The AMERICAN ARCHITECT

IN THE GARDENS OF THE VILLA D'ESTE

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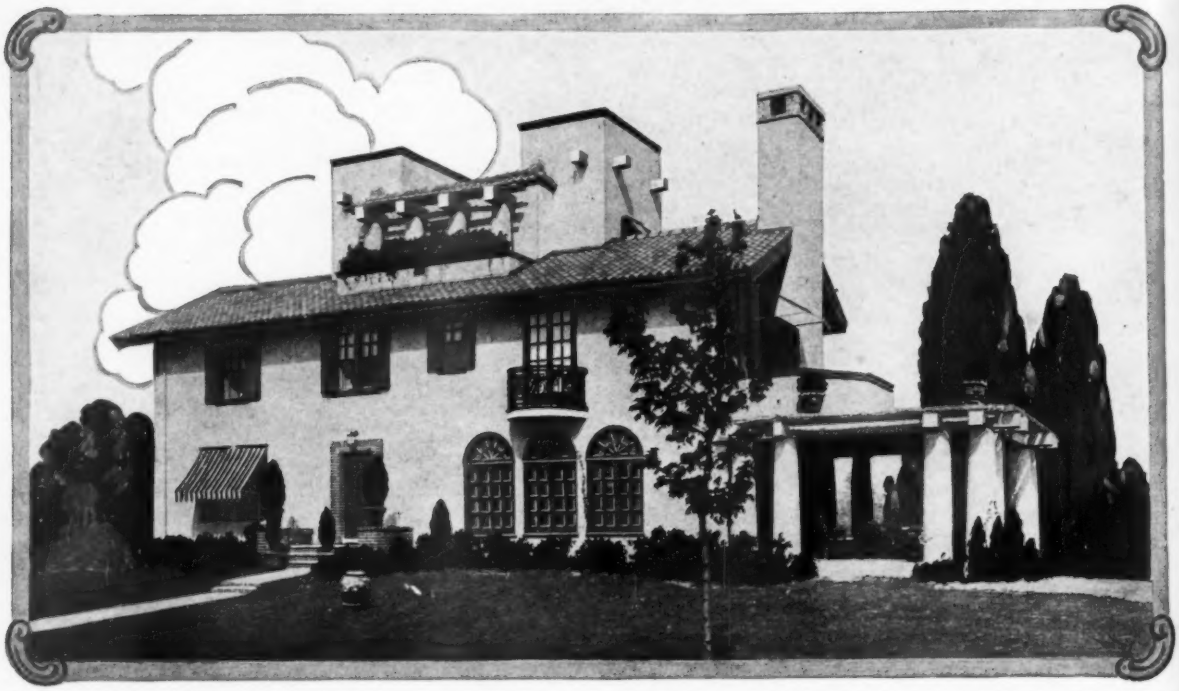

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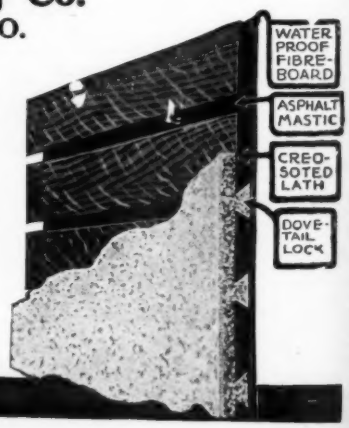


CLOISTER OF THE CATHEDRAL, TARRAGONA, SPAIN

THE AMERICAN ARCHITECT

VOL. CXV WEDNESDAY, JANUARY 15, 1919 NUMBER 2247

Architecture After the War

2. Organization

By C. H. BLACKALL, *F. A. I. A.*

BY organization I mean the association, grouping or incorporating of two or more persons in such way as to produce the best architectural results, considering architecture as a business, an art and a science. The architecture of today has always this triple nature. A failure to recognize this trinity means a limited or imperfect output constituting a restriction not only on the individual but on the profession as a whole and on the public. This triple nature cannot be too strongly emphasized, because in the natural specialization which comes in every business each individual is apt to forget the other's point of view and the exact balance between the three considerations is by no means easy to maintain. It ought to be accepted at the very start that no one man can do it all and do it right. Many single men can assume a leadership, can direct the forces, but in the very nature of things it is possible for one man to do the whole even if only because of the mere physical limitations; and whether the organization consists of one man with a number of hired assistants, whether it is a partnership of two or more, or whether it is a great co-operative enterprise such as has been tried in some instances where everyone down to the office boy shares in returns and responsibility, in any of these cases architecture is not the result of one man's energies or application, but must be considered as a combined output, as a group effort.

I am not assuming that this group effort, this recognition of the three sides of architecture, is a new idea. On the contrary it has been developed and carried to a thoroughly efficient and successfully complete organization by some firms for many years. But the point as I see it which ought to be emphasized is that this triple arrangement has in the past come about as an expedient rather than as a principle and that the great majority of architects are still clinging to the idea that the architect must do it all, that architecture is one, and that therefore an architect who gives up any part of the architectural prerogatives to another is by that degree less faithful to his profession. It seems to be pretty generally considered that from a business standpoint a division of work means an increase in the profits and a greater share of efficiency, satisfaction and economy, with also much larger profits. But there are still many architects, probably including the majority of the average practitioners, who feel that this is applying shop methods, that this means an architectural mill, that thereby individuality will be sacrificed and the architect will be degraded by seeking the level of the commercial man. I cannot feel any sympathy with this attitude. If there was any man who believed in co-operative, co-ordinated effort it was Mr. McKim, and his spirit of co-ordination was so strong that years after his death the school of architecture which was represented by his office and business associates is still able to keep up the high standard of work which he set, notwithstanding the fact that he was not at all what would be called a clever draughtsman or designer, nor a remarkable business man, and certainly not an engineer. But he recognized in advance of these times that the best result is obtained by co-operation, by several individuals pulling together and by a certain surrender of one's self to the group. There was also the case of Mr. Burnham, who was eminently a business man, but he, too, recognized the triple nature of architecture, and the organization which he effected was able to turn out a very high grade of work and turn it out in a very businesslike, practical, scientific, as well as artistic manner. The example might be multiplied indefinitely, and yet notwithstanding the manifest successes of men like McKim or Burnham we are constantly meeting the architect who denies that architecture produced by an organization can be a fine art, that the practice of architecture can be good and at the same time businesslike, that a man can be professional and at the same time be a business man and a poet. So what we need to-day is the awakening of the average practitioner. The big firms will take care of themselves. They will gravitate of necessity to an efficiency in organization, but after all it is the average man that makes the senti-

ment of the community, and it is this average architect that needs to appreciate the false position in which the profession has put itself in the past as well as the opportunities for a rebirth and a recount of possibilities to-day.

When I say that it is the average man we wish to influence, the answer will naturally be that the average man has not a sufficiently large practice to be able to share it with two or more others, that very many of our architects who are strong in design never have more than one or two jobs at a time, and that it does not call for sub-division of responsibility and effort. I am not so sure about that. One architect comes to my mind now who has never had a large business and it is doubtful if he has ever been upon more than three jobs at any one time with an aggregate cost of over $75,000, and yet I was interested to see how he recognized and wrought out this triple side. The getting of the job, the talking with the client and the talking with the contractors on general matters he did himself. He had one draughtsman whom he held responsible for the entire running of his office and the business end of his affairs, and then he depended entirely, and very wisely, upon the builder for the scientific side, calling in an engineer for special occasions. He frankly admitted his personal job was the artistic and the directing, and his work always went smoothly, his clients were satisfied and his buildings never fell down. Incidentally, he made a comfortable living every year. Now I claim that any man with a business of $100,000 a year or more ought to organize in this triple capacity even if it is only to share responsibility with a typewriter and an office boy, but recognize that there is this triple side, to be prepared to treat the practice of architecture accordingly, and if the man has any real ability at all his practice will not stay down to $100,000 a year very long.

I believe that the very mental attitude which will prompt an architect to say: "I do not know all the details about this, see Mr. So and So, my assistant, or my partner"—is one which would inspire confidence in builders and owners, for it would show a recognition of the necessity for care in decisions and a willingness to acknowledge limitations. It would not be a derogation of an architect's professional capacity in the slightest degree and I cannot believe that there is any architect so stuck on himself that he would not take more comfort and more pride in being an important factor in large results than he would in being monarch of all he surveyed on a small island. I think in the past architecture has sometimes suffered by a species of what the builders are apt to term "swellheadedness" on the part of the individual who tries to do it all and that attitude is one of the worst that could happen because it offers a bar right at the very start between the men who carry out our ideas and ourselves, and surely no one who has ever had any experience with co-operative effort and will honestly look on it as a question of efficiency would ever want to go back to doing it all himself.

In fact, it is the man in business for himself without associates, who cannot do everything himself, but has to try to do it, who is responsible to a very large degree for the present public point of view toward architecture and architects. There are many architects who can devise excellent color schemes, are connoisseurs of a bit of wrought iron or an architectural ensemble, who have unwittingly spread the idea that that is real architecture and that the real architect is above anything else. Again there is the other kind who has a real scorn of all things artistic, who prides himself on his engineering or business ability and thinks he has compassed the range of architectural possibilities when he has built his buildings securely and so that they will make money, even though they may be architectural atrocities. Neither of this kind ought to be in business for himself. They should in each case be joined with others who would supplement their own lack and would enable them to be part of an organization rather than to act as an individual. Everybody cannot be an architect and the quicker we recognize that fact the better, but the number who can take an honorable and very important part in an architectural organization is growing larger each year and there is no lack of good material right at our hand if we once get away from the foolish idea that architecture is nothing but a fine art.

I purposely avoid personal details of how to run an office. A lot might be said on that score, some of which I propose to take up later. They are largely personal matters and do not affect the general proposition of architecture after the war, which is increasingly a matter of group treatment and involves the three-sidedness of our calling which must be carried out to the full limit if we are to hold our own in the very exacting conditions of today. As I said before, many of the large offices are already recognizing and carrying out these very principles. It is for the profession as a whole not only to carry them out but to admit by word, by precept and practice that the individuals are a part of an organization which shall always be a business concern first, a scientific construction firm second and a poet and architect last, not that these always have the same relative importance because that varies nearly with every kind of building.

The third element is the one which makes the others worth while; the second is what makes it possible; and the first is what put the whole into logical, efficient execution.

The Architect of Tomorrow

By Alfred H. Granger, *Captain of Engineers, U. S. A.*

ONE evening, quite recently, four men were dining together at the Shoreham Hotel in Washington. All are in the service of the Government, having been drawn in by the emergency of the great war. One was a professor of one of our largest universities, now acting as an assistant secretary of the Treasury; one a noted Boston architect, acting as a vice-president of the United States Housing Corporation; the third, a civil engineer of more than national reputation, now a major in the Engineer Corps, serving on the staff of the Chief of Engineers, and the fourth a Chicago architect, serving with troops as a Captain of Engineers; thus New York, Philadelphia, Chicago and Boston were gathered together. The armistice had just been signed, and men everywhere had begun to talk of readjustment—the getting back to normal civil life. As, with the exception of the assistant secretary of the Treasury, all were vitally interested in building and construction, the main topic of conversation was the future of the building industries in America. The Boston architect started the discussion by saying to the secretary, "Do you think, sir, there will be any use for architects in the immediate new world?" This question acted almost like a bombshell upon the minds of the engineer and the other architect; the discussion was long and earnest, and the conclusions arrived at were so interesting and so pertinent to the very life of the architectural profession that they should be openly discussed now before it is too late.

At the very beginning of their talk these four men, from the four most important centers of America, found themselves in absolute agreement on the fact that architecture, as a profession, does not stand in high repute with the heads of the various departments of the Government. This is a most unfortunate state of affairs, but it is none the less true, as many of us who have been working in Washington for the past fifteen months have found out to our sorrow. Why is it? That is the question which must be satisfactorily answered if architecture as a profession is to take the place in the new world which is rightfully its own. We all know, we architects, that there is no one body of men more whole-heartedly devoted to public service. When we entered the war architects from all over the country, individually and as a body, gave up all thought of private work and came forward to enlist in the great cause for which the country was fighting. After the passage of the draft law one of the first problems facing the War Department was how to provide for the training of the great army. Up to that time the constructive operations of the army had been handled by two divisions—fortifications, roads, etc., by the Engineer Corps, and such purely building operations as were needed by the Quartermaster Corps. It is not my intention here to go into the story of the development of one section of the Quartermaster Corps, first into the Cantonment Division, Q. M. C., and later into the Construction Division of the United States Army, which has successfully carried on a building operation involving the expenditure of almost one billion dollars without waste, without any excess profit, and, which is paramount in war times, without delay.

On the staff of the Construction Division are architects from almost every section of the country, serving because the commanding general could not carry on his work without their services, while the Committee on Emergency Construction, which has borne the responsibility of selecting contractors for all this work, has been under the chairmanship of Col. William A. Starrett, of the architectural firm of Starrett & Van Vleck, who had serving with him all last winter Capts. K. M. Murchison and A. H. Granger, both architects. During the winter of 1917-18 Colonel Starrett, working with a committee of the American Institute of Architects, drew up a form of contract between the United States Government and ———, architect, by which the services of the architect could be used in preparing plans for the various types of buildings needed to carry on the war. This contract was submitted to the Secretary of War, but was never adopted. Why? Another question to be answered. One would naturally think that the Government would be eager, in such an emergency as then existed, to avail itself of the services of such a body of technically trained men as the architects of America, but, alas! it was not and is not so. Members of the various engineering societies offered themselves and were eagerly accepted; ofttimes the Government did not wait for them to offer, but summoned them from civil life, commissioned them without delay and put them to work. There is no single instance of an architect's having been specially sent for.

It might be said that most of the building problems were straight engineer's work and not architect's. There we near the root of the question which we all must face if we are to meet the problems of the immediate future. The engineer today

is in demand because he is practical, he is economical and he is honest, and by honest I mean that he tells his client the truth. I do not for one second imply that the architect has not these qualities when I say the engineer tells his client the truth. I simply mean he estimates properly because he knows actual costs, which 85 per cent of the architects today do not. Another reason why greater dependence has been placed upon the individual engineer than upon the architect in the more recent Government operations is because he seems to be in closer touch with the contractor, the actual builder, who, after all, in the mind of the man or corporation or government who is to spend the money, is the man who counts.

Properly to house the great national army during its period of preliminary training, it was necessary for the War Department to build thirty-two cities, each with a population of approximately forty thousand people, and to build these cities in the short period of three months—and it was done. It is obvious that work must have been begun before any plans could be developed far enough for even tentative bids to be made. How this was done has been graphically described in a series of articles by Colonel Starrett in the *Scientific American* for Sept. 7, 14 and 28, 1917, but in these articles the point of most vital importance to the architect has not been touched upon, and that is that from the very beginning the architect, the engineer and the contractor have worked together as one man, a veritable trinity. I believe that this union of the three types necessary for the solving of modern architectural problems has shown us the path we must follow if we are to continue to exist as a great and vital profession.

For the past twenty-five years the architects have devoted themselves more and more to the single problem of design, and of late years the problem of design has largely developed into the preparation of beautiful, elaborate and extremely costly drawings. The system of competitive bidding has been largely responsible for the elaboration and cost of these drawings, because the architect, in order to save his client the danger of expensive extras and yet preserve the, to him, essential beauty and integrity of his design, has been compelled to show every little detail of ornament and construction by carefully prepared drawings so that the contractor cannot by any chance omit from his estimate any of these details.

The preparation of such complete drawings involves so much time and study and thought that their prime purpose, to act as guides to the building of a building, has gradually been lost sight of, and that is why so many of us suffer such keen disappointment when we make a pilgrimage to see a building or group of buildings of which we have seen the preliminary or competitive drawings.

Before the Renaissance, during the Gothic period, buildings were erected which stand to-day as examples of wondrous beauty, but the names of the men who designed these buildings are unknown. With the advent of the Renaissance came the birth of the individual architect who created the profession of architecture as a profession apart from that of builder.

> "In the elder days of art
> Builders wrought with greatest care
> Each remote and unseen part
> For the Gods see everywhere."

Today we face the dawn of a new world. The hordes of autocracy have been beaten to their knees and mankind at last faces freedom. This is what we believe; it is for this that the civilized nations of the world have so freely offered up their dearest and their best. A witty Senator recently remarked, "Now the war is over, real trouble begins."

Had he said, "Now the war is over, real work begins," he would have been nearer the truth. Real work is before us, work calling for the best in every one of us, and in this work of construction and reconstruction no man has a more vital or more splendid part to play than the architect. Will he do it? I firmly believe that he will, but to go back to the discussion at the Shoreham and the conclusions there arrived at, there are certain things that must be done, certain new relationships to be arranged before the best results can be achieved. The architect must not consider himself like a Brahmin, a sect apart, but must draw to himself his two brothers, the engineer and the contractor in the closest possible association. The American Institute of Architects, the American Societies of Civil, Mechanical and Electrical Engineers and the American Contractors' Association should unite into some sort of federation somewhat on the League of Nations idea. All three are primarily builders because the supreme function of each is to produce buildings that shall show to future generations what our civilization stands for. We study human history by means of the buildings of past ages, and we want the ages to come to understand the efficiency, integrity and beauty of our age by the buildings we leave behind us.

I have not in this paper attempted to suggest the type of association to be formed among the three great building professions, but only pointed out one fundamental fact, which the architect must bear in mind, if he is to function properly in this new era of the world, and that is that he is primarily a

builder of buildings, and by those buildings he must be judged.

Two names stand out as creators of buildings in the annals of our great profession in America, and those names are H. H. Richardson and McKim, Meade and White, and I believe one reason of their pre-eminence is due to the fact that their buildings today possess distinction, not only because they were so carefully and so lovingly designed, but because they were so supremely well builded. Let us cease to be artists and become builders, losing our desire for individual fame in the greater desire of perfect production and our future in the new world is assured.

Reconstructing Architectural Practice in England

The following extract from the address of Mr. Henry T. Hare, president of the R. I. B. A., will undoubtedly be read with interest by architects in this country.

Mr. Hare stated in part:

We stand today at the threshold of a new era. Our whole system and scheme of life has been dislocated and virtually destroyed. Industry, commerce and society must be reconstructed and reconstituted on a new plan to meet the altered conditions. We have the opportunity of making a new beginning, and it is for us to approach the complex problems which face us, with open minds.

Reconstruction is the comprehensive word which expresses the problem which faces our country in every industry, calling and profession. In our own case the practice of our art during these years of war has been almost entirely in abeyance. We have had to submit to restrictions—and we have done so cheerfully and willingly—greater than those imposed upon any other profession. Our younger members have with one accord diverted their energies from the arts of peace to those of war, and while we are proud of what they have accomplished, we remember sadly and gratefully those who have fallen in the struggle. We shall welcome those who come back to us and endeavor to make their return to peaceful occupations as easy as may be.

I have alluded to the restrictions which have been placed upon our work, which have borne very hardly on most of us. We have submitted without complaint because we knew that it was necessary and essential to divert the whole energy and resources of the Empire to the one purpose of defeating a thoroughly organized and well-prepared enemy. With the restoration of peace that necessity will exist no longer, and we feel that we should not be asked to bear longer than is vitally necessary a special burden which other members of the community do not share. * * *

During the period of inactivity in the legitimate exercise of our profession, we are taking the opportunity of inquiring into the status of the architect. It is felt that, although the course of study and attainment required to equip an architect to carry out his duties efficiently is at least as severe as that required for other professions, from many causes the general public do not appreciate his position adequately. A very large amount of building is carried on either without an architect or under an entirely unqualified practitioner, thus bringing the entire profession into disrepute and leading to many abuses.

Is there any means by which the building public may be enabled to distinguish between the qualified and the unqualified?

Is it practicable, short of actual compulsion, to insure that every man who seeks to enter the profession shall be properly qualified by education and training to carry out the duties of his position to the satisfaction of his client and the benefit of the community?

Have we, hitherto, properly correlated and adjusted the relative importance of the practical business and scientific side of our work with the historical and artistic aspects?

Can any steps be usefully taken to organize and unify the profession?

These and kindred questions are now being carefully considered, and the views of those competent to give opinions are being collected and noted with a view to so ordering the policy of the Institute as to lead to a general improvement in the position of the profession.

In this connection it is felt that architects have not hitherto adequately taken their part in public affairs, on many aspects of which they are peculiarly qualified to speak. We ought to have our representative in Parliament, and there are few local bodies which would not be strengthened by the addition of an architect member, who would concern himself with the building projects of the district and its amenities.

I would have every new building or public improvement subject to the criticism and to some extent to the control of such a body. Here is a wide field for the activity of architects, and one which would enable us to forward the education of the public in artistic questions which are generally lost sight of and submerged in the purely practically and utilitarian aspect.

The Arch of Democracy

Brooklyn, New York

By FRANK J. HELMLE OF HELMLE & CORBETT, *Architects*

"OUR men will give a good account of themselves," declared General Pershing to Clemenceau just before their appearance on European soil. "Your men fight like veterans," exclaimed Marshall Foch after the first American advance. Our 200,000 boys from Brooklyn and Long Island have earned this praise by nobly doing their part in winning the great war.

These boys—our boys—are coming home to us, some of them maimed and blinded, and bearing the

THE ARCH OF DEMOCRACY TO BE ERECTED IN BROOKLYN, N. Y.
HELMLE & CORBETT, *ARCHITECTS*

marks of privation, yet joyful that they have done their share for humanity and democracy. Are we going to do our part fittingly to receive the living heroes, and pay our reverent tribute to the memory of the dead? Never before in the history of the world has there been a war like this, and never before has there been presented to the citizens of Brooklyn and Long Island such a splendid opportunity to do a fine thing in a magnificent way.

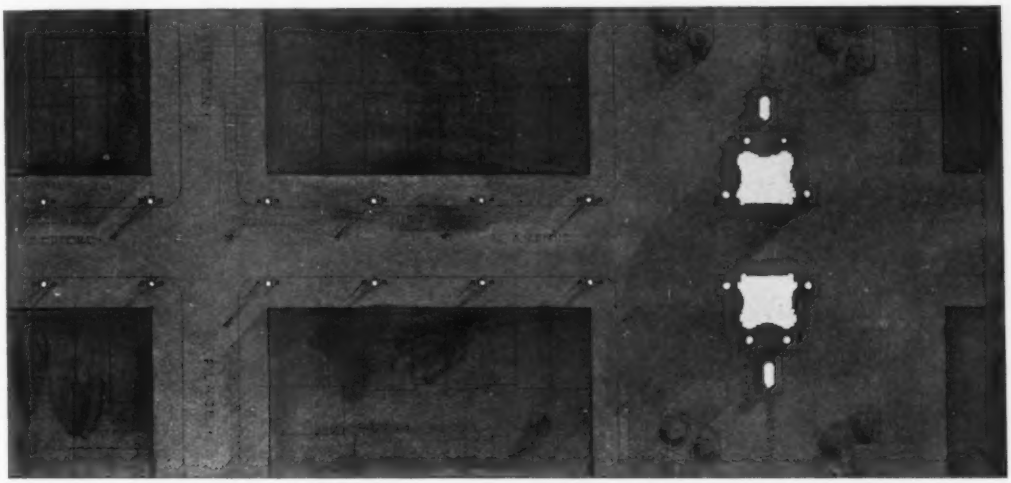
Traditions have been overturned, old modes of thought become obsolete, social lines and standards deleted and utterly destroyed. Out of this conflict has been born the triumph of Democracy, and a monument to commemorate the event should fittingly tell the story.

The arch, as designed by Helmle & Corbett, is a structure of magnificent proportions, 40 feet in span and 70 feet in the clear, springing from two huge pylons 36 by 36. The entire structure will have a height of 130 feet. The top will be crowned by a colossal group typifying the Triumph of Democracy. It will be represented by a figure of Victory driving a chariot drawn by six superb horses.

Flanking the central structure are eight free standing columns surmounted by statues of the eight great military leaders of the war, Foch, Joffre, Petain, Haig, French, Diaz, Albert of Belgium, and our own Pershing.

The frieze presents various military scenes and incidents and the entablature bears appropriate inscriptions. Below the richly ornate cornice are six circular medallions bearing the portraits of the great statesmen of the war, Lloyd George, Clemenceau, Poincaré, Orlando, Ishii, and Wilson. The spandrils bear symbolic representations of the military forces of land, sea and air.

There are six huge niches on the faces of the pylons which will contain heroic figures of soldiers, sailors, marines, engineers and others on whom the real burden of the war has rested. Within the arch upon two panels will be reliefs, the one representing the industries which have so admirably contributed to the success of our army, the other representing all those forces and agencies which have ministered to the comfort of the victims of the war. Here will be a tribute to the Red Cross, Young Men's Christian Association, Knights of Columbus, Salvation Army and the other similar organizations.



PLOT PLAN SHOWING LOCATION OF ARCH OF DEMOCRACY

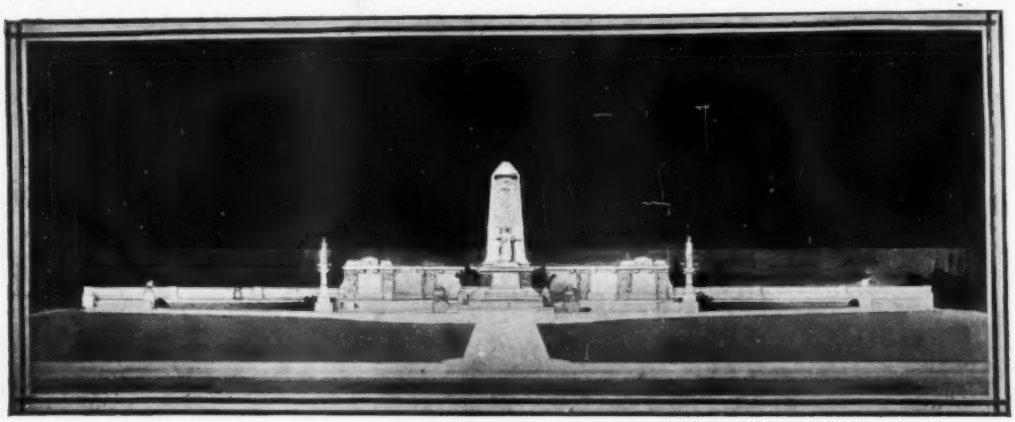
An Honor Roll Memorial in Chicago

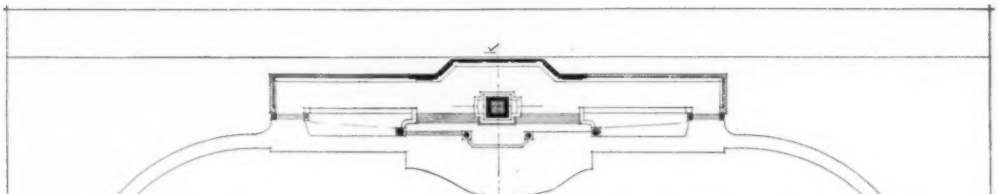
THE background wall of this memorial will carry tablets arranged to receive the names of the sons of Chicago fallen in the war, placed in general accord with the main organization of the Army and Navy, the tablets to be separated by sculptural decorations of symbolic character. In front of these tablets there will be a space about twenty feet deep to serve as a walk for the visitors.

In the center will be a shaft or obelisk form 65 feet in height emblematic of the city. In front of this shaft is to be a figure of Chicago, symbolic of the purpose of the city in the dedication of her energies to the war.

At the base of the obelisk, to the right, there will be a group representing the Army and to the left one representing the Navy. The lighting will be a special feature.

The monument and its grounds, although temporary, will help in the determination of any future scheme of improvement of Grant Park extending the work already begun north of the Art Institute.





HONOR ROLL MEMORIAL, CHICAGO, ILL.

EDWARD H. BENNETT, *Consulting Architect*
CHICAGO PLAN COMMISSION

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VOL. CXV JANUARY 15, 1919 NO. 2247

The Architect of Tomorrow

"WILL there be any use for architects in the immediate new world?"

In the article by Capt. Granger, "The Architect of Tomorrow," on page 91 of this issue, will be found this question, asked of an Assistant Secretary of the Treasury by a Boston architect and followed by an account of the discussion that this "bombshell" of a query provided. It is an accurate and profound presentation of an important matter.

No man intimately acquainted with conditions affecting the practice of architecture in the past or present, or with their probable effect on the future, will disagree with the arguments set forth. Nor, if he is thoroughly alive to the importance of these matters, will he fail to approve of the remedies proposed.

Here we have four men, from the four most important centers of the United States, each in accord with the opinion that architecture as a profession does not stand in high repute with the heads of the Government. Just why this is so is very clearly set forth, and the remedy for such a condition is as lucidly presented.

Why was the contract agreement between the Institute and the United States Government never brought to adoption? Why were engineers in such great demand that no time was lost in searching them out from civil life and offering them attractive opportunities? The answer undoubtedly is that engineers have always been closely identified with their work, have shown either as an organized body or as individuals that they were practical men. They did not rest in the seclusion of professional dignity at the time we entered this war, nor had they failed in the period before we commenced hostilities to show their ability to carry forward everything they undertook.

There is no blame that can be laid on individual architects, as there can be no individual claims by engineers for this state of affairs. The whole fault is one of organization and lack of proper representation.

AS shown by Colonel Starrett in the article referred to, from the very beginning when the architect, the engineer and the contractor "worked together as one man, a veritable trinity," they achieved the greatest and most successful results. All of which points directly to the contentions made in these columns now more than a year ago, that the architect is primarily a builder of buildings, and that if he is to function properly he must have, either of his own knowledge, or lacking that, by partnership with other men, the ability to render clients every service that will efficiently originate and carry to completion the work undertaken.

This is rapidly becoming an age of alliances, a period where men working toward a common purpose will find in a federation of interests the only successful solution of their many problems. The seclusion of professional dignity, the assumption of an autocracy of occupation no longer awes a world that is to-day more practical than ever. Now, as never before, will there be a survival of the fittest, and the fittest will be those who will have been willing to see the unmistakable trend of public opinion and so conform with it as to ride on the high wave of a demonstrated adaptability to a station of professional success. A federation of the architects, engineers and contractors, such as is proposed, is one that should receive the most thoughtful consideration.

There will be no diminution of dignity on the part of architects in such an alliance, but, on the contrary, there will be a very large accession of respect from the lay world for a profession that will, thus organized, combine in itself every element making for the highest efficiency and the most practical and valuable results.

ASK any one of that large and important body of architects who during the time that we were at war served in the various departments in Washington where their abilities were in demand,

and we think it will be disclosed that with scarcely any exception none of them were at any time engaged in either planning or designing of structures; their activities were directed wholly along lines of the most practical executive work. They were engaged in research into every phase of building construction. They were occupied with the questions of cost and the location of materials and the quickest and surest methods of their assembling. Ask them if they considered that they were practicing their profession, and it is believed that they will tell you, and with considerable emphasis, that it is their opinion that they have not only been practicing the profession of architecture, but that they have been engaged in the highest development of that profession, and in a method that will in the future guide and control all their activities as architects.

These men have been really practicing architecture for the Government, and it is not to be supposed that the practice of architecture for the individual client will in the future be very greatly different. None of the men who have filled these important positions have become any less artistic, but, retaining all those fine appreciations for the artistic side of their profession, they have added under the most rigorous training a post-graduate course of the highest efficiency. It will be to this type of man that the profession may look for the best and wisest counsel when the subject of the readjustment of architectural education is to be considered, and it will be a serious error if their words of wisdom are not harkened to and their counsel followed.

Improving Farm Buildings

LETTERS received from almost every state, each one expressing warm endorsement of the proposal to make well organized effort to improve the character of farm buildings, indicate that this subject is one of nation-wide interest.

In a few states, action looking toward reforms has been taken at one time or another, but these movements, like many another, have been suspended for war activities. At the present time when the whole world is actively preparing for readjustment to normal conditions, there may well be included in the general program some provision for a reform which, with industrial housing, is among the most important we now have to consider.

The proposal that each state appoint a commission to be composed of architects, agriculturists, builders and realty men, is meeting with general approval. A commission so constituted could work intelligently and to some purpose. Formed at this time, it would have ample opportunity to organize, outline a program and be ready for a practical demonstration of its work by Spring.

The effort necessary to set afoot such a reform is so small that it is to be hoped there will be no further delay on the part of the various states, particularly those wherein agriculture plays a prominent part.

War Memorials

THE subject of permanent war memorials is being considered in the artistic press, and it is encouraging to those who seek the best expression in these things to learn that the preponderance of opinion is strongly in favor of memorials which combine utilitarian features with artistic merit.

The types range from the usual memorial museum and library, of which we have many—good, bad, and indifferent—to community buildings, town halls, out-of-doors theaters, swimming pools and recreation centers. All of these have features that will commend them to different communities.

One encouraging indication is the general disfavor into which the Civil War iron statue atrocity has fallen. There is small danger that the country will again suffer such an affliction. If those who have stayed at home have no better artistic perception than to favor this type, it is very certain that the men who went to France and have returned have imbibed ideas of good art that will safeguard us from these "memorial monuments."

The temporary memorial such as the larger cities will build to serve during the occasions when returning troops are welcomed will not be considered in the same way as those built for permanency. Many of these so far built do not commend themselves to good artistic taste, but they will serve their purpose, disappear and be forgotten.

A memorial poorly designed and lacking in the essentials of good art is really a slight put upon the memory of the men it seeks to honor. Everywhere in this country where it is proposed to erect such a thing there should be some competent authority to pass judgment on its merits. As these memorials are in honor of soldiers and sailors, why, then, should not the Army and Navy Departments have some voice in approval? In case of doubt, we have a competent National Art Commission as a court of final decision.

Let us be slow and sure with our memorials, and not leave to posterity examples of our bad taste in these matters.

Criticism and Comment

The Editors, THE AMERICAN ARCHITECT:

I regard the suggestion of an allied conference very timely and agree with you that the architects of the country should be willing to assist in every way possible in the reconstruction work abroad. An allied conference of architects, such as you suggest, would, I believe, be productive of inestimable good for all concerned. To assist with practical suggestions having in view the requirements abroad, also what this country is best equipped to help with, should prove of real assistance to architects in Europe. The engineers, I believe, have already had a meeting of the kind; surely the architects ought to do their share.

Perhaps the question could be put to some of the foreign architects whether or not such help from this side would be welcome. I dare say they would accept with alacrity. At any rate, I think your suggestion should be acted upon with energy.

ALBERT KAHN.

Detroit, Mich.

The Editors, THE AMERICAN ARCHITECT:

We approve the principles set forth in "The Practice of Architecture" appearing in your issue of November 27. These principles, in the main, have always been the practice in our office.

We believe our service to the owner required us to prepare complete plans, drawings, details and specifications, including structural and heating plans of the proposed building, and to be morally and financially responsible for the completeness and accuracy of these drawings and specifications.

We think you will find upon investigation that there are many offices in which the preparation of complete and accurate drawings and specifications is the rule, and that these offices acknowledge and feel their responsibility. We also know there are many offices in which the rule seems to be to prepare as few, and to assume as little responsibility, as possible, and often the more careful and accurate architect does less business than the careless and incompetent one. The public has had really no opportunity to distinguish between the accurate and inaccurate architect. The explanation for this lack of real knowledge and appreciation of the skill and business ability of the careful and conscientious architect can be found, we believe, in the present methods of carrying out the work after the drawings and specifications are prepared—the practical separation of all that relates to the preparation of the drawings and specifications from the actual construction and erection of the building. The owner sees and knows but little, and the public not at all, of the days and nights of concentrated study required in the preparation of the drawings and specifications. They do see, however, the construction of the building as it goes up, how nicely each unit or part members with its neighbor, how smoothly and systematically the work progresses, and a sign with large letters, fastened to a prominent part of the building, giving the name of a contractor and engineer. True, the architect visits the building regularly, but he is practically a stranger. He probably does not know the name of a single mechanic engaged upon the work. Indeed, he may not even know the name of the foreman, as all of his instructions in regard to the work are given to the contractor in writing. And so the author of all of this great work, in whose brain the building originated and who carefully and accurately illustrated it so that the contractor could properly carry out the work is known appreciatively to only a few, while the contractor and engineer is known to every one because they see his sign on the building and because they see him "doing things."

The architect conducts his business in accordance with the present code of ethics, but this code does not bring a just reward to the able and conscientious architect, nor does it prevent the incompetent architect from often securing the greater rewards.

The solution of the problem, it seems to us, requires that the architect shall be intimately connected with the construction of the building. It must be in a way so that the public must know that he not only prepared the drawings and specifications, but that he also built the building. His name must be the principal one associated with its construction. We can then trust the public quickly to separate the competent from the incompetent.

If we understand it, the fourth and fifth paragraphs under discussion contemplate this closer connection with the construction of the building.

Pardon this quite lengthy letter, but we desire not only to approve these principles of architectural practice, but to also urge, as we see it, a closer conpractice, but also to urge, as we see it, a closer construction of the building. Just how this is to be accomplished, whether the office of the architect should be organized so as to take over the work of the builder, we are not prepared at this moment to say, although we cannot but believe it is the sensible and logical thing to do. MORGAN & DILLON.

Atlanta, Ga.

Recent Legal Decisions

Extra Work and Additional Work

In an action against a city for amounts alleged to be due for extra labor and materials furnished in the construction and completion of a reservoir for the defendant the question was whether or not the plaintiff was entitled to recover the reasonable value of extra labor improperly and unnecessarily required of him to be performed, under protest, by direction of the city's duly authorized agents and officials. The extra labor was caused by the fact that the city engineer required the plaintiff, when the work was suspended in 1914, to put earth on the slopes of the excavation and embankment of the reservoir to protect them during the winter season, and until the work of construction might be resumed, in 1915. The trial court found that this extra work was wholly unnecessary and without the contract, and not contemplated by the parties. On appeal from a judgment for the plaintiff the Utah Supreme Court thinks that, while the authorities and decisions are not uniform, the best considered cases hold, and the great weight of authority is to the effect, that the contractor may recover the reasonable value of extra materials and labor regardless of the provisions of the contract.

There seems to be a distinction made under the authorities between extra work and additional work in cases of this kind. The term "extra work" applies when the work is of such a character that it cannot be said to have been in contemplation by the contracting parties, while "additional work" may be said to be that class of work that may fairly be presumed to arise in the course of a proper construction of the improvement, although not included by the plans and specifications or specifically mentioned or referred to in the contract. Judgment for the plaintiff was affirmed.—*Wilson v. Salt Lake City, Utah Supreme Court,* 174 *Pac.* 847.

Government Contractor's Bond

In an action by materialmen on a government contractor's bond the sureties claimed that it was impossible for them to pay the respective sums for which they were liable because of the danger of double liability; and the further fact that they did not know, and could not ascertain, what proportion of their liability was due to the individual creditors. On this point the Colorado Supreme Court says that the bond performs a double function. It is intended to secure to the United States the faithful performance of the contract, and to protect persons from whom the contractor obtained labor or materials in the prosecution of the work. As said in United States v. National Surety Co., 192 Fed. 551, approved in Equitable Surety Co. v. United States, 234 U. S. 448: "The two agreements which the bond contains, the one for the benefit of the government, and the one for the benefit of third persons, are as distinct as if they were contained in separate instruments." The act does not postpone the right to have payment because it may be that a cause of action had also arisen, or may arise, against the sureties in favor of another party for whose benefit the bond was likewise given. If one so entitled is paid, the surety's obligation is discharged to the extent of the payment.

Where materialmen and laborers have a right to sue on a government contractor's bond immediately on the failure of the contractor to pay them, and the government had no right to sue until the completion of the work, materialmen and laborers who had sued years before the right of the government against the bond had matured are entitled to their money, and need not await the outcome of litigation pending between the sureties and the United States.

Under a bond executed under the act of Congress of 1894, undertaking that a government contractor should promptly make payment to all persons supplying him with labor and materials in the prosecution of the work provided for in a certain contract to which reference was made, it is held that the surety is liable for supplies for buildings, dining rooms, furniture, and means of provisioning workers, where the work (a tunnel) which would take months to complete, was to be performed many miles from any town.—*McPhee v. United States to use of Montrose Hardware Co. (Colo.),* 174 *Pac.* 808.

Mechanics' Liens—Proof of Time of Furnishing Materials

In a suit to enforce mechanics' liens, the plaintiff has the burden of proving that the last materials were furnished within the statutory time of filing the statement of a lien. Care should therefore be taken in regard to the dates of delivery slips, and in copying the receipted slips by a bookkeeper. An error in copying a date, as, for example, the substitution of February 2nd for February 24th, might involve the loss of the lien.—*F. M. Sibley Lumber Co. v. Doran, Michigan Supreme Court,* 168 *N. W.* 957.

Financial and Commercial Digest

As Affecting the Practice of Architecture

Bright Future for Building Activity

Declaring that although large loaning institutions such as life insurance companies were out of the market for the present on account of the heavy Liberty Bond purchases there will be a gradual rather than sudden revival in building activity, Walter Stabler, comptroller of the Metropolitan Life Insurance Company, expressed the opinion that this resumption of work depends upon financial arrangements that can be made. He suggests the bond issue, popular in other cities, as a possible solution. Mr. Stabler views the future as most promising and feels that the many problems to be faced will be easier of solution on account of the improved standing of real estate holdings, largely due to the increase in rent.

"Before there can be a resumption of building activities," Mr. Stabler says, "we must adopt some new plan of finance, and I can suggest one plan seldom used in New York City which has been extensively employed in other cities—the bond issue. I am familiar with conditions existing in many parts of the country, where new construction has been financed through bonds and notes issued in small amounts, even as low as ten and fifteen thousand dollars divided into small units. If such a plan could be practiced in New York nothing would produce better results. No railroad or any similar project is financed on any other plan, and it has worked out satisfactorily. Such issues should be made for long terms, and above all, arrangements made for an amortization every year or six months so that the debt is greatly reduced and the loan made safe. The owner would be benefited by a reduction of his obligation and the entire situation would lead toward a more conservative loan and greater confidence for lenders."

"Moderation will make for safety," Mr. Stabler continued, "and I hope that we never reach the point touched eight years ago when so many lenders encouraged builders too liberally and permitted entirely too many structures to be erected. But we all learned our lesson. The moderate resumption of building will work great advantage to the city without working to the disadvantage of the present favorable condition. As far as mortgages in general are concerned we have all been too careless in the way we borrow and the way we lend. Speculators have had in mind one idea, and that is to attain as near the expense of operation as they could. I do not blame them, but I blame the lenders because this is bad principle and is productive of bad results.

"A policy which requires a reduction on the principal of mortgages of 2 per cent every year should be strongly urged. This is now becoming the rule with most institutions and is based on a sound foundation. It is as much to the interest of the owner as it is to the lender because it enables him to pay all his debt in installments instead of being faced with the situation that he must meet his entire obligation. I predict that this rule will eventually be the plan of all mortgage institutions in New York City, and I hope to see it the universal practice."

Prices and Wages to Continue High

Describing the outlook as "auspicious" and remarking that the war has not impaired the resources of the country, the National City Bank of New York, in a statement issued this week, declares that instead of a period of exhaustion the future is looked forward to with both confidence and ambition. The question of prices and wages is referred to as follows:

"The indications are that wages and prices are going to stay up, for a time at least, all over the world, which will do much to simplify the situation in every country. The general state of credit expansion over the world will sustain, and naturally cause, a higher level of prices than prevailed before the war, and there will not be the same pressure to lower wages and prices in this country that there would be if the level were falling in other countries. It does not follow, of course, that wages and prices at the higher level will yield any better net results to producers and wage earners than at the old level, or that the new level will be permanent, but business is favored by stable conditions, and, with all the world subject to the same general influence, changes are likely to be gradual rather than abrupt. If all wages and prices in this country could be brought back at one stroke to the old level, it doubtless would be advantageous to have it done, but it is impossible, and if accomplished there is no probability that they could be held there with the present stock of gold in the country and the existing state of inflation abroad."

"Rehabilitation Bonds"

A suggestion that the United States Government might provide credit for financing foreign trade by an issue of "rehabilitation bonds" and practically force our industrial activities to concentrate their energies upon European restoration through control of exports, is made by the National City Bank of New York in a statement just issued. The opinion of the bank that the raising of credit by a "process of commandeering" like this would receive, in time of peace, the support of both the people and business organizations that raised the four Liberty Loans, is regarded by some with doubt. However, the argument is advanced that there is little question that if the restoration of Europe is put upon a business basis, with responsible financial and able business leaders in charge, several billions will be available in the form of popular investment in the securities of foreign governments, bonds of foreign municipalities, securities of sound foreign corporations, or mortgages of individual foreign manufacturers, with the guarantee of responsible governments or institutions.

The situation as interpreted by the bank shows that financial organization is ready to accomplish this. "Our banks have built up a great international banking machinery," the statement points out, "for doing foreign business right, and we can create these foreign enterprises, whether by financing reliable foreigners in their localities, or by financing enterprises to be founded and conducted abroad by Americans. This would at once create a great outward movement of supplies, building up the prosperity, consumptive demand and ability to buy in foreign regions that will steadily support an export trade from America in the future."

Rents Likely to Increase

Arthur W. Warner of the Executive Committee of New York Building Managers' Association believes that rents in many parts of New York are likely to increase before active building operations get under way. "Fixing criminal responsibility upon owners," says Mr. Warner, "for happenings on their property while it is under lease to others, or under the control of employees who may neglect to do what they are told to, shuts out those who would be willing to invest money in buildings. This leaves the market to persons willing to take some risk but who exact a premium for so doing. Money is worth more than it was, for building as well as any other purpose. These elements make for higher rents before any great building movement begins."

Estimating Recession of Prices

Considerable estimating as to the amount of recession from war-time levels that prices and wages will take in the near future is being done in architectural and building circles. Conservatives place the drop at about 10 per cent, while some few place 25 per cent as the maximum. And while the die is being cast property owners are marking time with the construction projects. That the drop will be small and will come before Spring is well under way is generally conceded. Although the urgent war demand is absent, there will still continue an abnormal call with man-power considerably lessened. There are cities without number short of housing and where office building space is at a premium.

Financing Foreign Readjustment

A survey of the question "Are American engineers and contractors wanted in France and Belgium?" made by the *Engineering News-Record* conclusively shows a negative answer. Agencies in this country of these two nations feel confident that their own engineers and contractors are fully able to cope with the situation. To America the French and Belgians are turning for construction machinery only, as materials will be largely of European origin. It is further brought out that this country must await the decision of the two foreign governments upon the method of financing the work of restoration before action is taken on our part, and that what seems more likely than the granting of extensive government credits is the probability that strong financial groups here will undertake the financing of projects abroad, and will inevitably select large contracting organizations to do the work.

Apart from the vital reconstruction problem abroad the most important situation before the United States today is what will result from the commercial and financial unrest that threatens industrial chaos. Our readjustment differs in many aspects from that of our Allies. Although a shortage of labor in this country has been marked for some time, a gradual demobilization of our forces is to be attempted so that the men may be reabsorbed into commercial activity.

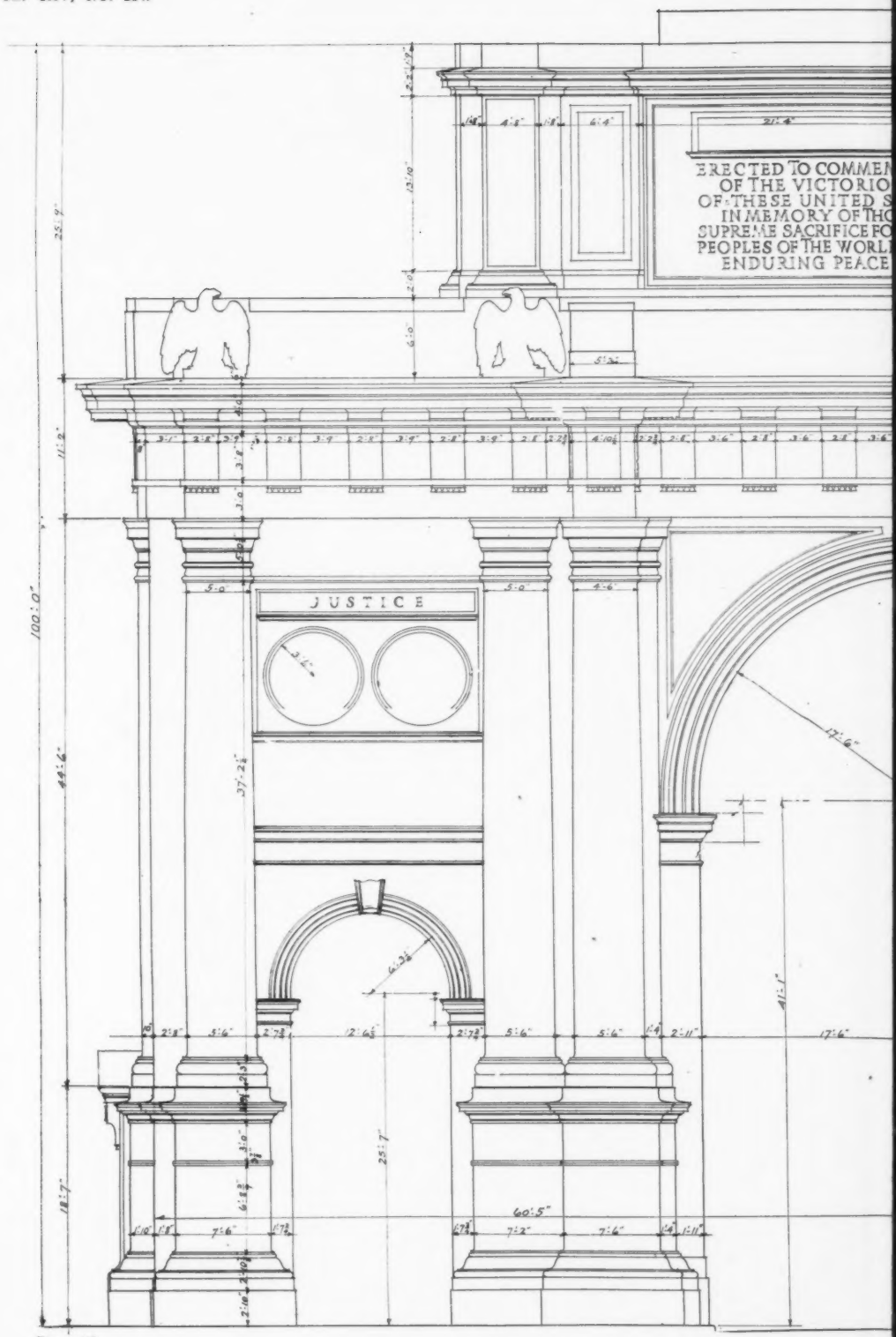
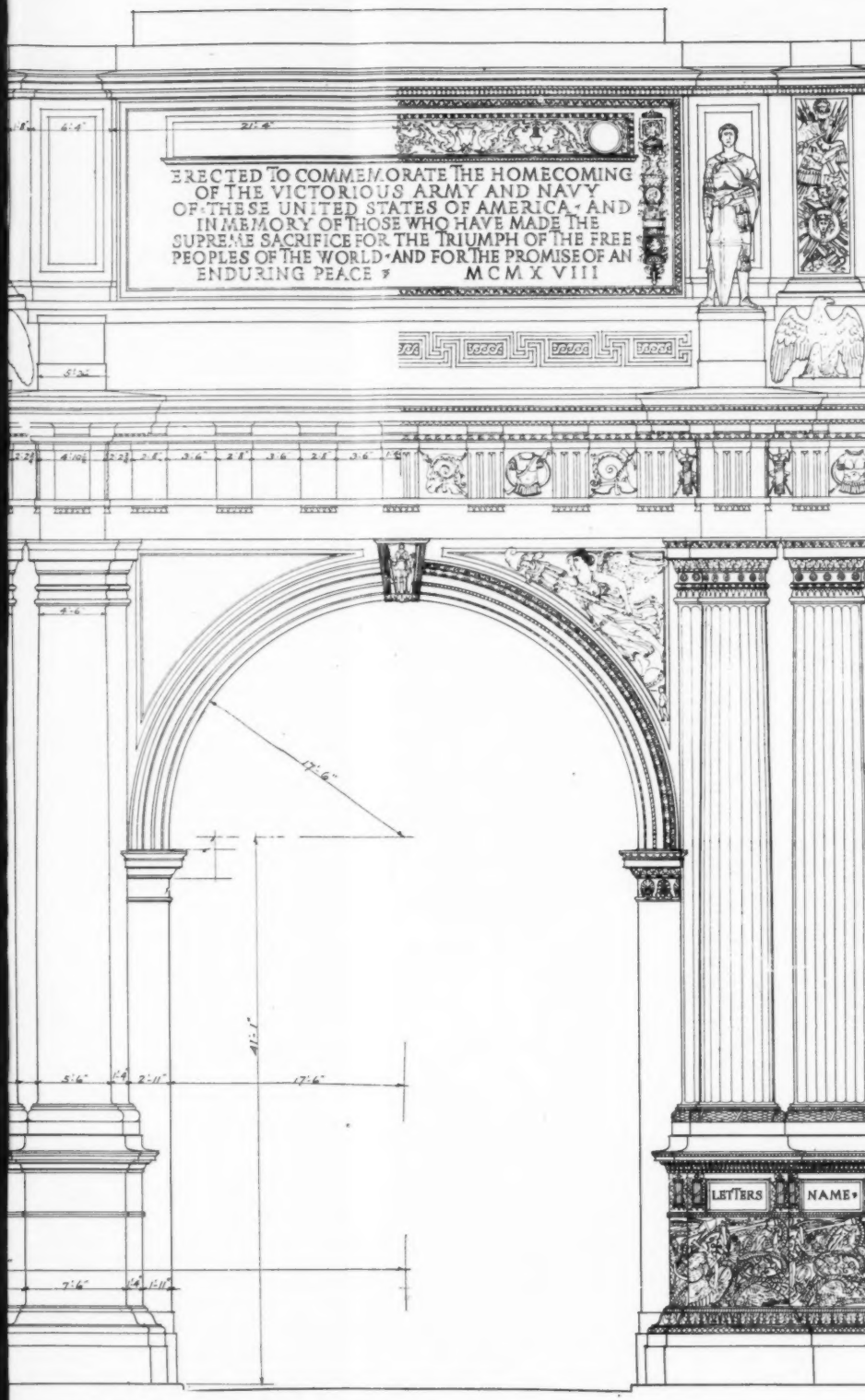


PLATE 18

ARCH OF FREEDOM, MA

THOMAS HAST



ARCH OF FREEDOM, MADISON SQUARE, NEW YORK

THOMAS HASTINGS, *ARCHITECT*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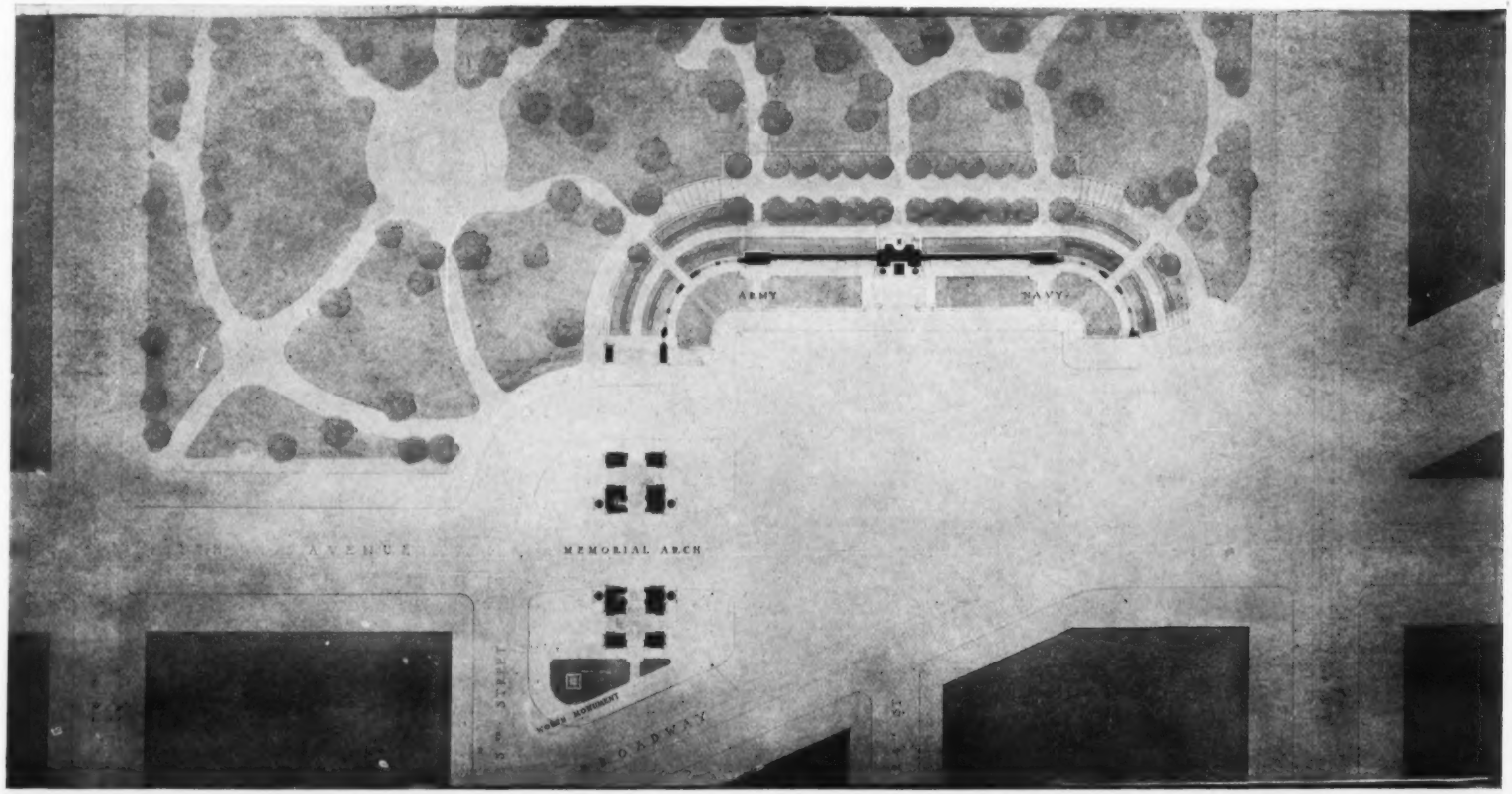


PLATE 19

GROUND PLAN, SHOWING LOCATION OF ARCH OF FREEDOM AND ALTAR OF LIBERTY, MADISON SQUARE, NEW YORK

THOMAS HASTINGS, *ARCHITECT*

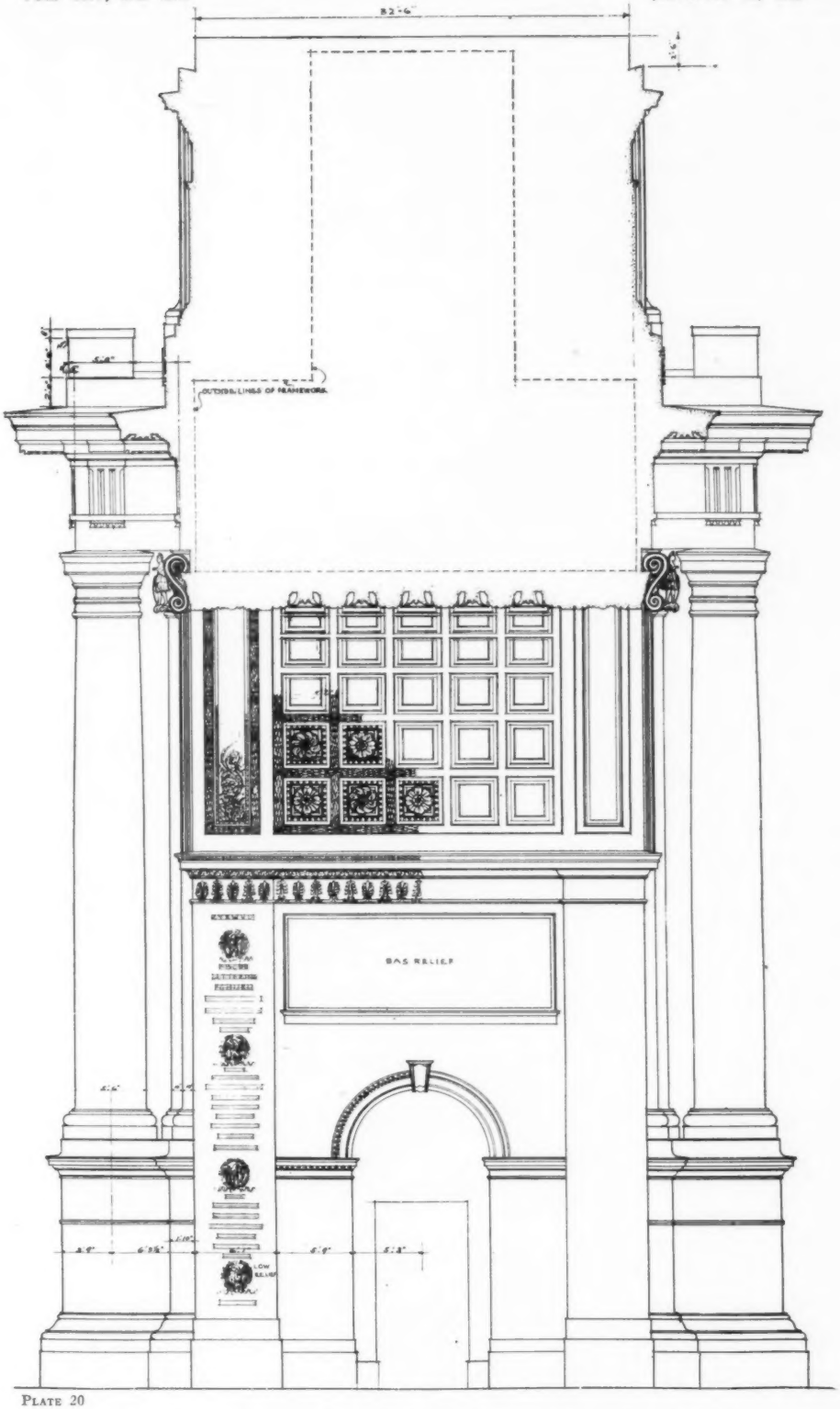


PLATE 20

ARCH OF FREEDOM, MADISON SQUARE, NEW YORK

THOMAS HASTINGS, *ARCHITECT*

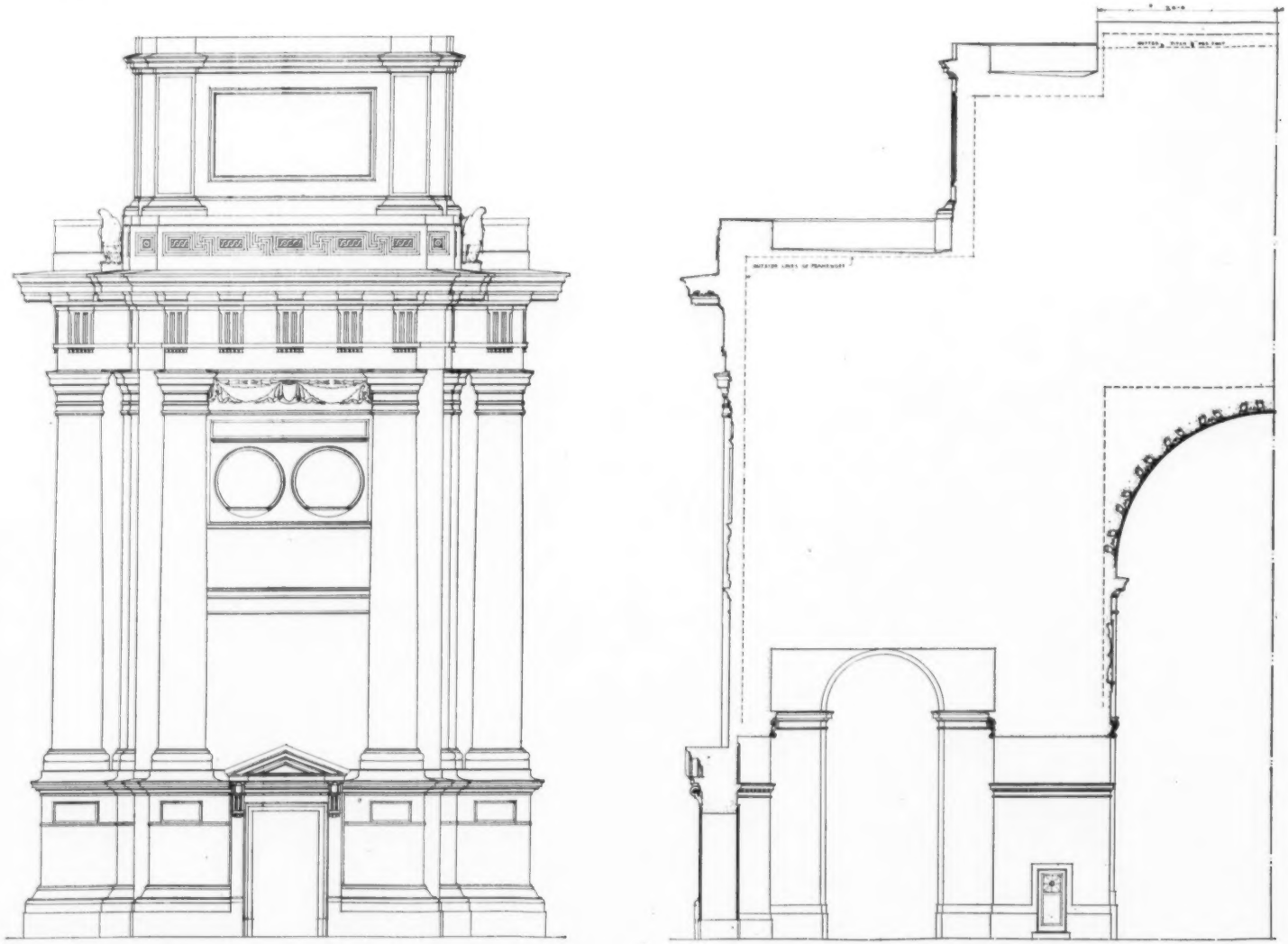


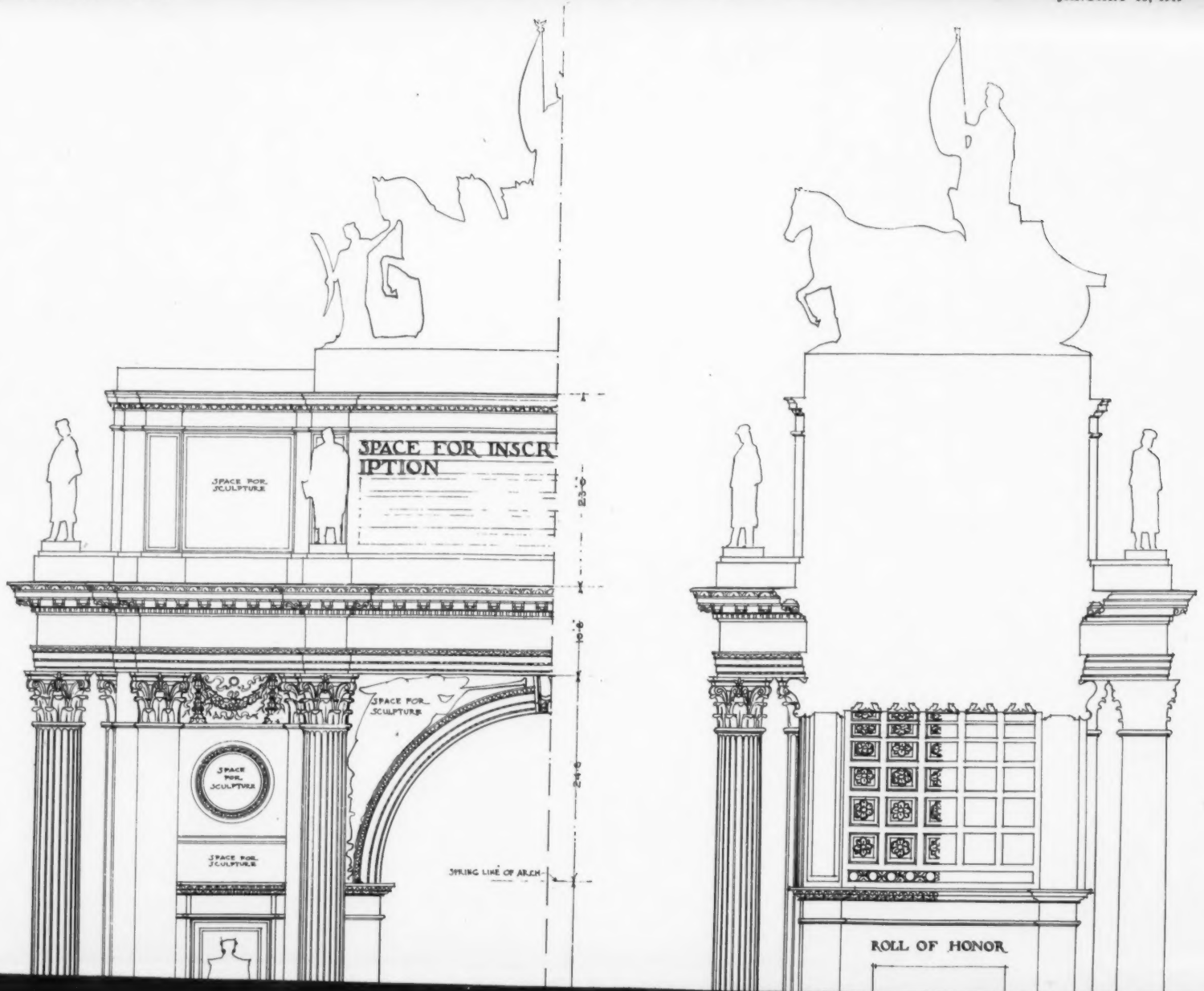
PLATE 21

ARCH OF FREEDOM, MADISON SQUARE, NEW YORK

THOMAS HASTINGS, *ARCHITECT*

PLATE 22 HELMLE & CORBETT, *ARCHITECTS*

VOL. CXV, NO. 2247 THE AMERICAN AIRSHIP JANUARY 15, 1919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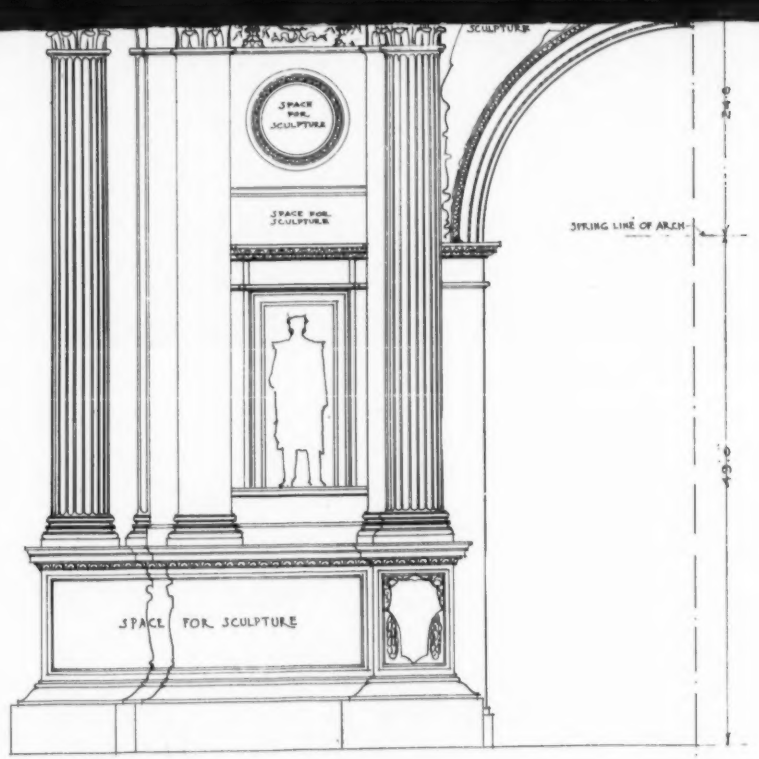

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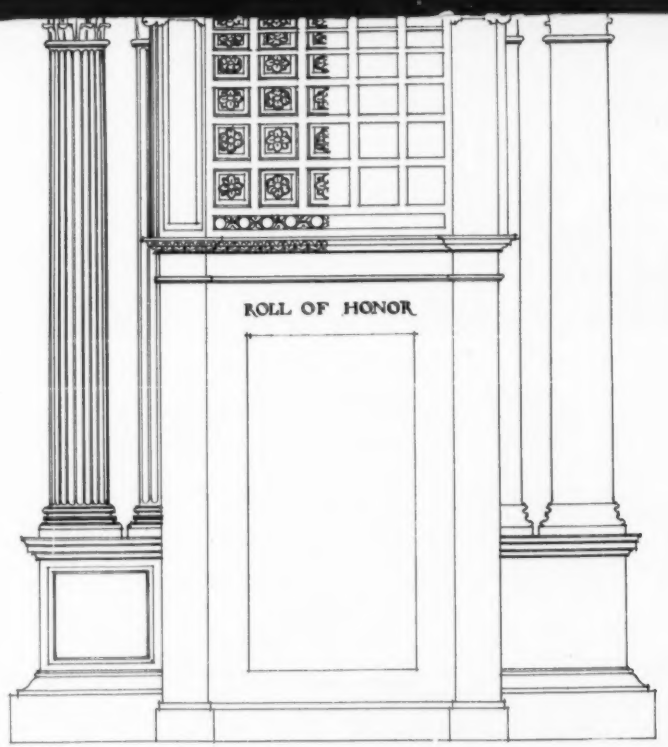

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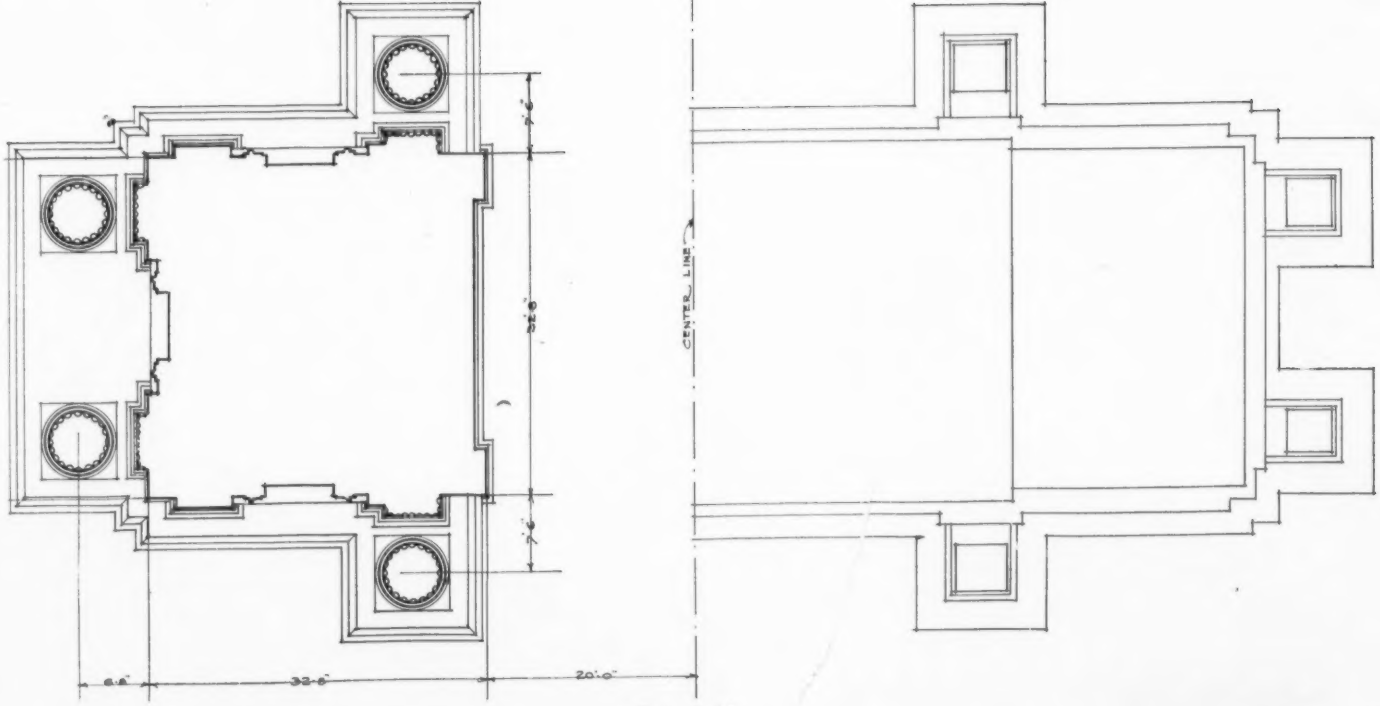


PLAN

PLATE 23

THE ARCH OF DEMOCRACY, BROOKLYN, N. Y

HELMLE & CORBETT, *ARCHITECTS*

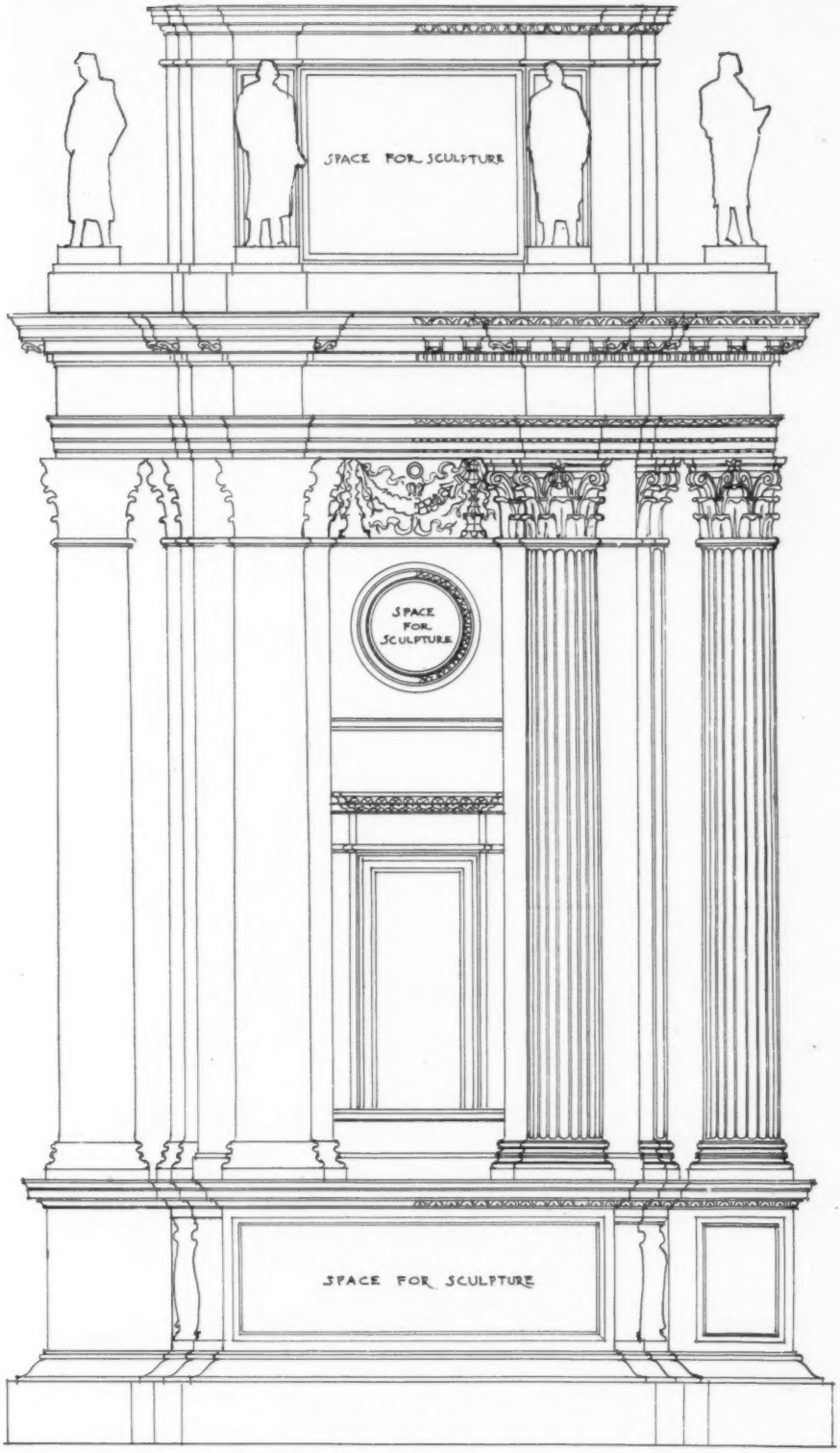


PLATE 24 END ELEVATION

THE ARCH OF DEMOCRACY, BROOKLYN, N. Y.

HELMLE & CORBETT, *ARCHITECTS*

Form New Bureau to Secure Construction Data

The new division created in the Department of Labor to interest the nation in public works and private construction is now in operation. Secretary Wilson announces that the new service will gather and distribute information which will enable private initiative to make the transition from a war to a peace basis without serious interruption due to lack of data on which business judgment must depend. The new organization is called the Division of Public Works and Construction Development.

A survey of business conditions will be made with a view to learning how labor and capital may be profitably employed during the critical period when factories are being made over for peace production and markets are being canvassed for future outputs.

The particular objective of the bureau's research will be to secure data for the use of the construction industry, but the material to be collected will be so varied that the information will be of value to industry generally. The facts made available will be of help to any community or investor in determining whether it is advisable to undertake public or private building at present. When circumstances unfavorable to construction are discovered, an attempt may be made to correct them, but there will be no stimulation of economically unsound enterprise.

The general purpose of the work of this division is expressed in Secretary Wilson's statement:

"Building construction will help to provide employment for returning soldiers and for workmen dismissed from war industries. One of the largest sources of prospective employment is the building trade and its allied factory industries.

"In the case of private construction, a resumption of activity will also lessen the congestion of population, improve conditions affecting public health and convert inactive property into active property—which supplies the means that enable communities to support the functions of governments.

"During the war the nation practically concentrated all its efforts on the production of goods for immediate consumption—war materials, food, clothes. The failure to produce the normal quota of goods for future consumption has made these scarce and high priced, and as they are essential to further production they affect the cost of production and, consequently, the cost of living. Chief among such goods are building and other real estate improvements, including public works, as roads, bridges, etc. The scarcity of buildings, for example, creates high rents."

The inquiry will be under the direction of business men of wide practical experience who are serving without pay. The actual investigation will be conducted by a group of economists and special agents supplied by the Department of Labor and other Government departments or by the universities. The field will include the cost and supply of building materials, the amount of labor available and its cost, the values of land, prevailing rents, the supply of capital, the amount of construction held up by the war and the demand for building in all parts of the country.

Mr. F. T. Miller, director of this new division, referring to the inter-relation of the construction industry with the general welfare of the country, makes the following statement: This is a question that goes beyond the interests of the construction industry. It is fundamental to our entire program of reconstruction and affects society as a whole. After all, reconstruction must be literal as well as metaphorical; the way to bring about reconstruction is to reconstruct. Successful construction depends upon proper teamwork between the employer and employee; therefore, the work undertaken by this division falls under the activities of the Labor Department, and under those of the Information and Education Service, which already possesses a nucleus of the necessary organization and important data.

Secretary Wilson's effort is toward interesting the nation in public and private construction. This end cannot be attained unless the work is based on facts. Facts when verified and surveys when completed, as proposed by the new division, will be made known to the public and to the members of this great composite industry. The service is one of information and education.

The co-operation of other governmental departments, the State Councils of Defense, etc., is assured. Time can be saved and correctness of viewpoint gained by such co-operation.

The following telegram from the Secretary of War, approved by the Secretary of Labor, has been sent out to forty-eight State Councils of National Defense and 4000 County Councils of National Defense:

> Re-employment of discharged soldiers, sailors and war workers released from war industries is one of the most important tasks now before the country. We strongly urge that in sections where there is a surplus of labor all public improvement be advanced in order to absorb labor. We ask that you use all influence with state, county and municipal authorities to this end. Preliminary steps should be taken immediately in order that neces-

sary authority may be secured in time for operations upon opening of construction season.

(Sgd.) Newton D. Baker, Secretary of War and Chairman of Council of National Defense.

Approved by Secretary of Labor.

The construction industry—a composite industry—is one of the nation's largest. Its successful functioning is most necessary for the public welfare. It now needs and merits governmental support more than any other great industry, for the reason that it has necessarily been embargoed by the Government during the war.

Deferred building construction is one of the first portions of our war debt which must be met, for it provides facilities for paying the remaining portion of the war debt and also decreases the cost of living. It is an economic waste to allow labor and materials to remain even temporarily in idleness when they might in the meantime be put into wealth and tax-producing structures.

Money is not consumed in building operations, but passes from one hand to another, and still remains in the National banking system, yet leaves on its way a permanent evidence of wealth—such as water-power, a highway, a railroad, a sewer or other necessity to the earning power of society.

Since the beginning of the European War, construction has decreased, until now it is quite at a standstill. There is, therefore, an accumulated need for building. The shortage of construction is indicated by high rents. The increased cost of building materials is only about half that of other commodities, and this cost is offset in some localities by decreased cost of land.

The country is probably a full year behind in its civic construction program, amounting to at least three billion dollars. This amount must be caught up and normal building continued; a condition of permanently arrested development of the country is inconceivable.

There is a growing understanding between the building employer and the employee of their co-operative relationship, and together they have every incentive for rendering the public efficient service. Co-operation of the architectural and engineering professions, of the practical contractors, and of the two hundred odd national associations of manufacturers, in the practical application of these facts may be assumed as assured.

New School for Industrial Art Opens

To supply the demand for artisans trained in drawing, color and designing, the New York Evening School of Industrial Art opened sessions on January 6th, with a student roll from art schools and art industries. It is the aim of the school to enable artists to become better craftsmen. Exhibitions of the students' work will be held several times a year. The Museum of Art and the American Museum of Natural History will, it is stated, co-operate to carry out the work of instruction which will be offered in the following subjects: book illustration, costume design, advanced drawing, interior decoration, jewelry design, modeling and sculpture, mural decoration, poster and advertising design, principles of design (craft and novelty work) and textile design.

Construction Projects Stopped by War Department

The War Department through the Director of Operations has ordered the construction division to abandon many proposed building operations. The order covers the stopping of all hospital extension work at Rochester, N. Y.; Cincinnati, Ohio; Chicago, Ill.; Milwaukee, Wis.; Cleveland, Ohio; Camp Shelby, Miss.; Des Moines, Iowa, and Nashville, Tenn. Projects in these cities were for alterations to make buildings suitable for hospitals containing 1000 to 4000 beds. Other work stopped includes work at the American University, Washington, D. C.; new barracks and additional roads at Florence Field, Fort Omaha, Neb.; quartermaster's supply buildings at Chapman Field, Fla., and the construction of an officers' training school at Camp Pike, Ark.

Production of Coal Decreases

The production of bituminous coal in the last week of the year just passed shows a decrease of nearly 500,000 tons compared with the previous week, according to the report compiled by the Geological Survey, Department of the Interior. The estimated average daily output decreased from 1,831,000 tons in the week ended Dec. 14 to 1,689,000 tons in the week ended Dec. 21. Production in the week of Dec. 21, 1917, was greater by about 800,000 tons than that recorded in the corresponding week of 1918.

The production of anthracite in the week ended Dec. 21 is estimated at 1,839,000 net tons, a decrease compared with 1,924,000 tons the previous week, but a gain compared with the corresponding week of 1917. The total production from April 1 to date is estimated at 72,541,000 net tons, about 1,400,000 tons less than in the corresponding period of 1917.

Report on Housing

By The

Joint Committee on Reconstruction After War, Illinois Chapter, A. I. A., and Illinois Society of Architects

YOUR Committee on Housing has been asked to study questions of means and methods to be used to keep the matter of proper housing before the United States and State authorities and to present a plan for carrying on better housing and propagating the idea.

Proper housing means better sanitary and living conditions for workmen and the elimination of the slums. The direct result of improving housing conditions will be to develop a higher type of citizenship and to create more healthful and more attractive communities in which to live.

The proper development of housing is of such vital importance to the state and nation, and the need for promptly remedying the conditions of congestion and housing shortage is so great that we believe the best results cannot be obtained without the active aid of the state and government authorities.

The present state laws prevent a company or corporation from erecting houses to be sold to or to serve as homes for their employees. This provision of the law is undoubtedly to prevent corporations from gaining too great a control over real estate, or over their employees, but to meet the great need for extensive housing development throughout the state it would seem that a careful study should be made of the existing state laws governing housing to determine whether or not they permit, to the fullest extent desirable, the various types of collective participation in community housing that have been employed successfully elsewhere.

We respectfully recommend the establishment by the government of a permanent Bureau of Housing to assist in an advisory capacity in improving housing conditions throughout the country.

We recommend the appointment of a State Commission of Housing to study the subject of housing in a broad way and under the guidance of expert advice to determine:

1st. The advisability of changing the present state laws restricting housing to permit freer housing development.

2nd. To determine the proper financial requirements needed in connection with housing developments for the protection of the investor to be enforced by state supervision.

3rd. To determine what changes, if any, in the State Constitution will be needed to give to the State authority to require the approval of all plans for housing development by a permanent State Housing Bureau. This bureau to be given the power to not only enforce the laws in regard to safety and sanitation, but to pass upon the planning of the houses and grounds for group housing projects to insure the development of housing along lines that will provide healthful living conditions and attractive homes and environment for workmen.

We believe that the establishment of a State Housing Bureau or Commission under the direction of an expert in city planning and housing development, and given the authority suggested, would do more to prevent the undesirable features of present housing development of the speculative type than could be accomplished in any other manner.

As a suggestion for propagating the idea of better housing we believe there is the need for educating the public to what better housing means.

This educational work could be carried on by lantern slides showing some of the best types of community housing, and if the slides were furnished by the various groups and men and women who are working for better housing conditions, without selfish motives, we feel sure that the managers of the moving picture theaters could be induced to show them to the public without charge.

The Industrial Readjustment of the Liberated Regions of France

The United States Commercial Attaché at Paris reports:

Roughly speaking, a seventh of the total area of France has at one time or another during the last four and a half years been in the occupation of the Germans. This so-called invaded region, now liberated, comprised the following territory:

Department of Nord—All, excepting a small area along the coast.

Department of Pas-de-Calais.—The eastern third, comprising an important part of the coal-mining basin.

Department of Somme.—The eastern half, which suffered damage as a result of the German thrust toward Amiens in the spring of 1918.

Department of Aisne.—The northern half was in German occupation for four years. The area of invasion covered all of the Department after the German push toward Paris in the spring of this year, and until the recent retreat.

Department of Ardennes.—All of this Department was in German occupation from the early days of the war.

Department of Marne.—The northern fringe only.

Department of Meuse.—The portion north and east of Verdun, comprising about one-half of the total area.

Department of Meurthe-et-Moselle.—The strip stretching northward from Nancy to Luxembourg, in which are situated the iron-ore beds of Briey and Longwy.

All of this invaded region has suffered damage, though the extent and character of the destruction varies greatly in different sections. The region in

the north which has suffered most constitutes the richest industrial section of France, and the task of restoration will be herculean. The aid of American manufacturers will be essential, and it is therefore important for them to know something of the industrial activities of the various departments as they existed before August, 1914. With the object of furnishing a few of the facts needed to gain an idea of the size and nature of the task of industrial reconstitution, the office of the commercial attaché has in preparation a series of articles giving the salient facts regarding the industries of the departments named. The first of these articles will deal with the Department of Nord, one of the most important industrial regions of France.

Reserve Officers to Be Trained in All Branches of Service by Colleges

An important change in organization will be worked out in the new Reserve Officers' Training Corps, which has taken the place of the demobilized Students' Army Training Corps in various colleges of the country. Thereby units will be allowed to specialize in training officer candidates for field artillery, engineer, signal, coast artillery, ordnance, and military aeronautics corps, instead of training for infantry alone, which was the rule before the war. Applications have been received by Secretary of War Baker for the formation of about 200 new units in addition to about 100 of the old units which will be re-established.

The Committee on Education and Special Training has in hand the administration of the Reserve Officers' Training Corps and will attempt to make available a large amount of scientific and technical material, which has been developed by the experience of the war. In all units special attention will be paid to physical training and athletic contests.

Wants More Trade Agents Abroad

Burwell S. Cutler, Chief of the Bureau of Foreign and Domestic Commerce, in his annual report just made public, recommends that the scope of the Government's facilities for increasing foreign trade be widely expanded. A resident trade commissioner abroad is needed, the report states, who can travel from place to place and send his views to American business men so that they can successfully do business with those countries. Mr. Cutler urges appropriations to pay larger salaries so that valuable men may be retained, unhampered in their work by lack of funds, and to provide for new posts. Attachés are asked for for Rome, Madrid, Ottawa, Mexico City, Santiago, Chile, Athens and other places.

Harbor and River Bill Carries Many Important Improvements

The harbor and river bill for 1920, which was completed last week by the House Committee of Congress, includes more than forty new improvement projects. The measure carries appropriations totaling $26,935,000. The principal new project is the purchase of the Chesapeake & Delaware Canal and its dredging to 12 feet.

United States to Supply Vast Quantities of Copper to Europe

Vast quantities of copper will be required for use in the rebuilding of devastated Europe. Stocks of this metal both here and abroad have been greatly reduced during the war, and a general survey induces the conclusion that there are no indications of a sharp decline in prices. There is no immediate prospect of a drop, although it is to be expected that there will be a gradual recession from the present level. Miners and other large interests still assert that copper cannot be produced for less than eighteen cents a pound.

Personal

Harry Marshak, formerly with the Navy Department at Washington, D. C., and Joseph A. Hickey, formerly construction engineer for the Revere Rubber Co. Plant 2 at Providence, have formed a partnership under the firm name of Marshak & Hickey, for the practice of architecture. They will open offices at 310 Strand Building, Providence, R. I. They will be pleased to receive catalogues and manufacturers' samples.

Blaney & Blaney have reopened offices for the practice of landscape architecture and town planning in the Brattle Building, Harvard Square, Cambridge, Mass., according to cards of announcement just received. During the war the firm's offices were closed owing to the fact that both partners had entered war service. Herbert W. Blaney, a member of the American Society of Landscape Architects, was engaged with the Town Planning Division of the U. S. Housing Corporation.

Obituary

Capt. E. L. Satterlee

Capt. Edward Lansing Satterlee, U. S. R. S. C., of the architectural firm of Satterlee & Boyd, New York, died of typhoid fever at Clermont Ferrance, France, on Dec. 4. Captain Satterlee was born at Dobbs Ferry, N. Y., and received his early education at St. Paul's School, Concord, N. H., later graduating from the Columbia University School of Architecture, class of 1899. He also studied architecture at the École Nationale et Speciale des Beaux-Arts.

Captain Satterlee specialized in ecclesiastical and memorial structures and residence buildings, and designed the Zion Church and the memorial to President McKinley at Hamburg, N. Y.; the Little Sanctuary and All Hallows Gate on the cathedral at Washington, and the residence of Admiral A. T. Mahan at Quogue, L. I.

C. Y. Turner, N. A.

Charles Yardley Turner, architect, painter and mural decorator, died of influenza on Jan. 1 at the Presbyterian Hospital, New York, after a two days' illness. Mr. Turner lived in Baltimore, and was visiting friends in New York City when taken ill.

Mr. Turner was a National Academician, elected in 1886. While the earlier years of his career were devoted to architecture, Mr. Turner was perhaps better known both as an easel painter and as a mural decorator. He painted the large panels for the new Essex County Court House in Newark, and also distinguished himself by his coloring and harmonizing the mural "The Burning of Peggy Stuart" to the architecture of the Baltimore Court House. He was director of color and decorations for the Chicago Exhibition in 1893, and director of color at the Buffalo Exhibition in 1901.

Born in Baltimore, Nov. 25, 1850, of Quaker parents, Mr. Turner graduated from the Art School of the Maryland Institute in 1870. Shortly after this he came to New York and founded the Art Students' League, of which he afterwards became president. Mr. Turner was vice-president of the Architectural League of New York, and for one year held a like office in the National Academy of Design. He had been awarded a number of medals at expositions here and abroad.

Offers Plans for "World Capitol"

A dispatch from Rome states that Henrik Andersen, American sculptor, will present to the peace conference, drawings for a capitol for the proposed League of Nations. It is proposed that the "world capitol" be built in either France or Belgium.

Growth of World Trade in Century

Growth in population, cheapening in transportation and a division of labor among groups of men the world over are, according to the statement of the National City Bank of New York, the chief causes of the growth from less than $2,000,000,000 in 1818 to approximately $50,000,000,000 in 1918. By 1850 world international trade had grown to $4,000,000,000; by 1900 it was $20,000,000,000; 1913 $40,000,000,000, and in the year just ending aggregated probably $50,000,000,000, when measured in the inflated currency of the present period. The bank's statement pointed out that with the rapid increase in gold production in the last quarter century the money of the world has grown from $10,000,000,000, in 1896, to about $15,000,000,000 at the beginning of the European war. During the century of power transportation, 1818 to 1918, the world's greatest steamships grew to about 30,000,000 net tons, with a value at the beginning of the late war of about $2,000,000,000, while the world's railroads had grown to 725,000 miles, with a value, probably, of $70,000,000,000.

Urges Plan for a Federal Body to Supervise Industry

A plan that calls for a body to counsel and regulate industry that closely parallels our present Supreme Court in its manner of appointment is being launched by M. L. Requa, head of the Oil Division of the Fuel Administration. It will be presented in the form of a bill to be introduced in Congress.

The fundamental idea, that supervision and regulation of industry by the Government must develop to a greater degree, embodies the placing on a sort of board of trade certain selected captains of industry who have reached the highest pinnacle of success in business life. Members elected to the body would necessarily have to give up all private business ventures and take up a position aloof, where, using their wisdom and experience, they could counsel and aid business generally and guide it in its relations with this and other governments.

It is Mr. Requa's idea that a chair in the proposed body should be cherished and striven for by

a business leader just as a lawyer sees the Supreme Court bench as the goal of a highly successful legal career. It is planned that this supervisory and regulative body, with powers sufficiently broad to allow it actually to function, would have its personnel so protected and guaranteed that business interests could put the fullest confidence in it.

Decided Progress Toward Resumption of Normal Conditions

Attributed chiefly to a drop in the prices of raw materials, the Federal Reserve Board reports a decrease in prices between September and October, the first during the present year. Steel prices have lowered, with foreign inquiries for the product strong. There is a real demand for copper, but buyers are generally waiting for prices below 23 cents fixed upon as an export price. The genuine belief is that much progress has been made toward the resumption of normal conditions where supply and demand are the controlling factors.

Building is being restricted on account of the uncertainty of the price situation in spite of appeals from the Government to promote such enterprises as a solution of the problem of demobilization.

Labor Readjustment Calls for Americanization

That only a thorough-going campaign of Americanization can solve the problem of labor readjustment which is now taking place is the decided opinion of many close followers of the subject. Just whether it will end with employers calling for help or with workers begging for jobs is not clear, but reports from widely separated sections indicate that the surplus labor may be absorbed. Some dispatches even intimate that an actual scarcity of labor may follow a brief period of readjustment.

Among the many plans suggested is the organization of Americanization committees in industrial plants to improve racial relationships and give the men something besides a wage stake in America. If they cannot get representation, self-expression and participation, it is said that many will return to their home lands, and their labor and savings will be lost to this country. The plan is to get them genuinely and voluntarily interested in free education, American investments, Liberty Loan, Red Cross and other American advantages which give new ties in our country.

With the coming of peace it is therefore necessary that the far-seeing employer will do everything in his power to make and retain the good will of his workers, just as the sales manager tries to gain and hold the good will of the buying public.

The Question of Advertising

The following wording, as to advertising by architects, has been accepted by the Board of Directors of the American Institute of Architects and ordered published as a part of the circular of advice:

"Publicity of the standards, aims and progress of the profession, both in general and as exemplified by individual achievement, is essential. Advertising of the individual, meaning self-laudatory publicity procured by the person advertised or with his consent, tends to defeat its own ends as to the individual as well as to lower the dignity of the profession, and is to be deplored."

Form Decorative Arts and Industries Association

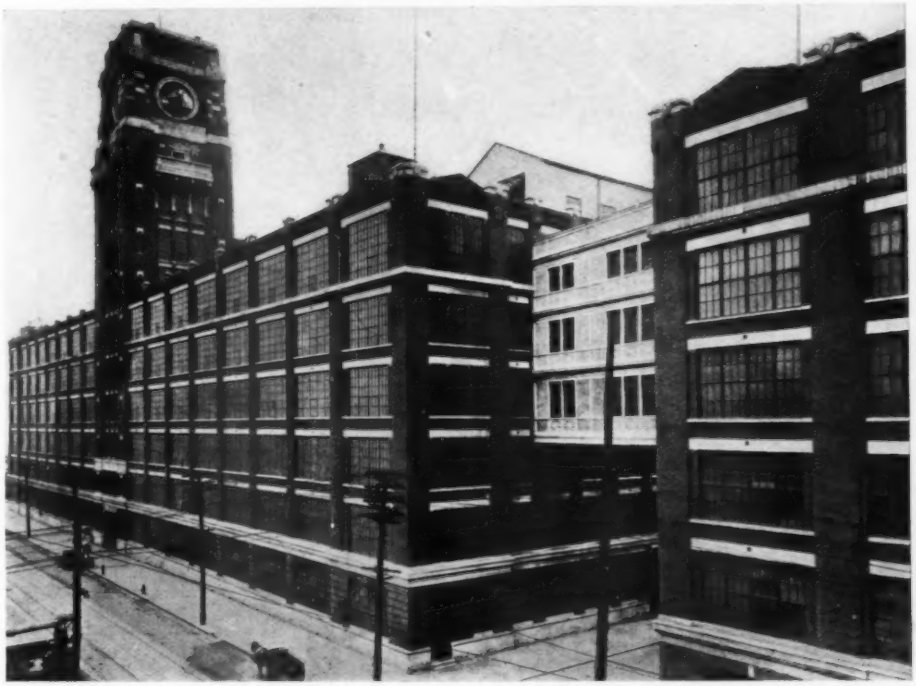
The Decorative Arts and Industries Association, a new organization to encourage higher standards in home furnishing, has been formed. The executive committee has decided to hold a convention in New York City early this year in order to bring together those interested in developing better taste in the home. It is proposed to secure a membership distributed through the art trades and societies, and to have a mutual understanding and common aim between the trade and artists working for the trade which does not now exist.

The officers of the new association are: James P. Haney, president; Henry W. Frohne, vice-president; William Laurel Harris, secretary, and Chandler R. Clifford, treasurer.

Municipal Reconstruction in America

For those interested in a reconstruction program for American cities, a valuable bibliography on the subject, including titles of magazine articles, British literature on reconstruction, and French books on reconstruction, has been prepared by the New York Public Library and published in Municipal Reference Library Notes for Nov. 13, 1918. Copies may be obtained by writing the librarian, Room 512, Municipal Building, New York.

Department of Architectural Engineering



CABINET FACTORY, VICTOR TALKING MACHINE COMPANY, CAMDEN, N. J.
View looking east on Market Street, showing bridge over Front Street, Building 17C, water tower and Building 17D beyond.

Cabinet Factory, Victor Talking Machine Company Camden, N. J.

BALLINGER & PERROT, *Architects and Engineers*

WHEN men achieve a certain degree of notoriety their portraits are published, illustrating all the seven stages of their lives. The student of human nature is able to trace the development of the character and explain the effects of employment and environment on the physical aspect of the person. Even as this applies to persons, it applies also to manufacturing plants that expand beyond their initial size.

The person who is versed in the development of building construction can easily determine the decade in which each unit of the plant was constructed. Every element of the building indicates the progress made in architectural design, structural design, the mechanical equipment consisting of the heating and ventilating plant, lighting system and sanitary arrangements. A change in the architect is also readily noticeable in the architectural and engineering treatment and also in the degree of the completeness of the structure and its equipment—the element of completeness being a measure of the work and care devoted to the project.

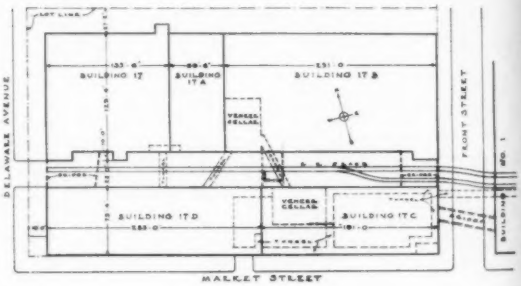
An interesting industrial development is that of the cabinet factory department of the Victor Talk-

ing Machine Company at Camden, N. J. This department consists of five units known as Buildings 17, 17A, 17B, 17C and 17D. These buildings are located on a plot of ground having a frontage on the north side of Market Street of 443 ft. and having a depth of 270 ft. with Delaware Avenue on the west and Front Street on the east. As will be seen from the block plan, the Buildings 17, 17A and 17B are located within 27 ft. of the north lot line and on the river bank west of Delaware Avenue. Under flood conditions and high tide in the Delaware River the water level is about two feet below the street level at Building 17D. The basement of this building is successfully waterproofed by finishing the floor and plastering the inside of the walls with a one inch covering of waterproof cement plaster. The original mechanical plant included a main steam service line supported on steel towers. As

Site of Building 17D, with Buildings 17, 17A at left and center with 17C back of water tower. Building No. 1 at extreme right. Old water tower being wrecked. Note elevated steam main entering at the left and later placed in tunnel.

constitute one group which is separated from Buildings 17C and 17D by a court yard 38 ft. wide. This court yard is traversed by a railroad track and has entrances on Delaware Avenue and Front Street and also through Building 17D midway in the Market Street frontage.

All of these units are of fireproof construction, six stories high, with Building 17D only having a basement throughout except under the driveway. A veneer cellar is placed in Buildings 17B and 17C. A system of tunnels extends from the old power house, located east of Front Street on Cooper Street, through Building No. 1. Crossing Front Street the tunnel enters Building 17C and connects with the basement of Building 17D and with Buildings 17, 17A and 17B by traversing the court as shown. On the west end of Building 17 is a shipping platform, under which is a basement from which a tunnel, passing through the kiln building, connects with the new power house which is located this line ran through the extensive lumber storage yards of the company it was apparent to the architects that a moderate fire would destroy the steam

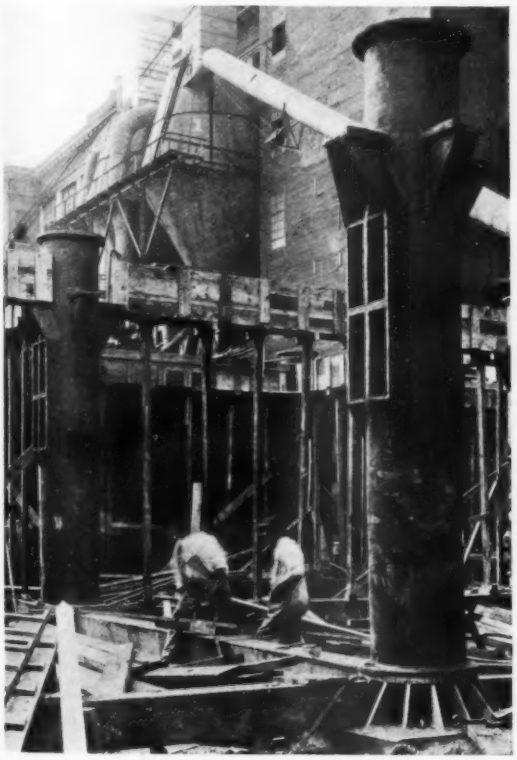


Block Plan

supply system and on their recommendation this steam service was placed in the tunnels which have been described.

View of a partially poured concrete floor, showing the four-way reinforcing rods in place

Three bridges, five stories high, cross the court and connect the two groups of buildings. A bridge in the 4th, 5th and 6th stories over Front Street



Basement column in position, showing brackets for supporting the floor slab and openings for hot air registers

connects Building 17C with Building No. 1. These bridges are closed at each end with automatic rolling steel shutters.

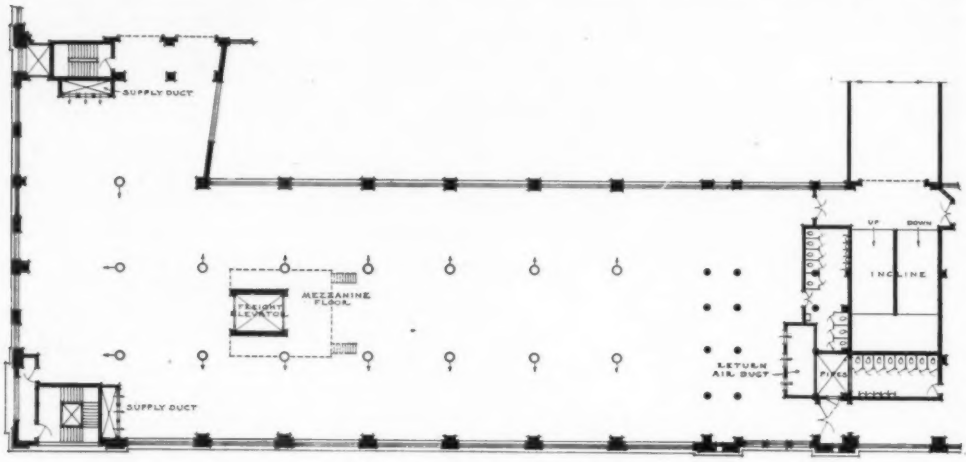
As Building 17D is the last one constructed, it naturally has some features of construction and equipment that are improvements over the previously erected buildings. Among these are described the features of building construction, heating and ventilation and water supply with a description of the ramps in Building 17C which are used as means of ingress and egress, in lieu of stairways.

Basement columns in position with slab form material ready for erection

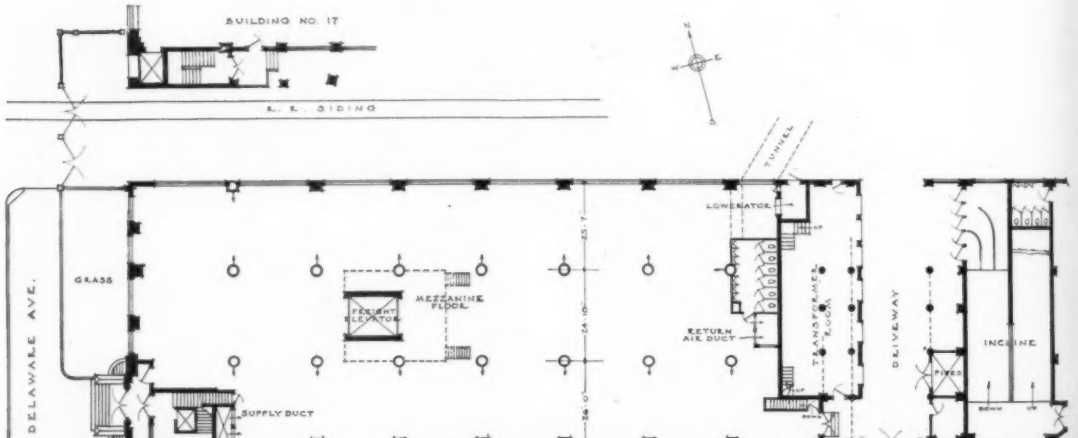
Building 17D is constructed of reinforced concrete of the type known as "flat slab" construction. The typical floor panel is 23 ft. x 24 ft. 10 in. in size designed for a live load of 150 lb. per sq. ft. The slabs are 8½ in. thick reinforced with a 4 way system, the diagonal hands consisting of 12 ½-in. square twisted bars and the rectangular bands of 30 bars of the same size. The drop panel is 9 ft. 6 in. square and 4 in. deep. The cap at top is 5 ft. 7 in. in diameter and 2 in. deep. The floor strips, fill, under and top floor of wood have depth

of 5⅛ in. The spandrel girders extend from the plane of the underside of the drop panel to a variable height above the floor, permitting the steel sash to extend practically to the ceiling line.

The exterior columns are of reinforced concrete, sive 1 in. The heavy cast iron brackets support the conical concrete cap. The columns have a 2 in. covering of metal lath and cement plaster, serving as fire protection. The vent openings in general are four in number 8 in. wide and 24 in. high, surround-



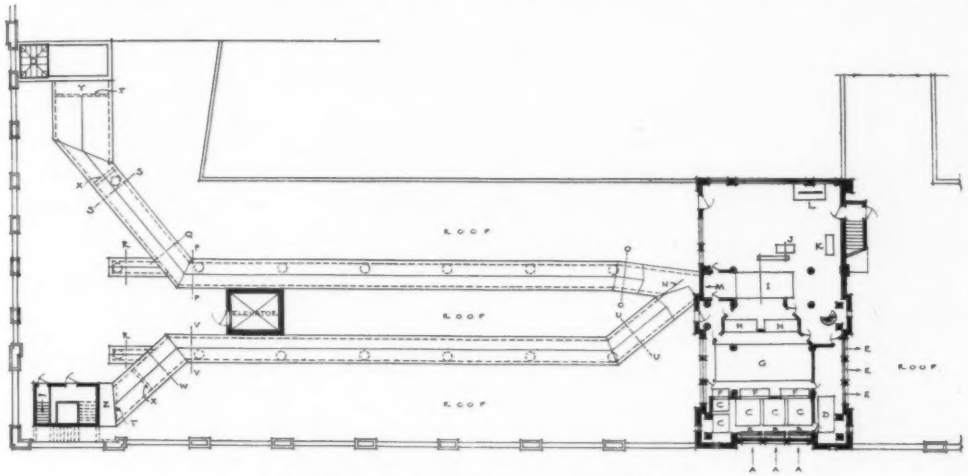
Building 17D, Typical Floor Plan



Building 17D, First Floor Plan

rectangular in section. The columns supporting the tower are of structural steel, encased in concrete and except for these the interior columns are of cast iron, cylindrical in section. These columns serve as structural columns and as vertical ventilating ducts. They all have an outside diameter of 27⅜ in. and the typical column has a metal thickness in the basement of 1 11/16 in., first story 1½ in., second story 1¼ in., third to six stories included by ribs of 2 in. metal 6 in. deep. The construction of these columns is clearly shown in the detail drawing and the photographic illustrations. The basement is 11 ft. 4 in. high from floor to floor, the first to fifth stories 15 ft. and the sixth story 17 ft. 2 in. to top of roof slab. The roof slab is covered with 2 in. of cork on which is placed the cinder concrete roof filling for drainage, over which is placed the slag roofing. The 2-inch cork

insulation was used not only to facilitate maintaining a uniform temperature in winter weather, but to prevent any condensation forming on the ceiling due to the humidity in the air. The south, east and west elevations are faced with brick, the north



Building 17D, Seventh Floor and Roof Plan

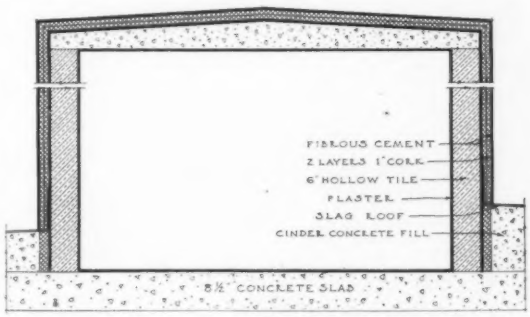
A—Fresh air inlet.
B—Regulated fresh air louvres.
C—Return air opening in floor with regulated louvres.
D—Return air opening in floor to atmosphere.
E—Return air openings to atmosphere.
F—Pre-heaters.
G—Air washer.
H—Re-heaters.
I—Fan.
J—Fan motor.
K—Vacuum pump and trap.
L—Switchboard.
M—Outlet to air duct on roof.
N—Adjustable deflector.
O—Duct 7 ft. wide, 5 ft. 6 in. high.
P—Duct 6 ft. 6 in. wide, 5 ft. 6 in. high.
Q—Duct 6 ft. wide, 5 ft. 6 in. high.
R—Duct 3 ft. by 3 ft.
S—Duct 6 ft. wide, 5 ft. 6 in. high.
T—Pipe rail in duct.
U—Duct 7 ft. by 7 ft.
V—Duct 6 ft. 6 in. wide, 7 ft. high.
W—Duct 9 ft. wide, 7 ft. high.
X—Regulating dampers in duct.
Y—Vertical air duct.
Z—Vertical air duct.

or court elevation has brick spandrel panels only, the concrete girders and columns being exposed. The four faces of the tower are faced with brick.

The tower is 40 ft. 6 in. square from the ninth to eleventh stories inclusive. At the seventh floor or main roof level the tower is the full depth of the building, the eighth floor being practically a mezzanine story as shown in the section.

This tower is a notable example of the use of such an architectural feature to house the water supply tanks and other utilities. If such structures were universally used the skyline of our cities would be relieved of the hideous tanks that so often appear as suspended in the air or resting on plain brick walls. In this particular case the tower is an interesting and well designed architectural feature which supplanted the concrete covered steel tower shown in the progress photograph which was in the same plan location as the brick tower in Building 17D.

The heating of Buildings 17D and 17C is accomplished by hot blast systems of sufficient capacity to maintain an internal temperature of 70 deg. Fahr. throughout, with external temperature of zero, the room temperatures being automatically controlled by thermostats. In Building 17C (not illustrated) the fan is located in a pent house on the roof and is of the double inlet, multiblade type, having a capacity of 200,000 cu. ft. per minute, operated by a chain driven motor of 150 hp. The pre-heater consists of two groups of regular vento sections, two tiers high and two rows deep, containing 2,560 sq. ft. of radiation. The re-heater is composed of two groups of regular vento sections, three tiers

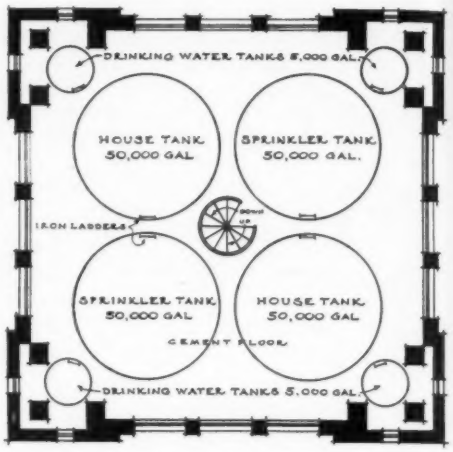


Section through Air Duct on Roof

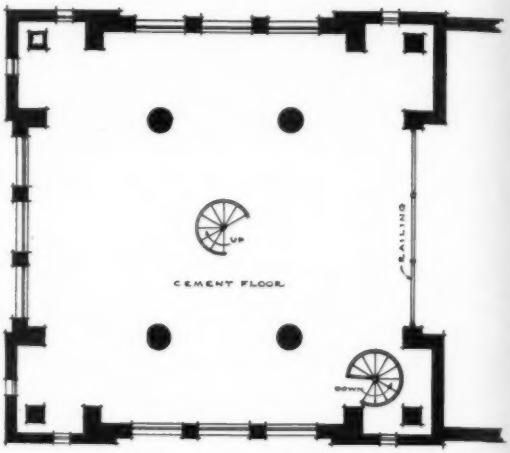
high, one group being three rows deep and the other group four rows deep, containing a total of 8,778 sq. ft. of radiation. The air washer has a capacity of 200,000 cu. ft. per minute and is provided with a system of humidity control.

In Building 17D, see seventh floor and roof plan,

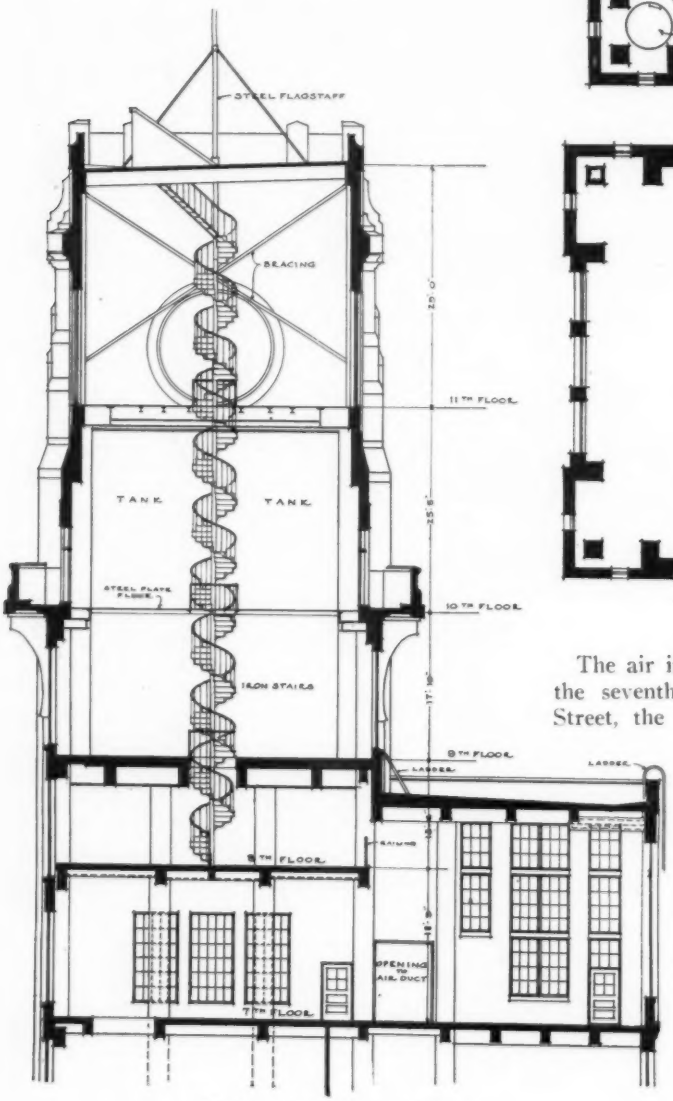
the fan is of the single inlet, multi-blade type, with a capacity of 225,000 cu. ft. per minute, operated by a chain driven motor of 150 hp. The pre-heater consists of three groups of regular vento sections, three tiers high and two rows deep, containing 4,224 sq. ft. of radiation. The re-heater is made up of two groups of regular vento sections, three tiers high and four rows deep, containing 8,448 sq. ft. of radiation. The air washer is of 225,000 cu. ft. per minute capacity and provided with a system of humidity control. These air washers eliminate 98 per cent of the solid matter in suspension before being delivered to the fan.



Ninth Floor Plan



Eighth Floor Plan



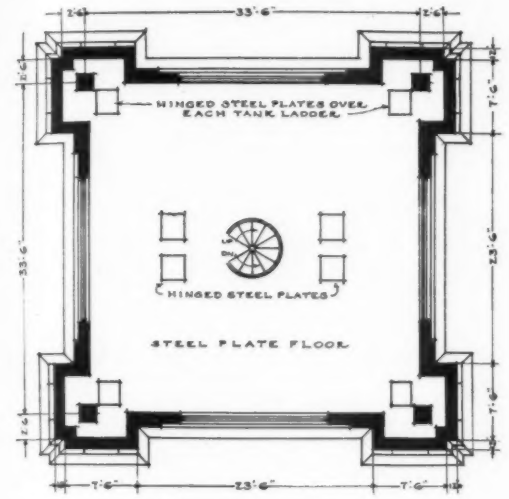
Section of Tower, looking west

The air intake is through the three openings in the seventh story of the tower, facing Market Street, the louvres immediately back of these openings are automatically controlled by thermostats and arranged so that the air may be taken entirely from the exterior, from the re-circulating ducts or a combination of fresh and return air. This arrangement is shown in the seventh floor and roof plan.

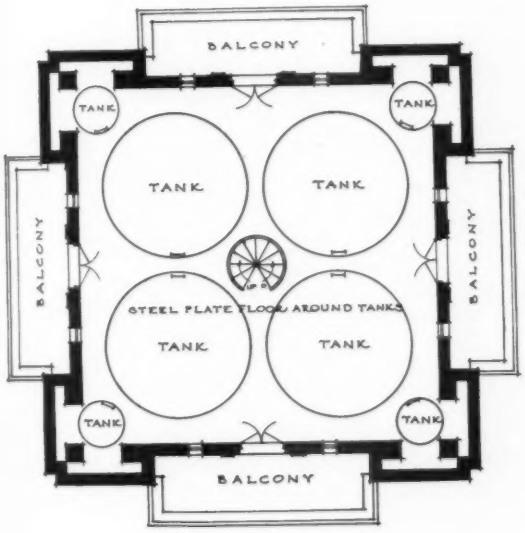
In the seventh floor are return air openings, with louvres which are controlled by thermostats. The return air duct is brought to this position below the sixth story ceiling. One such opening, to the east, is separated from the main air chamber

by a partition and this return air escapes to the atmosphere through the three window openings to the east as indicated.

The air, either fresh or return, passes through the pre-heaters, the air washer and the re-heaters

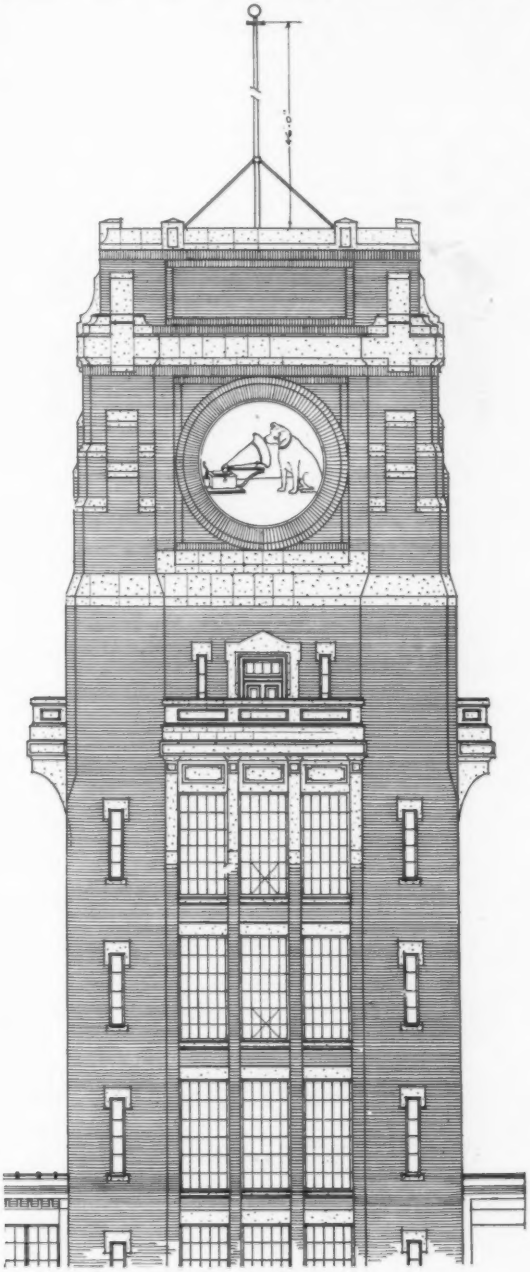


Eleventh Floor Plan



Tenth Floor Plan

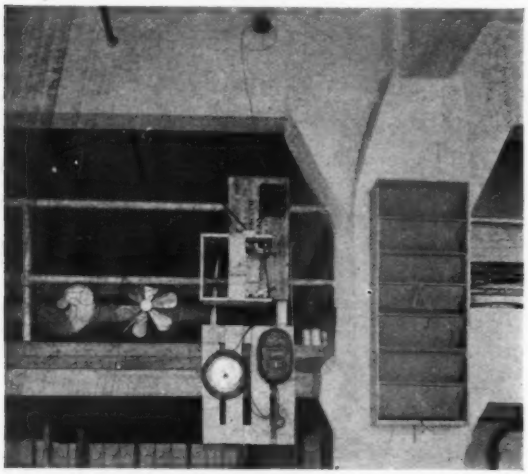
to the fan from which it is sent to the roof ducts. These roof ducts have side walls of 6 in. hollow tile and roofs of reinforced concrete. The entire interior is plastered. The exterior of the tile walls and concrete roof is plastered with a fibrous cement, to which is applied two layers of one inch thick cork to which is applied another coating of fibrous cement. By this construction the duct is insulated against heat loss. Immediately after the duct



South Elevation of Tower

emerges from the tower, it divides into two lines and at the junction is placed on adjustable deflector to regulate the air supply to these ducts.

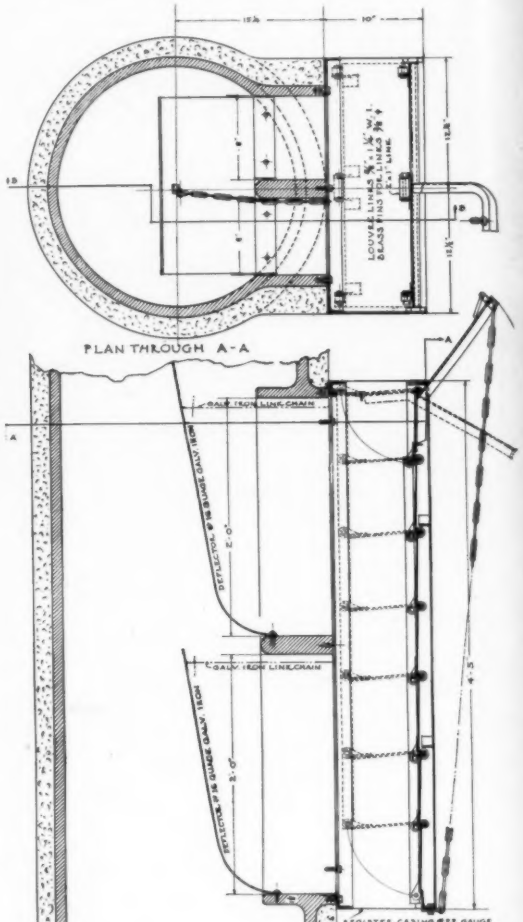
In the bottom of these ducts are openings into the tops of the fifteen stacks of cast iron columns, previously mentioned, which also serve as vertical air ducts. The air is diverted into these columns by specially designed deflectors which are adjusted from the outside of the horizontal duct. These horizontal ducts terminate over two vertical rectangular air supply ducts, the one on the north extending down to the second floor and the south duct to the basement. Before entering these vertical rectangular ducts there is placed in the horizontal



Test of automatic register release apparatus. Actuating apparatus at ceiling with air line connection to operating device which is connected with the ventilating louvres. For a test purpose the apparatus, on release closes the registers, stops one fan and starts another, rings a gong, turns in a fire alarm and causes a talking machine to say "This is a fire drill; form in line two abreast, and move out quietly."

ducts a regulating damper and a pipe railing to prevent persons from walking into these vertical ducts.

The air passing through the cylindrical cast iron columns is deflected through the openings at each story by adjustable galvanized iron deflectors as shown in the detail drawing. A register casing, made of galvanized iron, is placed on the front of the opening. In this casing is placed louvres which are hinged at the side. Their normal position is, of course, open and are held in this position by a simple chain mechanism, which in case of fire is automatically released and causes the louvres to drop into a position that closes the opening. These registers, as well as all of the automatic fire doors and rolling steel shutters, are actuated by an automatic release. This release operates when the rate of temperature increase is abnormal, as in fire conditions, or at a rate of 15 deg. or more per minute. When the rate of temperature increase is less than 15 deg. per minute the release does not operate. It will be seen that this device operates by the rate of increase in temperature regardless of the temperature itself. This is directly contrary to the action



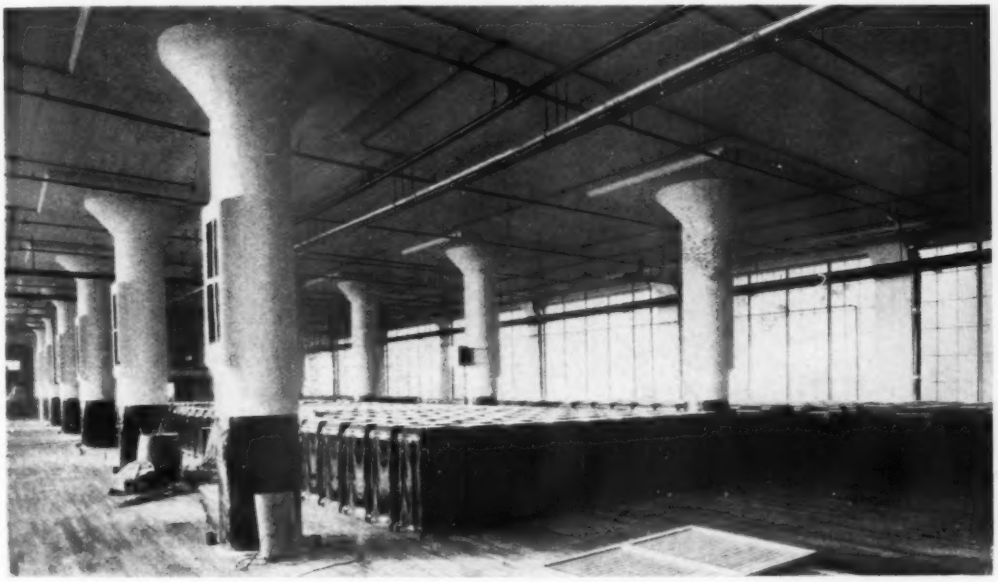
Detail of register on cast iron column showing the louvres closed. Open position indicated by dotted lines. Note adjustable deflectors inside the column

of the ordinary fusible link which can operate only at a fixed temperature. The release here used would operate in a cold storage house, provided the temperature increased 15 or more degrees per minute and well illustrates its value for universal applications.

The incoming air at each story causes the air to travel to the return air duct located at the east end of the building and extending vertically to the

chamber under the sixth story ceiling, where it passes through the louvred openings in the seventh floor and is disposed of as previously described. On one floor there is operated planing machines at which there are placed an exhaust apparatus for the removal of sawdust and shavings. This draws a considerable amount of air out of the room and one of the problems that the architect had to solve was to put in as much air as was taken out by this exhaust system and maintain temperature of the rooms; this was done successfully.

During the summer season, the fans and air



View of a finished story, except that the hot air registers are not yet in place.

washers are used for cooling purposes. The windows in this building in all seasons are kept closed.

Exhaust steam is used for heating. A 24-in. main supply originates at the old power house on Cooper Street and from this main a 14-in. vertical supply, with a 10-in. branch to the pre-heaters, supplies steam to this apparatus. A 6-in. return line carries the condensation to the basement of Building 17D at which point it connects with a 10-in. main return running to the power house. Vacuum pumps and return traps insure the circulation of the steam.

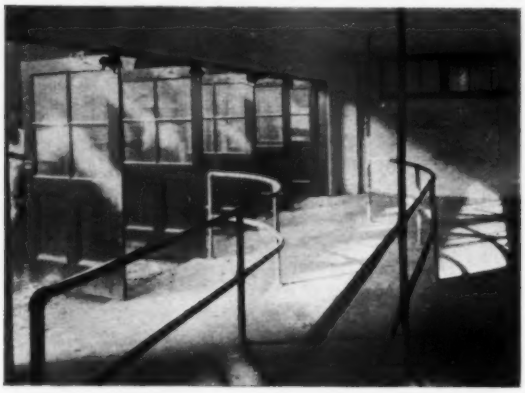
The water supply tanks for the group of buildings are placed on the ninth floor of the tower and extend through the ninth and tenth stories. They rest on a concrete slab which is supported by a heavy structural steel frame. Gutters are placed in this concrete slab, about the eight steel water tanks, to remove the condensation which accumulates on their outer surface. At the tenth floor, midway in the height of the tanks is placed a steel plate floor for utility purposes only. The eleventh floor above the tanks is also made of steel plates, in which doors are placed over each tank.

The tanks consist of two sprinkler system and two house tanks for sanitary purposes, each of these four tanks are 14 ft. 6 in. in diameter and 40 ft. 6 in. high, with a capacity of 50,000 gallons each and also four drinking water tanks, 4 ft. 8 in. in diameter and 40 ft. 6 in. high with a capacity of 5,000 gallons each. The total tank capacity is 220,000 gallons of water.

The water for sprinkler and sanitary purposes is taken direct from the river, the pumps being located in the basement of the Power House which is built on the river front. The water is pumped through filters which have a capacity of 5,000,000 gallons per 24 hours. This water is pumped to the four large tanks located on the ninth floor of the tower, which are located about 1500 feet from the Power House and about the central in the group of buildings. The elevation of these tanks is sufficient to give the required head for this group of buildings.

The piping to these tanks is run in the pipe shaft from the basement to the eighth floor, where all of the control valves for the tanks are located, the entire space on that floor being utilized for that purpose insuring easy access to all valves. This centralized control and the fact that the piping is painted in colors to designate the contents of the same,

gives a system that is easily understood and convenient to operate. The drinking water tanks are supplied with city water from a 6 in. main riser with a 4 in. branch to each tank. Two 12 in. risers supply the sprinkler and house tanks, from which a 6 in. branch supplies each tank through the 8 in. sprinkler and house service pipe which connects with the bottom of the tank. The large tanks have 8 in. overflows, the small tanks 4 in. overflows, into which are connected the 4 in. drains from the bottom of all tanks. These drains and overflows unite in a 12 in. vertical drain in the pipe shaft. From the 12 in. sanitary or house tank riser is taken a 10 in. service to the air washing plant. The sprinkler and house tank service is cross-connected at the eighth floor for emergency use.



Entrance to ramp showing hand rails for preventing congestion.

The discharge line from the sprinkler tanks is run to a manifold in the basement of the tower. The discharge line from the house tanks is connected with a loop line in the basement which serves all the buildings in the group, and to the sprinkler manifold, which makes the contents of the four large tanks available in case of emergency. The distribution of the drinking water is also accomplished by a loop line in the basement.

The inclined planes or ramps at the west end of Building 17C are worthy of especial attention. They are 11 ft. wide and have a pitch of 1¾ in. per foot. The concrete floor has an ordinary float finish. Two pipe rails are placed at the bottom of the incline to prevent congestion at the five exit doors. At a fire drill test 4850 men passed out of these buildings through this exit in 13½ minutes. This is a very impressive demonstration of the efficiency of this type of means of egress and is well worthy of careful consideration by architects and owners. Objection may be made by some to the amount of

View of ramp midway between first and second floors, showing entrance at the left.

space occupied by such a construction but its advantages in safety to life will far outweigh any reasons brought against its use. The other means of egress are fireproof stairs enclosed in brick walls and access thereto only being by passing through an exterior balcony; in other words, no stairway opens directly into the building.

This entire group presents many interesting features and is well worth a careful inspection. This article is confined to Building 17D, the last constructed, as containing all of the desirable features developed during the growth of this great industrial plant. Every feature of this building and its mechanical equipment was designed and specified within the organization of Ballinger and Perrot, Architects, and is an excellent example of the product of the modern architects' organization, so formed as to render complete service to the client. The plant also evidences the intelligent liberality of the Victor Talking Machine Company in providing such quarters for the production of their wares.

Industrial Information

In this Department there is published each week information as to the development of materials and methods, derived from reliable sources.

Changing Times

A twelve-page calendar measuring 20 x 27 inches will be sent on request to architects addressing John Boyle & Co., 70 Reade Street, New York. Each page bears a fine, colored map, representing first the world, then this country, Europe, the chief European countries, Asia, Africa and Australia in succession. In view of the imminent changes in the aspect of a world map now for so many years familiar, and the constant references that doubtless will be necessary in the near future, a calendar so illustrated will be a useful adjunct in every office.

John Boyle & Co., Inc., have been for nearly sixty years manufacturers and exporters of cotton duck and awning materials. They have a branch office in St. Louis, Mo.

Vacuum Heating

The valuable exposition of vacuum heating contained in a booklet on heating equipment prepared by the Bishop-Babcock-Becker Co. gives another outlook on a topic whose ramifications have not all yet been explored. This company has headquarters and factories in Cleveland, Ohio, and eleven other offices in principal cities throughout the country.

Considerable misapprehension exists on the meaning of "vacuum heating." The term naturally implies that vacuum is used as a heating medium, but this is actually not the case. It is generally conceded that steam is at present a satisfactory and economical heating medium, but it is also recognized that air accumulates in radiators, pipes and boilers, preventing the free circulation of steam and reducing the effectiveness of the system.

In the ordinary steam plant, the only way to get rid of the air is to force it out with steam pressure through vent valves on radiators. As the openings in these valves are very small, this procedure frequently requires considerable time, during which the occupants have to suffer from cold. In addition, a large amount of fuel is burned to produce the steam pressure necessary to force air out of the system and keep it out.

Vacuum heating equipment will, it is claimed, overcome these difficulties. Vacuum in a steam-heating plant eliminates air resistance by exhausting air from the radiators, piping and boiler; after this is done, it pulls steam into the radiators on the same principle as a vacuum cleaner sucks in dirt. The result is quick, thorough and even heating, as steam reaches all radiators instantly and each one is entirely filled with steam.

It has been found that with two-pipe gravity return plants, the vacuum would eliminate the water due to condensation, thereby assuring thorough drainage and preventing freezing and hammering in the pipes.

Another point in favor of vacuum heating is that vacuum in the boiler permits of boiling below the 212° F. required in air. This means that steam is produced and transmitted to radiators at a lower temperature than is otherwise possible, and results in an appreciable saving in fuel.

The booklet describes three different kinds of heating equipment made by the Bishop-Babcock-Becker Co., to cover every requirement. They are claimed to be efficient in any structure, whether small residence or tall skyscraper. Diagrams and plans are interspersed throughout the pages, helping to form a complete and valuable book.

Globe Ventilators

Good ventilation is inseparable from health and vigor. Every element favorable to good health may be present and yet made impotent by bad air. Manufacturers have devoted much time and effort to the perfection of apparatus which will purify the air and maintain it in constantly wholesome condition.

Notable among devices with this aim is a widely used and effective instrument manufactured by the Globe Ventilator Co. of Troy, N. Y.

In a booklet published by this company there is printed a simple discussion of ventilation in its various aspects, together with a thorough description of how the Globe ventilator fills the needs of a reliable system. The illustrations have been selected with a view of showing the variety of structures in which Globe ventilators have been installed.

The design of the Globe ventilator, with its curved inner and outer surfaces, induces, it is said, a rapid movement of the air outward, at the same time offering the minimum resistance to flow. It produces a powerful upward current of air, draw-

ing out all trace of dust, steam, smoke and gas-laden air. Wind cannot enter the throat of the ventilating pipe, therefore there is never a downward draft. The makers state that every inch of its opening is effective in creating efficient, positive ventilation; that it utilizes all wind currents, thereby creating vacuum—a vital principle of ventilation—and works without wind by natural suction.

The Globe ventilator is made of heavy gauges of galvanized iron of the best quality obtainable. The construction is described as firm and substantial, carefully executed by skilled workmen. An interesting result in the operation of this device is that nothing moves but the air, so there are no parts to creak or get out of order.

A small model demonstrating the operation of this ventilator will be mailed on request of architects.

Electric Equipment

The Hart & Hegeman Mfg. Co., of Hartford, Conn., has united with the H. T. Paiste Co., of Philadelphia. Both are now under one management in Hartford. The consolidation secures to architects a complete line of wiring devices of high quality, made under one supervision.

In manufacturing and developing its line of wiring material, the H. T. Paiste Co. has aimed to make every new addition to its line a standardized interchangeable device, thus avoiding duplication and multiplication of ineffective designs.

The reputation attained by Hart & Hegeman switches is, they claim, due to the fixed purpose of producing the most durable and serviceable switches possible. This company for twenty-six years has specialized exclusively in the manufacture of switches, and success of results is to be expected. If a switch proves unsatisfactory and causes inconvenience to the householder, the whole installation is apt to be condemned. In any case, it tends to makes the use of the system unreliable and troublesome. It is the switch with which the user comes in daily contact, and this makes it to him a feature of considerable prominence as part of the equipment. It is therefore a matter of importance to the architect to select a dependable and durable switch. The makers believe they have this kind to offer.

They state that all the raw materials used in the manufacture of "H. & H." switches are given laboratory tests before being made up, and further, that every part of the finished switch is tested and gauged. Most of the moving parts need to be so accurately made that there is not a variation of one-thousandth of an inch. In addition, severe mechanical and electrical tests are given.

A book of 181 pages may be secured from these people in which will be found illustrations and description of the wide variety of electrical devices and materials they produce.

The Shingle Roof

The possibilities of shingle roofs are persuasively presented in a pamphlet printed by the H. W. Johns-Manville Co. of New York.

Chief among the drawbacks in the use of shingles has been the matter of their susceptibility to fire. In this instance, however, the shingles are made of asbestos, so that by their use fire hazard is reduced to a minimum. Combine this attribute with a good assortment of rich and appropriate color and you have a material which has earned for itself considerable esteem and appreciation.

The brochure referred to is colorfully illustrated by pictures of country cottages and other rural structures where roofs of this type may be used, and covers an able and readable talk on the evolution and development of shingle roofing here and abroad.