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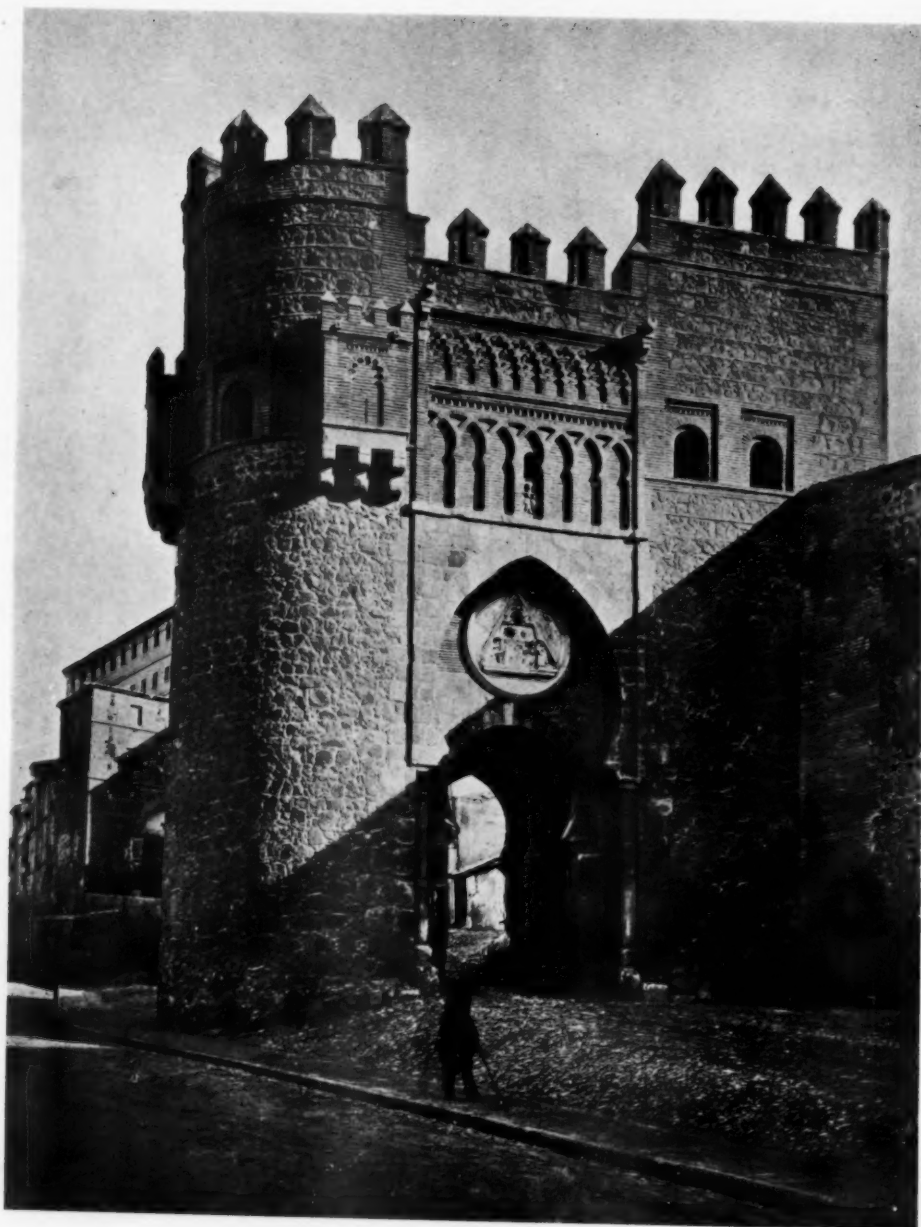
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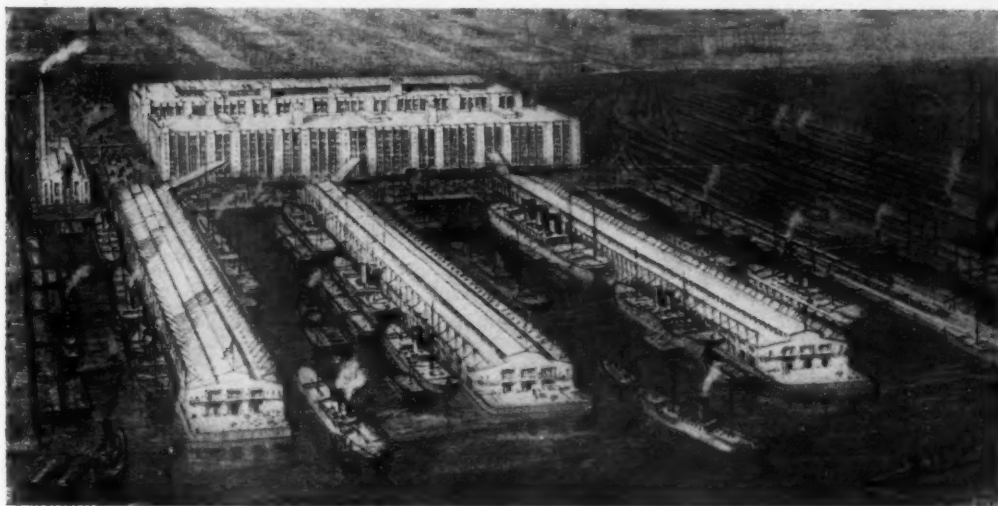
THE AMERICAN ARCHITECT

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VOL. CXVI

WEDNESDAY, NOVEMBER 26, 1919

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BIRD'S-EYE VIEW OF BASE, LOOKING FROM NEW YORK HARBOR

United States Army Supply Base

BROOKLYN, NEW YORK

CASS GILBERT, *Architect.*

IT was never necessary at any time during the war for any architectural firm called upon by the Government for emergency work first to perfect an organization that would make possible the quick and efficient progress of that work.

THE AMERICAN ARCHITECT on many occasions referred to the fact that in no other professions having to deal with large undertakings was there a better organized personnel than among architects. To support this contention, there were cited from time to time many proofs. Large hospitals were designed, planned and the contracts let, in record time. Here in New York, when the city was engaged either in the welcoming of representatives of our Allies, or in the many decorative schemes to further the "drives" that were made, firms of architects accomplished with their usual working organizations marvels of speed and efficiency.

In this issue there is illustrated one of the best conceived and most expeditiously and efficiently executed of all the Government's hastily entered upon operations. It will not be necessary to direct the attention of an architectural reader to the dignified character of the architectural treatment of this project. Mr. Gilbert has simply created a group of the most utilitarian buildings, clothed them with the highest expression of good architectural design, and added still another example to the buildings evolved by his genius that will enduringly stand as a monument to a great architect.

Just at this time of demands by labor in all parts of the country—demands that it is widely believed are not altogether based on a just regard for the general welfare or the future stability and dignification of labor—it is interesting to be able to point out that architects are to-day creating buildings in

THE AMERICAN ARCHITECT

which labor will find a shelter for its activities, as dignified and well considered as are any of the buildings which capital occupies for business enterprises. It will now be a good time calmly to consider whether or not unreasoning leaders, who do not at present really lead, could not so plan their future activities as to be worthy of the surroundings in which they are, as in this instance and many others, placed.

It will compensate every architect many fold to study this Army base group, for, as what may be called an emergency effort, it presents for consideration many of the problems as to substitution of materials and of methods that the war produced.

And, further, when the question shall arise as to just what part and to what importance architecture played during the great conflict, we may point to this group as one of the irrefutable arguments that architects were ready and competent to meet every call that the Government could make on their profession.

Certain features as to the architectural engineering problems that are not apparent in the illustrations are covered by the following brief description:

In the early part of 1918, Congress, at the re-

quest of General Goethals, Director of Storage and Traffic, made appropriations for the construction of five terminal storage plants of mammoth proportions, to be located along the Atlantic Seaboard, and one on the Gulf, all to be used for the storage and trans-shipment of Army supplies for the American Expeditionary Forces in France. Two of these are illustrated in this issue. They are those located at Brooklyn, N. Y., and New Orleans, La.

The Army Supply Base in Brooklyn has the distinction of being the largest of this group of terminals, while the New Orleans Base, described and illustrated in the Department of Architectural Engineering, holds the record for rapid construction.

A careful study of the various sites available for these terminal warehouses was made before their final selection was arrived at.

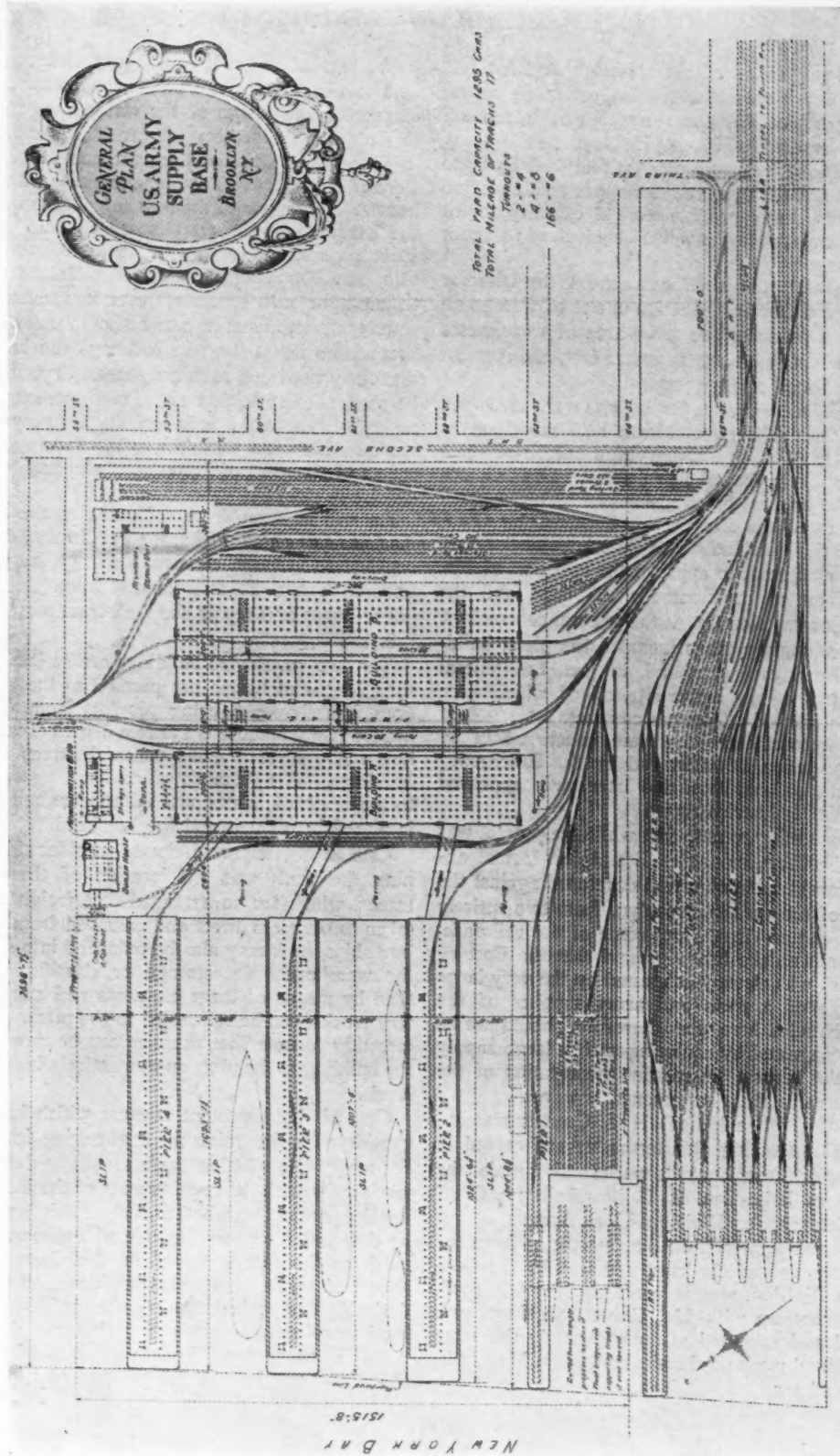
Before determining the site for the Brooklyn Base the available properties in the entire New York Harbor, both on the New Jersey and the New York shores, were carefully investigated, but the pre-eminent advantage of the Brooklyn site favored its selection. The property was available for immediate development, and was of sufficient size to permit the erection of warehouses having the proportions contemplated and also of the piers necessary in connection therewith to meet the needs of the War Department for this, the greatest of all ports. The property fronts on the deep-water channel at the pier-head line, and an investigation of the underlying soil conditions revealed the fact that it was possible to obtain excellent foundations for the warehouses as well as the piers. In addition, the site is immediately adjacent to the Bay Ridge Terminal of the Long Island and Pennsylvania Railroads, and has direct rail connections with the New Haven Railroad over the Hell Gate bridge, also direct connection with the Bush Terminal property, which had at that time already been leased by the War Department. The site of this base is located between 58th and 64th Streets, and between the pier-head line and Second Avenue, and comprises approximately 100 acres of ground.

Both elevated and subway transit facilities were available for bringing workmen to this location, so that it was possible to obtain an efficient and adequate supply of labor



A WAREHOUSE AND CONNECTING BRIDGE

THE AMERICAN ARCHITECT



UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

THE AMERICAN ARCHITECT

from the population of the Borough of Brooklyn.

Originally it was intended to provide an aggregate of 6,000,000 square feet gross of warehouse space, three double-decked piers, 150 feet wide by 1,300 feet long, one open pier, 60 feet wide by 1,300 feet long, and storage yards for approximately 1,300 cars. This would provide storage capacity for at least 700,000 tons of supplies, equivalent to about 100 average ship loads.

Shortly after the work was started, the Director of Storage ordered a reduction in size of warehouse space, thus reducing the gross area of warehouses to approximately 4,000,000 square feet, and increasing the railroad storage yard.

The preliminary plans for the base were developed by Mr. Cass Gilbert, architect, and submitted to General Goethals, in February and March of 1918, and in the early part of April General Goethals approved the original plans which had been prepared, and requested the Emergency Construction Committee of the War Industries Board, Colonel W. A. Starrett, chairman, to approve the selection of Mr. Cass Gilbert as architect for the base, and the Turner Construction Co. as the general contractors.

The preliminary plans included the piers, buildings, railroad yard plan and, in fact, the general development of the entire site, all of which were included under Mr. Gilbert's contract.

These recommendations were concurred in by the Construction Division and by the Emergency Construction Committee, and later were approved by the War Industries Board.

It is interesting to note that while the project was before the War Industries Board for formal approval, considerable objection developed against the location of the base in Brooklyn, from two entirely different angles—first, from some of the railroads, and second, on the broad ground that the Port of New York was already congested by the very large percentage of exports and army supplies of the country handled here, and, therefore, should not be further congested by centering such a large supply base in the harbor. A careful presentation of the facts overcame these arguments, however.

Lieut.-Col. (then Major) H. S. Crocker was appointed Constructing Quartermaster and served in that capacity throughout the work; acting under the direction of Brig.-Gen. R. C. Marshall, Jr., Chief of the Construction Division, U. S. Army.

The formal contract, on the emergency form for the construction of the base, prepared by the Construction Division, was executed on May 6th, 1918, and the contract with Mr. Gilbert, architect, was prepared and executed at approximately the same time. Actual work on the site started on May 15th, nine days later.

While the base has been designed and constructed as a war emergency to handle supplies for overseas shipments, the design of the warehouses and piers is such that the project has practically equal value in peace times for handling the commerce of the Port of New York. The piers, together with Warehouse A, make one of the best shipping terminals in the harbor, and the warehouses on both sides of First Avenue can readily be converted, if desired, into manufacturing buildings. With the present demand for such structures ever increasing as the country reverts from its war status to that of peace, there is no doubt that the buildings can be advantageously used for such purposes. It will readily be seen, therefore, that the Government has made an investment which it is reasonable to expect will increase in value with the great future developments of the port of New York and pay adequate dividends.

As will be seen from reference to the location diagram and photographs, the buildings at this base are five in number, consisting of two large warehouses, A and B, an Administration Building, a boiler house and repair shop, all constructed of reinforced concrete.

The two warehouse buildings are so located that their long dimensions are parallel to the bulkhead lines, Warehouse A being 260 feet from the bulkhead, and Warehouse B 150 feet distant from Warehouse A. First Avenue passes between the two buildings. The Administration Building is located to the north of Warehouse A, and the boiler house is placed between it and the bulkhead.

One of the important items considered in planning the work was the location of the railroad tracks, which are so arranged that freight may be taken to the piers direct and unloaded from the cars into ships, or it may also be unloaded into either of the warehouses for storage or classification, and then by means of large elevators and storage battery trucks, can be rehandled to the piers. It is interesting to note that supplies can be moved from the building to the piers on two entirely independent levels.

One of the important matters which had to be considered in designing the engineering features of the work, was whether these should be designed in conformity with the requirements of the local building department, or whether such restrictions should be deviated from, on the side of economy. Inasmuch as the future use of the buildings in peace time had to be constantly considered, it was felt desirable that such design should conform with the local requirements, in order that no difficulties would be encountered in case any part of this base should be acquired by private interests in the fu-

THE AMERICAN ARCHITECT

ture. As is well known, it was very difficult at this time to obtain large quantities of structural steel, and for this reason such material was eliminated in the design wherever possible and reinforced concrete used almost entirely.

Warehouse A is 980 feet long by 200 feet wide, 8 stories and dock story high, with columns spaced 20 feet in either direction. The foundations are of reinforced concrete of the type known as spread footings, the design being based on an allowance of three tons per square foot on the sub-soil. Under a small portion of the building a continuous mat

A granolithic floor finish, placed after the floor slabs had set, has been used generally, with the exception of the main trucking aisles and loading platforms, in which locations block mastic floors were used.

Warehouse B is 980 feet long by 300 feet wide, containing an interior court 66 feet wide. The building is eight stories and basement high. The foundations are similar to those described for Warehouse A, except for the north one-third of the warehouse, where concrete piles were used in order to eliminate the extensive amount of excava-



LOOKING TOWARDS THE WATER FRONT AND PIER 4. WAREHOUSE A ADMINISTRATION BUILDING AND CONNECTING BRIDGE

footing was used on account of inferior sub-soil conditions.

The columns are spirally reinforced and in the floor and roof slabs the two-way reinforced concrete girderless type of floor construction, representing the latest development in building construction, was used. All stairways, the elevator pent houses and towers are constructed entirely of reinforced concrete.

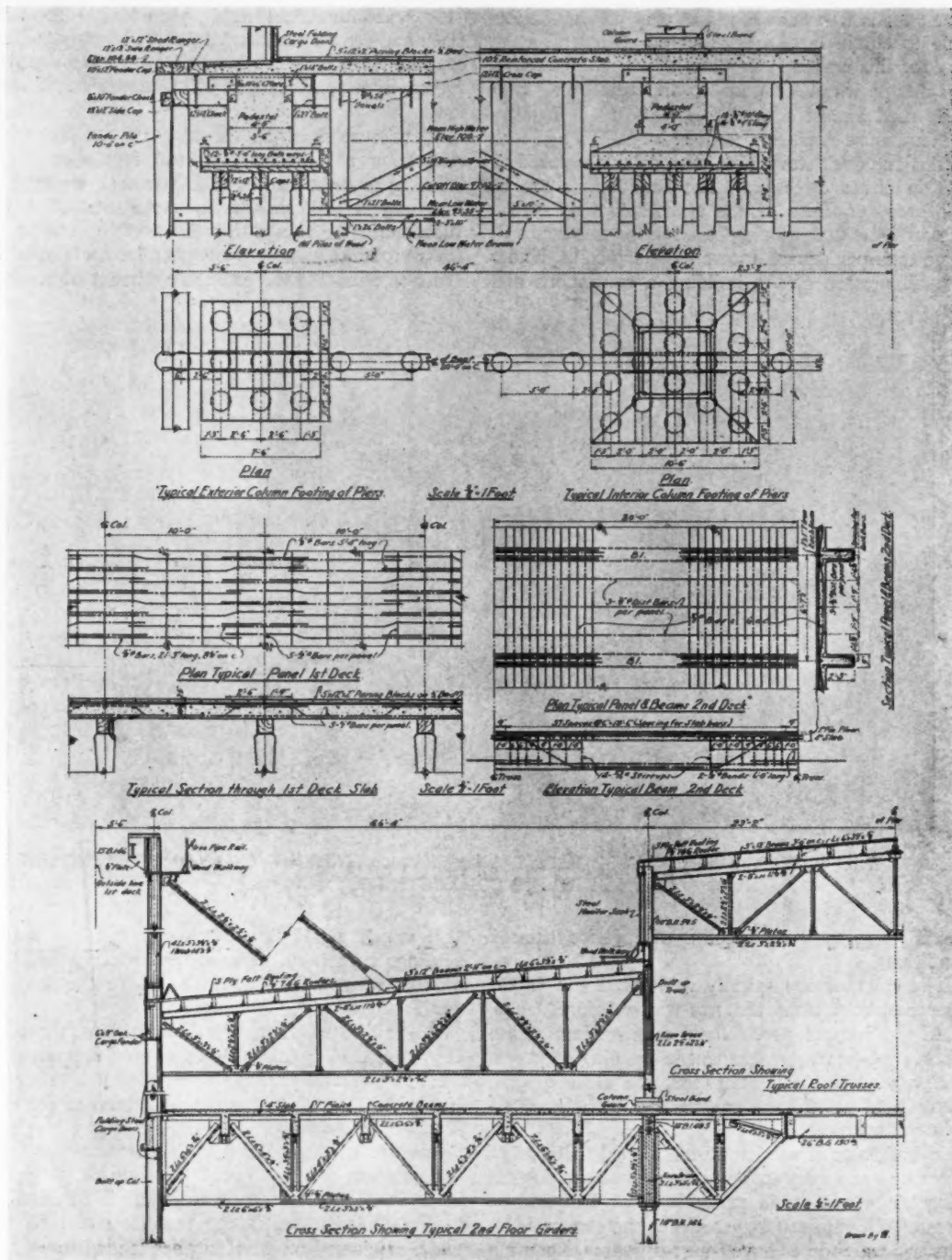
In buildings of the length mentioned the item of expansion and contraction is a serious one. Unless adequate provision is made internal temperature stresses develop, causing cracks in the construction. The two warehouses have four transverse expansion joints, dividing columns, floor, and roof slabs above the footing level. The slab joints are covered by sliding steel plates and the roof joints are protected by "V"-shaped copper plates.

tion which would have been required had spread footings been used. The column spacing and type of construction in Warehouse B are the same as for Warehouse A.

As will be seen from the illustrations, the court is protected on top by a skylight roof supported by steel trusses and purlins. This court will be equipped with three electric traveling cranes at the roof level. The cantilever reinforced concrete receiving balconies, which project into the court at each floor, staggered in order to permit landing freight on all balconies, can be clearly seen in the illustration.

The boiler house is 137 feet long and 88 feet wide, supported on wooden piles loaded to 15 tons per pile. The entire structure up to and including the boiler room floor consists of reinforced concrete beam and girder construction, while above this level, the interior framing is of structural steel

THE AMERICAN ARCHITECT



STRUCTURAL DETAILS OF PIERS—UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

THE AMERICAN ARCHITECT

with concrete exterior walls. Both floor and roof slabs and coal bunkers were originally designed in reinforced concrete, but later, due to circumstances, T iron and book tile were substituted for a portion of the roof. The heating and other supply lines are run through a system of service tunnels, below grade.

The Administration Building is 204 feet long by 54 feet wide, four stories and basement high, with provision made in the design for the addition of three stories, if desired in the future. The building is supported on spread footings similar to those used for the warehouse buildings. The columns are of reinforced concrete with spiral reinforcing and floors are of reinforced concrete of the beam and girder type. The electrical conduits and other pipes are, so far as it was possible, concealed in the fill on top of the floor slabs, and in tile insulation in exterior walls. The floor finish is granolithic, except in special locations where tile floors were used.

One of the most interesting features of the mechanical equipment of these buildings is the elevator installation, which was furnished under contract by the Otis Elevator Co. It is noteworthy that this installation in the buildings and piers combined make the largest ever attempted. A total of 96 elevators, of which six are for passenger service, are provided. All the freight elevators have a capacity of 10,000 pounds, traveling at a rate of speed of 150 feet per minute, and are so arranged that they may be operated by central operators handling a bank of elevators with automatic control. This system of operation would eliminate individual operators on each car. However, provision has been made for operation by operators on each car, if desired. All freight elevators have automatic doors provided with safety locks, to prevent the premature starting of the cars. No car can leave the landing until the door is both closed and locked. On each of the three covered piers there are six elevators, and provision has been made for placing six additional elevators, to be installed at any future time, if desired. These are controlled by push buttons at the landings, momentary pressure on a button calling the car to one level or sending it to the other, as required. This method of elevator control was fully described in *THE AMERICAN ARCHITECT* of August 6th, 1919.

In Warehouse A there is a total of 30 elevators, arranged in groups of ten; in Warehouse B, six banks of seven elevators each. The elevators in these two buildings are identical in all respects. In addition, one passenger elevator is provided in building A and two in building B, with a speed of 300 feet per minute and a capacity of 3,000 pounds.

The freight elevators are controlled by dispatchers, each of whom has one bank of elevators under his control. All of the operators for one building are grouped at a central station, located on the third floor, from which the movements of all elevators can be controlled by push buttons. By the momentary pressure of any one of the buttons a car can be sent to the desired floor and as the car reaches the floor the doors at that floor will automatically open and remain open, holding the car inoperative. After the car has been loaded or unloaded the doors are closed by the pressure of a button at the floor, and the dispatcher may again move the car.

Telephones are provided at each landing so that the freight handlers may telephone to the dispatcher to direct the movements of the car which has been loaded. It is not intended, however, under normal operation to use these telephones, as each elevator



TYPICAL FLOOR IN BUILDING A

is intended to be operated on a pre-arranged schedule.

Due to the large area covered by the several units requiring the service of mechanical and piping equipment, and the distance separating these units, numerous problems relating thereto were encountered and successfully solved. For instance, the area to be drained required the construction of an entirely new sewer and rain water disposal system, involving the installation of cast iron piping up to a diameter of 30 inches. These two systems are entirely separate, the rain water discharge emptying into tide water, while the sanitary sewers discharge into existing sewer lines or tide water.

The electric current for these buildings, furnishing light and power, is taken from the Edison Service, and new 6600 volts, 6 cycle, 3 phase underground lines have been installed direct from the Edison Power House at 69th Street. In addition, space has been provided in the boiler house for in-

THE AMERICAN ARCHITECT

stalling the necessary generating units and additional boilers should it be desired at any future time to generate electric current at the premises.

Heat for all buildings and the piers is furnished from the central boiler plant, in which six water-tube boilers of 440 horsepower capacity (normal rating) are installed. Should it be desired to increase the capacity, this may be done by forced-draft equipment. The stack of the boiler house is 12 feet in diameter at the top, and 225 feet high above the north corner of the boiler house.

High pressure steam is carried to the several buildings and piers in underground tunnels and trenches, the pressure being reduced for each purpose, and distributes to direct radiation units, with an automatic vacuum return system.

In the design of the plumbing equipment, the utilitarian character of these units has received first consideration, and the fixtures are of simple pattern but of durable construction. Waterclosets and urinals are provided with flush valves in place of wooden tanks. Shower bath facilities are provided where required for the convenience of the terminal employees, and an emergency hospital is equipped with all modern sanitary fixtures.

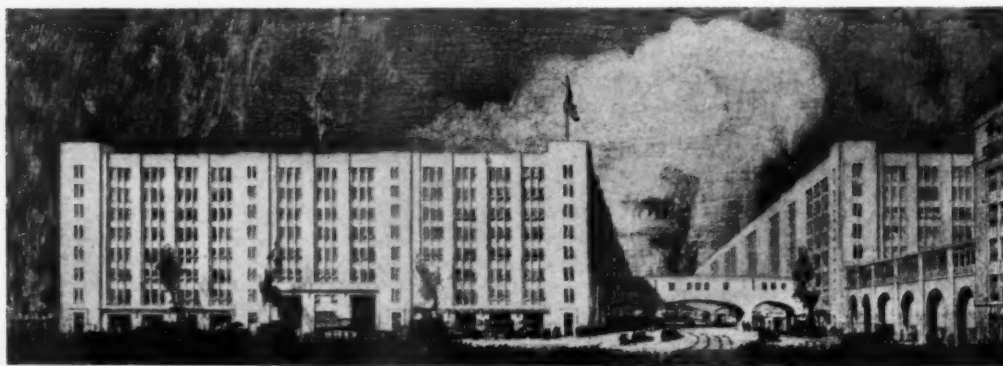
For fire protection, the warehouses and piers have been protected throughout with a complete system of two-source supply automatic sprinklers, meeting all requirements of the National Board of Fire Underwriters. Where portions of the ware-

houses or piers have a large number of openings for the handling of freight, thus permitting low temperatures in these portions in the winter time, the sprinkler system has been arranged on the dry pipe principle.

In addition to the sprinkler system, stand-pipe lines have been provided throughout each building and pier unit, and in addition to the regulation 2½-inch hose outlets, 1½ auxiliary hose outlets are provided at intervals throughout the warehouses, connections being made direct to sprinkler system.

To provide against the spread of fire, numerous fire-walls with automatic and self-closing doors protecting the openings have been provided, which divide the warehouses into areas of comparatively moderate size. Outside the buildings numerous fire hydrants are placed at suitable locations and Monitor nozzles have been installed along the roof of the piers.

The cost of this entire project, in round figures, is \$32,500,000.00. The satisfactory results attained in its construction and the speed with which it was erected were due in no small measure to the remarkable spirit of co-operation which prevailed at all times among the forces of the Construction Quartermaster, representing the War Department, the Architect, who planned the work, and the Contractor, who executed it, all of whom united their energies to aid the Government to the best of their ability successfully to terminate the war.



WAREHOUSES A AND B WITH CONNECTING BRIDGE

Door-Knockers

MOST people pay little attention to the style and expression of a door-knocker, writes "Aero" in a recent issue of the *Architects' Journal*, and would be surprised if they were told that the Greeks used knockers in the form of rings on the doors of temples as Old Homer states: "Silver the lintels deep-projecting o'er, And gold the ringlets that command the door"; that the Romans designed a very modern-looking maculus such as the head of a fearsome lion holding a ring in its mouth; and that research at Pompeii brought to light an instrument in bronze something like a pestle of a mortar, found suspended to a door by a chain, with a large ring like a quoit for the pestle to strike upon.

Numerous examples of door-knockers survive from mediæval times. Of these are the rings, by which the latches were lifted, serving as knockers, a large nail being driven into the door for the ring to strike on. In this fact will be found an explanation of the common phrase in old books "he knocked at the ring"; and perhaps the modern legend "Knock and Ring" will, in view of this revelation, be regarded with more respect. The finest examples of the matello di posta belong to the Italian Renaissance, when the fancy of the craftsman had free play for expression, and the curious tradition of the goldsmiths caught some part of the architectural qualities of the buildings. Shakespeare was acquainted with specimens of door-knockers in Warwickshire. Perhaps he was impressed by their significance when he was haled before the justice at Charlecote, a fact remembered in the "Taming of the Shrew" when Petruchio and Grumio arrive before Hortensio's house in Verona. In England during the seventeenth century door-knockers of various types were produced to embellish entrance doors, particularly in the towns. These ranged from the simple ring types to those formed like the heads of lions. In France the design of the heurtoir proceeded on more showy lines. There was the tradition of Cellini to work upon, and many a strange conceit appeared in metal, as Bury shows. The lion's head became the accepted symbol, both ornamental and useful, embellishing the doors to the strongholds of Englishmen about the time William of Orange took up his domestic pleasures at Hampton Court, and, finally while Queen Anne sipped tea, Isaac Bickerstaff published No. 105 of the "Tatler," including the notes given in the next few lines: "A very odd fellow visited me to-day at my lodgings, and desired encouragement and recommendation from me for a new invention of knockers to doors which he told me he had

made, and professed to teach rustic servants the use of them. I desired him to show me an experiment of this invention; upon which he fixed one of his knockers to my parlor door. He then gave me a complete set of knocks, from the solitary rap of the dun and beggar, to the thunderings of the saucy footman of quality, with several flourishes and rattlings never yet performed. He likewise played me some private notes distinguishing the familiar friend or relation from the modish visitor; and directing when the reserve candles are to be lighted. He has several other curiosities on this art. He waits only to receive my approbation of the main design. He is now ready to practice to such as shall apply themselves to him; but I have put off his public license until next court day. N. B.—He teaches under ground."

There is one type of door-knocker that makes an especial appeal to lovers of the days when Hogarth limned and Fielding, after business hours at Bow Street, compiled "Tom Jones" in the evenings; it is that curious form of console knocker known in some quarters as the Doctors; for what reason no man knows. We find traces of it in Mayfair; it is possible that Dr. Heberden had one fixed to his door in Pall Mall; that Joseph Andrews was familiar with its thunderous announcement of visitors to his fashionable lady. Made of brass, gigantic in proportion, it requires not a little physical effort and a great deal of courage to use it in the proper way. This type, together with the varieties of lions' heads, both brass and iron, continued to employ generations of footmen and link boys from the spacious days of Anne until Tom and Jerry wrenched the insignia of dignity from the stout doors in emulation of the pranks of the noble owner of Carlton House.

Towards the third quarter of the eighteenth century the braziers of Brum were busily engaged in preparing wares of more delicate outline. Adam and his brother were sketching knockers, evolving vases and festoons to please the fashionable ladies of London; the Wyatts were watching the doings of the men from the north, and every considerable ironmonger in the Strand and Cheapside was rearranging his stock and ordering in a gross or so of the latest pattern of door-knocker. On occasion, Adam could produce a particularly dignified specimen such as the knockers to the gates of Lansdowne House in Berkeley Square. It is possible he took an idea from the remarkably fine ones designed by Kent for Devonshire House near by. In my opinion a finer knocker than Kent's has never been cast. No wonder Holland, with his new-fangled Græco-Roman, was constrained to produce the head of Minerva fashioned as a door-knocker.

THE AMERICAN ARCHITECT

He gave the lead to Leverton, and so fashion received another fillip. Only the most distinguished of the London houses sported the head of Minerva; twenty or thirty years later the builders of Guildford Street seized upon this model for their work, but they could not afford bronze and had recourse to cast-iron.

Soane favored many types, ranging from lions' heads to those of Egyptians; and well into the 'twenties the practice of imparting a quasi-Empire style to the outline of the door-knocker continued. I have rather a fancy for the knockers designed by George Maddox, and quite an admiration for the metal work of Vulliamy. The mere catalogue of door-knockers and their variety is appalling. There are the brass and iron knockers of Wendover, the lions' heads, vases and sphinxes of St. Alban's, the iron masks of Exeter, and the noble rappers of Rochester. Every Cathedral City has a distinguishing regiment of door-knockers, marking the houses of minor canons and other ecclesiastics. If I had a London Directory of 1785 before me I could turn up the names of the Royal Academicians then living in Berners Street, and guess at the type of knocker enriching their individual doors, and I could repeat the process from Curzon Street in the West to the mazy labyrinth beyond Wellclose Square, east of the Tower of London. Frequently in my ramblings abroad I note the productions of the Carron Company cast in the 'thirties, a goodly crowd of dissenters still adhering to Paganism, as witness the diminutive head of Mercury with a particularly lengthy striker, the arms of which depend upon the swivel on either side. Then I chance upon the head of a ram, "all done in cast-iron," a sure sign that the district is a populous one, for this particular knocker is peculiar to the small

houses and cottages of the early industrial age. Sometimes my eye catches a door-knocker formed with an oval center of brass, in which, tartly obliterated by the application of aquafortis, can be traced the name of a long-vanished tenant.

And so as I wander about in speculative mood, nothing enables me to estimate the character of the people, past and present, nay, even the features of the reigning monarch, contemporary or otherwise, more than the appearance of the furniture to the front door. A door-knocker is calculated to inspire even the boldest with awe. First we view it with suspicion, much as the Egyptian in doubt approached the sphinx; secondly we use it; and in the interval of knocking and waiting try to read the character of the person on whom we are calling. The jolly old lion-faces of the eighteenth century are passing. You were always sure of a welcome behind such doors; the fiercer lion masks of the legal district are more tenacious; there are still a few Empire knockers in the neighborhood of the Foundling, and a greater number of the wreath and hand variety in the decaying parts of Camden Town. I have seen the brass knockers of Spalding, especially those on the doors of old-time ladies' schools; the iron and brass strikers of King's Lynn, with the brazen numerals over, and the learned knockers of Oxford and Cambridge (particularly the quaint one that is a rebus on Brasenose) which protect the Dons by reason of their forbidding aspect. Some time ago I investigated Belgravia and found few of the houses fitted up according to tradition; even the Victorian bell-pulls had given place to electric pushes. So passed the glories of the world, but for my past nothing shall ring the head of Minerva from the center style of my front door.



IN order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

The A. I. A. Report on Unionism

THE report of the Committee on Unionism, presented by its chairman, J. Monroe Hewlitt, at the recent meeting of the Board of Directors of the Institute, is an admirable one, and its treatment by the Board and the resolution passed are equally to be commended.

The Committee recognizes that the real question at issue is that of the closed shop and that it is absolutely necessary that this question be definitely answered by the profession before there can be any consideration of details. The Board places itself squarely on record as favoring vocational organization for any beneficial purpose of everyone connected with the profession of architecture, either employer or employee, provided such organization is for the purpose of improving the qualifications of members and their opportunities for service.

This is really the essence of a correct spirit of unionism. It means the uplift of not only the profession itself but accomplishes by direct influence on all of the arts and crafts with which architecture is allied an equally beneficial result. It takes no note of those sordid elements that now are the dominating influence that surround organized labor and that are the main arguments of those misguided minds that seek to extend unionism to every possible field.

IF we should ever make unionism a worth while consideration, it will be when the purpose is accomplished exactly along the lines that the A. I. A. Committee has indicated. The reference to the ancient guilds, the parallel drawn in this report is exactly correct. It is only when those clamoring for unionism among the employee body in architecture thoroughly digest and act on this principle that they will be able to command respect and deserve encouragement.

The detrimental effects of the principle of the closed shop as applied to unionism in the profession of architecture would be so far-reaching in their

disastrous influences as to destroy everything that a higher unionism might stand for. Such affiliation as would be implied under an open shop, would, as the Board very logically concludes, "endanger the sense of professional obligation for service to the public, which is the foundation of architectural practice."

THE dissimilarity between the unions as now organized and the old time guilds is so marked as to leave no resemblance. If it were possible to create a similarity, to restore those amicable relations between the employee and the employer, the art of the craftsman would receive an impetus greater than ever before. The relation that should really exist between the architect and the craftsman would become one of the closest and most valuable association. Upon the efficiency of craftsmanship, as this report so accurately states, depends the vitality and beauty of architectural enrichment. It is to the architect that the craftsman really looks for the real effort that will lead to the solution of these problems, to a closer and more efficient relationship, and it becomes the duty of the profession to see to it that the craftsman shall not look in vain.

The Proposed Capitol Park at Albany, New York

CONSIDERABLE discussion has arisen over the question of the use, for park purposes, of property purchased by the State for the site of the new State Office Building in Albany, and the location of the office building on land to be purchased on the south side of State Street. Something can, perhaps, be said on both sides of the question, but, after a careful study of the design for the new building, the following facts appear:

An open space of ground, with grass and trees, whether laid out in a formal park or only its natural beauties properly cared for, is always, of course, a source of pleasure and added beauty to

THE AMERICAN ARCHITECT

a community, wherever situated. In this case, however, it would seem necessary to consider to some extent, at least, the fact whether a harmonious beauty, combined with economical utility, can be accomplished by the use of the site already purchased and in connection with which considerable time and money has been spent.

THE plea that the additional cost of a new site would be to a large extent covered by a saving in the cost of foundations has not been borne out by the test borings already made on the site, as these do not disclose any unusual conditions, but establish the fact that on this site, at least, a building could be built on an ordinary foundation of sufficient carrying strength, while on the State Street site suggested, the soil conditions are unknown.

It would be a great architectural and artistic mistake to duplicate the Education Building on a corresponding site on State Street and facing the present building. Duplication, when placed in close proximity, detracts from the original, and this building, in its stately beauty, should stand alone as an emblem of the ideal for which it was built.

The design of the State Architect for the new office building is of unquestioned classic beauty in itself, as well as its harmonious blending with both the Capitol and Education Building. If it is placed on the site now chosen, there will be approximately 270 feet of park between it and the Capitol, with an additional parking inside and between the two wings of the building of 107 feet. The site is 350 feet deep, while the park at the rear of the Capitol is approximately 105 feet. The entire length of the colonnade of the Education Building is approximately 425 feet. This will leave nearly $\frac{2}{3}$ of the space between the rear of the Capitol and Swan Street clear for parking purposes, and will give a view of the Education Building from different angles on State Street and the park that to many will be more attractive than if the whole building were exposed; this being particularly true because the office building, while blending with the Education Building, is at the same time designed, through contrast, to enhance its beauty.

THE placing of the Telephone Building on its present site was, of course, a serious error, but the design for the new office building can hardly be compared to that. The park, with the building, as now designed, when completed, will be one of the most beautiful in the State, and as a foreground for the Education Building, will hardly detract from its beauty.

The site south of State Street, together with the block between the Education Building and Academy Park are very logical outlets for future expansion.

If these sites, when it becomes necessary to use them, have harmoniously designed buildings, with sufficient parking to insure an artistic setting, Capitol Hill may yet, in spite of many past mistakes, become a Civic Center of which Albany and the State may be justly proud.

Standardization in the Building Industry

MANY of the difficulties that to-day confront the building industry are undoubtedly due to lack of standardization, and a proper co-ordination of what are now conflicting elements. This lack is probably more apparent in building codes, and state legislation which applies to licensing and inspection as referring to building.

In fact we may go carefully through all the various phases of a building from its inception to its completion and subsequent maintenance and find in every department the strongest arguments for standardization.

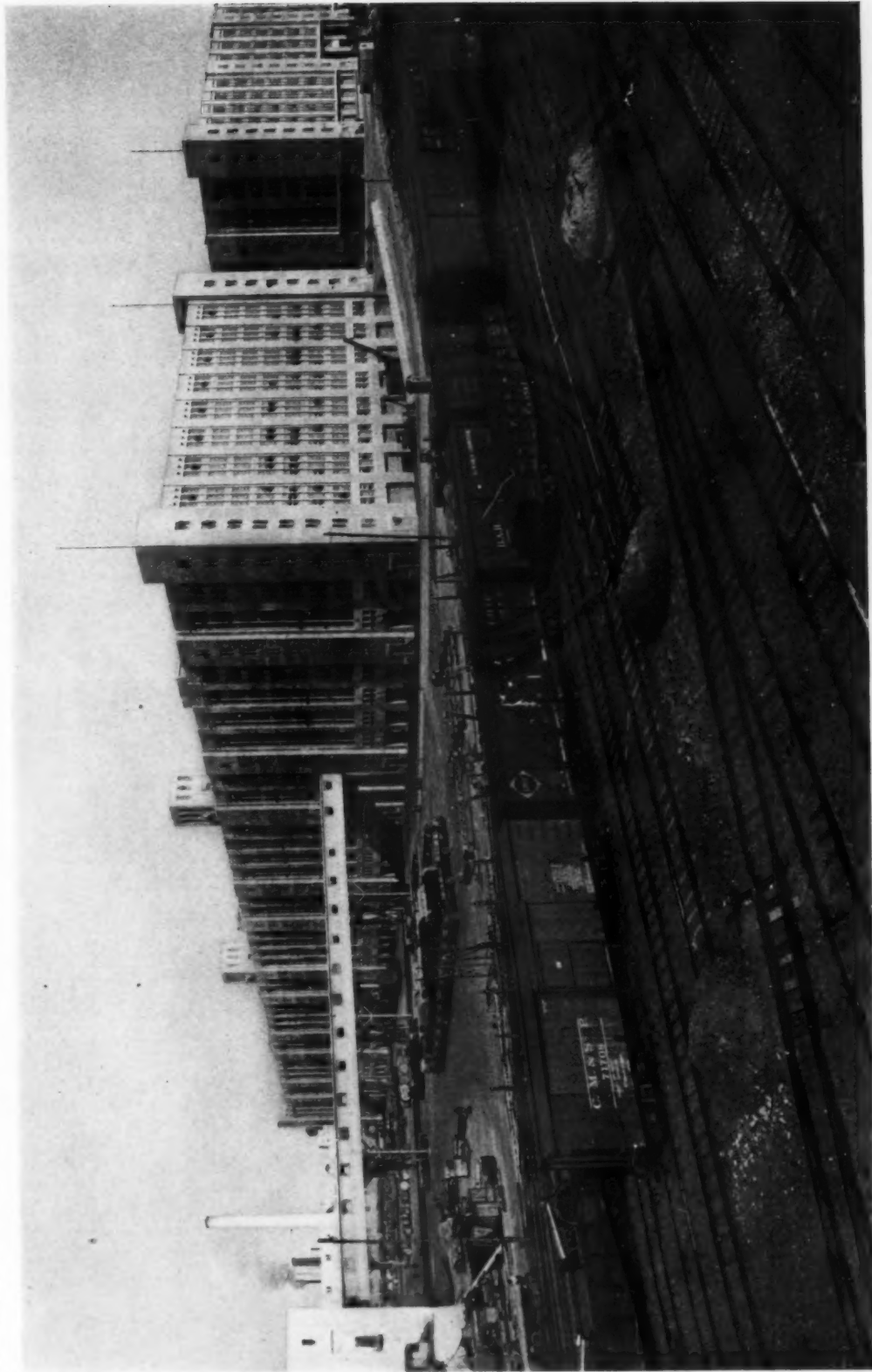
Codes vary, and to a large extent, in different cities. Methods of financing are in no two places alike, methods of bidding and building inspection are likewise different. Viewing the country broadly, the operations as referred to building so radically differ, even in nearby localities, that there can be no co-ordination of effort as securing uniform methods of procedure.

Reference has been made in these columns to many different forms of estimating contracting, and it has been pointed out that the ability of contractors to give the best result is largely dependent on the adoption of a method that will become universal and rid the business of estimating and contracting of the loss in dollars it now so often and so needlessly suffers.

If it could be made possible for manufacturers of building materials and accessories to standardize their product, there would at once result a very decided increase in quality and a marked reduction in cost. Every architect knows that his catalogue files are filled with scores of pamphlets illustrating and describing essential units that vary exactly in number to the firms producing them.

Quantity manufacture placed this country in the first industrial rank, but the construction industry has now become so unstandardized that quantity production has become greatly retarded and in some instances impossible.

Standardization has not only become desirable, but it may be safely stated that the lack of it is a pronounced menace to the future of the building industry. The subject is one that may well claim the attention of all organized architectural bodies.



UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

THE AMERICAN ARCHITECT

NOVEMBER 26, 1919

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UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

PLATE 180





PLATE 181

UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

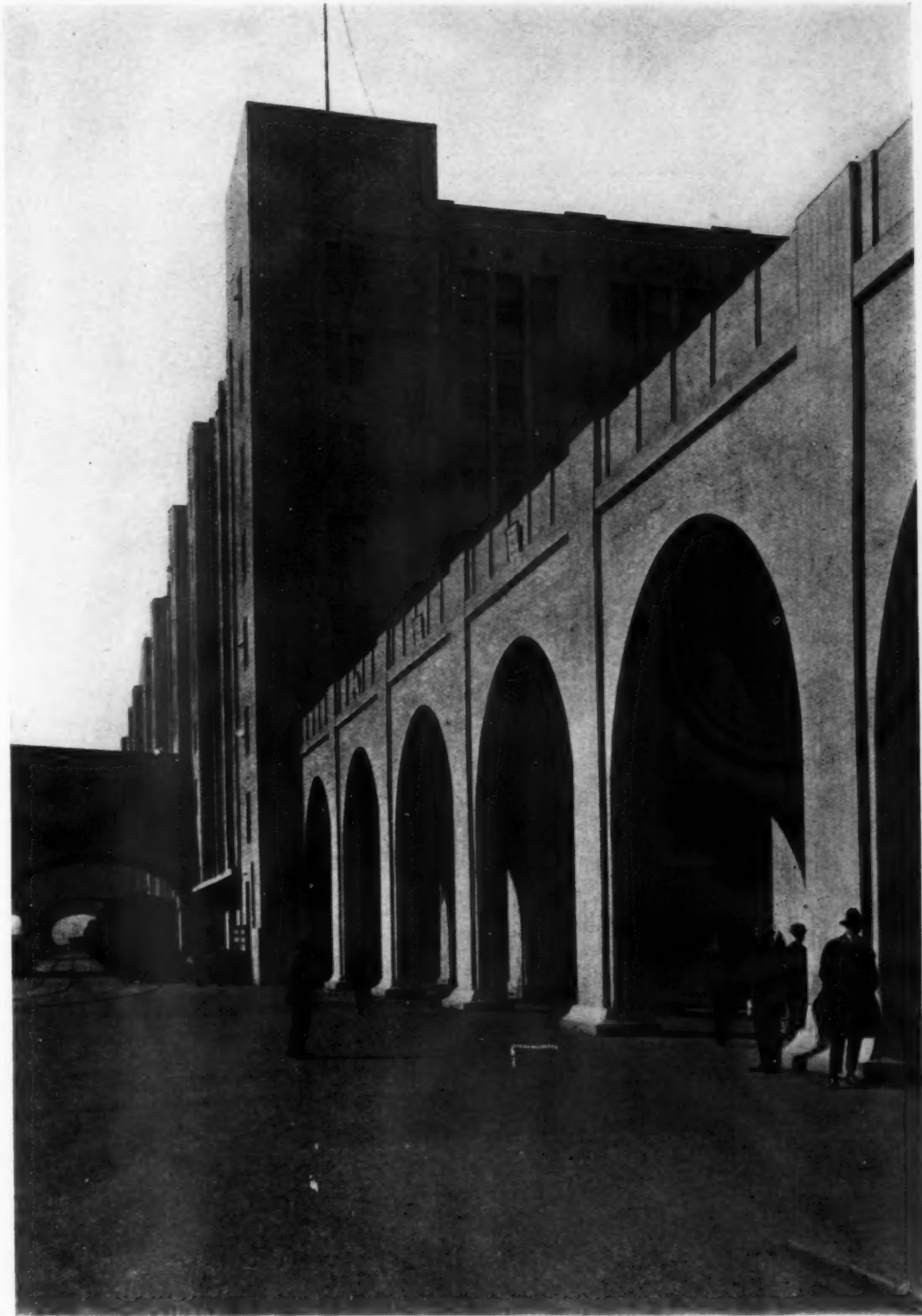
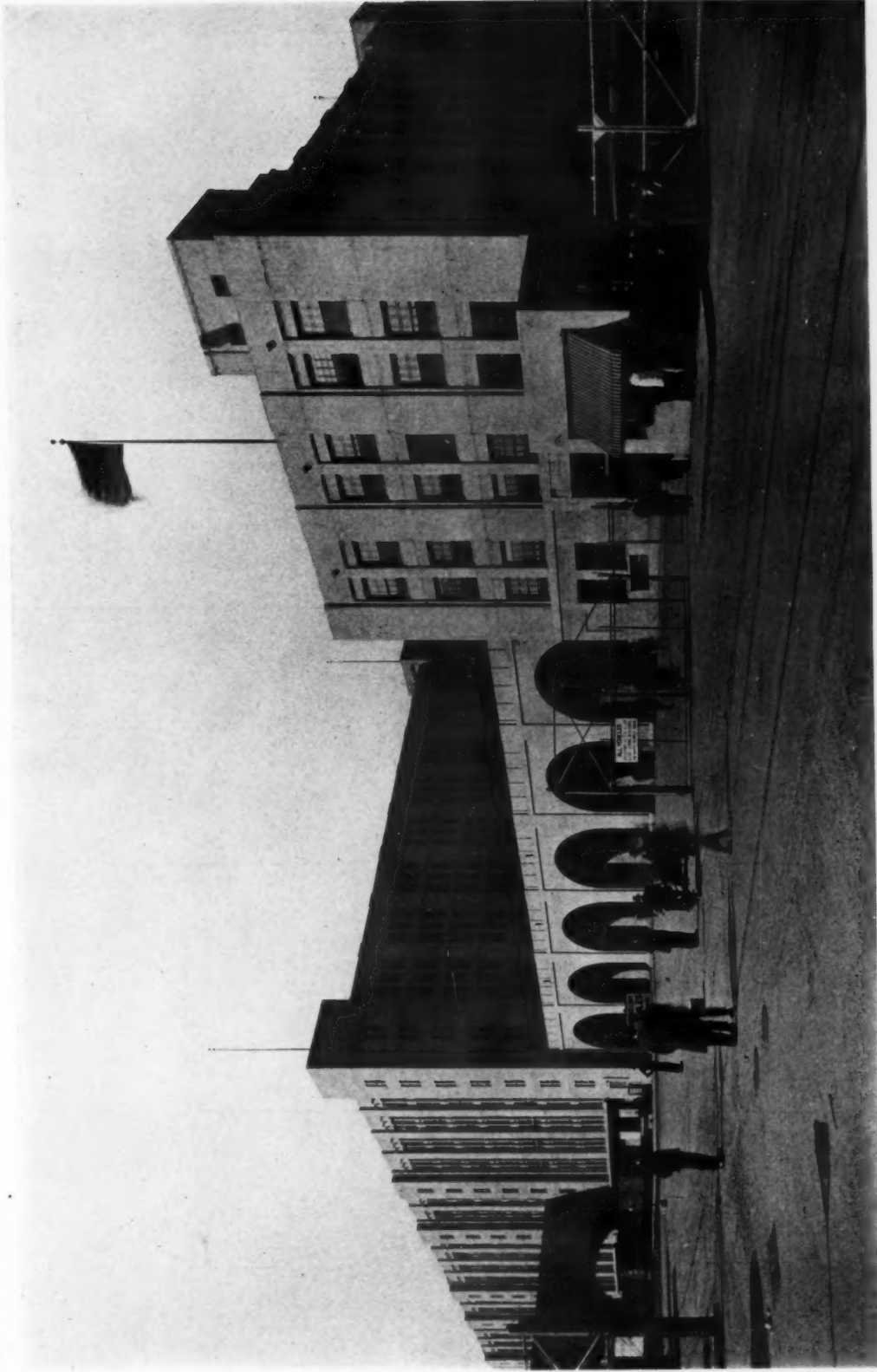


PLATE 182

UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
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Court in Building B, showing arrangement of cantilever balconies served by travelling cranes, handling supplies direct from rail to warehouse.
PLATE 184

UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.

CASS GILBERT, ARCHITECT

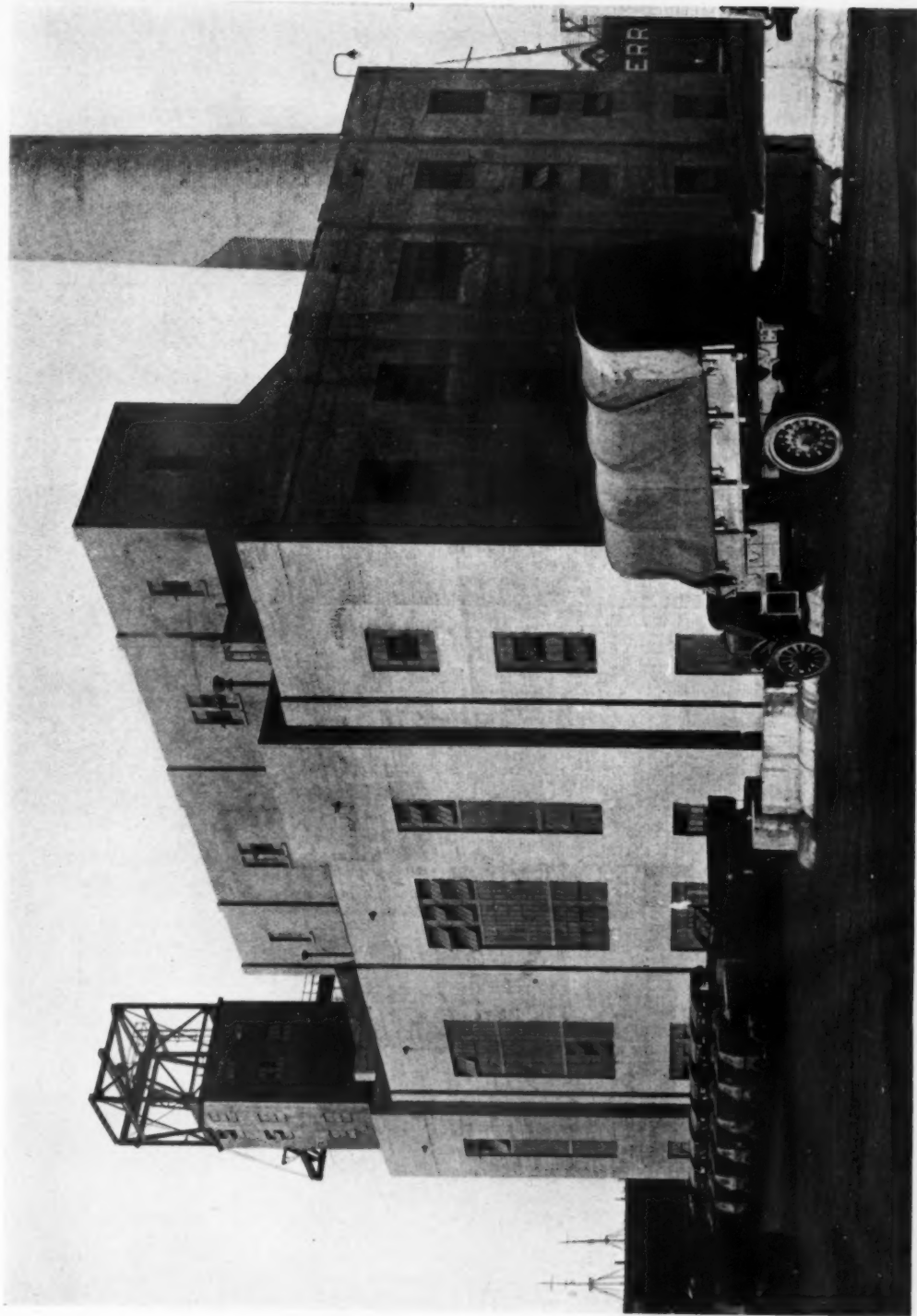


PLATE 185

POWER BUILDING
UNITED STATES ARMY SUPPLY BASE, BROOKLYN, N. Y.
CASS GILBERT, ARCHITECT

Current News

Late Happenings and Comment in the Fields of Architecture and the Allied Arts

In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

To Hold Pan-American Architectural Congress in Montevideo

The first Pan-American Architectural Congress, planned for 1916 but postponed because of the war, is to be held in Montevideo, Uruguay, March 1 to 7, according to an announcement just received by the Pan-American Union in Washington. The idea of the Congress was fostered by the Society of Architects of Montevideo, and the first meeting will be held under the patronage of the President of that Republic, the Council of Administration, and the Ministers of Public Works, Public Instruction, and Foreign Relations.

It is purposed that the Congress shall be a permanent institution, which will meet every three years in the capital of some American nation. At each meeting there is to be an architectural exhibition. The aims of the organization are set forth as follows:

"To contribute to the development of architecture and to give a stimulus to the artistic and scientific studies connected with the profession; to strive toward a better understanding of all questions related to architecture, in the solving of which the nations of the Americas are interested; to promote, by all means within its power, the highest interests of architecture, and to create and maintain close relations of friendship and understanding between architectural institutions, associations and individual architects of the Americas."

Members of the Congress will be architects, schools of architecture, and architectural associations, the latter to be represented by delegates and students. The official languages at the meeting will be Spanish, Portuguese, English, and French.

State Housing Association Acts in Advisory Capacity

The Pennsylvania State Chamber of Commerce has added a housing bureau and has engaged Ritchie Lawrie, Jr., as the new bureau chief. No direct financing of building operations will be part of the bureau's operations, but advice and the offering of practical plans for financing will be part of its work.

It is believed that the solution of the housing problem rests in assisting the lending institutions in financing homes and in securing the co-operation and co-ordination of all building agencies and community interests. A community housing company formed by the leading citizens in a community is in a position to perform this service. The housing bureau is mainly interested in promoting such organizations.

The director has been busily engaged in collecting information covering all phases of the housing problem. There has been prepared a pamphlet outlining various financial methods. This pamphlet will shortly be issued. Other pamphlets treating of the various phases of the

problem will be issued just as soon as they can be prepared and printed. There is under preparation at the present time a set of blue prints of some fifty to seventy-five plates, showing floor plans, elevations and perspectives of worker's practical homes. The pamphlets and the blue print sets will be distributed to all those interested throughout the state in providing homes for workers.

The results of a preliminary survey conducted by the state chamber covering replies from communities throughout the states establishes the fact that 100,000 need homes. At the present time these families are living as best they can in every conceivable kind of shelter. As a result the efficiency and health of a considerable portion of the population is jeopardized, causing discontent.

Practical homes for workers is believed to be the solution of this and many of the vital problems of the day. The state chamber, through its bureau, will place before the business men in the communities ways and means of meeting the situation in the most practical and efficient manner.

Royal Palaces to Solve Housing Need

There is a widespread demand that the former royal and princely palaces and castles of Berlin be utilized to allay the need of dwellings during the coming winter by renting parts of them to people in need of homes. Mayor Wermuth has sent a telegram to the imperial dwelling commissioner calling his attention to this situation.

The commissioner, in reply, says there are in Berlin only six of these buildings that are large and notable. Of these, the former emperor's palace, in which troops were housed for some time, will be occupied by state employees as rapidly as its rooms are vacated and eventually will be made into a museum for works of art.

The Marstall, formerly the royal stables, also has been occupied by troops, but will be turned over to the people.

Montbijou Chateau was and is a museum and its big hall is used for trials. The palace of Crown Prince Frederick is being used by the government for an exposition of modern painting and as headquarters for the "Safety Police."

The palace of the Crown Princess Cecilie is occupied as private residences rented from the government and has a few military bureaus in one section.

Charlottenburg Castle has been used since December last as an orthopedic hospital, except the middle section, which is extraordinarily artistic and historically valuable.

The palace of Prince August Wilhelm is rented to two state bureaus and its library is used for charitable purposes. Bellevue castle now houses state and government authorities.

The finance ministry which has been seeking space in some of these palaces found that all the available room had been taken as long ago as last March.

THE AMERICAN ARCHITECT

Brooklyn Architects Meet

The regular monthly meeting of the Brooklyn Chapter of the American Institute of Architects held an interesting session at the Crescent Club on Monday night, November 24. The following architects participated in the program of the evening: T. Edward Snook, Sr., William J. Dilthey, George F. Kiess, W. A. Parfitt, A. R. Koch, S. W. Dodge, Alexander MacIntosh, F. Monckmeyer, J. B. Slee, T. Edward Snook, Jr., C. H. Wagner and Hubert Dunning.

William J. Dilthey was appointed chairman of a committee to report details at the next meeting on the certificate of merit to be given to every architect and owner responsible for a meritorious design, whether it be a new building or only a store front.

A resolution of sympathy was adopted to be forwarded to Lieut.-Col. Woodruff L. Leeming's wife and family. Mr. Leeming was a former president of the Brooklyn Chapter and very earnest in promoting its welfare.

Attitude of Congress on Housing Problems is Muddled

WASHINGTON, Nov. 22.—Just at the period when there is an urgent need for a definite housing program, Congress seems determined to maintain its usual system of procrastination. Only one day was devoted to a hearing on H. R. 7014, the so-called Tinkham bill for the creation of a bureau of housing and living conditions, in the Department of Labor. The House committee on public building and grounds will not conduct further inquiry into the merits of the measure until late in January. Meanwhile the demand for homes to ameliorate social unrest continues to increase.

In the two hours which the committee spent at the initial hearing, eight witnesses appeared in support of the proposed bill. There were forty-three persons who came from all sections of the country to present the views of their organizations on the legislation. The only architect called to the stand in the short session was M. B. Medary, Jr., representing the American Institute of Architects and the Philadelphia Housing Association. Other architects in the official list of witnesses were Bert L. Fenner, representing the American Institute of Architects; John Irwin Bright of the Philadelphia Chapter; Rossel Edward Mitchell of Norfolk, architect and engineer; A. P. Clark, Jr., of the Washington Chapter.

As spokesman for the American Institute of Architects, Mr. Medary said in part:

Congressman Tinkham's bill, which has been referred to your committee, assumes that the welfare and happiness of the countless families of workers throughout the country is equally important as a matter of national concern, demanding the most exhaustive research and the most intelligent experimental work that the National Government may be able to bring to bear on the problem.

The rapid growth of slum conditions in the congested areas adjacent to large markets for labor is a national menace, which can not safely be left to such meager control as now results from occasional local legislation, generally confined to establishing very low minima of housing and living conditions, and rarely adequately enforced.

The bill before your committee offers an opportunity to undertake constructive research and experiment looking to the isolation of this germ of disease in the body politic, maintaining it in quarantine, and eventually destroying it. It offers the opportunity of conducting such work with

public funds belonging to all the people interested, and eliminates the paternalism suspected by the employee as the motive for any interest in housing and living conditions on the part of his employer.

These congested areas now produce great numbers of criminals, insane, and unfit, and we are meeting the situation with more courts, corrective institutions, asylums, and hospitals. We legislate against the admission of these classes to our shores, and at the same time tolerate conditions which must and do produce them as native-born citizens.

The children born in this environment are the citizens of a few years hence. You are their representatives in the American Congress. Yours is the opportunity to determine whether or not the conditions under which they must develop their lives is now affecting, or will in the future affect the morale of the Nation, by authorizing the study of their environment as a function of the Federal Government.

Such work as has been done along the lines provided for in the bill under consideration has disclosed the far-reaching character of any investigation which attempts to go to the root of the problem.

The number of families which may be housed on a given area of land without depriving them of ample light, air, and space for recreation, the rise in value of land resulting from housing a large number of families on a small area, and the effect of this high value in prohibiting a return to less congested use of the land, are some of the phases of the problem which demand the most careful and disinterested consideration.

The Department of Agriculture has done much to inform the American farmer of the relation between intelligent use of land and sustained value of its products. It would be one of the functions of a bureau of housing and living conditions to determine the extent to which land values may be developed at the expense of the physical, moral and mental welfare of those who live upon it, with the consequent charge against the whole community. Can not such a bureau parallel the service of the Department of Agriculture to the farming population by informing urban populations of the consequences of unintelligent abuse of land, viz., its legitimate development?

It is with the hope that research and experimental work conducted for the dissemination of public information by a bureau, such as that proposed, may result in a more intelligent appreciation of housing and living conditions as a vital national problem, that I earnestly ask you to favorably report Congressman Tinkham's bill.

The author of the bill, Mr. Tinkham, told the committee that there were two quasi-philosophic principles back of the measure. One is that the desire for a home is as deep a human desire and demand as the desire and demand for food. The other principle, as the legislator says, is that those who have nothing fixed in the social order are those who care the least about it or its preservation.

Dr. James Ford of Harvard University, one of the foremost authorities on housing conditions, offered a statement from the 1910 census indicating that more than 50 per cent of the families in this country were living in rented houses. He described them as virtually nomads having no stake in the community. He argued that by increasing the supply of houses relative to the demand the tendency to profiteering in rentals is reduced.

Representative Frank Clark of Florida, who has been a consistent opponent of the United States Housing Corporation, questioned both Mr. Medary and Dr. Ford as to their relations with that organization. Mr. Medary was a member of the architectural force at Philadelphia and chairman of the committee on design. Dr. Ford was editor of the official report of the Housing Corporation.

THE AMERICAN ARCHITECT

Bill for Federal Housing Study

A bill introduced into the present Congress by Senator Wadsworth of New York, Senate No. 2444, seeks the establishment of a national commission on rural and urban home settlement. Under the terms of the act the board would consist of five members, not more than three of whom would be of the same political party, but all of whom would be recognized "experts in housing, rural organization or colonization." The situation calling this proposal into existence is, of course, not only the presence of a thriving national responsibility to bring within reach of our returned soldiers suitable homes, whether for industry or farming, and generally to forward the movement "back to the land," but also the presence in Congress of measures such as the Mondell bill, which are designed actively to begin the accomplishment of this object. And the point is that whether these measures meet passage, defeat or postponement in the current session, the creation of an expert commission, designed to guide and help direct the processes of the nation in this important matter, is a thing to be desired. At least this is certainly so if the commission can be trusted to go about its work with the determination not merely to investigate and palliate but to investigate and then insist, so far as in them lies, on thoroughgoing action of the most approved nature.

It is true, according to information received, that Senator Wadsworth has no great sympathy for the lines of action which Secretary Lane sketched out in his last annual report, relative to land-reclamation projects in general and housing for soldiers in particular. To this extent his present proposal of a commission may properly be interpreted as a counter-move to plans made up on the Lane pattern. The senator himself believes that governmental efforts to make farms and homes available to soldiers and others should not consist, fundamentally, of large direct subsidy. He thinks the program should be one which, through national support of co-operative housing and land enterprises, would make available to every rightly disposed group of individuals the full benefit of that co-operative use of assets, organization and energy which often so much exceeds in its potency the sum total value of the efforts of men working individually, and without either organization or the support of special laws and agencies.

There may be a few citizens who feel themselves already prepared to take definite sides with either one of these two possible programs. There are a great many others, however—perhaps a majority—who are still open to argument and conviction. And surely it should be evident to all, or nearly all, that the greatest conceivable command of the facts, of the experience of other countries, and of all other relevant data can be none too great for the purpose of wise governance of a new national policy in the development of farming and housing enterprise. Whichever main principle be accepted for Federal action, it will require the service of experts for its translation into action if it is to succeed. This was proved in numerous instances in connection with various governmental housing projects framed to cope with one and another war emergency. Where a bureau went ahead without sufficient knowledge, study and information there occurred waste of funds and of energy. To avoid such error in housing and land matters in peace time, the Congress should permit the appointment of a competent Commission on Rural and Urban Home Settlement as early as possible.

Action on Senator Wadsworth's bill is being awaited with keen interest by the architectural profession, and it is expected that something definite will be reached within a short time.

Better to Keep Homes

The high prices of real estate have led many people who are comfortably established and who had neither intention nor necessity for selling to part with their homes, states a daily paper in Baker, Ore.

The real estate agent rings the door bell and tells the owner of the house he can get him double what the house cost. The man, suddenly dazzled by the money prospect, agrees to sell without taking time to consider the facts.

The deal is closed, the price named is forthcoming, and then the man who had a perfectly comfortable, pleasant home begins to look for a place to which he can move. After a distracted hunt of some days or weeks, the truth dawns on him. If he could sell his place for twice what it cost, so can everybody else, and everybody expects to. To build anything like as comfortable a place as the one he sold may cost more than twice as much. Rents are raised in proportion to purchasing prices, and rented property is very scarce. Finally he realizes just what it is that he has done, and hates himself for a fool.

This is happening nearly every day in every town in this country, and it will keep right on happening until the home owners begin to realize that the depreciated value of a dollar extends to real estate just as to everything else. When they wake up to this fact the people who own good homes are going to stay in them and let the fellow who doesn't own his home assume the burden of getting comfortably located.

The Use of Coal

Most of us think of coal as fuel and nothing else. But, according to Dr. Saleeby of London that is quite a wrong point of view. A chemist, he reminded an audience at the annual conference of the British Commercial Gas Association, would tell us that coal is a treasure-house of a thousand valuable things, and that to burn it is barbaric folly. One could imagine a barbarian coming along and seeing the British Museum with all its treasures and being ignorant enough to say: "Here is something that will burn; let us make a fire." To burn crude coal and destroy thereby its latent treasures is, said Dr. Saleeby, just as short-sighted and criminal as to burn any other repository of irreplaceable wealth. We should extract from coal the dyes and drugs and other valuable properties which it contains, and burn the residue as fuel. He advocated the increased use of gas, the spirit of coal, in place of crude coal for all domestic and industrial purposes, and urged that this question should be fully considered in dealing with the projected housing schemes.

Brooklyn's Monument to Hero Dead Will Cost \$35,000

Park Commissioner Harman of Brooklyn has announced that the entire cost of the memorial to be erected in honor of the 2300 Brooklyn boys who died in the great war will be paid by William H. Todd, the shipbuilder. The monument will be 14 ft. high and will cost \$35,000.

The monument or honor roll will be of granite. The names of Brooklyn's dead will be in bronze. The plan selected is by Augustus Lukeman, who is associated with Daniel Chester French. The monument will be completed about August 15, 1920, and will replace the temporary memorial near the Flower Garden in Prospect Park.

THE AMERICAN ARCHITECT

News from Various Sources

The Chicago *Tribune* states that chairs of aeronautics have been established at Universities of Cambridge and London.

* * *

The Pennsylvania Academy of Fine Arts and the Philadelphia Water Color Club have announced a joint exhibition, to open at the Academy Dec. 14.

* * *

The Riverside Public Library, Riverside, Cal., has just received the architectural library of the late John Correja. This consists of three hundred volumes.

* * *

U. S. Bureau of Education, with slogan "Educate America," issues comprehensive program, including establishment of national university and addition of Department of Education to Government.

* * *

Announced by London *Times* that British Ministry of Munitions has sold nearly 5000 army huts of all descriptions in France and Flanders to Belgian Government to house homeless in devastated areas.

* * *

Announced in Philadelphia *Public Ledger* that \$5,800,000 was the highest offer for Government powder town at Nitro, W. Va., offered for sale by Ordnance Department and reported to have cost \$70,000,000.

* * *

The Young Men's Hebrew Association at Ninety-second Street and Lexington Avenue, New York, is offering courses in architectural drawing, construction, interior decoration and allied topics at a very nominal charge.

* * *

Announced from Lincoln, Neb., that because of scarcity of farm labor and fear of losing large crop of wheat many Western farmers are doing part of their threshing at night, using portable electric motor outfit which furnishes power for machinery and current for lighting.

* * *

The testing of fireproof building materials in New York will no longer be in the hands of private enterprise but will be taken over by Columbia University. The Department of Civil Engineering has accepted the management of the fire testing station at Greenpoint, L. I., the largest of its kind in the vicinity.

* * *

War Department states that number of American cemeteries in Europe has been reduced from nearly 2400 to about 700. Graves Registration Service has placed these cemeteries in good condition. Matter of placing stone markers on graves engaging attention of Quartermaster General, who is working with National Fine Arts Commission to secure appropriate designs and materials.

* * *

Announced in *Woman's Century* for September that Orson, Sweden, is a municipality without taxes. Local railway is free to every citizen; no charge made for telephone service, schools and libraries. Large area of land had been acquired for city many years ago and planted with trees, with result that during past thirty years town authorities have sold over \$5,000,000 worth of trees and timber, while replantings have provided similar income in future.

Air Service plans transcontinental endurance tests, one starting at New York and ending at San Francisco, and the other starting at San Francisco and ending at New York. Stopping points are to include Rochester, Buffalo, Cleveland, Chicago, Des Moines, Omaha, St. Paul, North Platte, Cheyenne, Salt Lake City, Reno, Sacramento. Main idea of tests is to determine reliability of average plane for any class of travel, to demonstrate fact that aerial mail between New York and San Francisco is practicable, and to show public what progress has been made in development of aircraft.

Obituary

Charles Pratt Huntington, secretary of the board of trustees of the Hispanic Society of America, and an architect of note, a nephew of the late Collis P. Huntington, died recently in New York at the age of forty-eight years. Mr. Huntington was born at Logansport, Ind., and was graduated from Harvard in 1893 and from the École des Beaux Arts, Paris, in 1901. His chief architectural works in New York City are the museum and library for the Hispanic Society of America at Broadway and 156th Street, the Museum of the American Numismatic Society, the Museum of the American Indian, and the building for the American Geographic Society. King Alfonso, in 1916, made him a Knight of the Order of Isabel the Catholic.

Nathan Franklin Barrett, landscape architect, for nearly twenty years associated with the work of the Palisades Interstate Park Commission, died in New York City. He was 74 years old. Mr. Barrett was president of the American Society of Landscape Architects in 1903. He laid out the town of Pullman, Ill., and the country estate of P. A. B. Widener, Joseph H. Choate, and H. O. Havemeyer among others. He had recently been working on plans for beautifying signs along public roads.

Peter Roos, director of art in the Cambridge schools for twenty-three years, died Oct. 7 after a long illness. Mr. Roos was born in Lyngby, Sweden, on Feb. 22, 1850, and came to America in 1872, and for a time worked as a fresco painter and designer. In 1873 he became an instructor in the evening drawing schools of Boston. In 1876 Mr. Roos was appointed professor of industrial art and design in the University of Illinois, and in 1896 he became director of art in the Cambridge public schools. Mr. Roos was also well known as a landscape artist, and he had been a member of the Boston Art Club since 1874.

Historic Sites Are Developed

The need for housing is no longer respecting historic sites—an old estate in Quincy, formerly owned by John Quincy Adams, is to be cut into house lots, thus inaugurating a land development scheme which will call eventually for the construction of about 1000 houses. This is called the Adams estate development, the property involved having been originally owned by the former President and sold by a descendant after being in the family for generations. It contains more than 140 acres of land with two miles frontage on Quincy Bay, part of Boston Harbor, assessed for \$267,000. The proposition involves five miles of new streets with the usual accessories.

THE AMERICAN ARCHITECT

Personal

Bass, Knowlton & Graham of Indianapolis have opened a branch office at 213 Kennedy Bldg., Tulsa, Okla., where catalogues will be received.

Charles H. Alden, F. A. I. A. after two years of military service, has returned to the practice of architecture in 400 Boston Block, Seattle.

John McLelland will succeed Lamar Q. Cato as city architect of Houston, Texas. Mr. Cato resigns to form a partnership with Finger & Bailey.

Ralph G. Rossell announces change of address from Oakwood Village, Ohio, to Schwind Bldg., Dayton. Manufacturers' samples and catalogues are desired.

Three Harvard students who are taking advantage of architectural scholarships have sailed on the Winifredian

for Liverpool. They were R. H. Kettell of Lexington, who is to spend two months in England; Clark Knowlton of Memphis, Tenn., and J. V. Wilson of Pittsburgh, both of whom plan to remain a year in England, France and Italy.

Thomas W. Ludlow, formerly of the faculty of the School of Architecture in McGill University, Montreal, has been appointed Assistant Professor of Design in the School of Architecture at the Carnegie Institute of Technology. Professor Ludlow was recently discharged from the Canadian Army. He is a graduate of Columbia University and has studied architecture at L'Ecole des Beaux Arts, Paris. Since last December he has been attached to the Montreal Military Headquarters, in charge of the information bureau in connection with the demobilization of the Canadian Forces.

Financial and Commercial Digest

As Affecting the Practice of Architecture

Housing Situation Will Be Relieved When Attitude of Labor Changes

APPEAL TO ARCHITECTS IN HOLD-UP ON 1920 BUILDING PEACE

MORE firmly convinced than ever that only through the stabilization of the cost of labor by the adoption of certain economies that will make for increased production can the cost of building be materially reduced, architects and builders interviewed by THE AMERICAN ARCHITECT this week generally agreed that there soon must come a further breaking away from many existing stereotyped methods of operation. The decided opinion was, that if the workman is persuaded to assume a more interested attitude in his work and endeavor to fully cooperate with his employer for the good of the organization, that real economies can be made in many directions.

Unless this condition is reached—unless workmen employed in the construction of houses endeavor to provide better efficiency, combined with increased output, and fully realize their responsibility not only to the community but to themselves, there can be no hope of an improved housing situation within the coming months. In the New York district it had been hoped that with the final signature affixed to the contract between the Building Trades Council and the Building Trades Employers' Association, agreeing upon a wage scale for 1920, that there would come an era of peace and unprecedented building activity. No sooner than this was accomplished, however, than all plans were knocked into a cocked hat by the announcement of the Iron League Erectors' Association that it did not intend to abandon the open shop. This association alone of all the trades in the building industry has persistently fought attempts to adopt the policy of the closed shop.

There remains to be seen just what effect this independent action will have on building operations projected in New York, which, it is estimated, will be over \$10,000,000. It is a decidedly disturbing development, however, for under the 1920 building contract just signed union men

employed on building operations where non-union men are working are permitted to strike.

Architects have been appealed to with the hope that a solution can be found. The erectors' association has written to members of the architectural profession asking aid in restating their attitude toward the open shop by the insertion in all contracts for the erection of structural steel work of a labor clause. Not only does the new agreement provide for 1920, but a clause has been signed providing for a 1921 wage schedule under the following terms:

"Should the cost of living materially change, upon five months' notice from the Building Trades Council or the Building Trades Employers' Association, given prior to January 1, 1921, the wage scale for the calendar year 1921 shall be reopened and readjusted."

Speaking on the subject of increased pay and lessened working hours, one prominent New York architect stated that the workman on the job does not seem to realize that the man who buys the house pays for the increased cost of production. "Home building under such menacing difficulties," he said, "threatens to come to a standstill. There was never more work in our office than today. But the question is how is it going to be financed?"

"An honest day's work for an honest day's pay will do more to relieve the housing situation than all the political propaganda arising out of the cry of rent-profiteering, about which we have heard so much in the past six months. I fear rents will be increased next spring and that they will rise with the corresponding cost of maintaining property. I cannot understand why the workman doesn't understand that as a rent payer in the final analysis he pays the freight."

If construction is to be tied up by strikes how is the housing problem to be solved? Labor's present program makes it extremely difficult for capital to enter the building field. Education may help the laborer to see his mistake, but that is a slow process. If he doesn't sooner adopt a different attitude toward his work no one can estimate the damage that will result to industrial progress.

THE AMERICAN ARCHITECT

Building Trade Wages

As significant of labor wage conditions all over the United States, the following scale of wages being paid in New York City in the building trades was issued Nov. 8 by the Building Trades Employers' Association, is given herewith: Asbestos workers, \$6.40; bricklayers, \$8.50; bricklayers' helpers, \$5.50; carpenters, all boroughs, \$7; cement masons, \$7.20; concrete workers, laborers, \$5.20; composition roofers, waterproofers, \$5.50; electrical workers, \$6; electrical workers' helpers, \$3; elevator constructors, \$7.50; elevator constructors' helpers, \$5.50; hoisting engineers, \$7; houseshorers, \$5.25; houseshorers, Nov. 1, \$6; housesmiths, structural, \$8; housesmiths, finishers, \$6.40; housesmiths' helpers, \$5; marble cutters and setters, \$6.50; marble carvers, \$7.25; metallic lathers, \$6.50; metallic lathers, Nov. 1, \$7.20; mosaic workers, \$6; mosaic workers' helpers, \$4.50; painters, \$8; plasterers, \$8; plasterers' laborers, \$5.50; plumbers, \$7; sheet metal workers, \$7; slate and tile roofers, \$8; steamfitters, \$7; steamfitters' helpers, \$4.50; stonecutters, \$7; stonemasons, \$8.50; tile layers, \$6.50; tile layers' helpers, \$4.

Home Owning

The findings of the Senate Committee to investigate the steel strike contain some pertinent observations on conditions in the steel industry. The recommendations of the committee are really of more importance than the rehashing of conditions. It is well to have the views of men who are not connected, in any way, with the steel industry.

The Senate Committee recommends:

1. Creation of a permanent Federal Industrial Commission, somewhat similar to the War Labor Board, to have large powers in mediation, conciliation, pending whose decisions strikes should not be declared.
2. An Americanization law, to provide for effective education of illiterate foreigners and native illiterates.
3. Aid through Federal Government and industries to make industrial workers home owners.
4. Amendment of naturalization law to compel aliens to learn to speak the American language and to become naturalized within five years, or be deported.
5. An effective law dealing with anarchists, revolutionists and all who would destroy American Government.

German Municipalities Take Steps to Relieve Housing Situation

Although the city of Berlin as a whole has not yet taken steps toward relieving the misery due to the shortage of available dwellings occasionally referred to in cable dispatches, items found in German papers just received here show that several of the semi-independent municipalities making up the German capital are resorting to drastic measures in efforts to find homes for their citizens.

Several weeks ago Charlottenburg, Potsdam and Friedrichshafen obtained permission from the State Commissioner of Housing to compel families occupying large houses to turn over part of their habitations to persons unable to find vacant apartments. If the house owner and the tenant cannot agree as to the rent, the dispute will be settled by the municipal renting bureau. The local municipal council will decide when a house is large enough to spare some of its rooms, and the *Berliner Tageblatt* re-

ports that where a family of only from four to six persons is living in a house of from eight to twelve rooms, it will be forced to rent an apartment of two or three rooms, so reconstructed as to form a separate dwelling.

In Friednau a local ordinance was issued late in August providing that upon the expiration of all leases and rent periods of dwellings and furnished rooms, no renewals or new contracts might be made by the owners and the tenants, but the rooms must be placed at the disposition of the municipality. Then they may be rented again upon permission being granted by the local housing bureau.

Nearly all the municipalities are trying to control rents and are only allowing the landlords to raise their rates in cases where they can show that the upkeep has been materially advanced by increases in the cost of coal and labor.

Housing Conditions and Living Costs the Problems in Tunis

Consul Harris N. Cookingham, Tunis, calls attention to the effect on the cost of living of the small amount of building operations in the municipality of Tunis. During the second quarter of 1919 the figures comprise the erection of 8 temporary structures, 9 one-story buildings, 4 two-story buildings, and 2 one-story additions. Rents have increased disproportionately throughout the Regency as a result of the limited housing available. Government measures adopted during the war fortunately protect present lessees during the ensuing year; but in cases where a tenant surrenders his lease and a new arrival rents the property, rentals are increased sometimes by over 200 per cent.

To protect the public of the municipality of Tunis against profiteers and to enforce the maintenance of the prices of necessities fixed by the special commission which the Government appointed to investigate abuses and regulate sales, a consumers' league has been formed.

Housing Solution Up to Workers

Organization of a force of housebuilders from the workers in Detroit's industrial plants is one way of solving the housing problem in that city, according to J. Hubert Cullen, secretary of the industrial committee of the Board of Commerce, Detroit.

"Shortage of labor is given as the main reason why more houses are not being constructed," said Mr. Cullen. "If that is the case, then it is up to the heads of Detroit's largest industrial plants to get together and provide the labor. It may mean a temporary drop in production, but it is the factories that will suffer most from lack of homes for the reason that workers will not come to the city if there are no houses to live in.

"Detroit has approximately 280,000 workers. In large industrial plants there are men of every trade. If employers would call for volunteers up to 10 per cent of their working forces to work in shifts, that would be 28,000 men. It is estimated that it takes 14 men to build a house, some buildings are constructed with less.

"Allowing 14 men to a house, the 28,000 men could build 2000 houses. Detroit's home situation is one that calls for sacrifice. What if some factories suffer decrease in production during the building campaign, won't it be worth some sacrifice to manufacturers to know that their workers have decent places to live in?"

Department of Architectural Engineering



LANDSIDE VIEW OF COMPLETED WAREHOUSES. MATERIAL TO BE STORED SHOWN IN FOREGROUND.
UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.
FORD, BACON AND DAVIS, SUPERVISING ENGINEERS. LIEUT.-COL. A. PEARSON HOOVER, Q. M. C.,
CONSTRUCTING QUARTERMASTER.

The United States Army Supply Base, NEW ORLEANS, LA.

By A. PEARSON HOOVER, Lt.-Col., Q. M. C., Constructing Quartermaster, U. S. A.

THE United States Army Supply Base at New Orleans, La., is at one of the best strategic locations on the Western Continent, being:—

First—At the terminus of the navigable water courses and railroads of the Mississippi Valley and many ship lines of both the Pacific and Atlantic Oceans.

Second—Secluded from military attack, and

Third—At a location equidistant between points of origin of raw materials and the destination of manufactured products.

The Base, in location, design and construction, is completely adapted to Governmental and commercial service, meeting both war and peace time requirements of the Army, as well as the requirements of both public and private commercial businesses.

It co-ordinates all the present facilities of the

port of New Orleans and supplies a feature previously lacking in the structures of this port.

As shown on the accompanying plans, the plant covers an area of more than forty-eight acres, including various structures and yards, and is composed of three mammoth reinforced concrete warehouse units, each of the same design and each 600 ft. long, 140 ft. wide and six stories in height, and a two-story steel and pile wharf and wharfhouse 2000 ft. long and 140 ft. wide with connecting bridges joining the wharfhouse with the warehouse units. The connecting bridges are of structural steel of the enclosed multiple deck type, spanning Chartres Street and the intervening railroad yards. There are approximately nine miles of single railroad track serving the plant. The yards accommodate 520 cars, the warehouse units 135 cars, and the

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PANORAMIC VIEW LOOKING TOWARD SITE OF WHARFHOUSE, SHOWING CONDITION JANUARY 15, 1919. NOTE THE GREAT NUMBER OF PILES BEING DRIVEN TO SUPPORT THE WHARF AND WHARFHOUSE

wharf 88 cars, a total of 743 cars. The total floor space of the three warehouse units is thirty-five acres and of the two-story wharfhouse, thirteen acres, a total storage area of forty-eight acres. It will be noted that the aggregate floor area of the structures is the same as the ground area of the site. If all of the floor area of the structures were loaded to capacity the plant would contain more than 178,000 tons of shipping, equivalent to more than ten days' average movement over all the wharves, private and State, in the port of New Orleans.

The wharf is of sufficient length to accommodate at first off anchorage five to eight ocean-going ships simultaneously, and similarly the trackage immediately adjacent to the warehouse platforms, as previously stated, will conveniently accommodate more than 135 standard box cars.

The entire plant will cost, including the yards, the three warehouse units, the wharf and wharfhouse with complete equipment, approximately \$15,000,000. As will be noted from public records, this is 1.2 times the cost of all the State and municipal port improvements on the river front made to

recent dates, including the grain elevator plant and wharf, the cotton warehouses and wharf, the public belt railroad and yards, and all the miscellaneous State-owned wharves.

Commercial Advantages—The advantages to the city of New Orleans of this great expenditure by the Federal Government are self-evident. It goes farther toward fixing the center of gravity of concentration, storage and distribution for commodities of the western hemisphere, especially South America, at this port than any previous expenditure.

The plant includes such features of design as are in use in the world's greatest ports, namely:

Extensive storage capacity, ship side.

Maximum loading and unloading capacity in a ship's length due to:

- (a) Double deck wharfhouse.
- (b) Multiple story warehouse units, and
- (c) Multiple deck connecting bridges between wharfhouse and warehouses.

Loading, unloading and transportation appliances as described.

The special commercial advantages of these features being:

1. Increased speed in freight movement, thus reducing the ship's time in port approximately 40 per cent over the time required at the ordinary single-story unequipped wharfhouse.

2. Reduced handling cost per ton of freight.

3. Reduced storage costs per unit of capacity.

4. Reduced insurance costs on account of compartment design and fireproof construction.

5. A probable further classification of harbor facilities placing commodities such as steel and iron products, petroleum, coal, coffee, tobacco, sisal, grain, sugar and cotton at definite locations.

Adaptability—This warehousing, handling and shipping plant is of standard design and completely adapted to:

The storage, transfer and loading of miscellaneous and standard package commodities. Both import and export transfer and storage, and



WHARFHOUSE No. 3 AS IT APPEARED JANUARY 15, 1919.

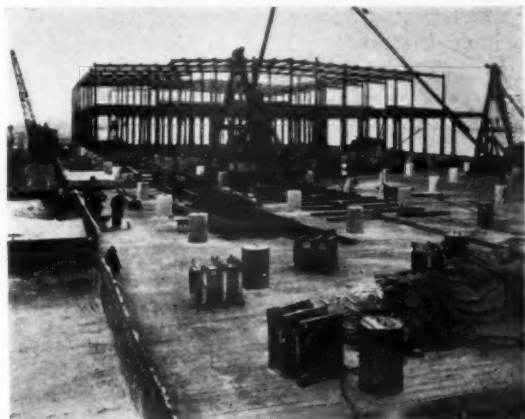
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No. 1. JANUARY 22, 1919.
PILE DRIVING IN PROGRESS.



No. 2. FEBRUARY 19, 1919.
DECKING LAID OVER COMPLETED PILES.



No. 3. ANOTHER VIEW, FEBRUARY 19, 1919.
ERECTION OF STEEL STRUCTURE FOR WHARFHOUSE
COMMENCED.



No. 4. MARCH 25, 1919.
WHARFHOUSE STRUCTURE CAN BE SEEN IN BACKGROUND.



No. 5. NEARING COMPLETION, MAY 28, 1919.
PROGRESS PHOTOGRAPHS OF WHARF AND WHARFHOUSE, UNITED STATES ARMY SUPPLY
BASE, NEW ORLEANS, LA.



No. 6. INTERIOR VIEW OF COMPLETED WHARFHOUSE.

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PANORAMIC VIEW OF WHARFHOUSE AS IT APPEARED APRIL 30, 1919.

Use as manufacturing lofts and for factory machinery housing.

The warehouses and wharfhouse have a column spacing of 20 ft. centers and an external glass area of 33 per cent and 11 per cent respectively, being adequately lighted for all the purposes noted above.

As stated, the warehouses are built for war or peace requirements of the Army as well as both public and private warehousing. Coffee merchants at Kansas City, Chicago or Denver can have their consigned coffee transferred from ships to these warehouses and from the warehouses to their customers in Memphis, Birmingham or Dallas, without handling the coffee beyond the port of entry storage.

This is equally true of virtually all commodities. Tobacco can be shipped from Kentucky and held in storage for curing at the warehouses at New Orleans while sales are being made in Europe or elsewhere. The use of the warehouses can be extended to supplement the private storage capacity of wholesale businesses.

Capacity.—The capacity of the plant is 178,000 tons as already stated, and in standard packages of principal imports and exports its capacity is:

Material	Warehouses	Wharfhouse	Total
Coffee (bags)	2,400,000	1,000,000	3,400,000
Sisal (bales)	350,000	150,000	500,000
Cotton (bales)	400,000	200,000	600,000
Tobacco (hogsheads)	100,000	50,000	150,000

Features of Design.—The buildings are relatively narrow, the width being approximately one-quarter

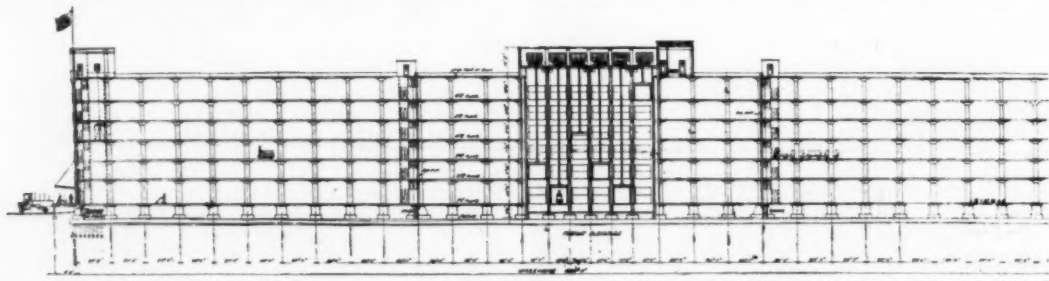
of the length. This feature allows a maximum length of railroad platforms and an arrangement of yard and loading trackage perpendicular to the wharf. The clear story height of all the warehouse units is 10 ft. 8 in. except the first story in each building, which is 13 ft. 7 in. The minimum clear story height in the wharfhouse is 17 ft. 6 in. for the first deck and 11 ft. for the second deck. The multiple deck structural steel bridges correspond in clear story height with joined buildings.

The loading capacity of the warehouse units on the various floors is:

1st floor.....	400 lbs. per square foot
2nd floor.....	350 " " " "
3rd floor.....	250 " " " "
4th floor.....	250 " " " "
5th floor.....	250 " " " "
6th floor.....	250 " " " "
Roof.....	25 " " " "

The pile foundations of units No. 1 and No. 3 are designed for the total dead load and 85 per cent of the live load, using a dead load of 12 tons per pile.

Under unit No. 2, to avoid the great difficulties and consequent delays of excavation, the standard piles used in units No. 1 and No. 3 were replaced by composite piles. The lower section of approximately 48 ft. is of untreated timber, and the upper section of approximately 8 ft. is of concrete installed in accordance with the design and under the supervision of the Raymond Concrete Pile Company. These piles are designed to sustain 16 tons each.



GENERAL CROSS SECTION OF ENTIRE PROJECT.

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WAREHOUSES 1, 2 AND 3 AS THEY APPEARED JANUARY 15, 1919.

The columns are designed for full dead loads and the following percentages of live loads:

Roof	100 per cent
Sixth floor	85 " "
Fifth floor	80 " "
Fourth floor	75 " "
Third floor	70 " "
Second floor	65 " "
First floor	60 " "

The warehouse units are of reinforced concrete throughout. The structural design of the buildings is in accordance with the Chicago Building Ordinance with exceptions as follows:

(A) *Flat Slab Design:*

1. The positive moments in bands perpendicular to the wall in the wall panels are 20 per cent greater than for interior panels.
2. The negative reinforcement perpendicular to the walls and wall panels for the bands at columns is the same in amount as the negative reinforcement over the interior columns.
3. All negative reinforcing steel perpendicular to the walls is hooked 6 in.

(B) *Beams:*

1. Continuous beams are designed for the clear span.
2. The spandrel walls are self-supporting.
3. The lintels supporting the flat slab floors are designed to carry the full dead and live load of one-fifth of the panel width tributary to same, considered as a uniform load.

4. Negative reinforcing bars in end spans are hooked 6 in.

(C) *Spiral Columns:*

1. The Considere formula was used in computing spiral columns.
2. The average core stress does not exceed 1200 lb. per square inch.
3. The concrete stress is 700 lb. per square inch for 1:2:4 concrete.
4. The amount of spiral reinforcement is not less than $\frac{1}{2}$ of one per cent of the core area nor greater than $1\frac{1}{2}$ per cent.
5. The amount of vertical reinforcement is not less than 1 per cent of the core area and not more than 4 per cent.

(D) *Laced Columns:*

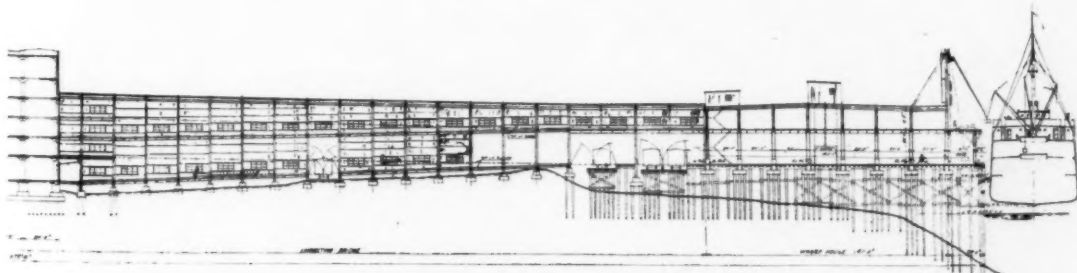
1. The concrete stress is 500 lb. per square inch for 1:2:4 concrete.
2. Lacings are not less than $\frac{1}{4}$ in. in diameter and they are spaced not more than 12 in. on centers.
3. The amount of vertical reinforcement is not less than 1 per cent of the effective area of the column nor greater than 4 per cent.

(E) *Steel Stresses:*

1. Steel stress for tensile reinforcement for beams and slabs does not exceed 16,000 lbs. per square inch.
2. Steel stress for tension in beam stirrups does not exceed 12,000 lbs. per square inch.

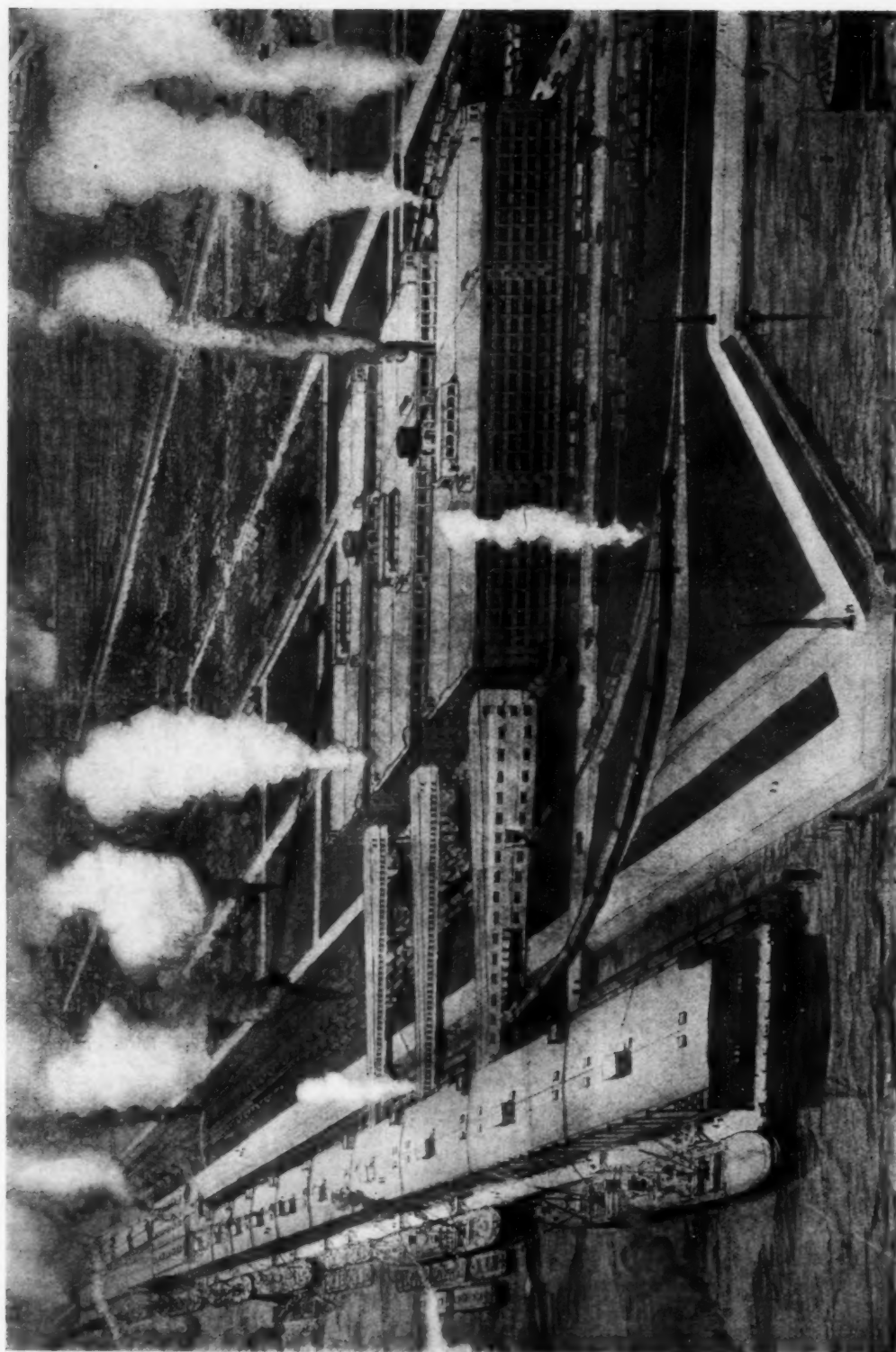
(F) *Concrete Stresses:*

1. The extreme fiber stress for concrete in



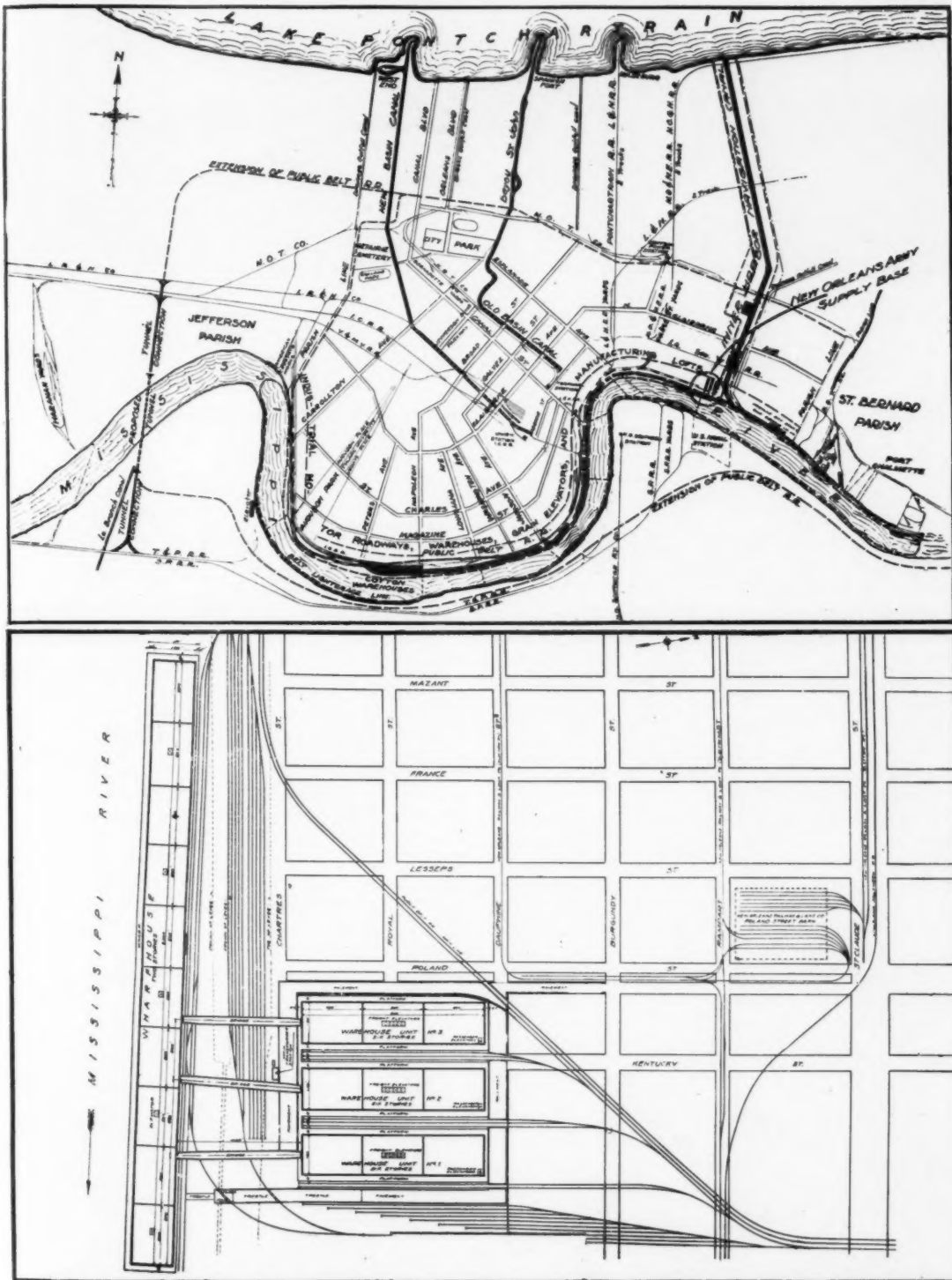
CROSS SECTION CONTINUED FROM PAGE 672.

THE AMERICAN ARCHITECT



RIVERSIDE PERSPECTIVE, UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.
FORD, BACON & DAVIS, SUPERVISING ENGINEERS. LIEUT. COL. A. PEARSON HOOVER, Q. M. C., CONSTRUCTING QUARTERMASTER,

THE AMERICAN ARCHITECT



LOCATION AND GENERAL LAYOUT, UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.

THE AMERICAN ARCHITECT



GENERAL VIEW OF SITE, SHOWING CONDITION AS IT APPEARED FEBRUARY 12, 1919

slabs and beams is not greater than 700 lb. per square inch for 1:2:4 concrete.

(G) Temperature Reinforcement:

The amount of temperature reinforcement is not less than $\frac{1}{4}$ of 1 per cent.

All other features of construction are in general accordance with standard specifications.

Piling is of round yellow pine and of various lengths for various parts of the plant. Under the warehouse units the points of the piles rest in a sand stratum at approximately 28 C.D., giving a total penetration of approximately 51 ft. The piles are driven for the entire length through Mississippi River alluvial deposit until they bring up at the sand stratum before mentioned. Under the wharfhouse all piles and all exposed timbers are treated, the treatment consisting of 16 lb. of creosote oil per cubic foot. These piles range in length from 50 ft. to 120 ft. In general, piles longer than 100 ft. are spliced, the lower section being of plain timber and the upper of treated timber.

The cement is of standard brands American Portland cement. The fine aggregate was obtained locally and limited in size to $\frac{1}{4}$ in. in diameter. The coarse aggregate consists of river gravel obtained from various sources, of sizes between $\frac{1}{4}$ in. and $1\frac{1}{2}$ in. Concrete mix, except in special locations, is of 1:2:4 proportions.

The wharf is of treated timber upon which is superimposed the two-story wharfhouse of struc-

tural steel enclosed by corrugated sheet steel and fireproof rolling doors and having wood floors.

Handling Apparatus.—Elevators for freight and passenger service are as follows:

	Wharfhouse	Warehouses
Number	5 freight	3 passenger 15 freight
Location	1 every 400 ft.	5 freight and 1 passenger in center of each building
Capacity	10,000 lbs.	10,000 lbs.
Speed	100 ft. per min. (frt.)	150 ft. per min. (frt.) 250 ft. per min. (pass.)
Floor area	785 sq. ft.	2295 sq. ft. (frt.) 126 sq. ft. (pass.)

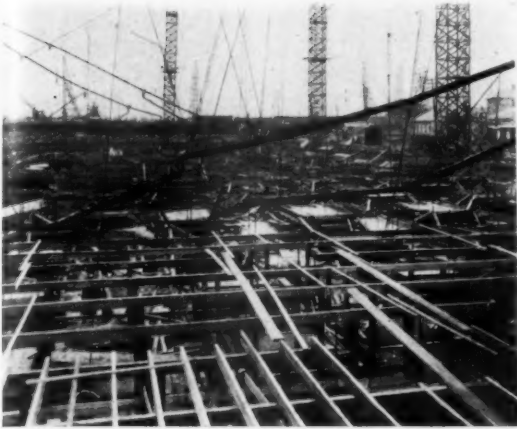
Space has been arranged for one additional freight and one passenger elevator in each warehouse. Provision has been made for spiral chutes for the discharge of commodities. The transfer of freight longitudinally is by means of electric tractors and trailers and the use of hand trucks. Bridges are so designed that a minimum use of the elevator system will be required, on account of the three bridges connecting the wharfhouse and the warehouses. These bridges are multiple deck and in total serve both decks of the wharfhouse and all the floors of the warehouses except the fifth and sixth in each of the units.

Quantities of some of the more important items required for this plant are as follows:



VIEW OF WAREHOUSES SIX WEEKS LATER, SHOWING RAPID CONSTRUCTION ATTAINED.

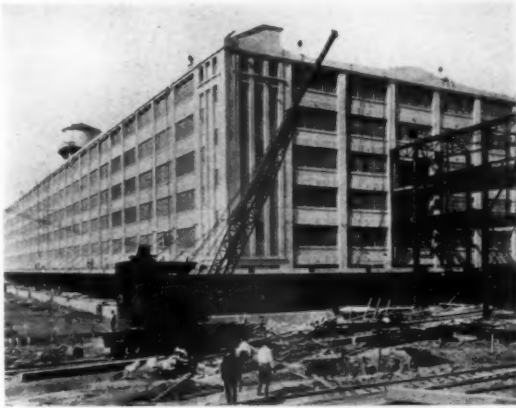
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WAREHOUSE No. 3, JANUARY 22, 1919.



WAREHOUSE No. 3, FEBRUARY 5, 1919.



WAREHOUSE No. 3, MAY 28, 1919.



WAREHOUSE No. 1, MAY 21, 1919.



WAREHOUSE No. 1, MAY 28, 1919.



WAREHOUSE No. 2, MAY 28, 1919.

PROGRESS PHOTOGRAPHS OF WAREHOUSES
UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.

THE AMERICAN ARCHITECT



INTERIOR VIEW OF WAREHOUSE
SHOWING ONE OF THE ELEVATOR BATTERIES.

Warehouses

Number of Piles.....	31,700
Cu. Yds. of Sand.....	48,000
Cu. Yds. of Gravel.....	93,000
Bbls. of Cement.....	162,000
Cu. Yds. of Concrete.....	108,000
Tons of Reinforcing Steel.....	7,500
Ft. B. M. Form Lumber.....	9,000,000
Sq. Ft. Steel Sash.....	113,000
Sq. Ft. of Roofing.....	252,000

Wharf and Wharfhouses

Number of Creosoted Piles.....	21,000
Ft. B. M. Creosoted Timber.....	5,000,000
Ft. B. M. Untreated Timber.....	2,000,000
Sq. Ft. Corrugated Steel Siding.....	96,000
Lbs. Structural Steel.....	9,000,000
Sq. Yds. Creosoted Wood Block Flooring.....	37,000
Sq. Ft. Roofing.....	280,000
Sq. Ft. Steel Sash.....	16,000

Fire Prevention.—The city fire department extended a number of alarm boxes over the entire construction and connected them to their nearest engine house. A fire marshal, with competent assistants, was kept constantly on the work, directing the general efforts toward the prevention of fire.

A complete sprinkler system, in addition to hose racks and portable fire extinguishers, was installed according to the requirements of the Louisiana Fire Prevention Bureau, and mainly constitutes the fire prevention apparatus which protects the various structures comprising the Army Supply Base. The wet type system was used exclusively, due to the fact that there was no danger of freezing temperatures occurring in this climate.

The underground feed pipe to the sprinkler system of the Base consists of a 12-in. main, directly connected by a 16-in. main to the city's 24-in. water supply main. In each main there is a venturi meter installed under the supervision of the Sewerage and Water Board of New Orleans. A complete circuit of 12-in. pipes was laid around the entire Base, with feeders of 8-in. pipe to each section of the warehouses, and also connected to the wharfhouse. A constant pressure is maintained by three 50,000-gallon tanks located 25 ft. above the

roof of the warehouses. Check valves are located in the 16 and 12-in. city supply pipes to prevent the water in the sprinkler system from entering the city main; such valves were also placed in the 8-in. tank risers to allow the water to flow from the tank into the underground system. The tanks are filled through a by-pass around these check valves. Mercury gages located at the first floor of each warehouse and attached to the tank risers show the height of water in the tank.

Further fire protection is given by two siamese steamer connections located above the platform at the west side of warehouse No. 3, thus enabling the city fire department to pump into the underground protection system direct from the city main. Hydrants located at convenient places around the warehouse complete the fire protection system.

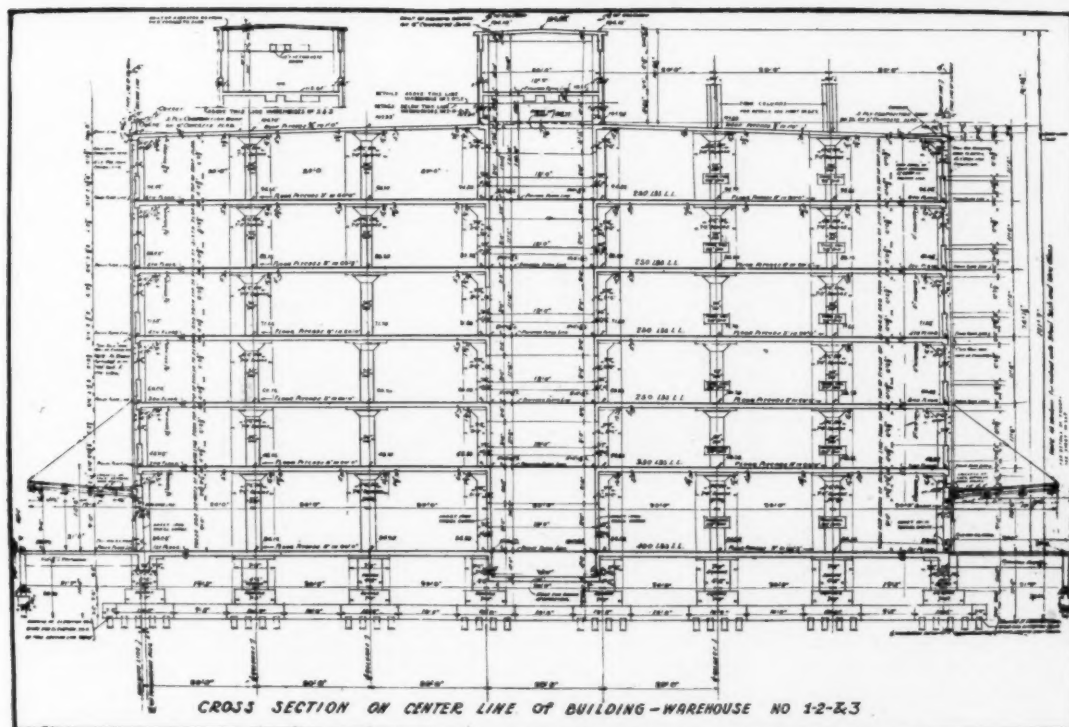
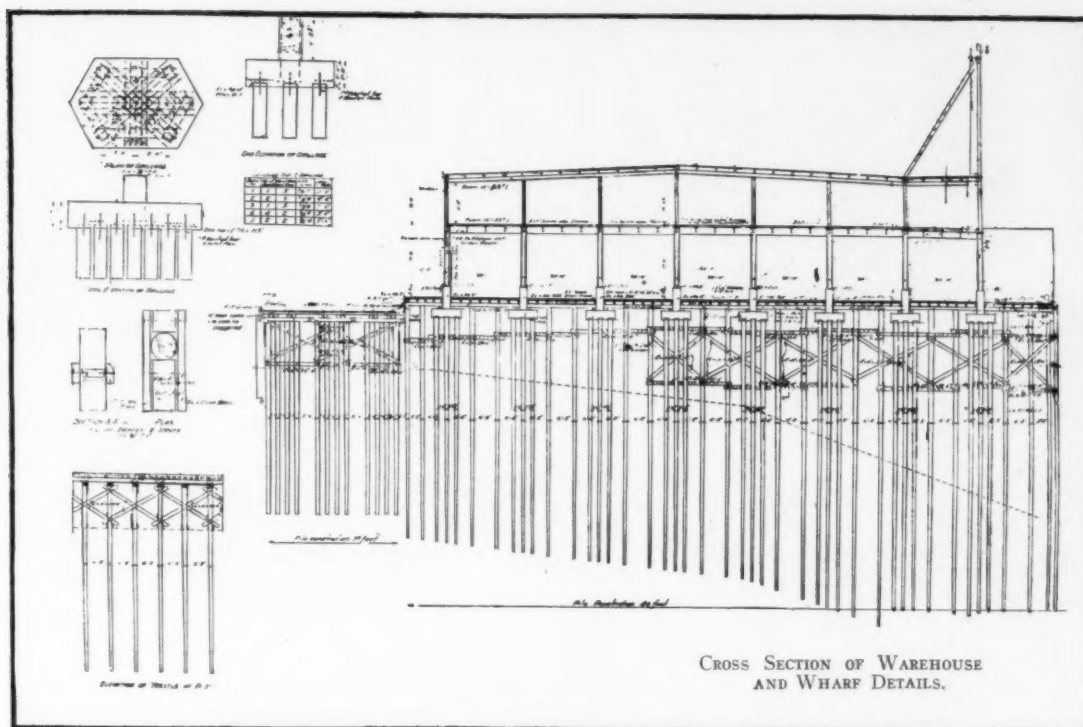
Protection is afforded freight cars standing in the yards back of the warehouses by five monitor nozzles located above the roof of the connecting bridges.

The fire protection for the wharfhouse consists of a 10-in. line located below the floor of the wharf, with 8-in. risers in each section to supply the interior sprinkler installation. This line is connected at the west end by a 12-in. main from the city supply and at the center and east ends by 12-in. mains from the underground warehouse system, thus providing a complete circulation. As an additional source of supply, three siamese connections were provided on the river side of the wharfhouse just above the deck, connected directly to the supply line of the wharf, thence through the 12-inch underground supply to the warehouse system proper.

Electrical Installation.—A transmission pole line was constructed which carried the current at 6600 volts, 3-phase, 60-cycle. This line is located underground, as it enters Government property and terminates at a main transformer station containing three oil-cooled transformers. From here current is transmitted to each of the warehouses and to the wharfhouse. The roof of the warehouses and



TYPICAL INTERIOR VIEW OF WAREHOUSE.
INTERIOR CONSTRUCTION IDENTICAL FOR ALL WAREHOUSES.



UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.

THE AMERICAN ARCHITECT

the wharfhonse each contain a pent house enclosing a transformer substation. Energy is here transformed from 2300 volts to 440 volts, 3-phase for power, and 110/220-volt 2-phase for lighting.

Interior building illumination is planned for the use of 100-watt lamps in the center of each bay of the first floor of the warehouses and wharfhonse, and 75-watt lamps for all other floors of buildings.

A separate circuit with independent transformers is provided for stairways and exit lights, while an all-night, or watchman's, circuit is provided through the center of each section of warehouses and wharfhonse, and lights in each section are controlled by three-way switches located conveniently at doors at opposite ends.

The outside building lighting consists of 100-watt lamps located approximately 20 ft. on centers, used for lighting platforms of warehouses and land side of wharfhonse. Flood lights of 1000 watts, spaced approximately 80 ft. on centers, are used for lighting the water side of the wharfhonse. Such fixtures are located on top of cargo mast and cast an even flood of light over the entire Base.

Outlets for portable extension lights into freight cars are provided at approximately 40-ft. centers along the edge of the platforms. A single circuit through the center of the first floor with 220-volt, 3-phase outlets on walls are provided for each 200-ft. section of the warehouse and the wharfhonse for the portable stacking and conveying machines.

An outlet of 400 volts every 40 ft. provides power

for the portable cargo winches on first and second floors of wharfhonse.

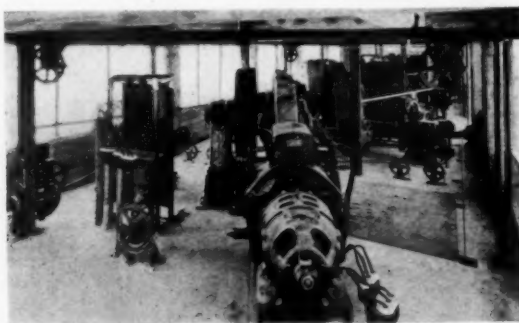
A battery charging station is located on the third floor, water end, of each warehouse, and one near the center of the second floor of the wharfhonse. These charging stations renew batteries used in the tractors around the plant.

The telephone office is located on the fifth floor of warehouse No. 1, and contains a telephone switchboard with a capacity of twenty-five trunk lines. Warehouse No. 1 had the greatest number of telephones, due to the offices on the fifth floor. One hundred and fifteen stations were installed in this warehouse and forty in each of the other two. With twenty in the wharfhonse and eleven located around the outside, it made a total number in use at the Base of 226.

One of the notable features in connection with the erection of this mammoth plant is the speed of erection. Work was started on June 13, 1918, and completed one year later, or to be exact, June 14, 1919.

The entire project was erected under the general supervision of R. C. Marshall, Jr., Brigadier-General Q. M. C., in charge of the Construction Division, U. S. A.

The plant was designed by Ford, Bacon & Davis, Supervising Engineers, acting under the direction of the Constructing Quartermaster, and was built by the George A. Fuller Company, also acting under his direction.



ELEVATOR PENT HOUSE MACHINERY.
UNITED STATES ARMY SUPPLY BASE, NEW ORLEANS, LA.

