

THE INLAND ARCHITECT AND NEWS RECORD

VOL. LII

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- Public School, Chicago.
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- Y. M. C. A. Building, Lake Geneva, Wis.
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- Office and Warehouse Buildings for Joseph T. Ryerson & Son, Chicago.
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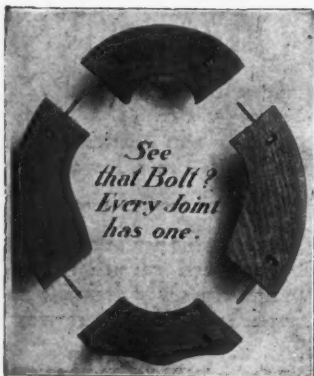


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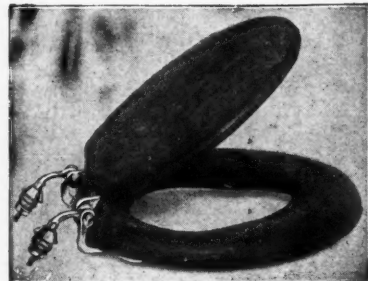
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A Monthly Journal of
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Constructive, Decorative and Landscape
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Vol. LII.

JULY, 1908

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NEXT CONVENTION AT DETROIT, MICH.

Owners Should Protect Themselves.

In political science there is a maxim that the more a government, national or municipal, does for people in certain directions the less they will do for themselves. One of these directions is fires. In American cities there seems to be no occasion for extraordinary effort by owners to guard their property against fire; is there not at hand the most perfect fire department in the world, ready to respond on the gallop to electric call and drown out a fire instantly? Now just abolish the fire service and leave both owners and tenants to protect themselves. They will take up the fire problem and handle it in a much cheaper and more efficient way than any department. For they will not confine their attention to fire extinguishment, as the fire departments do; they will start at the other end and make sure of fire *prevention*. It is a deal easier and cheaper to prevent a fire than to put it out later on. So there will develop an immediate and universal demand for a better class of building, something which will not ignite as at Chelsea from a match thrown on a rubbish pile. We do not advocate drastic measures, however beneficial the probable ultimate results. But all must admit that we need to give more thought to *fire prevention*; and to this end we must enlist the active help of both tenants and owners by an appeal to their instinct of self-preservation, precisely as is done by the "effete nations" of the old world.

**Delusion That
Insurance
Prevents Loss.**

We all share more or less a mischievous notion that fire insurance prevents fire loss. In fact it does nothing of the kind and never did; there cannot be a fire without a loss. But the delusion is innocently maintained by the custom of the daily press to conclude its reports of fires with the time-worn phrase "loss covered by insurance." From this the unreflecting reader (and his name is Legion) assumes that the fire did no harm, "being insured"; and the only lesson he draws from it is to keep up his own fire insurance and, perhaps, add a few thousands more to it. This done, his mind is discharged of all further concern; if his property burns he is well secured and, indeed, quite too often he realizes a larger price for it than he could get in any other way. So, while fire insurance never prevents loss anywhere, it does encourage fires with us by preventing the inevitable loss from falling where, much oftener than is suspected, it ought to fall, on the directly or indirectly culpable owner. In fact, American fire insurance operates, like the indulgences which Tetzel used to sell in Luther's time, as a permit to do wrong with immunity from all penalties.

**Objects
Sought by
President Gilbert.**

The splendid record made by President Cass Gilbert in connection with the redemption of the Octagon property from debt has led the architectural public to watch with much interest his administration of the office of president of the Institute. Two projects of the utmost importance to the American Institute are being prosecuted with vigor under the special direction of President Gilbert, namely, the increase of membership of the Institute and the raising of a substantial endowment fund. The increase of membership is of first importance. It has not kept pace with the advance of the profession in numbers, influence, attainments or achievements. While the Institute is fairly representative of the best in the profession, there are a large number of able and honorable architects throughout the country who are not members. A good proportion of these could be gathered into the Institute by judicious and earnest effort. Every present member has a distinct and personal interest in strengthening to the utmost the membership and influence of the national body. The greatest good to the profession can be attained only through an association thoroughly representative of all sections, and including in its ranks a very large proportion of the reputable architects of the nation. That President Gilbert fully realizes this is evidenced by the fact that he is persistently urging the chapters to redoubled efforts to recruit the membership of the Institute.

**Work of the
Institute
Hampered.**

This question of membership directly affects projects that have demanded much thought and effort in recent years and are still unsettled, such as the readjustment of the schedule of charges, contracts and specifications, etc. The concurrence of the entire profession in the settlement of these questions is much to be desired. The best way to attain this object is through greatly enlarged membership of the Institute. President Gilbert's campaign for this object should have the hearty co-operation of every architect. No class contributes more to the welfare of an enlightened community than the architectural profession.

As a rule architects' rewards are not commensurate with the study and training necessary in the preparation for their calling. Considerable self-sacrifice was required to lift the Octagon debt. The Institute is hampered by lack of funds in its efforts to promote better building laws and building throughout the country. This is a subject in which the public at large is vitally concerned, and the call for a substantial endowment fund should meet with generous response from all who have benefited by good building, public or private. President Gilbert has shown his capability to deal with such a problem and under his wise guidance there is hope of much progress, but here again he should have the utmost help of every member of the profession.

**Architects'
Protective
Association.**

At a recent meeting of the Chicago Architects' Business Association the subject of a protection association for architects was considered, and a committee appointed to investigate the expediency of such an organization. Mention was made of the benefits derived by the medical profession from a protection association. It would be the province of an architectural society of this character to look after the rights, especially legal, of architects. It often happens that an architect has legal rights that he relinquishes from policy or unwillingness to incur the expense of a legal fight. In every such case the status of the profession before the community is weakened. Many of these questions involve principles vital to the profession. A national protection association would have the organization and funds to carry the issue to the court of last resort. Much good would be accomplished in this way. To get full benefit from a protective association, it must be a national organization composed preferably of local business associations of architects.

**Copyright
for the
Architect.**

A paper of more than ordinary interest submitted to the congress was that by Dr. Erös (Budapest) on copyright protection for the architect. He reviewed the laws for architectural copyright of various countries, and some were new discoveries to the architects themselves of the countries mentioned. Belgium and Denmark are far in advance of other countries. In Belgium the architect has the sole right to reproduce his design, whether on paper or in building; in Denmark the building or any part of it may not be copied in the lifetime of the architect. England was the first country to legislate for copyright (1735), but there the design is protected on paper only. In Switzerland all designs on paper may be protected, but not the buildings themselves erected in public places. France added architecture to the protected list so late as 1902. Germany last year enacted a copyright act stating minutely what is protected in architecture. Japanese architects, so long as registered, have the sole right to reproduce their designs. No protection is given architects in Austria. America does not specifically mention architecture, but protects the designer in the sole right of any reproduction. Dr. Erös suggested that an international copyright would be very desirable in the interests of architecture. It would seem advisable for the American institute to appoint a committee to further the copyright protection of the architect's designs.



DEACONESS HOSPITAL, BOSTON.

THE FENWAY MEDICAL BUILDINGS, BOSTON



HAVING considered the earlier improvements of the Fenway district, attention naturally centers on those of more recent date. Conspicuous above all others is the beginning of what promises to be an important development in medical institutions. There are already two hospitals established to the south of Longwood avenue, the Deaconess and the Good Samaritan, besides the Harvard Medical School and the Carnegie Nutrition Laboratory.

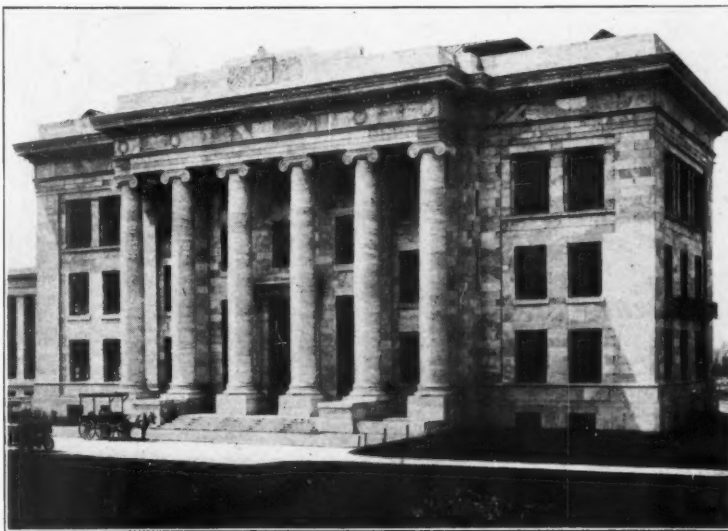
The first of the above mentioned hospitals is approached from Boylston street by a long promenade, well shaded by large old elms, which fortunately is on axis with the brick building. It is generally understood that this hospital has already outgrown its present quarters and the need of extensive additions are fully realized and contemplated. The Good Samaritan Hospital, Andrews, Jaques and Rantoul, architects, was erected slightly earlier. It is nearer the Medical School and also the proposed Brigham and Children's Hospitals.

Of the Harvard Medical School a great deal has been written. It is by far the largest operation undertaken and completed in this vicinity. The five Dorset marble buildings

are arranged about a beautiful court having the Administration Building on axis, and extending out from the court and on axis with it will be Avenue Pasteur, a fitting name for a boulevard leading from the Fenway drive to the center of the medical district. It is intended to widen the avenue at its junction with Longwood avenue into a semi-circular plaza and on either side of the circle to erect dormitories, as there are as yet no such accommodations for students. Shepley, Rutan and Coolidge were the architects of the noble Medical School group, and they have prepared sketches for the dormitories mentioned above as well as for the Harvard Dental School which has secured a site east of and adjacent to the Medical School.

This spring was completed the Nutrition Laboratory

of the Carnegie Institute of Washington, also by Shepley, Rutan and Coolidge, which while it is independent of the Medical School was influenced to locate here on account of it and the proposed hospitals to be erected hereabouts. The laboratory is built of water-struck brick laid in Flemish bond with limestone trimmings. The structure is absolutely fireproof, the brick partitions resting on concrete floor slabs. The steam, both low

ADMINISTRATION BUILDING, HARVARD MEDICAL SCHOOL, BOSTON.
SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.



SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.

CARNEGIE NUTRITION LABORATORY, BOSTON.

and high pressure, compressed air, brine and electricity for heat, power and light are furnished by means of a tunnel from the Medical School power house which was designed to take care of such cases as this and which also supplies the wants of the Good Samaritan Hospital as well as those of its own group.

The Brigham Hospital is to be just south of the Medical School. A competition to which five Boston architects and one from New York have been invited is being held and results will be announced in the fall. North of this hospital and west of the Medical School is the space allotted to the Children's Hospital, and when these hospitals are erected all the available land in this block will be occupied. It is a large block, in area equal to about six ordinary city lots, and it will present a most remarkable and extensive group of buildings for the furtherance of medical knowledge. For the Brigham Hospital it is understood that five million dollars are available, and for the Children's Hospital one million.

Going back to the city by way of Huntington avenue, first is seen the picturesque group of school buildings known as the Model School group, of which Peabody and Stearns; Maginnis, Walsh and Sullivan; and Coolidge and Carlson were associated architects. This building of red brick and cream terra cotta always attracts favorable comment, and its location at the Tremont entrance of the Fenway drive is a most fortunate one.

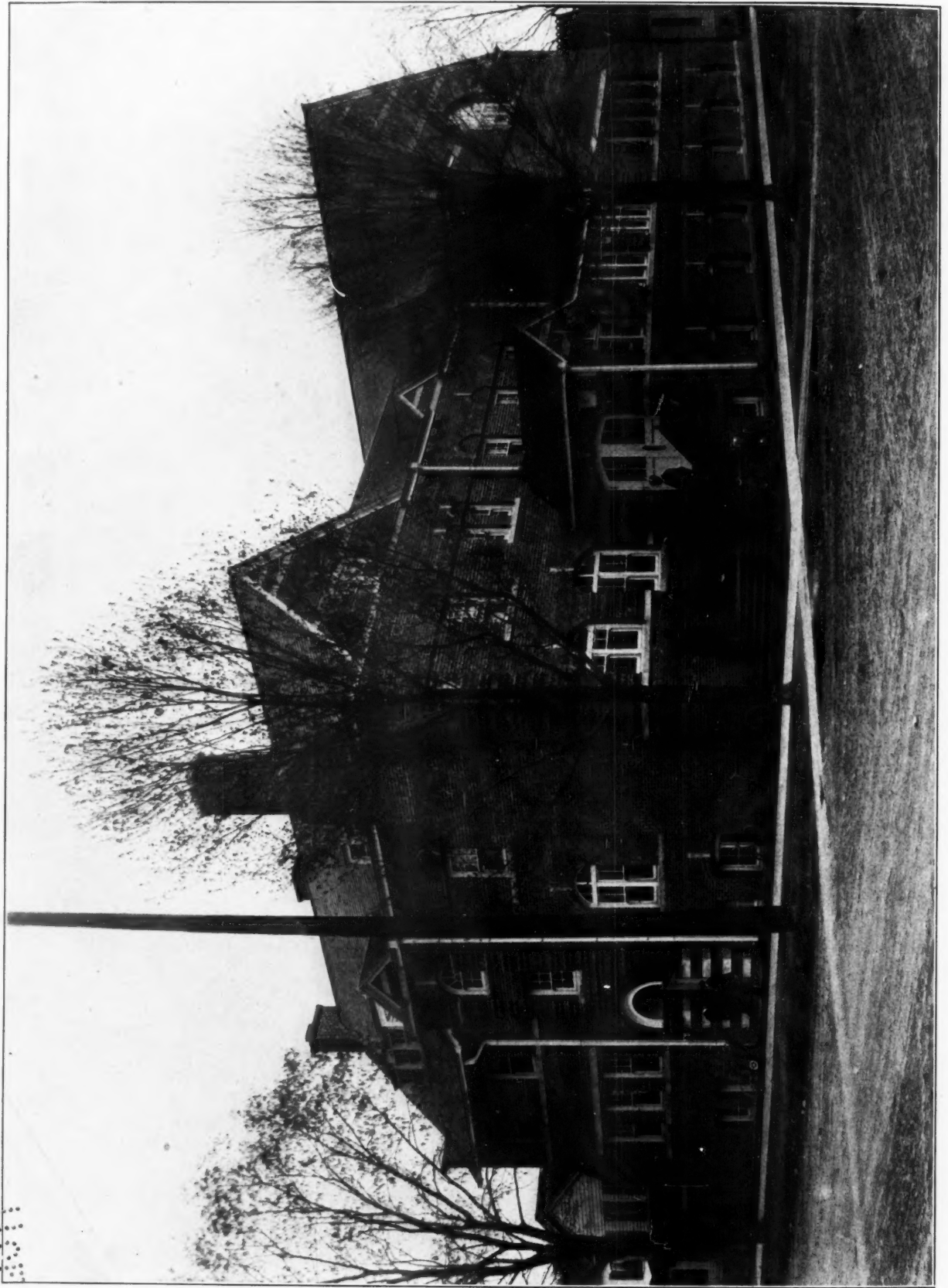
Still nearer the city is approaching completion the large Museum of Fine Arts, from Guy Lowell's office. Boston has long needed larger quarters for its exhibitions of painting, sculpture and allied arts, and in this new building it will have ample space, while at any time the building can be extended to meet requirements which may be desired.

It will be seen from the above that the Fenway district of Boston is an unique one, serving as it does for a delightful recreation spot and the home of so many educational and medical institutions.



BRIDGE ON FENWAY.

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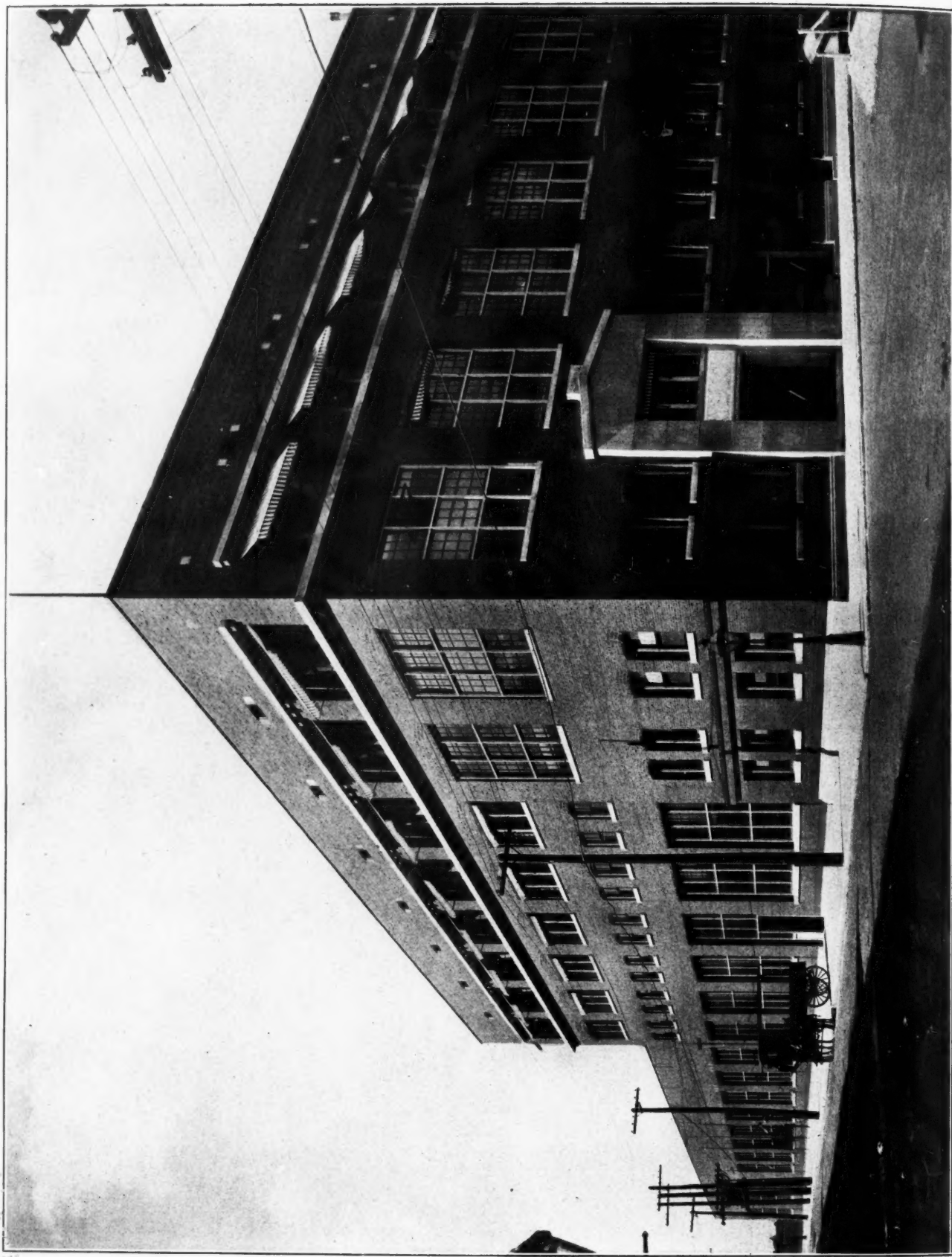


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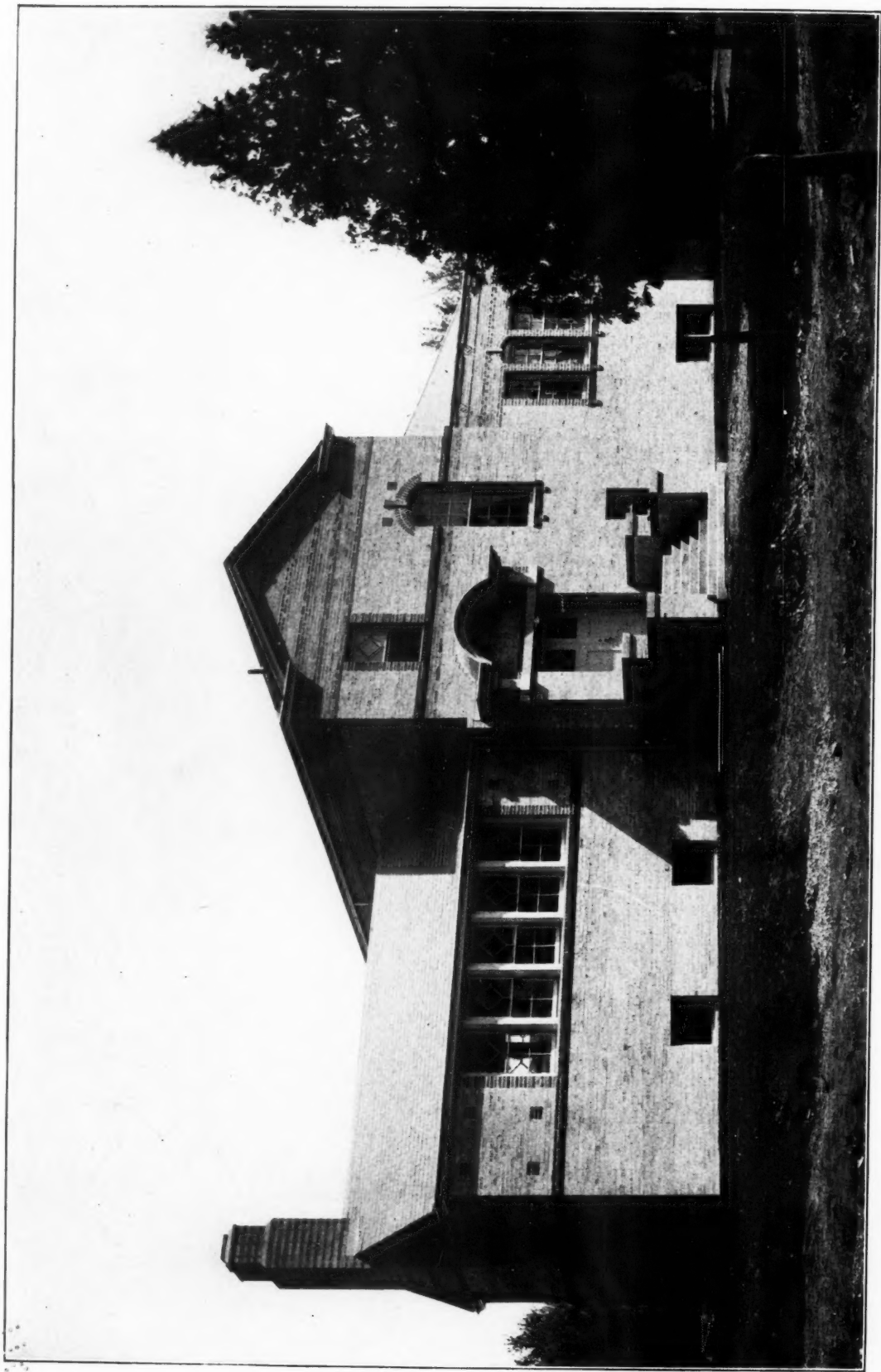


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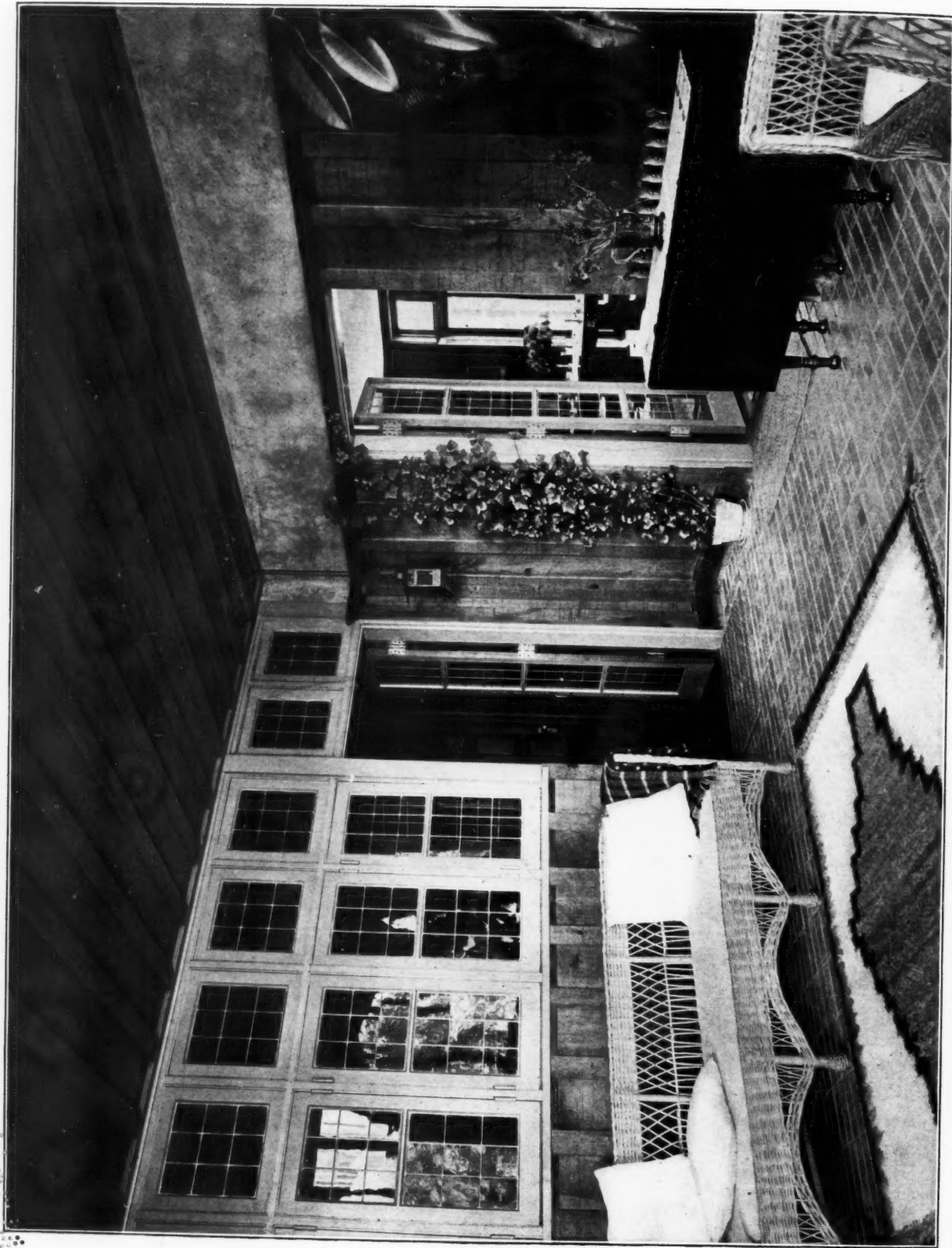
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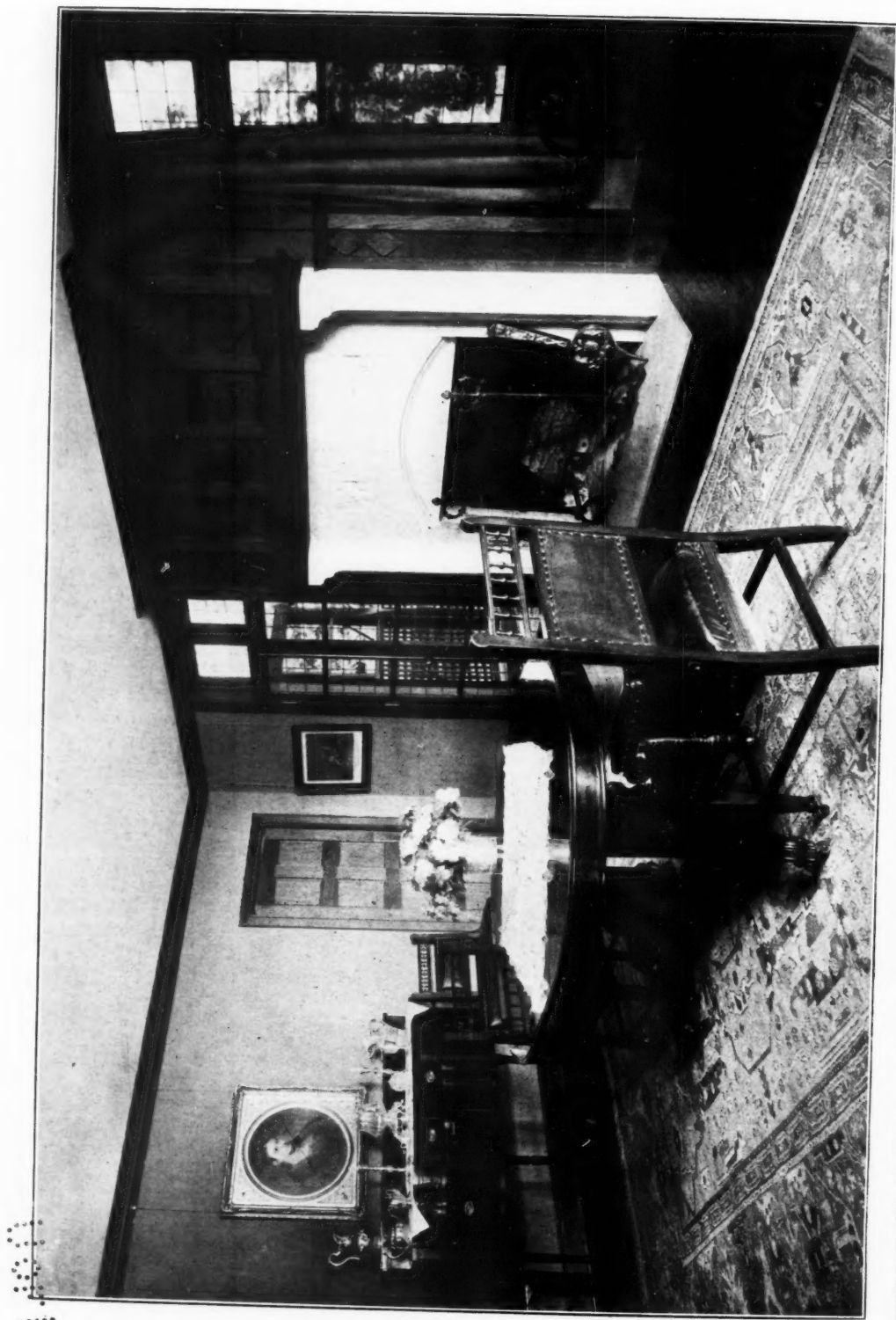
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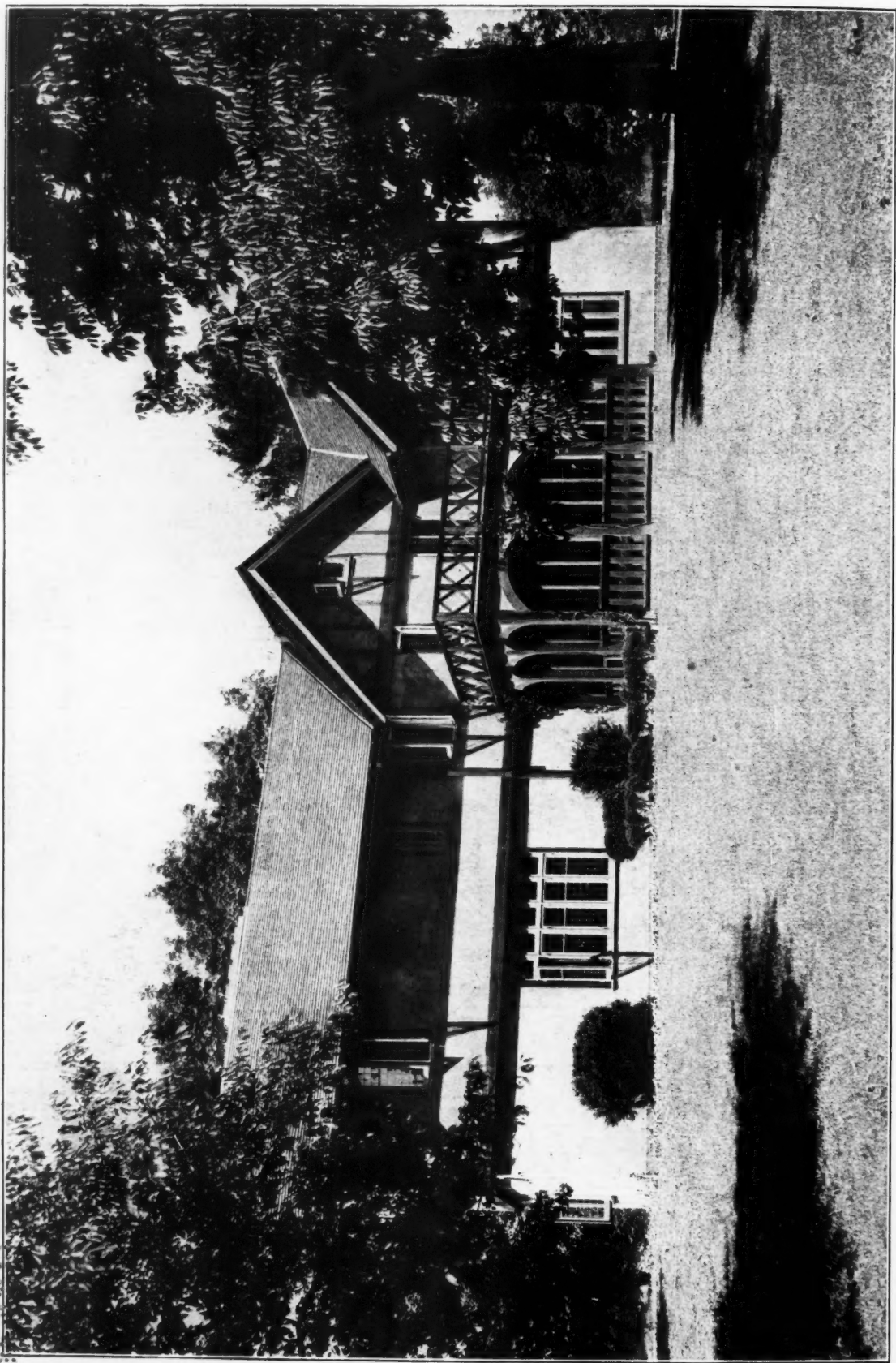
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DINING ROOM, RESIDENCE OF W. WOODBRIDGE DICKINSON
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RESIDENCE OF W. WOODBRIDGE DICKINSON, HADLEIGH HILL FARM, NEAR ST. JOSEPH, MICH.
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Side View

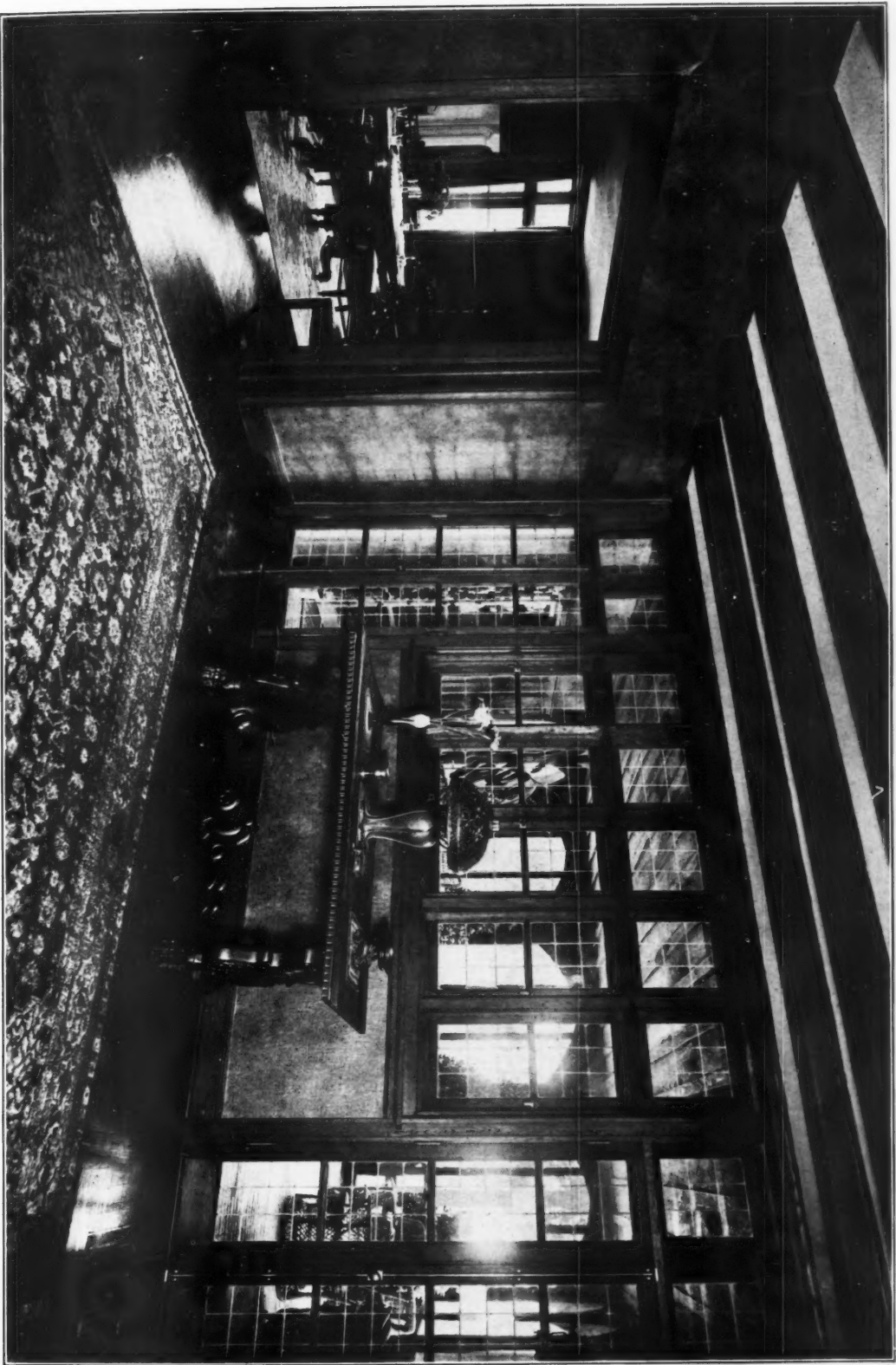


Entrance Approach

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THE HALL, RESIDENCE OF W. WOODBRIDGE DICKINSON
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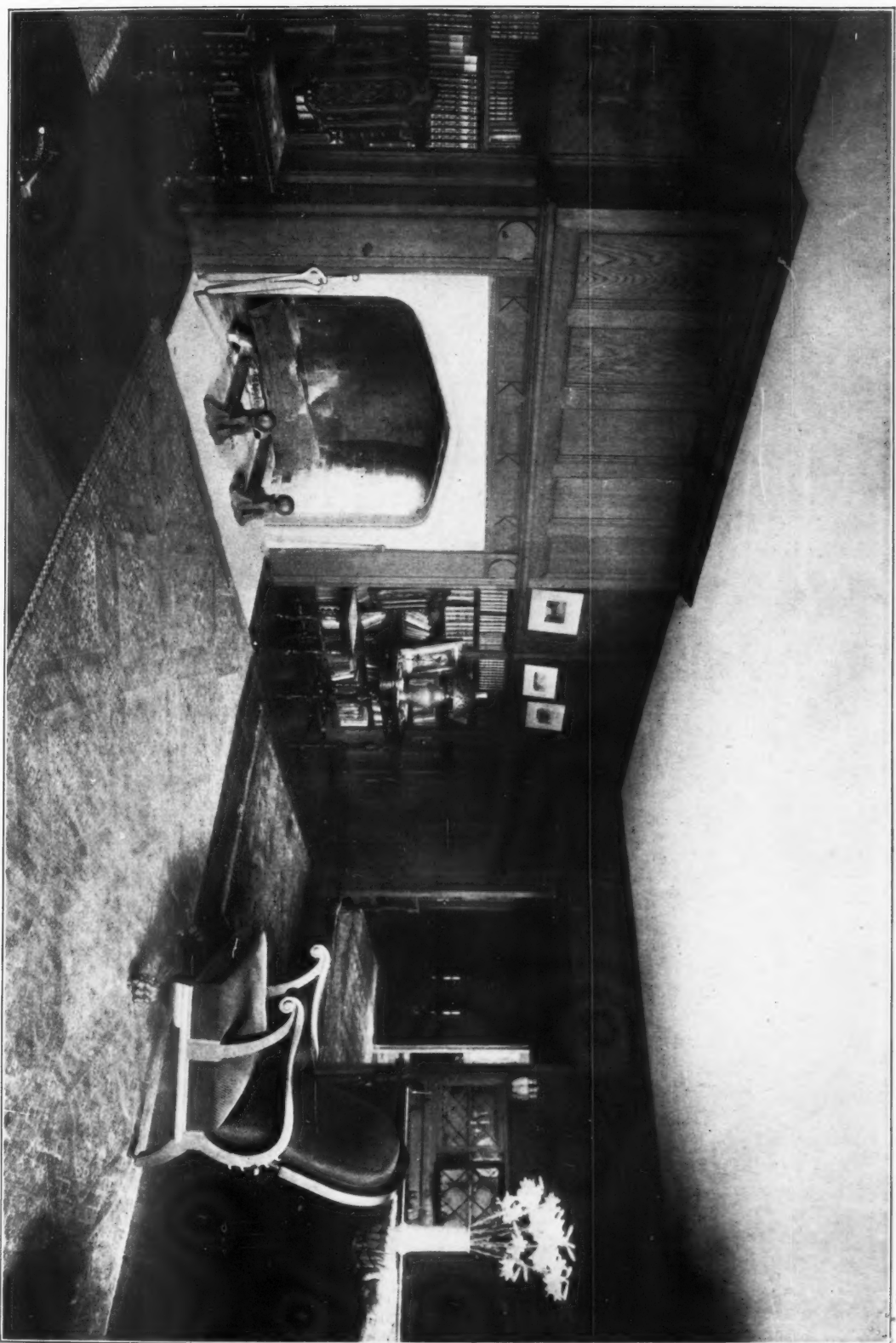
7. 10. 1907



PUBLIC SCHOOL BUILDING, CHICAGO
Dwight Heald Perkins, Architect for the Board of Education

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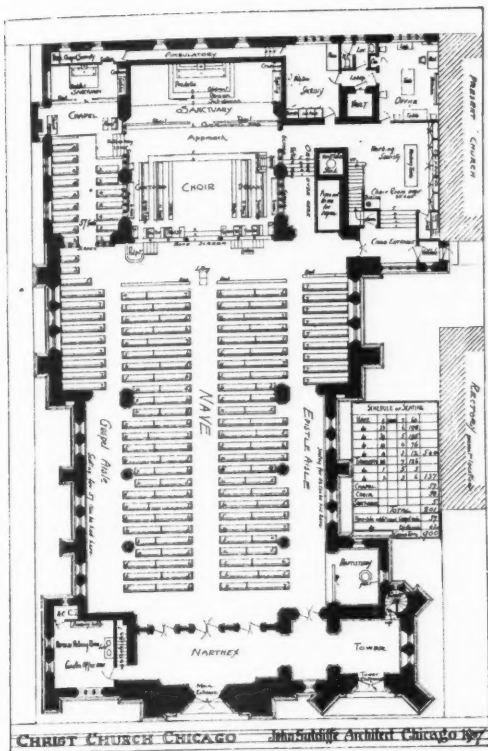
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JULY, 1906

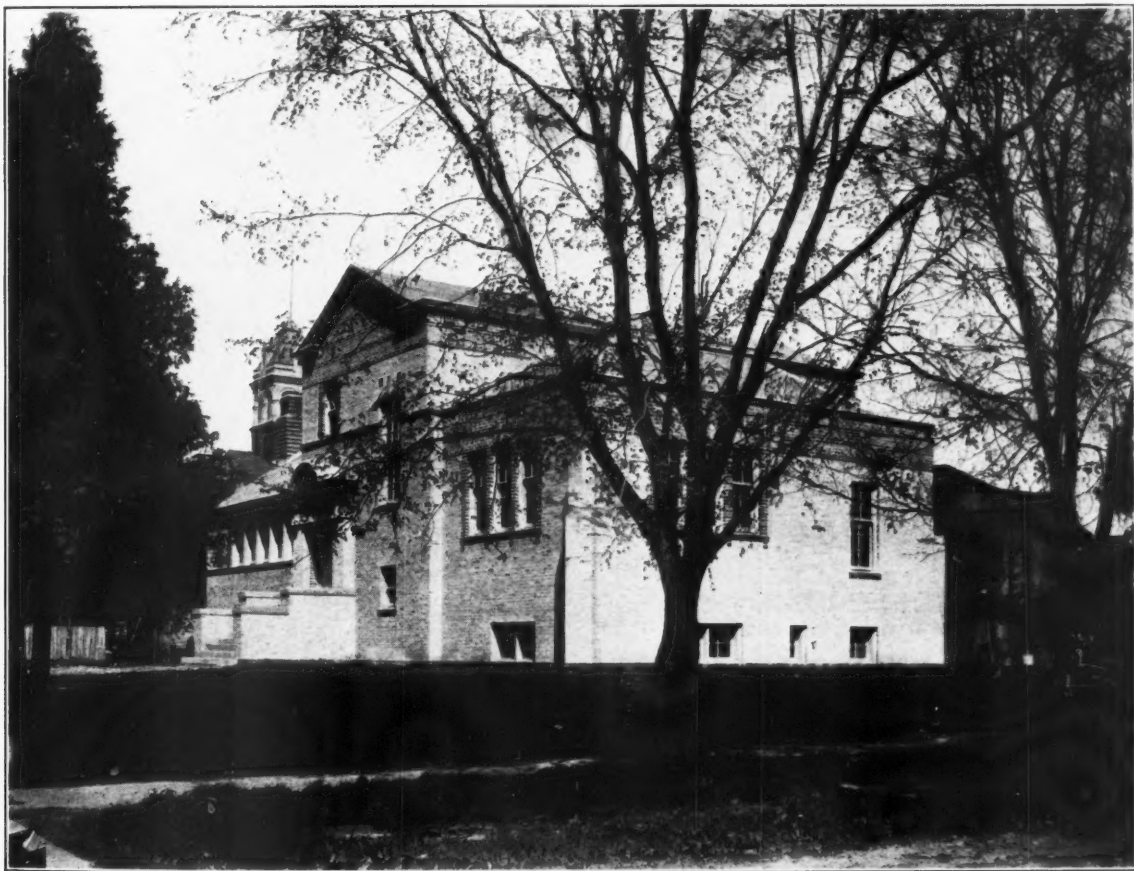
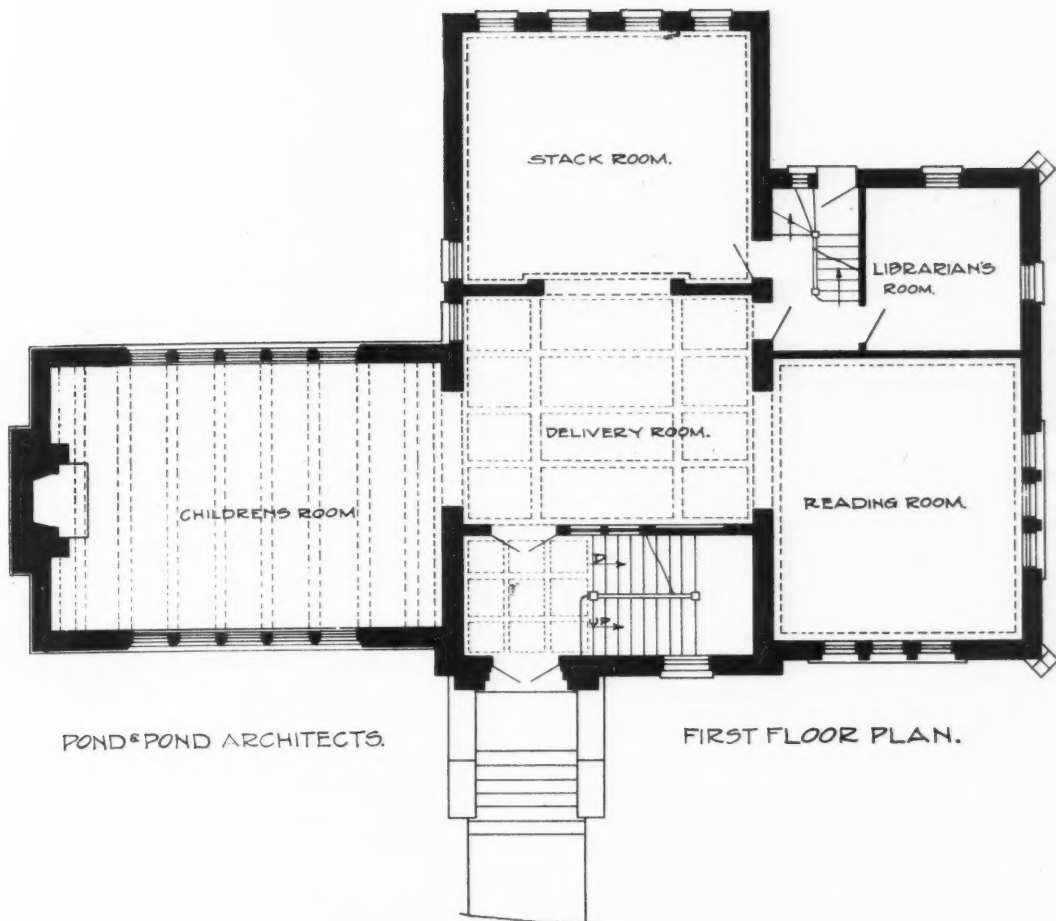
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CHRIST CHURCH, CHICAGO
John Sutcliffe, Architect, Chicago

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ENTRANCE DETAIL, OFFICE BUILDING OF BROWN BROS. MFG. CO., CHICAGO
Hill & Woltersdorf, Architects

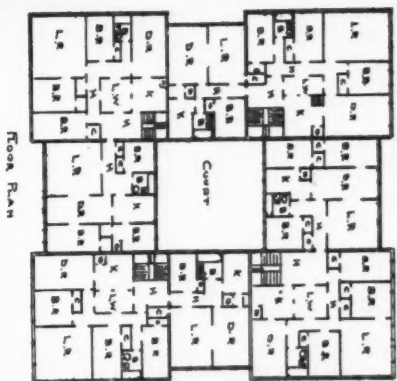
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ADRIAN COURT APARTMENT BUILDING, SEATTLE, WASH.
Stephen A. Jennings, Architect

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JULY, 1906



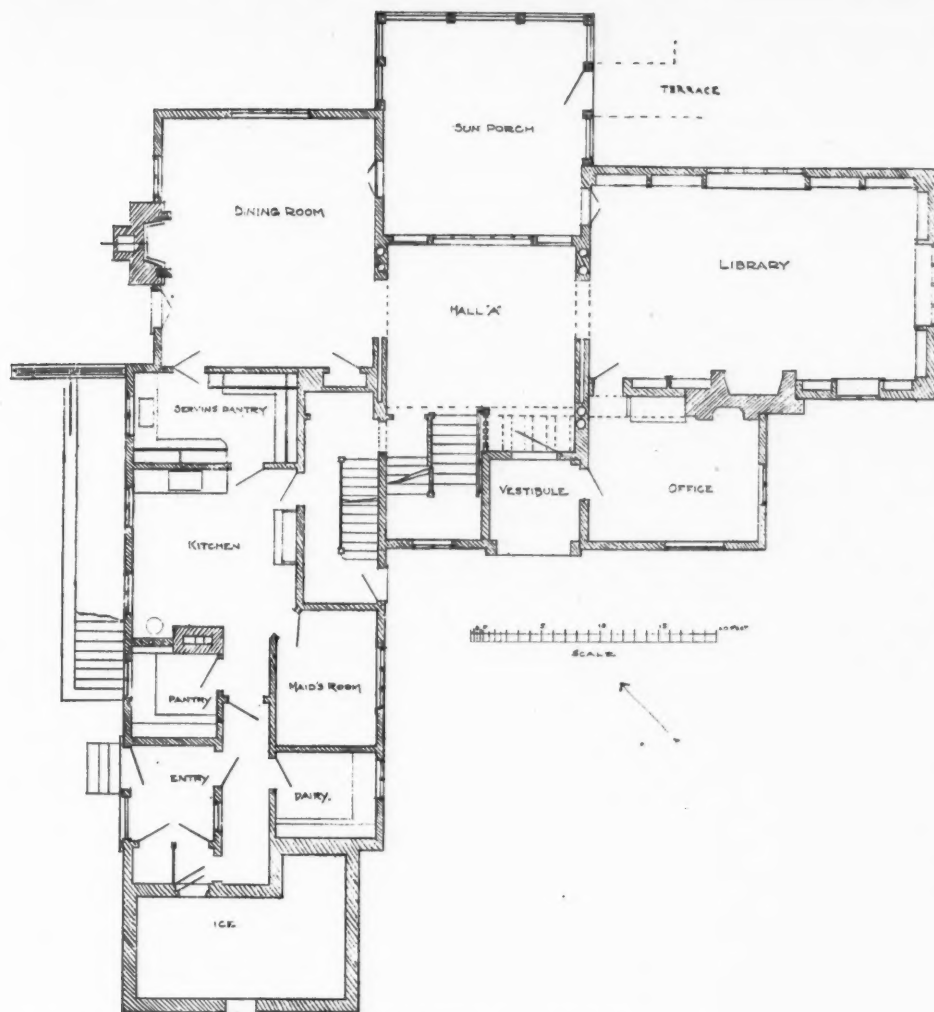
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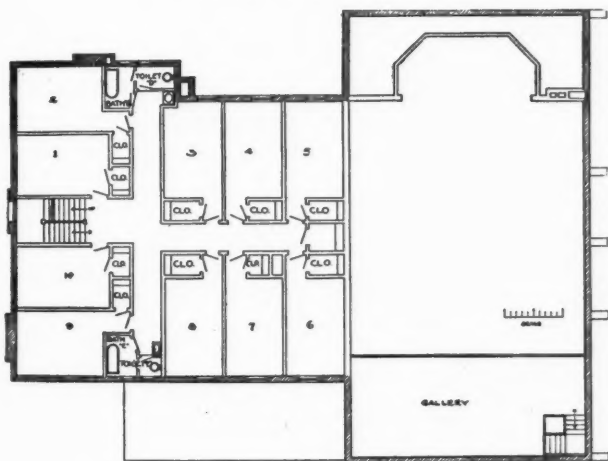
HOUSE OF ALBERT MITCHELL, ROSE HILL, O.
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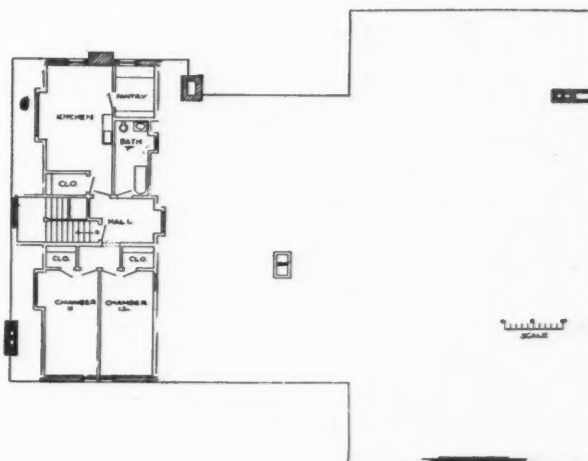
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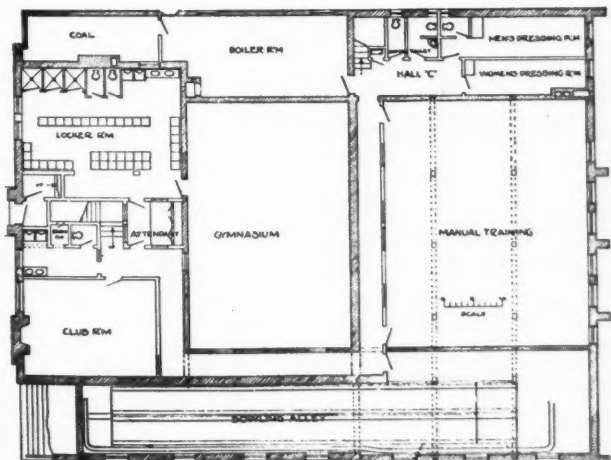
FIRST FLOOR PLAN, RESIDENCE OF W. WOODBRIDGE DICKINSON
Pond & Pond, Architects, Chicago



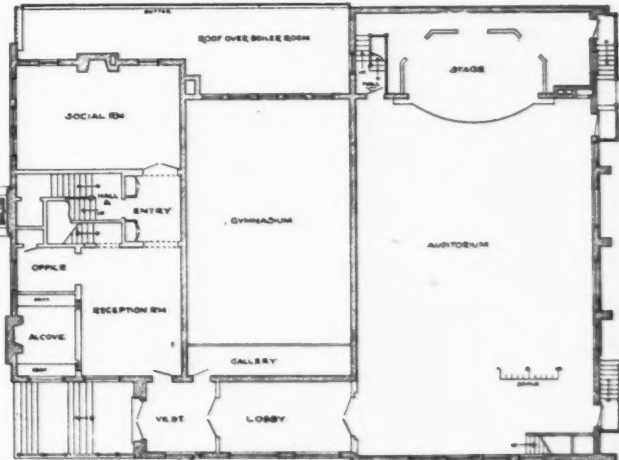
SECOND FLOOR PLAN.



ATTIC PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

FLOOR PLANS, Y. M. C. A. BUILDING, LAKE GENEVA, WIS.
Pond & Pond, Architects, Chicago

22

MANUFACTURING PLANTS*

BY GEORGE M. BRILL, M. W. S. E.

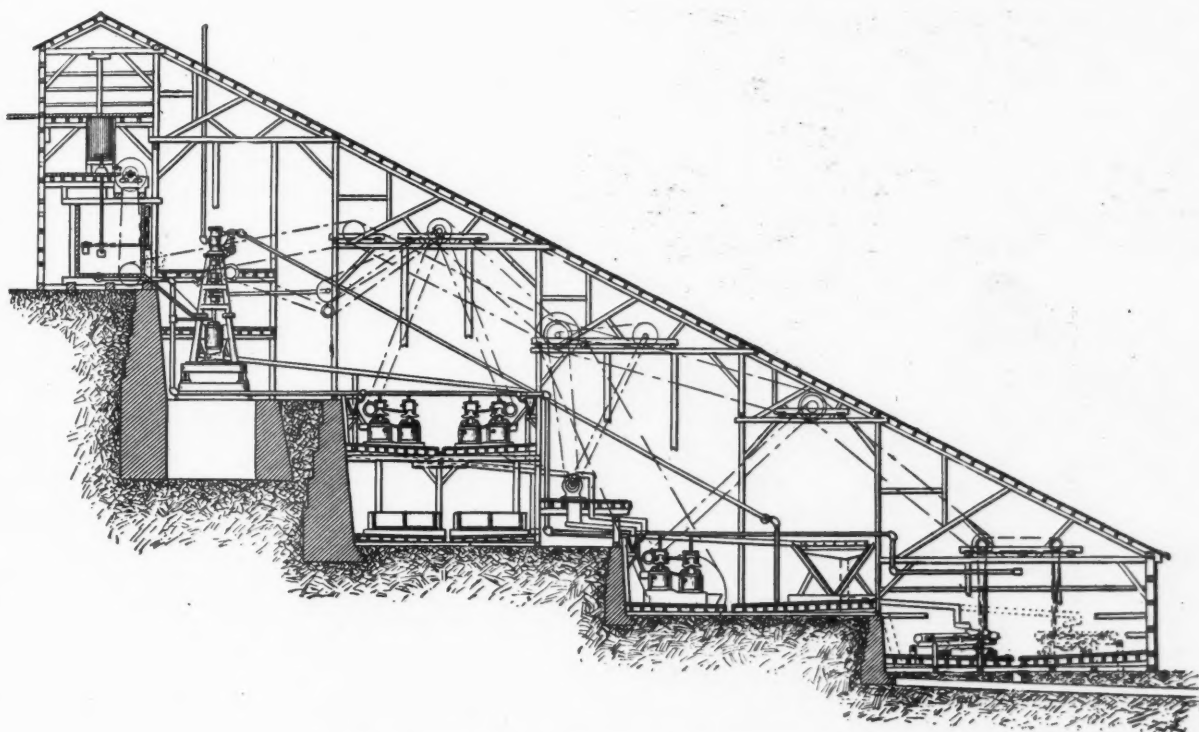


THE subject of manufacturing plants is so broad, complex and diversified that it must not be assumed that all which might be said about the possible combinations of requirements and manner of fulfilling them will be covered in a paper of this kind, or that the applications to any specific case will be exhausted. However, an endeavor will be made to touch upon some of the important features which control in all that pertains to a large variety of manufacturing plants. In taking up the building of a new manufacturing plant the controlling elements and the questions which naturally arise are largely included under the headings of Location, Arrangement and Construction.

For the purpose of this paper these ulterior factors may be disregarded, especially since there are enough legitimate ones which deserve careful consideration in order that the present and future requirements may be met.

It frequently occurs that some sacrifices are necessary in the location, size and character of sites in order to properly meet such fixed conditions as source of raw material and fuel or the necessity for an abundant supply of water. While these have their influence and must be given due weight in connection with all plants in which they form controlling factors, it may be sufficient to simply refer to them here.

The location of a site is governed largely by the amount of land required, its shape and topography, trans-



CONCENTRATING PLANT, SHOWING ADVANTAGES OF SLOPING SITE.

There are many conditions which influence the selection of a site for a manufacturing plant and while the object of this paper is to consider the matter from an engineering and construction standpoint, a word might be said in passing regarding the commercial considerations which frequently have a bearing upon the subject. An endeavor is often made by the real estate man to influence the manufacturer's selection in order to advance his own interests or for the purpose of promoting a town or land scheme, with little regard for the actual requirements or the adaptability of the location, size or facilities. The manufacturer is not unnaturally influenced and perhaps even led to neglect the more important factors by the attractiveness of cheap land or a bonus offered by interested parties. The success of the business depends to a considerable extent, larger than usually appears, upon the fitness of the location and its adaptability to the needs of the business, and the short life of some concerns has been due to the unsuitability of the location and size of the site selected.

portation facilities, the supply of labor and to some extent by the character of the soil.

The amount of land depends upon the size of the plant to be built and the probabilities of future growth. By size of plant is meant the area occupied by the buildings, the necessary or desirable space about them and the yard room required for the storage of raw materials and finished products.

The required shape of a site is controlled by the character of the buildings, their logical relative location, the receiving and shipping requirements and whether they are met by the use of railroads, teams or both and especially by the necessary manner of getting tracks to and about the property to conveniently serve the several needs.

The topography of the land may become an important factor in determining the site best suited for a specific case, especially where the character of the materials and

*Read before the Western Society of Engineers March 4, 1908, and printed in the journal of the society.

the processes employed are such that gravity methods of handling can be advantageously used. Some processes can be performed to the best advantage on one level, but in many cases it is not only convenient but essential to have several ground floor levels. This often arises from the character of the materials treated, methods of handling them, machinery used and the necessity for heavy foundations reaching well into the ground. Sometimes the operations are facilitated by having railroad tracks extend into the buildings at two or more levels.

The transportation facilities involve not only the local receiving and shipping connections, but those desirable on account of the character and sources of raw materials and the centers of distribution and consumption for the finished products. The need of direct water transportation for manufacturing plants is so comparatively infrequent that it can be practically neglected. Where the nature and requirements of the business are such as to make it essential, other naturally influencing conditions

exercised in the original plants it is difficult to make any material changes without interruption to the operations and loss of revenue. The possibility of changing the uses of the building from those for which they are designed should be kept in mind. The use of an old plant as a guide materially assists in determining the space and shape required in the new, emphasizes the good features and helps to avoid the bad ones. In reviewing and studying the general scheme of manufacture, the methods which have been used should be carefully considered, all meritorious features given due weight and an effort made to improve them in the new undertaking. Several general arrangements of plants should be laid out in which the processes can be carried out advantageously. This treatment of the problem will indicate the relative importance of the different departments and how they should be located in relation to each other; it will bring out the means which must be employed in the different arrangements for handling materials in course of manufacture and the effect each scheme may have on the power transmission; it will develop the uses and distribution of water and emphasize the important subject of sewerage and drainage. This study will also bring out the receiving and shipping requirements, the needs for storing raw materials and finished products, the portions of the buildings to be reached by railroad tracks and the most desirable location for the power plant.

If large quantities of water are used, making the problem of waste disposal important, due consideration must be given to the requisite means of handling the drainage without its becoming unduly expensive. Tracts of land available for manufacturing purposes are sometimes located long distances from city sewers or other drainage facilities, or the character of



INTERIOR VIEW OF ONE-STORY BUILDING, SHOWING NATURAL LIGHTING, WITH LANTERN-ROOF CONSTRUCTION.

may have to be compromised. The handling of large amounts of heavy and bulky materials or the use of large quantities of fuel may also tend to fix the general location within narrow limits.

The manner in which the needs for labor will be met is usually determined by the character, number and magnitude of other manufacturing interests located in the same town or in the immediate vicinity. It is not generally found difficult for a new concern locating in any section to procure, within a reasonable time, all the labor necessary, unless the new plant is of large magnitude or the requirements are for skilled labor of an exceptional character. Upon the advent of a new industry there is usually a gradual readjustment of the labor conditions and all ordinary demands are met. The labor problem is a reason for a tendency towards communities of manufacturing interests of the same general character, although of course the labor requirements may not be the only reason for such tendency. In connection with the location of a plant due consideration should be given to the cost of living and the means of cheap transportation between the site proposed and the local centers of population.

Convenient means of extending the buildings is important, for obstructions cause sacrifices of the original or compromises in the future construction. Unless care is

the waste may make it objectionable in sewers or streams into which the sewage ordinarily would be led. There may be a dry refuse for which adequate removal or dumping provisions must be made. One of the common mistakes made in the location of plants is the neglect of these important matters. The power needed and whether or not the general requirements are such that the engines are to be operated condensing should be considered in connection with the water available and its cost. It may become necessary in some lines of manufacture to be governed somewhat in site selection by the necessity for pure air.

Due consideration of all these important matters and a careful comparison of the merits of several possible plant arrangements should lead to the adoption of the most suitable one and help determine the site to be selected.

The arrangement of buildings together with the size and number of stories should be determined largely if not entirely by the manufacturing processes, except where they involve undue fire risks. All methods to be employed for conveying and transporting materials and products should be developed and proper consideration given to any effect they may have on the relative position of the departments and the building construction. If the nature of the products is such that the raw materials can be carried to the top floor of a building several stories in height and then in general be worked towards the ground floor, as the sev-

eral processes are completed, the tendency would naturally be towards a building of that character. To handle goods in course of manufacture in this manner involves the use of elevators, chutes and conveyors in some of the wide variety of types made, and the adaptability of this apparatus permits of a large range of materials and products being satisfactorily and economically handled. However, in many cases, the parts in process and the products are so cumbersome or heavy and involve so many operations in their production that it is not practicable to handle them in this manner and this would tend towards the use of one-story buildings. When the parts are small and handled in large quantities, the shape and arrangement of the building or buildings may have little influence on the economy of the operations. If but one line of goods is produced and the raw materials and parts are such that they are carried along together, a rectangular building may serve the purpose quite as well as one of more complicated shape. It sometimes occurs that an article or machine forming one of the products is assembled in one place by bringing together parts produced in many portions of the plant, when other than rectangular buildings may be more suitable. Such shapes should be considered as indicated by the forms below. These show various evolutions in shapes.

By the use of such forms, materials and parts may

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travel from two or more directions and pass through the respective processes on their way towards final assembling, or several lines of goods can be made and without interference brought to a common point for storage and shipping. At the same time, with these forms of structures sufficient space can be provided between and about the several parts so that each will be accessible to track and yard facilities and readily provided with natural light. With the original construction properly located on the site these forms can be extended and departments readily added.

It often happens that a group of several detached buildings may best serve the purpose. This may be emphasized by the size of the plant or the manufacture and storage of parts in large quantities before assembling. Especially is this true if, because of the sizes and character of these parts, they can be stored in an open or covered yard as well as to use more valuable space in the plant proper where they might form obstructions in the movement of the materials.

To determine the best form and arrangement of buildings, the logical method of procedure is to decide upon the space to be allotted to each department and their correlation and to consider the several processes, the character of the materials, the sizes of parts, the amount and nature of the work to be done and the requirement for light. This will indicate the best unit, width of buildings and, with this fixed, the total length which will result by the use of one, two or more stories will be shown. The relation of the several steps in the process of manufacture will determine where the different departments should be located and thus to a large extent make clear the number of stories

which will most naturally meet the manufacturing requirements.

The ground area covered is directly dependent upon the number of stories for a given total floor space, therefore the relative merits of two or more available sites, with areas differing enough to influence the building arrangements, should be weighed against those of buildings constructed with various numbers of stories. Not only the areas of available sites, but their unit costs might influence the height of the buildings and the shape of the plat may also modify the form of the buildings. To get the most efficient results it is essential to have land of sufficient quantity and of such shape that the building arrangements need not be compromised and thus leave the designer free to adopt such forms and heights as may best suit the processes and space requirements.

If several kinds of raw materials are received on cars in sufficient amounts to make it necessary or desirable to reach different portions of the plant with tracks, due attention should be given to the manner of bringing them onto the premises and of reaching the objective points—shipping and receiving—in such a way that the tracks will not be objectionable or interfere with such other means of outside communication between the buildings as surface and overhead tramways, runways, etc.

If a unit width of not to exceed 60 feet is adopted for buildings two or more stories high, natural light can be obtained suitable for most manufacturing operations. Where a portion of them require exceptional natural light they can usually be performed on the top floor of buildings, when, by the use of a saw-tooth roof, the best lighting conditions will result. Where all the operations require light of exceptional quality, it may become necessary to resort to one-story buildings covered entirely with saw-tooth roofs,



VIEW OF COMPLETED CONCRETE BUILDING.

although a good lantern design adequately meets all but the most exacting needs.

Considering the same general character of construction and a given amount of space, buildings of one story are generally somewhat more expensive than those of a greater number. This is emphasized if the value of land is taken into account. Eliminating all variable features as roofs and foundations whether the building is one or more stories and a unit area of roof costs no more when covering several stories than when covering one.

(To be Continued.)

THE ORGAN ARCHITECTURALLY CONSIDERED

BY GEORGE ASHDOWN AUDSLEY, LL. D., ARCHITECT



HAVING, in a very brief manner, touched upon the more important matters connected with the position and accommodation of the organ in churches, it is desirable that a few words be now said respecting the most convenient position of the clavier or console, and, accordingly, the position of the organist with respect to the choir. Custom, ruled to a great extent by the question of cost, and also by matters of mechanical construction, has favored, in the large majority of instances, the attaching of the clavier directly to the front of the organ. In the first place, this position compels the organist to sit so close to the organ that he cannot possibly hear properly the tonal effects he is producing, and, in the second place, it compels him to turn his back to his choir. This close and direct position of the clavier has, accordingly, nothing to recommend it from an artistic point of view, and still less from a musical one.

An able writer on this question, and an architect—one of the very few in the profession who has considered the organ worthy of serious consideration—makes the following propositions, in alluding to “the ideal position for the organist:”

- “1. That he should hear his choir well.
- “2. That he should hear his organ well.
- “3. That he should be able to see the choir well, and also see the clergy who may be serving at the altar.
- “4. That he may hear the congregation at least fairly well.
- “5. That he shall have a tolerable sight of the nave of the church, and thus be able to keep his eye on processions or other functions taking place therein.”

The writer adds: “Where all these combinations are to be found I do not know. In a parish church [Protestant Episcopal] of good size they would be difficult of accomplishment. They are not often approached in a church of the first magnitude.”

While it is only in connection with certain churches—notably Roman Catholic and Protestant Episcopal (High)—that all the above conditions call for careful consideration, there can be no question in connection with churches of every denomination respecting the desirability, if not the absolute necessity of so placing the console, containing the manual and pedal clavier, etc., that the organist seated thereat can hear the organ properly, and both hear and see his choir well, and, in turn, be seen by it. The church architect should, therefore, in planning accommodation for a choir, be careful to provide a favorable position for the console both with respect to the organ and the seats of the singers.

As we have said elsewhere, it is impossible to give a rule of universal application for the position of the console and organist, simply because the size, form, and internal arrangement, of churches vary greatly; but the conditions just given will serve as guides, and are deserving of very careful consideration by church architects and musical authorities, in the planning of new churches or the rearrangement of those already built.

Although, in the preceding articles, allusion has been made to the organ in the concert-room, it is, perhaps, desirable, before leaving all matters connected with the proper

placing of the “King of Instruments” in buildings, to add a few words respecting its position and accommodation in concert-rooms or music halls. The time is fast approaching, we feel assured, when the importance of public concert-rooms, furnished with a grand organ, will be widely recognized in this country, just as it has long been in England, notably by the corporations of the principal cities and towns.

It is of the greatest importance that in designing a concert-room the architect should give great attention to the requirements of the organ which is to be placed therein, and if he is not qualified to decide all details himself, all matters of size and disposition of parts should be discussed with the prospective organ builder, before the concert-room is proceeded with. We have seen, with respect to the church organ, that there are several conditions which attend the satisfactory placing of an organ in a church, and conditions of a similar nature obtain in connection with the correct location of an organ in a concert-room. There is certainly less diversity of opinion anent the proper position for the concert-room organ; and less difficulty, under ordinary circumstances, of properly providing for its accommodation, accordingly there is little or no excuse for the architect when he fails to make adequate provision for its reception. Great blunders have been made by architects in the past; and unless they take more interest in the organ and its proper accommodation than they appear to do at present, more mistakes will be made in the future. We unhesitatingly say that nothing in the form of a confined chamber should ever be constructed for a concert-room organ, on any sound-producing part thereof. As the instrument is required for solo performances or recitals, and alone, or in conjunction with the orchestra, for the accompaniment of the more important choral works, its voice, throughout all its departments, should be perfectly free and unobstructed, and every tonal effect and refined *nuance* it is capable of producing should be heard with distinctness and at its true value.

The proper position for the organ is above and in the rear of the orchestra tiers and chorus seats, but there it should not be unduly elevated, so as to place any of the more delicate portions of its pipe-work in the higher stratum of super-heated air. The correct method is to keep all the manual divisions of the instrument on one level, and that as low as practicable under controlling circumstances, and to spread the instrument laterally, with the view of giving all divisions a minimum depth, and placing no one behind another. Beyond the external screen or case-work, with its mounted or displayed pipes, the several divisions should have no obstruction to the free flow of the sound in front of them. Under no conditions should the organ be divided, so as to locate its different tonal divisions on the left and right of the orchestra. The effect produced by a divided organ is most objectionable in solo music, and most disturbing when used with the orchestra and chorus.

In connection with a properly planned concert-room there will be no difficulty in providing a convenient place for the wind-collecting and distributing portions of the organ.

(To be continued.)

POLYCHROMATIC EXTERIOR GLAZE DECORATION*

BY HERMAN A. PLUSCH, M. SC.



ALL who are interested in architecture and the ceramic arts are familiar with the growth and development of glaze decoration. The porcelain tower at Nankin, built 833 B. C., was one of the best examples of exterior polychromatic glaze decoration. The Assyrians, Egyptians, Italians, and Spaniards have all left many beautiful examples of what has been done with colored glazes applied to building exteriors and interiors—some of them date back to 3000 B. C.

The glazes mostly used by the Ancients and during Mediaeval times were the transparent lead, and in some cases—as in Lucca Della Robbia's work—the opaque tin enamels. The best examples of polychromatic glaze work are to be found in the Mediterranean countries. The clear air, colored skies and changing waters furnished inspiration for the early ceramists and they have handed down to posterity records of color which will neither fade away nor be destroyed by the ravages of time.

The Greeks, not satisfied with monochrome for their beautiful marble temples and public buildings, embellished them with various colored paints—it almost seems a sacrilege to us; but what was the effect? They have stood the architectural criticism of centuries, and are now being reproduced in more durable material.

Terra cotta modeled in every conceivable design, glazed with every known color and texture, is within the reach of every architect, and there is no reason why, with all of our advanced methods of manufacture and the discovery of the lost arts of glazing, more monuments of architectural beauty, such as the Academy of Music in Brooklyn, will not be erected.

This building of Byzantine architecture, modeled in high relief and glazed in oriental tones, covers a city block. While the glaze color treatment on this building has been criticised by some, this is no reason why polychromatic glazed exteriors should be condemned. Those who criticise this sort of work, with an idea toward condemning it, stand in the way of architectural and ceramic progress—and incidentally in their own light. This is the only means of beautifying our cities with a sanitary, fire-proof and weather-proof material.

The pyramids are crumbling and the hieroglyphics are being lost while the history of the world and religion remain for us intact on records of burnt clay.

Now a word in more detail concerning polychromatic exterior glaze decoration in its present state of development as found in the United States. Most of the examples of this work are to be found in the Eastern States. The Parkhurst church in New York was the first large polychromatic exterior to be used in that city. This building is scarcely five years old. The color scheme on it while attempted in a very conservative manner is nevertheless good; that one must approach the building very closely to get the beautiful effect of green and old-gold in combination. Deep blues, yellows and creams melt

into each other and on the whole produce a very quiet, sombre, and still refined effect.

Go across to Brooklyn and look at the St. Ambrose church and see bright blues, greens, yellows, reds, siennas and white used with less conservatism. Is the effect any less attractive? The synagogue in Pittsburgh in yellow, green and blue and with its colored dome is a gem of architectural beauty in the residential section of that city. The Elephant House now being erected in the Bronx Park will be a revelation in glazed exteriors with its shaded old-gold and deep green, its various blues and creams. The whole effect will be oriental in the extreme and in keeping with the purpose and surroundings of the building.

Much more could be written on the artistic value of glazed polychromatic exteriors, but this article would not be complete without a word regarding the architectural and commercial value of the same. Clay, yielding itself to the hand of the modeler, is easily made to express the feeling of the human mind; combine with this advantage the ease of securing a sanitary, weather and fire resisting material—to cover and protect such modeling—selected with a view toward producing the best color values, and we have a building material unsurpassed by anything ever at the disposal of the ancients. Our present day terra cotta is structurally efficient, and our glazes defy the severe mechanical stresses exerted upon them, the physical action of heat and cold, and the chemical action of our atmosphere.

With such durable materials at hand the reputation of the architect who successfully employs colored glazes for exteriors will be assured and lasting. Glaze composition, texture, and the degree of fusibility are very vital points which need consideration in connection with exterior work. The soft, porous and heavily applied mat glazes, so desirable for interior decoration must not be considered for exteriors, hard glazes, and those well incorporated with the body are essential, not necessarily lustrous glazes, although they present some advantages.

Tone must also be carefully handled—while the material for interior work changes very little in tone after being placed, exteriors must necessarily become softened by time—consequently a structure when erected in soft tones when aged will not produce the desired effect; whereas, the more or less aggressive color scheme will eventually tone down to what was originally intended.

It behooves us to use our best judgment in expressing our opinions on these attempts at old world restorations in our new country, and judging from the successful attempts made in this last decade the employment of colored glazes on building exteriors has a future of interest to all, especially to the lover of architecture, the architect and the ceramist.

As a progressive race we have adopted that which is best in old world culture, science, art, literature, and music. We have also adopted a great deal of old world architecture. Now come polychromatic glazed exteriors to be developed in accordance with the American taste and by American architects and ceramists.

*Reprinted by permission from the Ceramic Studio.

IDEAL SYSTEM OF EDUCATION*

BY CHARLES H. MORSE, Secretary and Executive Officer, Massachusetts Commission of Industrial Education



THE subject which we are considering today—"The True Ideal of a Public School System that Aims to Benefit All"—is one in which, in its broadest sense, Massachusetts is at the present time intensely interested. I say in its broadest sense because I believe that the spirit in which the subject was selected meant the "Public School System" to include all that instruction which is offered at public expense.

In reaching—perhaps I may almost say groping—after the ideal system of public education, we have, during the past three decades, successively added to our school system the kindergarten, the manual training and the commercial schools. These, with the exception of the last, have been cultural developments, and even the commercial instruction as given in our high schools may be included in a term almost as comprehensive and widely applicable as the word "cultural."

But even with these additions we still find our free school system so far from being ideal that it sends out into the world at about the age of fourteen years, five-sixths of those whom it is intended to benefit without giving them a proper sense of life's possibilities or what lies before them in life—to say nothing of a lack of training which will enable them to easily enter upon lines of productive work.

Do you as educators, do you as parents, realize how completely our present educational system shuts out—and our educators lose sight of—those who drop out of school between the ages of 12 and 16, the majority of whom join the army of untrained hand workers, usually in unskilled industries?

It is not an ideal free school system which does not guide the youth in the selection of his life's work, and those who are to leave school near the legal limit of school attendance should receive special attention by their teacher. The free school should at least give the future hand workers such a preparation that they make the most of life's opportunities. That this can be done best in an independent industrial school supported at public expense I have no doubt.

THE PUPIL.

It cannot be too strongly stated that the average pupil who goes to recruit the ranks of the hand-workers merely drifts along almost aimlessly, and is not guided as he should be. It is the exception that such a child has a definite object and ambition aroused during his school years. The cause of this state of affairs is to be found both in the home and the school. In the average home the specific future of the child is not dwelt upon—except to impress upon him that he must soon help to support the family. But no objective goal is constantly held up to the child to the end that he may ever be on the alert to avail himself of every opportunity to prepare for his life's work. Even those who enter the high school are too frequently purposeless in their aims—in fact, have no aims.

The majority who do not enter the secondary school deserve special consideration, and it is this class to which I desire to call specially your attention.

I consider that the elementary public schools can perform a valuable service to those pupils who should enter trades or who leave school at an early age by directing their attention to local industries.

I will select a textile mill town as an example of what may be done by the public schools to assist pupils to inform themselves regarding the work of and to take an interest in the chief industry of the town. The teachers should be urged to study local conditions. They should study the mills and the textile industry of their town and become familiar with their history. Textile museums should be established in the public schools, stories should be written on technical subjects relating to textile manufacture, the history of weaving should be taught and a study made of the fibres used in the manufacture of textile goods. The coöperation of manufacturers should be secured by asking the use of their files of textile journals and such technical books on the industry as they have available in their offices. The coöperation should also be obtained of the public libraries in the purchase of books dealing with textile questions.

There is such a misconception regarding the true function of the various schools for the training of the hand that before going further I wish to say a few words on this point. A careful differentiation should be made between the manual training school, the trade school and the industrial school. The manual training school has a cultural motive. Many trade schools have been established for the purpose of developing manipulative skill only. The industrial school should combine the main purpose of both the trade school and the manual training school, and give a thorough training in the process of the trade, and such subjects as mathematics, but related to shop problems; drawing, as relating to the trade; the chemistry and physics of the trade, and such other subjects as may be specially of value in any particular trade. Civics should also be treated of.

There are in Massachusetts 25,000 boys and girls between the ages of 14 and 16 years, who are not in school, and are not in a line of work which it would be best for them to follow in life. They are going out into the working world and in almost every case accepting positions in juvenile employment.

In our present school system we take the boy and assume that what is good enough in the way of training for the boy who is going to college is good enough for the boy who is going to work. The result is that the very large number who must go to work when they become 14 to 15 years of age, are driven away from the trades; they have been educated away from the trades rather than toward the trades.

The boy in Massachusetts today goes out to attempt to learn a trade at 14 years of age the manufacturer says: "I do not want him in my factory." And he will not take him into his factory except in a position where he is simply an errand boy, and even in those places many of the manufacturers say they do not want the boy. Now that boy between the ages of 14 and 16, when he is not wanted in the industries, ought to be in school.

(To be continued.)

*Address by Charles H. Morse, Secretary and Executive Officer, Massachusetts Commission on Industrial Education, delivered before the Convention of the National Society for the Promotion of Industrial Education, Chicago, January 25, 1908.

OUR ILLUSTRATIONS.

Christ Church, Chicago, John Sutcliffe, Architect.

House, Cincinnati, Ohio, Werner & Adkins, Architects.

House of Albert Mitchell, Rose Hill, Ohio, Tietig & Lee, Architects.

Y. M. C. A. Building, Lake Geneva, Wis., Pond & Pond, Architects, Chicago.

Public School, Chicago, Dwight Heald Perkins, Architect for Board of Education.

National Bank of Commerce, Kansas City, Mo., Jarvis Hunt, Architect, Chicago.

The architects of the Union Station, Seattle, Wash., published in the June number, were Reed & Stem; of the Y. M. C. A., the architect was James Stephen.

Public Library, Oregon, Ill., Pond & Pond, Architects, Chicago. The body is in a vitreous cream white brick, with frieze and gables of gray pressed brick. Ornamental bands and window trim in pattern are of red purple black and gray; green slate roof. The special features of the plan are a men's club room in basement and a picture gallery on the second floor. The stack room runs through two stories. The design is a sparkling color composition and far removed from the conventional Carnegie library type.

Office Building for Brown Bros. Mfg. Co., Chicago, Hill & Woltersdorf, Architects. This little building abuts the ornamental iron and bronze foundry of this company. The first story is devoted to general and private offices and the north exposure facing the foundry yard is given over to the drafting room. In the second story, the modelers have space with north and top light. The door-piece and ornament at the top below the stone course are of cast iron, it being thought the most suitable material for the decoration of a building housing such a concern.

Residence of W. Woodbridge Dickinson, Hadleigh Hill Farm, near St. Joseph, Mich., Pond & Pond, Architects, Chicago. Three exterior views and the library, stairway, dining room, hall and sun porch are shown. The house is situated on a beautiful plateau overlooking the fertile valley of the St. Joseph river and commanding a view of the picturesque hills beyond. The exterior is rough cast with soft brown wood trim, set off by massive brick chimneys of a purplish red cast. A formal garden on the crest of a high wooded bluff and numerous farm buildings in harmony with the house make up with the house the completed composition. The screened porch and windows command nearer views as well as the winding St. Joseph river.

Adrian Court Apartment House, Seattle, Wash., S. A. Jennings, Architect. The building is of reinforced concrete construction. It covers an area of 111x112 feet, with a central court 35 feet square, covered with a skylight raised about three feet from the roof. This three-foot wall is pierced with innumerable large louvres, creating an excellent ventilation at all times. The outside walls are 10 inches thick, plastered two coats and blocked off in ashlers, alternately, 6 and 12 inches. The cornice is of concrete, 2 inches thick, projecting over 38 inches, thus making the building imperishable. The inside walls are 6 inches, dividing the building into eight fireproof compartments. The entrance and porch are tiled. A reception room is on the right of the entrance, the office being on the left.

Office Building and Warehouses of Joseph T. Ryerson & Son, Chicago, Howard Van Doren Shaw, Architect. These iron and steel warehouses, claimed to be the largest in the world, extend from Fifteenth place to Eighteenth street and from Rockwell st. to Campbell ave. Exclusive of floors devoted to office, etc., there are 675,000 square feet of floor space. The enclosing walls and those of the main building are of red paving brick set with red mortar. The trimmings are of red terra cotta and Bedford stone. The frames of the buildings are of steel construction; the floors are of reinforced concrete. The general offices are on the top floor of the main building. They are abundantly lighted by saw tooth skylights. No windows are allowed to be opened for ventilation which is by the mechanical system. The other roofs are covered with large size red cement tiles. The main building is three stories high, but

there are five floors in all, as two of the stories have mezzanine floors. Much space is devoted to the convenience and comfort of the clerical staff and the officials. There is a lunch room and a smoking room on the second floor, and a dining, kitchen, smoking room and bath on the fourth floor. The fifth floor, two acres in extent, is devoted to the general offices. These are divided by low railings and counters which allow full view of all departments. The woodwork of the divisions, as well as the desks and office furniture throughout, are of special design in quarter-sawed fumed oak. Every facility is provided for the economical handling of the heavy loads of which the stock consists. Switching tracks are laid in the warehouses from the various railroads which allow the use of forty-nine cars at one time. There are installed in these buildings sixteen high speed traveling cranes, each of from ten to twenty tons capacity and 100-foot span, also over twenty smaller cranes and electric hoists, varying in capacity from one to five tons. There is in operation the heaviest machinery manufactured for the handling, cutting and other simple fabrication of steel. Among these are three high-speed friction saws, each of which has a capacity to cut a 24-inch, 100-pound beam, which is the heaviest section rolled, in from thirteen to twenty seconds. These saws are fed by motor driven roller tables so that every bit of the handling of material is done away with. There are also installed four guillotine plate shears, one of which weighs 260,000 pounds, and has a capacity of cutting twelve feet of 2-inch steel at one stroke. All the power for these extremely heavy operations is electric. The Ryerson plant is the most modern conception of architecture and engineering applied to a great warehouse.

NEW PUBLICATIONS.

SLOW BURNING OR MILL CONSTRUCTION. Revised Edition. Issued by the Boston Manufacturers' Mutual Fire Insurance Co.

In the advancement of the science of fire protection engineering, in which this company, under the guidance of the late Edward Atkinson as president, has always taken such a prominent part, it has been found advisable to revise and enlarge the treatise of the Insurance Experiment Station on the subject of "Slow Burning or Mill Construction." The advantages of placing this information before representatives of new or proposed establishments is, of course, evident, as oftentimes much can be done in planning a building to reduce fire hazard and do away with conditions which render severe damage and even loss of life probable. It has long been the practice of this company to give their members, without charge, information on any point which can rightly come under their supervision, and to offer for consultation the services of experts who are familiar with the various hazards common in industrial plants. The new edition of report No. 5, which has been revised and enlarged and contains a large amount of matter, will be found of service to those connected with industrial undertakings at a nominal price, which is much less than the cost of publication, the idea being to limit requests for it simply to those who can make use of it to good advantage and will therefore value it.

THE STRENGTH OF CONCRETE BEAMS. Results of Tests of 108 Beams (First Series). Made at the Structural-Materials Testing Laboratories. By Richard L. Humphrey. Issued by the Department of the Interior, United States Geological Survey, George Otis Smith, Director. Bulletin 344.

At the Structural Materials Laboratories of the United States Geological Survey in St. Louis, Mo., a series of important tests on the strength of plain concrete beams has just been completed. These tests form part of a comprehensive series of investigations undertaken by the government for the purpose of determining the strength of concrete and reinforced concrete. The work involved in these investigations consists of a study (1) of the constituent materials of concrete, (2) of its strength when molded into various structural shapes, and (3) of the methods by which its maximum strength may be developed through various forms of metallic reinforcement. Although it is true that concrete possesses but little strength in tension and must be re-enforced with metal to resist tensile stresses, it is believed that no study of concrete would be com-

plete without a series of tests establishing its strength without re-enforcement. The tests reported indicate that concrete is unsuitable for use under conditions where it must resist tensile stresses, because of the small loads it will sustain and particularly because of the suddenness with which it fails, in striking contrast to the behavior of re-enforced concrete, which usually shows a gradual development of cracks preceding failure.

THE ARCHITECTURAL ANNUAL, 1907. Published by the Architectural League of America. M. A. Vinson, Manager of Sales, Caxton Building, Cleveland.

The distinctive features of this 1907 Annual are the grouping by itself of the work of each city represented by the League, and the letter press contributions that alternate with the illustrations throughout the book. Besides views and details of buildings much interest is added to the illustrations by the publication of portraits of the presidents of the clubs composing the League. The architectural selections for the illustration pages are suggestive of the best class of work of the cities represented, both of buildings of magnitude and of residences. A few titles of the subjects will indicate the wide range covered by the contributions. These merit respect from the standing of the authors. "Civic Improvement in Toronto," by President J. P. Hynes; "Architectural Education," by Eden Smith, president of Toronto Club; "The Architectural Club as a Factor in the Community," by H. V. von Holst, president of Chicago Architectural Club; "Truisms and Cynicisms," by F. G. Corser; "Mural Painting," by W. B. Van Ingen; "Success in the Practice of Architecture," by Albert Kahn; "Egotism Among Architects," by Abram Garfield; "The City Parish," by John T. Comes; "Public School Buildings of St. Louis," by W. B. Itner; "Concrete Forms and Surfaces," by F. P. Sullivan; "Imagination and Reverie," by Spencer Roberts. The design for the cover of the Annual was secured through a competition in which thirty designs were submitted. It is not often that so valuable a collection of articles and illustrations of architecture is found in one volume. The sale of the Annual has been large and only a limited number of copies remain.

BULLETIN No. 20, TESTS OF CONCRETE AND REINFORCED COLUMNS.

By Prof. Arthur N. Talbot. Issued by the University of Illinois Engineering Experiment Station.

The University of Illinois Engineering Experiment Station has recently issued Bulletin No. 20, Tests of Concrete and Reinforced Concrete Columns, Series of 1907, by Prof. Arthur N. Talbot. This bulletin records experiments upon concrete and reinforced concrete columns, which have already become quite notable and which will have a marked influence in fixing the standing of certain types of construction. A feature of reinforced concrete in which engineers and architects are much interested is the column having the concrete hooped or bound with steel bands or spirals. Tests on this form of column reported from France and Germany indicate great strength, but the results have not been considered conclusive and many questions have been raised concerning its applicability to general construction. Engineers have wanted to know more of the action of this new combination of material. The tests here reported will, therefore, be welcomed by the engineering profession. One of the leading engineering journals in commenting on the importance of the results of these tests states that they bear on

nearly every phase of importance of reinforced concrete columns. The tests go to show that in hooped columns the steel hooping does not come into action to any great extent before a load equivalent to the ultimate strength of plain concrete, or a little below, is reached, and that up to this point the action of the column is very like one of plain concrete. Beyond this load the column shortens rapidly and the deformation becomes very marked. The extreme amount of shortening is a great disadvantage. The amount of strength added by the hooping before ultimate failure is reached, is two to three times as much as the effect of an equal amount of longitudinal reinforcement. A discussion of the French and German experiments is made, and observations on Poisson's ratio and data on the phenomena accompanying tests of plain concrete columns are given. The work of Professor Talbot in reinforced concrete is well known, and this investigation is a further evidence of the importance of the work of the Engineering Experiment Station. The bulletin contains sixty pages. Copies of this bulletin may be obtained gratis upon application to the Director, Engineering Experiment Station, Urbana, Ill.

ASSOCIATION NOTES.

OKLAHOMA STATE ASSOCIATION OF ARCHITECTS.

J. J. Walsh, of McAlester, was elected president and W. M. Fowler of Oklahoma City secretary of the State Association of Architects at the annual meeting. The next meeting will be held in Guthrie in January, when the association as a body will go before the legislature and champion a bill prepared and to be introduced at the opening of the legislature, governing the practice of architecture in Oklahoma.

COLUMBUS (OHIO) ASSOCIATION.

For the first time the architects of Columbus gathered together recently at what they propose shall be the first of a series of annual dinners. A. M. Allen acted as toastmaster and F. L. Packard, George H. Bulford and J. N. Bradford responded to toasts. At the conclusion of the banquet the following officers were elected: F. L. Packard, president; G. H. Bulford, vice-president; F. W. Elliott, secretary-treasurer; A. M. Allen, C. W. Bellows, J. N. Bradford, E. E. Pruitt, directors.

THE ARCHITECTURAL LEAGUE OF AMERICA.

The executive board of the Architectural League of America is desirous of obtaining designs for a seal to be used in connection with the letter press of the League. There shall be a first prize of twenty-five dollars (\$25.00), and a second prize of ten dollars (\$10.00). These prizes shall be awarded to the designs placed first and second by the committee, which is to be selected by the members of the League in convention at Detroit. Drawings: Drawings are to be made on bristol board in India ink line. The actual size of the drawing to be between 2½ inches and 3 inches. The bristol board to be 12x9 inches. These drawings are to be forwarded to the Detroit Architectural Club, 92 Griswold street, Detroit, Mich., not later than September 12. Drawings are to be accompanied by a sealed envelope containing the name and address of the author. No name or device is to be shown on the drawings.

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