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Convicts as Architects and Sculptors.

A recent news item telegraphed from New York states that in consequence of the legislature having stopped all labor at the Sing Sing State Prison which might be in competition with trades-union labor, the superintendent of that institution has discovered a way by which the prisoners may be prevented from going insane for want of something to do. He has found that among the prisoners there is an architect who is also an artist, and another one is a sculptor. He proposes to establish a school of architecture with the architect as teacher, and a school of sculpture under direction of the sculptor convict, of both of which the other convicts will be pupils. He does not say that the architect whom he has in charge was convicted for stealing another architect's ideas or was sent there because he was "also an artist." We must presume that it was for the latter cause, for it is hardly to be presumed that the State would attempt to board and feed the number of the former class that might have been convicted. But the crime of being "also an artist" is of such rare occurrence that we must assume that it was high time to nip it in the bud. The results of this method of prison reform from the inside are highly problematical, and will be an interesting subject for investigation by the Committee on Education of the American Institute of Architects. The danger that this instructor may inspire his pupils with high artistic ideals, and thus turn out a large class of convict architects filled with the divine afflatus and artistic fire of the men of old who made history centuries ago, can be dwelt upon with the severity this increase of educated criminality deserves. From the sociological point of view the experiment will attract the rapt attention of scientists and reformers. The questions will arise whether or not the study of architecture is an antidote for other forms of insanity, and may also become a curative for criminal instincts. It will be important to know if the criminal instincts will remain and increase by culture under the direction of an architect "who is also an artist," so that these newly fledged architects will clothe their works in forms of beauty only to lure confiding tenants into death traps of the Buddenseik order. If we are not misinformed Buddenseik, if still alive, is in the prison now and might be employed as an assistant instructor in the department of construction. Then again, this experiment is interesting from the organized labor point of view. As is well known the architectural profession is very jealous of any suspicion that it is imbued with trades-union ideas; and if it holds to its ideals it can demonstrate, by its silence, that it is indifferent to the employment of convicts on plans and specifications, and allow this great solution of the prison labor problem to go on undisturbed. From the economic point of view also the experiment may be valuable. The prisons not only may be enlarged solely by home labor, including the making of plans, but the State of New York can erect all its public buildings without the interference of outside architects. There may be even a good opportunity to thus complete the \$20,000,000 State capitol and adorn it with sculpture, and thus dispose of another serious question which is now disturbing the equanimity of the legislators of the State of New York.

CRITICISM ON BUILDERS' CODE.

To the Editor of THE INLAND ARCHITECT:

The following was written last spring, shortly after the publication of the "Code of Practice of the Chicago Masons' and Builders' Association," but not published at the time because I feared that I might have been over hasty in condemning the well intended, though in my opinion ill-advised acts of the estimable men who then composed the "Committee on Code of Practice."

Ten months' observation of the working of the "Code" justify in my mind the conclusions which I first formed and expressed in the following letter; and if I may believe the rumors which have reached me as to the recommendations recently made to the Chicago Masons' and Builders' Association by its original Committee on Code of Practice, that committee has come a long way toward my position, and justifies the belief that ere long its members will agree with me altogether.

The chief difficulty after all seems to be that the Chicago Masons' and Builders' Association is only trying what is constantly being attempted by so many other good people, namely, to reform and improve mankind, not by reforming their own acts and practices, but by ordering other people to act in accordance with the reformers' wishes. The matter is in my opinion of sufficient general importance and interest to the architectural profession and to the building public, that I feel myself justified in requesting you to give room in your columns to the following open letter.

DANKMAR ADLER.

OPEN LETTER TO CHICAGO MASON BUILDERS.

BY DANKMAR ADLER.

GENTLEMEN,—Your attention is respectfully called to the following friendly but critical review of the Code of Practice of the Chicago Masons' and Builders' Association:

Paragraphs 1, 2, 3, 4 and 5 are eminently proper and reasonable.

The demands made in paragraphs 6 and 7 are reasonable when the plans submitted to the mason are made for use not only by him, but by other contractors also, in which case the work to be done by the mason should be clearly and unmistakably distinguished from that which is to be done by other contractors. But whether this is done on the plans or in the specifications should be considered immaterial. Clearness, definiteness and distinctness in the statement of the things demanded from the mason are all that is necessary. Vagueness and indefiniteness of either plans or specifications cannot be too strongly condemned. But only confusion, and consequently only harm, can come of the practice of duplicate enumeration of the same things on both plans and specifications.

The ideal practice for which architects and masons should strive, demands full, clear and comprehensive plans, showing everything that is required to be done by the contractor for whom they are intended, while the specifications should never usurp the functions of the plans, but should describe positively and definitely the material and workmanship to be applied to the execution of the work shown on the plans, and should further enumerate in clear and unmistakable terms such things to be done by the contractor as cannot be drawn on the plans—for example, the requirements in each case as to permits, street obstruction, treatment of debris and rubbish, etc.

Plans and specifications should supplement but not duplicate one another, and should be so full and so definite in their presentations and statements that nothing is left to the discretion of the architect except the quality of material and workmanship.

Paragraph 8, if carried out, is just only if the cutting referred to is unforeseen. But it is wrong to forbid masons to include in their proposals and in contracts such cutting of walls, piers, arches or other parts of masonry as may be clearly described and called for by specifications. In short, masons should be prepared to state in their proposals what they will charge for anything which it is in their power to execute, if the party for whom the proposed work is to be done asks for it in the specifications upon which proposals are made.

Paragraphs 9 and 10 are just and proper.

Paragraph 11 relates to questions of value of services which must be determined in each case by the parties interested, who are the contractor and the owner. There is nothing to prevent the contractor from making the ten per cent charge mentioned in

this paragraph, unless it be the unwillingness of the owner to pay it. It would certainly be improper for an architect to agree in advance that his client shall in every case submit to this charge. There may be cases when ten per cent is too small and others where it is too large an allowance. The fact that it may be a fair average charge will not satisfy the client in whose case it is an excessive charge.

Paragraphs 12 and 13 are reasonable and just.

The execution of paragraph 14 is impracticable. The competition among contractors is so keen, that bidders force themselves upon owners and architects in such numbers that to ascertain before receiving proposals the desirability of each bidder as a contractor would become too great a task. When bids have been opened, an opportunity must be given for an investigation of the relative merits as mechanics and as business men of such among the lower bidders as may be unknown to owner or architect, and you cannot in justice take away from any owner the right to award his contract to the *best* bidder, who, as you know, is not always the lowest bidder. For surely you cannot maintain that membership of your association makes all of you equally competent to do work upon every kind of building, or that it deprives the personal friend among building owners of any one of your number of the right to give a preference to his friend in awarding a contract. You may say that such preference should be given before the bids are received, but in that case you forget that an owner may be willing to give a preference to his old and tried friend or to the better and more competent contractor, but that there is always a limit to the extent of such preference.

If the rule which you try to enforce by the terms of this paragraph were strictly adhered to, you would confine the bidding in the office of each architect to the present acquaintance of the architect and his clients, and would deprive unknown beginners and newcomers of the opportunity to make bids. And will your association guarantee that the lowest bidder will accept the contract if it is offered him? Will you, as a body, stand by the owner in such case, and protect him?

Turning now to the concluding portion of Section 14, I cannot believe that you are serious in asking owners to yield the right of determining what they shall in certain cases contract to pay for work to be done to the proposed contractor himself, without competition, and still less that owners will consent to allowing arbitrators of your choosing to determine what shall be the amount of the contracts which they are to close for the work which they wish to have done.

Paragraph 15. The contractor has his rights under the lien law, which gives him as security not only all which he has contributed to the building, but also the realty upon which it stands. The owner has no corresponding claim upon the contractor in case he fails to comply with his agreements. Again, it may be perfectly safe to contract with one party without the protection of a bond, while in the case of another it may hardly be safe to do so, no matter how large a bond is given as security. Under the conditions treated of by Section 16 there are many cases when owners are justified in entertaining the wish to ascertain which will be most to their advantage: to let contracts for a proposed building in parts, or as a whole; and this desire will often be so strongly pronounced, particularly in the case of very large and important buildings, that the effort will be made, and you will be compelled by force of circumstances to supply the desired information.

It is reasonable, however, to demand that when bids are taken for the work as a whole, and also for part contract, that such be done openly and above-board, with full notice to all bidders of the wishes of the owner.

Paragraphs 17 and 18 are in the main reasonable and just, although it is difficult to see by what right you can prescribe what shall be the price upon which the owner of a building may agree with his mason in the actual closing of a contract. Reasons may come up why either party wishes to deviate from the amount stated in the bid, and such reasons need not involve any injustice to other bidders, and whether they are just between the contracting parties concerns them only, and not your association.

Paragraph 19, like Section 11, relates to the right of the parties to a contract to agree upon the terms which they consider advantageous to each other, and cannot with justice be passed upon by your association without regard to the many varying conditions which may prevail in various cases. Here also the prices stated in your code may be fair average prices, but they will undoubtedly

be unjust in some cases, where the right to remedy them will surely be insisted upon and enforced by the interested parties.

Paragraph 20 is reasonable.

Paragraph 21, like several others which have preceded it, endeavors to restrict the right to freedom of contract, and is therefore opposed to good public policy.

Paragraph 22 makes it possible for an unprincipled member of your association to tie up the work upon any building on which he may have been employed by speciously presented but wholly unjust claims.

Paragraph 23 is another version, in still more high-handed and reprehensible form, of Section 22. Both of these paragraphs are as despotic and arbitrary as the average decree of the average trades union.

Paragraph 24, like many of its predecessors, assumes that when contracts are entered into between masons and others, these others have no voice in the formulation of the contracts and that it is the mason only who may dictate the policy of the contract.

Would it not be a logical sequence to add a Section 25, by virtue of which all those who have real estate or money or both are compelled to at once place the same wholly at the disposal of your association and its various committees?

It seems to me as if the authors of many paragraphs of your Code of Practice had been actuated chiefly by the recollection of many instances of petty vexations, unjust and harrassing, to which contractors have been subjected by unprincipled and ignorant owners and by incompetent and dishonest architects. But they appear to have lost sight of the fact that, after all, reasonable and fair-dealing men preponderate among owners, and that there are very many capable and honest architects to mediate between them and contractors. Again, the Master Masons and Builders appear to have lost sight of the fact, that now and for several years past, and perhaps also for a year or two to come, hard and sad as may be the lot of a master mason or a master builder, 'tis still harder and sadder to be the owner of buildings subject to continuous depreciation, periodical increase of taxation, and constant lowering of rentals.

Gentlemen of the Chicago Master Masons' and Builders' Association, permit me to indulge myself in giving utterance to the following expostulation. Remember that you are in the United States of America, that you are dealing with freemen, that no law has yet been enacted which compels those who have spare capital to invest the same in enterprises which involve the erection of new buildings. But few of your number are rich enough to make it a matter of indifference whether the number of buildings erected in this community be great or small. Most of you are interested in popularizing the practice of erecting new buildings, and all of you should know that a policy like that proposed by your Code of Practice will deter many timid persons from venturing into building enterprises, while strong and aggressive men among possible building owners will avoid submission to your dictatorial policy by seeking other means of investment of their capital than the erection of new buildings, where they must be hemmed in and restricted by a Code of Practice almost penal in its character.

In conclusion, I wish to state that my interests and yours are identical. We all wish to see an active building market. If many buildings are erected our profits will be greater—code or no code—than if but few are erected.

Let us do all in our power to make the undertaking and carrying out of building enterprises easy, and we shall have done our share toward making it popular. With reference to your Code of Practice, put yourselves in the place of a person who, having money enough to erect a building, is hesitating between that and another form of investment. Which way will he be inclined to turn after reading paragraphs 11, 14, 15, 16, 18, 19, 22 or 23 of your Code of Practice?

There are at best, owing to general business depression, but few jobs of building to go around among us all. Many of us will have to go without employment. Every additional building undertaken will benefit one or the other among us; every possible building not undertaken will deprive one of us of a possible remunerative employment. Let us not commit the blunder of making building a series of unnecessary hardships for those who are ready to give us a chance to earn a livelihood in trying times like these.

As an association you assume the right of dictating what the contracts between individuals shall be. The courts, if appealed

to, will not tolerate such infringement of the rights of the individual to make private contracts as his will and his interests may dictate. I trust that this will be received in a spirit as kindly as that in which it was conceived and written.

CONDITIONS

UNDER WHICH ESTIMATES ARE TO BE MADE, PROPOSALS SUBMITTED AND CONTRACTS ENTERED INTO FOR MASON WORK BY MEMBERS OF THE CHICAGO MASONS' AND BUILDERS' ASSOCIATION.

1. Plans and details for mason work, when offered for final or competitive estimates, shall be presented on a scale, not less than one-eighth ($\frac{1}{8}$) of an inch to the foot, must be done in ink or by some process that will not fade or obliterate, and be completed in every part, with given dimensions marked in plain figures thereon.

2. Portions of drawings that require a larger scale than general drawings for a thorough comprehension of what will be demanded, shall be presented at the time estimates are requested, and when ornamental brick is to be used, name of maker and number of design must be marked thereon in plain letters and figures.

3. Specifications shall be presented in ink, or by same process as called for in the foregoing for plans.

4. Specifications must be definite. All such indefinite demands as "The contractor must furnish all work that is necessary," or "All work that the architect may require," or any demand having in contemplation the shielding of the owner or architect from responsibility arising from a violation of the building ordinances, are improper and must not appear in the specifications.

5. The specifications shall be taken as a guide for estimating; and all demands made by the specifications—unless objection be made thereto in writing when proposals are submitted—shall be covered in the estimate offered.

6. Demands made by the plans, and not referred to in the specifications, shall not be considered in the proposals.

7. Everything that will be required in the mason work must be mentioned in the specifications, classified and grouped under appropriate headings.

8. Specifications shall distinctly state that when it is necessary to cut or change the work of one contractor in the placing of the work of another, then the said cutting shall be done by the contractor whose work is so changed or cut, he to be paid therefor by the contractor whose work makes the said cutting necessary.

9. Proposals not to be given to cover an indefinite depth of foundation. Foundations which have to go below the depths shown upon plans must be paid for as additional work, at prices agreed upon.

10. Members of this association when requested to submit proposals for work (other than their own branch) must not be restricted as to whom they shall employ as subcontractors, unless previously notified in the specifications.

11. Should portions of the work be reserved by owners or architects and estimates therefor be obtained by them, a member of this association, if required to include the said estimates in his contract, shall receive compensation therefor of not less than ten per cent on the amount of the said estimates (except in the case of materials. See Condition 19).

12. When proposals are asked for on work, and payments to be made other than cash, same must be specified; when not so specified no member shall contract except for cash.

13. Specifications shall state distinctly the date and hour when proposals are to be opened; in case of postponement of date specified, all bidders shall receive notice in writing of said postponed date and hour, and no proposal shall be received or considered after the time specified.

Proposals shall be opened, read and listed at the time specified before such bidders as are present. Contracts shall be awarded by owners or architects within a reasonable time thereafter.

Members shall not be held on proposals retained longer than ten days after date of opening.

14. In all cases where work is let under plans and specifications prepared by an architect, for which proposals have been received and opened, the lowest invited bidder shall be awarded the contract, and estimates for changes shall be made by him only, unless the said changes involve an alteration in the plans of twenty-five per cent or more of the proposal price, in which case the full competition shall again be opened.

In case the price estimated for changes should not be satisfactory to the owner, it shall be settled by arbitration, as provided for in the form of contract adopted by this Association.

15. When security is exacted from a member, a like amount of security shall be required of the owner, but no member shall take without security any contract that another member has refused because he was unable to get such security.

16. Members shall decline to give architects or owners proposals in the aggregate, when the said architects or owners are soliciting proposals in detail, nor shall proposals be furnished in detail, when proposals are being solicited in the aggregate, and same shall be specified in the specifications.

17. Whenever the completion of a contract will be required in a certain time, then that time shall be mentioned in the specifications, and if a penalty for noncompletion is to be exacted of a member it shall be so stated, and also that the owner will be required to pay a premium of like amount to the member for any and all delays caused by owner or other contractors, selected by owner or architects.

18. A member shall not be permitted to alter his proposal after proposals have been opened, and previous to the award.

A member to whom a contract is awarded shall be required to sign a contract (except as provided for in Condition 14) for the amount of the proposal he has submitted, or withdraw his proposal.

19. For any and all materials furnished by the owners or architects in connection with contracts for mason work, the following demands shall be made and no contracts executed by a member of this Association, unless said demands be complied with by the owner, agents or architects, namely:

The amount to be demanded on materials or certain parts of materials furnished by owners, agents or architects shall be as follows, and amount of same shall be added to the contract price:

Rubble stone \$1.50 per cord.

Dimension stone 5 cents per superficial foot.

Common brick \$1 per M.

Pressed brick Under \$16 per M—\$1.50 per M.

Pressed brick Over \$16 per M—\$2 per M.

On cement, lime, sand, etc. 10% added to cost per bbl., yd., etc.

20. All measurement of additional work or for quantities of materials furnished by owners, agents, or architects, shall be governed by Rules of Measurements for Mason Work, adopted by Master Masons' Association and approved by the architects in 1880.

21. No member of this association shall let a subcontract for mason work except for stone setting, tile setting and terra cotta setting.

No member of this association shall take a subcontract for mason work on any one job for an amount exceeding \$500, except for mason work in heating or power plants.

22. Any member unable to obtain a settlement, according to the terms of his contract for work done, may present his claim in detail to the secretary of this association, who shall demand in the name of this association from any party or parties, owing said member, a prompt settlement of the account. In case said party or parties refuse to comply with said demand, no member of this association shall do any work for said party or parties until such settlement has been effected.

23. When a member is engaged upon any building or buildings, if building masonry either by contract or otherwise, no member of this association shall furnish estimate or do any mason work on such building until the member first engaged thereon shall have been settled with in full.

24. The form of contract adopted by this association is the contract known as the Mason and Builders' Contract, and is the only form of contract a member of this association is allowed to execute for mason work.

IS ARCHITECTURE A LIVING ART?

BY PETER H. WIGHT.

ALL the world agrees that architecture, at various times during the historical period of the world's civilization, was not only a living art, but the greatest of the arts. Its history is now well understood. It has had its greater and its lesser periods of renown, but critics do not agree as to when it was greatest, when it declined, and when it died, if it died at all. Let us, therefore, consider calmly and dispassionately the state of this art today and the position in history that it will hold.

The natural vanity engendered by success in a chosen vocation, and a knowledge of the enormous productions with which architecture has been credited in the latter half of the present century, unconsciously leads the unthinking to glory in its achievements and assume that we are in an age of evolution like those of which we are so well informed from a study of the history of our art in past ages. But the immensity of these modern works, and the vacillating and unstable nature of the designs embodied in them, even within an ordinary lifetime, have been the best means of convincing us that up to the present time our efforts have been futile in resuscitating that which was dead. Whatever honest efforts have been made are so scattered and infrequent as to be swallowed up in the mass; and to the average observer they are unseen and unknown. For unless any revival of architecture can be brought within the knowledge and appreciation of the masses of the people and become a subject of common thought, nurtured and sustained by popular sympathy, to say nothing of enthusiasm, it has no hope for the future. The public is unreasonable if it expects architects to become leaders unless they have the appreciative support of public opinion.

It is first necessary to agree what the words "Living Architecture" mean. The meanings given by lexicographers and the best essayists and commentators have been so varied as to give the best evidence that the nature and essence of architecture, seen from so many points of view, is little understood; they are only echoes of the prevailing popular misconception. And what is more natural than that we should have failed in our definitions of that which does not exist, and of which we know only through the history of ages with which we have no human sympathy? For this we must go to the history of those eras in which it was a living art. For a venture, therefore, let us try this as a definition: A living architecture is the evolution of building in a way that reflects the progressive life of a nation in science and art when upheld by popular appreciation. If this is right, we must measure ourselves by it now, just as only a study of the history of the art, now well known, and only recently understood, enables us to make the definition. For to know what it was we must know the works, the life and the art of those nations in which it was the subject of evolution under these conditions. All architecture was more or less progressive from the earliest historic times to the sixteenth century. The historic sequence of methods of building combined with that artistic expression which is called "style" can be traced with more or less accuracy through this long period. There were apparent breaks in the chain, but still the connection can be found through periods when history itself is fragmentary and doubtful. There were branchings out in different directions from race to race, as in the limbs of a tree. There were leads of thought among the nations of the earth that were lost, but in some cases these diverging streams came together again. This was illustrated by the influence of the Byzantine style of Justinian in two directions. There are very few evidences of isolated architectural styles, even in Asia, where they originated; and it is very remarkable that the only indigenous styles which have continued to be a living art, almost to the present day, have had their origin in these isolated styles, which are not parts of the chain which has followed the progress of civilization. The architecture of Southern India, the original Hindoo, was practiced up to about a century ago. That of Japan, an offshoot of the Chinese two thousand years ago, has lasted to the present time. But it is safe to say that with the adoption of European and American ideas and customs it has died within our own remembrance, and is now only an object of archaeological interest to those who practiced it, for which a certain reverence still exists, but no disposition to adjust it to the methods of building made necessary by the march of modern civilization.

From the beginning of the seventeenth century to the latter part of the eighteenth, architecture, from being an indigenous art, became a cult. It has often been said that the renaissance of Roman architecture in Italy in the fifteenth century was the natural result of the revival of the study of classic literature, which had been a sealed volume for a thousand years; but this is denied by some of the ablest thinkers of our time. Those who claim to know all about it tell us that it was another evidence of the emancipation of humanity from the monastic gloom of the middle ages. Whatever there was of monastic gloom in the middle ages died out in the latter part of the twelfth century with the rise of the municipalities. From that time learning and scholarship began to grow, even without the art of printing, and it was printing that made a knowledge of the classics possible only to greater numbers. This was also the age of chivalry and one of the most glorious eras of art the world has ever known, comparable only to the age of Pericles in Greece and that of Justinian in Byzantium.

The adoption of the so-called classic styles in the sixteenth century was very slow, and it only happened to be coincident with the revival of letters through the art of printing.

Gothic architecture only declined because after it had reached perfection in the thirteenth century it gradually became overwrought with detail, and pure invention was taking the place of a rational expression of the art of building. Rational structure was superseded by constructive experiments and *tours de force*. Decorative treatment was no longer in harmony with structural forms. It was in Italy, where Gothic architecture never reached the high state of development that it attained in France and England, that Roman details began to be employed on Gothic structures. Satiated with fantastic exuberances of the later flamboyant details, the French began to import architects from Italy in the sixteenth century. These were not constructors, and the French designers had ceased to be artists—though they were still good builders. Building continued in the mediæval manner, but the Italian artists directed the details, which, however, continued to be executed by French artisans. Schooled in the traditions of the middle ages, the work they did shows the lively and expressive influence of this training, which they could not shake off. As a result, the early Renaissance details of France are much more refined than those of Italy. It is the work of this period, done in the age of Francis I. and Henry II., that has lately become an object of such admiration that an attempt has been made to revive it in this country, mainly under the influence of the late Richard Morris Hunt. This style, in its time, was a protest against the extravagances of Gothic architecture, which were the evidences of its decline and approaching fall.

So Gothic architecture died by its own hand. No attempt was made to return to the rational building of the thirteenth century, and Italian ideas continued to be adopted until no trace was left of the traditions of the Gothic artisans. But the transition was very slow in France and slower still in England. Architecture became only a system of decoration applied to buildings, instead of an art growing out of their materials and construction. It became a learned profession, and with the establishment of the French Academy under Louis XIV. it became, as I have said, a cult, and the Academy laid down strict formulas which have been adhered to with more or less severity to the present day.

Gothic architecture died slowly in England, and was practiced there in various debased forms for nearly a century after the Italian Renaissance had been brought from Italy to France, and it was nearly two centuries from the first revival of the Roman styles in Italy until they obtained a foothold in England. The period of the great fire in London (1656) very nearly marks the beginning of architecture as a profession in England. Before that time Inigo Jones was its sole representative in that country, and thenceforth through the example of Christopher Wren it was completely taken out of the hands of the guilds.

In Italy the revival of Roman decorative forms became universal, but gradually architecture became completely subservient to painting, mosaic and sculpture, the history of which in the golden age of these marvels of decoration is too long to here recite. Being but the framework and setting for the arts of the decorator, architecture never reached a high state of development after the fifteenth century. Today Italy reposes on her traditions, is content to only reproduce and too indolent to create.

Germany, which had a rational and masterly architecture in the middle ages, though inferior to that of France, made no progress in modern architecture until the latter part of the eighteenth century, when, with England, it took up the Greek craze after the ruins of Athens had been explored and published by Stuart. This was gradually formulated into a German Renaissance style under the influence of Schinkel and Stüler, while Gottfried Semper has been the leading exponent of the Italian Renaissance during the present century.

These are in brief the attempts during three centuries to make architecture again a living art.

The French alone of all enlightened people believe that they have done so; they have been consistent in making the endeavor. The French style of Louis XIV. was derived from the revived Roman architecture of Italy in the sixteenth century. The revived Roman of the Italians came from a study of the few remains of what had been crumbling into ruins under their very eyes for twelve hundred years. These ruins had been treated with contempt, and had been the quarries of the mediæval builders of Italy and southern France during most of this time. The great monuments of ancient Rome were structures of brick and concrete reared by civil engineers and decorated and adorned by Greek artists. It was in this way that the architecture of ancient Greece, the only classic architecture, reached Europe through Rome, until it became an object of study in the latter part of the eighteenth century, especially after the French revolution. It is a misnomer to call the modern style of the French Academy "Classic." It is essentially Italian or Roman. As practiced today it varies little in its details from that of the time of Philibert de Lorme and Mansart. The Greek influence was felt about thirty years ago, but it has died out entirely. There has also been a small but strong school of Gothic revivalists in France, led by Viollet-Leduc and Lassus, within our memory. But it has died out. The trial is still in progress in France to determine whether or not a purely academic style of architecture, the French Renaissance so-called, can be established under the nurture of such a powerful force as the magnificently organized French Academy supported by the whole power of the government. The existence of this very support is the best evidence that it is not a living

* First of a series of papers discussing two questions: "Is Architecture a Living Art?" and "Can Architecture Again Become a Living Art?" read before the Illinois Chapter of the American Institute of Architects, 1896-1897.

architecture. A living architecture must exist through natural and not artificial causes; most of all it must be progressive and evolutionary. The facts show that French architecture has not been progressive but stationary. The best architectural monument of Paris, the Hotel de Ville, was reproduced almost in facsimile after its destruction by the Commune because it was admitted by the best architects in France that it could not be excelled.

An architecture to be "living" must be universal in its employment in the country that fosters it. In France the "grand style" is used only for what they call monumental buildings and pretentious structures. Buildings for the poor and those even of the middle class are generally built in any style that suits the fancy of the builder. The average modern buildings of France are grotesque, if not commonplace and even vulgar in their design. It is safe to say that for rational and appropriate treatment, and the use of correct building methods, they will not bear comparison with buildings of a similar class erected in our own country within the last twenty years.

The style of architecture used for the exteriors of buildings as inculcated by the French Academy, is not a true expression of the art of building as practiced in France, but a mask and an applied decoration like that which the Roman emperors imported from the Greeks — whom they had captured — to cover the works of their great constructive engineers.

If, therefore, a so-called national architecture is not natural in its growth, but nurtured like a hot-house plant, is neither progressive nor evolutionary, and is not universal in its employment, it cannot be a "living architecture." It is an architecture prescribed by professors and doctors, one provided for the masses of the people, not proceeding from the people.

Outside of France this century has seen no concerted architectural effort in any of the civilized countries of the world. In England the classic or Greek revival commenced with the century, and later was, as with everything else that was English, imitated in this country. In only a few public buildings in some of the older cities was it employed with any consistency as to the materials used, or with any fidelity to the Greek principles of design. Outside of a few public buildings in Washington, New York, Philadelphia, Boston, Charleston, Nashville and Columbus, all the so-called Greek buildings, and especially the great mansions of the South, were but travesties of this pure and noble style executed in wood, lath and plaster or stuccoed brick. The fashion died out fifty years ago. Since then, both in England and America, the so-called Italian styles have been worked in all classes of buildings with varying degrees of deformity. With the knowledge of a small stock of details any draftsman or journeyman carpenter could turn out a design for any building that was wanted, without artistic feeling or regard for the constructive necessities of a true and living architecture. But we have not been confined to this style. All the styles of the ancients have been tried as fancy dictated — used like the fashion plates of the dressmaker's books.

The only concerted effort to revive the principles of an architecture that was once a living art, was seen in the modern Gothic movement in England. This movement, first taken up by the ecclesiastics and their disciples, was promoted by a band of earnest students in England, and a few of their followers in our own country, who saw in it the possibility of working together according to accepted principles. The main idea was to make design consistent with construction. The real aim of these reformers was not to revive Gothic architecture by imitating and reproducing it, but by adhering to the underlying principles of the architects of the best period of mediæval art, namely, the thirteenth century, to frankly express in all classes of buildings the constructive methods best suited to our times, and, discarding all meretricious ornament, to enrich them with ornament appropriate to the material employed. In England the style, which had been initiated by masters in the art, was taken up and practiced by ignorant and thoughtless imitators who did not understand these principles. The extravagances and errors of the dying days of the mediæval Gothic were repeated. Then some of the most earnest practitioners deserted the movement and returned to their old methods. They found something that had not been imitated, and the so-called Queen Anne revival was the result. This became a fad. It has already gone through many variations. All the debased periods of architectural design and building construction since the age of Elizabeth has been copied, but there is nothing in them on which to found a living architecture.

There is little to be said about the Gothic movement in America. It is better known by the unconscious influence that it exerted than by the works of its devotees. This influence was most salutary and was felt in nearly every city of the land, even to its western boundary. To make it clearer, this influence resulted in the discarding of meretricious ornament everywhere and the substitution of artistic original carving on buildings in all styles of architecture. It banished overhanging cornices over openings, and best of all the immense cornices of sheet metal at the top of buildings that had been used everywhere. Unnecessary projections of all kinds were omitted and the walls themselves became fields for decorative treatment. Windows and small openings that had been arched because it was supposed that an arch was more ornamental than a square head, even though it was not wanted as a convenience or required by constructive exigencies, were built with straight lintels. These are but a few of the reforms in designing all kinds of useful buildings, not of a public or monumental character, that were due to the Gothic

revival. Contemporaneous with it was the general reform in all classes of decorative design and its application to useful articles commenced twenty years ago. The improvement in architectural design, especially in dwelling houses, both as to their exterior design and interior fittings, became so general that in a series of articles that appeared in the *Atlantic Monthly* from the pen of Henry Van Brunt, it was stated that the greatest hope for the architecture of the future could be found in recent work in the large interior and western cities, and especially in Chicago. The two architects whose example was most potent with other practitioners were: Henry H. Richardson, of Boston, and John W. Root, of Chicago. Richardson's practice was very extended; Root's was mainly seen in Chicago; but Chicago has four of Richardson's most characteristic works, representing his method of handling buildings of diverse classes. They are the American Express building, the residence of Mr. MacVeagh on the North Side, and of Mr. Glessner on the South Side, and the wholesale store of Marshall Field & Co. Richardson was credited with instituting a Romanesque revival, but his aims were far above the restoration of any ancient style. While he had been educated and had practiced in France, he saw, after trying to adapt the French academic style to American requirements, that it was not suited to our wants. He simply drew his inspiration from the works of the Byzantine and Romanesque periods. He saw in the Byzantine the point of departure from the debased Greek art of the latter days of the Roman Empire toward better things. But few of his works are entitled to be named after these styles, and most of them are an expression of the principles of the Gothic revivalists, which were not for the purpose of restoring Gothic architecture. The only difference was that he took his starting point from the Byzantine style of Constantinople and Ravenna, which prevailed from the sixth to the eleventh century, and the Gothic revivalists started with the study of the thirteenth century work of Northern Europe, influenced largely by that of Italy in the thirteenth and fourteenth. Neither of these two men claimed that their works should be named after any decedent style, but simply looked forward with hope to the development of better things. Neither of the four buildings of Richardson in Chicago has any distinctive resemblance to Byzantine, Romanesque or Gothic architecture.

There was great hope in this development of a national architecture in America up to five years ago. We had apparently cut loose from the influence of style, and hundreds of architects were apparently working together. That "intelligent unity of effort" among the architects to which Mr. Van Brunt so often refers as essential to the development of style seemed to have accomplished something. The public even was actually beginning to take an interest in architectural art, and the designs of leading architects began to be discussed in polite society.

But not more than five years ago the influence of the French style seen in the work of a few eastern architects, whose patrons were among the wealthy and fashionable classes of the metropolis, began to be felt throughout the country both by architects and clients. Their designs became prominent through the illustrated architectural journals. The French Renaissance had become the fashion. It had the backing not only of the large number of young architects who had attended the French Academy, but of our own architectural schools, nearly all of which have adopted the French curriculum. Along with this the so-called Colonial style had become a fad — it is so still in an aggravated degree. Leopold Eidlitz, one of the veterans of the profession, defines the Colonial style as "Classic architecture interpreted by carpenters and builders." No one claims that the domestic buildings erected in America during the eighteenth century were designed by architects. A writer in *Loudon's Magazine*, published in London in 1830 or thereabouts, who was traveling in the United States, said that the attenuated classic details of old American houses, executed in wood, were the design and work of ship joiners, and exactly resembled the cabin work in the passenger ships then crossing the Atlantic. This was long before any Colonial revival was dreamed of.

Just now there is a race between the French Renaissance and the American Colonial, which can only be decided by the fancies of our generous patrons. In some cases these fashions become mixed in one creation. Besides these, there is the Francis I. fad, an imitation of late French Gothic with Italian Renaissance details thrown over it like a sauce. The American State capitol and courthouse style still holds its own with its central dome adapted either from that of St. Peter's at Rome or St. Paul's at London. Latterly there has been a diversion in favor of the dome on the Agricultural building at the World's Fair, which has become a good second already to St. Paul's. The recent competition for the Minnesota State capitol showed all these varieties. For churches, the late English Gothic, called Perpendicular, is becoming a favorite — the style of the decadence of English mediæval architecture; in fact, anything but good thirteenth century work, which is tabooed because it is supposed to have some connection with the Gothic revival of the present century, which is out of fashion. The oriental styles were favorites recently for theaters, but they are unpopular now and we are being regaled with the French Renaissance having a dash of Greek details and Colonial attenuations in structures of this character.

The strongest forces are now working for the French Renaissance — *la Mode de Paris*. Its details permeate the designs of all classes of buildings. It is too bad that so many of our most estimable citizens, who have spent so much money on tasteful dwellings designed and built by the genius of Root, Richardson and

their immediate followers, should suddenly find that by the freaks of fashion these rational and beautiful creations, which they have learned to enjoy, are now *passé*. But this is the fate of those who live in an age of fashion rather than reason, and for whom architecture is no longer a living art. For amid the *embarass de richesses* of the modern pattern book of architecture, there can be only one style that is *de rigueur*, however short-lived it may be.

The architecture of the Court of Honor at the World's Columbian Exposition was the grandest of all the exhibits of that never to be forgotten event, but it was an exhibit of the possibilities of monumental architecture in the hands of our ablest practitioners, and nothing more. It showed how well they had studied the style of bygone times, and the magnificent effect of grouping to form a harmonious *ensemble*. Too much praise cannot be accorded for what was accomplished. But it was only an exhibit after all. Not one of those great façades was an expression of the plan, construction or purpose of the building behind it. The buildings were simply masked by full-size models of decorated walls designed for palaces. In this sense they were not architecture. But as models of architectural style they have taught nothing but the superb effect of artistic and successful grouping. As realities, there is no possibility that they can ever be reproduced, and seen once they will never be seen again. Thus far they have exerted no influence upon contemporaneous architecture except in so far as they exemplified some of the practices of the French school. They have furnished materials for incompetent copyists, who are accustomed to enter the public competitions, and nothing more. We have no more use for palaces, and palatial architecture, now only a reminiscence, is degraded by repetition in stores and dwelling houses.

The experience of three hundred years has thus far shown that architectural revivals conducted by architects have in every case proved to be failures. But in the present state of society we have nothing else to expect. Architects cannot reform society; they are but its humble creatures. In all periods when architecture was a living art, those who stood in the place where modern architects now do were the instruments of society, whose part it was to create the monuments through which so much of its history was to be read in future ages. Call them architects, builders, freemasons, monks—what you will—they were but the exponents of the spirit of their times. The development of the arts which they practiced went hand in hand with national development and national thought. There were no archaeologists in those days, the architects and builders knew no style but that which belonged to their own country. There were no brilliant exhibitions of genius. All progress was slow but sure. Advances were made step by step. All worked for a common purpose, and personal rivalry gave way to mutual support. In other words, their architecture knew no law but that of evolution. In the great chain of architectural history we know of two periods when this state of affairs existed: the Golden Age of Ancient Greece and the twelfth, thirteenth and fourteenth centuries in Europe. Each produced an architecture in true accord with the state of existent society, and adapted to the materials, climate and mechanical knowledge of its time and country, with as great a perfection as anything that we have been able to conceive. The last mentioned period was followed by two centuries of very slow decadence, as before mentioned. Then came the so-called Renaissance, which in time was formulated and nurtured by the academics.

Architecture from being an indigenous art became a learned science, to be cultivated and practiced like any other profession. It is so at this day, with the result that in our own free country it is a subject of caprice and fashion. We have ransacked the world and filled libraries with magnificent books that bring a knowledge of the whole range of architectural history to our own doors. We know so much that all we can do is to copy and imitate. We use this storehouse of knowledge that we have built up like a pattern book. After half a century of experimenting we can agree upon no special course to follow. It is not for want of means, for this has been the age of extravagant expenditure, which has enabled us to encumber the ground with a chaos of stupendous structures, which will ever be known as the architectural aberrations of the nineteenth century.

(2) CAN ARCHITECTURE AGAIN BECOME A LIVING ART?

The same reason for what has been and is now, will guide us, in some measure, to fathom the future. We cannot predict anything that is not based on premises that are now self-evident to us. The spirit of this century will be the spirit of the century to come, only perhaps intensified. There is an irrepressible conflict between utility and art which will not down. The age of utility commenced in earnest with the beginning of the nineteenth century. Its growth has been a marvel to our own eyes. Its progress has not alone been confined to science and the mechanic arts. The same spirit has made us a race of investigators; we have not only ransacked the whole world and all past times for a knowledge of architecture, but of every other fine art, of every process and every invention that was lost and dead. It is our spirit of investigation and inventive genius (which are the manifestations of a utilitarian age) that have enabled us to restore nearly all of the lost arts; and we have acquired the skill that enables us to imitate with more or less success every kind of fine art production of past ages that has come to our knowledge. We have imitated the old masters of sculpture and painting; but, judged by the highest standard of criticism, their works have been equaled by few and surpassed by none. There is, however,

a vitality in painting and sculpture as well as in other decorative arts. We have imitated the styles of architecture of all eras, but produced none of our own—nor will we do so, unless by some process not yet known to us we can reconcile the utilities of the building art, which is constantly advancing, to forms of artistic expression which are in sympathy with the spirit of the age. What the former are we can readily understand. The latter are a sealed book to us.

No one can claim that there is any analogy between those periods of the world's history when architecture was a living art and the state of society at the present day. But there was a period of great building activity when it was not a living art, and the one which most nearly resembles our own. The architecture of Rome during the first two centuries of the empire was borrowed from the Greeks, and was designed by Greek architects. It was used as an external and internal mask for the works of their engineers. Such as we have is borrowed from everywhere. The Romans were great builders; so are we. They were great engineers; so are we. The structural parts of their great buildings were designed by engineers. Our architects, not trusting themselves, employ engineers to construct their buildings, following modern engineering methods, which are different from those of the Romans. The structures of Rome were not designed architecturally, except as to their plan and arrangement, and the architectural designs were applied to their exteriors and interiors in the form of pilasters, cornices, and incrustations of thin marble and mosaic. In our present practice we more resemble the Romans than any others, and Roman architectural designs fit our buildings, where the real construction is only with bricks, about as well as they did those of Rome.

But the building art with us, by the assistance of engineers, has advanced beyond anything dreamed of by the Romans. Now, if there is any hope for our architecture—assuming that methods of construction are fixed by natural laws, and the progress of invention is inspired by our physical necessities—it will be in the appropriate decorative treatment of these modern structures by the use of decorative material. In other words, there seems to be no prospect that a modern architecture that expresses the condition of the civilization in which we live can come any nearer to a living art than a skeleton of brick or steel, covered outside and inside with the clothing furnished by the professional decorator. This will not be an imitation of Roman architectural design, but an expression given to buildings, in terms of art, according to the spirit of the architecture of the Romans.

An age in which the spirit of utility predominates can only produce a utilitarian architecture or a combination of engineering and decoration. The latest manifestation of this is in the erection of high buildings, which set at defiance all preconceived laws of proportion. It has led to the invention of systems of construction that are entirely new. The engineering part, like all engineering of this age, is well done; but architects have striven in vain to clothe them with that which is intended to give them an architectural expression in accordance with their precedents and formulas; they have only made the engineering feats the predominant qualities that have elicited the admiration of the world; they have in this touched the only chord of popular sentiment that is yet competent to appreciate what they do. The public appreciates the engineering part better than the architecture. Why is this? It is because architecture as an art is a sealed book to the masses of the people, a puzzle with which they are confused and mystified, especially when they see that our designs have no relation to our construction. Building *per se* is something in which all are interested and which most can understand. This interest extends sometimes to the criticism of the external masks with which our structures are clothed, and the architects now find themselves confronted for the first time with a public sentiment which demands that something shall be done to excite its interest. If the architect fails, we must fall back upon the professional decorator. If our construction is fixed by mathematical rules and worked out in materials incapable of artistic treatment by any process that we can apply to them, we are compelled by the exigencies of the case to acknowledge that architecture is a failure; that the designing of buildings by architects has become subservient to the science of engineering, and that nothing remains but engineering and decoration. All the arts of decoration in plastic materials, mosaic, bronze, terra cotta and thin plates of marble, have recently been cultivated in the highest degree within the very time that construction has taken on purely scientific and mathematical methods. Can we not use them more than we already have, and with more respect for those who cultivate them? This ray of light faintly leading us to hope for better things, points to the possible union of engineering and decoration, in the production of buildings that will be characteristic of the spirit of the age. It may drive styles of architecture to the winds. It may be a substitute for a living architecture, but it will not be an architecture in the sense of that of Greece in the time of Pericles or of France in the thirteenth century. It may be a forward step to the evolution of building in a way that reflects the progressive life of a nation, in science and art, when upheld by popular appreciation. But it seems to me that the professional architect will under such conditions be, as he now is to a certain extent, only the maker of plans and the managing director and organizer of the complex systems of engineering, sanitation, heating, lighting, telephoning, fireproofing, and, last of all, decoration, which go to make up a modern building.

He may cultivate all the arts of antiquity that he chooses and cater to the tastes of patrons and dilettante; he may introduce the

latest *modes* or design in the most unfashionable styles that suit his own fancy; but unless his work gives evidence that it is part of that endless chain of evolution in building in a way that reflects the progressive life of a nation in science and its longing, if it has such, for beautiful things, his architecture will never be a living art.

Gentlemen, I have only offered a few suggestions which may lead to more serious thoughts and must leave the second question unanswered.

ATTRACTIVE RAILWAY STATIONS.

TO the architecture of railway stations might well be devoted an entire volume of illustration and description, so important has this branch of the profession become. If we were to seek pleasing and profitable examples in this line many could be found among the station buildings which have been erected by the Michigan Central Railroad. The problem presented to the architect of this class of work is not easy. What is wanted in



WEST BAY CITY, MICHIGAN.

the average small city or village is not an elaborate structure of stone or brick, designed to be erected at great expense, but a comparatively small building, often of frame construction, and necessarily of limited cost. Into this plan must be put all of artistic value, both as to structure and surroundings, that can be encompassed by the skill of the designer. In the light of modern criticism the engravings shown herewith demonstrate that the Michi-



BATTLE CREEK, MICHIGAN.

gan Central department has attained to unusual excellence. The undesirable tendency to sameness could scarcely be more effectively avoided than it has been in the three stations illustrated. The Battle Creek building is especially original and striking in design, and combines many meritorious features in a small and inexpensive structure. On the score of economy together with beauty, perhaps the West Bay City station is even better. To



NILES, MICHIGAN.

rescue these little buildings from the total eclipse of art to which they seemed a few years ago to be doomed has been the commendable and successful effort of the Michigan Central. Their station grounds also show the same careful treatment in landscape gardening. If a traveler cares anything for beautiful surroundings he is sure to be pleased with this road. Perhaps the fact that

it is "The Niagara Falls Route" has something to do with it, but assuredly there is no finer example on the continent of a route naturally picturesque along which every opportunity to enhance this picturesqueness by art has been seized upon by the management.

THE BRUSSELS INTERNATIONAL EXPOSITION OF 1897.

ON April 24, Brussels, the capital of Belgium, will open the gates of its International Exposition. Great preparations have been made to give the event all the "éclat" consistent with such an occasion, and, as all civilized nations in the world are to be officially represented, there is no doubt of its success.

The United States Government is to be represented by a Commission specially appointed to that effect, who will have in charge all American interests sharing in this country's section, whose chief attraction is to consist in a Government exhibit.

Numerous American manufacturers have applied for space and will make gorgeous displays of their products. Chicago especially will be well represented there.

Among other exhibits it is proposed to erect in the grounds a typical American frame cottage, movable, erected after plans and specifications drawn by an American architect, built by an American contractor with materials furnished by American firms and of American growth and production, fitted from basement to roof with the best modern devices of American sanitary engineering, furnished likewise in thorough American style by a collectivity of American furniture manufacturers, decorated by expert American house decorators, is an enterprise that should commend itself to all who have at heart the extension of American methods and American trade in foreign countries.

Such a scheme is on foot for the Brussels Exposition, which is to open its gates on April 24. It has received the unconditional approval of the United States Commission, appointed to represent this Government at this next international fair, and space has been offered free to help carry the idea to execution.

To appreciate fully the commercial value of this undertaking, one should bear in mind that Europe is at least twenty years behind time in the building methods practiced in America; the firms who would introduce American ideas abroad would certainly reap a rich reward.

The Belgian government, in order to stimulate exhibitors in the making of desirable utilitarian exhibits, has appropriated a sum of \$60,000 to be distributed as premiums for the most remarkable displays, both practical and graphic, as desiderata to numerous questions propounded in the official programme. Related to the building trades, plans and specifications are asked "for a small workingman's dwellinghouse," to be erected in good conditions of solidity and salubrity, built either as a separate house or in a group.

Other plans are asked for a rural habitation, presenting the same conditions as the first. The cost of either one of these buildings is not to exceed \$800, and a premium of \$240 is offered for the plan adopted by the jury of awards. But these are only a few of the many novel features which will constitute the chief commercial attractions of pretty Brussels' Exposition.

Another one will be the exhibit of the "Chicago Trade Press Association," which is to establish in the main gallery of the Liberal Arts hall a reading room where the principal Chicago trade journals will be kept on file.

It is largely due to the intelligent efforts of Mr. Louis Moreau, commercial agent, that America will be represented at Brussels. His important commissions will call him to that city in a few weeks. At present he may be addressed at 218 La Salle street, Chicago.

NEW PUBLICATIONS.

JOHN WELLBORN ROOT—A STUDY OF HIS LIFE AND WORKS. By Harriet Monroe. Illustrated. 8vo., 291 pp. Boston and New York: Houghton, Mifflin & Co., 1896. Price, \$6.

Six years have passed since this joyful and radiant light in the architectural profession passed suddenly away at a time when his grandest hopes and desires seemed about to be fulfilled. After waiting long and patiently for the revelation of his life and works by someone capable to portray them, we gratefully welcome this tribute from the Poet of the World's Fair, fitly clothed in the language of poetic prose. Harriet Monroe is the sister of John Wellborn Root's widow, and was the companion of both, as she is now of the wife and children. No one was more competent to reveal his inner life during the period of his greatest activity between 1879 and 1891, and here we have the plain narration so much desired by all who knew him, admired him and loved him. As a whole it can be described as fascinating reading matter, such as holds the attention from beginning to end. The least part of it is biographical, but as such furnishes all that is interesting to the public of this singularly attractive life. This was without exciting incidents except in boyhood's days, when it was interwoven with incidents of the great rebellion. When he reached manhood it was devoted to unremitting work. And while this life was not without its festive side, that was only its play time and relief from work that might even have shortened its usefulness still more. Miss Monroe intimates that in some respects he was a lazy boy, but it was the laziness of introspection, the laziness of a cat which enables it to store up forces that accomplish the feat of scaling fences at a bound. She also tells us of the facility with which he obtained knowledge, the faculty of absorption with

slight effort, with which few are blessed. How he got it was his affair, but he was well up in the literature and history of art, and this was shown in the few masterly papers that he prepared in his later days. The most beautiful side of his life was his love for music, in which he was a born adept. It was the side light of his whole architectural career. Root's literary ability will probably be a revelation to most of the readers of this book. His contributions were all written for the societies with which he was connected, were read before them, and afterward printed in *THE INLAND ARCHITECT*, running through the volumes from 1887 to 1891. They were little read and little remembered, and the extracts, which are copious, in the volume before us, will meet many eyes for the first time. They show the settled purpose of all that he did, for they are consistent with his works. That he had a great influence with the younger architects through his designs is undoubtedly true, but it is to be feared that this has been dissipated in later years by the introduction of architectural fashions which are negations to all that he did. But time will show that he was a teacher worthy to be followed no less than an exemplar. All of his designs having been credited to the firm of Burnham & Root, Miss Monroe has performed a delicate task, most effectively, by giving a list of those works which were mainly inspired or modified by Mr. Burnham, to whom also she credits the most of the planning. It would be a misfortune if the memory of the days of this long and brotherly partnership—which might perhaps with more propriety be called a companionship—should after all these years be marred by reflections that would rob either of them of his part in the magnificent work that they accomplished. Their united labors ended with the inception of the World's Columbian Exposition and the formation of the Board of Architects, in which they both joined hands for the last time on December 6, 1890, the day the Board was appointed. History has told us that the only work of Root, in the World's Fair, which was realized, was the general plan of the grounds and arrangement of the principal buildings, carried out by Frederick Law Olmsted. All the architectural work is credited to other hands. The designs for buildings which he made before his death are reproduced here from some of his original sketches made before the Board was chosen. He never saw even the sketches of the associated architects. It had been decided when the Board of Architects had been selected that Burnham & Root should design the permanent Art Institute on the lake front, to which the Exposition agreed to contribute \$200,000. Root made no more designs for Exposition buildings after this, and immediately commenced the drawings for the Art Institute. He worked on these up to December 31, 1890. They were the last drawings he ever made, and in their unfinished state are here reproduced to a very small scale. The subsequent fate of the Art Institute project is well known.

The division of the book into subjects is unique, relieving it of much of the usual monotony of works of biography. It is divided into eight chapters. The first tells of his ancestry and childhood, the second of his early training and struggles. His early social life after he had commenced the practice of the profession is described in the chapter on "Youthful Emotions and Ideals." This portrays not only his first real love but his religious aspirations. The latter were portrayed in the remarkable paper which he prepared as part of a course of lectures delivered before a Swedenborgian congregation in Chicago, numerous extracts from which are given. The next chapter gives his ideas of modern architecture, and here the biographical part rests. This is illustrated by copious extracts from papers read before the Chicago Architectural Sketch Club and the Art Institute, and reveals the theory and motive of all his designs. The chapter on his "Work and Its Results" is largely reminiscent, describing his method of working and criticising some of his most prominent designs. The chapter on "Life and Thought" is largely filled with anecdote. This describes his later experiences down to the time of the inception of the World's Fair idea, and includes his active labors in the Western Association of Architects and American Institute of Architects. Chapter VII describes his connection as consulting architect to the World's Columbian Exposition in detail, and tells much of the unwritten history of the early days of that immense enterprise—the year 1890. The final chapter includes but a few days, ending with the death scene and funeral.

The illustrations, which are interesting, are the reproductions by some photographic process of many of Root's original sketches and drawings, including the designs made by him for World's Fair buildings and the Art Institute, which were never executed. These are not always easy to decipher, because all his drawings were made with pencil on tinted paper. The bulk of the pictures are general views of many of his buildings, and vignette sketches of interiors and details from the pen of Charles F. W. Miellatz. There are also etchings of St. Gabriel's Church and the entrance to the Western Union Telegraph building, Chicago, and a profile portrait for a frontispiece.

A TEXT-BOOK OF THE HISTORY OF SCULPTURE. By Allan Marquand, Ph.D., L.H.D., and Arthur I. Frothingham, Jr. Ph.D., Professors of Archeology and the History of Art in Princeton University. New York: Longmans, Green & Co., 1896. Crown 8vo., 293 pages; \$1.50.

This, as the title implies, is a text-book, and is one of the series of histories—called "College Histories"—of art lately published by the Longmans, of which have already appeared "The History of Architecture," by Prof. A. D. F. Hamlin, recently reviewed in *THE INLAND ARCHITECT*, and the "History of Painting," by Prof. John C. Van Dyke. They are an evidence of the recent tendency to make a study of the history of art a part

of the curriculum of every American college. To an architectural student the book before us has only a relative interest. We would not advise him to commit all the names given of known sculptors throughout all historical times to memory. But it is worth his attention by giving it a careful reading, as it will save much time that might be lost in researches in other directions. To the student who desires to delve deeper it furnishes references to all the other authorities extant. Unlike most of them, it helps to show the proper relation of sculpture to architecture at each period of its historic development, and whatever allusions it makes to contemporaneous architecture are intelligent and serviceable. It commences with Egypt and Babylonia and ends with the present day, tracing the evolution of the art from its prototypes in Egypt, Babylonia, Assyria, Persia and Phoenicia, through Greece and Rome to its decadence, and its revival in France in the twelfth and thirteenth centuries, followed by its golden period in Italy in the fifteenth and sixteenth, from which all later sculptural art has been derived. It is a very nearly complete catalogue of the sculptors of all times. The illustrations are numerous and are all half-tones from photographs, but they are badly arranged with reference to the text—as if the printer had inserted them according to his fancy instead of to illustrate the author. While all are numbered, the text nowhere refers to them by number, and the reader has to hunt for them as best he may. It looks as if they were selected from a general collection of photographs without reference to illustrating this book, as many important ones necessary to make it valuable are not to be found. There are reliable lists of "Books Recommended" at the heads of chapters, and directions as to where may be found extant remains and copies at the ends of the same. There is also an index of the names of sculptors at the end of the book, an index of general bibliography, and the addresses of makers of photographs and plaster casts of sculpture all over the world. For these reasons alone it is a valuable book of reference even to those who do not want to read and study.

PROCEEDINGS OF THE THIRTIETH ANNUAL CONVENTION AMERICAN INSTITUTE OF ARCHITECTS. Held at Nashville, Tennessee, October 20, 21 and 22, 1896. Published by the Board of Directors, A. I. A. Alfred Stone, editor, 49 Westminster street, Providence, Rhode Island. 8vo, 150 pp.

The Proceedings have just been received. They come almost as a New Year gift, for never before have they been so promptly issued. They are uniform in style with the new form of issue inaugurated by the publication of the Proceedings of the Congress of Architects at Chicago in 1893, which emanated from the Inland Architect Press. There is one advance, however; for the first time in many years there appears an index, which is in the back instead of the front of the book. The paper is heavy and the print very black, a great merit in these days, when clearly readable typography is often sacrificed to glazed paper and half-tone illustrations. A good half-tone portrait of President George B. Post serves as a frontispiece. Our readers are already acquainted with much of the contents through the columns of *THE INLAND ARCHITECT*; but that is no reason why members of the Institute, so few of whom are able to attend the conventions, should not peruse its annual register at leisure and keep themselves in touch with its official progress. A good sermon might be written on this subject alone.

MOSAICS.

ONE of the most helpful agencies in modern trade-paper making is the press clipping bureau. A dozen years ago this institution was regarded as a novelty. Now, it could not be dispensed with. Robert and Linn Luce, founders of the Press Clipping Bureau, with headquarters at 68 Devonshire street, Boston, have seen this business expand from a small individual enterprise into an industry of national proportions. They have recently found it necessary to open branch offices in Denver, Colorado, and Cincinnati, Ohio, from which to serve their increasing list of patrons in the middle and far West.

A RECORD of twenty years' successful manufacture of sash chains is represented by the "Giant" metal sash chain, made by the Smith & Egge Manufacturing Company, of Bridgeport, Connecticut. This answers the question sure to be asked of the "Giant," as of every improvement in architectural appliances, "Is it a thoroughly tried device?" Its success is predicated largely on its durability, which is the most important quality in sash chains. The mere making of a chain to run over a pulley and carry a weight is a simple matter, but the composition of such a chain of metals which defy exposure to the elements and rough usage, and retain their strength for years, is a secret which is understood by the Smith & Egge Company in perfection.

A NOVEL suit which will interest architects in all parts of the country has grown out of the neglect of a contractor insisting on his painter, who took a subcontract to do the painting and staining of shingles, using the shingle stain which was specified. The architect specified Dexter Brothers' English Shingle Stain for the roof and sides of a large country house. The shingles were to be dipped, and a brush coat was to be given the roof after the shingles were laid. The painter bought but five gallons of the roof stain, and ten gallons of the side stain, whereas he used two hundred gallons of his own mixture. The house looked extremely well at first, and owner and architect were well pleased, but as the work on the house progressed, the moss-green roof changed to a

pea-green shade, and the fraud was discovered. The architect refused to pay for the staining, and the painter and contractor have brought suit for the labor and stain. The case has aroused the interest of firms who furnish material for house building, and will certainly tend to make architects look after the material the contractor uses on the outside of a house, as much as the plumbing specified inside, for the whole appearance of a beautiful house can be easily ruined by poor colors.

A PROMINENT merchant of Portsmouth, Ohio, thought to dispense with the services of an architect while building himself a new house, and got along very well until his \$7,000 dwelling was nearing completion, when some curious-minded friend asked about the fireplaces. Then the economical man, for the first time, discovered that he had neglected to make any provision for flue or chimney of any kind. Moral: Economy is not always the soul of wealth.

THE Tiffany Enameled Brick Company of Chicago has just issued a new booklet on the subject of enameled brick. The general information contained in this booklet regarding sizes, shades, etc., will prove of considerable value to the architects and builders of the country. This company has made important strides in the perfection of enameling brick, and for smoothness, color effects and trueness their product cannot be equaled by the best imported. Their most recent contract is for the new Sherry Hotel in New York City, McKim, Mead & White, architects, where a quarter of a million of their white enameled brick will be used.

MEASUREMENTS were taken recently for the purpose of ascertaining the amount of building material used in the construction of the town of Pullman, says the *American Contractor*. It seems a unique undertaking to compute the quantities of a town containing over nine hundred buildings, including every variety of structure. The result was as follows:

Concrete, cubic feet	230,625
Rubble stone, cords	19,275
Dimension stone, cubic feet	44,900
Cut stone, cubic feet	152,875
Pressed brick	4,968,000
Common brick	77,327,000
Lumber, feet	27,770,000
Cast iron, pounds	1,342,250
Wrought iron, pounds	2,869,860
Roofing, square feet	1,966,758
Skylights, square feet	234,700
Plastering, yards	792,068
Area under cover, acres	50½
Cubic feet in all buildings	70,244,450

All of this work was designed and under the immediate supervision of Architect S. S. Beman. The number of drawings required was something enormous, running into thousands, and the weight of the paper could be measured by the ton. All this to graphically illustrate what was required of contractors. All of these drawings had to be unrolled and carefully measured to obtain the above results, and was about three months' continuous work on the part of C. A. Jordan, at Architect Beman's office. This is the largest job of figuring done during 1896 in Chicago.

ASSOCIATION NOTES.

DETROIT ARCHITECTURAL SKETCH CLUB.

The competition of the Detroit Architectural Sketch Club for the gold and silver medals offered by the Michigan Chapter of the American Institute of Architects has just been decided, the problem being to design an arched gateway and keeper's lodge suitable for Palmer Park. The awards were made by the members of the Chapter, first place going to Richard Hildner, second to Carl Pollmar, and honorable mention being awarded as third to L. T. Risher.

On January 28, Mr. Rogers, of Rogers & McFarlane, representing the Chapter, criticised before the members of the club the twenty sets of drawings that were sent in, and the successful designs are being exhibited at the Museum of Art.

The giving of these prizes is looked upon as a most graceful act on the part of the Chapter, with the hope that this concours will become an annual one.

Owing to the courtesy of the trustees of the Museum of Art, the club is able to hold its meetings there. That the influence of that institution is making itself felt in this, as well as in other questions, is demonstrated by the fact that one of the premiated designs is by a former, and another by a present, student of its art school.

The Architectural Sketch Club is made up of draftsmen from local architects' offices, having been started and incorporated little more than a year ago "for the purpose of furthering education and interest in matters architectural," especially among the lay members of the profession. Saturday afternoons were secured from the architectural firms for classwork and devoted to the study of rendering in water-color works in clay modeling, under Mr. Nygard's direction, being carried on during the present winter. At the Monday night meetings papers on architectural history, construction and allied subjects are read, and talks are given by architects. The study of design is made as interesting as possible by means of sketch problems and monthly competitions, the drawings being submitted to an architect for criticism.

In having a president who devotes himself to the teaching of architectural art work, the club is particularly fortunate, for to the enthusiasm and energy of Emil Lorch, much of its success and standing among like organizations elsewhere is due. At the

present time plans are being laid for having an immense architectural exhibition next October, when the American Institute of Architects will hold its convention in Detroit.

WESTERN SOCIETY OF ENGINEERS.

The 356th meeting of the Western Society of Engineers was held in the society's rooms, at Chicago, Wednesday evening, December 23, 1896, First Vice-President Thomas T. Johnston in the chair, Nelson L. Litten, secretary, with thirty members and guests present.

On motion by Mr. J. J. Reynolds, a committee, consisting of J. W. Cloud, chairman, and Charles L. Strobel and T. L. Condon, were appointed to take proper action on the death of David L. Barnes.

Mr. Charles L. Harrison read his paper on "Natural Distortion of Rock in Place," presenting illustrations of special characteristics on blackboard and by photographs.

The annual meeting of the society was held in the rooms of the Technical Club, Tuesday evening, January 5, 1897. First Vice-President Thomas T. Johnston called the meeting to order. Nelson L. Litten, secretary, and 120 members and guests present.

The treasurer, Mr. E. Gerber, read report of the finances of the society for 1896, which showed a gratifying balance in the treasury in cash and reliable assets.

The secretary then read the report of the judges of election of officers for the ensuing year, which gave the following members a majority of the votes cast, and they were declared elected to the respective offices: Thomas T. Johnston, president; Alfred Noble, first vice-president; J. J. Reynolds, second vice-president; E. Gerber, treasurer; and Ferdinand Hall, justice for three years.

An adjournment to the banquet hall followed, where all sat down to an excellent dinner accompanied with delightful music. The president, Mr. T. T. Johnston, read a letter from Mr. J. F. Wallace, the retiring president, expressing regret at being unavoidably absent, and introduced Mr. Alfred Noble, who had kindly consented to address the meeting in Mr. Wallace's stead. At the conclusion of his address Mr. Noble introduced Mr. Johnston, the incoming president, who read an address outlining the society's policy and purpose the current year.

At a late hour the meeting adjourned.

PITTSBURG ARCHITECTS.

An architects' club was organized at Pittsburgh December 9. The initial meeting was held in the Carnegie Library building in the department of science and art. The object of the organization will be to promote better architectural practice, and the more prominent architects are interested in the movement. Meetings will be held every two weeks, and each month it is proposed to have competitions by members of the club, and adjudicated by a committee. In time it is hoped that prizes and medals may be given and architects from other cities invited to compete. A great deal of enthusiasm is manifested, and the organization promises to be influential. Every assistance possible will be given in the club by Mr. Anderson, the librarian at Carnegie Library, who is much interested in the object, and who is arranging a complete architectural library in one of the alcoves. There were twelve of the leading architects of the city present at the meeting, and there are to be three women architects in the membership. The organization is to be known as the Pittsburgh Architects' Club.

OUR ILLUSTRATIONS.

Mooresque Room, Cincinnati, Ohio.
Residence of Edgar G. Barratt, Chicago. George W. Maher, architect.
Residence for C. S. Morey, Denver, Colorado. Gove & Walsh, architects.
Breakwater, Southport, Connecticut. Hobart A. Walker, del. Two views are shown.
The C. S. Morey Mercantile Company Building, Denver, Colorado. Gove & Walsh, architects.
"Skylands," Ringwood, New Jersey. Algernon S. Bell, architect, New York; Hobart A. Walker, del.
Steinway Hall Building, Chicago. Dwight H. Perkins, architect. Exterior Detail and View in Hall are shown.
Views in Hall, Residence of O. W. Meysenburg, Chicago. Thomas & Rapp, architects. Two views are shown.
Farm Building for F. L. Stetson, Ringwood, New Jersey. Algernon S. Bell, architect, New York; Hobart A. Walker, del.
Photogravure Plate: St. Martin's Church, Chicago. L. Becker, Mainz, Germany, and Schlacks & Ottenheimer, Chicago, associated architects.

Correction: The Engine House in January number credited to Donaldson & Meier was by Mason & Rice, Detroit, Michigan.

PHOTOGRAVURE PLATES.

Issued only with the *Photogravure Edition*.

View of Cincinnati Club, Cincinnati, Ohio. A. O. Elzner, architect.
Residence of A. O. Elzner, architect, Cincinnati, Ohio. Two full-page views are shown: an exterior and an interior.
St. Martin's Church, Chicago. L. Becker, Mainz, Germany, and Schlacks & Ottenheimer, Chicago, associated architects. The following full-page views are shown: Side View, Detail of Entrance, and two interior views.

BUILDING OUTLOOK.

OFFICE OF THE INLAND ARCHITECT, 1
CHICAGO, February 10, 1897.

The prospects for the coming year are fair. Our necessities are crowding. They will fill shops and mills with work. More house, shop, office and mill room are needed, and they will be built. The iron and steel trades are preparing for activity. The lumber interests anticipate, with good reason, an improving year. General manufacturing interests are feeling a better demand, though moderate just now. The anticipations of enthusiastic business men may not be realized in their fullness, but there is certainly a broadening field for manufacturing enterprise. The present year must bring more business and perhaps fractionally better remuneration than last year.

SYNOPSIS OF BUILDING NEWS.

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

Chicago, Ill.—Architect C. A. Strandel: For Victor Peterson, a two-story flat building, 22 by 58 feet in size; to be built at Otto street near Herndon street; will put in the modern open plumbing, gas fixtures, oak interior finish, mantels, sideboards, etc. Also making plans for two-story, basement and attic frame residence, 24 by 60 feet in size; to be built at Edgewater; to have a stone basement, oak and pine finish, the best of open plumbing, gas and electric fixtures, mantels, hot-water heating, laundry fixtures, etc. Also two-story stone and flat building, 25 by 76 feet in size; to be erected at Avondale; to be of pressed brick and stone front, have the modern plumbing, gas fixtures, mantels, etc. Also three-story apartment house, 46 by 80 feet in size; to be erected at Pine Grove avenue, near Diversey avenue, for M. Johnson; will have buff Bedford stone front, gravel roof, oak and pine finish, gas fixtures, the modern open plumbing, laundry fixtures, etc.

Architect W. J. Van Keuren: Made plans for three two-story, basement and attic frame residences, 24 by 50 feet in size; to be erected at Oak Park; they will have stone basements, the modern plumbing, gas fixtures, hot-water heating, mantels, sideboards, electric bells, speaking tubes, cement basement floors, sidewalks, etc.

Architect C. M. Almqvist: For Joseph Oleson, a two-story and basement flat building, 25 by 60 feet in size; to be built at 1401 North Rokeby street; it will have a buff Bedford stone front, oak interior finish, gas fixtures, furnaces, mantels, sideboards, etc.

Architect Louis Martens: For Belton Alley, a four-story and basement apartment building, 50 feet front; to be erected at Lake avenue near Forty-third street; it will have a buff Bedford stone front, oak and pine finish, mantels and sideboards, gas and electric fixtures, steam heating, electric lights. For A. J. Toolen, a four-story apartment house, 50 by 60 feet in size; to be erected at 2718-2720 Indiana avenue; to have a buff Bedford stone front, hardwood interior finish, gas and electric fixtures, the best of modern open nickel-plated plumbing, mantels, sideboards, electric light, steam heating, gas ranges, and fireplaces, electric bells, speaking tubes, marble wainscoting, cement floors, tile floors and bathrooms, etc.

Architect Harold Flower: A three-story and basement apartment house, 50 by 67 feet in size; to be erected at Indiana avenue near Fifty-fifth street, for Osterman Brothers; it will be of buff Bedford stone front, have hardwood interior finish, gas and electric fixtures, steam heating, the best of modern plumbing, electric light, mantels, sideboards, gas ranges, etc.

Architect J. A. Miller: For F. McGivern, a three-story and basement apartment building, 50 by 80 feet in size; to be erected at Evanston avenue corner of Waveland avenue; it will have two fronts of buff Bedford stone, oak and pine interior finish, mantels, sideboards, gas and electric fixtures, the best of open sanitary plumbing, steam heating, electric light, electric bells, speaking tubes, marble entrance, gas ranges and fireplaces, cement basement, tile work, etc. For Jacob Webber, a three-story apartment house, 45 by 60 feet in size; to be erected at Superior street, between Wells street and LaSalle avenue; to be of pressed brick and buff Bedford stone front, have the best of open sanitary plumbing, gas and electric fixtures, hardwood interior finish, mantels, sideboards, steam heating, etc. For William Seymour, a two-story livery stable, 129 by 127 feet in size; to be erected at Clark street and Barry avenue; it will be of pressed brick and stone front, have the necessary plumbing, electric light, etc.

Architect Morrison H. Vail: For G. E. Kuhn, a three-story and basement apartment building, 50 by 70 feet in size; to be built at Ashland avenue near Wilson avenue, Ravenswood; it will be of buff pressed brick front with terra cotta trimmings, have marble entrance and mosaic floor, fine hardwood interior finish, mantels and sideboards, gas and electric fixtures, the best of open nickel-plated plumbing, steam heating, gas ranges and fireplaces, etc.

Architect Charles W. Van Keuren: For Miss Smeek, a two-story flat building, 35 by 55 feet in size; to be built at Vernon avenue near Sixty-seventh street; to be of buff pressed brick, front trimmed with buff Bedford stone, have hardwood finish, mantels and sideboards, gas and electric fixtures, steam heating and the best of plumbing. For A. H. Phalen, at Fifty-fourth street, a two-story flat building, 25 by 56 feet in size; to have a front of buff Bedford stone, hardwood finish, mantels and sideboards, gas fixtures, furnaces, etc. For J. N. Martens, at Beach avenue, seven two-story flat buildings, 25 by 54 feet each; to have stone fronts, modern plumbing, steam heating, etc.

Architect Niels Buck: For C. P. Steffenson, three three-story flat buildings, 24 by 56 feet each; to be erected at School street near West Ravenswood Park, Ravenswood; they will have stone fronts, oak interior finish, gas fixtures, the best of open plumbing, mantels, sideboards, furnaces, electric bells, speaking tubes, etc. Also preparing plans for three two-story attic and basement residences, 24 by 47 feet each; to be erected on North Hermitage avenue, between Sunnyside avenue and Wilson avenue, Ravenswood; they will be of frame with stone basements, have interior finished in quarter-sawn oak, mantels, sideboards, gas fixtures, hot-water heating, electric bells, speaking tubes, laundry fixtures, etc. For Theodor Peterson, a three-story flat building, 24 by 54 feet in size; to be built at Rokeby street near Grace; it will have a buff Bedford stone front, the modern plumbing, gas fixtures, mantels steam heating, electric bells, speaking tubes, laundry fixtures, cement basement and sidewalk, etc.

Architects Cowles & Ohrenstein: For Joseph Phillipson, a four-story store, 74 by 86 feet in size; to be erected at Jefferson and Twelfth streets; it will be of pressed brick and stone front; have the necessary plumbing, steam heating, electric light, elevators, etc. For O. C. Wolcott, a three-story residence, 25 by 70 feet in size; to be erected at Vincennes avenue near Forty-ninth street; it will have a buff Bedford stone front, hardwood finish, mantels, sideboards and consoles, the best of open plumbing, gas and electric fixtures, steam heating, etc.

Architects J. F. & J. P. Doerr: For Margaret Dubach, two three-story flats, to be erected at 4905-4907 Calumet avenue; to have pressed brick and stone fronts, gas and electric fixtures, mantels, sideboards, quartered oak interior finish, the best of open nickel-plated plumbing, furnaces, electric bells, speaking tubes, laundries, etc.

Architect Jarvis Hunt: For Charles McDonald, a handsome old Colonial residence, 28 by 100 feet in size; to be erected at Wheaton; it will be two stories, basement and attic; to be constructed of frame, beams of plaster, have elegant hardwood finish, specially designed mantels, sideboards and consoles, the best of open nickel-plated plumbing, gas and electric fixtures, cement basement, sidewalks, etc. For Arthur Ely, a two-story, basement and attic residence, 38 by 140 feet in size; to be erected at Wheaton; it will be constructed of common brick with terra cotta trimmings and tile roof; to have fine hardwood

interior finish, mantels, sideboards and consoles, the best of open plumbing, electric and gas fixtures, etc. Also combination stable, 140 feet long, to be erected at Wheaton for Messrs. James Deering, Charles McDonald and Edward S. Worthington.

Architect John H. Wagner: For J. B. Smith, a seven-story and basement factory, 67 by 150 feet in size; to be erected at Erie and Franklin streets; it will be of pressed brick and stone front, have elevators, electric light, steam heat and power, and machinery for the manufacture of boots and shoes.

Architects Morrison & Torrance: For L. B. Converse, a three-story and basement apartment house, 45 by 60 feet in size; to be erected at 5728-5730 Ellis avenue; to be of pressed brick and stone front, have hardwood finish, mantels, sideboards, steam heating, gas and electric fixtures, the best of modern open sanitary plumbing, etc.

Architects Higgins & Levy: For C. A. Warren, a two-story residence, 22 by 60 feet in size; to be built at Woodlawn avenue near Sixty-fifth street; it will be of buff Bedford stone front, have hardwood finish, mantels and sideboards, gas and electric fixtures, electric light, laundry fixtures, furnace, the best of nickel-plated plumbing, etc. For Grant Orr, a four-story apartment building, 50 by 70 feet in size; to be erected at Sixty-second and Wright streets; to be of stone front, have the modern plumbing, gas and electric fixtures, elevator, steam heating, electric bells, speaking tubes, laundry fixtures, etc.

Architect Fritz Foltz: For Dudley and B. M. Winston, a six-story and basement apartment house, 54 by 110 feet in size; to be erected at the corner of Chicago avenue and Pine street; it will have two fronts of pressed brick with terra cotta trimmings, the best of modern sanitary improvements, gas and electric fixtures, steam heating, electric light, elevators, etc.

Architect S. N. Crowen: For George R. Day, four two-story residences, 63 by 80 feet in size; to be erected at Forty-ninth street and St. Lawrence avenue; to have pressed brick and stone fronts, the best of modern plumbing, gas and electric fixtures, mantels, sideboards, laundry fixtures, furnaces, electric bells, speaking tubes, cement basements, etc.

Architects Brainerd & Holsman: For William Schneider, a four-story apartment house, 50 by 82 feet in size; to be erected at Calumet avenue near Thirty-ninth street. It will be of pressed brick with stone and terra cotta trimmings, have interior finished in oak and birch, gas and electric fixtures, the best of plumbing, marble work, tile bathrooms, cement basement, etc. For Henry K. Holsman, a two-story, basement and attic residence, 25 by 42 feet in size; to be erected at Beverly Hills; to be of frame, with brick basement, have the open plumbing, oak finish, mantels, etc.

Architect J. M. Van Osdal: For J. K. Hamilton, a two-story, basement and attic residence, 24 by 65 feet in size; to be erected at 5548 Woodlawn avenue; it will be of pressed brick and terra-cotta front, have the best of modern plumbing, gas and electric fixtures, hot-water heating, electric light, quartered oak finish, special mantels, sideboards and consoles, electric light, gas ranges and fireplaces, etc.

Architect Albert S. Hecht: For Charles Liebenstein, a two-story store and flat building, 26 by 60 feet in size; to be built at Sixty-third street near May street; to be of pressed brick and stone front, have iron store fronts, the modern plumbing, steam heating, gas fixtures, etc. For Mrs. Gammet, a three-story flat building, 25 by 60 feet in size; to be built at Elaine Place near Madison street; it will have a buff Bedford stone front, plumbing, mantels, furnaces, gas fixtures, etc. For E. F. Angell, a three-story apartment house, 46 by 75 feet in size; to be erected at the northwest corner of Leland avenue and Paulina street, Ravenswood; it will have a buff Bedford stone front, hardwood finish, mantels, sideboards, gas fixtures, steam heating, laundry fixtures, copper cornice, tile and marble work, cement basement and sidewalks, electric bells, speaking tubes, etc.

Architect Louis Broadhag: For Sebastian Bauer, a two-story frame residence, 24 by 52 feet in size; to be erected at 2610 North Paulina street, Ravenswood; to have stone basement, hardwood finish, mantels, sideboards, gas fixtures, furnace, modern plumbing, etc.

Architects Pridmore & Stanhope: For Z. E. Martin, a two-story, basement and attic frame residence, 22 by 40 feet in size; to be erected at Oak Park; to have stone basement, oak finish and floors, mantels, sideboards, gas fixtures, hot-water heating, modern plumbing, etc.

Architect H. C. Hoffman: Making plans for a three-story apartment house, 50 by 120 feet in size; to be erected at Sixty-eight street and Vincennes avenue; to be of buff pressed brick with Bedford stone trimmings; have the modern sanitary improvements, gas and electric fixtures, mantels, sideboards, steam heating, electric light, electric bells, speaking tubes, cement and tile work, etc.

Architects J. K. & A. B. Pond: For Frederick W. Job, a two-story, basement and attic residence, 25 by 60 feet in size; to be built at Oakenwald avenue, near Forty-fourth street; it will be of brick with stone trimmings, have hardwood finish, gas fixtures, etc.

Architect Simeon B. Eisendrath: For Joseph Rosenbaum, a two-story, basement and attic residence, 22 by 80 feet in size; to be erected at 2231 Calumet avenue; to be of pressed brick and stone front, have hardwood finish, etc. Also alterations and remodeling, at 4111 Grand Boulevard, for Louis Benjamin.

Architects Hessemer & Meldahl: For Webber & Clark, four two-story residences; to be erected at Ashland avenue, near Montrose boulevard, Ravenswood; to be of pressed brick and stone fronts, have modern plumbing, etc.

Detroit, Mich.—Architect A. C. Varney: Two-story residence; first story field stone, second story frame; North Woodward avenue subdivision; cost \$5,500. For Weston Estate, two-story residence; first story stone, second story frame; cost \$6,000. For Mrs. William Stoll, two-and-one-half-story frame residence. Also two-and-one-half-story stone and frame residence, to be built at Cottonwood Falls, Kansas; cost \$5,000.

Architects W. H. Ashwell & Co.: For Park and Boulevard Commission, Detroit, greenhouse for Belle Isle Park, 80 by 100 feet in size; iron and glass construction; cost \$12,000.

Architects Malcombson & Higginbotham: For J. S. Lapham & Co., Northville, Michigan, fireproof two-story banking building; cost \$10,000. For W. S. Russell, remodeling and alteration of store on Woodward avenue.

Architect George W. Meyers: For William Shoemaker, two-and-one-half-story frame residence, to be built on Horton avenue. For Neil McEwen, two-and-one-half-story frame residence; cost \$5,000.

Architect A. E. French: Two-story double brick apartment house, to be built on Hancock avenue; cost \$5,500.

Architect Richard E. Raseman: For Krempler Brothers, a two-story brick factory, to be built on corner Bellevue avenue and Berlin street; 41 by 94 feet in size; cost \$6,500.

Byron H. Edwards: A two-story brick double residence, to be erected on Smith avenue; cost \$7,500.

Architect Edward C. Van Leyen: For George T. Abrey, block of brick flats, five apartments, three stories high, stone fronts; cost \$20,000.

Architects Marble & Demoney: For Louis Behn, a two-story frame residence, 24 by 50 feet in size, at Park Ridge; stone basement, oak finish, the modern plumbing, hot-water heating, gas fixtures, mantels, sideboards, cement work, etc.

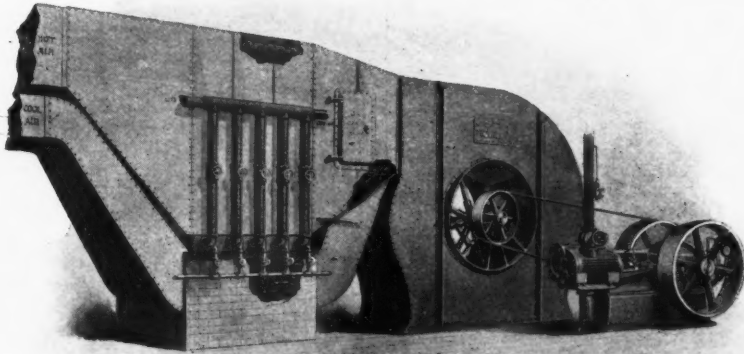
Omaha, Neb.—Correspondent reports as follows: Some large buildings that have been in contemplation, but were held back on account of financial difficulty, are now about to start up as soon as the weather permits. We shall certainly have two new large depots together with some large buildings.

Our Trans-Mississippi Exposition will soon give employment to a large number of contractors and mechanics, as it will be the means of expending some two or three million dollars during the years 1897 and 1898.

Pittsburg, Pa.—While the real estate market is decidedly dull, yet it is evident that considerable building is being done. People who formerly invested their money in property are now turning their attention to building on the property already purchased. The only explanation offered is that desirable houses are becoming scarce, and there is a better market for good residences than for unimproved property. The owners, now seeing an opportunity to build a good house at comparatively small cost, are now improving the property. Building material was never so cheap as at present.

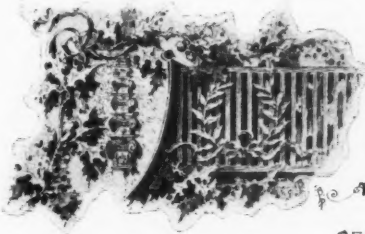
St. Joseph, Mo.—According to a statement by Building Inspector Forgrave, the next spring will be a busy season in this city, for numerous new structures are under contemplation.

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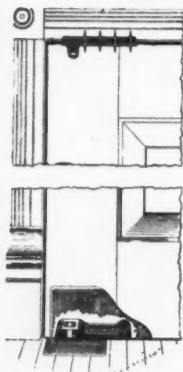
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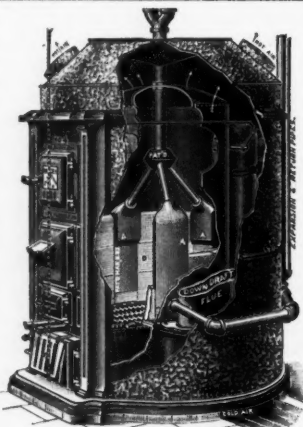
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VOL. XXIX.

FEBRUARY, 1897.

No. 1

TECHNICAL REVIEW, THE VAN BUREN STREET STATION.

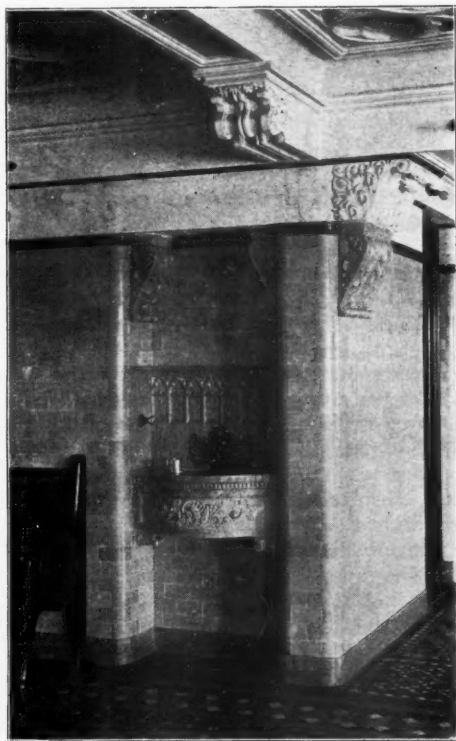
SUBTERRANEAN ARCHITECTURE,

AS EXEMPLIFIED IN THE VAN BUREN STREET SUBURBAN STATION OF THE ILLINOIS CENTRAL RAILROAD COMPANY, AT CHICAGO.

FOR novelty in design and appropriateness to its purpose, the new suburban station of the Illinois Central Railroad Company in Lake Front Park, at the foot of Van Buren street, Chicago, is probably the most unique in this country. The problem was to erect a station on one side of a cut, 200 feet wide and 20 feet deep, to receive and discharge passengers from two classes of trains, so that there should be no contact between those out-

going and incoming, and that the outgoing passengers should be divided so as to take trains at different places.

The problem was further complicated by the fact that the station had to be covered with turf, preserving the appearance of a park, so as to be invisible from the city side, and it was to be crossed in the center by a viaduct for teams and foot passengers, leading from the inner to the outer park and spanning



DRINKING FOUNTAIN

the 200 feet of railroad tracks. In doing this, the viaduct has been utilized for the discharge of incoming passengers, and has been connected by two stairways with platforms on the east side of the suburban tracks. But should passengers for any reason be discharged from the west track, they can reach the west side

of the park, nearest the city, by two stairways placed at either end of the station building.

The whole arrangement has been controlled by the fact that the company operates two classes of suburban trains, express and local. And while all these trains start from Randolph street, Van Buren street is really the main starting point which receives and discharges the greater number of passengers. The problem was one which employed the arts of engineering and architecture in equal degrees, each supplementing the other. The engineer had to design the viaduct according to fixed conditions, the same that controlled the designing of the viaducts at Monroe street, Harrison street and Peck court. The main elements were the grade of Michigan avenue, 310 feet west of the cut, the grade of the tracks, the clearance for trains passing under the viaducts, and the height of car floors above tracks. This, it was found, left sufficient height under the viaduct for a station building, with a clear height of 9½ feet inside. The viaduct is 60 feet wide, with an approach from the avenue of the same width. On the north side of the viaduct approach which rises from the avenue is the station approach, which is 27 feet wide with a gentle declivity toward the entrance of the station, and is walled in by cut stone masonry, laid in regular courses, surmounted by perforated stone parapets corresponding with those on the retaining walls along the railroad. This passageway is floored with concrete, has a gutter on each side, and is lighted by ornamental electric lanterns on both sides. A short distance from the station this approach is crossed by a bridge, which serves as a connection between the two parts of the park, and also serves as a convenience to passengers coming from Jackson street diagonally across the park, who can descend directly to the south entrance of the station by an ornamental stairway, which also affords facilities to passengers approaching from the south end of the park. In planning the station a space of 50 by 300 feet has been used. The west 14 feet of this has been used for entrance halls, vestibule, smoking rooms, ladies' retiring room, toilet rooms and lavatories. In order to prepare for this, a heavy stone retaining wall had to be built around three sides of the space. The central part of this wall supports the west end of the viaduct, constructed of steel, which spans the station building 50 feet in addition to the 200 feet required to span the tracks. All the walls of the station are independent of the retaining wall, but the roof construction of the station is supported by both walls.

In approaching the station through the cut from Michigan avenue, the passengers turn to the right into a covered entrance hall the walls of which are faced with buff and white enameled brick relieved with blue, trimmed with the same shade of ornamental enameled terra cotta; then through two sets of doors into the vestibule, turning to the left into the ticket office foyer. Here there are two offices, one on the right and one on the left, each of which is adapted for two ticket sellers. This vestibule is

approached on the south by the stairway above referred to, leading down from the park on the south side of the viaduct.

After passing the ticket inspectors, those taking express trains turn to the right and those for local trains to the left, in the central distributing corridor. From this corridor the passengers are ushered into two magnificent waiting rooms, each 34 feet by 106 feet and 9½ feet high. These rooms, for beauty, substantiality and completeness of appointments and conveniences, will compare favorably with those of any railway station in the world, even though naturally restricted in height of ceiling. The floors of the waiting and toilet rooms, also corridor, are all paved with English floor tile; the foyer, vestibule and south entrance are paved with ceramic mosaic, and the base throughout is of polished Tennessee marble. The walls are faced with Maw's écu glazed tile, 3 by 6 inches, patented lock back, and the ceilings are of cast plates of stucco, forming a design of Gothic tracery. The cornices and girders are also finished in stucco, the point of junction with the glazed tiled walls being covered with a mahogany molding. There are two rows of cast-iron columns in each room, supporting the roof, which are incased in écu glazed terra cotta, elaborately molded and ornamented.

The windows of the ticket offices are covered with elaborate, handmade, wrought-iron grilles, some of which are polished and electroplated with bronze.

There is a smoking room attached to each waiting room, a ladies' retiring room and lavatory, and a matron's room at the south end of the building. The men's lavatory, bootblackening stand, toilet and janitor rooms are at the north end. There are also private lavatories for the attendants and locker rooms for the railroad employes. All of these are under the space of 14 feet wide and 300 feet long on the park side, not already occupied by the entrances, and are lighted through ceilings of cast iron and glass. The waiting rooms are not skylighted, but receive ample light through windows on the east side, so that it is not necessary to use artificial light in any part of the station in the day time. Yet all of this is literally under ground and invisible from the west, and the roof is covered with soil and green turf in the summer time. Here then is at least one building in Chicago which may be said to be a sample of cycloneproof architecture, and yet there is nothing about it to suggest that it is a cellar; as a matter of fact, there is a cellar under part of it, 26 by 62 feet, in which is the steam-heating apparatus, using natural gas, illuminating gas, or coal fuel, at option.

The east front of the building, 300 feet in length, shows a wall of one story, faced with buff Bedford stone—pierced with windows and doors. These are plainly treated except at the exit stairways at each end, which, in their detail, are delicate suggestions of the French transitional architecture of the fifteenth century. This style is followed sparingly wherever appropriate ornamentations may be used about the building, and the carving is all handled in an artistic manner. The floor of the whole building is constructed with steel beams and 10-inch flat hollow tile arches.

The passenger platforms are the full length of the station, 8½ feet wide, and built of concrete slabs resting on an outer foundation wall of concrete, being flush with the waiting-room floors and level with the car platforms. The central portion of this is covered by the viaduct. Extending 100 feet on each side of the viaduct are awnings of steel and glass bracketed from the front walls. The steel work is incased in moldings of sheet copper and the plate glass is curved. The supporting wrought-iron brackets are works of art. The platforms are extended 250 feet each way from the building with a substantial construction of wood in front of the retaining wall of the park, making a total length of platform of 800 feet. This is sufficient to allow two trains of six cars each to take up passengers. The express trains stop south of the viaduct, and the local trains, north of it, so that there is no delay or confusion in case two trains should arrive at one time. There are also two landing platforms on the other side of the double suburban tracks of equal length for in passengers. These are covered with steel canopies of umbrella form.

No detail of the exterior of the building wherever visible has been neglected, and even the copper down-spouts and their open heads are veritable works of art. Each waiting room has an exquisitely designed drinking fountain of marble and bronze recessed in the wall. The seats are all of mahogany with brass feet, so as not to be damaged by washing the floors.

Returning through the waiting rooms to the skylighted rooms for convenience and comfort, we here find the perfection of

human ingenuity in all the appointments. Everything in these rooms is not only fireproof, like all the rest of the structure, but waterproof and washable, inculcating the greatest cleanliness with the least effort and expense. The lavatories and closets are models of the perfection of modern plumbing, a word which seems to have little meaning here where all piping is nickel-plated brass, and nearly all the rest of the work is executed in marble and porcelain. The only woodwork used is of polished mahogany, trimmed with nickelplated brass, and there is very little of it. It may well be said that bootblackening has been raised to a fine art when it has such conveniences and accessories as are here found. The walls of these rooms are of glazed tile, while those of the smoking rooms, including those of the janitor and matron, are of enameled brick with floors of granolithic work. Wherever any exposed woodwork is required throughout the building it is of mahogany or quarter-sawn oak.

It is hardly necessary to say that the construction throughout is fireproof, being of rolled steel materials for all horizontal members, and cast iron for the interior columns, while all vertical supports for the viaduct running through the station building are also of steel. Hard hollow tile has been used for all the flat floor and roof arches, and all iron and steel constructive members are protected from fire by the same material. The steel work of the viaduct has been entirely covered and concealed with handmade terra cotta of dark brown color. This has been done, not to give it the appearance of a stone bridge, but to protect the steel from the gases emanating from the locomotives more effectively than could be done by any coating material. This is the first time that this method has been used for such a purpose.

The whole structure is built on a concrete foundation put down four feet below the rails. An interesting feature is the method employed in constructing the roof, where it is covered with earth. Six inches of concrete of Portland cement, sand and broken stone was spread over the flat tile arches; then 1½ inches of solid asphalt was spread on this; on top of the asphalt was placed several inches of plastic clay, rolled down hard and smooth; on top of this will be placed the black earth and sod. The whole is subdrained, and guttered at the edges to carry off superfluous water. The weight will be forty-four tons on each of the forty columns in the station. The building is lighted throughout with incandescent electric lamps. Every precaution has been taken to prevent leakage of water, or the sweating of the walls in summer by making all the walls with ventilated air spaces, which was one of the most important elements in the problem. There is ventilation for all the rooms directly through the roof, these ventilators over the large rooms are ingeniously constructed of iron with stained glass ceiling lights. There are forty-two ventilators over the building, all counted.

One cannot pass through this remarkable and unique building without noticing the exquisite workmanship on most of the materials and being struck with the care taken in the superintendence. The ornamental iron work impresses one with the fact that in not only the design but in the execution, the workmen were artists. Enameled terra cotta is extensively used, and, with the exception of the columns, and the ornamental terra cotta newel post noticeable in the lobby of the south entrance, it is in connection with the enameled brick of home manufacture, the use of polychromatic effects in solid enameling for bricks being something of very recent accomplishment. The steam radiators are another attractive feature and are not stock patterns, but designed especially for this work. Then the copper work, before mentioned, is unusually prominent and effective, especially in the leader seen from the long approach from Michigan avenue. Other fine effects are seen in the prismatic skylights which are of novel design. Wherever it could be appropriately introduced the trademark of the railroad, consisting of four combined lozenges, has been used in the decorative details with good effect.

The public is already familiar with the elaborate and extensive improvements made on the Lake Front during the past year by the Illinois Central Railroad Company, the plans for which were conceived and carried out by Mr. John F. Wallace, chief engineer of the road. This entire piece of work is a magnificent tribute to the ability and energy of the chief engineer of the Illinois Central Railroad Company, who has acquired a wide reputation as one of the most prominent and successful civil engineers of the country. Every detail has been handled with rare skill, and as a specimen of engineering work, these Lake Front improvements, including Van Buren street station, are worthy of the highest praise. Mr.

David Sloan, assistant chief engineer, and Mr. H. W. Parkhurst, engineer of bridges and buildings, should also have great credit in connection with this work, as well as Mr. George F. Jenkins, superintendent of construction of the Van Buren street station. But the work which most immediately interests us is that of the architect of the road, Mr. Francis T. Bacon, who designed the station. Ordinary praise for his part would not be appropriate here. At a time when the architectural profession is contemplating its recent achievements and is in a mood to ask itself if they have given evidence of a vitality in consonance with the spirit of the age, it is pleasant to find one example in which a most difficult and complicated problem has been solved, with due respect both to utility and art. Here we have found one structure in which the beauty is not dependent upon a few details of historical style that have been introduced, however, skillfully and effectively; and it is where most people would least expect to find it. But it will outlive most of the great buildings of *fin de siècle* Chicago, for it is fireproof, waterproof and cycloneproof, and will remain intact through many generations. This is the simple truth and therefore the more remarkable. It is well worth a ride on the railroad to see and enjoy its comforts.

The cost of the architectural work was approximately \$75,000. The work was commenced in June, 1896, and the station was opened for traffic December 14, of the same year. The results are most remarkable considering the short time employed. But there are some features that require a more technical description for those who are interested in them and a few of them are hereto appended.

As one turns from the boulevard into the broad subway of the handsome new suburban station of the Illinois Central Railroad at the foot of Van Buren street, he is immediately impressed with the substantial and finished appearing construction and an air of permanence, not frequently noticed in the improvements of such corporations in this country. Following the throng, whose patronage makes such luxury possible, down to the main entrance through the broad passages past the ticket offices and out through the gates into the pavilion itself, the sense is at every step gratified by the extreme taste with which each detail has been worked out, and when the full completeness of the perfectly arranged waiting rooms bursts upon the observer, he is charmed with the beauty of the place. Particularly is this so if his visit is after the hour of dusk and the station is illuminated by the soft effulgence of the myriads of incandescent lamps with which the low ceiling is studded. This feature of illumination is worthy of special mention and to a little description of it this item is given up:

The wiring system is very complete and is fed with electric current from the mains of the Chicago Edison Company, a careful canvass of the question having demonstrated this source of energy to be more desirable than an individual plant, when both expense and convenience were taken into consideration.

The subway is lighted by four lanterns containing three lamps each, which are of black iron and in excellent keeping with the solid masonry walls. Within the station the lights are, with the exception of a few in the entrance and ticket offices, studded in the ceiling, a small black iron rosette of leaf pattern forming a finish to each lamp, concealing the socket and making a pleasing contrast to the white paneled ceiling and frosted surface of the lamps. Outside upon the train platform small black two-light brackets take the place of rosettes. The whole effect of the scene is that of a handsomely lighted salon deck of one of the palatial sound steamers, or perhaps of a brilliantly illuminated cave, the latter fancy being carried out more in detail by the partially underground arrangement and the slender tile columns which support the roof and which may be compared to stalactites, and the effect is so pleasing that it is a suggestion to architects that whatever high ceilings may add from the standard of fresh air, they are not to be compared with low for effective illumination. We would respectfully call attention to this and promise that anyone who will take his stand in the new station in the coming period of Grand Opera, when the room is furnished by the striking and handsome toilettes of gay opera devotees as they fill the immense rooms while waiting for the train, will note a scene which will not only gratify his eye for interior architectural effect but will make him long for the pencil of a Gibson.

The tiles on the walls were manufactured by Maw & Co., of Shropshire, England, and are supplied and set by their agents, Hawes & Dodd, of this city, and are chiefly remarkable for their evenness of color, highly finished glaze, and freedom from the

technical fault known as "crazing." There are some 6,000 or 7,000 feet in the building, and all of them are made with the patent grip back. In a building of this character a good deal of vibration is sure to be prevalent, owing to the passage of a great number of trains in the vicinity, and the liability of the tiles becoming loose is effectually guarded against by this "grip back." It is a dovetail undercut, permitting the cement to get a grip on the tile, rendering it impossible to be got off without destroying the tile, and is not affected in the slightest by vibrations or any of the causes that ordinarily loosen tiles. Another special feature is the curved corners to all the window and door reveals. They are made on special steel dies, exactly to fit the curves and give the effect of the piers being solid, quite doing away with the ordinary objection to tiling where corners are turned, of being merely veneered. In the foyer and curved ends of the waiting rooms, special dies were also made to suit the curves given, and such is the scientific exactness which the firm is capable of in their manufacture that everything fits exactly, and without unsightly jogs and joints.

The floors are also of the same manufacture and put in by the same firm, and are of the highest quality and capability for hard wear such as a building of this kind would be subjected to. The patterns are very pleasing and are as selected and arranged by the architect. The ceramic mosaic, manufactured by Hawes & Dodd, was put in the entrances; and in the foyer, immediately in front of the ticket windows, the characteristic diamond with name and initials used by the Illinois Central Railroad Company are faithfully reproduced in the familiar colors. The borders are all Gothic in design and are carried out in an artistic and pleasing manner. This mosaic is specially adapted for use in such places as here adopted. The enormous traffic in a building of this kind would quickly damage soft marble and obliterate the beauty of the coloring, but this intensely hard flinty material stands without a sign of hard usage, the colors remaining as brilliant and clear as in the beginning.

All the work is set in Portland cement of the best quality, and it stands today an example of sound, solid construction, unsurpassed, we believe, in the city.

The whole of the work, as above described, is a good example of the capabilities of this firm and their principals abroad. It was executed with promptness and, in all cases, met the requirements of the very rigid specifications drawn up by the company's architect. As a contract of some magnitude it would test the capacity of an ordinary tile manufacturing firm to get out in a limited period, more particularly when it is remembered that a number of specialties are included, but the prompt and effective way the contract was handled proved effectually that they have unusual capacities for just such undertakings.

This building is warmed throughout by a system of low pressure, direct steam warming apparatus on the gravity plan, furnished by Messrs. Kehm Brothers & Mertz, of 289 East Kinzie street, Chicago.

The steam for this apparatus is generated in two of their special firebox or locomotive style of boilers, being especially designed for this building owing to the limited height of the boiler room and the point of established water line in the apparatus; they are equipped for burning coal, fuel gas or illuminating gas, and work automatically with either, regulating the temperature or pressure in same and the apparatus from atmospheric to two or three pounds, as the outside temperature calls for a greater or less degree of heat.

The boilers are set in brickwork and so arranged that the gases from the fire box pass the entire surface of the shells and the flues, and are thoroughly exhausted before passing to the chimney.

The boilers are cross-connected at all points, so that either can do the duty of the other, or so that both can be run together when desired.

The main supply pipes for the apparatus are run on the ceiling of the basement and the return pipes in a similar manner; in the running of these mains and returns, it was necessary to take care of the expansion to prevent the tipping of radiators on end or raising the same off their feet. Owing to the great length of building, this was successfully accomplished by installing expansion loops at intervals in the piping and overcoming the use of expansion joints, which would require packing and repairing.

The one-pipe system of piping is used throughout; the main supplies make their respective circuits of building, entering the main returns and returning to the boilers by gravity. The piping

system is so arranged that it can be shut off and drained without letting the steam go down in the boilers or drawing fires. The air accumulating in the radiators and piping is removed through composition stem compression air valves which connect their discharge into a line of air piping, and this in turn discharges into an open cesspool in the boiler room, thus preventing the spattering of steam on the finished surfaces surrounding the radiators, should the air valve fail to work instantly.

The radiators in the distributing corridors and waiting rooms are set in recesses under windows on a marble base, with sufficient space around them for cleaning purposes, thus leaving the floor also unobstructed for cleaning and scrubbing.

The work furnished by the American Terra Cotta and Ceramic Company comprises not only the terra cotta of the viaduct but the sills, lintels, ornamental brackets and cornices of the large entrance vestibule at the foot of the inclined approach, and the ornamental column covers of the interior. Except the viaduct work, which is in mottled terra cotta, all the rest has a surface of genuine ceramic enamel, the manufacture of which has been lately perfected and is the result of a revival of the art made famous in the sixteenth century by Lucca Della Robbia and his sons. The revived process has been used also in the Boston Block, St. Paul, and the Journal Building, Chicago. In this building several colors of enamel have been used to match those of the enameled bricks with great success. The delicately modeled brackets are especially noticeable.

A new use for fireproofing material has been developed in the construction of the viaduct over the tracks. This, as has been above suggested, consists of using it as a protection to the steel work of the structure from the deleterious effects of the gases discharged by the great number of locomotives passing under it. The result is that it is gasproof more effectively than if coated by any liquid or plastic material, as well as being made thoroughly fireproof. In doing this the hollow fire clay tiles used are all salt glazed. Each beam forming the floor is independently inclosed with skewback tiles, having soffit tiles on the bottom, and the spaces between the beams are closed with segment arches. The steel posts, brackets, struts and girders are all similarly covered, the posts having rounded corners and suggestions of bases and capitals, which, however, are only molded coverings of projections in the steel necessitated by the construction. The Pioneer Fireproof Construction Company not only furnished and set this work, but the floors and roof of the station building proper.

The brick lining of the large entrance vestibules and the two smoking rooms, which are roofed with iron and glass, are faced with the recently perfected enameled bricks of the Tiffany Enameled Brick Company. The perfection of this manufacture in America, which renders it unnecessary to continue importing the expensive English enameled bricks heretofore used, has proved to be an economic advance in building where such a material has become a necessity.

The plumbing, by Messrs. Byrne & Ryan, of 254 Forty-third street, near Cottage Grove avenue, Chicago, is worthy of the highest praise, their work showing that there has been great care and skill displayed in the selection of the fixtures and planning of the piping from an artistic as well as a sanitary point of view. The water closets are siphon jet, made of the best vitreous ware, with mahogany seats and tanks, with nickel-plated flush and supply pipes. The nickel-plated wall guide for the tank pull is not only ornamental but useful in preventing the displacement of the tank valve. In the men's toilet room are five stall urinals; these are trimmed with nickel-plated brass fittings, with an ornamented nickel-plated brass rail over the stalls to brace the marble partitions in place. The waste pipes are so arranged as to provide a continuous flow of fresh air through them, and at the same time keeping the air pure in the room by this ingenious arrangement of ventilation. Two wash basins, of imported porcelain, are placed in the lavatory, and all exposed piping is of nickel-plated brass.

The walls, floors and partitions of the water closets and urinal stalls, as well as the basin slabs and bootblackening stand, are of highly polished pink Tennessee marble and fitted with nickel-plated brass standards and clamps. The ladies' toilet rooms are finished in the same manner—including a large plate-glass mir-

ror; no expense being spared to provide comfort and convenience for the patrons of the railroad.

The sinks in the matron and janitor's rooms are of solid porcelain with solid nickel-plated brass flushing rim, with polished oak tank and nickel-plated pipes and faucets. The water supply is well arranged and ample for all needs. All the piping is laid open and easily reached in case of accident. This same mode of piping applies also to the gas arrangement. This firm has also placed an ejector in the basement that keeps it dry and prevents any overflow. The drinking fountains in the waiting rooms are delightful conceptions of fine art in carved marble and bronze.

The special features of the ornamental iron and bronze work are the combination of Sullivanesque and Romanesque styles which adds very much to the general attractiveness of the building. This work, consisting of window grilles, gates, railings, stair-work, down-spouts, awnings, brackets, etc., was executed by the Chicago Ornamental Iron Company, whose offices and extensive shops are located at Twenty-sixth and South Halsted streets, Chicago.

The settees of the waiting rooms, lavatories and smoking rooms were made from special designs of the architect by Messrs. J. S. Ford, Johnson & Co., of Chicago. All the settees are worked out in mahogany or oak, having brass feet and present a very rich and harmonious effect.

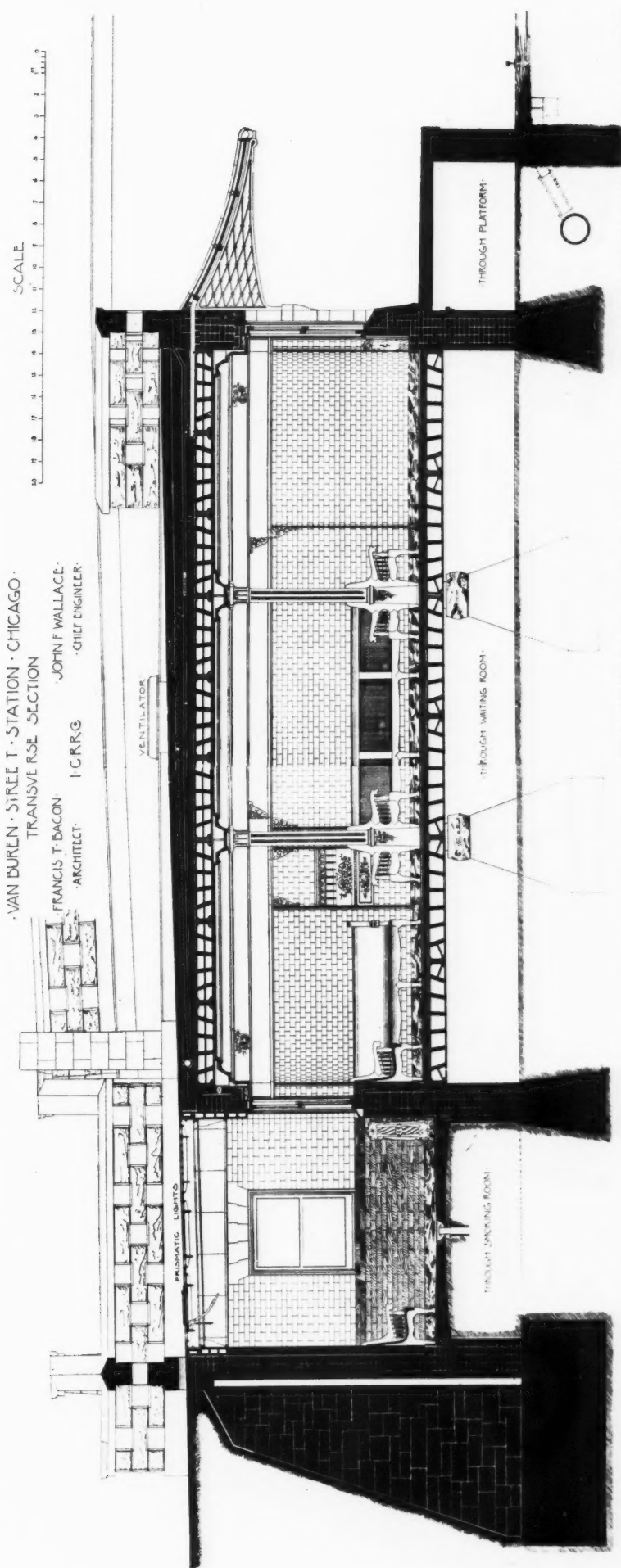
The ceilings are of cast plates of stucco, forming a design of Gothic tracery furnished by the Leo Bonet Artistic Stucco and Modeling Company, of 1449 State street, Chicago.

To the J. L. Fulton Company, of Chicago, fell the pleasant task of constructing the exceptionally heavy retaining walls, whose function it will be to stand sentinel over this generous outlay of brains and money, through decades to come. We venture the word pleasant, because the Messrs. J. L. Fulton Company have not failed to carry with them throughout this weighty undertaking the hearty esteem of those for whom the work was performed. Concisely stated, this all-important unit in the sum total of the Lake Front improvements embraces the construction of both walls, east and west of the Illinois Central's right of way; the abutments for viaducts spanning the same at four given points; the rectangular inclosure of three sides of the Van Buren street suburban station; the foundation of this station and its heavy floor and enduring roof covering of Portland cement concrete, and Trinidad asphaltic concrete, and the stonework of the upper structures of the several viaducts. The pierwork of columnar supports for the viaducts is also a part of this contract, and is a fair criterion by which to measure work of its classification.

The paved incline which affords a pleasant access to Van Buren street station from Michigan avenue, flanked, as it is, at either side by symmetrical courses of Berea sandstone, may properly be regarded as an enduring monument to the credit of these gentlemen. They have carried out intact the nicely balanced design of the work here erected, making it in many ways the most excellently constructed masonry approach that may be found in this city of tunnels and viaducts. This work has been described in full detail in the foregoing text.

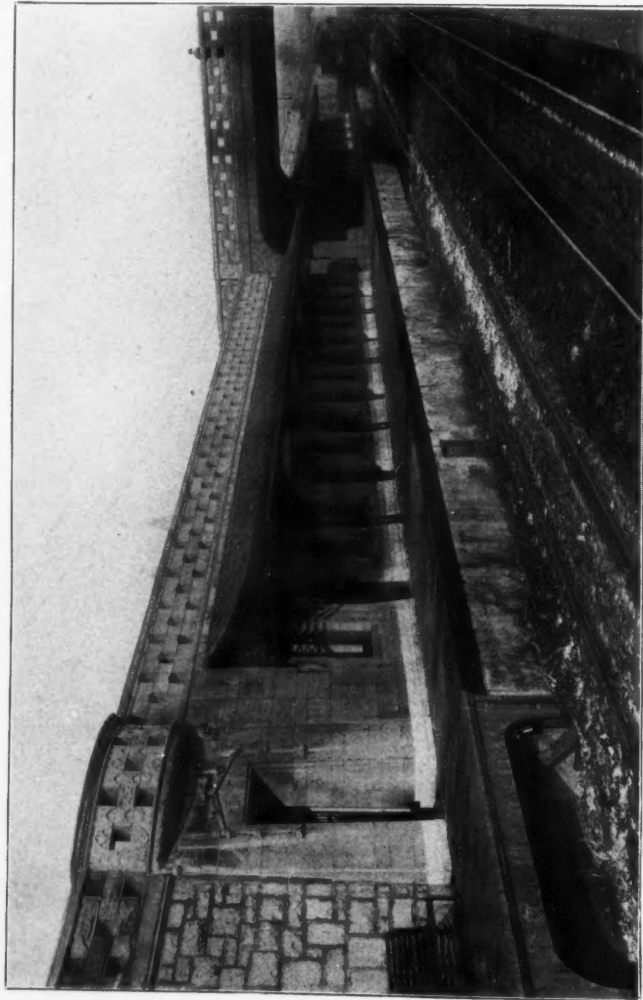
A word as to the volume of work and the expedition with which it has been performed seems to us well earned. In April, 1896, the work was begun on the west retaining wall. Over a distance of 5,800 feet, from Park Row to Randolph street, the necessary excavation was made, a concrete base 4 feet by 9 feet 6 inches placed therein, and a wall of extra large random range, squared limestone rubble, 14,000 cubic yards in all, built upon it, to a height of 21 feet above Chicago datum. The wall is coped with heavy Berea sandstone and a block-spaced parapet or balustrade 3 feet high, built upon this cope, and is finished with a stone ridge-cope of the same material. The work was finished in December, 1896, thus demonstrating the ability of the Messrs. J. L. Fulton Company to grasp a situation and aptly apply the means to the end.

Speaking of this work in its relation to the union of idea and effort that has been put forth upon the Lake Front we can easily conceive how the J. L. Fulton Company might with the necessary adjustment of the expression, aptly quote that famous statesman who, in speaking of his own State in her relation to the Union, simply said, "and as for Massachusetts! There she stands."

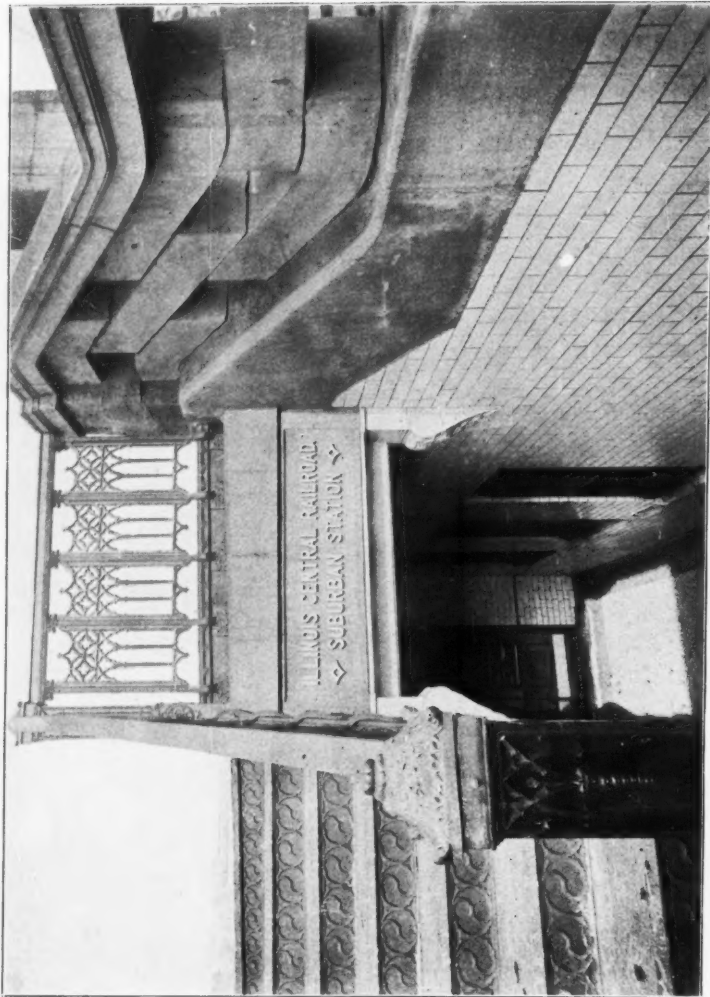


VAN BUREN STREET STATION, ILLINOIS CENTRAL RAILROAD COMPANY, CHICAGO.

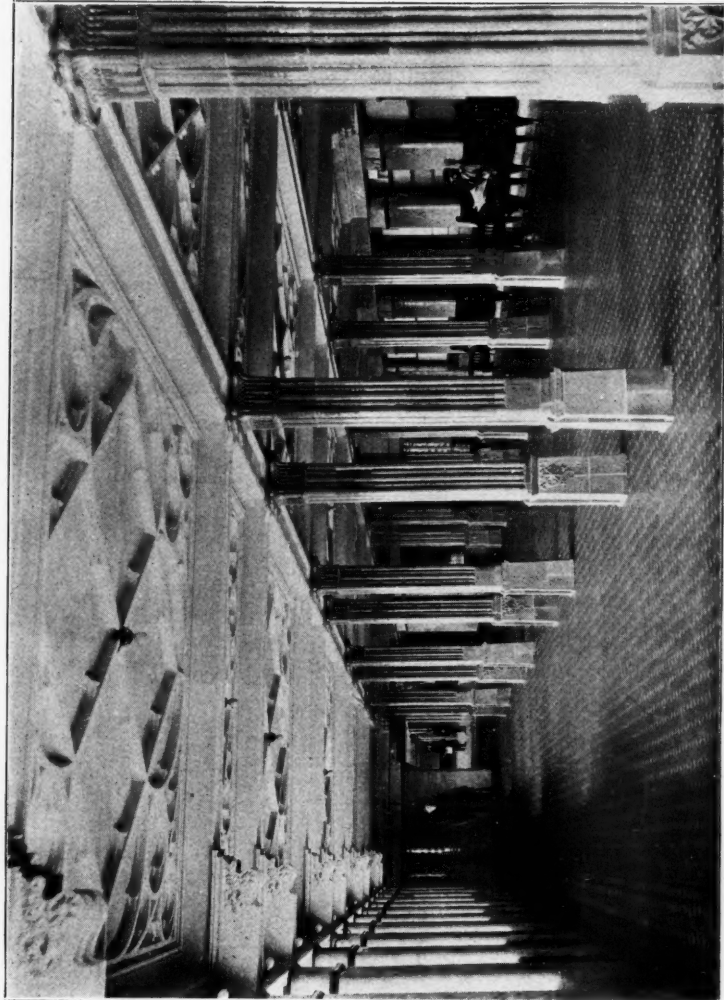
FRANCIS T. BACON, ARCHITECT; JOHN F. WALLACE, CHIEF ENGINEER.

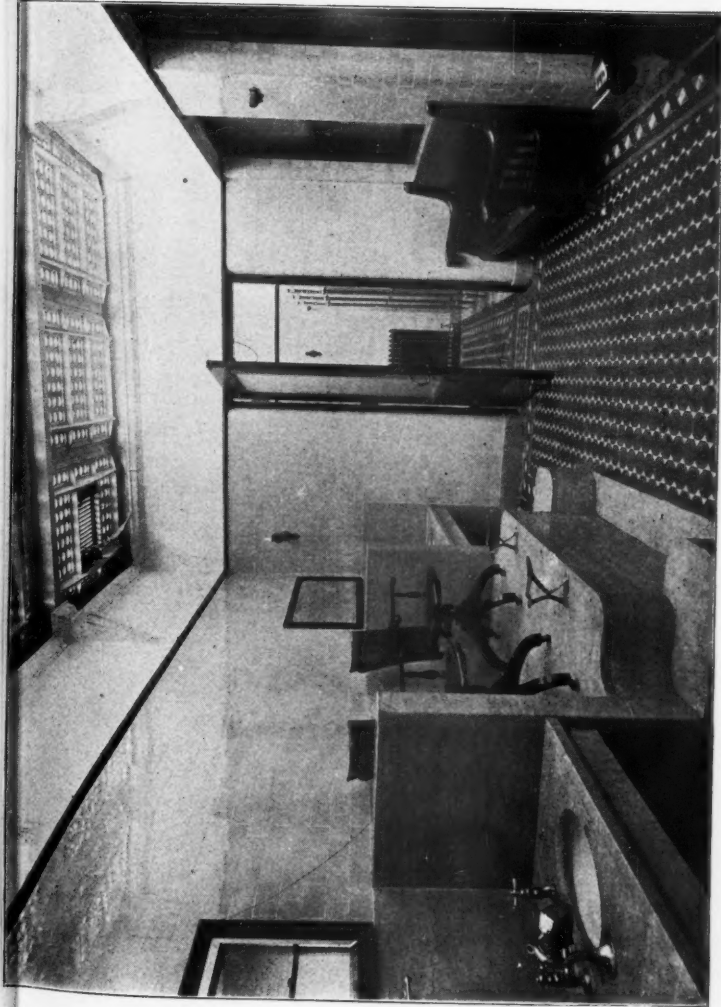


LAKE FRONT VIEW.

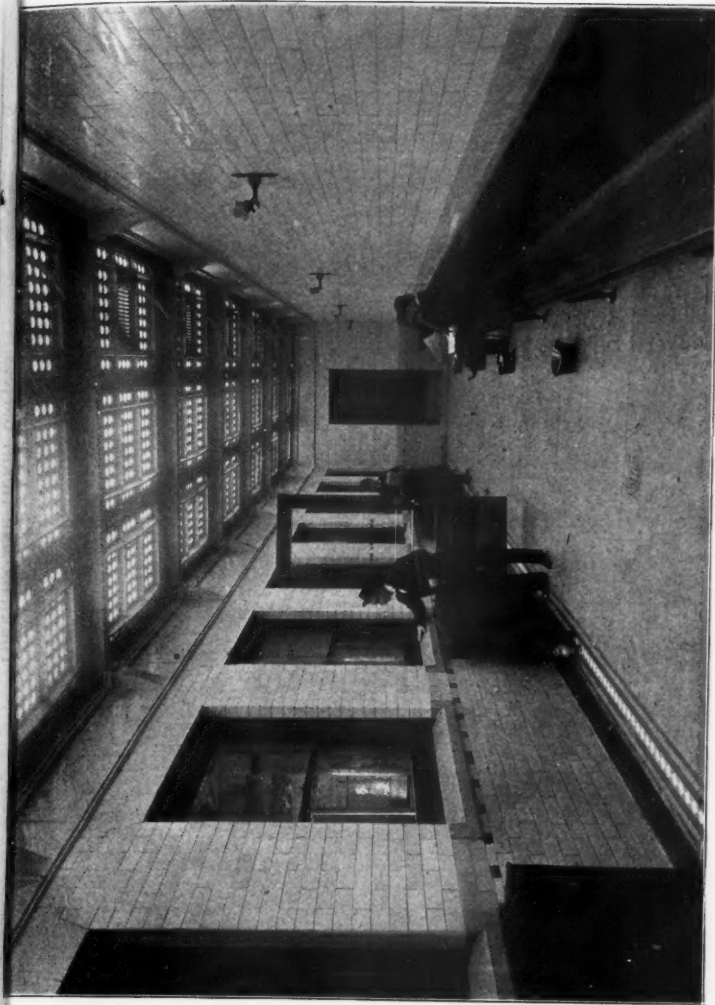


SOUTH ENTRANCE FROM VIADUCT.

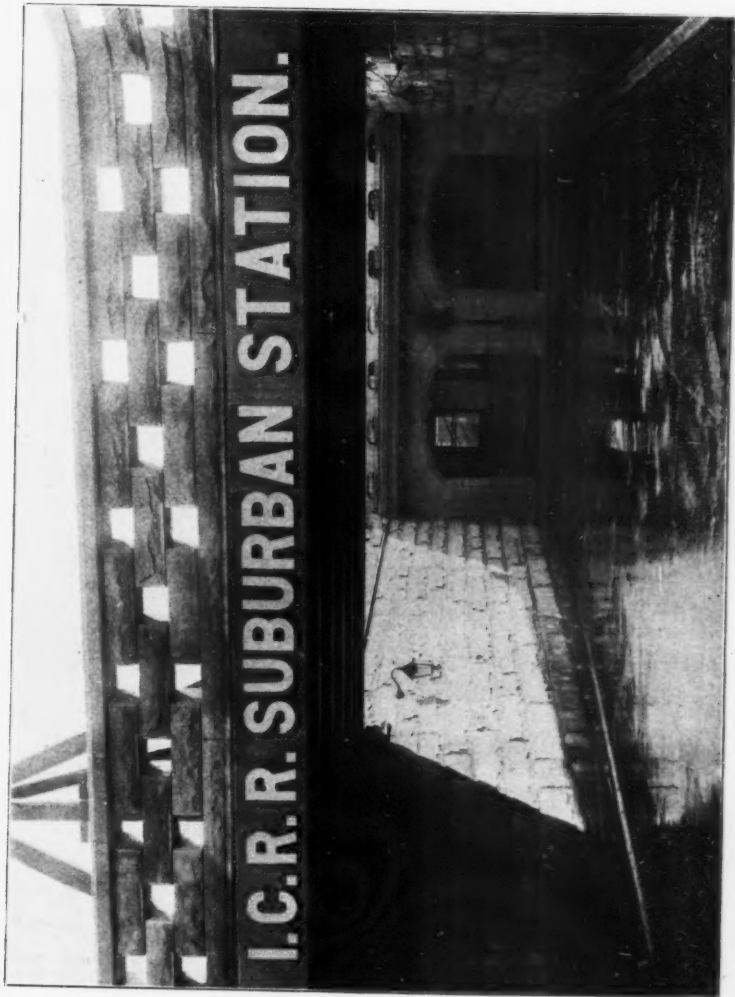




MEN'S LAVATORY.



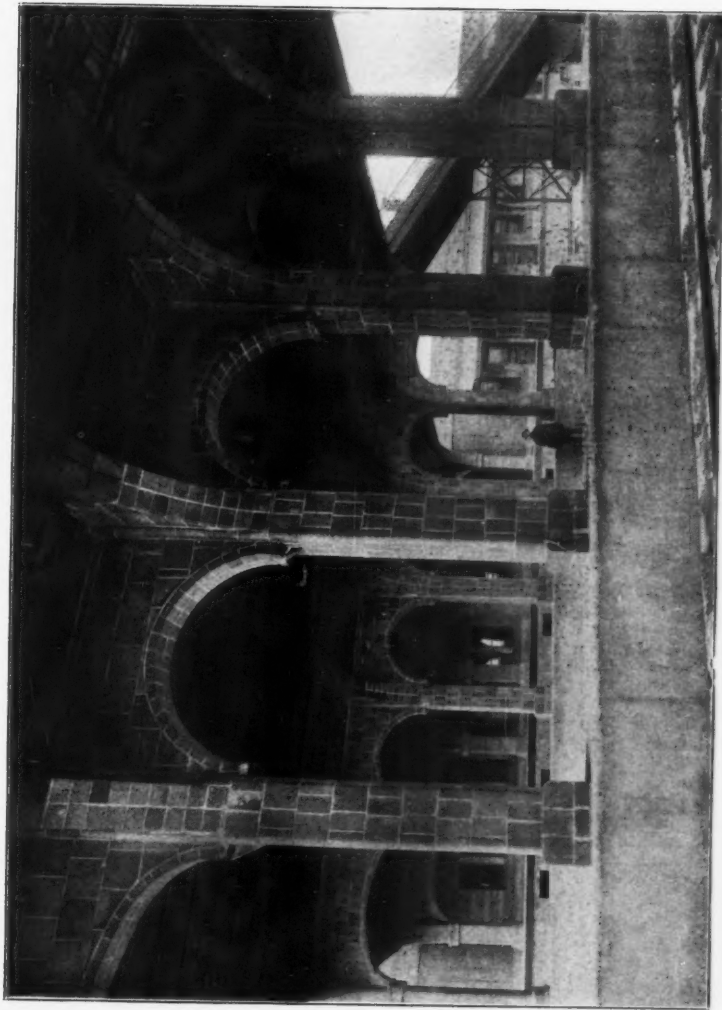
SMOKING ROOM.



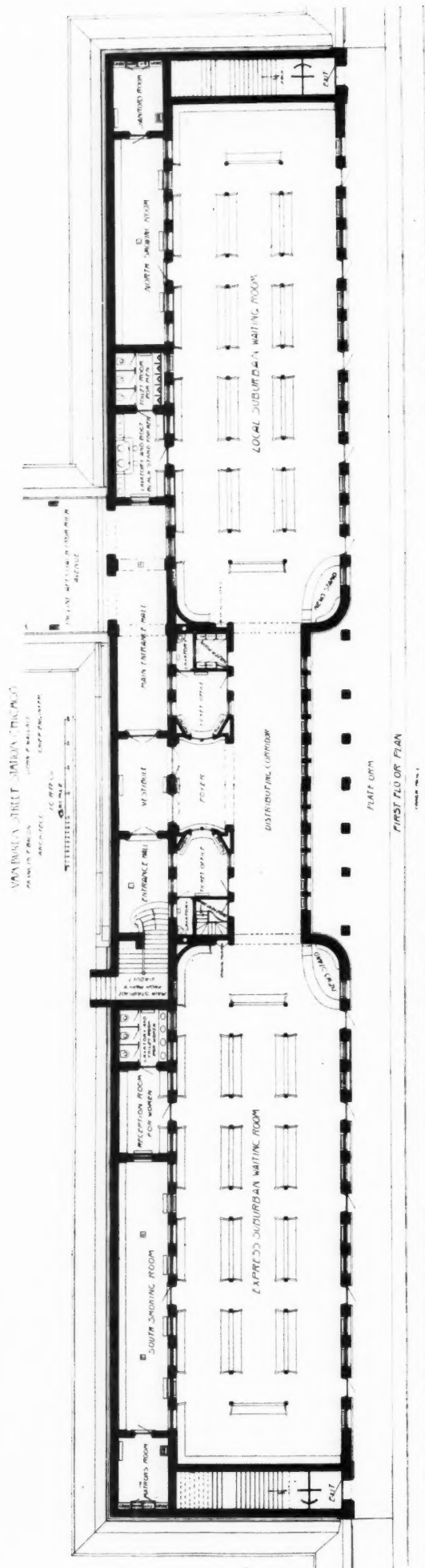
VAN BUREN STREET ENTRANCE FROM MICHIGAN AVENUE.

STATION FOR ILLINOIS CENTRAL RAILROAD, LAKE FRONT AND VAN BUREN STREET, CHICAGO.

JOHN F. WALLACE, CHIEF ENGINEER; FRANCIS T. BACON, ARCHITECT.



TILE COVERING FOR VIADUCTS AS COMPLETED BY THE PIONEER FIREPROOF CONSTRUCTION CO.



FIRST FLOOR PLAN.
 VAN BUREN STREET STATION, ILLINOIS CENTRAL RAILROAD COMPANY, CHICAGO.
 FRANCIS T. BACON, ARCHITECT; JOHN F. WALLACE, CHIEF ENGINEER.



J. L. FULTON, President.

D. H. LAWTON, Vice-President.

F. S. SOMMERS, Secretary and Treasurer.

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ALL KINDS OF BUILDINGS.

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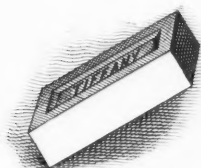
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ENAMELED BRICK.

ILLINOIS CENTRAL RAILROAD COMPANY.

OFFICE OF THE CHIEF ENGINEER.

CHICAGO, December 14, 1896.

TIFFANY ENAMELED BRICK CO., CHICAGO, ILL.:

GENTLEMEN,— Having thrown open to the public the Underground Suburban Station at Van Buren Street, which is said in all respects to be a phenomenal success, I feel I must extend my thanks to some of the material men and contractors who so ably assisted me in its construction.

Your Enamel Brick (English size), which I used in this work, I have found are all you could possibly recommend them to be, and you deserve much credit from all, especially the Architectural profession. Not only are your brick very evenly enameled and scarcely any difference in shade, but they are exceedingly hard, and I found could be perfectly ground for high-grade arch work where I had to use some of them.

Taking pleasure in knowing that this lay-out of your material at Van Buren Street Station will be a great card for your firm, I remain,

Yours respectfully,

FRANCIS T. BACON, SUPERVISING ARCHITECT,
ILLINOIS CENTRAL RAILROAD CO.

TIFFANY ENAMELED BRICK COMPANY.

GENERAL OFFICES,

204 Dearborn Street (Marquette Building), CHICAGO.

626, 156 Fifth Avenue, NEW YORK.

The American Terra Cotta & Ceramic Company



FACTORIES:

TERRA COTTA, ILLINOIS.



OFFICES:

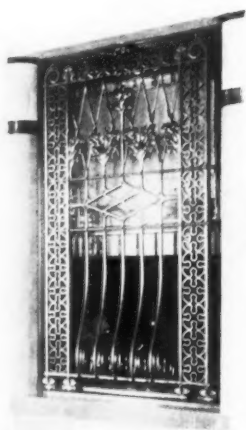
MARQUETTE BUILDING,
CHICAGO.

TELEPHONE, EXPRESS 364.



Have furnished the Terra Cotta for the Van Buren Street Station, Park Row Station and Viaducts, also a great number of the largest buildings in this country.

CONTRACTORS, THE VAN BUREN STREET STATION.



WINDOW GRILL, EXECUTED BY

Chicago Ornamental Iron Co.

CHICAGO, ILLINOIS,

Contractors for **Wrought Iron and Bronze**

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Planters Hotel, St. Louis.
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and many other important buildings throughout the country.

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PLUMBING,
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Corner Cottage Grove Avenue.

TELEPHONES: { OAKLAND 914.
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A few of the buildings we have furnished the plumbing in are as follows:

The Van Buren Street Station of the Illinois Central R. R.
Residence of E. C. Potter.
Residence of E. C. Wilson.
Calumet Club House.
Kenwood Club House.
McConnell Building, 39th Street and Lake Avenue.
Residence of Jas. L. Higgle.
Tyson Apartment Building, Goethe Street.
E. A. Hamill Residence.
Residence of E. E. Chandler.

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and many other Railroads throughout the country.

We take pleasure in calling the attention of Railroad Officials and Purchasing Agents to Settees made by us, from special designs, for the following stations in Chicago:

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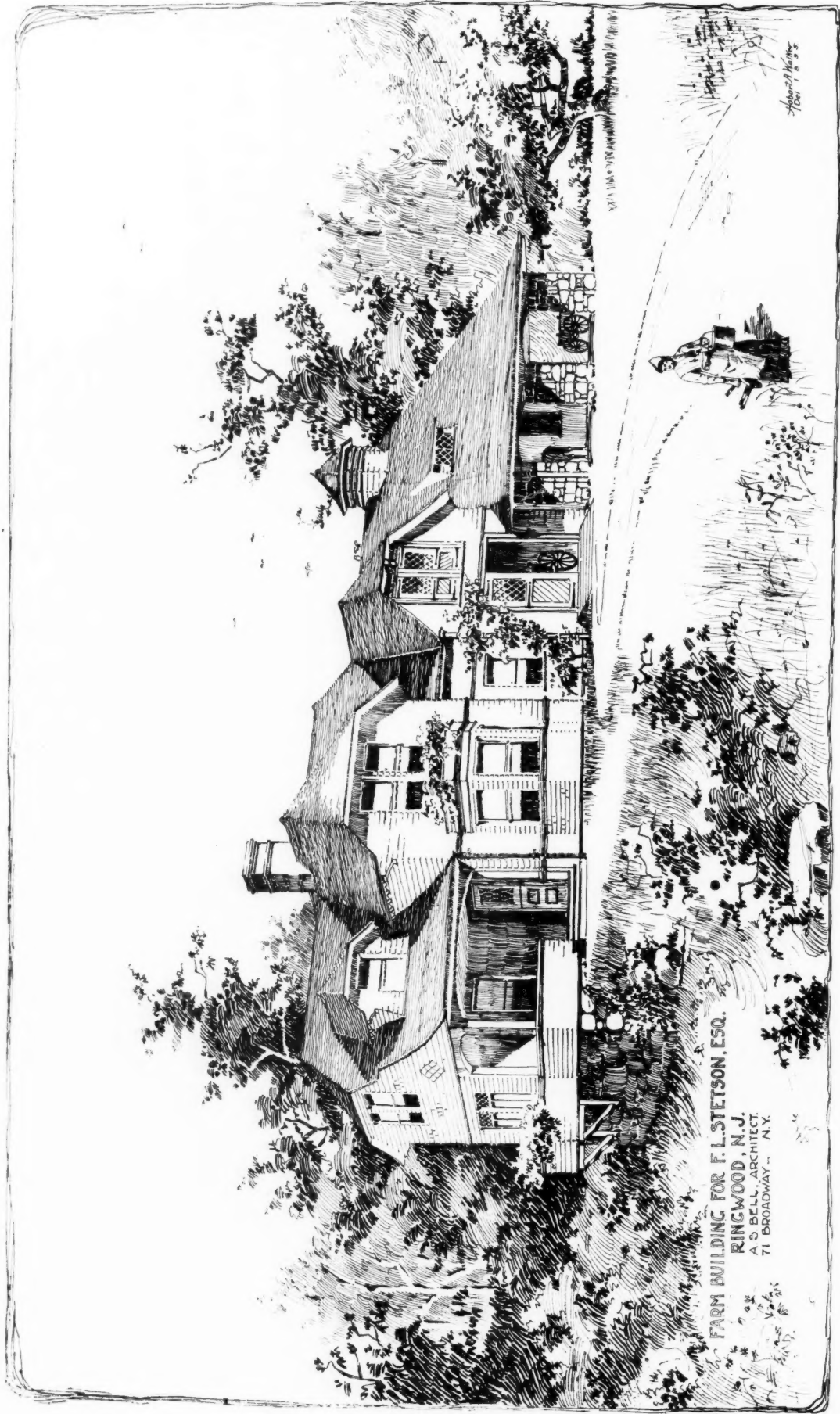
SOLE AGENTS:

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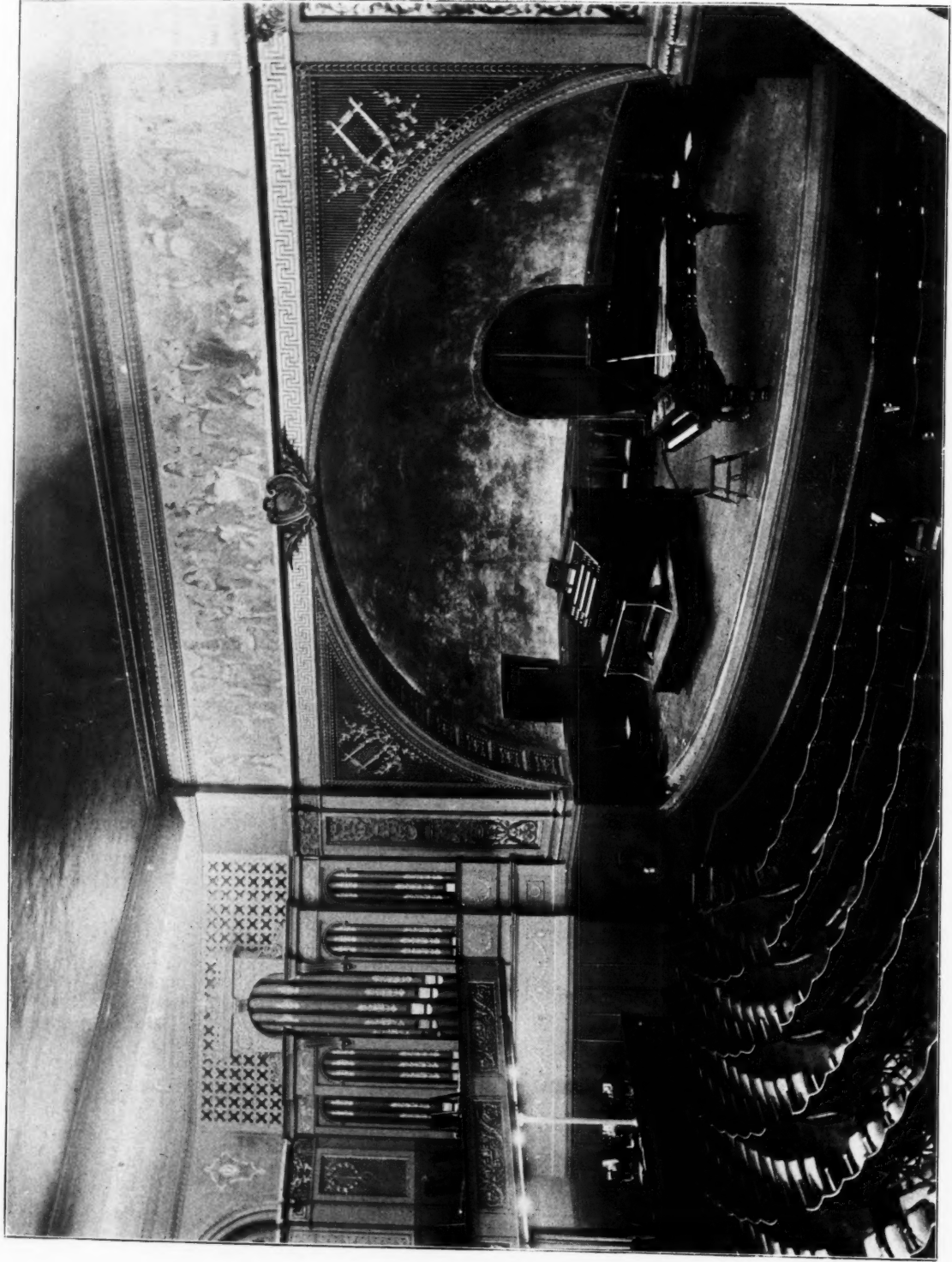
FACTORY AND WAREHOUSE:

101 WEST ADAMS STREET.

The whole of the Tile Work for floors and walls, as well as Mosaic Floors in entrances, were supplied and set by the above firm, for the new Suburban Illinois Central Depot at Van Buren Street, Chicago.

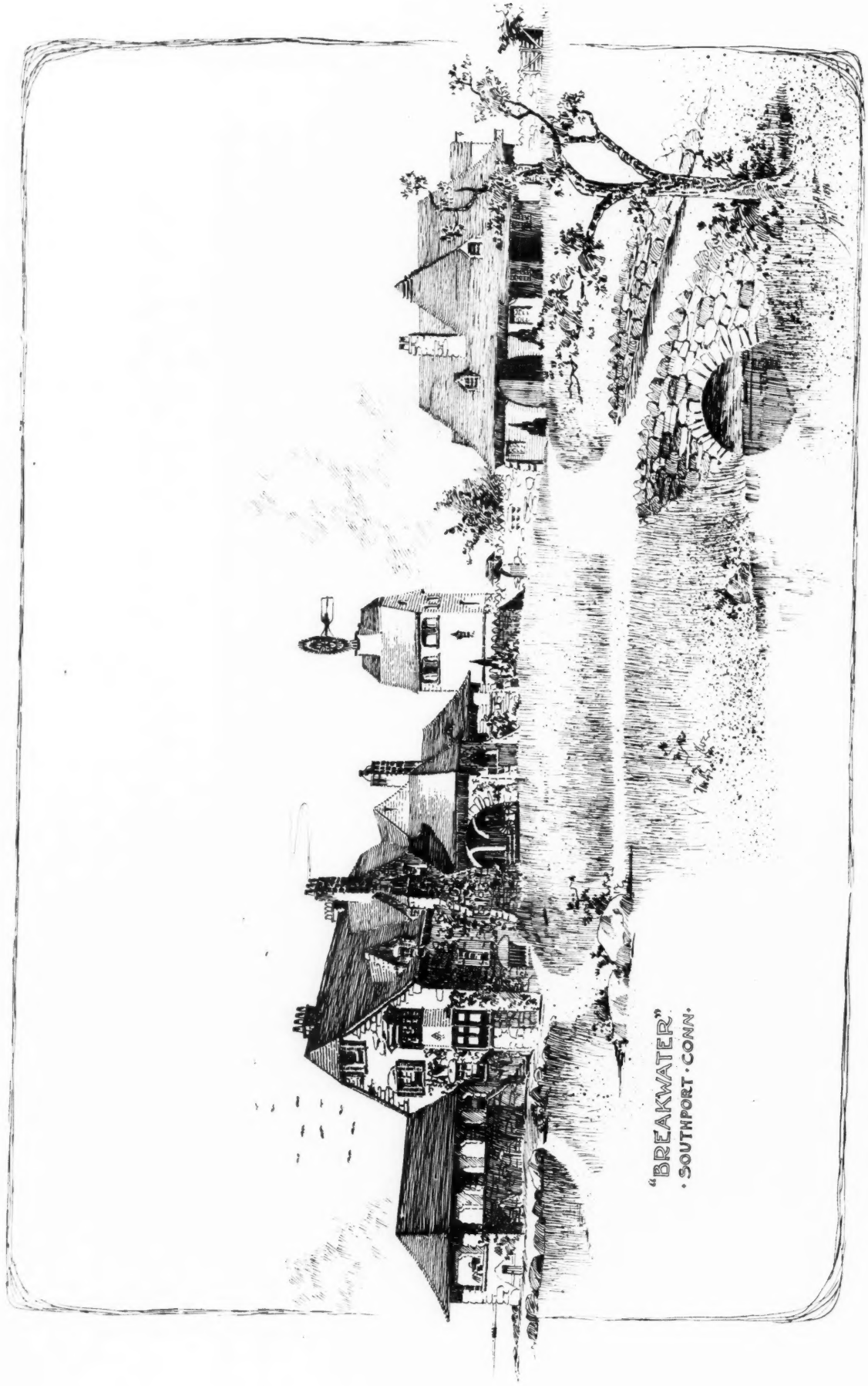


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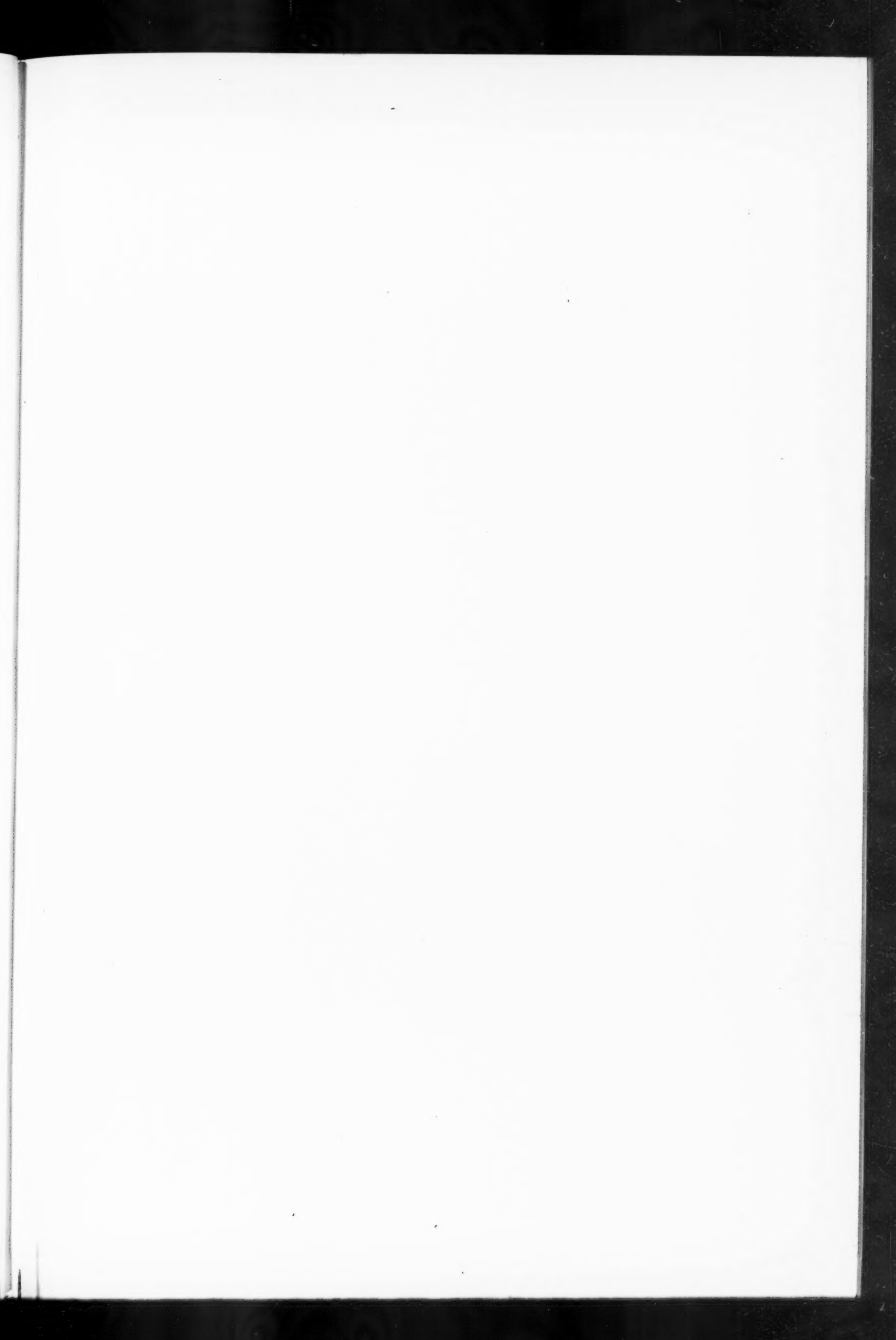


INTERIOR VIEW, STEINWAY HALL, CHICAGO.

DWIGHT H. PERKINS, ARCHITECT.



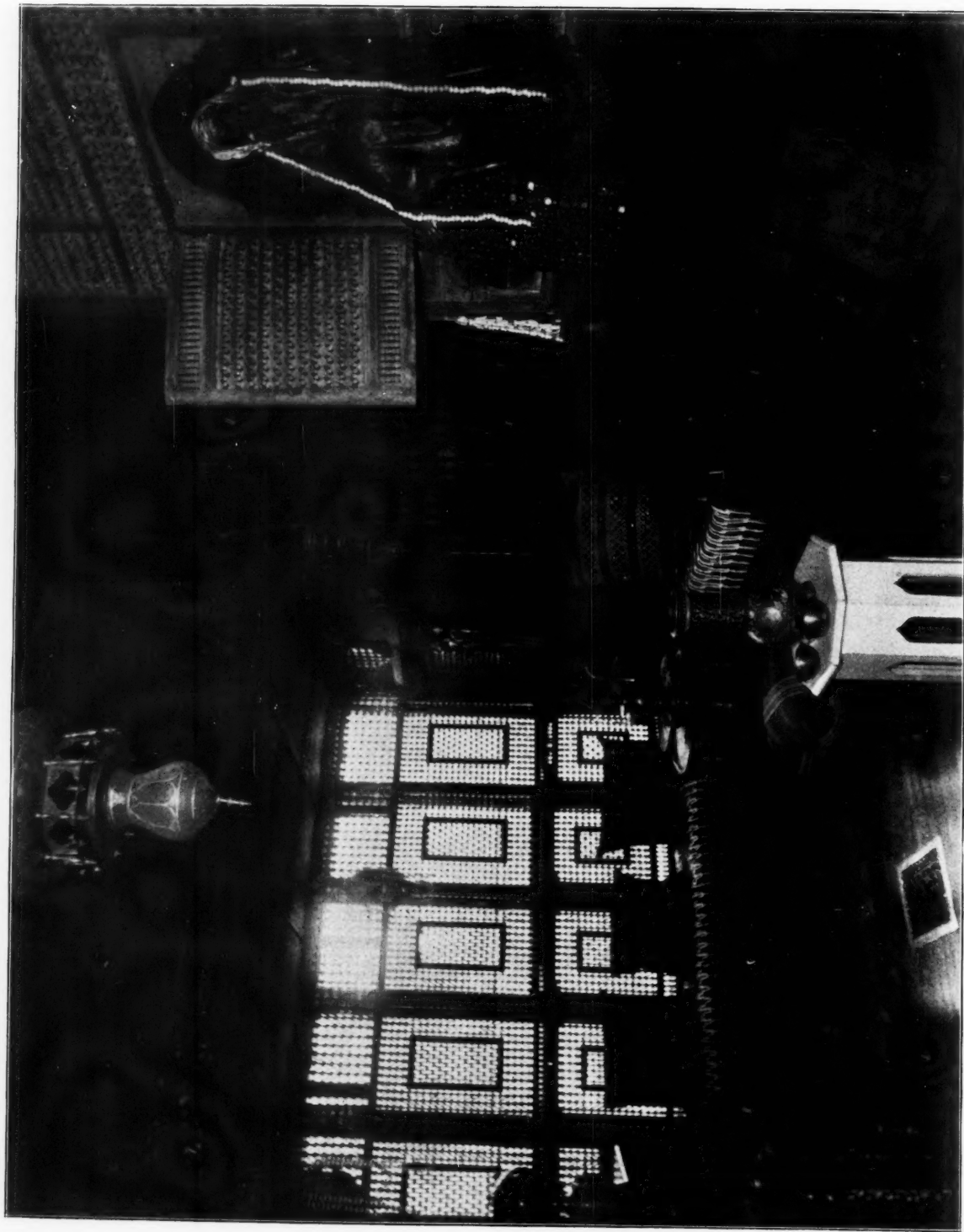
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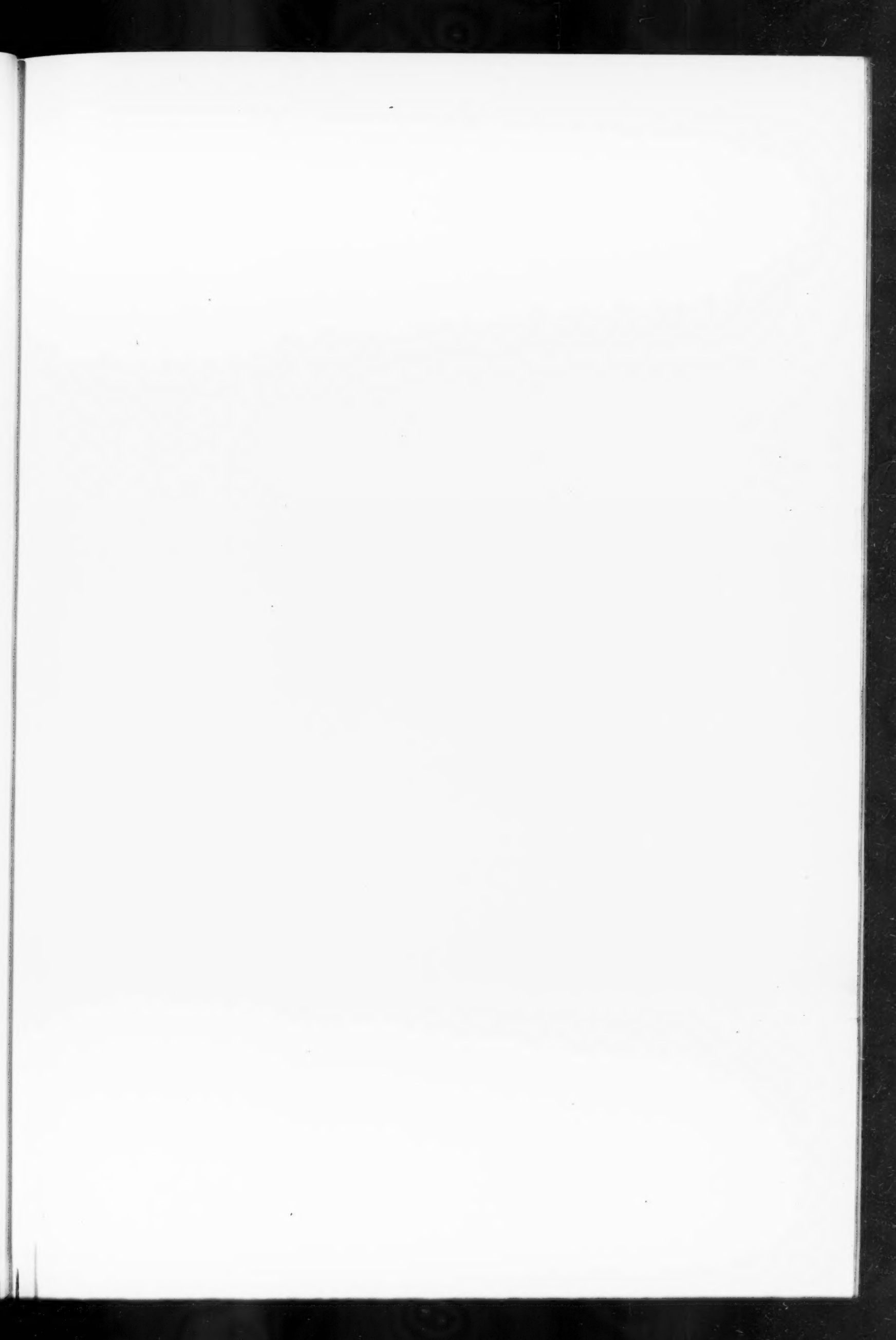
Ralph D. Cleveland, Photographer, Chicago.

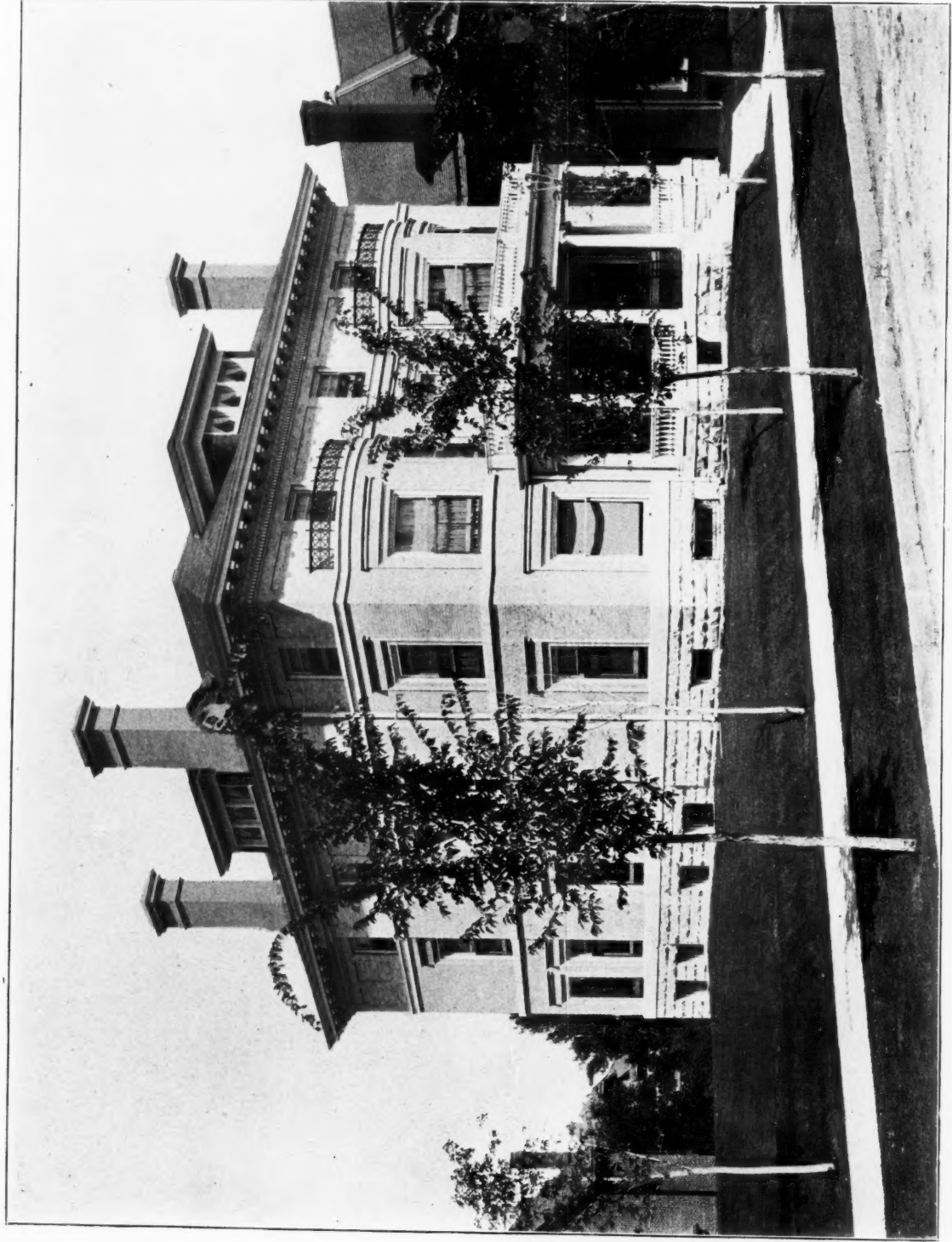
INTERIOR VIEW, RESIDENCE OF O. W. MEYSENBURG, CHICAGO.
THOMAS & RAPP, ARCHITECTS.



A MOORESQUE INTERIOR, CINCINNATI, OHIO.

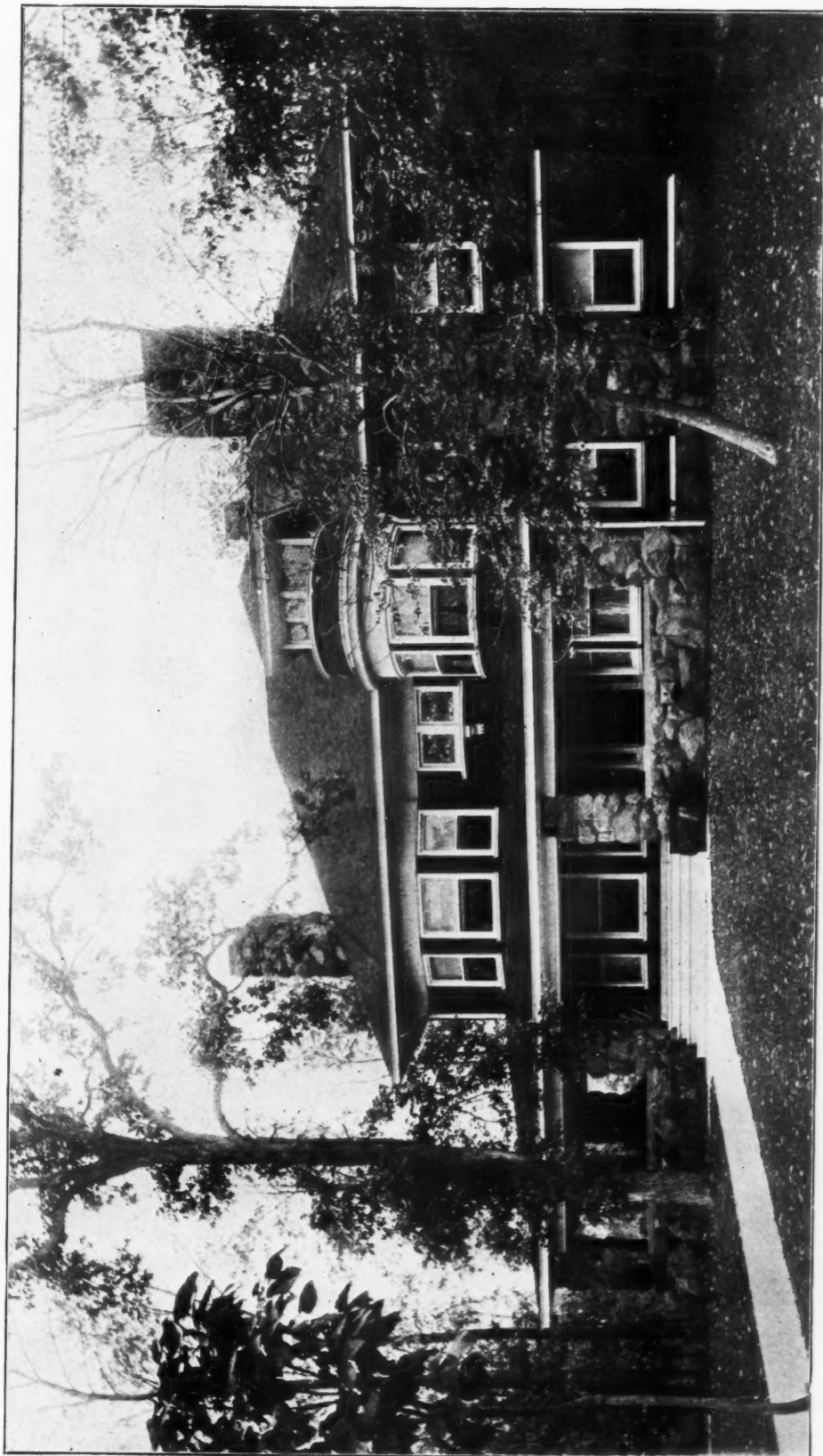
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RESIDENCE OF C. S. MOREY, DENVER, COLORADO.

GOVE & WALSH, ARCHITECTS.



RESIDENCE OF EDGAR G. BARRATT, KENILWORTH, ILLINOIS.
GEORGE W. MAHER, ARCHITECT, CHICAGO.



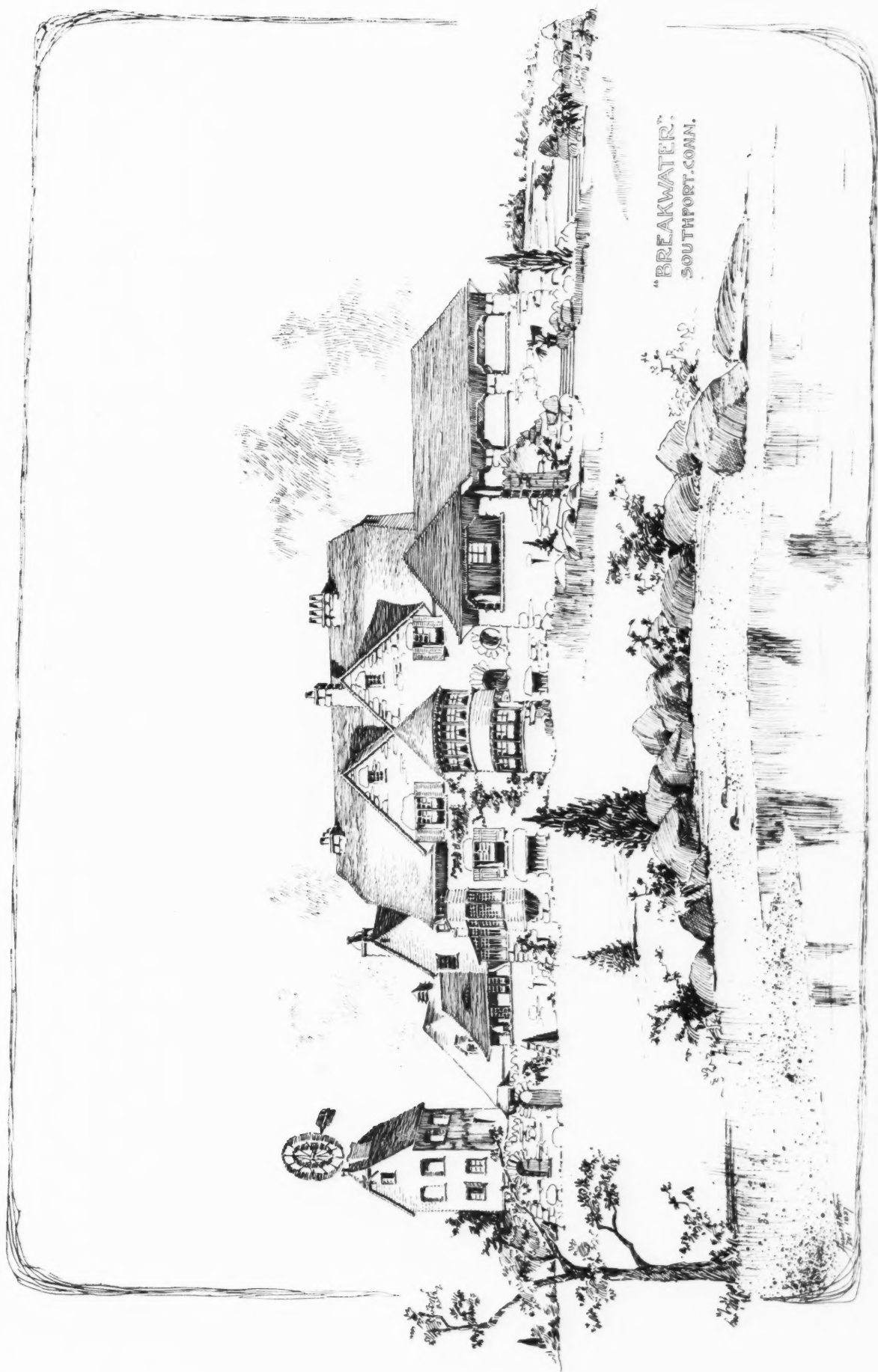
THE C. S. MOREY BUILDING, DENVER, COLORADO.
GOVE & WALSH, ARCHITECTS.



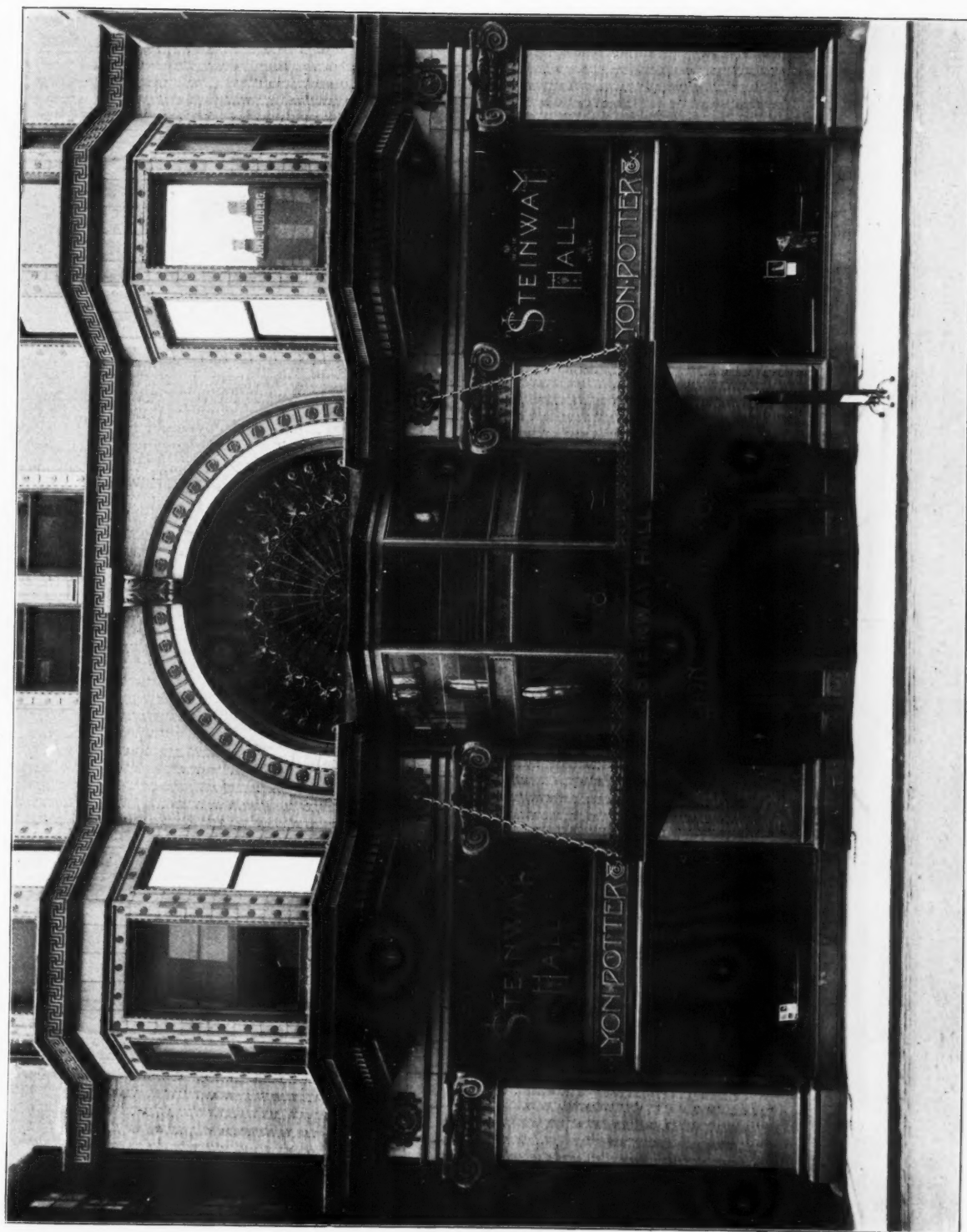
Ralph D. Cleveland, Photographer, Chicago.

VIEW OF STAIRWAY, RESIDENCE OF O. W. MEYSENBURG, CHICAGO.

THOMAS & RAPP, ARCHITECTS.

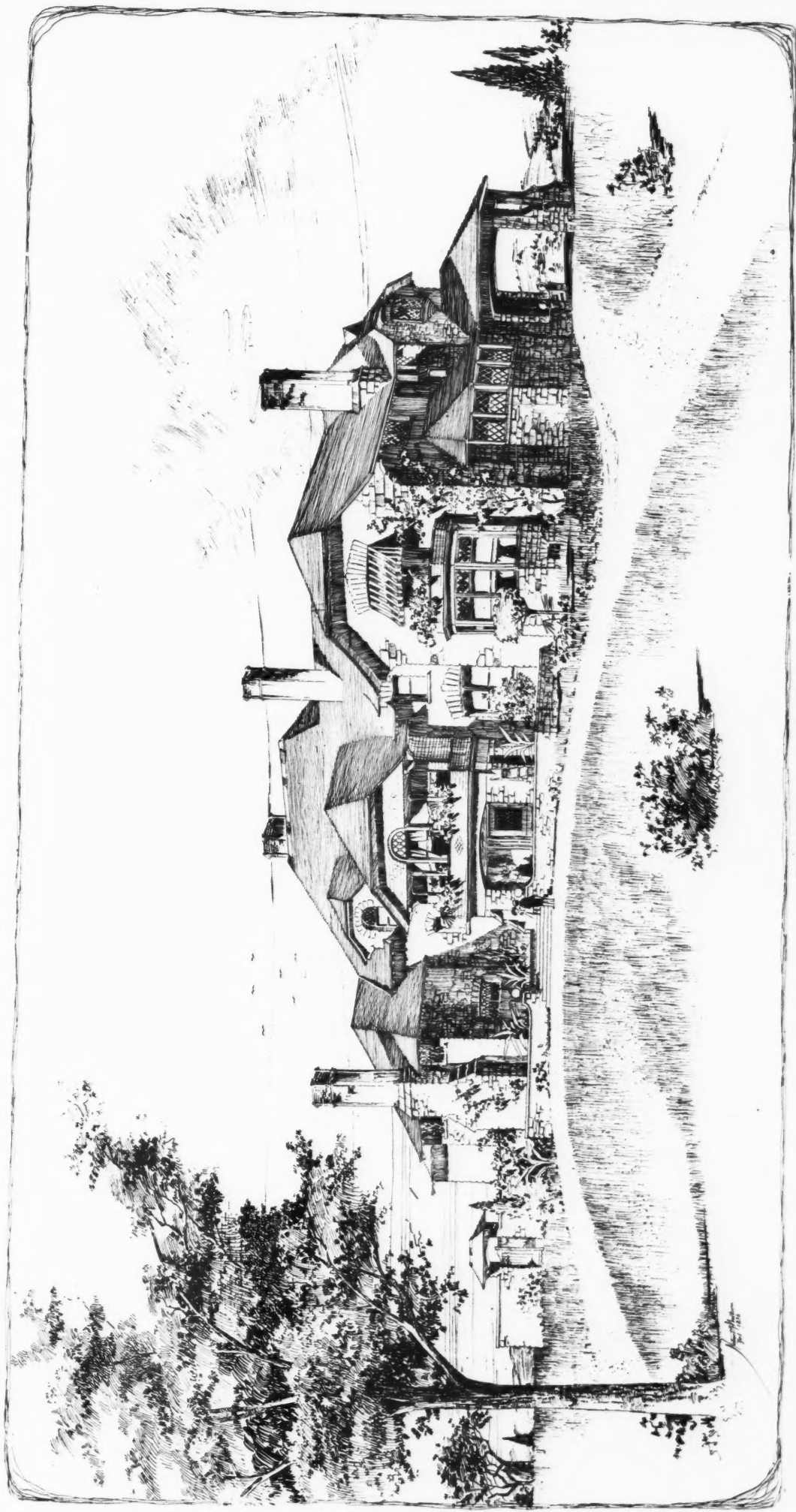


"BREAKWATER,"
SOUTHPORT, CONN.

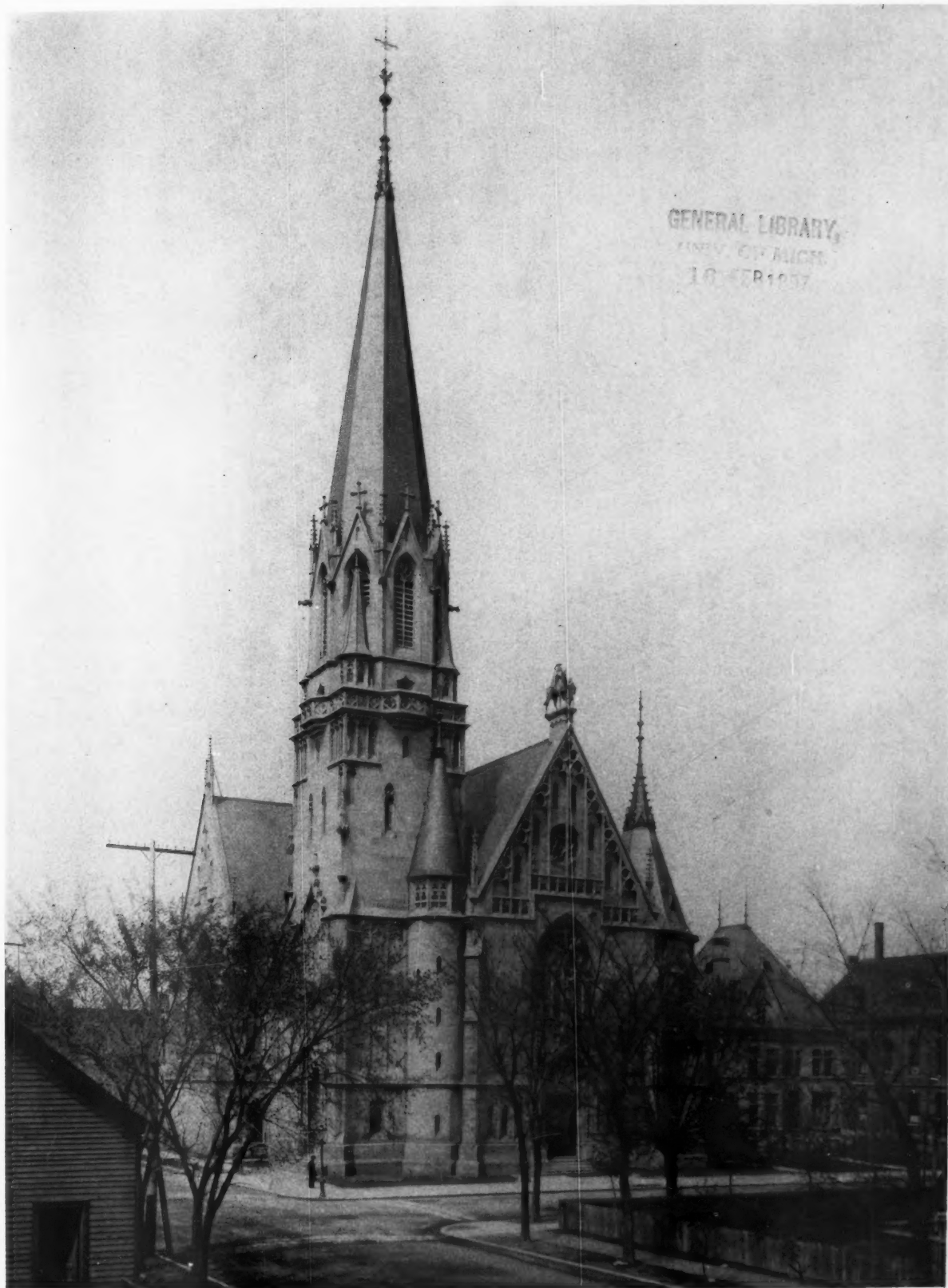


DETAIL OF STEINWAY HALL, W. H. & F. A. WINSLOW, OWNERS, CHICAGO.
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