs. The stress on the extreme fiber of yellow pine beams is limited to 1200 lbs. per square inch in New York, while 1800 lbs. per square inch is allowed in Buffalo and Memphis, Tennessee. The safe compressive strength of oak across the grain is limited to 250 lbs. per square inch in Chicago, while 800 lbs. per square inch may be used in New York and Washington.

The ultimate strength as given by various authorities causes a great deal of confusion. For the modulus of rupture for long leaf Southern pine, Prof. Lanza gives 5000 lbs. per square inch, while Prof. Patton gives 15000 lbs. For the ultimate shearing strength of oak parallel with the grain, Prof. Lanza gives 266 lbs. per square inch; A. L. Johnson and W. G. Berg give 800; Professors Fernow and Burr give 1000; Prof. Hatfield, 1250; and Prof. Patton, 2300 lbs. per square inch,—a variation of over 800 per cent!

The safest course is to find out the reliability of the tests quoted by the various authorities, and if they are equally reliable, to take a grand average of them all; it may, therefore, be very misleading to fall back on one authority alone.

The factor of safety may be defined as the ratio of the *ultimate stress* to the safe stress. As both the numerator and denominator of this ratio are thus seen to vary between wide limits, the factor of safety naturally will also have a large variation. This variation is increased by many other uncertain factors that enter into the factor of safety. Broadly speaking, the factor of safety depends upon the following three factors, namely:

1. The nature of the load. 2. The nature of the material. 3. The nature of the structure.

The first step in determining the factor of safety is to find out what loads will have to be provided for. The loads include the dead loads, or the weight of the structure itself; and the live loads, which latter may be static loads, or moving loads that may or may not be applied suddenly, or with impact. Wind loads and centrifugal loads would also come under this heading. As the amount of the loads may vary between wide limits, the next step would be to determine for the given case, the probable maximum load which should be used in connection with the ordinary safe working stresses and safe limits of deflection. The next step would be to determine whether or not still larger loads would be possible although improbable. For such loads the ordinary safe working stresses may be increased 25 per cent. For improbable but absolute maximum congested loads of short duration only, the safe working stresses could be increased 50 per cent, provided the stresses still remain within the elastic limit of the material It should also be borne in mind whether or not any future use, that the building might be put to, would call for larger loads still. The above arrangement is perfectly logical, and is recommended by Mr. C. C. Schneider, past President of the American Society of Civil Engineers.

The second item that enters into the make up of the factor of safety is consideration of the nature of the materials. This would include the range of strength that the given material has in tension, compression, transverse bending and shear, the modulus of elasticity, the modulus of resilience, the elastic

* Lecture delivered before the Architectural Club of the University of Illinois, March 1 1900, by Benjamin E. Winslow, Consulting Architectural Engineer, Monadnock Building, San Francisco, California.

limit, the coefficient of expansion, the size of test pieces that the above values are based upon, the percentage of moisture of timber, and its influence on

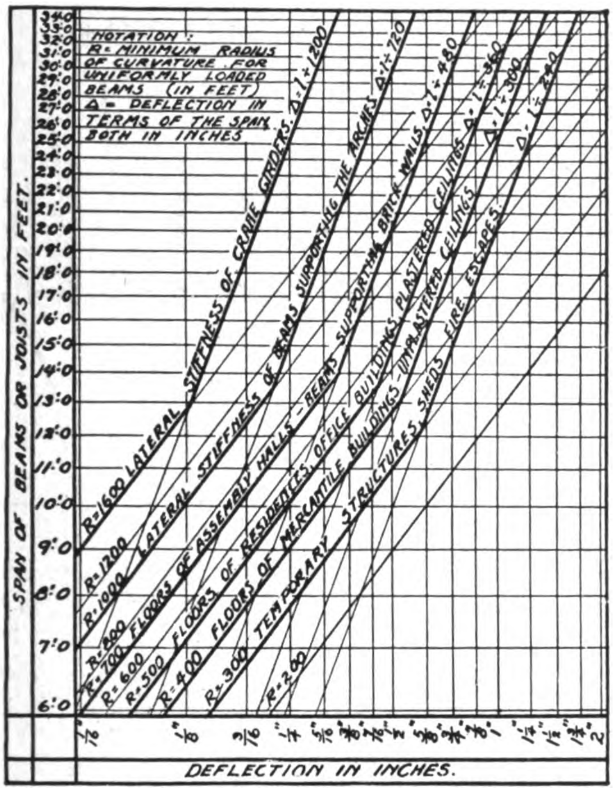

TABLE X.—ALLOWABLE DEFLECTION OF BEAMS

Notes:--As the deflection of beams permanently loaded increases with time, beams carrying brick walls should be figured stiffer than ordinary floor beams.

The heavier the floor, the greater may be the allowable deflection, as a heavy floor is better able to resist shocks or vibrations than a lighter one.

its strength, the quality of the material, and the influence of probable defects such as knots and season checks in timber, blow-holes in castings, probable inequalities in cement and steel and deterioration of stone due to influences of the weather, and other seen and unseen defects that are likely to occur. To this must be added the consideration of the liability of timber to rot, and of steel and iron to corrode as well as the influences of intense heat or cold if probable.

The third item that enters into the make up of the factor of safety is the nature of the structure, whether temporary or permanent, important or unimportant, and the possible damage that may be caused by failure, and whether or not such failure may occur with or without warning. The stiffness or rigidity of the structure should also be considered as an element equally important as that of the strength. Arrangements should be made that certain limits of deflection are not exceeded, and it should be seen that such deflections do not produce secondary stresses difficult to compute, and also that the lateral stiffness of joists, beams, girders and columns is properly looked after. Scantiness in the size of joists and timbers and probable imperfections in workmanship are often loaded on the factor of safety.

For special constructions as, for example, long span segmental hollow tile arches it should be ascertained whether or not the factor of safety is based upon a uniform load distributed over the whole span of the arch, as is often wrongfully done, or whether it is based upon a load that covers half the span only as the worst probable loading. It should also be seen that the tie rods are not spaced too far apart or perhaps entirely omitted.

The factor of safety for reinforced concrete is furthermore loaded with the uncertainties dependent upon the mixing and placing of the materials. The ordinary assumed bending moments for continuous slabs and girders are often only one half of the actual bending moments that may be developed by special loadings covering one panel at a time and larger bending moments are still often caused by very small uneven settlements. The effect of the too early removal of the forms or support is also often left to the factor of safety to take care of. All of these elements are generally loaded on the factor of

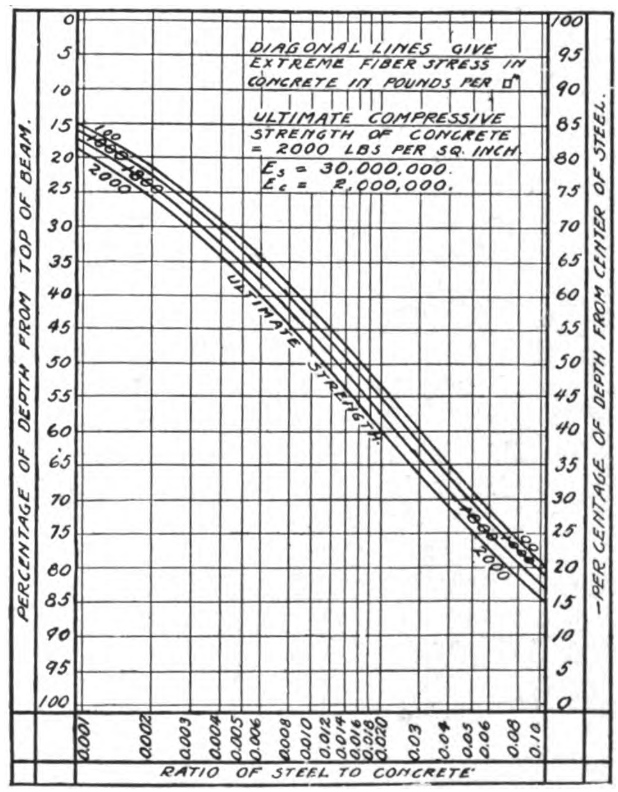

TABLE XI.—POSITION OF NEUTRAL AXIS OF REINFORCED CONCRETE BEAMS

Notes:--This diagram is based upon Professor Talbot's formulae and shows how the location of neutral axis is lowered as the percentage of steel as well as the extreme fibre stress of concrete in compression is increased.

safety which too often is taken at the lowest possible limit. When the factor of safety becomes overloaded a failure is sure to occur, and when it does occur, it often happens that nobody is able to locate the cause.

We will thus see that when the factor of safety, or the ratio of the *ultimate stress* to the safe stress is taken to be say 4, this does not by any means mean that it will be possible to put 4 times the calculated load on the structure before failure will take place, as is often believed. The failure will undoubtedly take

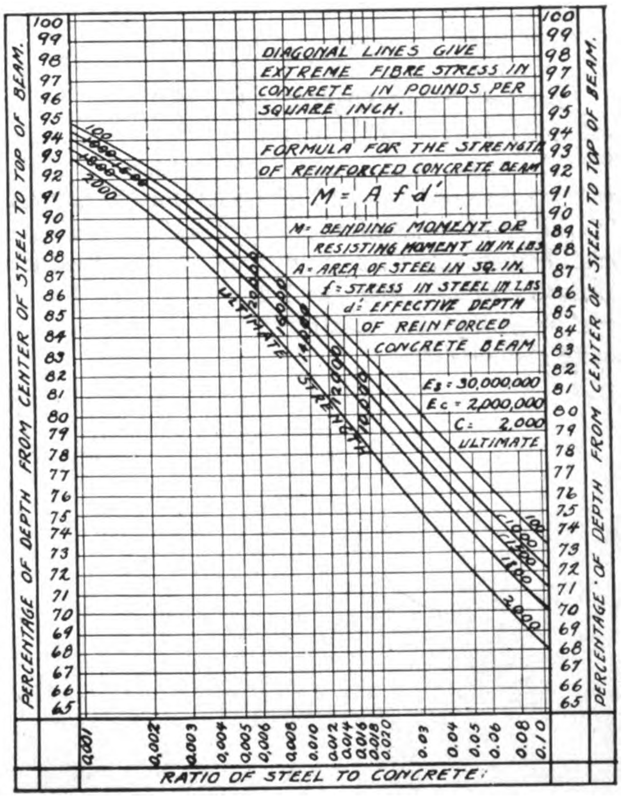

TABLE XII.—EFFECTIVE DEPTHS OF REINFORCED CONCRETE BEAMS

Notes:--This diagram is based on Professor Talbot's formulae and shows how the effective depth decreases as the percentage of steel and the extreme fibre stress in the concrete increases.
When the safe allowable extreme fibre stress in compression is assumed at 650 pounds per square inch, the stress in the steel will be as shown by the vertical figures across the curves.

place under much smaller loads. Too often, the factor of safety is a matter of guesswork, pure and simple. Great sums of money are annually wasted by an improper guess at this factor, and on the other side, a number of buildings are standing up that should fall down; the chances are that such buildings may be standing, because they have not happened to have received the loads they may be subjected to at any time.

There is a great need for the establishment of a more rational method for taking care of all of these variable elements, so as to be able to design safe buildings with a minimum amount of cost.

(Tables one to ten, which embody a method by which varied elements are provided for, are omitted).

The probability that all parts of the structure will receive the full amount of the live load is not the same. Thus a joist may very likely receive the full live load, but the probability that a girder will receive it is less, and the probability that a column in the lower story of a many story building will receive it, is still less, and the foundation will have a smaller chance than any other part of the building of receiving the full calculated live load from every square foot of the floor area of the building. It is customary to allow for this in the loading. The following method is believed to conform with good practice:

Figure all parts of the building for the full dead load.

Figure joists and beams for the full live load.

Figure girders for 85 to 90 per cent of the live load.

Figure the columns supporting the roof and top story of a building for the full live load. For each succeeding story below, make a reduction of 5 per cent in the full live load coming on the columns. This reduction must, however, not exceed 50 per cent of the full live loads for a many story building. Figure the foundation for one-third of the full live load. Of course, if it is known that the beams, girders, columns and foundations will have to carry the full live load, they should be figured strong

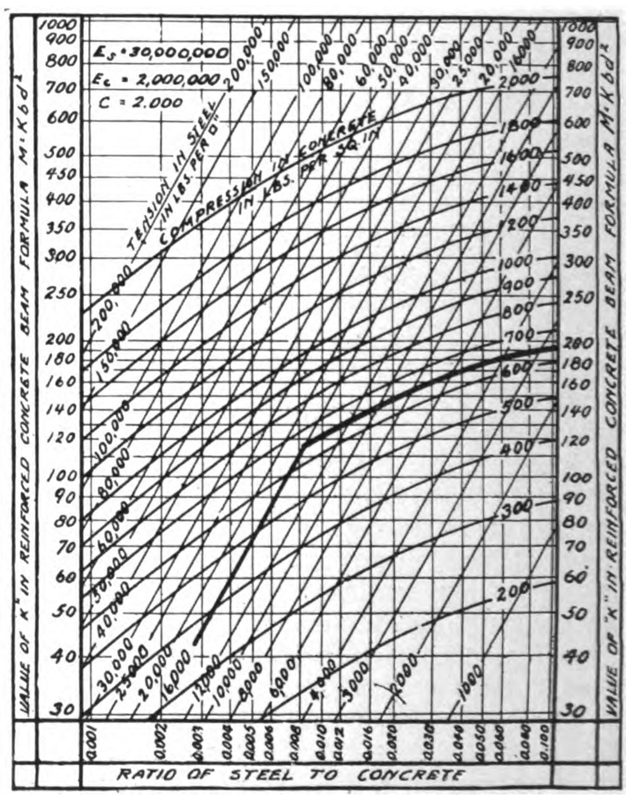

TABLE XIII.—STRENGTH OF REINFORCED CONCRETE BEAMS enough to carry it with the proper factor of safety. In this manner all variations in the load are provided for.

On table 10 is given the safe allowable deflections for structures of various kinds. In calculating the deflection, the values for the modulus of elasticity given on tables 2 to 7 should be used. As light floors may vibrate more and easier than heavy floors, a smaller deflection is allowed. As it is the actual curvature of the joists more than the actual deflection which causes cracks in plastered ceilings, such joists should be figured for curvature when the radius of curvature becomes small, which occurs for short spans.

Very short beams should be figured for shear or curvature; beams of intermediate spans should be figured for transverse strength; and beams of long spans should be figured for stiffness. Whether a beam for a given case should be figured for one or the other of the above factors, will depend much on the safe working stresses used as well as on the deflection, that may be allowed. When the deflection is 1-360th of the span, the beam uniformly loaded, the beam supported at both ends, the modulus of elasticity and the safe working stresses for shear and bending are as given on table 3, the following rules will be valid for any kind of wood:

1. Calculate for shear when the span is up to 12 times the depth of the beam, or when the depth of the beam in inches is greater than the span of the beam in feet.

2. Calculate for transverse strength when the span varies from 12 to 20 times the depth of the beam.

3. Calculate for stiffness when the span is greater than 20 times the depth of the beam.

Likewise, steel beams should be figured for deflection when the depth of the beam in inches, is less than twice the span in feet.

Tables 11, 12 and 13 give the position of the neutral axis, the effective depth and the strength of reinforced concrete beams and girders on basis of the formulæ established by Professor Talbot. These formulæ may be considered as the most scientific, most reliable thoroughly up to date and practical formulæ yet devised, as they give the true stresses in the beam for all stages of the loading. They can be adapted for any factor of safety for strong or weak concrete, for beams of any age, and for beams of rectangular or tee section. Certain variations must be made if the steel is inserted in the top side of the beam. Of course, covering the ground in such an efficient manner, the algebraic expressions cannot be so very simple. However, when put in a diagramatic form, as on table 13, they will rival even the straight line theory in practicability and ease of application. Professor Talbot's formulæ show just how reliable the straight line theory is for safe working stresses and how very far off the straight line theory is for ultimate loads. It shows that the straight line theory errs on the safe side for safe working stresses an amount of from 5 to 6 per cent only, and thus gives a strong argument in favor of the generally accepted methods of calculating reinforced concrete slabs and girders. Of course, Professor Talbot's method is the better of the two, as it may be used with confidence for any working stress, either safe or ultimate.

UNIFORM BUILDING LAWS*

BY F. W. FITZPATRICK, ARCHITECT

THAT you deemed this subject, "Uniform Building Laws," of sufficient importance to be discussed at this Congress, indicates the prominence the matter has attained in your esteem and that you asked me lead in its discussion is to begin with, most flattering to me personally, but also shows that in Canada at least the profession appreciates the advantages to be gained by the necessity there is for working in closest touch with and upholding the building departments of the country, which departments together with those of my own country, across the border and those of Europe and Asia and of even Australia are at last firmly united in an International Association, whose Vice-President is your enthusiastic secretary pro-tem and whose Executive-Officer and Consulting-Architect I have the honor of being.

One of the very foremost purposes of that Society is the securing of greater uniformity in building requirements. There is absolutely no reason that can be advanced why those laws should not be uniform while it would take me all day to enumerate the good and sufficient reasons why they should be uniform. There is no more sense in having them dissimilar in the different cities of a country than there is in having, as we now have, radically dissimilar divorce laws in the States. You practicing Architects realize how much bother these jumbled up regulations can be. In the old times when an architect seldom went out of his own balliwick it mattered less, but now every one of you have commissions in Montreal, in Toronto and in a dozen other places. And you are confronted not with merely differences to meet local conditions but in one city you are told that a twelve-inch wall will carry so much load while in another place twenty-five miles away the ordinance permits you to put twice that load on a wall of the same dimension. Builders have still more fretting difficulties. They figure construction one way, sensibly, probably even according to plans for a building in some other town than where they live and lo and behold they run up against, so to speak, unexpected and perhaps new

* Paper read before the first congress of Canadian architects, at the Institute of Architects of Canada, in convention August 19-20-21, 1907, at Montreal.

regulations that change not only the profit there may be on the work but may possibly compel complete revision of plans meaning delays and oftentimes litigation.

Building laws, at least as they were until very recently, were a mere jumble of make-shift regulations, the outgrowth of necessities that were more than apparent and that had to be met by men generally ill-fitted by training or experience to cope with them. There was little communication between cities and such a thing as standardizing these regulations was undreamed of. Indeed few cities deemed them worthy of much thought and the result is evident all about us in the hundreds and thousands of old buildings, shabbily built, without any regard to fire-prevention and that are now a standing menace to our every community. Our new buildings to be at all safe have to be built not only with ordinary care and intelligence but with extraordinary precautions to protect them from the hazard that lax regulations have created.

On "our" side of the line—the half of me that is not Canadian is now addressing you—municipalities, underwriters and architects are pretty thoroughly awakened to the necessity there is for the standardization of all municipal regulations regarding buildings. A splendid effort is being made to have one uniform law passed by every community. Only in the strictly local phazes of the subject can there be the slightest necessity for special requirements; the basic and general regulations, particularly those referring to strength of materials, mode of construction, what constitutes fireproof construction and what does not and all those matters should by all means be uniform and standard.

In the first place where many band together to obtain some end the means taken toward that accomplishment can be more thorough, more all-covering than can any individual effort. The underwriters, for instance, have a uniform building code that they are urging all cities to adopt and that is most excellent. It is the work of the leading experts of the country, years have been spent in solving it. We, this Society, helped materially in having a splendid ordinance written for the city of Cleveland. We still look upon that as the best so far conceived and have had it adopted by many other cities, but the underwriters are making such strenuous efforts to have their ordinance adopted that rather than to scatter our labor and to be pulling at cross-purposes we have set aside what we deem the very best and now most zealously work in conjunction with the underwriters and advocate their ordinance. There is nothing like unifying efforts "I" union fait la force" you know, and for that very reason we are particularly anxious to secure the earnest cooperation of the architects. On the other hand, where an ordinance is devised especially for some particular city or town it is usually the work of a committee of local men, the members of which at best have but a local experience and are more generally political appointees than shining experts. Why, I know of one very important city indeed that rebels at the idea of adopting anything that anyone else has and is now at work upon its own building ordinance that is in charge of a lawyer, one builder, one architect, a plumber, two business men—one a dry-goods man, the other, a butcher—a doctor and three real estate agents. The architect has never built anything more important than a schoolhouse and the lawyer's practice is in the police court. Imagine the building regulations that that city will have.

Not only are we clamoring for uniformity of building laws but we are making considerable headway in inducing the state authorities, your provincial governments, to establish the minimum of excellence that will be permitted in any building anywhere within the confines of the state or province. There are towns of size sufficient to be classed as almost cities in which there is not one iota of regulation. Anyone and everyone builds as he wishes. Those places are growing and it is only a question of time when they will be commercial centers of note. Think of the heritage of poor construction and the resultant fires and loss of life and property that will be their portion on account of the present laxity in building matters. With the state or province establishing as I say a standard of construction below which nothing will be allowed and seeing that its laws are lived up to by creating the office of state or provincial fire marshal it will be an easy matter for the cities in each grand division which have due regard for their own safety and the permanence of construction to adopt other and additional uniform regulations that will incorporate these basic ones that obtain throughout the whole section. There need be no conflict of authority or clash of regulations and it is a movement that merits well of you. Not only should you be interested in it as public-spirited citizens but individually it is good business policy for you to give this propaganda all the impetus you possibly can.

Our building requirements should not only be uniform but they should be severe. I have heard people clamor against this and say that it would necessarily make building more expensive and be a great hardship on the poor man, a specious argument and veriest sophistry. As things are today the poor man pays an almost unbearable tax simply because he and his fellows and his fathers have been permitted to build shoddily.

This so-called cheap construction—which is the most expensive of all—has become such a habit that it can be said to be in the blood. We are all contaminated with it. Even the architects have it in virulent form but of them more anon.

We have reached a point where the community has to legislate and do it strenuously for it must be recognized that little can be expected of the individual, even where his own interests are at stake. As far as building is concerned the average individual will only build as well as he is compelled to. The essential purposes of building restrictions should aim at the preservation of property and the protection of the interests of the many against the aggression or even the private rights of the individual. Now since fire is the chief destroyer of property, virtually the most contagious of diseases, everything should be done to stop the growth and destruction wrot by this plague. The community does not legislate for the benefit of the individual. We don't ask it to.

It is meet and right that it legislate to prevent and to control contagious diseases, which may spread from the unclean or ignorant person who originates them to the community at large. "Just as no legislation aims at the prevention of contagious diseases is held by the public too grinding and unendurable, so no disease that can affect the public welfare is more contagious than a conflagration, and yet comparatively little effort is made by the public to deal with it preventively".

We appropriate and spend hundreds of millions of dollars a year in an endeavor to handle this disease after it has broken out. The maintenance of our fire departments, high water pressure and the payment of insurance premiums, all in the endeavor to cure fire, costs these two countries over $500,000,000, but when it comes to spending a little money or to enact sufficient legislation to stop, to prevent this scourge, ah, it is another matter and it immediately becomes time to economize and to not interfere with the people's "rights". After all it is the community itself that is the real culprit since it has permitted and does permit buildings to be erected that inevitably mean fire, the murder of innocent citizens and the destruction of much property when it really has the power to absolutely prevent conflagrations if not ordinary fires.

To prevent destruction a building must perforce be indestructible; to not burn it must be incombustible and to not be damaged by fire it must be fireproof. It is not asking too much that our building laws be uniform and even at the risk of being thought visionary and one expecting the millenium I would insist that those laws PROHIBIT everything but incombustible and fireproof construction. Mark my words, it is only a question of time when such regulation will be enforced and the sooner we have it, the better, the less danger will there be of other such horrors as San Francisco and Baltimore. Am I an alarmist? Look at the conditions about you, the narrow streets, the vast amount of wood in your buildings, the unprotected windows and think of how slight a margin there has been right here in Montreal between what may have been only a serious fire and that might have been a conflagration that would have wiped out one-half your highly combustible city.

"The theory under which advances in fireproof building have been made hitherto is largely, if not altogether, a mistaken one. It has been the assumption that a real estate improver as a sane business man, should be able to perceive how much it was to his own ultimate advantage to build an indestructible building, and so save in the long run a large amount in insurance on building and contents The true theory, and it is incontrovertible is that incombustible buildings must be built. It is really immaterial to the taxpayers whether an individual elects to let his building be destroyed by fire, but it is of very real interest to the public that the property of other people shall not be destroyed at the same time. This once comprehended, it is easy to see that the real responsibility rests on the public and not on the individual. It is for the public then to examine the ways in which it can discharge its duty to itself at least cost to the taxpayer and here, as in the case of all other contagious diseases time is the essence. It is desirable and necessary, imperative to substitute unburnable for burnable buildings with the shortest delay possible since a conflagration may occur at any minute".

We cannot leave that process of transformation to the individual and the community may only act through wise laws and their rigid enforcement. Why should those laws be more exactingly or more strictly enforced in one community of a country than in another? "Unjust discrimination"—and uniformity is the only thing that can efface that stigma.

But the state can coax its people into this right way of building as well as it has the power to force them into it. Why should not our taxes be upon a sliding scale? Why should a man who voluntarily builds well and pays the increased cost of such construction be taxed upon a virtually self-imposed tax, a species of compound interest as a penalty for having so well-built? Would it not be infinitely more equitable to have a regular ground tax to begin with and then a sliding scale of tax upon improvements, buildings, the minimum rate upon those of the first-class, fireproof structures that cost the community the lowest amount, the very minimum of expenditure for protection, fire departments, etc.; and then charge the maximum rate against the old combustible and dangerous structures, for the comparative safety of which the city has to spend so much for fire departments and all that sort of protection?

In all of this the architect plays a most important part. He should be the intermediary between the constituted authority of the State and the individual, his client. In seeking to have uniform and wise laws enacted looking to safe and sound as well as fireproof construction we should have his most earnest and enthusiastic co-operation. I take it that here, in Canada, you gentlemen do so actively co-operate with the Building Departments and others interested in the same laudable endeavors. In what I will say I have particularly in mind conditions with which I am more familiar than with those existing hereabout. Yet even here there may be cases quite analoguos to those we lament as so common across the border. With us it is undoubtedly true that the architect is very largely to blame for poor construction from a fire protection standpoint. As a general rule the architect lacks the conservative instinct and those of both the new and the old schools know less and care less about the fire protection element which enters into the construction of a building than about any other feature. Though carelessness and ignorance in the matter of inspection are also very largely responsible for this kind of work and for the toleration of and connivance at experimental construction that so often leads to fatalities and to considerable loss; witness our many collapses of reinforced concrete buildings even while under construction. It is lamentable that so little attention is paid to what really constitutes safe building. Our architects go along in the same old way as a matter of habit. Wood was used by their predecessors and little distinction was made between combustible and noncombustible materials, between what was lasting and what was perishable and the habit has stuck.

The average practitioner, I am sorry to say, is infinitely more concerned about some carving on the exterior or a specially fine mantelpiece, something that he terms the artistic features of his building, than he is about the real essentials of that construction. He forgets that true art is truthful and that however beautiful a facade may be if what it conceals is poorly built, flimsy and dangerous then indeed is his chef-d'ouevre but a whited sepulchre.

Granted that the average client is cranky and inclined to peremptorily command his architect, the latter's duty is quite clear. He should no more permit himself to build anything that can be classed as a dangerous building than should a doctor give a patient poison even though he should ask for it. Indeed is it not most unwise to have laws that allow him to do so? There was a time when, as in the other learned professions, if a man presumed to dictate to or be overbearing with his architect, the latter in substance would tell him to go to various and sundry places and would throw the job after him. I have seen that done right here in Montreal and more than once. That time has gone by. That the architect has brought this change upon himself by his own subservience to the prospective client, by his extreme solicitude to not lose a job, his willingness to measure swords with any and all competitors, in competitions and tests of price as well as of skill, and has consequently weakened his position and given the owners of property an upper hand that they never dream of using in dealing with the medical or legal professions is neither here nor there. The fact is that the average architect does not stand superlatively high in the esteem of the average man. But the architect must be a poor talker indeed, a man of little force if he cannot persuade his client that to build something artistic is wise and to build something durable is necessary. He should arm himself with such statistics and date as to be able to convincingly impress that client with the folly of poor, experimental or combustible construction. Heavens! there is surely matter in abundance and facts galore readily accessible, matters of common knowledge testifying to the desirability, the necessity there is for more substantial and permanent construction. The architect who pleads that he does not know much about fireproof building and is not aware of the appalling losses of life and property that are the results of just such ignorance as his has no place in the profession and the sooner he is ruled out of it, the better.

The good, the capable architect needs no encouragement on my part to advise his client to build well but even to him it would be a decided help if our laws were such that the client HAD to build well, and that those laws compelled the same uniform excellence wherever the architect may have clients would be but an added boon and one for which he should strive. But his isolated personal affort in that direction will not count for nearly so much as if he would join his fellows and in association with all those societies having for their purpose the same general objects, the common weal in one grand united effort to secure good, adequate and uniform building laws.

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With a view to obtaining an exceptionally artistic cover design for the Architectural Annual the publishing Committee has arranged a competition according to a published prospectus, to which all members of the Architectural League of America shall be eligable. It is hoped that the prize will go to some Western club, and as the Eastern competion will be strong, members in the West should make an exceptional effort to secure a large representation in the competition, and if possible, win it. Edmund Howe Poggi, 529 Real Estate Trust Building, Philadelphia, is chairman, N. Max Dunning and Charles Mason Remey, the remainder of the committee, from whom copies can be obtained.

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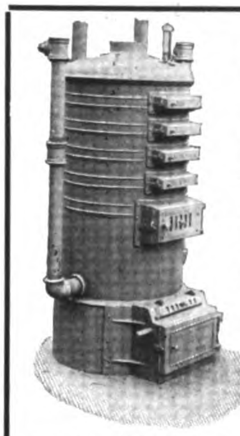

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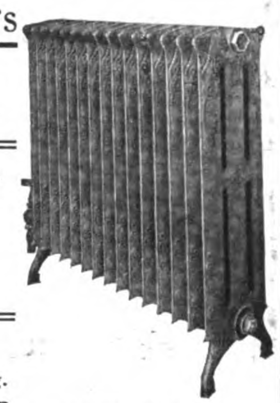

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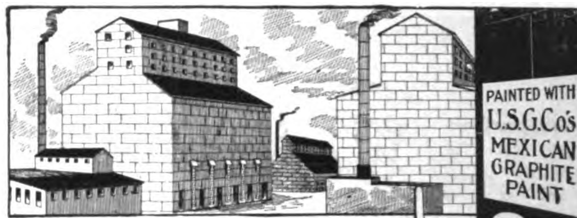

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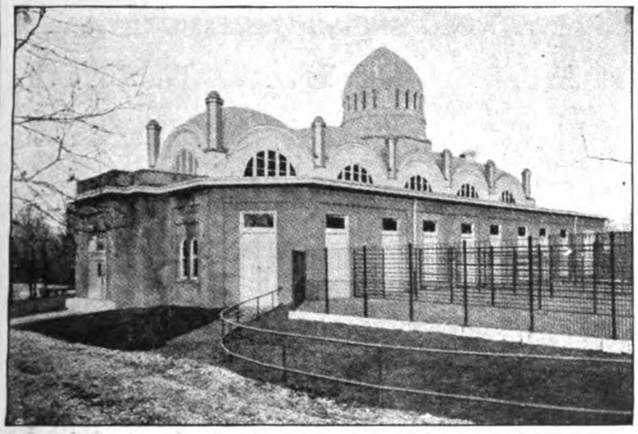

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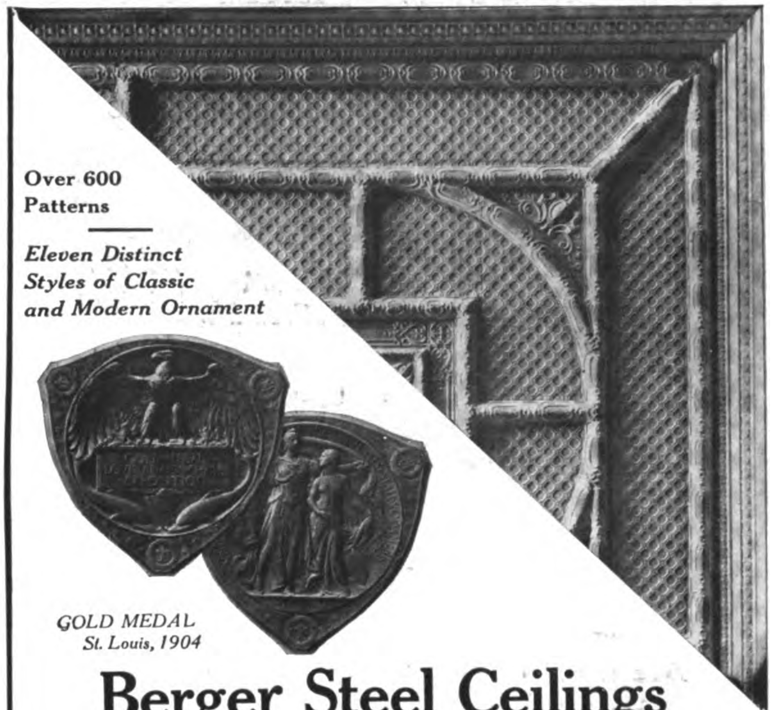

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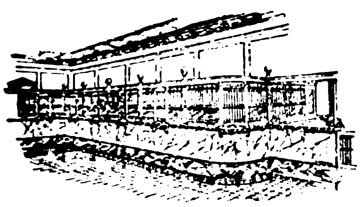

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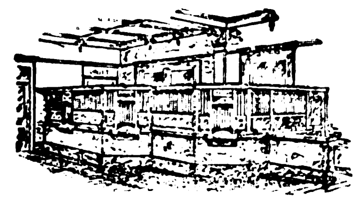

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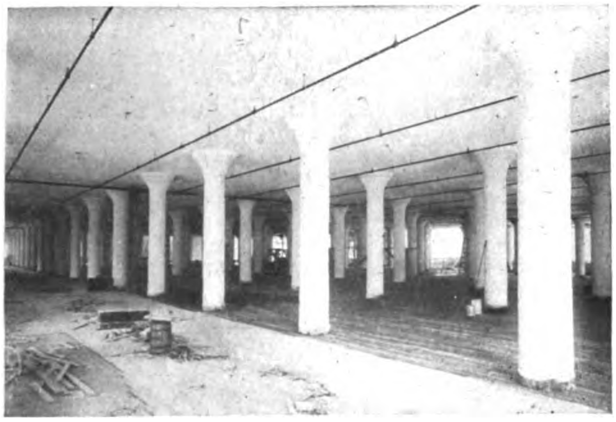

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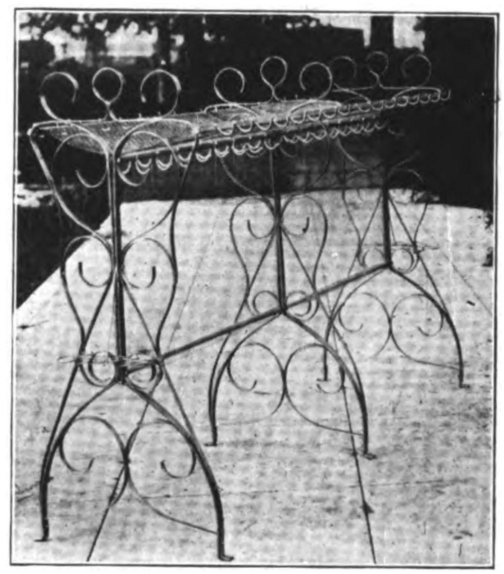

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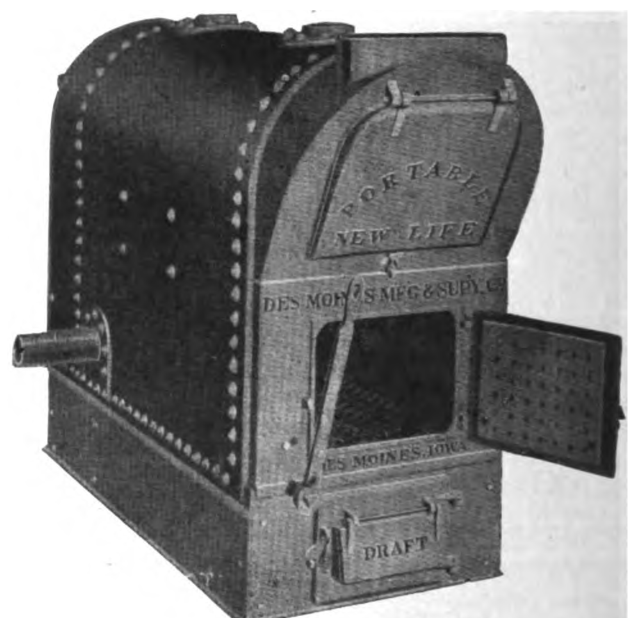

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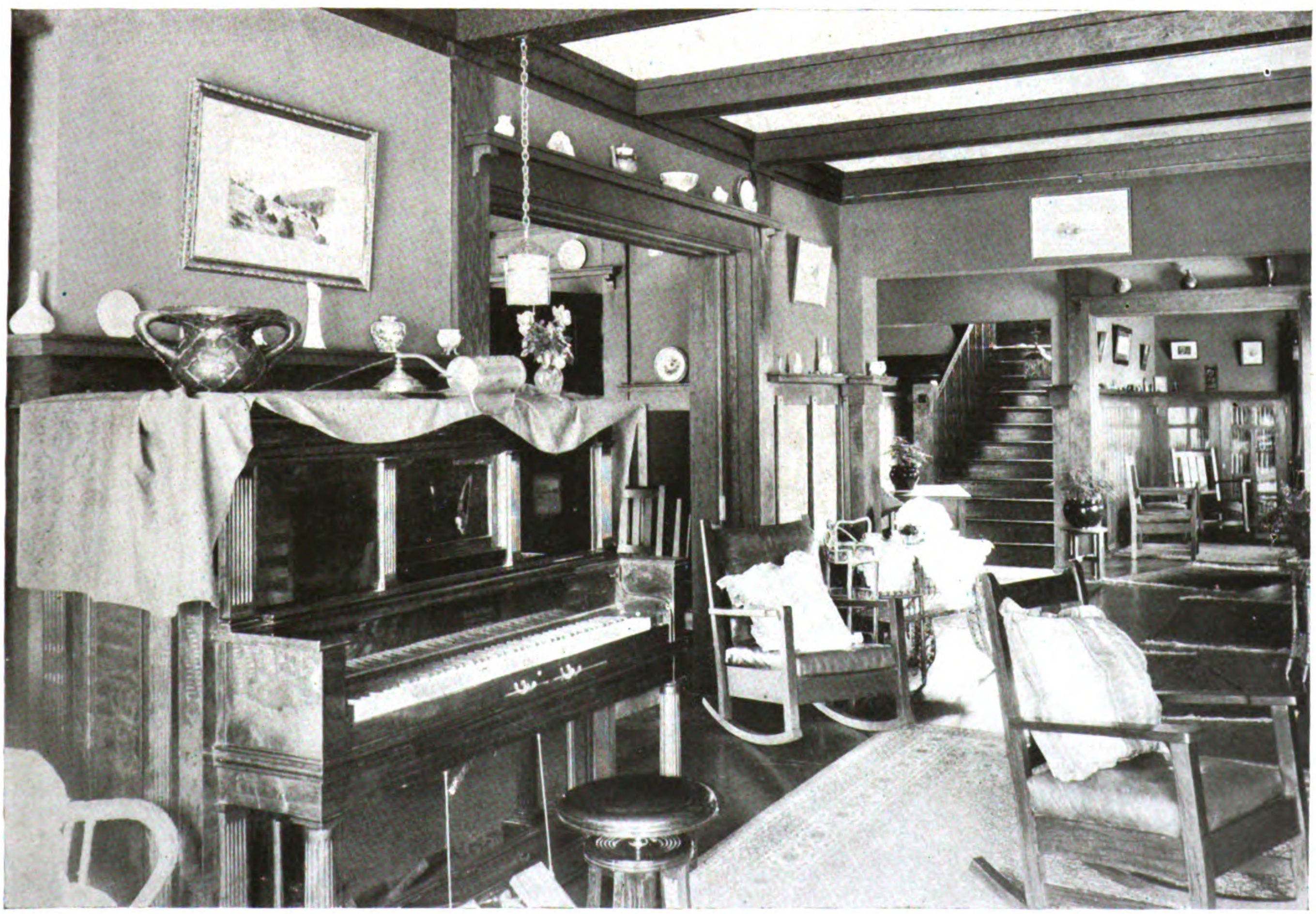
THE WESTERN ARCHITECT
SEPTEMBER
1907

DINING ROOM



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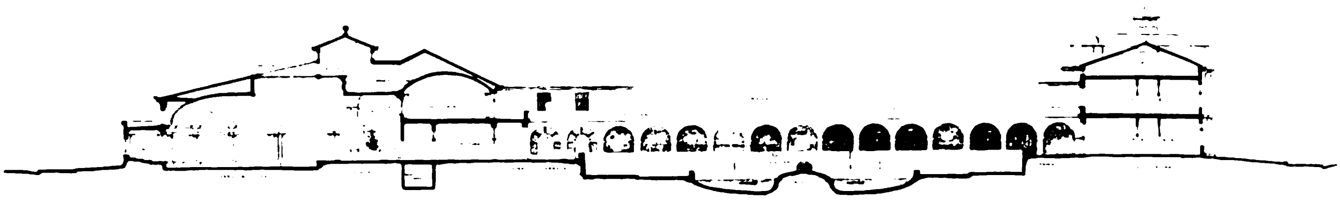

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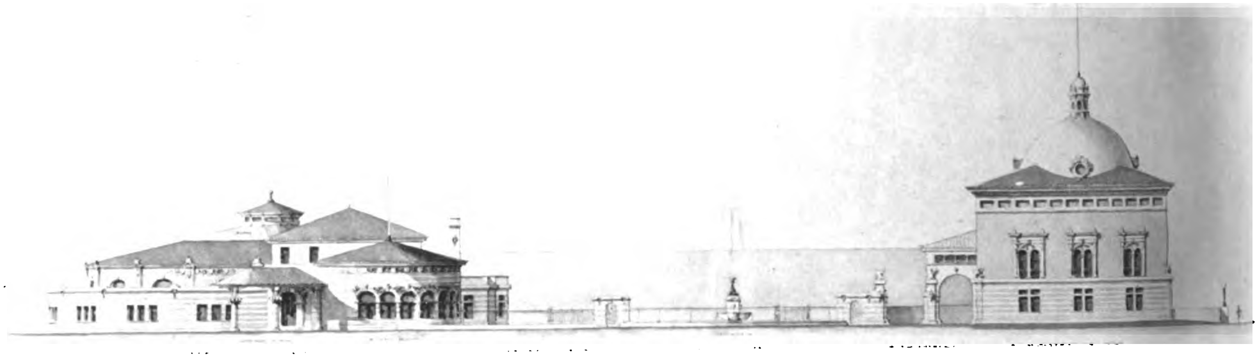

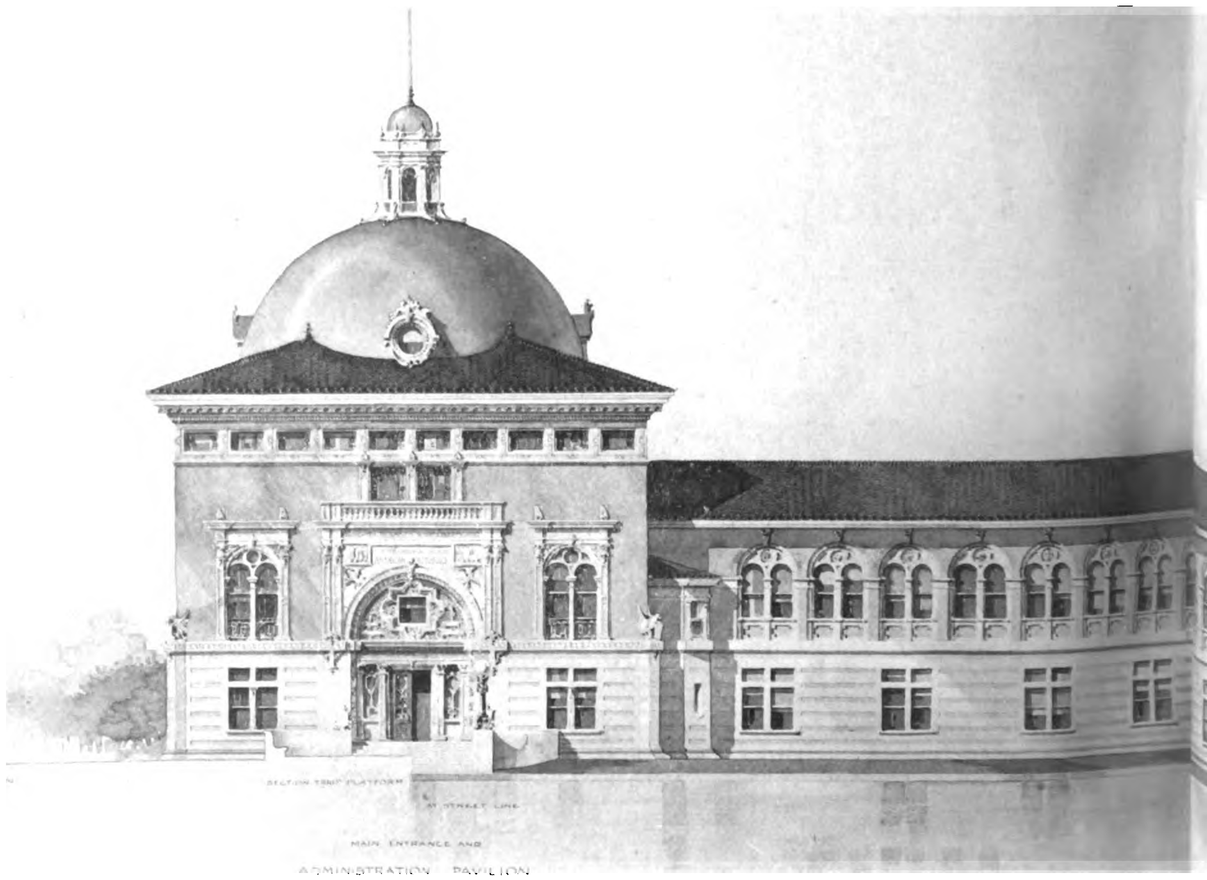

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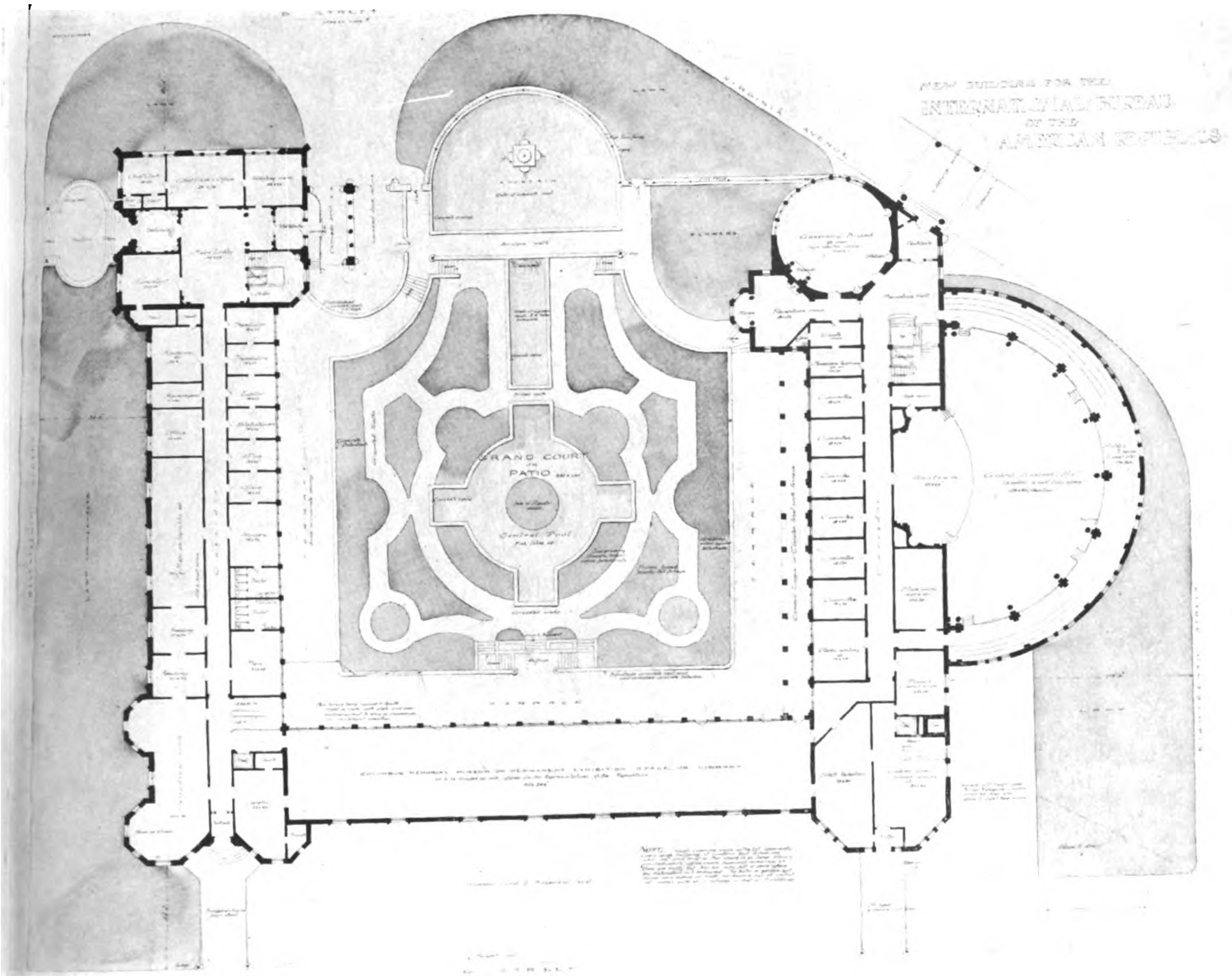

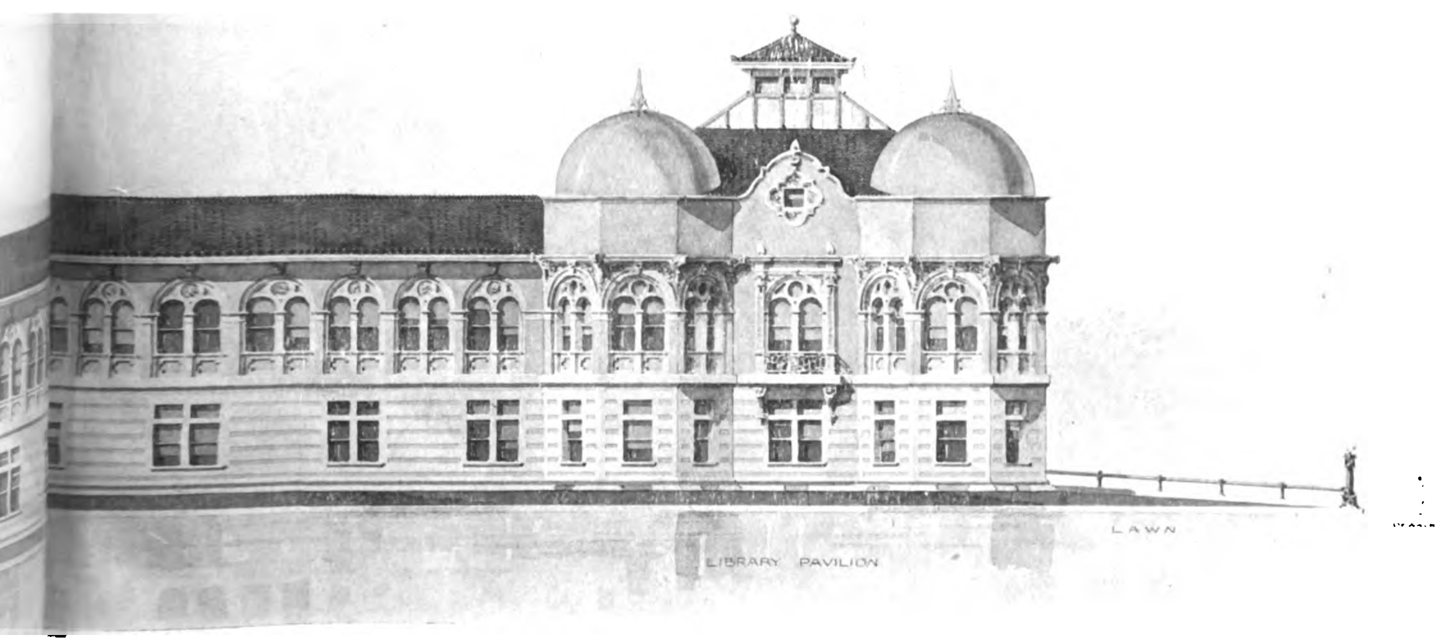

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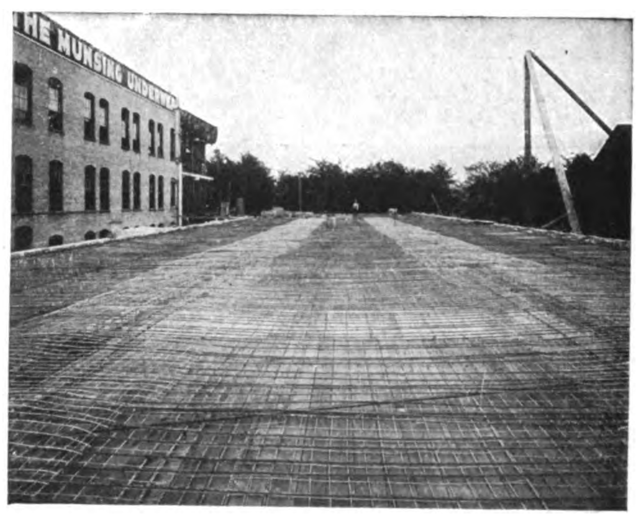

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The Western Architect

VOLUME X NUMBER 10

Contents October 1907

Illustrations

CORRECTION
THE ILLUSTRATION PUBLISHED IN SEPTEMBER ISSUE OF RESIDENCE OF MR. EZRA STINSON, CREDITED TO FREDERICK L. ROEHRIG, SHOULD READ, "RESIDENCE OF MR. A. M. CHAFFEY, LOS ANGELES, CALIFORNIA. HUNT AND EAGER, ARCHITECTS

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ROBERT CRAIK McLEAN, EDITOR.

BUILDING OPERATIONS FOR SEPTEMBER

BUILDING operations for September in forty-five of the principal cities show a decrease of 12 per cent compared with the corresponding month a year ago. Permits were taken out in these cities, according to official reports to Construction News, for 12,624 buildings involving a total cost of $36,980,616 against 11,810 buildings aggregating in cost $42,150,868, a gain of 814 buildings and a decrease in cost of $5,170,252, or 12 per cent. Of the 45 cities there were losses in 22 and gains in 21. Two of the big cities showed important increases, and these were Chicago and Philadelphia. The former gained 21 and the latter 29 per cent. Some of the increases were phenomenal and in this respect the north Pacific coast cities make a marvelous showing, Seattle leading with an increase of 185 per cent, Portland 114, Spokane 57, and Tacoma 49. Building is unusually active in Duluth, where the gain was 199 per cent, San Antonio 141, Baltimore 65, Birmingham 55, Grand Rapids 97, Columbus 41, Rochester 36, Philadelphia 29, Toledo 25, Denver 23, Lincoln, Neb., 23, Omaha 18, Kansas City 18. The most notable decrease was in New York city where building fell off 47 per cent. Otherwise there were no unusually heavy decreases. The heaviest were in cities of very moderate size at remote points from each other, the majority of which have not figured very extensively in the tables of building speculations heretofore. The showing is considered very satisfactory when one takes into account that record breaking activity has prevailed for years past and that wages and the cost of material have never been higher in the history of this country.

SUBSTITUTION

IN these days when, because of their merit, certain articles have become "standard," and those who have not the talent or honesty to originate are prone to imitate, it is not strange that those who have placed "standard" wares on the market should protest. For the imitation article is always advertised as "just as good," and a too gullable public will accept the vender's assertion because there is a seeming saving in price. There never was an article that was "just as good" as another. It is invariably better, or inferior. Usually the latter, for "a good wine needs no bush," and a standard article is one that needs no comparison, while comparison is the chief claim for merit in the substitute. There is a funny story going the rounds of the press of the man who was offered "just as good" brands for those of standard quality that he asked for, and presented in payment a Confederate bill which he claimed was "just as good" as the "standard" currency demanded. There is another funny story that is not quite as polite, of the grocer's boy who wished to substitute sand paper and fly paper. In the line of building materials and appliances there is nothing just as good. Architects know the standard makes, and should select those that most closely fill his requirements. The new device should be sold and accepted on its merits, and if it is all that is claimed it will, in turn, be placed on the standard list. But this can never be done with a "just as good" appliance, for on the face of it the makers seek to build up their business by substitution rather than upon real merit.

OF INTEREST TO ARCHITECTS

ARCHITECT Leon E. Stanhope has removed his offices from the Monadnock building to The Temple, 184 La Salle street, Chicago, and will be pleased to receive trade catalogs.

MODERN comfort as represented in the installation and use of the heating and ventilating system of Kellogg-Mackay-Cameron Company is illustrated and described in an artistic pamphlet issued by the advertising department of that concern. In compact and attractive form the pamphlet shows the power and resources of this independent manufacturing concern, and illustrates and explains the reasons why the heating and ventilating appliances of the Kellogg-Mackay-Cameron Company should be installed in buildings old and new where the acme of comfort, with the minimum of waste of fuel and labor, is desired.

THE hot air generator of the Kelsey Heating Company of Syracuse, New York, is briefly explained in a pamphlet "Just a few houses" illustrated by a number of residences in which it has been installed that in design show that a strong belief in its superior heating qualities is entertained by leading architects throughout the country.

THE Sandusky Portland Cement Company, manufacturers of Medusa Water-proof compound report furnishing their waterproofing material for the following work: Grand Rapids Refrigerator Company plant. The material is also being used in the Reinforced Concrete Dam being built by the D. L. & W. Ry. Coal Department at Scranton, Pa., and was used in the A. Booth & Company cold storage plant at Detroit, Michigan. The Atchison, Topeka & Santa Fe Railway is using an immense quantity at Albuquerque, New Mexico, and Summerville, Texas. Albert Kahn, Architect, and President of the Trussed Concrete Steel Company, Detroit, who is the inventor of the Kahn System of Reinforced Concrete, used the material throughout the construction of his private residence just completed.

A CREOSOTING plant has been installed and has become an important branch of the business of the Kettle River Quarries Company of Minneapolis. In order to bring the necessity for creosoting a large variety of timber material, and the value of the process, before the construction public, the Kettle River Quarries Company have issued an attractive booklet, illustrated with drawings and photographs, which gives much valuable data regarding the causes of decay in timber, and specifications for its proper treatment. The plant of the company is described, and a general fund of valuable information in regard to all classes of timber, from bridge timber to paving blocks, is to be had by application to the company for a copy of the pamphlet.

A BROCHURE recently published by the Flour City Ornamental Iron Company gives a comprehensive sketch, in illustration and text, of the artistic and mechanical ability of this famous ornamental metal concern. It does more than this in that it calls attention to the important part ornamental bronze and iron has played in the evolution of architectural creations for centuries. In typographical form the booklet is as artistic as its contents, and that is saying much.

IT IS interesting to know that Kinnear Pressed Radiators have been adopted exclusively for the forty-seven story Singer Building, now being erected in New York City by the Singer Manufacturing Company, which, when completed, will be the tallest building in the world. Mr. Ernest Flagg, the architect, selected them only after the most rigid examination and exhausting test of all the radiators in the market. The test thoroughly demonstrated that Kinnear Pressed Radiators exceeded every possible requirement for efficiency and durability, yet possessed the essential factors of relieving a weight in the tower alone of over one hundred tons, and affording a saving in space of forty per cent.

THE latest, and one of the most valuable of publications of the American Steel & Wire Company, is a handbook and catalog of Concrete Reinforcement published July 1907. In compact form, letter press and diagrams occupying one hundred pages, it presents to the public a compilation of facts, not only regarding the reinforcement of concrete, but concrete itself from data gathered through the Company's engineering department, as well as some of the best known engineers in the country.` Such estimates as cost, strength, protection of iron from corrosion, elasticity, bonding old and new concrete, effect of freezing and all the other details entering into the use of concrete in reinforced form are given with tables of weights, areas and sizes of triangular and square mesh reinforcement, etc,. to aid the engineer in accurately computing his quantities and working out his design. The booklet is supplemented by twenty-five page and double page illustrations of important works under construction.

A PAINT catechism compiled by G. B. Heckel, editor of "Drugs, Oils and Paints," and circulated to the trade by the "Bureau of Promotion and Development of the Paint Manufactures of the United States," gives in terse and compact form the technical knowledge which has been accumulated during the past half century regarding their product. The "diseases" of paints and the remedies which it gives is alone "worth the price of admission" which is a mailed request to the association headquarters at Chicago. The illadvised and unscientific laws passed by many of the states, which defeat their purpose by barring out some of the best brands of mixed paints through the misuse of the words "pure" and "adulterants."

THE house publication of the Heath & Milligan Manufacturing Company, "Co-Operation and Expansion," which is published in the interests of the agents of that famous paint concern, gives the reader an insight of the reasons why the Heath & Milligan paints are so extensively used throughout the United States. It also will strike the reader that their manufacture must be as good as they know how to make, and not as bad as they are able to sell and not go out of business. To the architect it means that it is only safe to specify the paints manutactured by Heath & Milligan, Masury, Devoe or other standard concerns whose paints have been known for their good qualities for two generations, and that the "just as good" brands should be left to the exploitation of the department store and the mail order houses to be worked off on a too gullable public.


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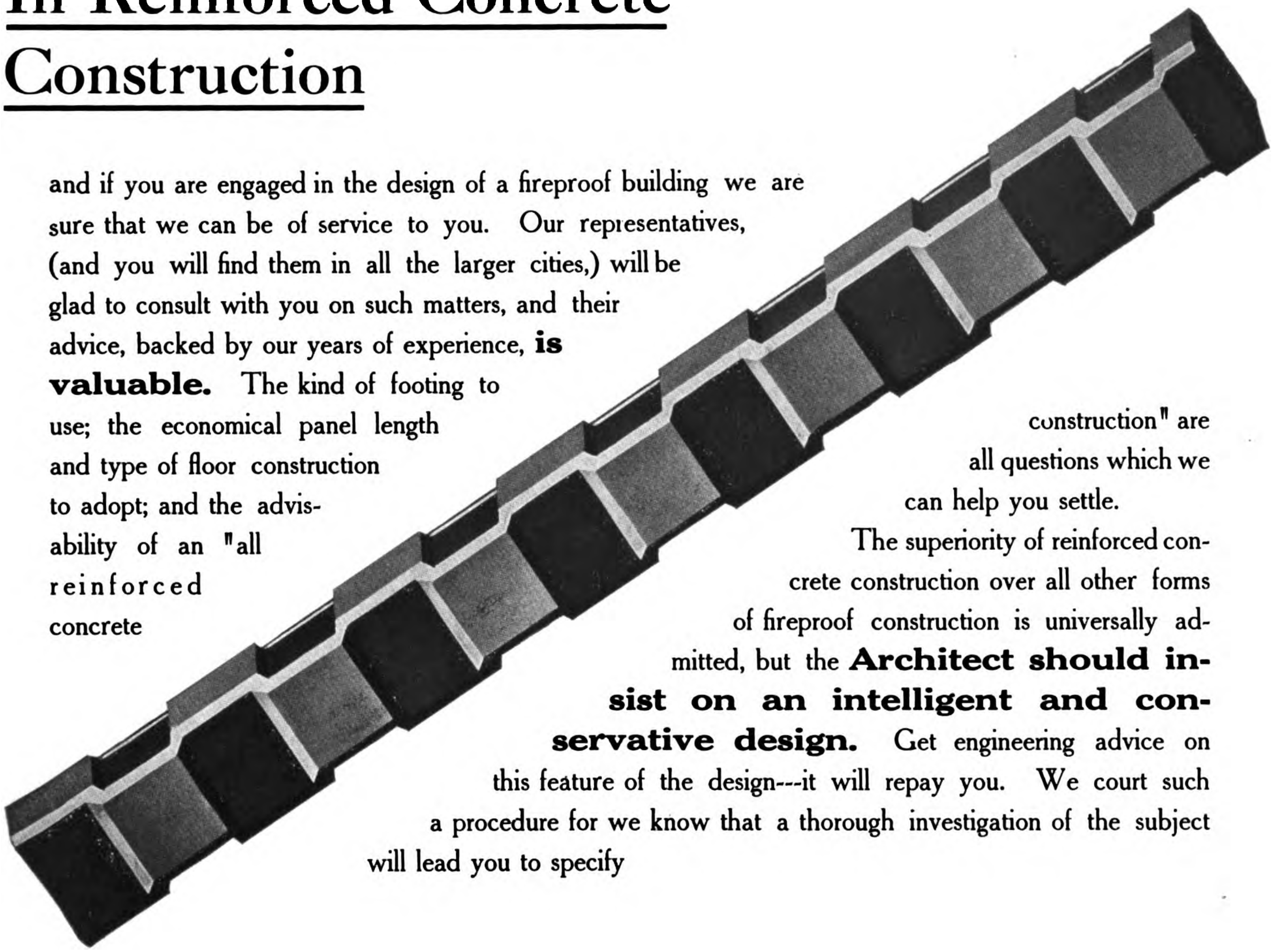

and if you are engaged in the design of a fireproof building we are sure that we can be of service to you. Our representatives, (and you will find them in all the larger cities,) will be glad to consult with you on such matters, and their advice, backed by our years of experience, **is valuable.** The kind of footing to use; the economical panel length and type of floor construction to adopt; and the advisability of an "all reinforced concrete construction" are all questions which we can help you settle. The superiority of reinforced concrete construction over all other forms of fireproof construction is universally admitted, but the **Architect should insist on an intelligent and conservative design.** Get engineering advice on this feature of the design---it will repay you. We court such a procedure for we know that a thorough investigation of the subject will lead you to specify

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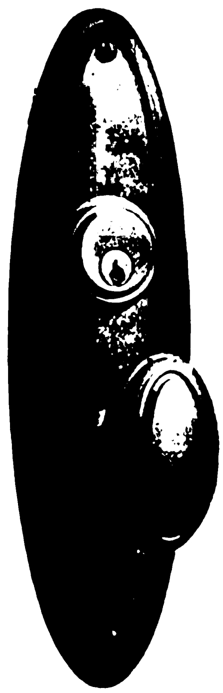

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BY

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(INCORPORATED)

ROBERT CRAIK McLEAN, EDITOR.

Forty-first Convention of the Institute

With but one convention in the territory west of Pittsburg in the past eight years, the convening of the American Institute of Architects at Chicago on November 18, 19 and 20th will be exceedingly important to the profession. This is particularly so because it has been decided to make the meeting a structural one, with the artistic treatment and expression of steel and concrete as a basis for papers and conference. Now that it is probable that the last word has been said in regard to the construction of the steel building, and the use of concrete is beginning to be a large factor in building construction, it is most opportune that those most actively engaged in the design and erection of both classes should bring their knowledge and experience to such a conference for a comparison of method, and to place their deductions before the profession. While the membership of the Institute hardly reaches one-fifth of the practicing architects in the United States, this convention is of the utmost importance to every practitioner, and as architects not members are always welcome to attend the conventions of the Institute, it is hoped that members of the profession generally will find it convenient to visit Chicago upon this occasion, and attend the sessions of the convention. Among those who will present papers on the general subject are F. W. Baldwin, C. E.; Architects A. O. Elzner, of Cincinnati; C. Howard Walker, of Boston; and Irving K. Pond, of Chicago.

In Regard to A. I. A. Schedule of Charges

An architect who is known and admired for his interesting work in design, and who has been a Fellow of the Institute since 1902, contributes an article under his signature to a recent architectural magazine, in regard to the Institute schedule of charges. His opinion is that the schedule should be abolished, and that the public be informed of the fact through the daily papers. His reasons are principally because the public, and the profession as well, are inclined to overlook the word "minimum" in the published schedule, and make five per cent or less the charge for all classes of work; that "those who are worth that much or more, and who have backbone enough to charge what they are worth, are not in need of it, and those who wish to cut rates do so anyway, whether they are members of the Institute or not." This view would be endorsed by a large number of the profession, both in the Institute and out, were it not that the Institute has gone farther into the matter, and found that while there is a class of the capable and backbone variety, the mass of the profession, who are also probably as capable, but lacking the backbone, a superlative talent, or so fortunate a vogue as they, through all sorts of competition find that it takes all the influence of the Institute's endorsement to aid them in maintaining any schedule at all. The successful in the business end of the art are apt to forget that there are many in the profession as capable in an artistic sense, who have not had the good fortune or the opportunity for demonstrating in a signal way that talent to the public. But behind this is a business point which touches all who practice the profession, and that is its legal aspect. Before the Institute became the influential organization it now is, when an architect sued for his fees he usually obtained just what a judge and jury happened to think his services worth. There was no basis except what members of the profession charged for individual work, and five per cent was usually a maximum. But this was changed when it could be shown that an organization representing the entire profession held that a minimum charge of five per cent was "usual and proper." Thus the architect that now sues for a commission of seven per cent, which is probably just, is certain to obtain five per cent, when otherwise he might be allowed three on the testimony of some other architect who would be content to do the work for that price. The schedule should not greatly increase the load upon the backbone of those who are blessed with that rigid anatomy, while its absence would leave the profession in the condition of twenty years ago when one percent was sometimes held by courts to be a large sum to pay for a few sheets of plans. It would be well for those who take the superficial view of the schedule, as the writer of the article in question evidently does, to study its history in Institute annals for the past fifty years, beginning with the doubt regarding the propriety of discussing the subject of fees in Institute meetings, to the present, when the schedule of charges is the only basis upon which an architect's commission can be based and legally sustained.

Benefits from Attending the Institute Convention

Beside the material knowledge that will be placed in concrete form in the sessions of the Institute convention, the large amount of construction, both in steel and in concrete, that is now under way in Chicago, will give to the visitor a rare opportunity for studying the different methods used in the solution of the problem. A visit to the convention will demonstrate conclusively why every practitioner should seek to become a member of the representative architectural society. Its work has for the past fifty years been the nucleus around which the advance of the profession in all its aspects has centered. It has been the representative through which the government and the people have been kept in touch with the art and its ethics, and its influence has elevated the profession into a real profession, where otherwise it would have remained to a large extent a trade.

The "Contract" Value of Competition Programs

The responsibility of the "owner" in issuing an invitation to compete and a formal program, is established to a degree by the outcome of the suit entered a year ago by Rankin, Kellogg & Crane, architects, of Philadelphia, against the Board of Education of the City of Newark, New Jersey. The competition was for a Technical High School in that city. A number of architects were invited to compete and a formal program issued to each. According to the program a certain number of designs would be selected; the author of that placed first to be awarded the commission to design and supervise the construction of the building; the authors of the other designs selected to be paid a cash prize of a nominal sum; it being explicitly stated that the envelopes containing the names of the authors of the various designs would not be opened until these selections had been made. The drawings were judged by Mr. Charles B. J. Snyder, Superintendent of Buildings of the Board of Education, of New York City, whose recommendations were not accepted by the Board. They, being unable to agree upon a choice, decided to reject all the designs and return them to the respective competitors. The envelopes were opened and the designs returned without any of the provisions of the program of the competition being complied with by the Board of Education. One of the competitors, Kellogg, Rankin & Crane, immediately entered suit on the ground that the program and their acceptance of same formed a definite contract, the terms of which they had complied with, and therefore entitled to collect all their expenses in preparing the competition drawings, and a suitable sum for damages, entirely regardless of what their standing in the competition might have been had the Board made a selection as agreed. The case was compromised by the Board of Education paying Kellogg, Rankin & Crane the sum of two thousand dollars, with costs, and interest from the date of the competition. Thus, while the case did not come to actual trial, the result sustained the architects' position, as they succeeded in establishing a sufficient precedent to be of value in similar future cases. It would seem, at least, that the other competitors might now successfully sue and recover a like amount for their rejected plans.

THE SAFETY OF OUR SKYSCRAPERS.

BY F. W. FITZPATRICK.

IT IS the habit of our insurance friends who invariably come in at the eleventh hour and say how things *ought* to have been done, we are now informed by Mr. Babb, the President of the New York Board of Underwriters, that it is only a question of time when the downtown, the skyscraper district of New York, will be utterly wiped out by fire. This must be the cruelest cut of all, particularly to the big insurance companies, who have been advertising their buildings as "absolutely fireproof."

Fortunately, Mr. Babb's alarm need not be taken too seriously, for while, of course, such a catastrophe is possible, there is slight probability of its coming to pass. Yet it is a most favorable opportunity, for his remarks certainly have raised a hubbub in the building and financial circles, to emphasize that, well as those buildings are constructed, still more could be done to perfect them and make the fulfillment of his prophecy utterly impossible. The aggravating thing about it is that it has always been and is in the power of those same insurance companies to oblige the builders of skyscrapers and of all other structures to erect those buildings well and to make them far nearer absolutely fireproof than they are, and spite of the fact that the building regulations did not compel it. The companies know well enough how things should be done, but they have never had the snap or the courage to make their rates accord with their knowledge. Our people are so constituted that they will only build as well as they are obliged to, and the standard of construction has, unfortunately, been the lowest the insurance companies would permit under what was deemed a reasonable rate. Had the companies ever made a commensurately low rate on real first-class construction and a virtually prohibitive one upon shoddy construction, it would not have taken us twenty-five years to get the people into the humor of building as well as they do today.

To me this sudden discovery that our skyscrapers are dangerous structures does not ring very true. It sounds more like a premonition, a sort of little prelude, a paving of the way to an establishing of higher rates all around and more profit to the companies than any real misgivings as to the stability of the New York skyscraper construction. The companies are not infallible, you know, and naturally desire to recoup themselves for San Francisco, a fire, by the way, for which they were very largely to blame, for they had wantonly nursed and encouraged cheap, wooden, shoddy construction by a ridiculously low rate granted because of the wonderful excellence of San Francisco's fire department!

Most of the New York tall buildings are very well built; as a class they are far superior to the tall buildings of San Francisco or Baltimore. Danger of fire from within is not alarmingly imminent, and externally those buildings are surrounded by a pretty fair class of minor structures. The entire district is what might be termed "fair," and the fact that there are so many tall buildings together, constitutes an element of safety. It was the few tall buildings of Baltimore, though they were damaged themselves, that saved the city beyond them.

But since attention has been centered upon them, it would be well indeed to so protect those buildings, adding to them the things that really ought to have been done in the first place, and making them truly absolutely fireproof and undamageable to any serious extent by fire from within or without. Their stair and elevator wells should at once be closed up with fireproof partitions of some sort and with self-closing fire-doors, making of each story a separate unit. The wooden sash and ordinary glass of the windows should be replaced with wire glass and metal sash—cut off the window route and you have cut down your fire risk full 80 per cent. Provide abundant water supply, tanks, etc., on the buildings and drill the employees of the buildings so that any incipient blaze in any one unit can be readily handled and without calling in the aid of the city department. Surely those are not extraordinarily costly provisions to make, particularly as their cost could be more than made up in a short time by reducing the amount of insurance carried on those buildings. If one would only build well enough in the first instance he need bother his head very little, if at all, with insurance companies and their idiosyncrasies.

Referring to the small cost of the real protection of a building, one's thoughts naturally turn to San Francisco and the wonder is why on earth are architects so unmindful of even the major details of what actually constitutes fireproof construction. (The sins of the San Francisco brethren were many, but alas and alack, those sins are common with the profession generally. How many of our dear brothers really know very much about the matter, and if they do, how well do they apply their knowledge? The tall buildings of New York and of every city in the country, let alone the small ones, are my answer to the query. To leave a twenty-story building with unprotected windows is little short of a crime. The importance of the matter was well illustrated at San Francisco.) Fire did not originate in any one of the tall buildings, their interiors and contents were destroyed by fire from without. Wherever the windows were at all adequately protected, those buildings or parts of buildings were intact. To have had wire glass, for instance, in all the windows of the tall buildings would have cost, perhaps, $60,000. The architects "saved" this amount for their owners, or spent it in useless carving and ornamentation. But that saving cost at least $10,000,000. Comment upon the wisdom of leaving off such essentially protective features seems unnecessary.

The question has been answered time and again, yet day after day it is reiterated and a surprisingly great number of times by architects of large practice and reputed skill—"What *is* a fireproof building?"

It is one that is not only incombustible in itself, but that cannot be destroyed by fire or even damaged to any appreciable degree and affords the maximum of protection to its occupants and contents. There is no such thing as "partially fireproof." "Slow-burning construction," except under most propitious circumstances, is a delusion and a snare. A building, like a chain, that is only as strong as its weakest link, may be ever so fireproof in many details but may have the whole scheme vitiated by the neglect of some one little detail.

The first great principle of the construction is the isolation of parts, the cutting of a building into units, particularly vertically. Stairs, elevators, light shafts and all such things, should be absolutely enclosed and tight. Then, even story by story, each should be in as many separate units as possible, cut off by fire walls and self-closing fire doors.

Granite and marble and fine stones are very beautiful, but note what is left of them after a neighboring fire. Better far to eschew such damageable materials and stick to well-burned brick and the best of terra-cotta for ornament. Architects should forget the beauty and charm of fine woods for interior decoration. If marbles and metals are too costly, then resort to plastic decoration and plain surfaces, beautifully colored. The artist decorator can so beautify an interior that one actually forgets that there is any such a thing as mahogany or walnut or rosewood. If the building be a tall one, a steel frame is the only structural skeleton to use. Cover it all well with cement to protect it from corrosion and then as carefully protect it with brick or fireproofing tile to withstand the attack of fire. If the building is to be a low one, then you may resort to reinforced concrete (after some prayer and many misgivings). But even there, the highest authorities in concrete construction have lately conceded that floors and columns and girders of that material should be protected from fire just as carefully as we do the steel frame.

The cutting of the building into small units is all-important, the building of its structure merits the greatest attention, and last, but not least, fire must be kept out of that building. Forty-four per cent of the fire losses of the country is directly attributable to unprotected windows, and we may say that nearly 100 per cent of San Francisco's loss is chargeable to the same fault, therefore should every architect keep a good big placard over his desk, upon which should be emblazoned in letters of red, "Look to Your Windows." Shutters of many kinds, automatic closing devices, etc., are effective in some places, but the consensus of opinion and the bulk of our experience undoubtedly affirm that wire glass, in metallic sash, is the best window protection we have so far devised.

Provide water in abundance and independent of the general service, and intelligent employés to handle it in case of need, and you have all the essentials in those few rules for the construction of an *absolutely fireproof building*.

In the application of those rules, in the selection of building materials, in the designing of the structure so that it will be safe as well as artistic, there is, however, required one thing more; in many buildings, even skyscrapers, it has been sadly lacking. It is not a particularly expensive material, though spite of its name it is not over common. But it has to be used in liberal quantities. Fortunately, if it is not already right at hand or over abundant, it can be cultivated. I mean good, plain, *common sense*.

THE NATIONAL GALLERY OF ART.

BY LEILA MECHLIN.*

ONLY a little over a year ago announcement was made that America had a National Gallery of Art; one which for more than half a century had legally existed, but had been overlooked and forgotten. Once brought to light through the agency of the Harriet Lane Johnston bequest, this institution has demonstrated splendid vigor and developed with a rapidity as encouraging as it is surprising.

When the Smithsonian Institution was established, by act of Congress, in 1846, it was made the lawful custodian of all works of art belonging to the nation, and steps were taken, by the regents, to procure and maintain a gallery. Various conferences were held upon the subject; plans for special exhibitions and for a school were considered; and, in 1849, with excellent judgment, the sum of four thousand dollars was expended for the purchase of the Marsh collection of prints. But that is about as far as the matter was carried.

The first equestrian statue erected in this country—that of General Jackson, in Lafayette Square, in the city of Washington—was not completed until 1853, and the sculptor—Clark Mills - had never seen an equestrian statue when he produced it. There were no notable collections of works of art, either public or private, available to the student; and the early painters of eminence had passed away, leaving but a scattered few to carry on the traditions. The astute collector might, at that time, have procured great art treasures in Europe, which would have incalculably enriched the nation and benefited future

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generations; but the astute collector was wanting, and the few purchases which were made for the National Gallery by the Smithsonian Institution were expressive chiefly of crude patriotism—pictures which had subjective interest as records of historical personages or events, but little or no intrinsic art value. Very naturally, the interest waned, and between the years 1866 and 1879 all those things which had come into the possession of the Institution were deposited either in the Library of Congress or in the Corcoran Gallery of Art, then lately established.

It was not strange, therefore, that when Mrs. Harriet Lane Johnston made her will, disposing of her collection of paintings, historical documents and so forth, she was in ignorance of the existence of a National Gallery, and so bequeathed them to the Corcoran Gallery, with the provision that, if such an institution should at any time be established by the United States, they should revert to it. Owing to certain other conditions with which it was impossible to comply, the Corcoran Gallery was obliged to decline the bequest.

It was this emergency which led President Roosevelt to include in his annual message to Congress, in December, 1904, the recommendation that "the collections of art contemplated in Section 5,586 of the Revised Statutes should be designated and established as a national gallery of art, and the Smithsonian Institution should be authorized to accept any additions to said collections that may be received by gift, bequest or devise"; and it was this, also, which opened the way to the discovery of the mislaid institution.

Mrs. Johnston's heirs were as averse to the dispersal of her collection as was the nation, but they had no legal right to interpret her will. Hence an amicable suit was entered in the Supreme Court of the District of Columbia, and the quandary was settled on July 11th, 1906, by a decree which not only authorized the Smithsonian Institution to receive the gift, but gave legal standing to a National Gallery. In less than a month, the works of art, etc., composing the Harriet Lane Johnston collection were given into the custody of the Smithsonian Institution and temporarily placed on exhibition in the rooms set aside for the secretary and regents.

Mrs. Johnston died in July, 1903; and, while the settlement of her estate was pending, Mr. Charles L. Freer, of Detroit, Michigan, made his splendid gift to the nation, placing in the hands of the regents of the Smithsonian Institution, on May 6th, 1906, a deed to his private collection of paintings, prints, potteries and other art objects, valued at $600,000, and promising to bequeath to the Institution the sum of $500,000 for the construction of a fireproof building in which to house it. This had no reference to a National Gallery, but it is probable, if not certain, that the discussions occasioned by Mr. Freer's original offer operated toward an awakening of interest on the part of those in authority and helped materially to quicken the solicitations of those outside. And in the end, though the Freer collection will be in a separate building, a unit in itself, it will not be isolated to such an extent that it may not be considered a part of the National Gallery. It was, in fact, the beginning; the first stride toward a distant goal. That Mr. Freer recognized the desirability of centralizing at Washington the forces which make for national culture is significant.

The American people are inherently generous. The majority of our public institutions are supported by private individuals, and even our Government collections have been built up by numerous small private gifts. No sooner, indeed, was it known that a National Gallery existed than offers were made of loans and gifts. But the first question to be met was that of adequate accommodations—a suitable gallery in which to house and place on exhibition the newly acquired works. Every available foot of space in both the Smithsonian and National Museum buildings was occupied, the cellars were full, the storehouses were overflowing, and the new building, with its nine and a half acres of floor space for the accommodation of exhibits, was far from completed. The Smithsonian Hall might well have answered, could it have been remodelled and made available, but there was no place in which to dispose its exhibits, and hence the lecture-hall of the National Museum was selected. This is a large and dignified room, and, under the expert direction of Mr. William H. Holmes, chief of the Bureau of American Ethnology, who has acted as curator of the National Gallery, it was redecorated and adapted to gallery use. To be sure, it is poorly lit and in other respects far from ideal; but it alone was available, and its prompt utilization manifested on the part of the officers of the Smithsonian Institution a fixed determination not to allow the National Gallery project again to lapse.

Almost immediately after the Harriet Lane Johnston collection was arranged in this hall, the heirs of the late Lucius Tuckerman offered to loan to the gallery, for not less than a year, the collection of paintings which he had assembled; and, shortly after this, Mr. Edward Kemeys, the distinguished animal sculptor, who died only last May, placed indefinitely at the disposal of the National Gallery, for exhibition purposes, a collection of his bronzes and original plaster casts, numbering more than fifty.

The Harriet Lane Johnston collection comprises sixteen paintings and as many other items, some of which have no special bearing upon the subject of art; such, for instance, as an autograph letter of Queen Victoria addressed to Mrs. Johnston's uncle, President Buchanan, during his term of office. The paintings are chiefly portraits. There is a likeness of "Miss Kirkpatrick," by Romney; one of "Mrs. Abington," by Hoppner; and one of "Mrs. Hammond," by Sir Joshua Reynolds. Sir Thomas Lawrence is represented by a painting of Lady Essex as "Juliet," and Sir William Beechy by a moderate-sized portrait of "Miss Murray." There is reason to believe that all are authentic, but none save the Romney is a specially important example. Aside from authorship, however, much interest attaches to a portrait of "Josepha Boegart," attributed to Pourbus the younger, and to a painting of a "Madonna and Child," ascribed to Bernardine Luini. And, despite some blunt errors, a three-quarter-length portrait of King Edward VII., painted by Sir John Watson Gordon when, as Prince of Wales, His Majesty visited the United States, is one of the notable items in the catalogue. With, I think, but two exceptions,—"A Street in India," by Edwin Lord Weeks, and "The Prince of Wales's" visit to Mount Vernon," by Thomas R. Rossiter,—all the paintings in this collection are by foreign artists, so that, as a whole, it emphasizes especially the desirability of collecting this class of work; of bringing to America, and congregating in a national collection, the great works of the leading masters of all lands and times as examples and standards.

The Tuckerman loan collection was of the same type, covering merely a later period and indicating the trend of European art when, for a number of years, it usurped the rôle of the writer and devoted itself to narration, carrying at the same time the painter's craftsmanship to remarkable perfection.

It was, therefore, all the more interesting and important that the next addition to the National Gallery should have been the Kemeys collection, which turned the attention abruptly to American production and a diverse form of expression. Howsoever Mr. Kemeys's work may be regarded from the strict art standpoint, its strong, frank merit can never be denied, and for all time it must be reckoned among notable accomplishments. It breathes the spirit of genuine Americanism; it presents the wild life of the plains and reëchoes the legend of the wilderness. While others were seeking classical ideals in the Old World, he was learning the secrets of the New, and with the true sculptor's instinct for plastic form was sympathetically interpreting the fauna of our land. When, a few years ago, an exhibition of American water-colors was held in London, an English critic declared, with evident disappointment, that none, save an Indian picture by Irving Couse, manifested "a truly American characteristic." Needless to say, this is not the kind of Americanism to which I make reference. We have pictures of Indians and cowboys galore, paintings of negroes and sky-scrapers in abundance, but we have few sincere interpretations of everyday themes which set forth the ideals, the potentialities and the hopes of our own great nation. For this reason Mr. Kemeys's work is the more significant, and the loan of so comprehensive a collection of it to the National Gallery so soon after its inception must be regarded as a felicitous circumstance.

But a great impetus was given to the new institution through another notable gift. In March, of the present year, Mr. William T. Evans, of New York, than whom none has done more to advance and encourage American art, went to Washington and offered to present to the National Gallery a collection of paintings by American artists of established reputation—an offer which was promptly and gratefully accepted. This collection consisted of fifty pictures, and was given with the understanding that if, later on, it was found that any of the number failed to uphold a properly high standard, it should be replaced by a better example, in order that not only the collection itself, but the representation, should be as good as possible. Nothing, it would seem, could be more fair-minded or generous, and certainly no small collection could better stand for contemporary American painting. It is not faultless or complete, but it is a nucleus, and such an one as, in all probability, could have been acquired by the nation in no other way. There are, for instance, included in this collection, paintings by Inness, Wyant and Homer Martin, which are now almost unobtainable, to say nothing of works by John La Farge, Winslow Homer, Robert Blum and John H. Twachtman. Both the landscape and figure painters are represented, but the former with greater strength and comprehensiveness than the latter. Benjamin Constant said that Inness was the greatest landscape painter of his day; and, whether the statement may be taken at its face value or not, it is undoubtedly true that he and his contemporaries led the way to the noblest conception of landscape art that the world has ever known. Where, indeed, can we turn for truer or more sympathetic interpretations of the outdoor world than to the works of our modern American painters? They have not all seen it in the same way, nor interpreted it in the same manner; some are not poets or even good painters, but the majority of them are sincere and have independent conviction.

In the Evans National Gallery collection, which for lack of available space has been temporarily loaned to the Corcoran Gallery, there are landscapes by D. W. Tryon, J. Francis Murphy, Charles B. Davis, Henry Ranger, Charles Melville Dewey, Louis Paul Dessar, Ballard Williams and Albert Blakelock, J. Alden Weir and Robert Minor, as well as by the older men already mentioned. And, of the figure painters included in the catalogue, there are John W. Alexander, T. W. Dewing, John LaFarge, Walter Shirlaw, *Louis Loeb*, Sargeant Kendall, Charles C. Curran, J. Alden Weir and William T. Smedley—some of the strongest and best. From first to last, the collection has been well assembled and with a view to set forth not merely notable examples, but the work of those who have contributed something individually to the art of our land.

It has been said that we have no American school of art, but if this be so it is because we have many. In America art is passing through a formative period, and is to some extent experimental and immature; but, in spite of this, it is today the healthiest, most vigorous and promising art in the world. There are dangers and hindrances attending its development; feebleness in some of its members; occasional dissensions within; but the trend is onward and upward, the major tendencies being hopeful. Not merely patriotism, but common sense, therefore, dictates its encouragement, and applauds its inclusion in the permanent collection of the National Gallery. It was this belief which prompted Mr. Evans's gift and has since induced others to make similar single contributions.

Thus it will be seen that, within a year, much has been done toward placing a National Gallery on a sure footing, but done, it will be noted, by private individuals. At no time, and in no definite way, has the Federal Government given official recognition to American art. Perhaps, in fact, I should say, to art, without qualification, for while appropriations have been made by Congress, from time to time, for the purchase of some single specific work, nothing is done toward the support of institutions, and rarely is encouragement lent by the employment of expert skill. The nearest approach to a token of any patronage of art given by the Government are the mural decorations in the Library of Congress, which were paid for out of a surplus appropriation at the minimum rate, but have, it must be confessed, exerted a potent and wide-spread influence.

America has a tremendous problem on her hands—that of social adjustment—and in no way can she solve it save through the medium of education. Until men and women learn to find pleasure in better things than mere money-getting, there will be no solution of labor troubles. Art which delights the eye and gratifies the senses is, therefore, not a luxury, but a necessity—a staff of everyday life. The public schools, through their art courses, are now doing much toward broadening visions, opening the children's eyes to that which is beautiful, cultivating their taste and giving them true standards. The museums also are reaching out in the same direction; and for the extension of art knowledge many organizations have been formed in all parts of the country. Not only, then, are the artists worthy of suport, but the people are prepared to profit by the instruction which may be offered.

Governmental wheels turn slowly, but sometimes it is well that this is the case. Certainly, much care and thought must be given to the development of a National Art collection if it be made in every respect worthy. Together with the generous giver come those who have wares to sell, and discrimination must accompany the exercise of the purchase power. That this power may be unpolitical is demonstrated by the Library of Congress, which is now an independent institution and truly national in scope. Eighty years were required to evolve it, but it is now one of the strongest factors in the nation's educational scheme, and its organization and administration illustrate the manner in which a National Gallery might be controlled and made effectual.

When the establishment of a National Gallery was first noised abroad, suggestions were made in many quarters concerning its probable character. Some persons thought that it should be restricted to American work, others that it should be exclusively a portrait gallery. The hope is, of course, that it may in time be all-inclusive, and embrace not only one, but every phase of the art of this and other lands. The suggestion that it should be a portrait gallery forming a pictorial directory of the great men of America strikes terror, however, to those interested in the success of the project who are acquainted with the official portrait galleries which are now included in every Government Department. Every Cabinet officer is represented in his Department by a portrait, painted by any artist whom his successor may select, and paid for by the nation. Some of these portraits, by chance, are good, and could fittingly be included in a National Art collection, but many are far from commendable or suitable for the purpose.

It has been said that the National Gallery would have to contend with the jealousies of other art institutions; but I believe that this supposition is incorrect and that, almost without exception, it will be found that the people in all sections are working for the common good. Certainly, when Mr. Evans's gift was announced, congratulations poured in, not from individuals alone, but from sister institutions. The conviction that Washington should be the center of national culture and learning is gaining ascendency. Much enthusiasm has been manifested in regard to the Park Commissioner's plans for the artistic development of the city, and more and more, as time passes, is evidence given of interest in their fulfilment. The Carnegie Institution, the American Institution of Architects and the American Academy at Rome, all have their headquarters there; and, with the Library of Congress and the scientific bureaus of the Government, they are attracting to the National Capital students and scholars from all parts of the world. And, what is more, Washington is a residential rather than a commercial city; its environment is already artistic and its future character assured.

In the Corcoran Gallery, last winter, a notable exhibition of contemporary American paintings was held—the best probably which has yet been set forth—and during the four weeks it was open it was visited by over sixty-two thousand persons. The average attendance at the Corcoran Gallery has been about four hundred thousand a year; but, upon special occasions, as many as five thousand have been admitted in an afternoon. This at least suggests the fallowness of the field.

"Why," it has been asked, "with the Corcoran Gallery, is there need for a National Gallery?" Because, the answer is, the Corcoran Gallery is a privately endowed institution, with an independent organization and comparatively limited means. Established and endowed by the late William Wilson Corcoran, it is governed by a board of trustees whose term of office is for life and who are obliged to perpetuate, by elections, their own number. The Corcoran Gallery has, however, stood in the place of a National Gallery for many years, and if eventually, by some arrangement, it can be made a part of the larger organization, keeping its own independence, it will indeed be well.

That is, of course, looking far ahead. For the present, no radical or definite plans have been made. That other broad-minded art patrons and collectors will follow, in time, the example of both Mr. Freer and Mr. Evans seems more than probable, and that artists themselves will aid in the upbuilding of the collections there is reason to believe. The National Museum has already certain collections of ceramics and exhibits in the industrial arts, which may be reckoned as a part of the National Gallery, and it is earnestly hoped that in the near future further development may be made along these lines.

The great and first need is a building—one which will adequately and appropriately afford a home for the institution, and allow in its plan for continued growth. Undoubtedly, an appropriation for this purpose will be asked of Congress at its next session; and though it is possible that, in pursuance of what has been characterized as its "extravagant policy of economy," the request may be refused, it would seem more logical to believe that, with evidence of so much outside interest and enthusiasm, the national support will be forthcoming.

THE NATIONAL LUMBER SUPPLY.

A POINT in the industrial progress of the United States has now been reached where development of the country is made, not in the face of the forest but with its essential aid. The old process of exhausting the supply of timber in a region and then seeking new fields is practically over. Already the lumber industry is turning back on its tracks. A quality of timber is eagerly sought in the Lake States which a few years ago was ignored as utterly worthless, and in the South the whole pine region is being gone over in a close search for the old field pine, a tree once despised but now bought up at prices much higher than those formerly paid for the magnificent timber of the virgin forests.

A publication just issued by the Department of Agriculture, entitled "National Forests and the Lumber Supply," defines the important part which the National Forests are destined to play in the economic development of the country. Abuses have grown up under the laws which provide for the disposition of public land, notably the segregation of large holdings of timberland for speculative purposes. Timber from the National Forests is now purchased by the thousand board feet, and payment is made upon the actual scale of the logs when cut. Two dollars and a half per thousand feet is comparatively low as present charges go, but since the cut ranges from 5,000 to 20,000 feet per acre, the government receives from five to twenty times as much for the timber as it did under the timber and stone act.

Public opinion now demands, not that the government should dispose of its remaining timberlands as rapidly as possible and leave it to private enterprise to exploit the forests hastily, but that what remains of the National Forests should be more conservatively used. The government has been forced into the lumber business solely in order that a supply of forest products may be guaranteed to future generations.

Probably 65 per cent of the total stand of merchantable timber within the forests is located on the Pacific Coast, where for a long time the enormous supply of privately owned timber will satisfy most of the demand. This more accessible private timber surrounded the forests as the meat of an apple surrounds the core. It has been entirely eaten away in many places, while in others it is locked up by speculators. The thing to remember, then, is that this immense body of public timber is there as a great reserve against the time when private timberlands will be depleted, and for use as a weapon against monopoly.

The first effect of National Forests upon prices, particularly where there still is a great deal of available timber, is to raise the price of outside stumpage toward its actual value by withdrawing the excess supply of low-priced timber from the market. But later, as the supply of timber dwindles and values are forced upward by speculative holdings, the effect of the forests will be to check the advance of prices.

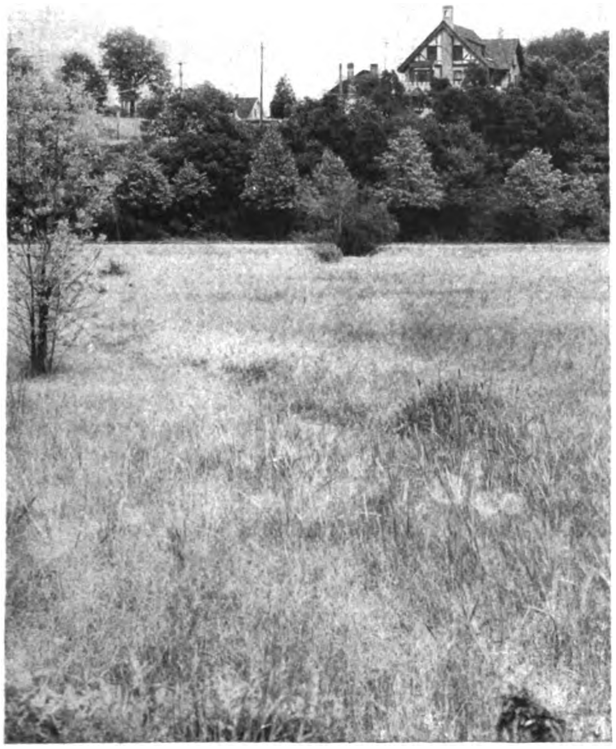
In the virgin forest, growth is just about balanced by decay. In the western forests, however, natural deterioration is greatly augmented by forest fires. The fires usually do most harm by damaging merchantable timber, but, great as this injury is, vastly more actual loss in forest wealth results from the yearly burning over of the grass and undergrowth of the forest. Ground fires do not consume the large trees, but they destroy seedlings outright and injure growing trees so that they quickly decay. Finally, the forest floor, composed of a mold of needles, twigs, and mosses, is burned away.

Far beyond the present influence of the National Forests upon the lumber supply will be their importance in the future. The United States is now facing a shortage in the stock of available timber. The yield from the National Forests will aid greatly to bridge over the period in which mature timber will be lacking, a period which will last from the time the old trees are gone until the young trees are large enough to take their places.

The definite result, therefore, of the sale of timber from the forests will be to sustain the lumber business, to maintain a steady range of timber values and so discourage speculation, and, far more important still, steadily to further the uninterrupted development of the great industries dependent upon wood.

THE ADAPTABILITY OF THE ROUGH-CAST HOUSE.

THE adaptability of the rough-cast half-timbered house to different locations has often been shown, and it is always picturesque. Of the accompanying illustrations, one house faces the south from the brow of Lookout Mountain, with a surrounding panorama that includes five states. The other is in the beautiful environs of Minneapolis, Minnesota, on a knoll overlooking one of the picturesque lakes that are a feature of that city.



But it is not in its picturesque quality alone that this form of plaster construction is desirable. While it may be applied to wood, it is more often the finish of a brick or hollow-tile interior construction, and adds a finish that is fire-resisting to an interior that is practically fireproof, and that at a cost that in many cases is less than it could be built from wood in the ordinary balloon frame method.

In the matter of design the adaptability is also noticeable in the illustrations for the Spanish tile roof of the cottage or the ordinary tile of the larger residence. While in one case the design suggests the Spanish architecture and material of our coast cities, and the other that of the southern counties in England, they both serve to make a comfortable and wholesome residence in latitudes where the extremes of heat and cold are far apart, and always meet the conditions.

PUBLICATIONS.

RUMFORD FIREPLACES and how they are made. By G. Curtis Gillespie, M. E. Architect. Containing Benjamin Count of Rumford's essay on "Proper Fireplace Construction." William T. Comstock, New York, 1906.

As the birch bark canoe was constructed upon lines which were first laid down in the legendary past of the American Indian, so the fireplace has been an institution since the stone age, and like the canoe, is governed by the same inevitable law, which, deviated from, destroys at once all usefulness in its special province.

The Indian has never tried to change his design, but the modern has sought to change the fireplace to the extent that it is an exception when one is found that perfectly fulfills its function. This is regrettable because the fireplace is the one medium by which in modern city life we can keep in touch with the life of our forefathers, and in which the poetry of the past and the present join in our inner consciousness.

This volume, so full of practical hints in detail, and which in general is seemingly designed to bring back the modern architect to the old and original form upon which the fireplace was constructed, is a delightful compilation of text, with pictures of the fireplaces of the olden and designs of those of modern times. Thus its value not only lies in its practical instruction, but because of the immense amount of fireplace lore that it contains, it is a pleasure to review or to possess, by any one who cares for a hearth fire in his home.

AIR CURRENTS AND THE LAWS OF VENTILATION. Lectures on the Physics of the ventilation of building, delivered at the University of Cambridge in the Lent Term, 1903. By N. W. Shaw, Sc. D., F. R. S., Cambridge Physical Series, Cambridge University Press, London. G. P. Putnam and Sons, New York, 1907. Price, $1.00.

What is probably the last word, and certainly the conclusions of the highest authority, upon the subject of ventilation, is found in this book by the venerable director of the Meteorological office of England, and, as the author states, it is in a way his "last will and testament" in respect to ventilation. Demonstrating in a clearly worded preface the principles of ventilation physics as he has found them, and deducing them to a simple equation, under the head of four general chapters are given a series of papers on the subject in detail. Following the "Laws of flow in air circuits and their verification," a chapter is given to physical principles applicable to ventilated space. Then the "Application of physical laws to practical ventilation" is followed by notes on the "Measurement of the flow of air," and data for the "Determination of the head of aero-motive force due to various agencies." It is evident, according to the author, that too little attention has been paid to the laws of physics in the study of ventilation. That the paradox of additional air of higher or lower temperature can be used to cure a draft. That one man's fresh air is another man's draft, and the general problem of how the supply of air designed to wash away the respirable impurity, and still maintain the requisite temperature, may be expected to fulfill its task in its journey from inlet to outlet. Beside being a notation upon the general problem, the data collected by Mr. Shaw through many years of scientific experience is of paramount value to everyone that has to do with the design and construction of buildings.

STAIR BUILDING AND THE STEEL SQUARE. A manual of practical instruction in the art of stair-building and hand-railing, and the manifold uses of the steel square. Part I, Stair-Building. By Fred T. Hodgson and Morris Williams. Part II, The Steel Square. By Morris Williams: Illustrated. Published by American School of Correspondence, 1907. Price, $1.00.

The necessity for a series of practical working guides to stair-building, compiled from the results of practical experience, created through the advances in science and the evolution in constructive methods, has been met by the systems detailed in this volume. It is especially adapted for the purpose of self-instruction, as the utmost care has been used in the treatment of the subjects by past-masters in carpentry and building. There is no writer of this generation more conversant with all the practical details of carpentry than Mr. Hodgson and to him carpenters owe the larger proportion of the written instructions and record in their trade that are authentic and reliable.

The book on Stair-building is timely, as the art is fast becoming lost to the journeyman in the mill-constructed, machine-made work, that has become general throughout the country. The mill has in the same manner destroyed the one time skill of the worker in wood in other directions, but in none is it so pronounced, and at the same time regrettable, as in that of making stairs, until it is doubtful if there is one "carpenter" in a hundred, or five hundred perhaps, that could lay out the wind of a stairway or have sufficient knowledge of the use of the steel square to lay out the miter of a tread or riser, much less a flyer or winder, or its manifold uses in roof framing. This also applies to the draftsmen in architect's offices, in its application to stair-building, and the imperfect drawings that at one time could be brought right by any competent carpenter are now bungled by the workman constructing the stairs. It should, therefore, be found in the working library of every architect.

This volume is the joint work of Mr. Hodgson and Mr. Williams, and is a most valuable combination of facts and figures gathered from a ripe experience for the present seeker after woodworking knowledge, as well as a record which will do much to perpetuate the art of woodworking, both in stairbuilding and in the multitude of uses to which the steel square is available.

ASSOCIATIONS.

CENTRAL NEW YORK CHAPTER A. I. A.

The annual meeting of the Central New York Chapter of the American Institute of Architects was held at Ithaca on October 11, at the College of Architecture of Cornell University.

The officers elected for the following year were: President, Professor Clarence A. Martin, Ithaca; Vice-President, H. G. Tuthill, Corning; Secretary, Arthur N. Gibb, Ithaca; Treasurer, Samuel E. Hilliger, Auburn; Member of Executive Committee, O. H. Waltz, Ithaca.

The delegates elected to attend the Institute Convention are J. Foster Warner and Claude Bragdon, Rochester, and Arthur N. Gibb, Ithaca.

OBITUARY.

GEORGE LEWIS HEINS.

Following so quickly the death of Mr. Russell, the loss of George L. Heins of the architectural firm of Heins and La Farge of New York City will be particularly regretted by the profession. He died at his home at Lake Monegan, New York, of meningitis, on September 25th, in his forty-seventh year.

Graduating from the Massachusetts Institute of Technology after a course at the University of Pennsylvania, Mr. Heins entered partnership with his classmate, Christopher Grant La Farge, in 1882. In 1899 Governor Roosevelt appointed Mr. Heins state architect and since that time he has designed all the New York state buildings, and aside from his other works of exceptional character, he has given to the state architecture an individuality which is creditable alike to the architect and to the state that secured his services.

The largest cathedral yet erected in this country, that of St. John the Divine, he won in competition with the best architects in the United States, while the cathedral of St. Paul the Apostle, the interior of the church of the Incarnation, and the recent alterations in Grace church in New York City, each show a remarkable genius for church architecture in its highest and best conception.

Mr. Heins' activities extended in other directions, among them being consulting architect for the Rapid Transit Company and the designing of the stations for the first subway.

Mr. Heins was an active member of the Architectural League of America, having had a large share in the upbuilding of that association. He was also a fellow of the American Institute of Architects since 1901, and was entered on the membership list of the Calumet, Century, University and Underwriters' clubs, of New York, and the Fort Orange Club, of Albany.

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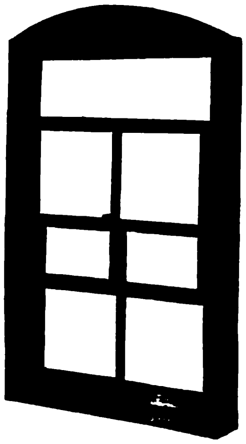

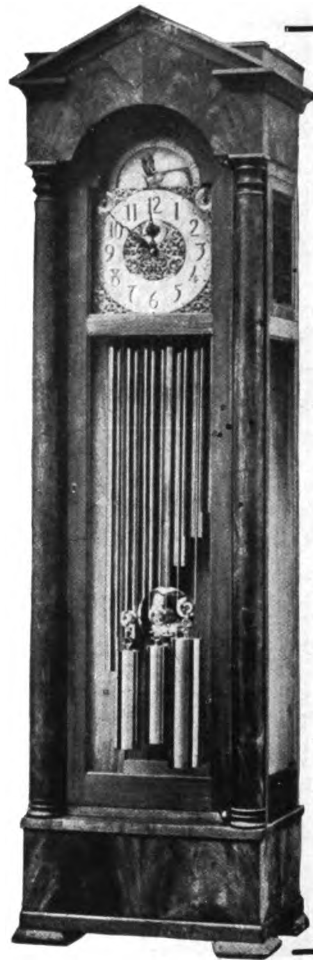

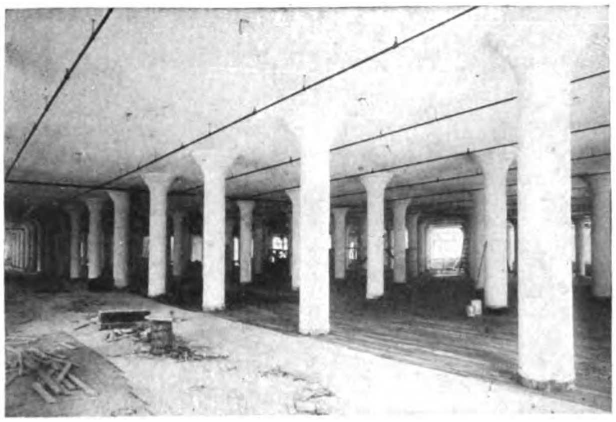

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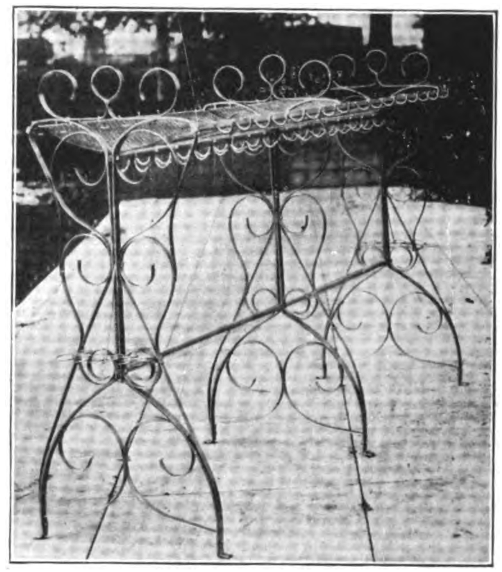

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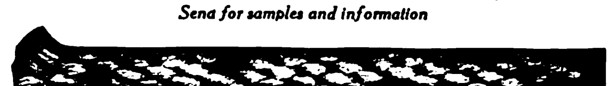

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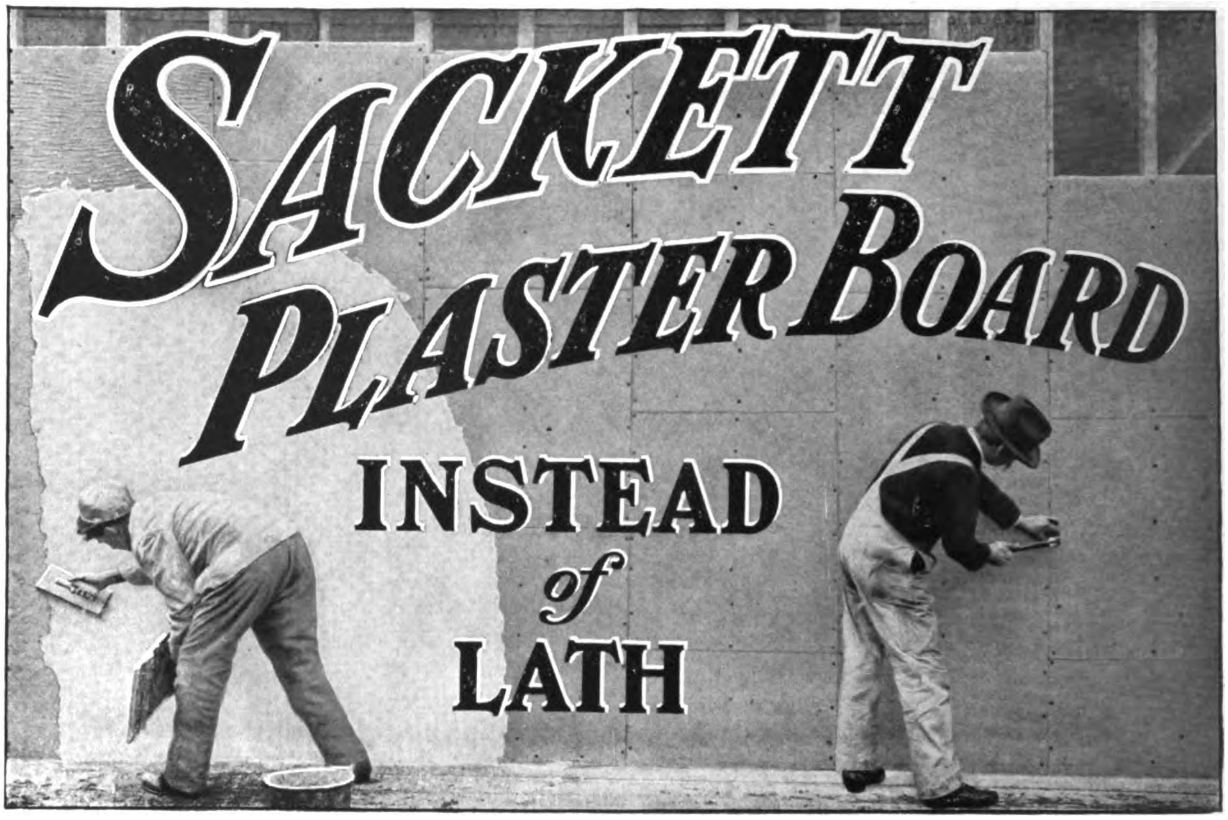

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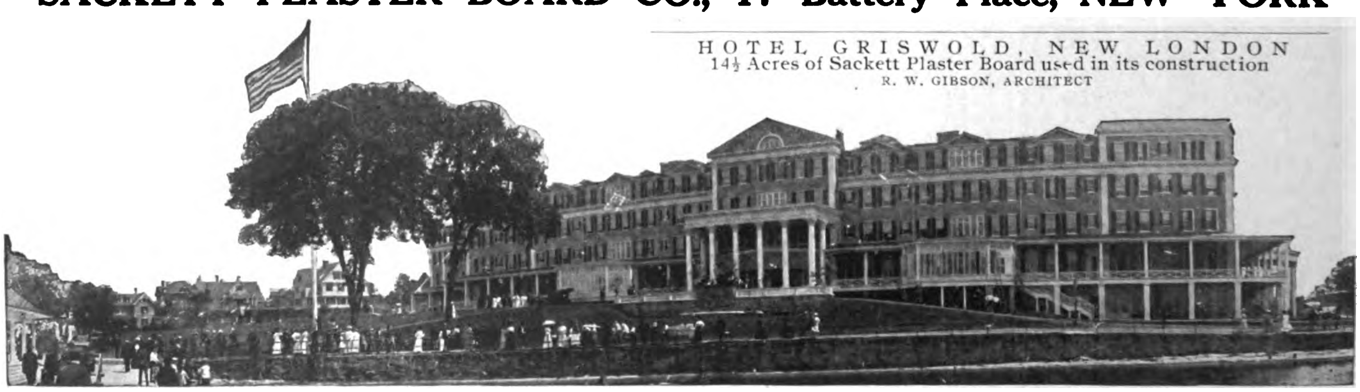

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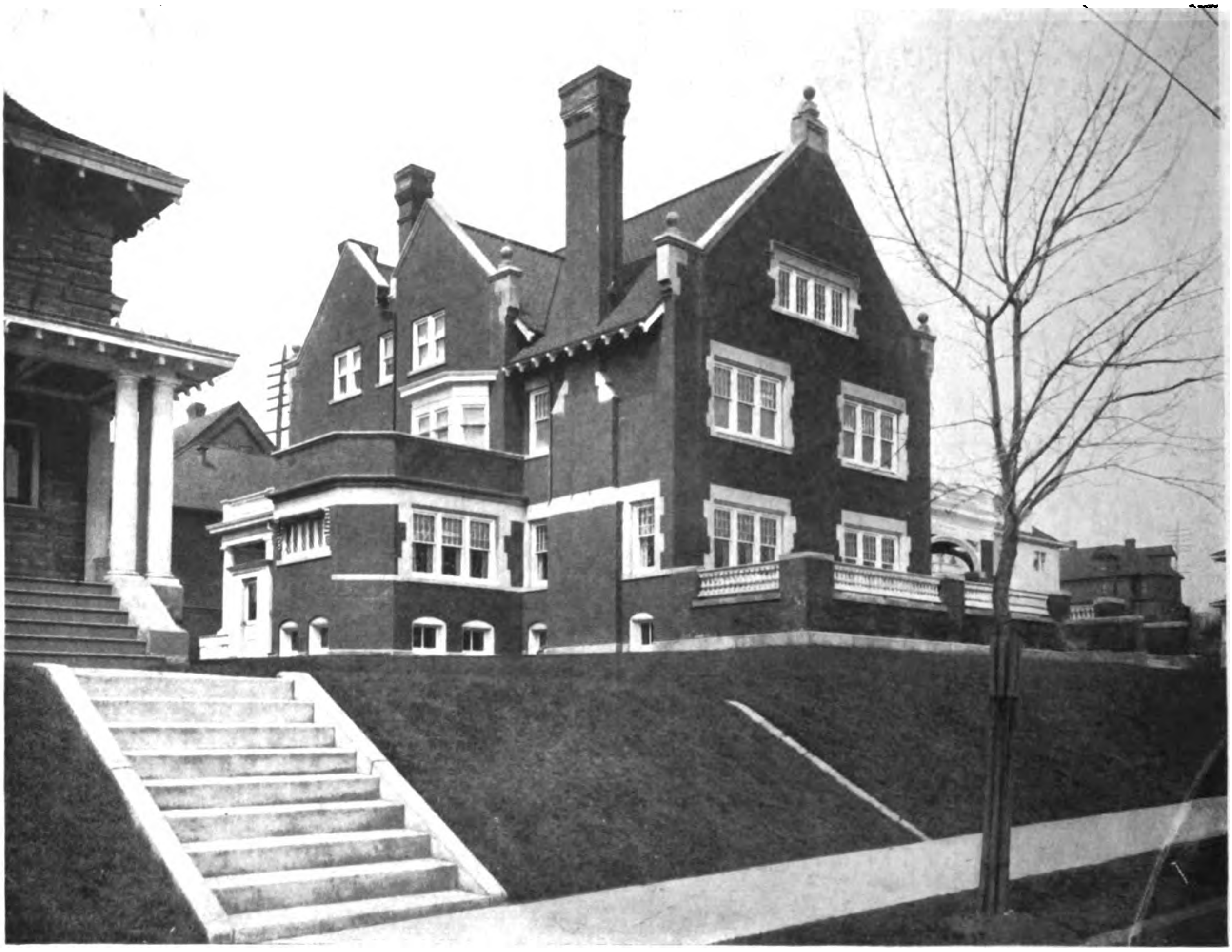

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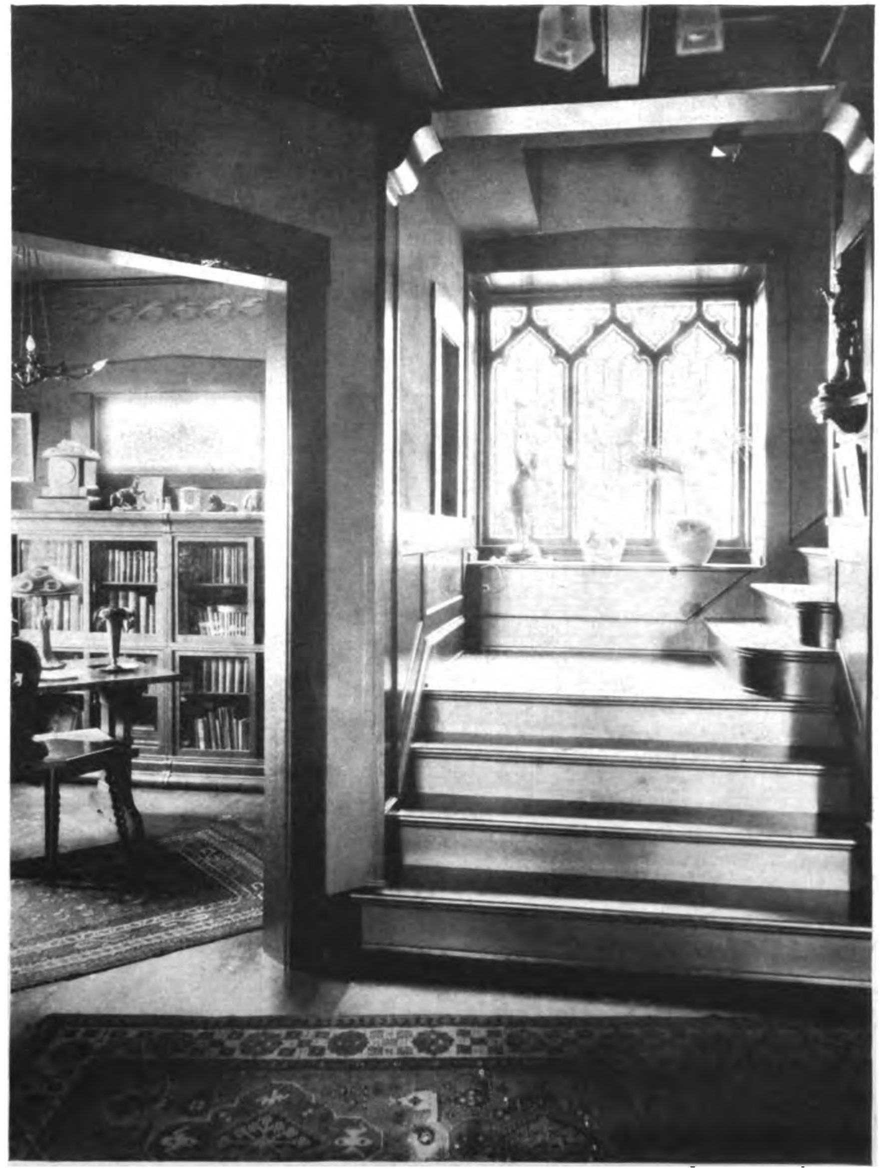

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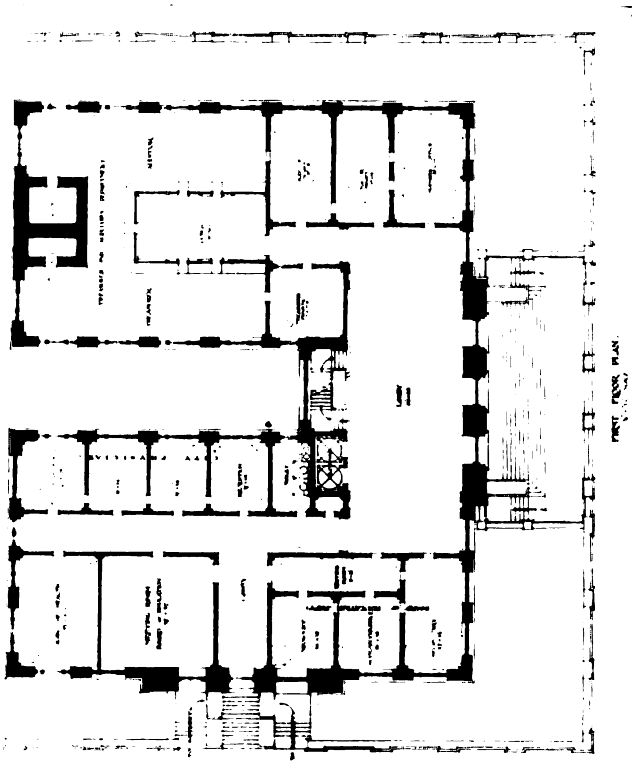

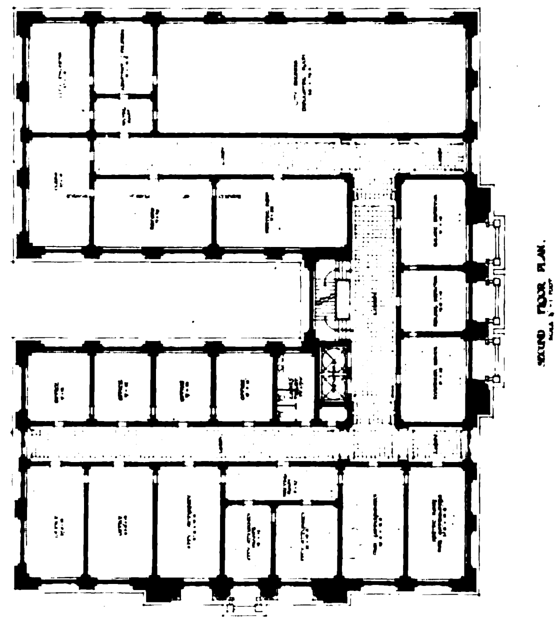

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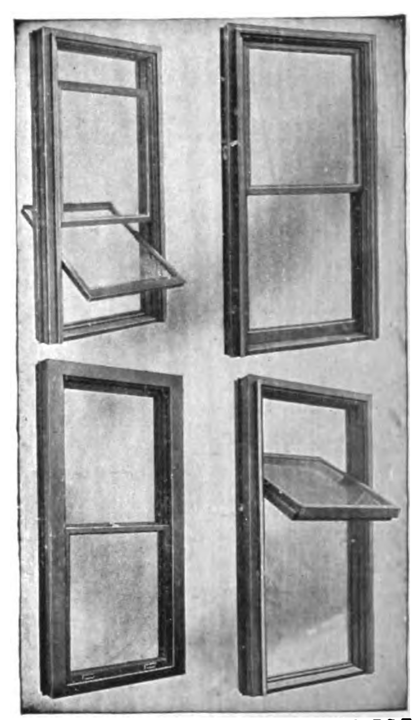

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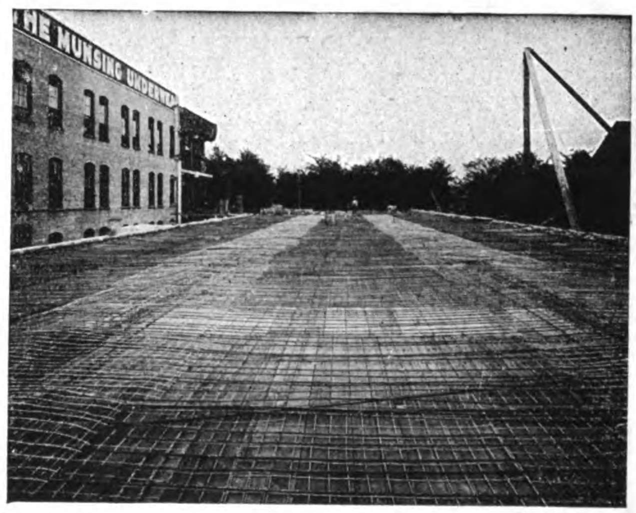

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The Western Architect

VOLUME X NUMBER 11

Contents November 1907

Illustrations

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ROBERT CRAIK McLEAN, EDITOR.

BUILDING OPERATIONS FOR OCTOBER

DURING October permits were taken out in forty-two of the principal cities according to official reports to Construction News, for the construction of 11,785 buildings, involving a total consideration of $41,350,179, against 13,179 buildings aggregating in cost $47,399,124 for the corresponding month a year ago, a decrease of 1,394 buildings and $6,048,945, or 13 per cent.

The situation at the present time is somewhat complex. The Middle West, including Ohio, makes the best showing. Surprising as it may seem, however, New York City, which has been running behind for months, made a gain in October of 63 per cent. Chicago, which showed a heavy gain in September, in October had a loss of 5 per cent. A decrease in Philadelphia of 59 per cent is a very material falling off for the reason that the totals of that city never vary greatly. Ohio seems to be in pretty good condition, Cleveland having a gain of 281 per cent and Cincinnati 118. Toledo and Columbus, Ohio, have suffered small losses. In the northwest St. Paul and Minneapolis showed increases respectively of 77 and 13 per cent, while in Duluth there was a decrease of 33. It is a little late and may be it is not the cause, but St. Louis begins to show the effect of overbuilding, the decrease amounting to 55 per cent, while Kansas City had a gain of 24. There were increases in Omaha of 37, Salt Lake City 22, and Denver 2 per cent. The south generally shows a falling off, Baltimore leading with 34 per cent, Chattanooga 50, Mobile 20, while Birmingham has a gain of 97. The Pacific coast cities are not making quite as satisfactory a showing, but the figures for Portland and Seattle have not been received. San Francisco showed a decrease of 75, Los Angeles 45, Tacoma 22 per cent, while Spokane had an increase of 82.

Reports for the time being indicate that considerable new work has been deferred temporarily because of the tight money market. That is to be expected, but it is believed that it will be brief and that matters will right themselves within a very short time. Very little building, as most people know, is for speculative purposes. It is to meet urgent necessity and owners are anxious to go ahead with prospective improvements just as soon as conditions are a little more favorable.

ANNUAL CEMENT PRODUCTS EXHIBITION

THE Cement Products Exposition Company has been incorporated by a number of Western men interested in the progress of cement for the purpose of holding an annual exhibition of cement products in the city of Chicago. Among the incorporators are: William Dickinson, of the Marquette Cement Manufacturing Company; C. C. McDaniels, of the Chicago Portland Cement Company, and B. F. Affleck, of the Universal Portland Cement Company. A large number have taken stock in the company. The first annual exhibition will be held in the Coliseum, Chicago, December 17-21 inclusive. One of the features of the display will be a complete concrete block house. This movement was started to provide the West with an annual show of the progress being made in cement construction and cement use. It was realized that the annual sessions of the American Association of Cement Users must be held in various parts of the country, thus giving the West the exhibit accompanying this convention only occasionally. The number of people interested in one way and another in cement and its uses indicates that this annual show will be an important event that will rank with the big stock exhibitions held in Chicago every fall.

IT is hoped that the exposition will be of great educational importance, and will accomplish a good work in advertising the interests of the industry. The scope of the exposition may be judged from the outlines of the various divisions of exhibits as follows: Cement, concrete mixers, block machines, brick machines, cement pipe machines, cement tile machines, cement post machines, cement coloring mixtures, reinforcing metal, cement publications, testing machinery, sheet piling, aggregates, sand, technical institutions, etc.

THE management of the show has been placed in the hands of Mr. L. L. Fest, an experienced manager of great trade exhibitions of this nature. His connection with the affair is of itself an assurance of success.

THE time of the exposition is opportune, coming as it does during the holiday season when the cement men from all over the country may come to Chicago both for the purpose of seeing the show and doing their shopping at the big stores of Chicago.

IT is sincerely hoped that everybody directly or indirectly interested in the cement industry will do something to contribute to the success of this great demonstration intended to exploit cement as the building material of the future.

OF INTEREST TO ARCHITECTS

OF the many great manufacturing plants of St. Paul, perhaps none is better known outside the confines of the state than the St. Paul Foundry Company, which makes a specialty of structural steel work for buildings, bridges, water towers and mills, and is equipped to furnish castings of any size for all purposes. So favorably known is their output that no contract of importance in the Northwest is let without the bid of this popular institution being considered—and more often accepted. They are competitors for structural steel and heavy casting orders in all the territory from the Soo to the Pacific coast, and from Winnipeg to Kansas City. This splendid plant occupies about 15 acres and its various departments, employing 400 men, comprise the largest and best-equipped foundry in the entire Northwest. The original plant, established in 1883, covered something over five acres, so it will be seen that the growth has been remarkable, while the ratio of gain in volume of business is even more so. The executive officers of the company, Mr. C. M. Power and Mr. J. B.

Johnston, respectively president and secretary, are conducting the business in a manner that not only means rapid progress, but adds to the supremacy of St. Paul as the manufacturing center of the Northwest.

THE Architectural League of America announces that all the architectural clubs and societies, members of the league, have inaugurated their fall work, and the "Annual," the official organ of the league, is now occupying their attention. The "Annual" for this year will be very interesting to the architectural world at large, as it contains more than one hundred reproductions of selected examples of hitherto unpublished work throughout the country. Architects and league members of prominence and ability have contributed articles of interest. Taken as a whole, the architectural "Annual" of 1907 will be the best volume heretofore published. This edition will be ready for distribution about December 15th. Any further information can be obtained from Mr. Edward H. Poggie, 529 Real Estate Trust Building, Philadelphia, Pa.

SUGGESTIONS on sheet metal building material "from ore to store," are issued by the Berger Manufacturing Company of Canton, Ohio, and the "suggestions" consist of the eleven styles of steel ceilings made by this company. Beside ceilings, the Berger Company suggests ferro-tile as a substitute for ceramic tile which are beautiful, cheap, and fire-resistant, as well as easily applied. The Berger suggestion also covers a large variety of styles and construction in eaves troughs, end pieces, hangers and conductor pipes, all in stock for hurry orders. A considerable portion of this works, perhaps the largest in the line in the country, is given to roll roofings, made of steel or pure charcoal iron and corrugated sheets and brick and rock-faced siding. The Berger ventilators are also in evidence in suggestion pamphlet, as they are on a good proportion of the roofs one looks down upon from a high building in any city in the country. But as every building appliance that can be made of iron and steel, and made best of that material, is made by the Berger Manufacturing Company, and our suggestion is to write them for catalogues showing their specialties.

F. C. VAN STONE, the artist in decoration known to architects of the Twin Cities, and the West through his former connection with W. C. French & Company, of St. Paul, is now the manager of L. A. McIvor & Company, of Minneapolis. This firm, which has long held a leading position in the decorating field of the West, with this accession acquires a greater scope and assures the architect or the owner as high a grade of service as can be secured in the country in any decorative project from interior finishing to upholstering. Enlarged quarters have been secured by McIvor & Company to meet the steadily increasing demand upon its services.

SOME of the points the Cortright Metal Shingle Advocate makes against wood shingles are worth noting. It says: In "the good old days" wood shingles were made of the body of the tree and endured; now they are made of limbs and saplings just a little beyond the age of the wood that made our schooldays worth while. You may have a roof garden at will. Just put wood shingles on your house and let it rain. The plants will grow in a little while. You may want the shingle effect and not the predatory population of wood shingles. Cortright Metal Roofing provides the means. No vegetation grows on a Cortright Metal Roof, rain runs off and leaves the surface just as it was the first day it went into service. No stone slate is ever tight enough to keep out rain and snow when the wind is directly against it. No wood shingles that will not take up enough water to double their weight.

Ready For Distribution

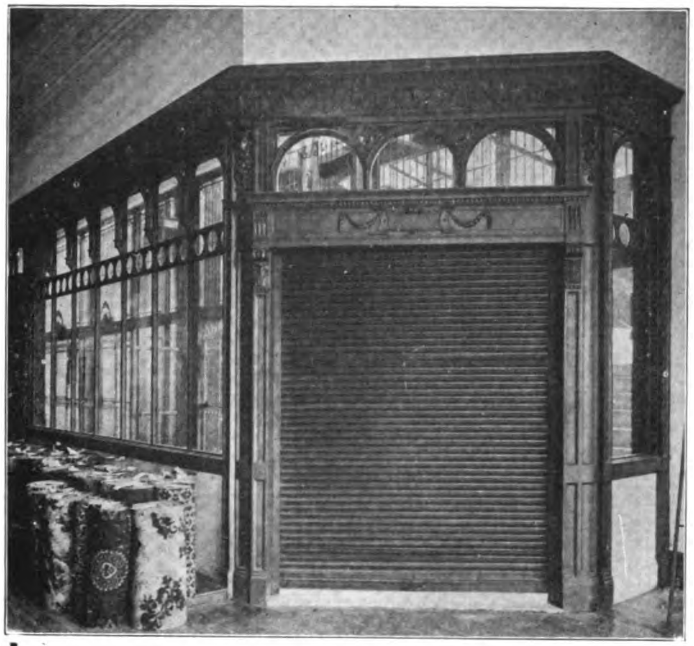
THE "Tin Roofer's Handbook," issued by this Association, will be sent free, post-paid, on request, to any Architect, contractor or engineer.

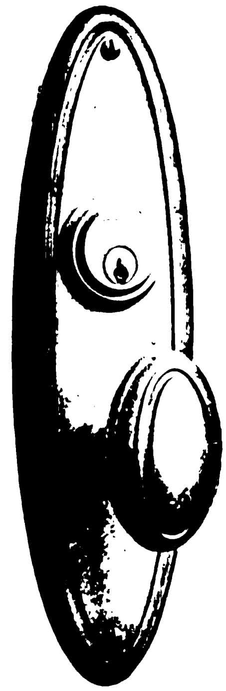
This textbook on tin roofing should be in the library of any one who specifies building materials. Note the following chapter headings:

"Tin Roofing---A Brief History" *"Standard Working Specifications"*
"Advantages of a Good Tin Roof" *"Practical Hints"*

This "Handbook" will be mailed to architects throughout the United States during September. If you fail to receive a copy write to the President of this Association, using your letterhead, or enclosing business card, and one will be sent you promptly.

National Association of Master Sheet Metal Workers





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ROBERT CRAIK McLEAN, EDITOR.

A Useless Impatience with Art Advancement

Since the different plans for the beautifying of the city of Washington became concrete in the original lines laid down by Washington as to plan, and a commission for the proper conservation of the art growth of the future, there has been an active working out by both congress and the art professions for a definition of the phrase. It has been defined in the past by an equestrian statue from the hands of a sculptor who had never seen a horse in bronze or marble, and an architect who thought a pile of stone that towered a Gibraltar of ugliness was architecture. But now the sculptors and architects alike have seen and studied and developed to a degree, so that the art expression of their predecessors is improved upon by their creations. The sensitive soul of the editor of the Washington Post would have the marks of the past obliterated and the designers wait until a fairly representative art sense has developed, and in the interim let nature take the place of art in our capital city. As in most extremes it is between these that true progress lies. The architecture and sculpture of today is not what it should be, but it is improving, and present works may, and undoubtedly will, look crude beside the developed art of the future. But even then the works of our past and present should stand to show that development, and the long road that has been traveled in order that the highest ideals in art might be reached. The crudeness of the past or the lack of perfection in the present should not condemn either, for each shows a growth and virility which promises well for the general achievement in art. A badly designed statue or building has its deterrent effect on the artist, whatever may be its effect on the general educational development of the people.

Importance of Membership in the American Institute

Preparatory to the convention of the American Institute of Architects at Chicago November 18, it might be well to glance at the membership of the Institute. It is naturally like the center of population, distinctly eastern as to location, but aside from that there are other causes that have operated in centering the membership east of the Alleghenies.

The conventions of the Institute must be held in large cities where the latest designs in and methods of construction are varied for the examination of the visiting architect. Boston has the largest percentage of members of any city, and the membership is largest generally where the most intelligent and aggressive chapters are located. The Institute represents the architectural profession, yet there are fourteen states which are not represented either by fellows or associates. These are not governed by locality, for while there are no members in Arizona, Idaho and the Dakotas, there are none in Vermont or New Hampshire or in the Carolinas, Florida or Mississippi. Yet there should be. In each of these states there are architects who are fully competent to hold membership in the Institute, and should for the benefit of the profession as a profession. In the states where there are larger numbers of architects the same rule obtains, for there are many more architects who not only are eligible but owe it to the profession of which they are members to join in the work of the Institute in elevating and advancing the profession in all its different aspects. It is hoped by those who have hope for the future of American architecture that the convention at Chicago will be signalized by a phenomenal growth in the membership of the Institute, and this can only be accomplished by the individual meeting the association half way, and as a preliminary attending this convention that is called to consider the most practical phase of construction now before the profession.

Scheme to Organize a National Exchange

There has been of late considerable agitation in the direction of organizing a national association of the building trades. It will not probably be successful, but it calls for comment at this time, when the exchanges are largely made up of the younger element in the contracting business and governed by those who were but little conversant with association matters a decade and a half ago. There still exists, yet in a more or less moribund state, the National Association of Builders, an association that organized in 1885 and for twelve years displayed a strength and virility that prophesied a long life. In the first few years of its existence it placed the contractor on a plane with the architect and brought them together in council to the incalculable benefit of both, yet perhaps largely because of a defect in organization, that of the delegate system rather than direct membership, the local exchanges one by one refused to pay the small per capita tax and withdrew, leaving the National Association in the hands of an executive committee. The present scheme is drawn much on the same lines as the old, but without its strength in control and direction. The projector, Mr. Williams, may be an estimable man, but he is unknown to the building fraternity at large, and from this objection throughout the entire published program errors in direction are noted that anyone who had knowledge of the hard-earned experience of the National Association of Builders would have rejected as impracticable. The fact is, that in the rank and file of all exchanges there are too many, and in most a majority, who cannot see a benefit that does not come from a direct contract and a dollar earned. If the unification of the contracting business and material supply and the exchange of friendly council between distant exchanges that was one of the benefits of the National Association, was not valued by these at a time when it was managed by the best minds in the ranks of contractors, it cannot be done now by unknown men, even though the new project were an improvement on the old. These conditions of ignorance and narrowness still exist though the establishment of the uniform form of contract was a victory for the contractor that is worth many times all the money ever paid for the support of the National Association by the local exchanges. If any revival of a national association should be entertained by the local exchanges of the country, the National Association of Builders still exists, and its constitution formed on lines dictated by experience. Its name and personel would at once establish that confidence between architects and contractors. Everywhere that seems indispensable with building affairs.

Progress Shown in Contract News Columns

The contract news pages of the building journals are always interesting reading to those who wish to keep in touch with the general commercial progress of the country. Here are gathered the structural activities of the day and from them can be gathered a fair estimate of the growth of a city or a country. The Construction News shows the routine construction of large cities in the United States, while from the Canadian Contractor this feature of office buildings, apartment houses, churches and schools is noticeably absent. In its place the word development describes the impression the news gathered by that journal gives to the reader. And this development is not only interesting, but unique and phenomenal. In the United States the progress has first been in the lines of the habitations of man and then came the public utilities. In western Canada, especially in the newer towns, this seems to be reversed, for the news columns are filled with water power, bridges, railway lines, and trolley systers, projected and under way. Some of these projects rival the office building projects of Chicago or St. Louis in the amount of money involved, and when one reads of the immense ore docks and pulp mills projected at Port Arthur, a $500,000 smelter at Alberta, or a $160,000 armory at the celebrated Medicine Hat, or the several thousand horse-power plant at Calgary, one realizes that Canada is progressing fast and in the right direction.

DEVELOPMENT OF SECULAR ARCHITECTURE IN FRANCE.*

BY S. E. DESJARDINS, ARCHITECT.

WHEN March appears and the sun begins to shine, and we see the first blades of grass and discern that the buds begin to swell, we say, "It will soon be spring," and feel the rise of impulse. But the weeks pass by and the transformation of the season is slow, and from day to day we look in vain for new signs of development. We are impatient of the delay of winter and in despair of the advent of spring. There is here and there a little green, and here and there a furtive flower in some sheltered place, but the chilliness of morning, the lowering aspect of afternoon, and the sleety nights hold back the swelling buds and retard the unfolding leaves. But in due time, all at once as it were, when May is not far off, after a burst of sunshine, after a night of warm rain, the leaves in the trees take us by surprise; the flowers astonish us with their profusion. Spring hath come, we scarce know whence it came.

This is the parable of unfolding art from the obscurity of the Dark Ages into the dawn of the Renaissance. The Age in France had two austere nurseries of Art: the stronghold and the cloister. The rude forefathers of France were strong men of action and impulse, who wrought and prayed sword in hand. They did not at once obtain that degree of cultivation when men are swayed by the refinements of art. They built a crude enclosure of timber for protection, or perhaps a rampart of earth and stone, or perchance appropriated some battered stronghold of Roman colonists which stood amongst them in evidence of past conquest. Their habits were primitive, their surroundings rude; the retreat of the forest served them for asylum and temple. The struggle of existence was that of the woods, the mountains, the plains, and the swollen torrents. Nevertheless, they were surrounded by evidences of civilization, that of Roman domination.

The imperial colonists had left impression of their power in the cities of Gaul, in massive walls, vast amphitheaters, aqueducts, palaces, baths, triumphal arches, and other monumental piles of imposing grandeur. The Franks gradually repelled and superseded their imperial conquerors; they battered their strongholds and other monuments, but these mementoes of Rome served them as traditions; the presence of these impressive structures in their midst modified the barbarity of their customs and swayed their savage impulses. The retreated grandeur of Rome, the lingering evidences of higher civilization within their borders, molded the awakening thoughts of the warlike chieftains and their roving followers, and, undefined though this influence may have been, it supplied the germ whence the great Art of France did spring. But as the new Art unfolded during long periods of uncertain progress it became more and more unlike its prototype and assumed forms which bore no resemblance to the building of Roman origin.

The influences which, with no uncertain trend, led to these modifications, though unknown and of sources obscure, were potent and spontaneous. They molded Gothic Art so as to become unlike any other art, when, like the flowers which surprise us in spring, it unfolded in glorious existence and marvelous beauty. We are, in fact, unable to trace Gothic Art to its fountain source. Some unique influences, Arabian, Moorish or Byzantine, modified the prime motives of Roman origin so as to lead to this wonderful result, or this may have been effected through a combination of several alien influences. We do not possess sufficient knowledge of the unlettered period during which this art assumed form to enable us to trace it back through all the stages of its development. In the South of France there is indeed an unbroken chain which, link to link, leads back to Rome, but in following this clue through the past it does not suffice to enable us to understand how the art was so modified as to become entirely alien to that of Rome, and, when we turn to Italy, Sicily and Spain for the origin of the forms it assumed, these countries afford us nothing in solution of our inquiries; we, on the contrary, find that they themselves came under the spell of Gallic influence in their monuments.

The monks in the cloisters preserved during the Dark Ages the light of classical learning from extinction, and to them may also be attributed the continuation of the lamp of architecture. While the warrior built without other considerations than those of defence, there was within the cloister leisure for study as well as for prayer and contemplation. There was an intensity of emotion in those early times, the depth of which we, in this matter of fact age, can form but faint conception, yet, notwithstanding this devotion to the things of the world to come, the recluse felt the paucity of an existence entirely given over to spiritual contemplation and found relief in the laborious task of copying manuscript and the more wholesome employment of the trowel. He thus early became familiar with the builder's art in the erection and gradual extension of the monastery walls. The Church of the Abbot was decorated with columns purloined from pagan temple, Roman bath or imperial hall of justice; a capital was discovered to be lacking and a ruder one was carved to supply its place. A doorway was to be spanned, and voussours of Roman workmanship not being obtainable the rustic mason assayed to cut the stones and turn the arch, and the result, though crude in comparison with its neighboring example, taught him the rudiments of his craft. This does not explain in any comprehensive manner the beginning of the art, as it emulated that of Rome, but may in some manner illustrate what may have been the first step in its development.

The rustic king borrowed from the monk, and in course of time the oratory within the castle emulated the monastery chapel and ultimately lent its influence in the shaping of the stronghold towers and battlements. The fortifications reared in rigid lines of protection and defence became the cradle of domestic art from the time the feudal lord began to entertain conceptions of personal comfort for himself and for those under his shelter and made first attempt to ameliorate the dreary conditions of contracted existence within the confines of the stronghold during the winter and in times of siege.

This influence did not for a long time begin to extend beyond the confines of the rampart, for it was not until the populace in general began to be moved by the influence of religion that art began to spread to any extent

*Paper read before the Cincinnati Chapter of the American Institute of Architects. Originally prepared to be read before the Woman's Club of this city.

beyond the monastery walls or became detached from the fortification towers. The monastery chapel eventually was enlarged to admit the people from without, and the masses penetrated within the abbey walls to witness the rites of religion and listen to the eloquence of the preacher. It was then that the general awakening of the people led to the building of churches for the laity unconnected with monastic institutions, and sacred edifices sprang up within the enclosure of the stronghold, beside the city market, and wherever the people might assemble in concourse, until this movement culminated in the vast cathedrals erected by the bishops for the people.

From the days of the first Clovis to the time of Charlemagne, the kings of France led roving lives hardly conducive to the building of palaces and the embellishment of capitals, and there is scarcely any evidence that secular architecture made much progress during that epoch. It is, however, probable that existing buildings of Imperial Rome yet stood intact in many of the Frankish cities, and these may have housed the early kings of France during their sojourn in these palaces. The migratory ruler established his capital in numerous places during his reign, and a house of wood probably as rude as the block houses of our own pioneers may have served as palace on occasion. The life of those primitive days was crude and uncouth. There was no commerce and few of the avocations of advanced civilization. The occupation of the warrior was frequently that of the chase, the employment of the serf that of herdsman; the cattle were guarded in the woods and along the banks of streams and often driven from place to place to escape the raids of warlike and rapacious neighbors. The duties of the king's retainers were often those of petty warfare and forage. Life had no permanency and little security. Even the cloister was not immune from attack and the abbot bore arms on occasion. The monastery walls were crowned with battlements as impregnable as those of the king's stronghold. We have no means of ascertaining many facts concerning the character of the secular buildings of those days, which were probably mostly of wood. A glimpse within the Paris of that day would scarcely reveal any architectural form of familiar aspect except those of Roman origin.

The permanent walling of cities marked an epoch in the progress of civic architecture. The battered ramparts of Roman masonry were repaired and restored and new walled cities arose as the population of the country increased. The city was at first a mere enlargement of the fort rendered necessary to provide for asylum for the rustic population in times of danger. The streets within the walls were narrow passages and the populace horded in restricted quarters, and, as the masses multiplied, the area of the enclosure was gradually extended. New occupations and avocations were created to supply the growing needs within these confines, while the art of the builder followed apace to provide shelter for tradesmen and craftsmen, as well as for the soldiery and the lord of the castle.

Passing from monastic and military structures the first evidences of civic and domestic architecture were in the markets, guild halls, and other places of assembly, and also in the abodes of feudal lords, as these gradually became distinct from the military stronghold. Most buildings were in early times put to a number of uses in common, so that the structures of those days admit of no definite classification. The monastery was also a stronghold and on occasion a feudal abode and place where justice was dispensed. The primitive markets and meeting places of guilds and parliaments were within abbey walls. Churches and cathedrals were also gathering places for concourses no longer considered appropriate within sanctuary walls, for they frequently served the growing populace as town halls as well as temples of worship.

The military fortress long continued to shelter the feudal lord, and the primitive baronial castle consisted mainly of one vast room which served as audience chamber and was also a common meeting place in which divers transactions were consummated. The king's palace was not unlike other baronial seats. For it must be borne in mind that there was at that early period no king of France in any unrestricted sense of the term. The bearer of the royal insignia was absolute lord over but a small portion of France and exercised sovereignty over surrounding petty kings, dukes and counts only by virtue of superior strength, while these were bound to him by most indefinite and uncertain ties. Every province of France was a semi-independent kingdom; the chief city of every province was a capital almost as important as that in which the king of France held court. Every city contained its castle, palace, or baronial hall where, during this primitive epoch, the people came for justice and redress and for almost everything pertaining to civic order. It was not until after commerce had become a power and the crafts predominant in influence that the life and activity of the populace ceased to be centered within abbey walls and houses of noblemen. With this began the advent of civic architecture, first, in markets and meeting places for guilds of craftsmen and tradesmen and leading in course of time to the individual abodes of merchants and other civilians. The market was the primitive place of assembly for the common people, and in early times served a variety of purposes. It had its beginning rather in the convent than in the palace, for it was within the monastery that the merchant first found a place of safety for his wares as he traveled from place to place to dispose of them, and there also the tiller of the soil brought his products for distribution among the people. It was in the market that the people first gathered independently of, and in opposition to, the influence of the feudal hall.

We now arrive at a period when ecclesiastical architecture had attained its culminative height of glorious achievement and lent its influence to other classes of building as they arose in profusion throughout the land. Much, indeed, had previously been accomplished in military and secular art. The fortress had ceased to be solely a formidable structure designed for protection and defense, and it is interesting from the viewpoint of architecture to observe that many structural and ornamental details of the secular buildings of France had origin in the severe exigencies of fortress walls, and bore no relation to the development of art as it arose from ecclesiastical sources; among other peculiarities of this nature being the persistence of segmental and elliptical forms for arches. As a notable monument of this age when the severity of military structures was modified by civic influence, stands Pierrefond with its beetling towers and magnificent halls.

With this epoch the embellishment of all classes of buildings ceased to be furtive and uncertain; the work was in the hand of a skillful and well established craft who followed defined traditions which molded their training, and who wrought with an instinct and love of art, the intensity of which we can have no clear conception from the viewpoint of the present day. There were few mechanical arts to be practiced; most of the varied industries of this day were unknown; so that all of the best which lay in the minds of men found allay in pursuit of the builder's craft.

The country became more densely populated, the people more secure in the protection and increasing influence of the king, and it ceased to be necessary for every city and isolated demesne to be surrounded by strong ramparts and in continual preparation for defense. The counts in their provincial capitals and at their country seats, built additions to their battlemented palaces with walls less massive and with windows open to the sunshine, encouraged in the decreasing dread of invasive arms. The people began to build houses without the walls of the city, and rustic villages ceased to cling as closely in proximity to fortified walls. The number of uses to which buildings were erected multiplied; guild and parliament halls vied in grandeur with palaces; abodes of rich merchants emulated those of barons, while along the narrow streets of cities tall, picturesque houses of timber even surpassed in embellishment the more enduring structures of stone.

(To be continued.)

QUEBEC, FROM A SCULPTOR'S POINT OF VIEW

BY GEORGE JULIAN ZOLNAY.

THE impression of Quebec changes at almost every turn: from the distance it looks like Gibraltar on a small scale, but with more grandeur of outline. Approaching it you may think yourself in the presence of one of the great mediaeval cities of France. By the time one has reached the lower part of town it is Genoa all over, for, like in

A STREET IN LOWER QUEBEC

the Queen City of the Mediterranean, some of the streets are actually only a few yards wide, and even in the widest there is barely room for one street car track.

As one climbs up through this narrow maze towards the heart, or rather head of the city, which is built upon a rock several hundred feet high, comparisons are generally abandoned, for the steepness of these narrow lanes barely leave a man sufficient strength and energy to swear. But Quebec is a pious place and to keep the stronger from losing his religion, they have built an elevator which, upon payment of two and a half cents pulls you to the summit with neatness and dispatch.

Having reached the plateau known as Dufferin Terrace, one faces the most beautiful panorama imaginable. Below the precipitous ramparts mediaeval stone houses

PARLIAMENT BUILDINGS

nestle to the great rock as for protection from all the dangers that once lurked in the immense expanse of land and water surrounding this first settlement of the white man in the wilderness of the new world. The majestic St. Lawrence, which, contracted at this point, expands again below Quebec and finally disappears behind the foothills of the Laurentian mountains.

On the same terrace, facing the river, stands the famous Chateau Frontenac, an immense modern structure, costing over $1,000,000, of the most beautiful Seventeenth century architecture. It is perhaps the most modern and up-to-date hotel anywhere, without losing any of the charm and beauty of its mediaeval design, and certainly is the most perfect adaptation of the past to the needs and requirements of the present.

If it is characteristic of Canadian cities to perpetuate the architecture of the past in their modern public and semi-public buildings, this custom is absolute in Quebec. The university, city hall, armories, parliament, city gates, etc., all constructed within the last twenty or thirty years, are perfect specimens of bygone days.

The visitor's first impulse is generally to visit the fortress built by the Duke of Wellington, with its towers, bastions and bristling with guns, which stands on the highest point of Diamond Cape, jutting into the river. The severe outline against the clear sky intensifies the charm and mystery of centuries of romance of this battleground of old world powers for supremacy in the new.

In this fortress the visitor is shown the various implements of war; whenever his appearance points towards his coming from the states, his English cousin will point out with more than usual emphasis a gun captured at Bunker Hill. Should you be rude enough to ask Tommy Atkins to show you some more guns captured on that memorable occasion, he instantly changes the subject, pointing out to you the scenic beauties of the surrounding country.

This guardian of the mighty St. Lawrence, most romantic in association and distinctive in details has in form and spirit not only resisted the innumerable attacks by arms, but it seems as though its massive walls have shut out the feverish modernism of the surrounding continent.

Four-fifths of the population is French, more French perhaps than their kin in France. Very few speak English, and the French of the masses is anything but Parisian. It seems to be a mixture of the French of two centuries ago and Indian, producing a *patois* of the most complicated variety.

The churches are mostly of the seventeenth and eighteenth century Jesuit style, very numerous and of imposing size and quality. The Basilica contains some very fine paintings, brought from France during the great Revolution, when the religion there was at a discount.

The streets of the city are all named after the saints of the calendar and one must come to Quebec to realize what an army of beatified people this world has produced.

The university, very complete in all its departments, and containing a very valuable collection of paintings, stands on the site of the old Jesuit college, built in 1638, the oldest institution of learning in the new world. There are a number of monuments and statues, among which that of Champlain, founder of the city some three hundred years ago, is of great artistic merit.

Here is a city of less than one-eighth the size of our St. Louis, with three times as many public monuments than we have!

But there is something even more typical of past ages

CHURCH OF SAINT ANNE OF BEAUPRE

than are the walls, draw bridges, and turrets of this place. There are the miraculous cures wrought by the good Saint Anne of Beaupre, enshrined in a beautiful church in a little village of the same name, about twenty miles out of Quebec.

Christian tradition tells us that a body of Saint Anne, who was the mother of Virgin Mary, and therefore the mother of Christ, was brought in a bark by St. Lazarus from Jerusalem to Avignon, France, in the first century of Christendom, that is to say, under the reign of Emperor Trajan. In the earliest times of Canada's colonization over three hundred years ago, some Breton sailors, being caught in a terrible storm on the St. Lawrence river, appealed to their patron saint of Brettany and vowed to build her a sanctuary on the spot where they would land, which they did. Although of the mortal remains of this good saint, there is only a fragment of a bone of her arm at Beaupre; its divine healing powers are not impaired, judging from the thousands of crutches left in the church by those who have been restored to health during these three centuries.

Whatever we may think of the material efficiency of this old piece of bone and its fantastic history, the fact remains that thousands of unfortunates have been cured or have found fortitude and consolation from their sufferings.—And after all, what does it matter whether we are cured by a pilgrimage to Saint Anne's, by Christian science, or by the surgeon's knife, as long as we are cured?

Midway between Beaupre and Quebec are the great falls of Montmorency, which in beauty surpass those of Niagara. While the volume of water is infinitisimally smaller, the falls are over a hundred feet high and of unequalled beauty.

The old mansion above the cataract, once occupied by the Duke of Kent, father of the late Queen Victoria, is converted into a fine hostelry, where the irreverent visitor, upon payment of one dollar can have a meal in King Edward's grandfather's dining-room: Sic transit gloria Mundi.

INVESTIGATIONS OF STRUCTURAL MATERIALS

BY RICHARD L. HUMPHREY, ENGINEER IN CHARGE OF STRUCTURAL MATERIALS DIVISION, UNITED STATES GEOLOGICAL SURVEY

WITH the problems arising from the growing scarcity and consequent increase in the price of wood, principally lumber used in building construction, the search for a desirable substitute becomes a matter of prime importance and justifies the work now being done by the United States Geological Survey at its structural materials testing laboratories at St. Louis.

The increased use of concrete in many forms during the past few years, especially for building purposes, has created a great demand for information regarding the structural value of this material. For a number of years limited investigations designed to obtain this information have been carried on by a number of investigators throughout the country, but no serious attempt at co-operation in this work had been made until a few years ago, when the United States Geological Survey, recognizing the need of information and co-operation, procured a small appropriation for making tests of structural material and invited various technical societies to take part in the work.

A committee called the Joint Committee on Concrete and Reinforced Concrete was invited to assist in outlining the work at the laboratories. This committee is composed of members of the American Society of Civil Engineers, the American Society for Testing Materials, the American Railway Engineering and Maintenance of Way Association, and the Association of American Portland Cement Manufacturers. The leading professors of engineering from almost all of the large colleges in the country are members of this committee, and they exercise general supervision over the work.

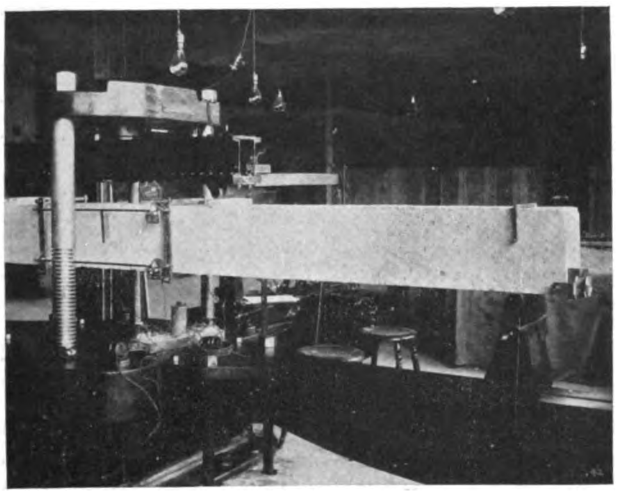
An Advisory Board composed of leading engineers throughout the country was at once created and has had general supervision of the work.

Tests are being carried on to determine the value of different sands, stones, and other materials used in the manufacture of concrete. The material is shipped from all parts of the country by geologists connected with the work and a complete record of the material is sent in by them. At the laboratories this material is made into mortar and concrete by using the different percentages ordinarily employed in practical work and following as closely as possible practical conditions.

In addition to the study of the constituent materials of mortars and concretes, structures of various kinds similar to those used in buildings are made and tested.

The equipment of the laboratories at St. Louis for carrying on this work is very complete. In addition to all needed smaller apparatus there are four testing machines of 200,000 pound capacity and one of 100,000 pound capacity, suitable for testing beams and other structures used in buildings. These machines will test beams up to twenty feet in length and are equipped to make tests of the different materials used in construction work. Three of these machines used in the beam division are shown in Fig. 1.

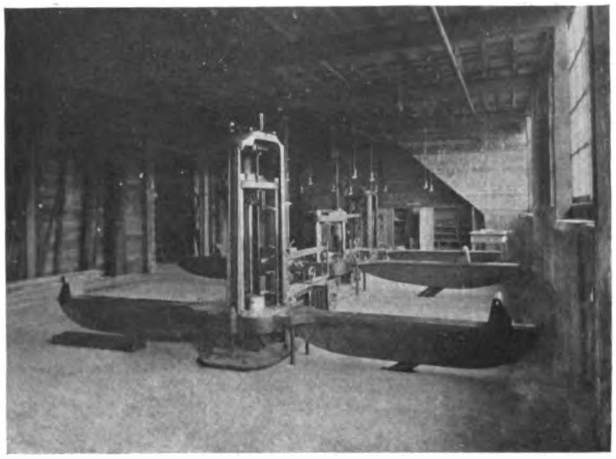
In addition to the above machines a very large machine, having a working capacity of 600,000 pounds,



SETTING A THIRTEEN FOOT CONCRETE FLOOR

will in a few weeks be installed at the laboratories at St. Louis. As far as known at this time there is only one other machine in the United States similar to this. This machine will make it possible to test columns, beams, and in fact, all the different kinds of construction material now used. It will test very large reinforced concrete girders up to spans thirty feet in length and concrete columns up to thirty feet in length.

The value of such tests as these is readily apparent, since their results can be applied directly to practical work. A very serious objection to the use of results obtained in tests made by private investigators is due to the fact that the tests were applied only to small specimens not nearly approaching in size the parts or pieces used in actual construction. Heretofore it has been necessary to consult the results of these small tests in order to have some basis for design, but it is now clearly recognized that the best results can be obtained only from tests made



THREE CONCRETE-BEAM TESTING MACHINES

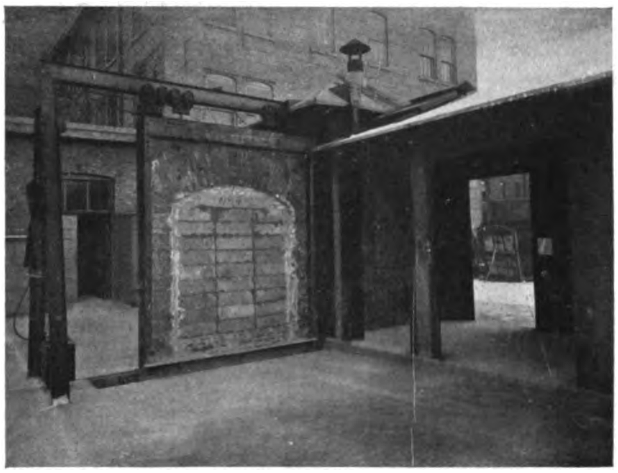
on members as large as possible, or at least on pieces as large as those ordinarily used in structural work.

All the concrete used at the laboratories is mixed in three Chicago cube concrete mixers, each of which is mounted on skids, geared to a motor and equipped with charging hopper. One of these mixers has a capacity of one cubic yard and the others will contain one-third cubic yard each. After the concrete is mixed it is carefully tamped in molds to form the different pieces on which the tests are made, such as cylinders, cubes, and beams.

The laboratory also uses five hollow concrete block machines, used for making concrete blocks similar to those used in actual construction, and the several different divisions—the constituent materials division, the beam division the concrete block division, the permeability, the shear and tension and the chemical division are equipped with all apparatus necessary for conducting their tests.

Although reinforced concrete is used to a remarkable extent at the present time, and both concrete and reinforced concrete construction is becoming more and more popular every day, it is evident to anyone familiar with construction work that these materials will be more generally employed within the next few years. Many engineers are prejudiced against the use of concrete and reinforced concrete, but this prejudice is rapidly being removed by the obtainment and publication of reliable data regarding this material. Without doubt, in a very few years, when most of the principles underlying the use of concrete and reinforced concrete have been fully established from tests and investigations, there will be little prejudice against the use of concrete; the present prejudice evidently being due to lack of information.

The longest beam thus far tested in the beam division has been thirteen feet in length. Beams of this length tested are made without steel, that is, of solid concrete beams, and also with varying proportions of steel, ranging from very small percentages up to three per cent. A full size beam in the testing machine is shown in Fig. 2; the load is applied at the top of the beam at points four feet from each end. The men conducting the tests watch the beam very closely while it is in the testing machine, and examine its surfaces with magnifying glasses in order to locate the fine cracks as they appear. In the beginning a load of about 5,000 pounds is applied and the machine is stopped with this load on the beam. After the observers have examined the beam carefully and made a record of the cracks appearing at that time, the load is



TESTING FIREPROOF QUALITIES OF CONCRETE

increased and after every 1,000 pounds additional the beam is again examined until the maximum load is applied.

In a very large number of tests the beam shows no cracks that are visible to the eye until the maximum load is reached, when the steel reaches its elastic limit and begins to stretch fast, this result ending the test. The cracks that appeared on the beam and the loads at which these cracks appeared are recorded by photographs.

In beginning tests of reinforced concrete simple round rods were used, as it was thought that more uniform results could thus be had than if any of the patented systems were used. After a complete series of tests with the round rods has been made, it is proposed to take up tests of the different forms of bars that are used in practical work, and the results will be published from time to time by the Geological Survey. Tests will be made of beams ranging from six to twelve feet in length, and because of longer span will be tested later, if necessary, in order to get results that can be applied to almost all practical conditions.

The concrete used in the different beams tested, as described above, is molded into cylinders and cubes, which are tested in order to get the direct strength of the concrete. These cylinders and cubes are all tested at different ages, generally at ages of 7, 28, 90, 180 and 360 days. The cement, sand, stone, gravel, or other material composing the concrete is carefully proportioned by weight, the correct percentage of water is used and the whole mass is placed in a mixer and thoroughly mixed. It is then deposited very carefully in molds or forms which, after twenty-four hours, are removed. The concrete is then moved into a storage room, shown in Fig. 3, and is there sprinkled with water three times each day. Each test piece is numbered on a card index, which tells where information relating to the test pieces can be found and also indicates the dates on which the different pieces are to be tested.

A branch of the work that should be of interest to everybody, especially the small home-builder, is the investigation of cement building blocks. Many houses are now built of cement blocks in preference to wood, because generally cement block construction is cheaper and better than wood, since it is fireproof, more durable and less expensive to maintain. The exterior surfaces of wooden buildings must be painted, and clapboards must be added from time to time; but when the cement block building is finished, the surface is there once for all; no further treatment, no repairs, no maintenance are necessary.

The concrete is mixed in a one-third cubic yard cubical concrete mixer and deposited on the floor of the testing room. It is then shoveled into the hollow block machines and compacted very firmly in the forms. Varying proportions of concrete, sand, and stone are used in order to determine the relative value and economy of using different mixtures. Some blocks are made of wet concrete, others of concrete very dry, and still others of concrete having a consistency medium between wet and dry. In actual practice, concrete blocks made from comparatively dry concrete is usually preferred by the manufacturers, for these blocks harden quickly and the forms may be removed almost as soon as all the concrete is placed in the machine. By this practice it is possible to use the same machine for making a large number of blocks each day, whereas when wet concrete is used, the blocks must remain in the machine for a much longer time before they can be removed. When the concrete blocks are removed from the forms they are placed in the storage room and tested at different ages. Cylinders are also made from the same concrete that is used in the blocks, and the results of tests of the cylinders and of the blocks establishes a relation between the strength of the concrete in the cylinder and that of the concrete in the block.

The results of the great fires at San Francisco and at Baltimore demonstrated very clearly the fact that modern buildings are not so nearly fire-proof as they should be and as they can be made. The lack of fire-proofing in the past has been due somewhat to the reluctance of owners to add a small percentage to the cost of their buildings by properly fire-proofing them. The failure to employ fire-proof construction more generally, however, was due in part to the fact that proper information was lacking, and many engineers, architects, and owners who tried to make their buildings fire-proof used all the information at their command at the time of building.

The art of fire-proofing has been developed rapidly within the last few years, but there is still much to be done, especially in relation to the fire-resisting properties of concrete. In order to obtain information to meet these needs a series of fire tests are bing carried on by the Geological Survey at the Fire Underwriters' Laboratory at Chicago.

For this purpose a hanging door having a steel frame and a one-foot wall of fire brick inside of it is used. At the center of this frame there is an arched opening of about the size of an ordinary door. For the fire tests this opening is built up successively with different materials, ordinary building brick, fire brick, hollow tile blocks, the different kinds of cement building blocks, stone, concrete, and terra cotta. When the opening is filled with cement blocks, it has the appearance shown in Fig. 6. After the opening is filled, a flaming gas jet is played all over the door for a long time and when the heated surface is very hot, the gas is turned off and the door allowed to cool. In some tests the cooling takes place slowly, in others a stream of water is played on the door immediately after the gas is turned off in order to reproduce as nearly as possible the actual conditions in a fire.

When these tests are completed, the results will not only show engineers and architects what material is best for fire-proofing and how much should be used to procure the best results, but will also teach the small builder, the builder of a home, what kind of a cement block is best adapted to make his house fireproof.

It is the consensus of opinion among engineers that a reasonably fireproof building can be constructed, and it is hoped that the art of fire-proofing will be so developed in the next few years that the public will also be convinced that this is true. It is also desirable that the public should be thoroughly informed as to fire-resistive qualities of the various classes of building materials and it is expected that the work being done by the United States Geological Survey will furnish reliable information not only on this subject, but also in regard to the strength and other properties of these materials.

ARCHITECT JENNEY AND THE CONTRACTOR.

IN AN article contributed to the daily press, Scott N. Hughes gives a characteristic sketch of the late William LeBaron Jenney that is not remarkable to those who knew him, but should be put on record because it so perfectly pictures his kindly treatment of the frailties of others, a characteristic which was rather an instinct than an aggressive honesty.

While Mr. Jenney was a man of odd characteristics, he was "straight," but too charitable ever to bend backwards. He recognized human frailties, but seldom condemned the frail man.

Mr. Jenney despised worse than anything the grafter, and his manner of dealing with that type of man was effective. Architects have peculiar intimacy with graft because they constantly are running into contact with crooked contractors and builders, and too frequently architects disgrace their profession by dividing with dishonest contractors the fruits of robbery achieved through crooked bidding, or favoritism.

Jenney never countenanced this way of doing business. One day Jenney was in his private office when a man who wanted to provide certain materials for a building then under construction came in and approached John Ewen, then a "cub" in Jenney's office, with a flagrant bribe offer. He offered Mr. Ewen $50 if his material was used.

Mr. Ewen was seized with an inspiration. Instead of throwing the man out of the office, he said: "Mr. Jenney always handles that end of the business. Go in and see him." Then he awaited the explosion.

The man innocently approached Mr. Jenney and made the proposition.

"Sit down a moment," said Jenney, quietly. A moment later he looked up and said: "Young man, are you new in the business?"

"Yes, sir, I'm just starting. I want to get in right. My stuff is good, and I want a chance."

"Well," said Mr. Jenney, "there are two ways to do business. If you want to do the best kind of business, with the best firms, don't do as you have done today. I have no doubt that is the way to do business with some firms. If you are after that class of business that is the proper way to get it. But if you want the best business don't approach any one as you have me. I'll give you the contract at your figures. If you can afford to give me $50, you can afford to knock $50 off the price to the owner. Let's reduce your figures $50 and give the builder the benefit."

The man agreed. He learned his lesson well, and he did business with Mr. Jenney for years. When Mr. Jenney died this man testified that it was that one business lesson that made him realize that the only way to do business is to do it straight.

When Mr. Jenney dismissed the man that day after signing agreements he stepped out smiling to Ewen and remarked: "Thought you'd have some fun with me, eh?"

Another and severer lesson he administered to a big contractor downtown. This man was prominent socially, financially, and in religious circles, and through Jenney he got the contract for a skyscraper downtown. One day, while the building was in course of construction, he entered Mr. Jenney's office and handed him a check.

"What's this for?" asked Mr. Jenney.

"It's the usual 10 per cent of the first payment—your share," he added, significantly.

Mr. Jenney took the check, chatted for a time with the man, and finally went out into the workroom.

"What's the amount of that contract?" he asked Mr. Mundle, his partner.

Mundle told him.

Jenney figured for a moment, muttered, "Yes, the amount is correct," and then retired to his private office and indorsed the check over to the owner of the building.

Nothing more was heard of the matter until the end of the month, when the crooked contractor received from his bank a check indorsed both by Mr. Jenney and the owner of the building.

There was nothing for him to do but to take his medicine. He appeared in Jenney's office, probably expecting to be flayed for his tactics, but nothing of that sort happened. Mr. Jenney remarked: "I am extremely glad to know that you can afford to make the lowest bid on a building, and give the owner 10 per cent back and still make money on it, but don't you think it would be more business-like just to subtract 10 per cent from the total contract price and save all this red tape of sending the check to me and having me indorse it over to the owner?"

The contractor humbly admitted that it was.

There was not a word of condemnation or reproof and only a few who learned of it from the owner ever knew of the occurrence.

Mr. Jenney did not cast out that contractor, but continued to do business with him. And when Mr. Jenney built his own home he gave a contract for part of the material to this man—and the man skinned him.

PUBLICATIONS

THE YOUTHS COMPANION. 144 Berkley Street, Boston, Mass. 52 issues.

The serial stories of character, adventure and heroism that made the fathers of the youth of the present better men and women are still giving to that representative household journal all the charm that comes from dreams of the past and hopes for the future. There is probably no agency that enters the home so potent for good and the moral, mental and physical direction of youth as is found each Saturday in the current Youth's Companion, that is always looked for, always welcome and never disappoints. To those boys and girls who have never read its pages, if there are any, its presentation forms the greatest benefit and pleasure that can be conferred. It never grows old, for it is human, and the cordial sincerity of its tone places its value at the head of all the aids to youthful development that is known to our time.

CYCLOPEDIA OF ARCHITECTURE, CARPENTRY AND BUILDING. A general reference work covering the field of the building industry and its allied arts and trades. Prepared by a staff of practical experts of the highest professional standing. Ten volumes. Illustrated with over 3,000 engravings and about 400 special plates. Red half-morocco, gilt stamped, marbled edges. Indexed. List of plates. Published by the American School of Correspondence, Chicago, Ill. List price $60.00. Introductory price $19.80.

The rapid advances made in recent years in the engineering and mechanical fields and in the evolution of constructive processes and methods, have affected the building industry more than any other, and the appearance of this comprehensive compilation is timely.

The publishers have taken time by the forelock in giving to the world for the first time a really comprehensive and authoritative work summing up the results of modern progress in this field. The task was a difficult one, but has been most admirably done. This cyclopedia is a practical working guide to modern methods of building construction in all its details, embodying the most approved practice. It will therefore be extremely valuable to architects, contractors, property owners, carpenters, steel and concrete workers, masons, bricklayers, sheet-metal workers, plumbers, electric wiremen, and all others interested in construction work of any kind. It ranges from the masonry wall or steel frame to the carpentry and interior decoration, from the plumbing and draining to the heating and ventilation, from the foundation to the roof and cornice, from the drawing of the plans to the awarding of the contract and the acceptance of the completed structure.

The section on "The Architect and His Legal Relations" defines the law as it relates to building contracts. That on "Reinforced Concrete" discusses the latest developments in this new and important branch of building. The section on "Estimating" and the section on "Steel Construction," as well as the many sections on "Specification Details," are full of practical, up-to-date information. A specially noteworthy feature is the unusual wealth of illustration. The books are well printed, on high grade paper, and are substantially and handsomely bound.

PRINCIPLES OF REINFORCED CONCRETE CONSTRUCTION. By F. E. Turneaure, Dean of the College of Engineering, University of Wisconsin, and E. R. Maurer, Professor of Mechanics, University of Wisconsin. 8vo, 8, 317 pages, 11 plates, 130 figures. Cloth, $3.00 (12 6 net). New York, John Wiley & Sons. London, Chapman & Hall, Limited. 1907.

Among the fast accumulating books on reinforced construction this volume comes from the laboratory rather than the work as executed in regular practice.

In the present volume the authors have endeavored to cover, in a systematic manner, those principles of mechanics underlying the design of reinforced concrete, to present the results of all available tests that may aid in establishing coefficients and working stresses, and to give such illustrative material from actual designs as may be needed to make clear the principles involved.

The work is essentially divided into two parts: Chapters I to VI treat of the theory of the subject and the results of experiments, while the remaining chapters treat of the use of reinforced concrete in various forms of structures. In Chapter II the properties of plain concrete and of steel are considered to a sufficient extent to give accurate notions of their relation to the general subject in hand. The subjects of adhesion and of relative contraction and expansion are also discussed in this chapter. In Chapter III is given a full theoretical treatment of reinforced concrete, avoiding so far as possible empirical rules and methods; and in Chapter IV are presented the most important available tests on beams and columns, analyzed and correlated, so far as may be, with reference to theoretical principles. The subjects of working stresses and economical proportions are considered in Chapter V. In Chapter VI are brought together in convenient form all the formulas and diagrams needed for practical use. There are also included tables relating to reinforcing bars and a comprehensive table of the strength of floor slabs. This chapter is, for most purposes, complete in itself, so that the reader need not refer to any other portion of the work in order to use it in designing.

Following the theoretical portions are chapters on the application of reinforced concrete to building construction, arches, retaining walls, dams, and miscellaneous structures. In these chapters the analysis of various features is given, where the use of reinforced concrete involves problems new and unfamiliar. A complete general analysis of the solid arch rib is also given, which, the authors believe, offers advantages over the usual graphical method. It is primarily an analytical method, but may be shortened by obvious simple, graphical aids. Stresses in the concrete and steel are readily calculated by the use of diagrams in Chapter VI. In the chapters on the application of reinforced concrete it has not been the aim to cover practical construction in all its phases; for this the reader is referred to the more voluminous works on the subject. It is hoped, however, that as a treatment of the principles of design the work may prove of service to the student and the engineer. The complete analytical treatment of the arch, with diagrams, extensive tables of floor slabs, etc., and the bringing together of all the necessary tables and diagrams in chapter VI, makes the book especially useful to busy men.

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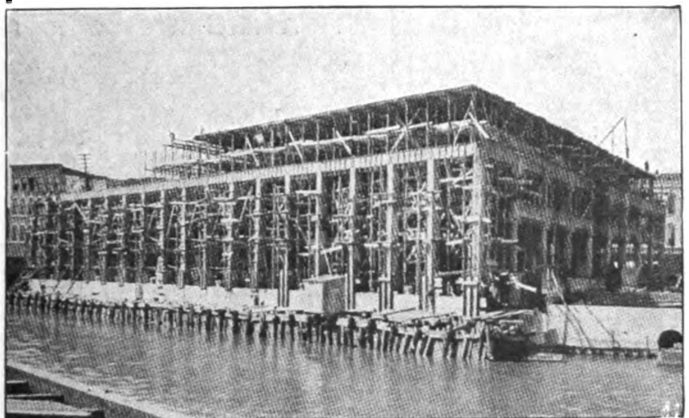

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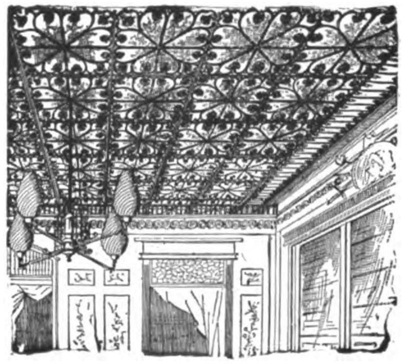

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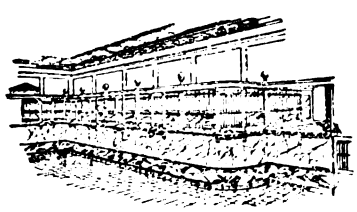

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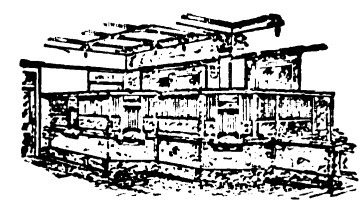

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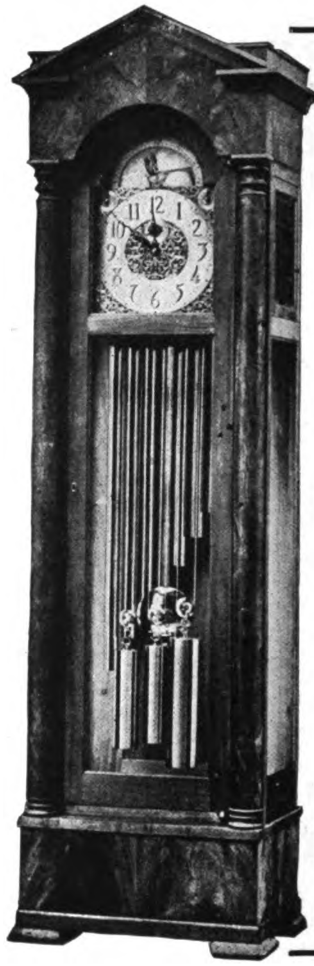

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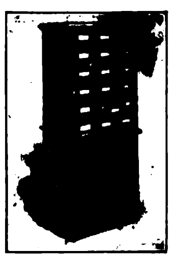

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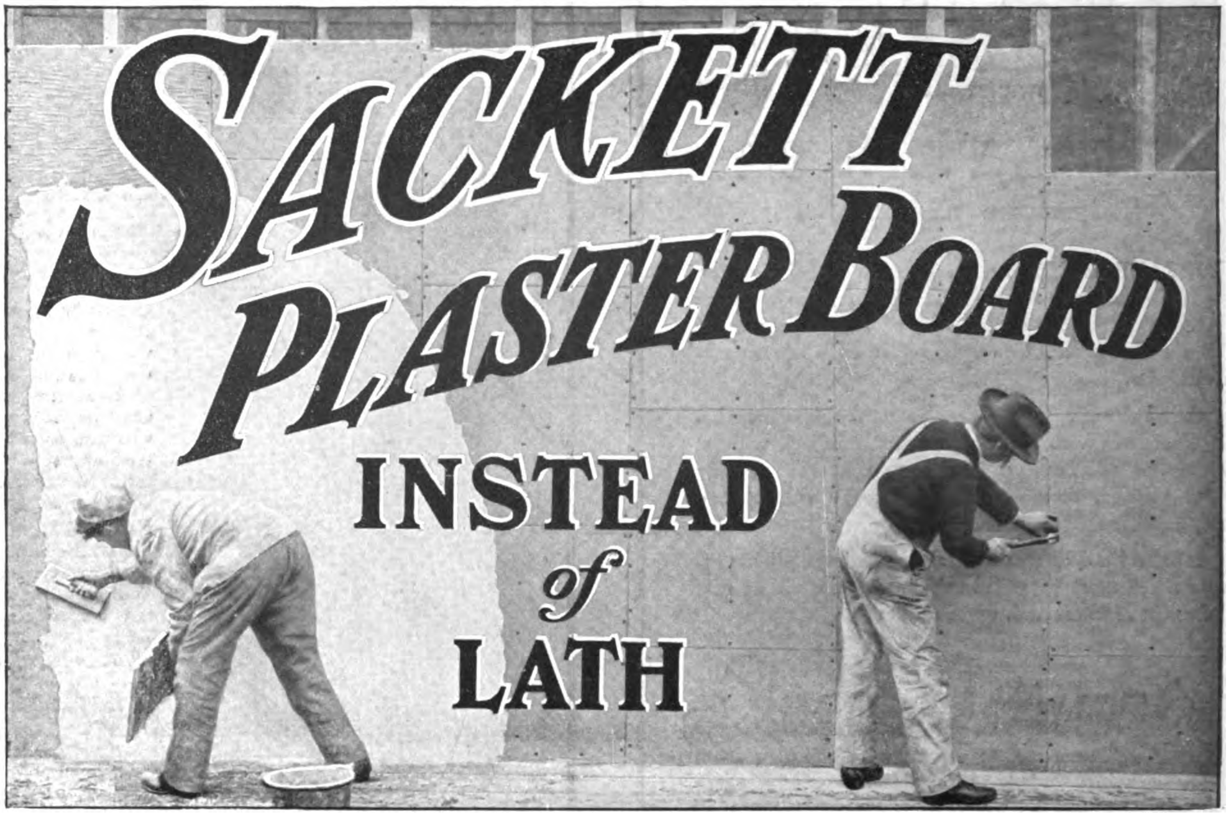

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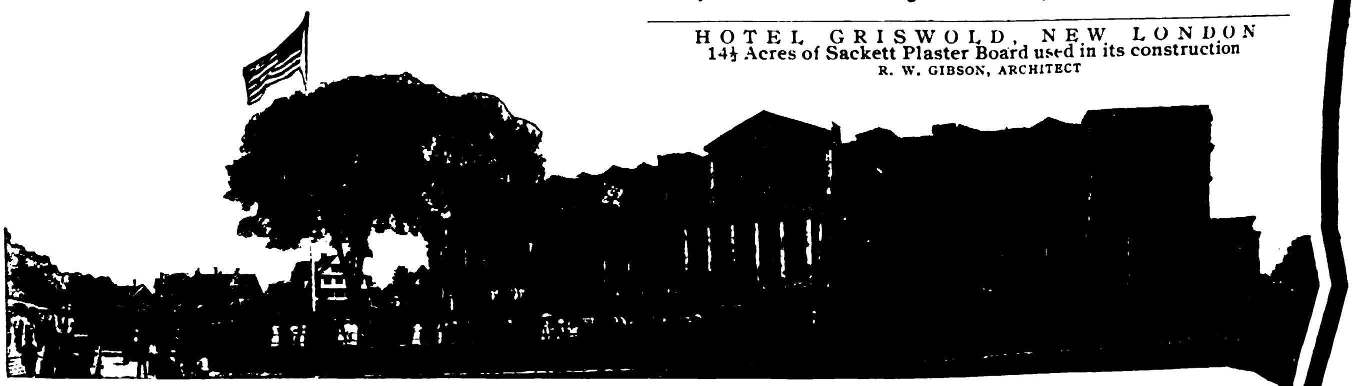

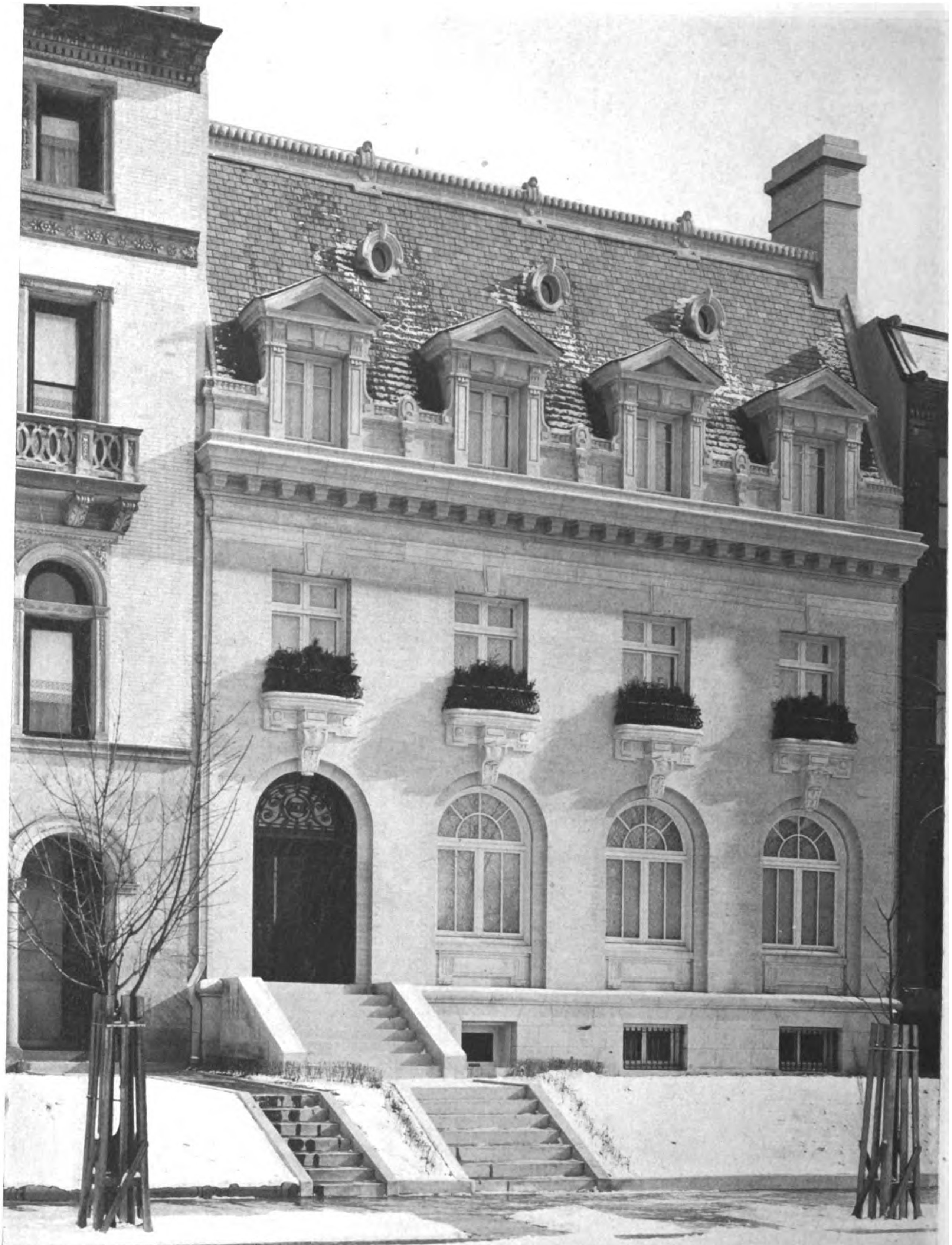

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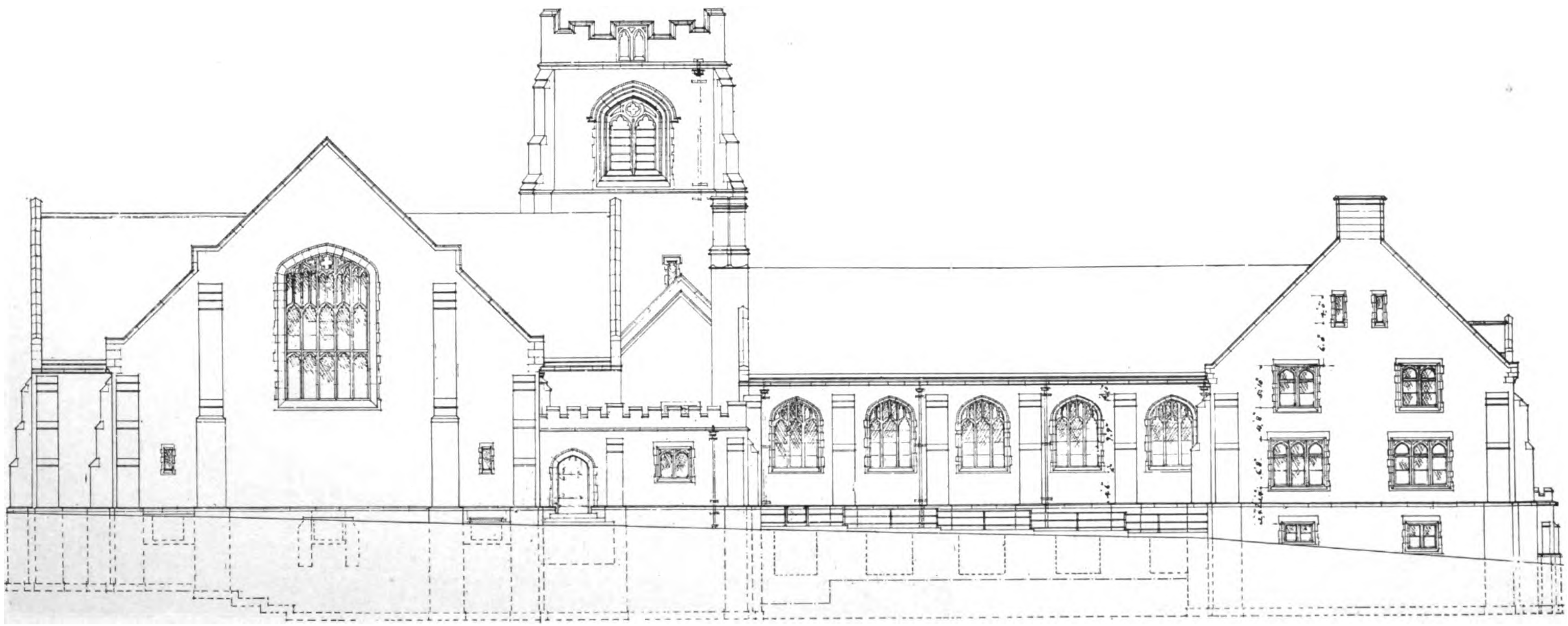
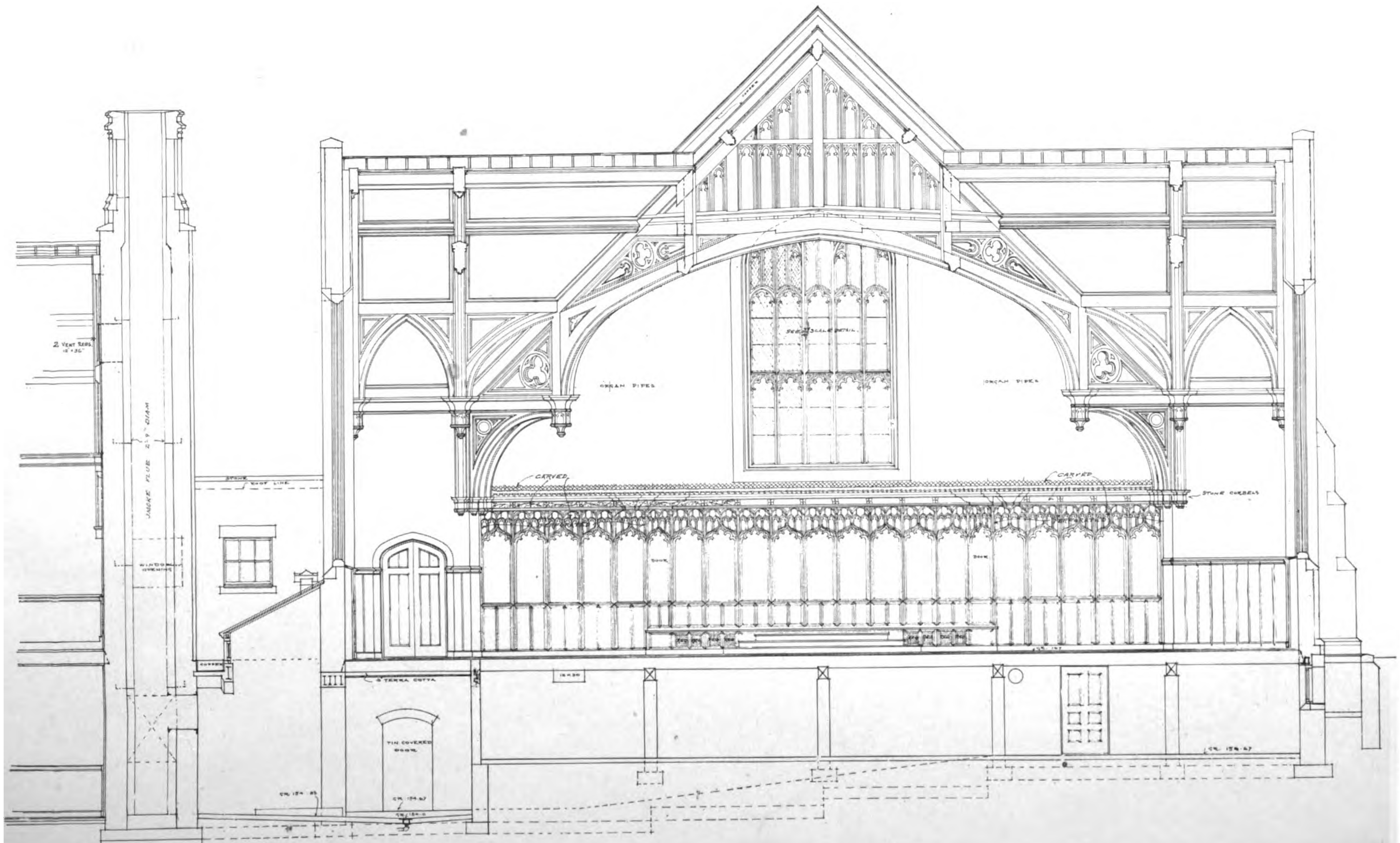


SOUTH ELEVATION

PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS

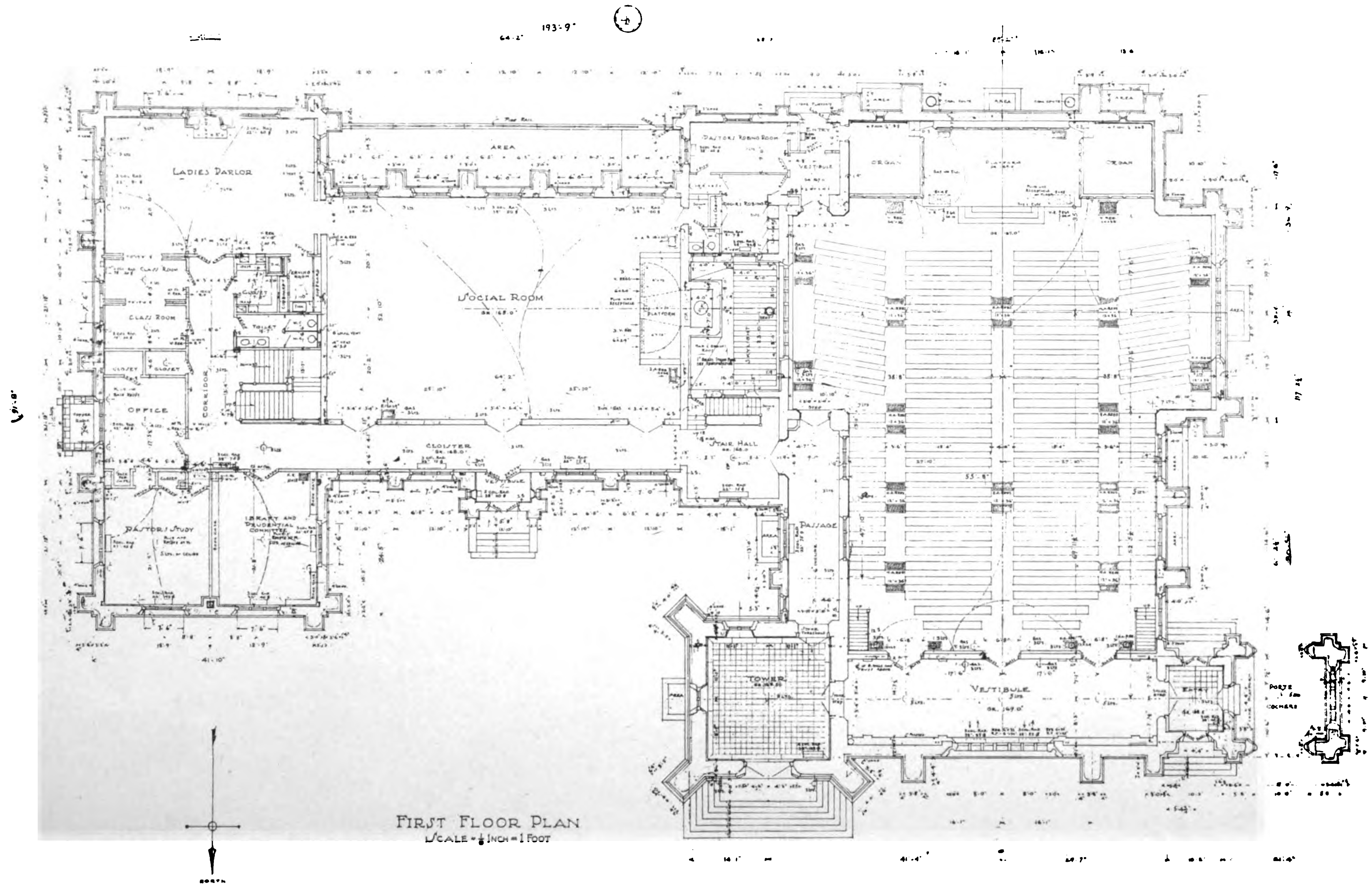
THE WESTERN ARCHITECT
NOVEMBER
1907



SECTION THROUGH TRANSEPTS

PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS



PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

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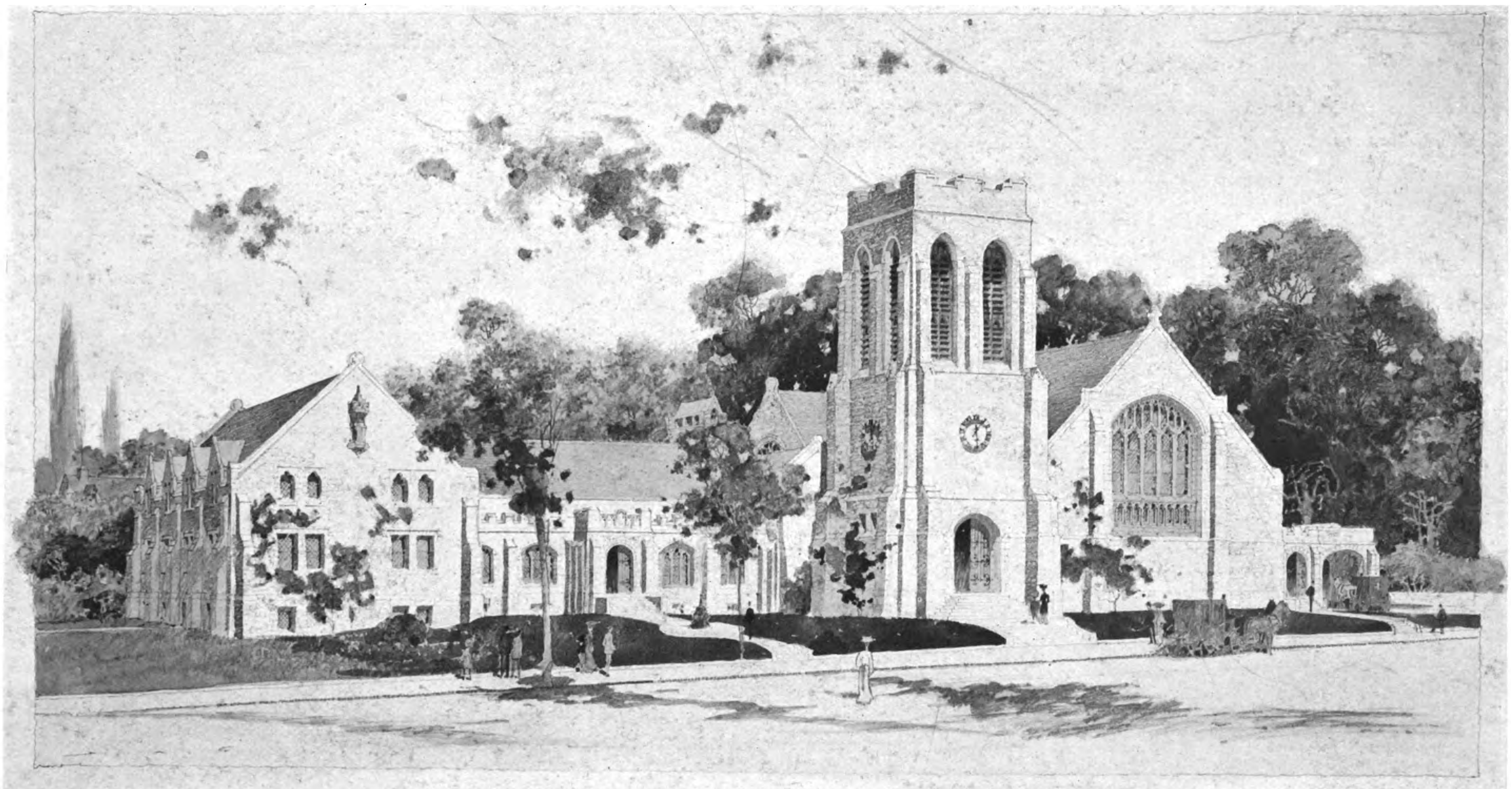
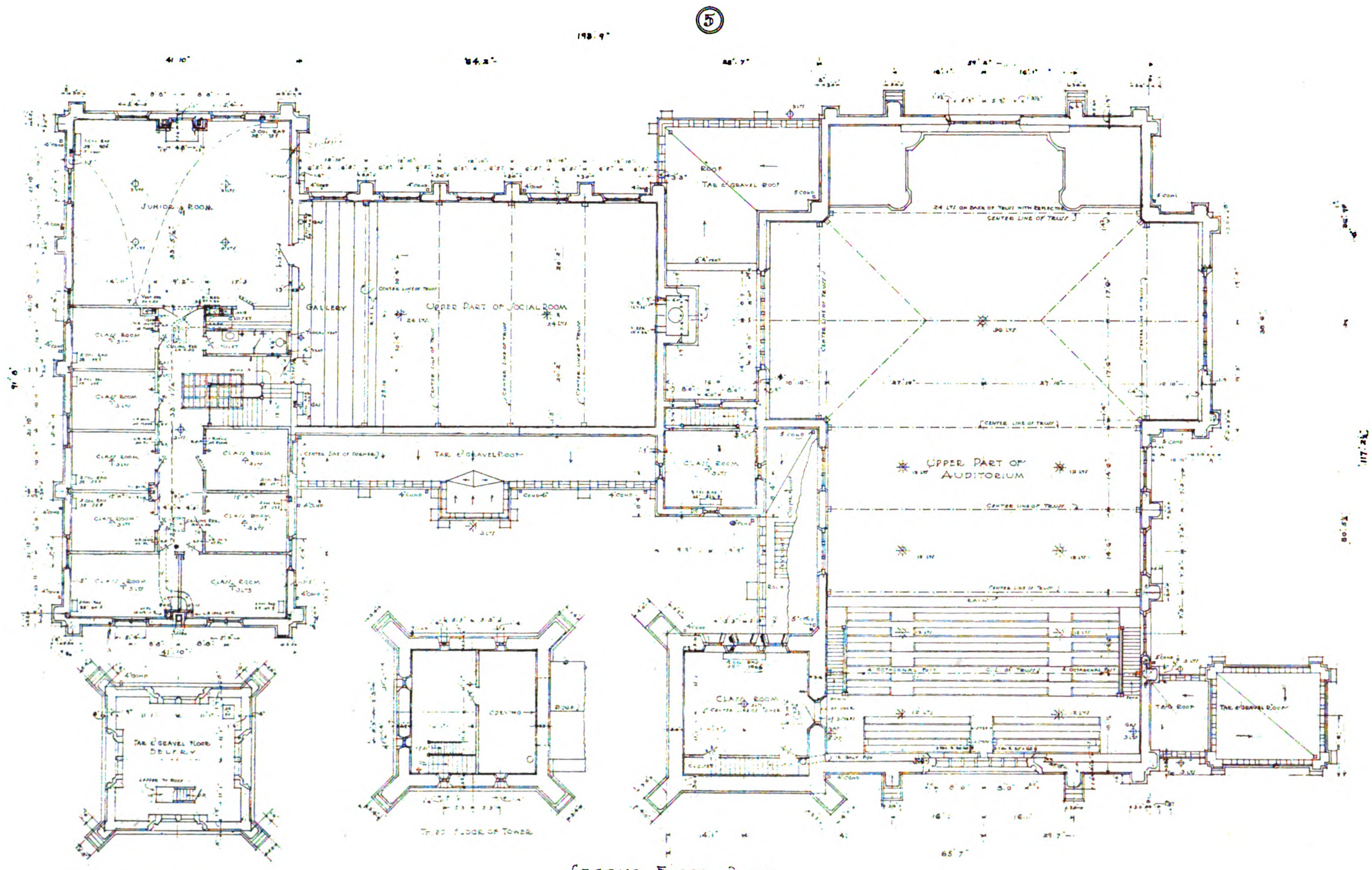
PRELIMINARY SKETCH FOR PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS



PRELIMINARY SKETCH FOR PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS



Plan of Belfry

Second Floor Plan
Scale 1/8 inch = 1 foot

PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA
Shepley, Rutan and Coolidge, Architects, Boston, Massachusetts

SECTION THROUGH SOCIAL ROOM AND TOWER

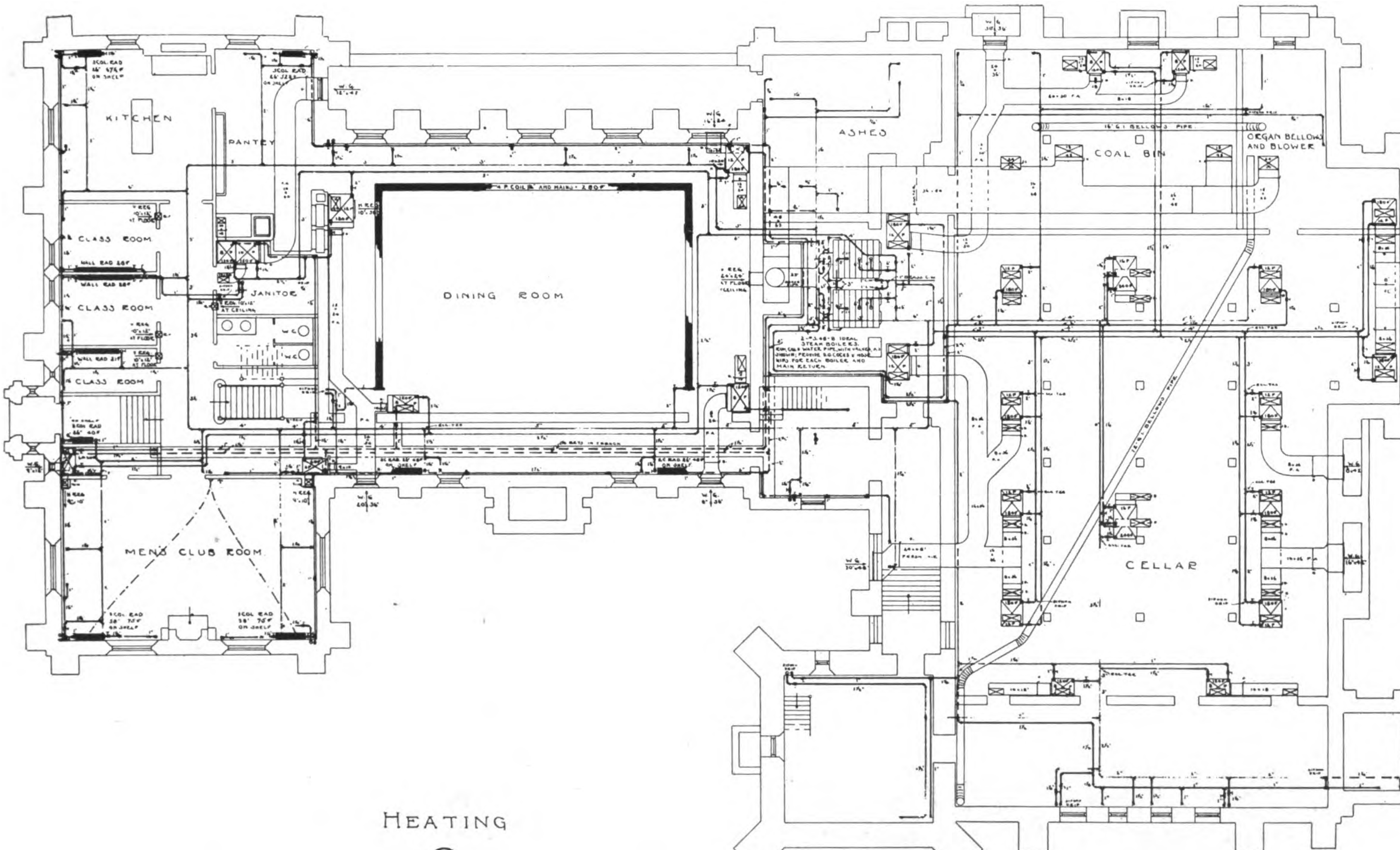
PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS

NORTH ELEVATION

PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS



HEATING

28

BASEMENT PLAN

SCALE ⅛ INCH = 1'-0"

PLYMOUTH CONGREGATIONAL CHURCH, MINNEAPOLIS, MINNESOTA

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS, BOSTON, MASSACHUSETTS

RESIDENCE OF MR. SAM WIESS, NEW ORLEANS, LOUISIANA

MACKENZIE, GOLDSTEIN AND BIGGS, ARCHITECTS