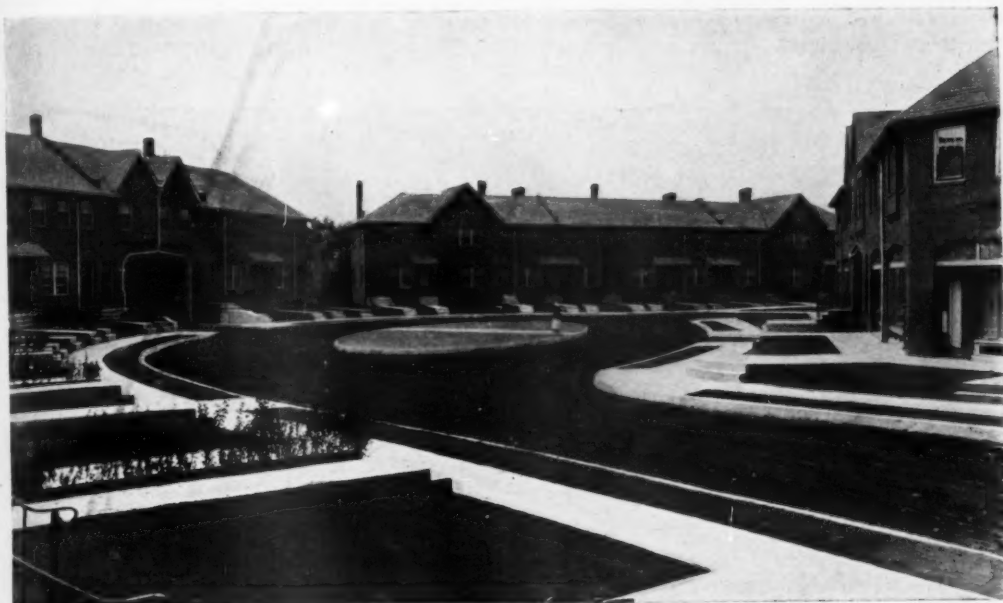


THE AMERICAN ARCHITECT

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NUMBER 2198



THE GENERAL COURT
THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
SCHENCK & MEAD, ARCHITECTS

The Bridgeport Housing Development

AT last the subject of industrial housing has assumed the importance that it should. It has taken conditions created by our war preparations to demonstrate plainly that much of our success in accomplishing the great task we have undertaken is contingent upon the adequate housing of a rapidly increasing industrial population. In the many manufacturing cities throughout the United States the subject of industrial housing has received more or less attention. In certain locations a very strong effort has been made both to effect a solution that would meet present needs, formulate a plan insuring such future development as would secure the best interest of the industrial worker and at the same time start a properly conceived movement toward a permanent improvement.

The apathetic attitude of many communities toward industrial housing has unfortunately been

common, but has been no more marked in city administrations than in the general disposition of the national government toward this important question. It was only when the success of our shipbuilding program was very seriously menaced by lack of housing accommodations at shipbuilding centers that some definite steps were taken to overcome a condition that far-sighted men had long since realized was imminent. The necessity for an immediate appropriation has become so great that money has now been set apart for housing operations in shipbuilding centers. While the delay has served to retard a very important work, the means to effect at least a partial remedy has been supplied. If the operations are properly conducted we may look for better results in ship production.

Just what are the proper methods to pursue in the supplying of housing accommodations for those engaged in shipbuilding may well provide a subject

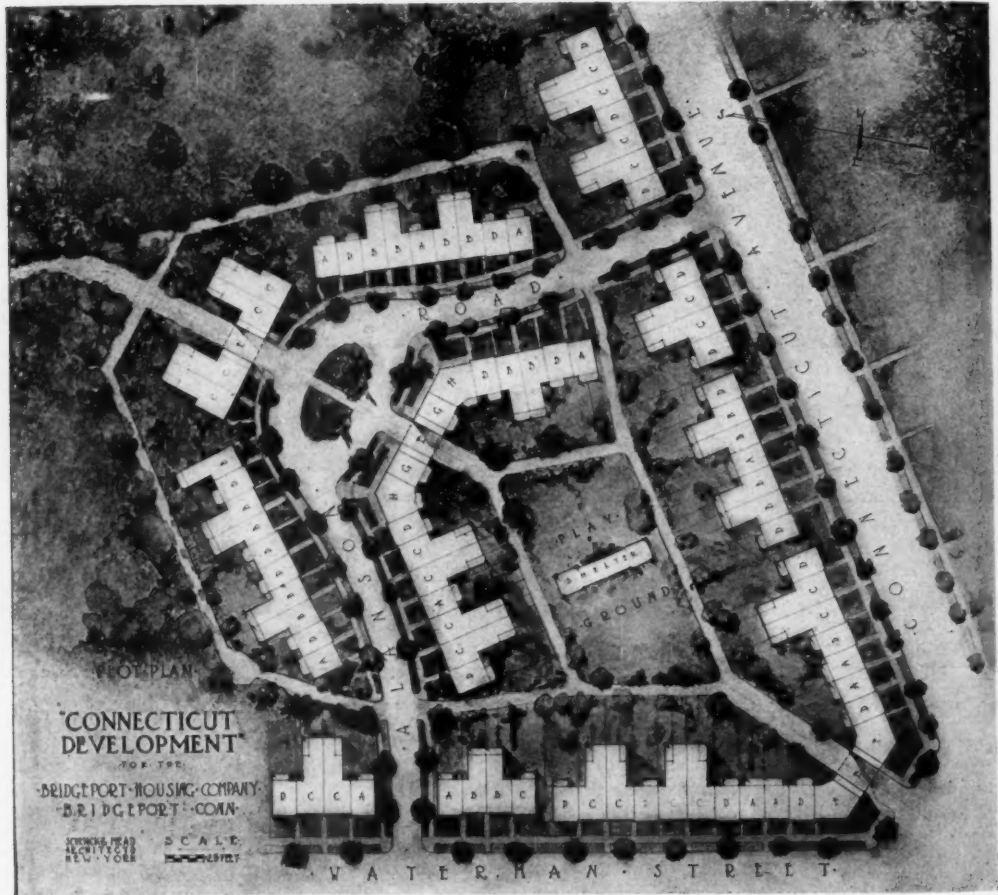
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THE AMERICAN ARCHITECT

for future discussion. There is in a certain sense but a temporary demand for accommodations for this class of labor. But in the widely extended ramifications of our present rapidly growing industrial development there are presented other phases of industrial housing that will assume a more permanent character. These should be studied from their inception with a view to similar developments all over the United States.

progress, it will be well to make inquiry into conditions which now exist, and probably will continue to prevail for some time after peace is declared.

In many of our large plants engaged in filling government contracts in the emergency class, the output has been decreased 50 to 60 per cent because of lack of housing accommodation. There is plenty of labor available. At the various hearings held by the government, the contractors summoned have



The scheme of industrial housing which is now being considered for the city of Bridgeport, Conn., is perhaps, in view of certain new and hitherto untried ideas, one of particular moment.

It will be of much interest to make inquiry into this scheme and, as far as we are able, to present the more important features for consideration.

First, however, in order that the reader may be able to understand clearly the very vital relation between industrial housing and successful industrial

stated that they could secure men, but as skilled workers were necessary, and as no adequate or satisfactory housing could be provided, it was impossible to retain those engaged.

Just one instance may be cited as typical of many. Between January and October 1 more than 10,000 men were engaged by a certain large corporation engaged on government work. Out of this large number only 400 could be retained because of lack of housing. This company had already tied up

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almost a million dollars of capital in a large tract for housing development, having begun the initial work toward providing housing accommodations. Because of its inability to secure credit beyond that of its working capital, this project was of necessity abandoned and the result as above set forth was the consequence.

This and other similar examples of comparatively

ployees shall have the advantage of buying these houses at a fair cost; paying in excess of this cost only such amount as will defray the expenses of the organization charges and interest charges on the money invested.

The development proposed under the foregoing plan and financial arrangement is:

(1) Apartment house for clerical help, consist-



KITCHEN COURT AND GARDENS

THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
SCHENCK & MEAD, ARCHITECTS

recent experience have aroused the government to a realization of the importance of housing.

THE BRIDGEPORT DEVELOPMENT

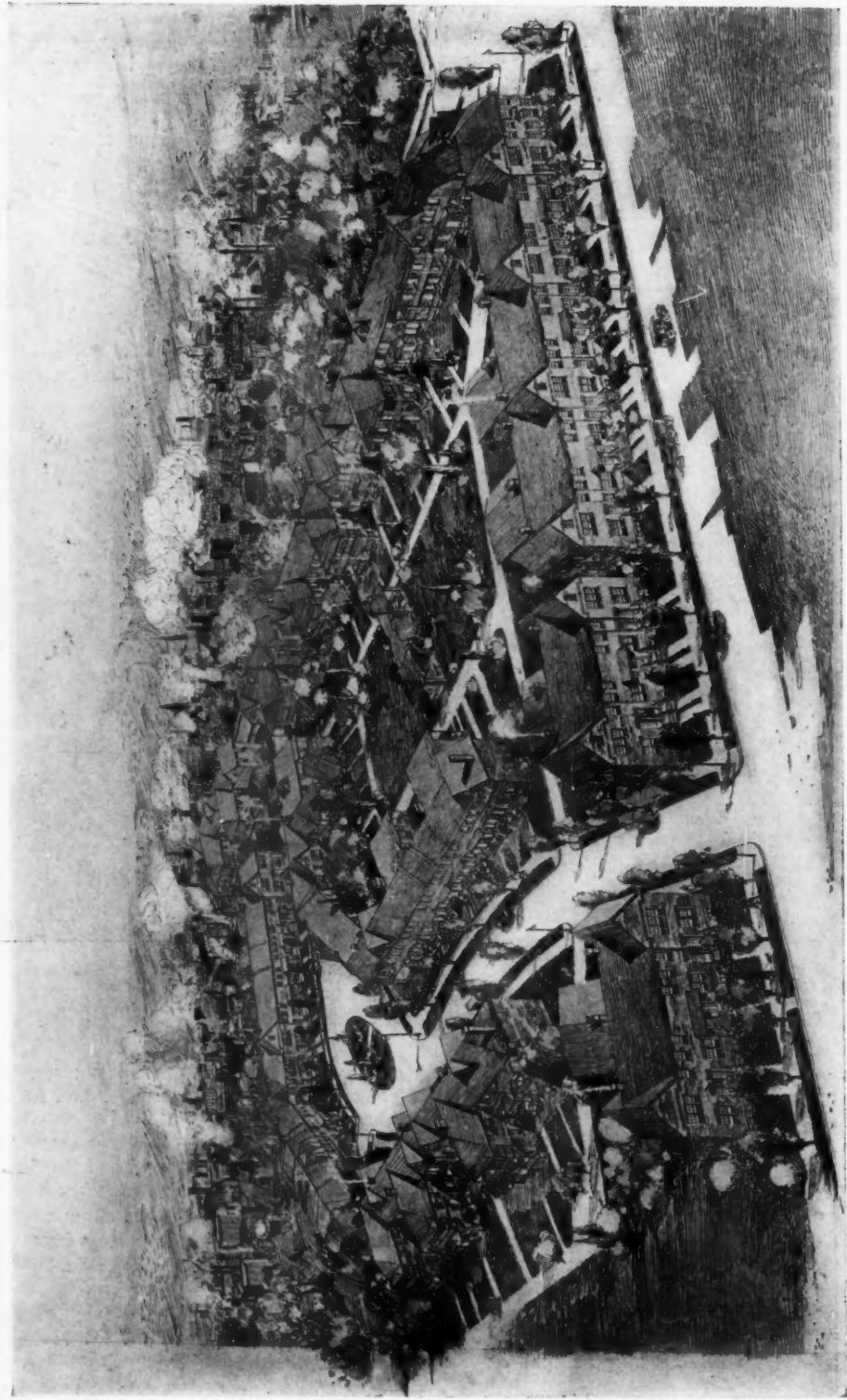
As is generally known, Bridgeport is and has been for many years primarily a manufacturing city. Its two fundamental difficulties have been an insufficient number of houses and the improper quality of the houses thus far erected.

The Bridgeport plan is as follows: The manufacturers of the city joined with the public service corporations and banks to build houses for various classes of employees, with the purpose that em-

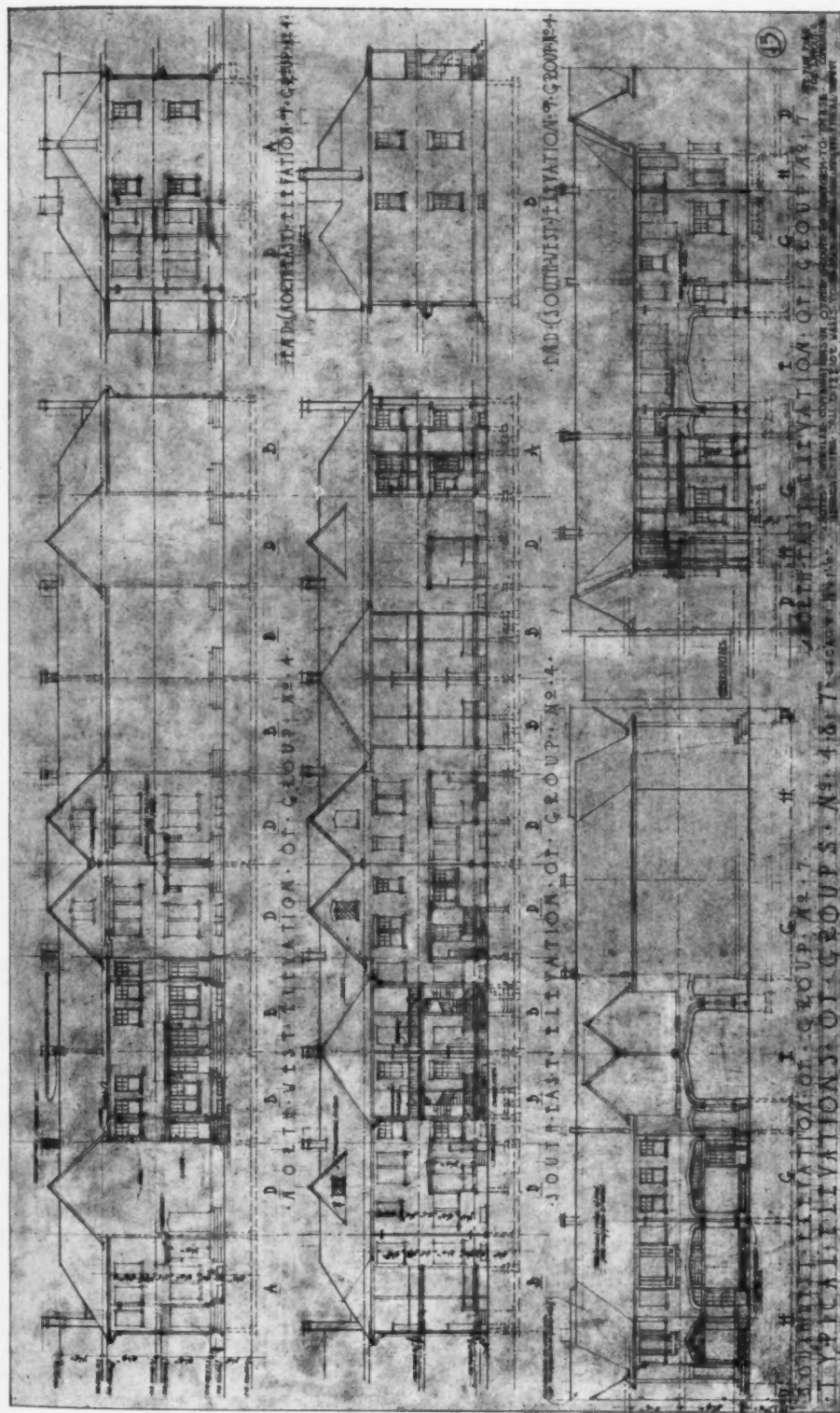
ing of three room and bath apartments, heated with steam, supplied with hot water and furnished with janitor service.

(2) Connecticut Avenue development. Single and two-family row houses with individual entrances front and back. Each tenant has individual piazza. Portion of this group heated by circulating hot water system, and another portion heated individually by hot air furnaces. Individual furnaces for each tenant.

(3) Villages of single and two-family houses—Fairfield. These houses intended for higher paid mechanics and clerical workers.



THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
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THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
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(4) Lordship village. For clerical and high-class mechanics, foremen, etc.

It is the purpose of the housing company to build houses which may be copied by private builders. This company is now building on land which it owns and will build on land of the individual. All of the houses are intended eventually to become the property of the working classes.

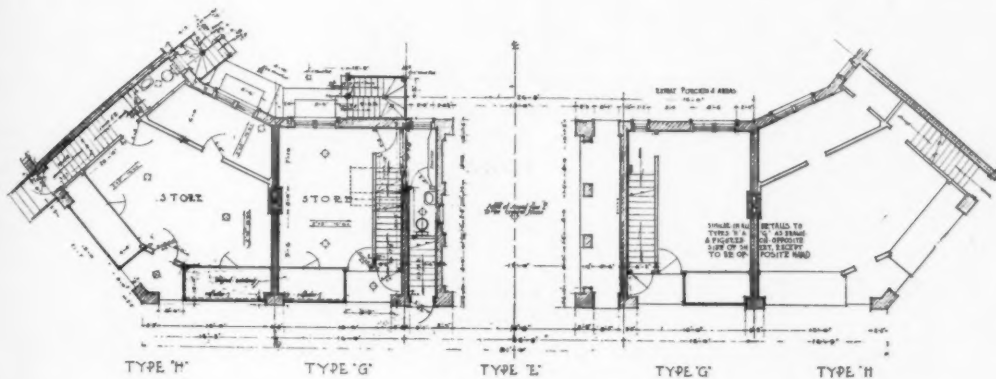
The following homes have been built since January, 1917:

One apartment house having thirty-nine families. The apartments consist of three rooms and bath each, heated by steam and furnished with hot water and janitor service. These apartments are intended for the young married people, two working women, or other small families, usually in the clerical de-

portion of the city, very close to a group of manufacturing plants. One portion of this, about 60 per cent of the total development, has been equipped with circulating hot water heating system supplied from an adjoining power-house owned by one of the manufacturers interested.

In connection with this group there are two stores, one at least of which is to be run on a co-operative basis and to handle all food products which can be distributed in this way. The intention of the housing company is to supply for the occupants of these buildings the need for homes having a small number of rooms, in a good locality, well equipped with housekeeping apparatus and at a comparatively moderate rent.

The rent for the portion of the development



FIRST FLOOR PLANS

partments of manufacturing plants. The cost of this building averages \$2,410 for each family, to which should be added \$154 for land and development, including sidewalks, hedges, grass and other planting. The rents are from twenty-five to thirty dollars per month. This apartment is now completely occupied, and there is said to be a large waiting list.

The Connecticut Avenue development will consist of eighty-seven row type houses of single and two-family type, taking care of one hundred and thirty-nine families, as follows:

- 24—apartments, 2 rooms and bath.
- 40—apartments, 3 rooms and bath.
- 47—apartments, 4 rooms and bath.
- 28—apartments, 5 rooms and bath.

Estimated average cost per family \$2,603 for building and an additional cost for land and development, together with streets, playgrounds, etc., of \$449. This development occupies approximately a whole city block, and is located in a densely settled

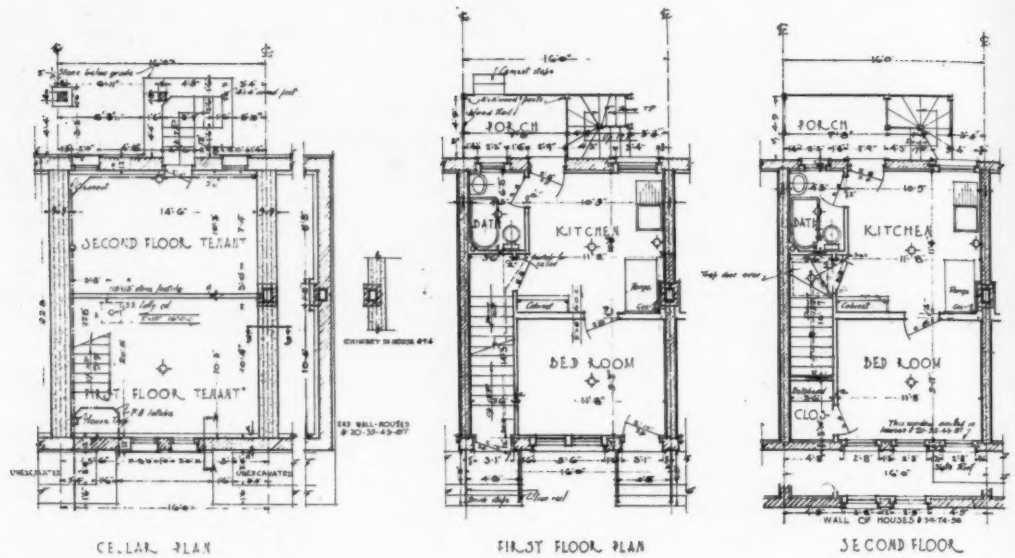
which is heated individually by hot air furnaces is as follows:

2 room and bath apartments.....	\$15.00
3 room and bath apartments.....	18.50
4 room and bath apartments.....	24.00
5 room and bath houses.....	29.00

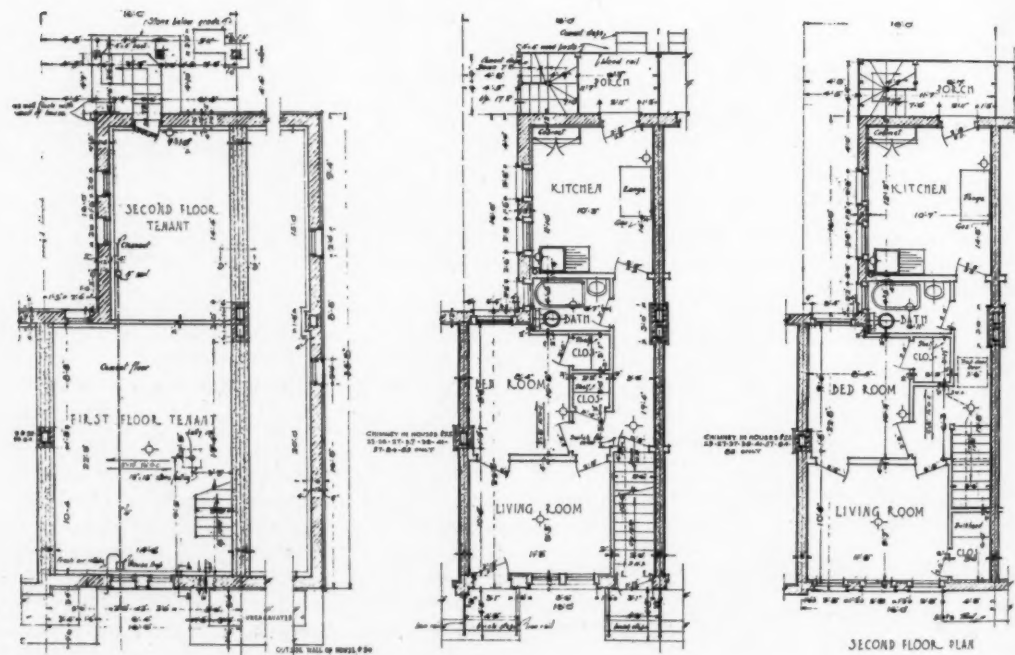
The company is to supply free of charge a gardener and repair man. For the portion of the development which is heated by hot water a variable charge is to be made on the basis of number of rooms and a maximum monthly charge in the winter, a minimum monthly charge in the summer and an intermediate charge in spring and fall.

At present these houses are all rented. It is proposed to operate this proposition on a co-operative bank plan of saving so that when tenant has paid in sufficient amount of money in excess of rent to amount with interest to 10 per cent of the cost of any of the separate houses owned by the company, the company will sell the house to this tenant, either one of the row type houses or one of the

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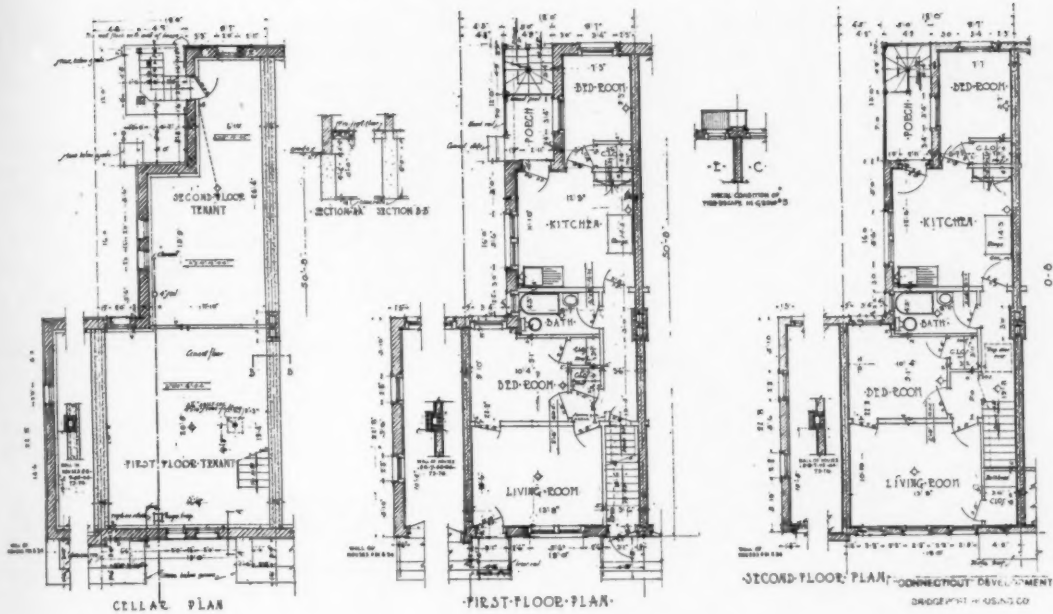
TYPE A



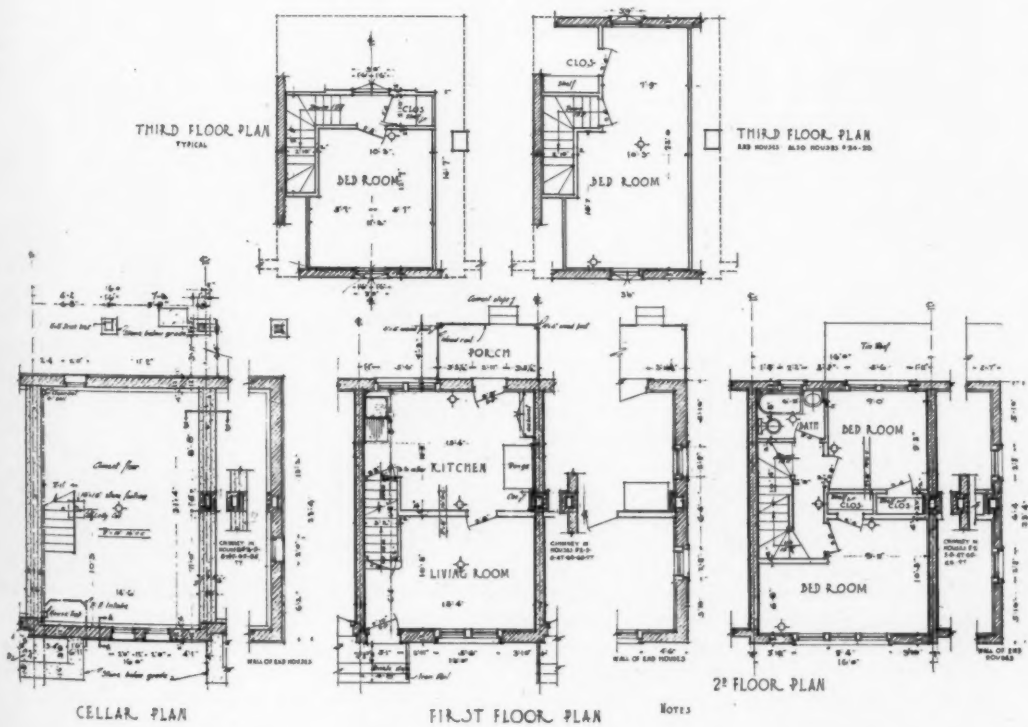
TYPE B

THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
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TYPE C



TYPE D

THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
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individual houses, on the instalment plan, the purpose of this arrangement being to allow the newly married couples to begin to save while they are still living in an economical way, in a small number of

standard. The following restrictions have been put upon the development:

- 1—Set back lines for all buildings.
- 2—Location of garage for all properties.
- 3—Type of house to be not over 2½ stories high.
- 4—All front yards to be free from outbuildings.
- 5—No live stock or fowl to be kept on the premises.

6—Houses to cost not less than \$3,000. This price to be made variable by the approval of the Housing Company and the majority of the property owners on any one street.

Each house is equipped with furnace heat, gas, hot water heating apparatus, gas stove, laundry tubs, shades, screens, full bath-room equipment, etc. The houses are laid out with latticed laundry yard, and at least 50 per cent of the lot is left available



STREET VIEW, THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.

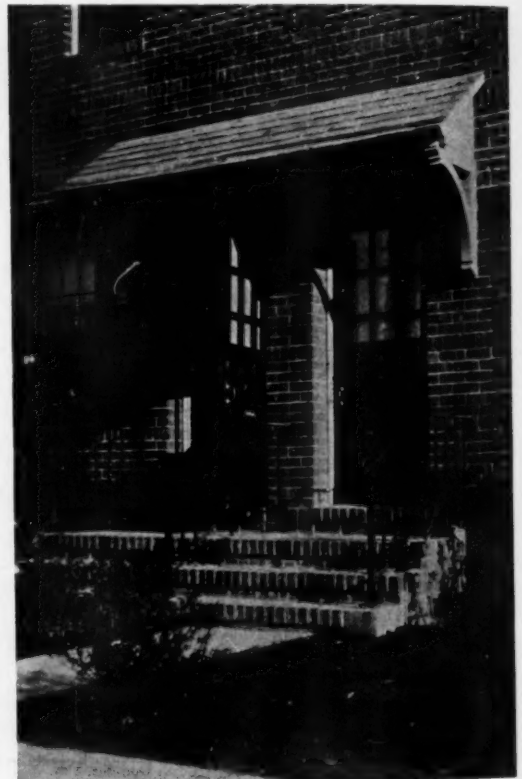
SCHENCK & MEAD, ARCHITECTS

rooms, and under the protection of a thoroughly restricted development.

The suburban development consists of two groups of houses. A village of single and two-family houses at Fairfield, for the higher paid mechanics and clerical workers, and another at Lordship for a yet higher and better class of skilled labor.

These suburbs are located within easy reaching distance of all of the manufacturing plants in the city. They are laid out with care, with proper streets, play-grounds, etc. Each house is arranged so that it will have a minimum of five rooms and bath and maximum of seven rooms and bath for the single house. The semi-detached houses have been built with five rooms and bath to each tenement, and it is planned later to build other semi-detached houses with six and seven rooms and bath.

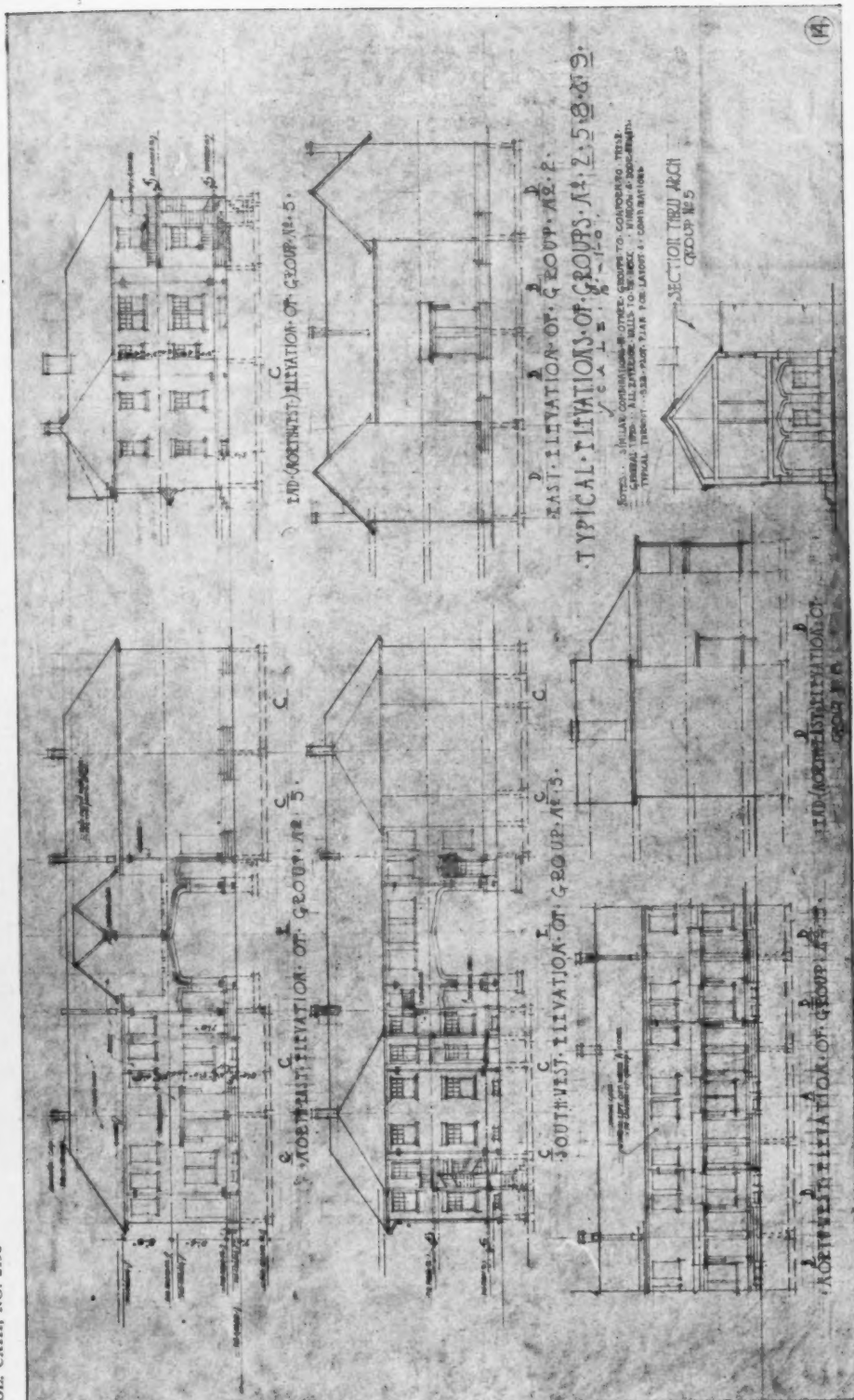
The Fairfield development has been planned along lines of well-developed New England towns, with location for shops on a village green, school house on a big park area, with necessary provision for an athletic field. The plans call for ownership of the stores by the company, with the ownership of the houses immediately adjoining the park, so that this portion of the development can be kept to a high



ENTRANCE DETAIL, CLASS C HOUSES

SCHENCK & MEAD, ARCHITECTS

for garden space. Planting in front of the houses is also arranged by the company. Sample gardens are being laid out. The type of house is the usual story-and-one-half dwelling. Monotony of repetition is avoided by the use of six different types made up



THE "CONNECTICUT DEVELOPMENT," BRIDGEPORT, CONN.
SCHENCK & MEAD, ARCHITECTS

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from units carefully studied as to location relative to neighboring houses. Minimum size of lot used is 60' by 60'. The houses are set near the street line, with proper arrangement for entrances and planting, leaving the back of the lot free for gardening.

In connection with the laundry yard there has been built a skeleton garage which can be completed for approximately \$100. This has been carefully studied in its relation to the house so as not to be objectionable from the standpoint of location. It will be easily accessible and will not rob the house of its rear garden.

The houses are built of brick laid English and Dutch bond. The roofs are of slate. All floors throughout are hard wood.

The average cost of houses per family for the building alone is \$3,708. The cost of land and land development varies with the location. This will be approximately \$900 per house fully developed and planted for the most expensive land and \$500 for the least expensive.

These houses will be sold on a basis of monthly payments in lieu of rent and slightly in excess of rent. Payments include all charges such as interest, taxes, insurance, water, etc.

In all of these developments the average number of rooms per family is 4.1 plus a bath. The average

cost per family, including land and street development is \$3,433. The average rent is \$24.32 per month.

It is further proposed to build houses of a cheaper variety for foreign labor, known in the East as "common labor," paying not over \$16 per month rent for four rooms and bath. Plans have been made for one type of row houses, known as the Philadelphia house. These are 15 ft. wide and 22 ft. deep with yard in the rear. The exterior of the building is to be brick, roof to be flat and covered with tar and gravel, the house to be equipped in a simple way. Floors to be hard wood, single thickness, plaster to be common hard plaster on wood lath, walls to be furred, ceiling under roof to be furred down to an air space. The plumbing equipment to be as follows: Kitchen, large cast iron sink with coal stove equipped with water back for heating water. Bath-room, toilet and bath with space left for lavatory to be installed later. Chimneys to be arranged so that furnace may be installed later. It is well understood in Bridgeport that this type of house should be built in limited quantities and under restrictions which will prevent the location of their erection from becoming a hive of humanity similar to those in some of the larger cities. While it satisfies the requirements of a certain class of



TYPE NO. 1—FAIRFIELD AND LORDSHIP
BRIDGEPORT, CONN., HOUSING DEVELOPMENT
R. CLIPSTON STURGIS, ARCHITECT

THE AMERICAN ARCHITECT

labor, it is not considered as ideal in housing, but it is certainly a necessary adjunct to tide over the period of congestion that now exists in Bridgeport.

Another type of house which may be built, and which bears a very close relation to the present needs of large manufacturing cities is one that might be termed a "permanent camp." This type of dwelling would be built on a large tract of land in the suburbs where land is cheap so that each house owner might have a garden of considerable extent, the house to be built of not less than three

Bridgeport's population engaged in industrial work, the method of financing becomes one of the first importance.

The manager of a large manufacturing plant is reported to have stated before the National Council of Defense at Washington during an important hearing that "The American idea that the American workman can take care of himself is pretty firmly seated in the minds of our employer class, and the people themselves have accepted this doctrine as a part of our theory of freedom." Referring to



TYPE NO. 2—FAIRFIELD AND LORDSHIP
BRIDGEPORT, CONN., HOUSING DEVELOPMENT
R. CLIPSTON STURGIS, ARCHITECT

rooms, with space left for bath and additional rooms to be finished at a later date. These houses are being built in very large numbers by certain classes of foreigners.

If this form of building is included in the present development, it is proposed to establish a standard stock plan which may be built in the mill and erected with little cost beyond the necessary foundation.

THE FINANCIAL PLAN

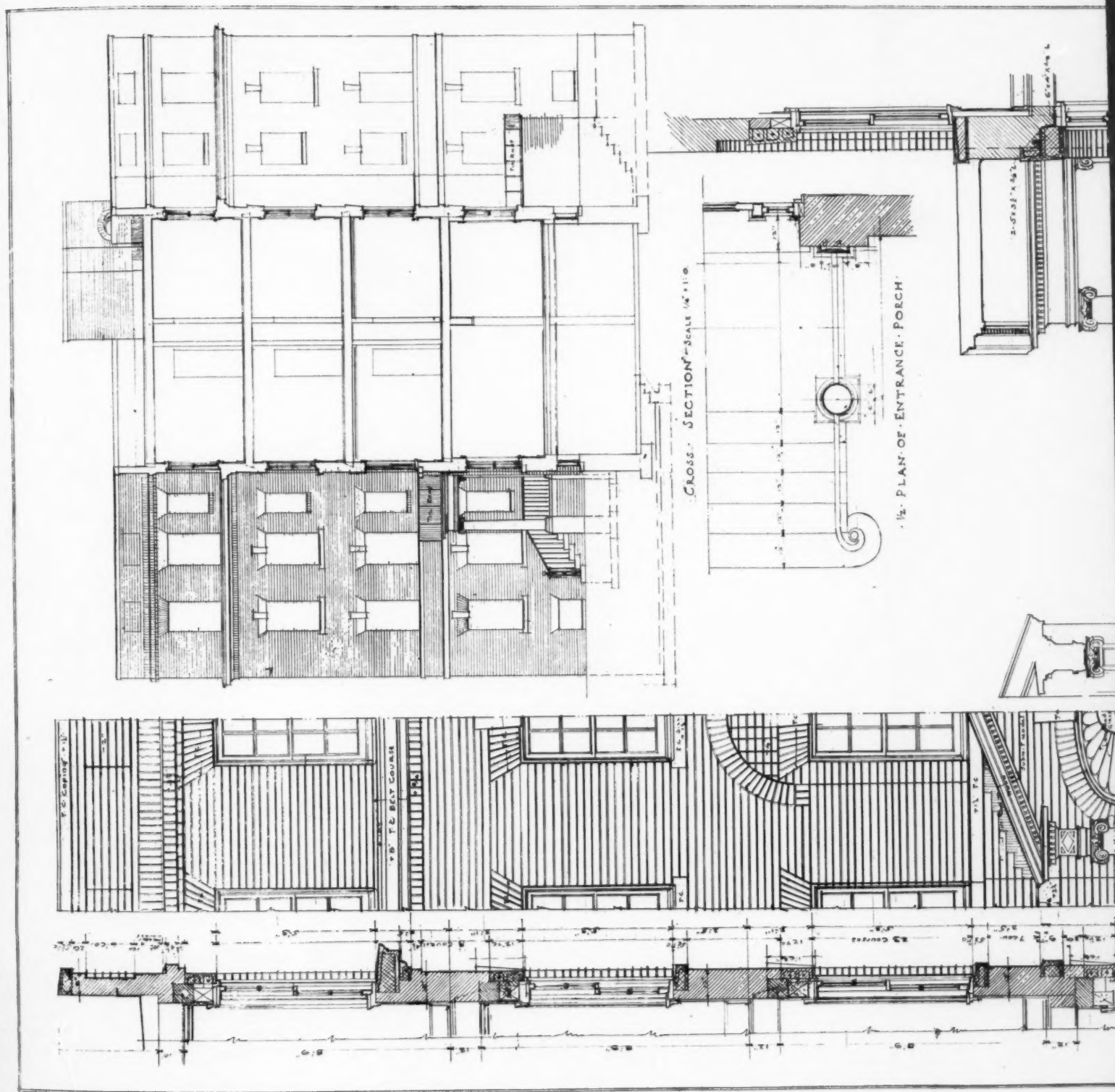
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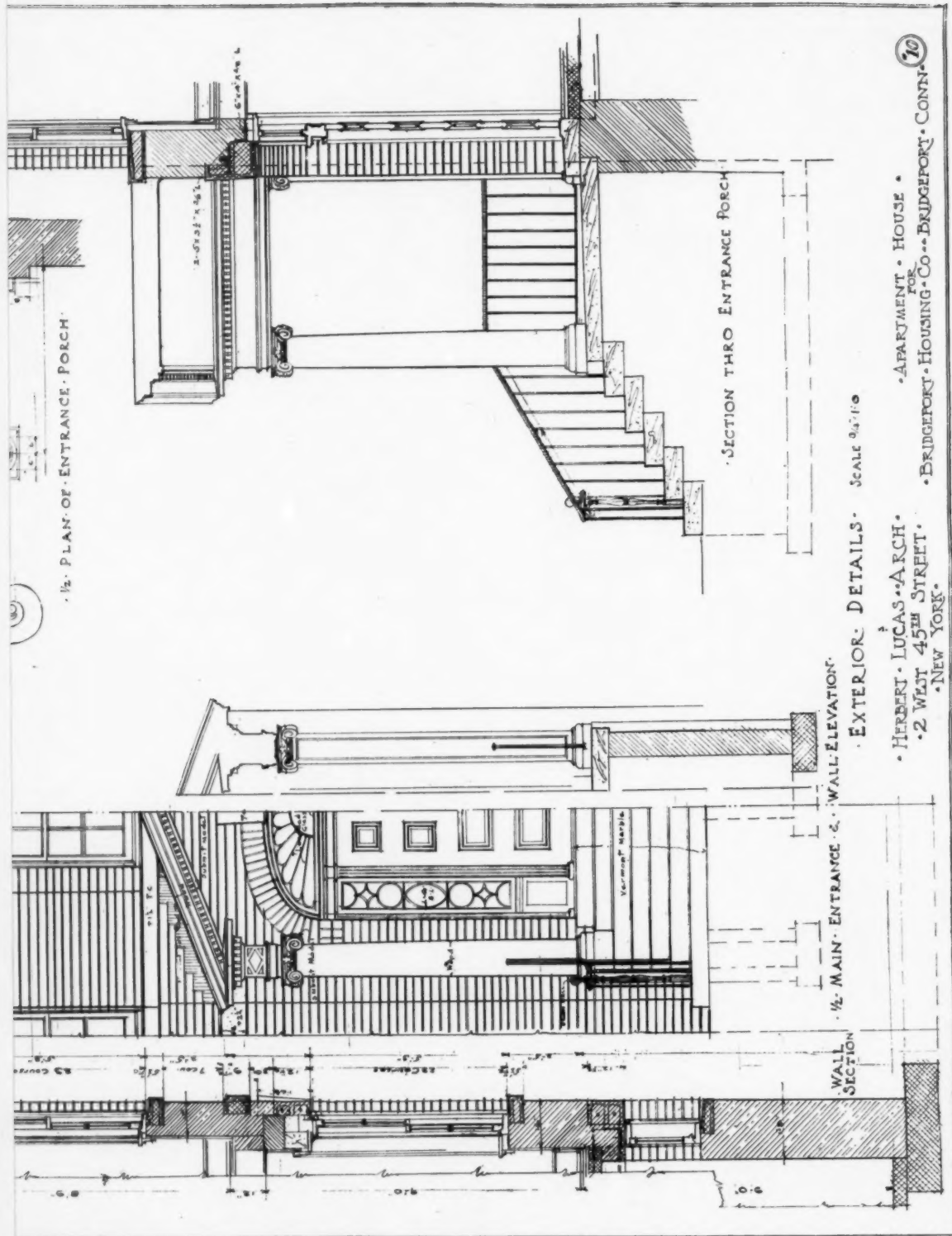
this statement, W. H. Ham, whose work with reference to the Bridgeport development is widely known, commented during a recent lecture, as follows:

"A well established belief of this kind must have some basis of fact or it would have been disproved long ago.

"The change that has come over the laboring conditions in the last decade has reached the fundamentals of industry and at the same time the vitals of social life of the industrial worker.

"The laboring man has advanced from the con-





HERBERT LUCAS ARCH.
 2 WEST 45TH STREET.
 NEW YORK.

APARTMENT HOUSE
 FOR
 BRIDGEPORT HOUSING CO. BRIDGEPORT, CONN.

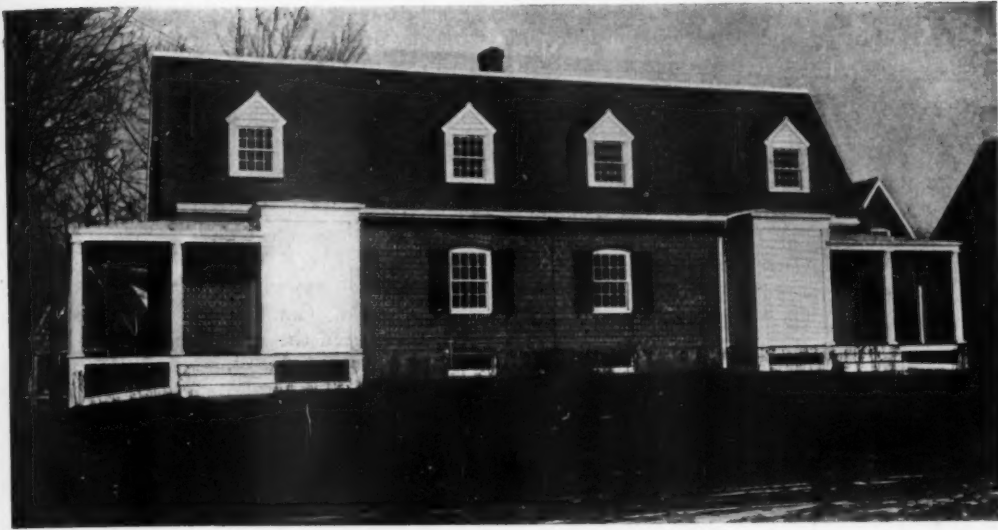
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TYPE NO. 3—FAIRFIELD AND LORDSHIP
BRIDGEPORT, CONN., HOUSING DEVELOPMENT
R. CLIPSTON STURGIS, ARCHITECT

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"Socialism is arriving with an increasing speed and all of the functions of social relation are being tested. The classes and the masses each have taken up the subject of changing conditions and they are upon the country at large with a terrible force. This thought that has been considered basic is itself liable to a shock as many other doctrines are liable to shocks, and only sound doctrines will prevail after the testing process, which is now going on, has been finished.

"This theory about the American workman is also on the rack, and it is such a fundamental problem that it must have all of the attention that it deserves and must be settled with that freedom from selfishness which all real big problems deserve.

"The American workman can take care of himself. Let us look at this subject for a moment. Who is most interested in the truth or fallacy of the statement? What are the facts? What is the past history of this theory? Is it true now? Will it be true with the changes that are sure to come? Is it partly true and partly false?

"There are many questions which can be asked and many answers which will satisfy in part. Let us look for a moment at the few questions which I have asked about this theory and see if by studying

these questions we can get a little light on the subject which will perhaps help in part the solution of the problem.

"The first question is, 'Who is most interested in the truth or fallacy of this problem?' From 20 to 25 per cent of the wage income throughout the country goes to pay rent. The man, therefore, who pays rent is interested to a large degree. The man who owns the house is interested, for his income is from the rent which is paid. These two are vitally interested. Their interests appear on the opposite pages of the ledger and the difference in viewpoint is quite easily understood.

"The one who rents wants something cheap in cost and good in character. He who owns wants high rent and as little beyond the necessities as will satisfy. Shoddy show is often used by one to deceive the other and the use of this shoddy is one of the fundamentals that we naturally expect to be changed as this subject is given the thorough investigation which the emergency of the present demands.

"What the man who rents really wants (he sometimes does not know it) is economy. What the owner of the property wants is economy if he is a fair owner, and if we can arrive at economy we have a good viewpoint of two vitally interested parties to this problem."

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THE AMERICAN ARCHITECT

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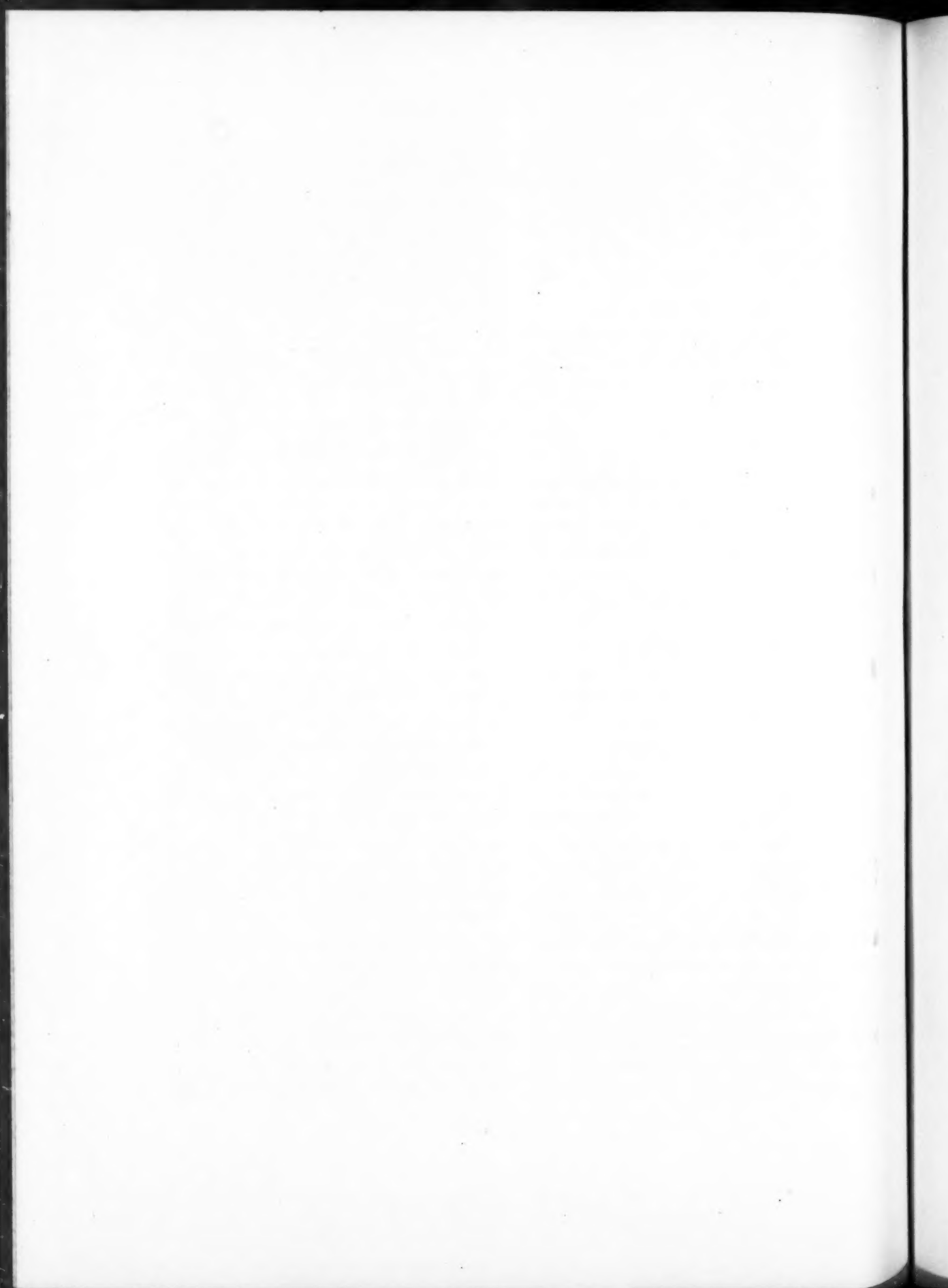
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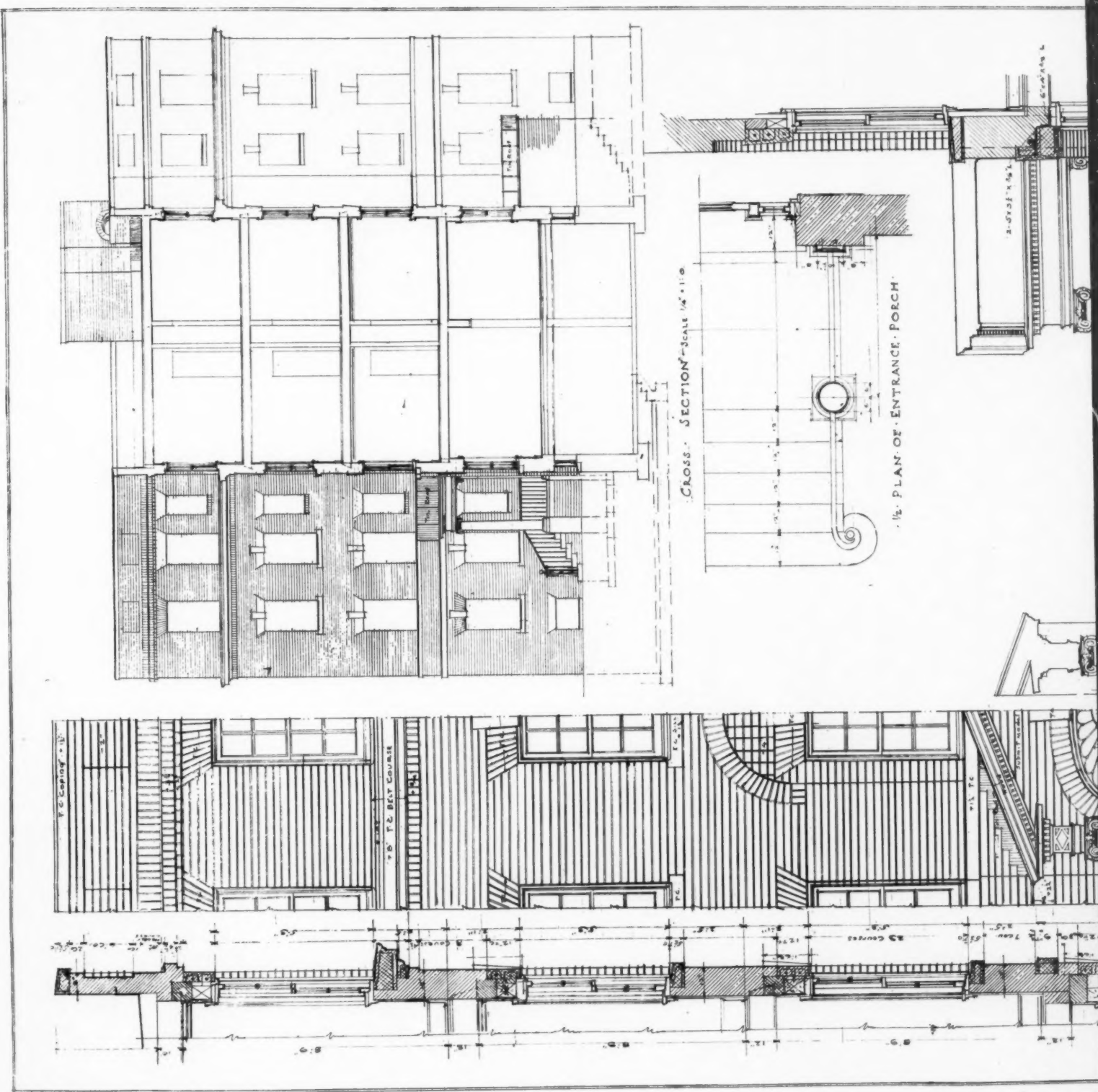
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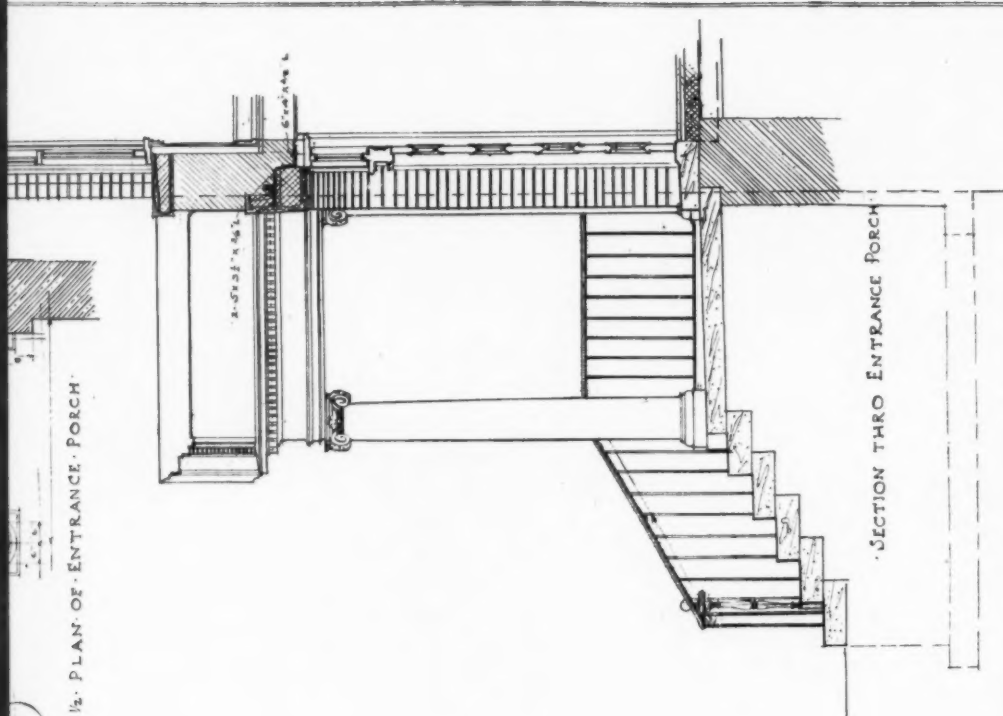
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1/2. PLAN OF ENTRANCE PORCH

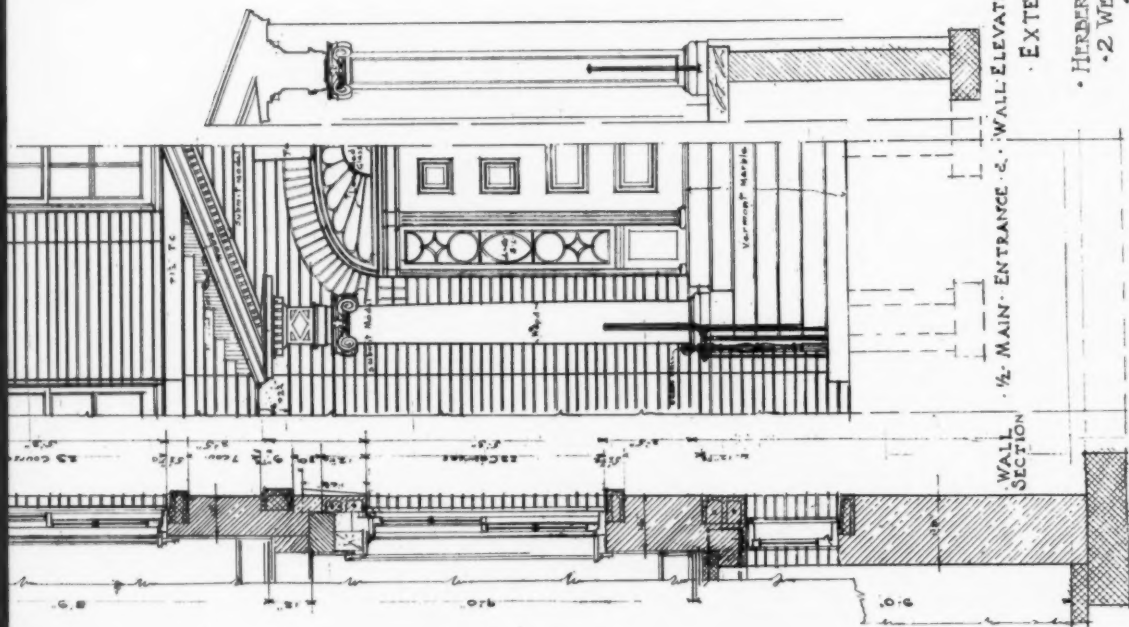


SECTION THRO ENTRANCE PORCH

SCALE 3/4" = 1'-0"

EXTERIOR DETAILS

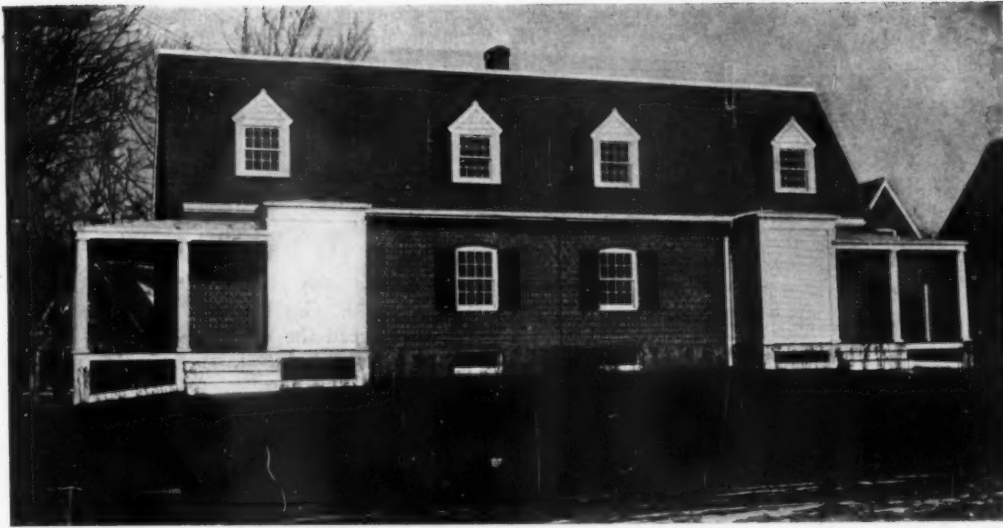
1/2. MAIN ENTRANCE - E. WALL ELEVATION



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FOR
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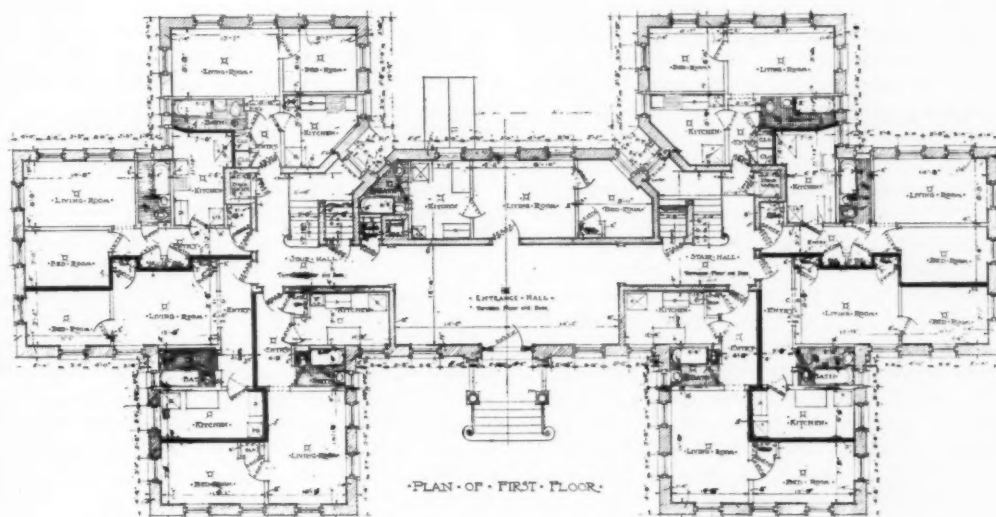
Practical Housing a Commercial Asset

By HERBERT LUCAS, *Architect*

IN all the talk and discussion now heard about housing facilities for the men and women who are, or soon will be, working in the different shipbuilding and industrial plants throughout the country, it is surprising that one hears practically nothing of the question from the point of view of the workers themselves.

Most of the talk is of "so many houses" or "so many beds" without regard to whether they are attractive and homelike, or can be economically run, or are sound as an investment. Indeed one might

one great industrial plant that built shops, etc., which were the "last word" from a mechanical and scientific point of view, involving the ultimate expenditure of some \$14,000,000. With all the study and foresight which this involved, there was practically no consideration of the question of housing for the men, and this in a minor city where the securing of labor was already a problem. It naturally followed that the kind of men they wanted thought twice about taking their families to such an environment, where the best living quarters to be



APARTMENT HOUSE FOR BRIDGEPORT HOUSING CO., BRIDGEPORT, CONN.

think at times that it was a question of taking care of so many animals, and in a temporary way.

There is distinctly a physiological question involved here, and a proper regard for it will, I believe, have a very material bearing on the enormous labor turnover from which all plants are suffering, a turnover that has been found to be as much as 600% in some cases. This means that in a plant employing 5000 people no less than 30,000 people have come and gone in the course of a year.

There is surely some reason for this besides the irresponsibility and *Wanderlust* of the average workman, and I believe that much of it is due to the very casual manner in which the question of proper housing is considered by the average employer of labor. For instance, I personally know of

had were the product of the local speculative builder, the most commonplace and dismal quarters, in a row of equally commonplace and dismal houses, and usually at an exorbitant rental.

We all know the depressing conditions that surround almost all of the great industrial plants. Is it any wonder that a self-respecting man dislikes to live, and force his family to live, under such conditions? Is it not time that the men directing these plants recognize the fact that proper housing is just as essential a part of their plant as proper machinery and tools, that the kind of men they want are human beings like themselves with the same fundamental ideas?

How can they expect such men to do proper and loyal work when the elements that spur men on

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and dried scheme, conceived over the drawing board, with little regard to the feelings and inclinations of the people who are to live there, and stamped all over with the idea that it is an industrial city and the offshoot of some adjacent factory.

I say again that this can all be accomplished economically, quickly and in such a manner that after a few years there will result a permanent and competent force living adjacent to each plant, owning their own homes and exercising all the functions of good citizenship. What better asset can a plant have than such a community of workers, permanent and efficient, and how can they better prepare, not only for the present emergency, but for the competition that is bound to come after the war?

I believe, too, that the financial side of it can be worked out in such a way that the developments will ultimately pay for themselves. That is, to organize each development as a business by itself and to treat the money advanced by Congress as a loan, to be amortized in a given number of years,

and to be paid out of the proceeds derived from the rent and sale of houses. The increased increment in the value of land, which would accrue with a wise and comprehensive development would go for the benefit of the project, instead of to an individual or a company, and the taxes, instead of being paid in the customary manner, would be paid into the treasury of the development and spent only on its maintenance.

Before long this would amount to a very substantial sum and could be applied to the amortization fund, so that ultimately there would be no taxes, as the maintenance would be by interest on its own savings. This would also remove the least stigma of exploiting, as every rent payer and every owner would directly benefit by such saving. This again would be in line with the idea, now freely advanced, of a new relation that is bound to come after the war between employer and employee; in fact, it would be a good guarantee that the old days of exploiting have passed.



THE AMERICAN ARCHITECT

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The Task in Hand

THE communications received and printed in these pages in response to an editorial appearing in the issue of December 12th seem to indicate that the profession of architecture is menaced by grave dangers. These communications are representative of the entire field of architectural practice. They come from Maine to Missouri, from the state of Washington to New York.

It will be observed that the opinion expressed is largely in agreement with the suggestions set forth, and that such objection as has been taken is mainly one as to the exact form of reorganization suggested. It is gratifying to observe that our true intent in this matter is, in the main, understood, and in the single exception where the entire plan is rejected, there seems to be a purpose on the part of the writer of that objection to secure for himself a certain matter of record that would be of value, perhaps, in future Institute politics.

THE AMERICAN ARCHITECT stands today, as it has for more than forty years, for every last thing that conserves the best interests of the profession and upholds all the dignities of practice. But let it not be understood, as it apparently has been very largely in the past, that the dignities of the profession are only those things that refer to its

ultra esthetic aspect, or the maintenance of an acutely artistic perception, and therefore, as is widely believed, to an equally acute lack of practical hard sense. The dignities of the profession, for which this journal contends, are those things which increase and maintain on the highest plane the confidence in competent architects that should be felt by everyone with whom they come into professional contact, as thoroughly capable, practical men, trained in executive capacity and endowed with sufficient artistic ability to impart to their structures the refinements necessary in every well developed work of architecture.

What we need, and that can be best set forth by the Institute, is a better comprehension on the part of the profession as a whole, of the real functions of an architect. We cannot ignore the fact that in the present crisis much of the Government emergency work which would logically be performed by architects has gone to men in other professions. This being true—and it undoubtedly is true—there is evidently a good and sufficient reason. Why not hunt this reason down and set about a cure for the ills it indicates?

THE AMERICAN ARCHITECT is now, as it has always been, loyal to the American Institute of Architects, and it will be found at all times giving all it has in encouragement of every properly directed effort of that organization. It does not now, and has never entertained any thought of advocating its disruption. It did not intend even to suggest such action in the editorial that has called forth such extended comment. But it would be recreant to a duty if it permitted a condition to exist unnoticed which, in its judgment, was impairing the usefulness of the Institute and robbing it of the representative character that it possessed at the time of its organization sixty years ago.

It will be interesting to make comparison of the activities of the American Institute of Architects during the past year with those of the Royal Institute of British Architects for the same period.

The Royal Institute of British Architects has probably contributed more members to war service than the American Institute. Those who are unable to serve with the colors are as busily engaged in matters entrusted to them by their government as we are here, yet the English architectural papers published weekly give large space to reports, and comments thereon, of the monthly conferences of the Royal Institute.

The matters discussed at these monthly conferences are the live things that are affecting the practice of architecture, or will affect it at the close of the war. Our English brethren appear to be fully alive to the dangers that confront them and are doing all they can by frequent meetings and

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resulting well directed activities to foresee and provide for any possible contingency.

On the other hand, the American Institute, after a dormant period of sixteen months, has just made announcement that a convention will be held in Philadelphia in April. This convention will extend over the usual three days' period. If it follows the procedure of previous conventions, it will consider a series of well prepared reports, listen to many forensic efforts on the part of delegates, indulge in considerable social activity, eat the well served annual banquet, during which it will hear selected orators extol the glories of architecture and then—the convention will adjourn.

Why not, as a war measure, omit many of the unessentials? Why not hold day and night sessions devoted to the needs of the profession? Why not Hooverize the banquet, or better yet, omit it, utilizing every hour of the limited three days for some practical effort? Why not devote all of the time to serious consideration of many things that should have received attention now these many months?

Three days will be all too short a time in which to discuss the vital matters that this convention should consider.

Low Cost Houses

GROSVENOR ATTERBURY, president of the New York Architectural League, cites three factors now preventing the erection of the much needed low-cost houses in and near the metropolis. These are, first, honest and efficient government. It is probable that very few people realize what enormous sums are uselessly added to the cost of buildings for the purpose of protecting the public against dishonest construction. The profession refers to this situation as "the factor of safety," but, says Mr. Atterbury, it might better be called "the factor of dishonesty."

The second factor is lack of scientific building regulations, by which Mr. Atterbury means a national basic building code founded on standard engineering rules and government tests. Without these, as at present, careful design in construction work is subjected to conditions that cause unnecessary expense through inconsistencies and often even erroneous principles upon which building regulations are drafted. This, also frequently attributed to safety, he prefers to call the "factor of stupidity."

Finally, the value of standardization is emphasized. To quote from Mr. Atterbury:

"The obvious solution appears to lie in the standardization not necessarily of the general plan, but of its various component units and structural elements. Carried to its logical conclusion, this principle would result in a system of standard dwellings manufactured on a ready-made system, of wholesale fabrication like that which has already given the poor man his \$2.00 shoes and his \$10.00 suit of clothes.

"In other words, that the theoretic solution of the problem must consist in the employment of a more or less standardized, shopmade and completely finished building section or unit, of the maximum economic size, as determined equally by the type of structure into which it enters, and by the latest mechanical devices available for its manufacture, transportation, handling and erection."

Organized Building

A PAPER read at a recent meeting of the Minnesota Chapter of the American Institute of Architects complains that despite the great importance of its building operations, the Government has never had a department of public works with a responsible head to look after its interests. Each department has been handling its own building independently as a mere incident in its regular business. The high degree of specialization required in modern building, combined with the general lack of system in the usual course of procedure, makes this wasteful and unsatisfactory. Particularly in war time does the importance and value of a directing authority force itself upon us, and an attempt so to organize the building industry that it may better serve the Government's war needs strongly commends itself.

The suggestion is made to divide the country into building zones, with a branch organization in each district, somewhat in the same manner as the reserve banks are assigned to different territories. There should be a central executive office in Washington, with a staff of architects, engineers, contractors and material men at its disposal.

Acting in connection with other boards, such an organization would not only facilitate building operations necessary to the fulfillment of war contracts, but the distribution of work over the country would prevent the undesirable congestion of population in a few cities, and would make possible the useful employment in Government service of a vast army of both professional and laboring men right in their home environment, whose recent work has been destroyed by our entry into the war.

Criticism and Comment

"A National Organization"

The Editors, THE AMERICAN ARCHITECT:

The purport of the editorial in your issue of December 12 is an effort to have "something" done that will to some extent take up the "slack" of the American Institute of Architects; which is a most laudable and worthy purpose, because as far as the Great West is concerned the American Institute has been a misnomer, in so far as it has been of any perceptible benefit or assistance to this section of the United States. The Institute, as near as we can judge at this distance, has successfully confined its energies to the confines of a few cities on the Atlantic seaboard, with an occasional recognition of Chicago as also being an American city. Such being our conception of the extent of the Institute, we allocate it to the class of "has-beens" as an institution which had great prospects and greater opportunities, but availed itself not.

The greatest handicap to the acceptance of your suggestion is the want of *esprit de corps* and honor among those practising the profession of architecture, combined with an unnatural callousness, presumption and overbearing individualism, which strangles the possibility of a successful organized effort for the betterment and advancement of the profession. Lawyers, physicians, dentists and similar professional men have all made a success of organization for the advancement of the professions, and unselfishly give their meed of due to their confreres, while the average architect sums up the ambitions and endeavors of his brethren as something unworthy of serious consideration, and until this selfish egoism is eradicated, to a great extent, architects will continue as a flock without a shepherd, each astray, wandering in his loneliness.

If it were possible to inject an "incentive" into the ranks, a real discussion of the different schools or styles of architecture, questions that would attract the layman to a study of the art, we might finally arrive at a point where the real talent of the profession would be suitably recognized, and a vast interest be aroused in the long-expected American style of architecture. The architecture of our country has advanced amazingly, but we seem to be unable to divulge, or create, a distinctively "American style of architecture." We have revamped all of the past styles, periods and obsessions of the art, but if any real and lasting achievement has been attained, the same has only been in adaptation, re-

grouping and the distribution of the detail common to each, but nothing that would make "the eagle scream," except with scorn on occasion. We have continuous performances after uniqueness, oddity, or anything that will be "different," and when the particular fashion reaches its zenith and retrogrades it falls fast with a dull thud and buries itself in the earth out of all remembrance. The architect as at present constituted is a distinct species in the professions; the doctor when he thinks necessary calls another in consultation; the lawyer, when occasion arises, never fails to consult another lawyer on points of law; but out of all professional men do you find one architect who will consult another architect as to the artistic or scientific points that might with a short consultation overcome some point that would make or unmake a really worthy architectural achievement? We may be selfish or opinionated.

The licensing or registering of architects in several of the states has accomplished more for the betterment of the profession than any other medium so far proposed; it has to a more or less extent removed the unsafe constructionist and untrained men who once were the bane of the profession; it has made the practising architect more careful of his draftsmen's work; but with all this it cannot make "architects," it is at best a State's haven of safety in the construction of buildings, and may be termed a regulator of the incompetent and the unworthy.

"A national organization" of architects should have an "incentive," "something" to give the profession pause for thought, "something" to weld their peculiar individualism so that same would be a power instead of a weakness; "something" that will be the means of recognizing and helping, where necessary, anyone who has made the study of architecture his life work, not only as a means of getting his daily bread, but rather with the hope of adding to the greatness and betterment of his country.

I am in favor of uniform laws for the regulation of the practice of architecture, through the licensing and registering of all architects in the United States. In Colorado the licensing of architects has been of considerable assistance to the profession.

Would be in favor of "The National Organization of Architects," if it is possible to formulate a common platform of interests, with an "incentive" of sufficient prominence and breadth so that the architects of all sections of our country, including the professors of the schools of architecture in the

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different universities, would come to the front and take an active part in the work.

Your suggestion of "a national organization" is well taken, and the time most propitious, for the serious consideration of the profession. The idea should have the widest discussion, which ultimately may bring good fruit in the guidance and upbuilding of our profession, and add a distinct "period" to the development of the science and art of architecture in the United States. ROBERT WILLISON.

Denver, Colo.

The Editors, THE AMERICAN ARCHITECT:

Having just read the comments upon your editorial of Dec. 12th, and particularly the invitation of Mr. Eugene H. Taylor for "suggestions calculated to help the cause," I offer the following with the hope that it is constructive and will lead to further progress.

In the first place, may it not be possible that the reason the Institute has not become all inclusive is because its codes and regulations have been made by and for a "select minority" rather than by and for the "great majority" of less prominent practitioners? Is not the A. I. A. an autocracy rather than a democracy? If so, how can it expect to include the masses?

Undoubtedly the Institute deserves great respect and admiration for the high standing which the profession now enjoys, and possibly up to recent times the methods pursued were best, but this respect can hardly cause the minor architect struggling for a place in the profession, and in many instances for a living, to join an institution which so greatly hampers him in obtaining his livelihood; when in many cases he only pursues the same honorable methods of business getting used when they began their own practices, by some of those who have now become dominant in the Institute.

Probably one reason that keeps many of the able young architects from applying for Institute membership is the Competition Code. It is practically impossible to get public officials and trustees of corporations erecting minor public buildings, schools, churches, banks, libraries, etc., to agree to the Institute Code of Competitions, as delay is usually occasioned and the cost must be deducted from the already small appropriation, while public sentiment is not yet sufficiently educated to approve of such "extravagance," even though the authorities in charge agree to relinquish some responsibility in the selection of the design.

If in the case of these smaller buildings costing, say, less than \$250,000 the Institute would appoint one of its members to act quickly as advisor in drawing up the program and conducting the com-

petition, any necessary fee might be paid by the client from the total fee of the successful architect.

Under such conditions I believe there would be little difficulty in having the Competition Code more universally adopted, as small buildings of the monumental type should be designed and erected by able architects of standing compatible with Institute membership. The successful architect could well afford to allow the fee of the advisor, particularly in view of the loss he would have sustained had he not won the competition, and this small penalty might also be consistent with the present Institute desire to limit the competition practice. Competitions we have had with us these many hundred years and many of the able men in the profession enjoy the opportunity for a test of skill instilled into their very blood by the method used in teaching them design. They offer the main stimulus for advancement and opportunity for practice to the able young architect lacking wealthy or influential friends. Who can say that competitions, both student and practical, are not responsible for the high state of present-day draughtsmanship, yes, and some of our best designed buildings as well?

Probably another reason that prevents many applications for Institute membership is the attitude of some professional advisors in limiting competitions to a few eminent men after advertising for applications, or in creating a favored class in the semi-open competition. If a prominent firm with all its resources in money and able designers cannot win its way into the finals, why should it be favored over the less fortunate small office already under a large handicap? Public competitions should be open to any reputable architect who can demonstrate from his experience ability to successfully design and erect the building contemplated.

Finally, why should a client intrust his work to a less prominent architect when he can obtain the services of a "fellow" for the same minimum fee? In what other profession is such an autocracy established where the simple practitioner must charge as high a fee as is accepted by the most prominent? Either the "fellows" should have a higher minimum rate or the schedule of charges should recognize that the less experienced practitioners and those furnishing the simpler services of a country practice may charge a lower fee. Why should not an architect's standing be commensurate with the fee charged? This, I believe, is the main bar against Institute membership of the less prominent architects. Would it not be better to have all architects on the same moral and ethical code by removing the bar which keeps them outside the Institute?

When the Institute removes the financial restrictions now operating against the less favored great majority, and can give the less prominent practi-

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tioner value received, then may his application be expected. If the Institute cannot get down to include the lesser lights in the profession, then by all means let us have a national organization in which they may feel at home and which the general public will respect because it is at least a majority association.

CLARENCE W. BRAZER.

New York.

The Editors, THE AMERICAN ARCHITECT:

I noticed in a recent editorial in your paper that some one had "lucidly reviewed" something or other, and that it was easy for your editors to "agree with conclusions so lucidly reached." This interested me at once. Lucid is a word that has always appealed to me; it has a nice sound, a little liquid and mellow, and then, too, you so seldom see it in print nowadays. Therefore, being interested, I looked up the lucid letter, which I found was written by Mr. Thomas Crane Young, and started to read it casually, with a feeling of confidence that I could drink in its mellow sweetness at one gulp, a feat that is very rare indeed when imbibing from architectural magazines. The title "Fetishes and Fallacies" was alliterative and pleasantly stimulating, but the letter itself was, to me at least, distinctly not lucid. In fact it seemed obscure, not to say platitudinous.

It would appear from the opening paragraphs that some architects have fondly imagined themselves to be "Captains of Business" and that "to such it must come as a distinct shock to realize that in the recent building emergency the Government turned to the engineer and contractor, and not to the architect." I myself never in my fondest imaginings felt I was a captain of business, and so I am not shocked at all, nor do I think anyone will be shocked, because in the last analysis when the captains aforesaid and the kings depart I think you will find that the architects have done more, much more, really constructive work on the housing problems than all the engineers and contractors put together. I fear that Mr. Young has in view only the hurried patching up of a few boards, or rather of many millions of boards, in the first cantonments, and has no knowledge of what the Institute and its members have done at Washington, no knowledge of the improvements they have made in the hospital layouts and in the camps, no knowledge of their part in the great vital issue of the hour, the housing conditions. Read Mr. Ackerman's article in the last issue of the *Journal* and the resolutions recently passed by the New York Chapter and sent to the Washington authorities. Contractors and engineers indeed! If this be lucidity, it smacks of lunacy.

But enough of the fallacies. Let us get down to

the fetishes which are to be found at the bottom of the page, about 2½ inches below the "low grumble of discontent." I was somewhat in doubt when I read the title just what fetishes really were, but I found that, architecturally considered, they are nothing but our old friends the canons of ethics and the competition code. I might have known it. I never heard a speech at the Institute convention which did not contain a veiled allusion to these hard-working documents. I have heard them called hard names, too, but "fetish" is a new one. They are also, according to Mr. Young, ridiculous, because among other things they speak harshly of architects who advertise—and advertising, says the writer, is "a much more highly paid profession than ours, and therefore of course more useful." How true, alas! And yet I don't seem to recollect the name of any Greek advertising gentleman contemporary with Phidias and Ictinos, and I feel quite sure Mr. McKim was better known than the genius who controlled the advertising in the subway. We are told an engineer may advertise; ergo, why not the architect. Think of what grand effects one might design for one's self—a neat little electric motif with letters 2 ft. 4 in. high, Roman type for the Classicists and black or rather white letter for those who do our Gothic churches. It is true electric signs are not looked on with favor by the coal conservation authorities, but there are doubtless other chaste ways of doing it.

I nearly overlooked the premise that "the motto of the advertiser is truth"—a statement evidently misplaced, as it belongs in the fallacies and not in the fetishes. Among the latter is included the competition code. Mr. Young asks, "What other body of sane men would for a moment tolerate so utterly wasteful, inefficient and economically foolish a practice as that of public competitions?" "The code," he says, "admits it's very, very bad, but allows it under a prescribed ritual. If the practice is evil why not cut it out?" This is an old question and one that has never been answered satisfactorily. I grant you that public competitions are not always satisfactory, especially to those who lose, but how else can you do it? Certainly it is more satisfactory to award a commission for a public building through a well conducted and perfectly honest competition, open to the best men in the country, than to have the appointment made a political plum to be awarded to some deserving Democrat or Republican either, or be finally sold to the highest bidder. Then, too, it usually happens that those in charge of the operation welcome the assistance of the Institute and hail a properly conducted competition with joy. It relieves them of the responsibility. They are often in the position of the politician who stated that he had at last settled an important appointment

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for which he had at least twenty applicants, and on being asked how, replied that he had had the job abolished. Sometimes it's easier to let George do it. There is no use dodging the facts. Public competitions cannot be done away with, whether we like it or not; and if there must be a competition the code provides a method by which such a competition can be held with perfect fairness to the owners and to the architects. There is nothing mysterious about the code. It's really very simple, and while there are some points susceptible of improvement, still it is generally good. As to the economic fallacy of the practice, why, in heaven's name, it's not obligatory. No one has got to go into a competition if he doesn't want to. If the game seems worth the candle, go to it; if not, stay out.

Another fetish mentioned is what is called the fixed percentage fee. I must confess I am unable to follow the reasoning here, lucid though it may be, except that it (the fixed fee) appears to benefit the contractors to the detriment of the architect. In fact all through the letter the contractor and the engineer are held up as worthy of emulation because they have made money, and it would seem that the architect's only hope to attain efficiency is to abandon his profession and become a tradesman, and that "every thinking man believes that this war will cause vast changes," etc., and that we should so prepare ourselves that when peace comes we may not be caught unawares. There will be, as there have been, vast changes, but most emphatically these changes will be in the right direction, forward, not back. The profession of architecture will remain a profession, a fine art, and will not degenerate into mere efficiency. The world wants no

more of that blighting efficiency called kultur, which has destroyed everything it touches and will eventually destroy its inventor. There will be so much ruin and horror that the human mind will turn to the things that are beautiful, and will demand the beautiful. Who would dare to replace the devastated villages of France with efficiently laid out and cheaply built modern atrocities, smugly sanitary, or who would dare to restore Rheims with new vaults of wire lath and plaster? The thing to look forward to, to prepare for, is the coming of that time when we who are forced to stay home can have an opportunity to do our bit also for the beautification of what has been laid waste, for our profession and for our country.

EGERTON SWARTWOUT.

New York.

A Correction

In the letter from Mr. Irving K. Pond, printed in our issue of January 9, an error was made in the introduction of the word "the" in the following sentence:

"If the editor of THE AMERICAN ARCHITECT will cast his eye over fairly recent history he will realize that on more than one occasion the Institute has made its voice heard and its influence felt throughout the land to the remotest corners of (the) society."

As printed, Mr. Pond was incorrectly made to state that the society referred to was the American Institute of Architects, whereas his intention was to refer to society in general.



Digest of Commercial and Financial News

Affecting the Practice of Architecture

The Cleveland Plan for Financing House Building

"YOU cannot man the works unless you house the man." When Paul L. Feiss, chairman of the Housing Committee of Cleveland, gave expression to this remark he tersely stated the housing problem and its only solution. Cleveland, in common with many other cities, has seen so large and so rapid a growth of her industrial enterprises that it has been found extremely difficult to assimilate it.

With an annual increase of 20,000 persons, its housing facilities were already very seriously taxed, but with the sudden influx of labor due to war activities, the situation became one of great importance, and the housing of its rapidly increasing population was regarded as the most vital of all matters affecting the city's welfare.

Last fall, with a shortage in Cleveland estimated at 10,000 houses, the need for capital that would be immediately available was so apparent that efforts were made to induce the investment in housing operations of every available dollar of capital. Financing housing on a large scale was the task set for the committee of the Chamber of Commerce. The plan evolved is worthy of careful consideration.

The essence of this plan is the diminution of the period during which capital may be said to be tied up in any single operation. By reducing the period from the usual three to five years to one or two years, or releasing the capital as soon as the house is completed, it was estimated that the cost might be reduced at least ten per cent. The capital thus released would at once be available for further operations.

In *The Survey* of Jan. 26, Mr. John Ihlder, executive secretary of the Philadelphia Housing Association, has discussed the Cleveland plan for financing house building.

We read that the committee of the Cleveland Chamber of Commerce, to whose efforts are due the perfection of the present plan, decided to form a corporation to finance the purchasing of houses, but not to do the building. Continuing, Mr. Ihlder states:

"In addition to the 10 per cent due to immediate purchase, this corporation would earn a 3 per cent commission for making the sale and another commission for placing fire insurance, making in all,

according to its figures, \$400 on a \$3,000 transaction. It was proposed that the dividends of the corporation be limited to 6 per cent and the balance of its profits be distributed to home buyers as deferred dividends similar to those on life insurance policies. The crux of the whole project lay in the possibility of its producing a very large amount of cash capital to be used in purchasing houses. This was to be done as follows: The purchase price, minus \$300, to be paid by the individual home buyer, was to be covered by a mortgage. This mortgage was to be deposited with a trust company as security, and against it would be issued collateral trust notes in convenient denominations to be sold through the usual channels and to bear current rates of interest. In this way the capital would remain liquid and available for further use.

While this interesting plan would have had a greater appeal before the war made capital as well as labor and materials high and scarce, there are two points in it that call for notice. One is that the house buyer must put down \$300 cash, the other that the interest is to be only 6 per cent. The first would shut out the great army of low-paid workers. The second made the investment unattractive unless its security were demonstrated, or unless it could be made either a necessary side issue to business expansion or a business-plus-philanthropy venture. The latter the committee definitely—and rightly—eschewed. The former they quite as definitely avowed. "In the case of such employers as desire to have direct contact with their own employees it would be quite possible to arrange it by making the employer directly responsible for the individual loan. It would seem better, however, not to stimulate this direct relationship any more than is required by individual and special needs, but to make this a community movement as far as possible. This idea need not prevent a corporation from placing a lump sum into the hands of the company for the development of a specific project—possibly one adjacent or convenient to a particular plant.

"The desire here expressed 'to make this a community movement' is the only point that distinguishes it from a movement to incite a number of firms to repeat the old and little successful experiment of owning the homes of their employees. Unfortunately, the desire does not lead further to a statement that company ownership should be but a passing phase of the movement, necessary, perhaps,

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in securing the initial capital, constantly necessary in developing new and isolated areas not yet accessible to the city and to other industries, but of constantly diminishing relative importance. Unfortunately, too, it does not make any definite provision for the wage earner's participation as a capitalist. With 'notes in convenient denominations' he might be persuaded to buy into a corporation that is designed to provide him with a home. And in some of our busiest districts to-day he is the man with the ready cash."

The present need for every dollar in plants and their equipment that pay more than 6 per cent, the persuasion to invest in Liberty Bonds have in a large measure absorbed much of the capital that otherwise would be available for housing operations.

Cheap government money for these operations is not so available as we were led to expect, and this, at one time considered a broad and easy way out of our housing difficulties, has now so narrowed as to be in a sense negligible.

For the time being, at least, says Mr. Ihlder, it looks as if the government, having undertaken so much, must undertake more. For it alone can say in how much the shipyards, the munitions plants, and other government enterprises, must abate their demands for men and lumber and sand in order that houses may be built so that men may be had to work in the shipyards and munition plants.

Sixth Annual Report of the Art Jury of Philadelphia

Considerable value attaches to the Sixth Annual Report of the Art Jury of Philadelphia. This is an illustrated booklet describing fully the wide range of activities with which this city department has been concerned. That its work has been beneficent in its results is readily apparent upon looking over this report.

Of special interest is the "Appendix," which tells of matters submitted in 1917, their disposition, and, in many cases, the reason for such disposition. These matters cover libraries, monuments, bridges, piers, fire houses, fire escapes, recreation buildings, street clocks, a proposed municipal auditorium, additions to the Nurses' Home, the erection of garages, the interior decorations of Independence Hall, bulletin boards for City Hall, and many other structures, public and private.

Banners over highways, for charitable, commercial and other purposes, were also submitted and approved or rejected according to their merit.

Control has been extended to merchants' showcases projecting into the sidewalk, and in fact

through almost all of the conspicuous factors comprising the city's beauty.

Many of these matters are discussed at length in the text, giving interesting details of the extension of the Jury's authority, and showing the thorough analyses that are made of each situation as it arises.

New State Architect for Kansas Appointed

Governor Capper has announced the appointment of R. L. Gamble of Topeka as State architect, to succeed the late Charles H. Chandler. As assistant State architect, Mr. Gamble aided in the construction of several important Kansas buildings.

The Need for Civilian Workers

Our forces fighting in France would be powerless without the sustaining force of the army of efficient civilian workers, whose efforts are as necessary to the success of our war aims as those of the men actually enrolled in military service.

The United States Civil Service Commission needs several thousand civilian workers, and has started a campaign to induce competent men to take up this work.

In addition to purely clerical help and men skilled in the mechanical trades the following draftsmen and designers are now urgently needed: 500 mechanical draftsmen, \$800 to \$1,800 a year; 50 gauge designers, \$2,000 to \$3,000 a year; 100 apprentice draftsmen, \$480 a year.

Salaries named are the usual salaries at entrance. Higher or lower initial salaries may be paid in exceptional cases. Positions paying salaries higher than those named are usually filled through promotion. Men only, unless otherwise specified.

For further information apply to the representative of the United States Civil Service Commission at the post office or custom house in any city, or to the Civil Service Commission in Washington, D. C.

Historic Buildings Menaced

According to the New York *Evening Sun* of Jan. 9, three of Philadelphia's historic colonial structures were threatened recently by fires which destroyed buildings in their neighborhood. The buildings referred to, which fortunately escaped damage, were Carpenter's Hall, where the first United States Congress met; the Betsey Ross house, and old Christ's Church, where Washington worshipped.

Housing Bill Indorsed

An appropriation of \$50,000,000 to help in housing the great army of shipbuilding workers now being recruited was indorsed at a conference on January 30 attended by Secretaries Baker, Daniels, and Wilson, Assistant Secretary Roosevelt, and Chairman Hurley and Vice-Chairman Piez of the Shipping Board. A bill to provide that amount now is pending in Congress. Other appropriations for taking care of the influx of workers in industrial centers, where war contracts are being filled, probably will be urged later.

Mrs. John D. Rockefeller, Jr., has also conferred with Secretaries Baker, Daniels, and Wilson on plans for improving housing conditions among women employed in Government and munition factories. The Department of Labor is considering the whole question of providing adequate houses for female workers.

The Painter-Gravers of America

A society, membership in which would appear to be attractive to artists, is known as the Painter-Gravers of America.

This group of men and women have formed an association to continue and develop in America the great traditions of the artist-print in its many phases.

This society has collected a most interesting exhibition that is eagerly sought by museums and art galleries all over the country. A collection of one hundred prints is representative of the work of such well-known men as John Alden Weir, president National Academy; F. Luis Mora, N. A. Childs Hassan, Albert Sterner, George Elmer Brown, George Bellows and Leo Mielziner.

Decorating the School

In the course of the annual meeting of the League for the Decoration of Public Schools recently held in Washington, an appeal was made by Rev. John Van Schaick for the more extended beautifying of schools. His hearers were reminded of the educational importance of environment, and it was urged that proper artistic surroundings exert not only an esthetic but also a moral influence. He pointed out that it was private initiative which first shaped public opinion as to the desirability of hospitals, kindergartens, and various other institutions now financed by public appropriations, and expressed the hope that in this enterprise also the time would come when a larger proportion of public funds could be used for the decoration of school buildings.

The Wonder of the World's Work

Joseph Pennell, in an introduction written for the catalogue of his lithographs of war work, exhibited at the Cincinnati Museum, writes:

"I have never passed such an interesting, such an exciting, such a varied year in my life—and besides this, I hope I have been able to accomplish something in my work which shall show one phase of the Wonder of the World's Work of to-day. . . .

"I have had more opportunities of seeing what is being done in war work in England, France and the United States than any one else, and in a fashion what no one else has been permitted to see—war in the making. Yet I do not do these drawings with any idea of helping to win the war; but because for years I have been at work, from my earliest drawings, trying to record the wonder of work; and work never was so wonderful as it is to-day; and never had any one such facilities, such aid, such encouragement given him to record its wonder, and by the governments of the three great countries which are engaged in this incredibly horrible war. . .

"Not only have I seen the Wonder of Work in these three lands to-day, but before the war I saw it in Belgium, Germany and Italy. I have drawn it everywhere, save in Luxembourg; and there, too, have I seen it."

The Skyscraper

Mr. George T. Mortimer, president of the Equitable Building Corporation, has recently expressed the opinion that the skyscraper is going out of style. He asserts that there are too many of them and that they have been erected in many cases without regard to their demand and with no consideration to their depreciation.

Referring to general prospects after the war, he goes on to state that by the devastation of Europe, America is left in a unique position as a money power. Further, the postponed replacements which we ourselves will have to undertake will doubtless keep our industries active, and such delayed enterprises alone will serve to maintain our prosperity.

Norfolk's Fire Losses

More than a score of buildings were damaged to a greater or less extent in the recent fire at Norfolk, Va., and property valued at \$1,241,000 was destroyed. The principal losses were: Monticello Hotel, \$575,000; Shulman clothing store, \$115,000; S. J. Thomas & Co.'s store, \$80,000, and the Lenox Building \$60,000. Several of the structures will be rebuilt.

Government Confiscates Building

The United States Steel Corporation's warehouse in San Francisco has been taken over by the government and turned over to the Union Iron Works. The building will be used in the construction of submarine chasers, but before being employed for this purpose will have to be built about 15 ft. higher. This will be accomplished by jacking it up and building new walls under the present structure.

Changing the Climate

A rather unique enterprise is under way in the vicinity of Rio de Janeiro, Brazil. This city is so situated that cool winds are prevented from reaching it because of the existence of Costello Hill. It has long been proposed to level this elevation, and a syndicate has now been formed which has obtained governmental permission to remove the obstruction. The material so removed will be used to reclaim a large area of submerged land. The work will require transferring 47,000,000 cu. yds. and the cost is estimated at \$10,000,000.

New York's Hotels

There are 132 modern and modernized hotels in New York City. According to the official guide of the hotel industry, these total 36,660 rooms. The big railroad hotels expected to be completed by next year will each have more than 2000 rooms.

Vacant Rooms

The City of Washington is being urged to place small signs in its windows if there are any vacant rooms available to house persons seeking living quarters. Formal notices similar to those now used by the federal food administration will probably be used, and will be inscribed "Vacant Room, District Council of Defense." It is proposed that members of the real estate association deliver a brief address at each performance in the theaters and other places where people congregate, to persuade them to rent their vacant rooms, with a view to accommodating some of the many newcomers with lodgings.

Meeting of Arkansas Surveyors, Engineers and Architects

The ninth annual meeting of the Arkansas Association of Surveyors, Civil Engineers and Architects was held at the Hotel Marion, Little Rock, Ark., on Dec. 27.

Building Zones to Be Recommended for Detroit

A Michigan paper states: Restricted building and manufacturing zones in Detroit, following the system of New York City, will be urged upon the charter board by the building code commission, which is preparing a new set of rules for the building department. Some doubt exists as to whether the city can incorporate the zone system into the new city charter without an act by the State Legislature authorizing it. Advocates of the zone system believe in allowing the city planning board to govern transportation routes and thoroughfares, in order that it may build a traffic plan for the future. Buildings would be classified as industrial, business and dwelling, and would be segregated to such extent as might be found practicable.

Architects' Association Elects Officers

The North Dakota Architects' Association of Fargo has elected for the ensuing year George B. Hancock of Fargo, president; Bert D. Keck of Grand Forks, vice-president; Karl A. Loven of Bismarck, secretary-treasurer; and J. A. Shannon of Jamestown, trustee.

Personal

The co-partnership of Percy Dwight Bentley and Otto A. Merman, under the firm name of Bentley & Merman, architects, is announced. Offices are at 209 Linker Building, La Crosse, Wis.

Edward A. Juul, Architect, Imib Building, Sheboygan, Wis., announces that he has affiliated himself with Lawrence Richardson of Milwaukee. The latter will establish offices in Manitowoc, while Mr. Juul will continue to work in Sheboygan.

Robert R. Reeves, formerly with Frank L. Packard, New Hayden Building, Columbus, has associated himself with Orlando C. Miller, architect, New First National Bank Building, Columbus, Ohio. The firm began business in the latter location Jan. 1.

Charles D. Wilsey, architect, of Syracuse, N. Y., is leaving his office in the Sedgwick, Andrews & Kennedy Building for government service in Washington. He is to be superintendent of construction on government buildings and expects to be assigned to Edgewood, Md., for about five months.

Delay in Plans for Washington Buildings

Senator Martin, chairman of the Senate Appropriations Committee and of the Public Buildings Commission, recently reported to Congress a plan for housing the government activities of the District of Columbia, particularly where said activities are being carried forward in rented quarters. The project, however, would mean an expenditure of approximately \$58,000,000, a policy inadvisable during the war, Secretary McAdoo has ruled. "Plans will be prepared, however, and made ready against the time when money in the Federal Treasury may again be applied to construction purposes."

It is further stated:

Orders of Secretary McAdoo not only prohibit construction of new public buildings, but embrace other aspects of the construction program.

All extensions of buildings, the urgency of which is established to the satisfaction of the assistant secretary in charge—Assistant Secretary Moyle—are to be placed on the market for bids at as early a date as practicable and carried to completion.

All buildings and extensions of buildings now under construction are to be completed.

Marine hospitals, quarantine and immigration stations, being convertible into Army or Navy hospitals, or other war uses, construction work and improvements thereon or in contemplation in connection therewith are to be carried on as rapidly as possible.

In all other cases where sites have been acquired or contracted for, the work of the supervising architect's office in preparing designs, plans, specifications, etc., is to be carried on to the point of readiness to advertise for bids for construction. In these cases, however, no bids are to be solicited without further orders.

Detroit Expects Gain in Building

Secretary Charles C. Ludy, of the building department of Detroit, looks for an increase in building operations in 1918 in that city. Millions of dollars are being turned into Detroit through war contracts, and this means the employment of thousands of men, and the operation of shops to their fullest capacity. The record of building in 1917 shows an advance proportionate to the amount of buildings erected in 1915 and before in this section of the country.

Modern Building Code Needed?

In his annual address to the City Council, Mayor Ellsworth E. Mount, of Burlington, N. J., said, in part: "In order that cities may be planned and buildings so constructed as to promote health, reduce danger and loss from fire, new restrictions and methods are necessary. These provisions could be

embodied in an up-to-date building code. It should include the very latest ideas and requirements as to construction and permit regulation as to location of certain classes of structure. While the code may require revision from time to time, I am confident that for the present it could be made more complete and more modern. Perhaps the adoption of a code would be the means whereby better adjustment for insurance rating for the city could be obtained."

Building Permits Disguise the Truth

Minneapolis, Minn., explains that the apparent falling off of building operations in 1917 as compared with the record of the previous year, is largely due to the fact that on Jan. 1, 1917, the fee system for building permits went into effect, carrying with it the demand of one dollar for each \$1,000 of building to accompany every application for a building permit. Accordingly, all those contemplating extensive building in 1917, and aware of this proposed charge, took out their permits the latter part of the preceding year and the result was unduly to increase the already large totals for 1916 to the detriment of 1917. Many important structures actually raised in the year just past were in a sense, it is claimed, falsely accredited to the year before.

Workingmen's Houses

The Shipping Board in Washington has decided on an immediate expenditure of \$1,200,000 for housing accommodations for shipyard workers at Newport News. This was the result of the insistence with which a Senate sub-committee had presented the urgency of the situation. Housing facilities will be provided at other plants engaged on Government work as soon as Congress can pass a bill now pending to supply money for the purpose.

Building Facilities of St. Louis May Be Listed for War Use

A St. Louis paper encouragingly states in regard to building conditions in that city: "The allied building interests of St. Louis, at a meeting held recently at the Chamber of Commerce, decided to organize a permanent body to survey the city's qualifications as a building center for government needs, and of ascertaining the materials and men which St. Louis can furnish for any purpose. To this end a committee will be sent to Washington when surveys are completed and will lay before government

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officials the real facts concerning the building situation in St. Louis.

"It was pointed out at the meeting that St. Louis is one of the few large cities where conditions are nearly normal. While Eastern cities, because of war contracts, are suffering great shortages of material and men, St. Louis has both in a supply which the building interests believe could be easily turned to government work. The labor situation here is also less acute than in many other cities."

Predict Busy Building Year

A Michigan paper states in regard to building prospects in the Middle West, and particularly in Grand Rapids: "Builders, architects and real estate men are turning their backs on what they concede to have been a rather bad year, and are looking with considerable hope into the future. A reaction is setting in against the depression that has reigned since the United States entered the war, and people are beginning gradually to adjust themselves to the situation and find that they can be patriotic and still think of business. One architect recently said: 'A certain amount of building for a given period is imperative to the needs of the community, and when one year falls short another year must recover. The government is beginning to regulate the prices of commodities that are essential to existence, and people are beginning to get back on their feet.'"

Model Structure Planned for Women Workers

An experiment in housing is to be made at Charleston, S. C., where the Young Women's Christian Association plans to build a model structure for the accommodation of about one hundred girls employed in making uniforms.

Mrs. John D. Rockefeller, Jr., recently discussed the project in New York at a meeting of women, and said in part: "The idea of the Young Women's Christian Association in establishing this model house in Charleston is so to enthuse the committee on housing of the National Council of Defense that they will be inspired to erect similar ones throughout the country."

New York Chapter A. I. A. Elects Officers

The Central New York Chapter of the American Institute of Architects at a recent meeting elected the following officers: President, O. H. Waltz, Ithaca; vice-president, F. H. Gouge, Utica; treas-

urer, C. G. Tallman, Auburn; secretary, Horace T. Hatton, Rochester. Discussions were led by J. H. Pierce of Elmira, S. E. Hillger of Auburn, and H. H. Bickford of Elmira. The chapter voted to offer its services to the Government in any capacity.

Berkeley and Zoning Laws

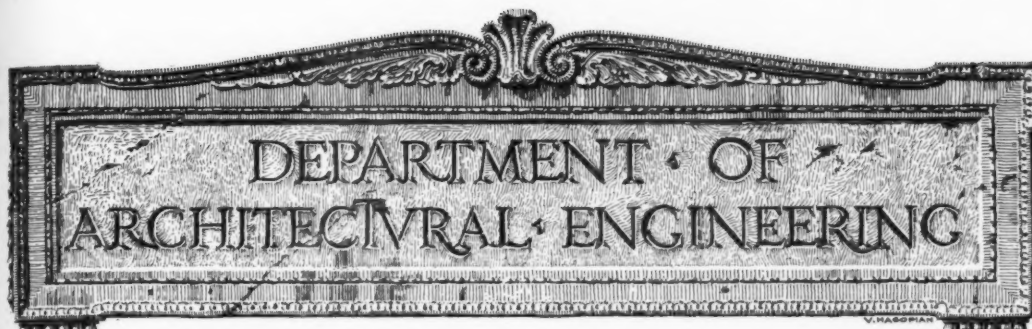
Watchful of the results of New York's zoning law, the City of Berkeley, Cal., is taking the preliminary action necessary to secure a similar one. A letter from E. M. Bassett, counsel for the districting committee of New York City, telling of the success of the New York districting plan, was read before the Berkeley City Planning and Civic Art Commission by President Frank D. Stringham, and is having a desirable tendency to effect further accomplishment along these lines in the West.

Columbus Chapter Awards Prizes

As announced in our issue of Dec. 19, 1917, a competition was held by the Columbus Chapter of the A. I. A. for the purpose of creating an interest in the erection of moderately priced homes. This competition is now said to have been one of the most successful ever conducted by Ohio architects, and was participated in by 250 members of the profession, representing nearly every state. The winners, who will be paid prizes aggregating \$500, were as follows: First prize, Fred Wells, Toledo, Ohio; second prize, Daniel R. Shea, Springfield, Mass.; third prize, John S. Kelley and O. L. Lenski, Columbus, Ohio; fourth prize, H. E. Rich and V. F. Tinsley, Des Moines, Iowa; fifth prize, Elmer E. Nilman, Colorado Springs, Col.; sixth prize, Wm. H. Scopes, New York; seventh prize, Olaf William Shelgren, Buffalo, N. Y.

Fire Peril Warning

The National Board of Fire Underwriters is circulating letters among 350 fire chiefs urging special precaution in the matter of fire prevention at the present time. It is stated that because of the coal shortage and the recent cold weather the sprinkler equipments in thousands of buildings are temporarily out of action. A general conflagration is therefore an imminent possibility, since sprinklered buildings which ordinarily serve as fire barriers cannot at present be so regarded. A general conflagration with a high wind, occurring at a time when the Fire Department might be hampered by severe cold and impassable streets, would be an appalling catastrophe, and protective measures should not be delayed a single hour.

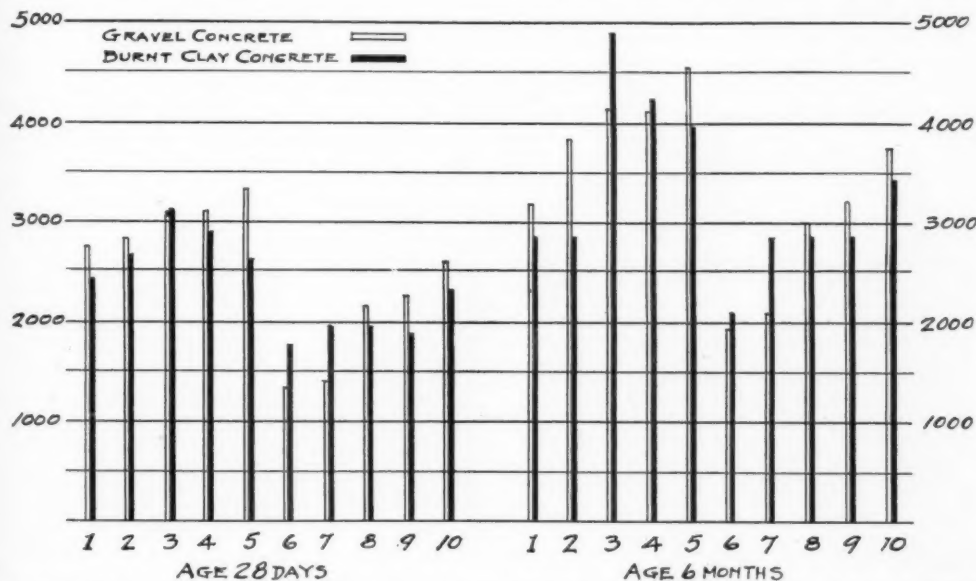


Concrete Aggregate of Burnt Clay

TESTS have been made at the University of Iowa to compare the strength of concrete made of burnt clay, limestone and gravel aggregates. The results are published in *The Iowa Engineer* and are of interest.

sand 2.69, and for gravel 2.82. Absorption of hard-burned clay 3.0%, medium-burned clay 6.6%.

The tests of limestone and burnt clay aggregates were made on 6-in. diameter cylinders 12 in. high. The proportion by loose volume was 1:3:6, and the



COMPARATIVE CRUSHING STRENGTHS GIVEN IN POUNDS PER SQUARE INCH. TEST NUMBERS CORRESPOND TO ITEM NUMBERS GIVEN IN THE TABLE

The cement passed the standard tests and the quality of the sand is evidenced by the tests of 1:3 mortar, in which the tensile strength of the 7-day test was 260 lbs. per sq. in. and the 28-day test 327 lbs. The crushing strength for the same mortar was, for the 7-day test, 980 lbs. per sq. in., and for 28 days, 1530 lbs. The weight of the materials per cu. ft., loose, was for limestone 73.31 lbs., burnt clay 65.45 lbs., sand 98.75 lbs., and gravel 100.00 lbs. The specific gravity was for burnt clay 2.26,

weight of the green concrete per cu. ft. was, for limestone, 149.5 lbs., and for burnt clay, 139.0 lbs. The cylinders were crushed at the age of 28 days, the average for limestone being 1630 lbs. per sq. in., and for burnt clay 1845 lbs.

In the tests to obtain the comparative value of gravel and burnt clay concrete, the specimens were also 6-in. diameter and 12 in. high.

The odd proportions were fixed to compare with tests made for a forthcoming bulletin on the "Pro-

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portioning of Gravel Concrete Mixtures." Although the proportions are nominally the same for each material, the comparison is not exact for the reason that there are two factors influencing the result. These are the character of the coarse aggregate and the absolute volumes of the materials present in a unit volume of concrete. Exact comparisons can only be made when the concretes have the same absolute volumes of cement, sand and coarse aggregate in each type of concrete. For practical purposes, a comparison made on similar proportions of loose volume are adequate, as such methods of proportioning are those used in actual practice.

To use concrete to the best advantage it would be necessary to study the proportions in the terms of absolute volumes of materials in the product. Absolute volume is defined as the solid volume of the material in a given volume of concrete, and the difference between the gross volume and the absolute volume is the volume of air space or voids. The sum of the percentages of absolute volume of cement, sand and coarse aggregate is sometimes called the co-efficient of density and is the complement of the air and water voids.

The composition of the concretes indicated in the diagrams, measured in loose volumes, is as follows:

Item	GRAVEL		BURNT CLAY	
	Sand: Cement: Coarse Agg.	Cement: Total Agg.	Sand: Cement: Coarse Agg.	Cement: Total Agg.
1	1:1.94:3.91	1:5.1	1:1.64:5.03	1:5.1
2	1:2.17:3.04	1:4.5	1:1.97:4.12	1:4.5
3	1:2.36:1.97	1:3.8	1:2.25:2.76	1:3.8
4	1:2.75:0.94	1:3.1	1:2.57:1.29	1:3.1
5	1:2.52:0.13	1:2.6	1:2.55:0.20	1:2.6
6	1:3.24:6.50	1:8.5	1:2.74:8.36	1:8.5
7	1:3.45:4.72	1:7.0	1:3.08:6.42	1:7.0
8	1:3.57:2.90	1:5.6	1:3.30:4.08	1:5.6
9	1:3.76:1.24	1:4.35	1:3.61:1.82	1:4.35
10	1:3.47:1.78	1:3.50	1:3.43:2.73	1:3.50

The crushing strength in lbs. per sq. in. from average of five specimens of each mix is given in the diagram. Then tests are divided into 28-day and 6-month-old specimens.

While but few of the mixtures are those used in actual work, the fact is developed that burnt clay of the quality used in these tests will make concrete as strong as that made with gravel or limestone. The burnt clay used came from the refuse pile of a sewer pipe plant, and the uneven shape of the fragments made it more difficult to work than the gravel and limestone. The type of the crusher used would evidently have an important influence on the shape of the product and such objections can be overcome.

The refuse consisting of defective, hard burned

paving bricks and sewer pipes would make excellent material for this purpose and would crush to a satisfactory shape. If the burned clay is of the quality used in paving blocks a concrete with good wearing qualities should be the result.

There are many tons of burned clay refuse in localities where suitable sand, gravel or crushed stone is obtained only at a great expense. This refuse would have an added monetary value used as coarse aggregate in concrete work of any description, except possibly when the color was a feature of importance. In emergencies where other coarse aggregates are not readily obtainable, burnt clay can be used. This use, which in many cases lowers the cost of concrete, should be encouraged as a matter of conservation, otherwise a valuable by-product of many clay-burning plants would be a waste.

Cast Iron and Concrete in Combination

The use of materials of construction in new combinations is always a matter of interest. It also has the advantage of breaking down the precedents that so often hamper every phase of human endeavor.

Mr. W. J. Knight, Assoc. M. Am. Soc. C. E., describes, in a recent engineering publication, a combination of this kind which is novel and of merit. The structure is a sub-grade, one-story building, the roof of which is designed to support a live load of 100 lb. per sq. ft., and an earthfill of the same weight.

The roof construction is a four-way, flat-slab of reinforced concrete of standard design. As a minimum diameter of supporting columns was necessary, this was accomplished by using 7-in. diameter cast iron columns of 1-in. metal. The columns were seated on a 20-in. square cast iron base with stool 6 in. high. A circular flange of 22 in. diameter, 1¼ in. thick, and supported by eight brackets, is located 6 in. below the top of the column. This 6-in. projection above the flange is buried in the concrete cap.

The usual concrete column cap, in the form of the frustum of a cone, is used and has a diameter at the ceiling line of 4 ft. 3 in., a height of 15 in., and of course a 22-in. diameter where it rests on the cast iron flange. Four ¾-in. anchor bolts pass through the flange to a point near the top of the slab.

As the columns are interior, they support parts of four panels. For this reason it was decided that the possible bending due to the deflection of one panel would be safely resisted by the column.

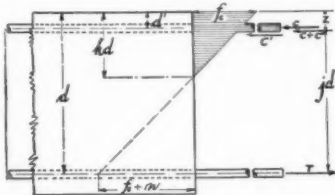
With an occupancy of a slow-burning character, or if protected with automatic sprinklers, this construction should be entirely satisfactory. Many engineers overlook the fire-resisting ability of cast iron when subjected to compression only, and as this material is quite available and fairly inexpensive at this time, this combination is worthy of careful consideration. The application of cold water to columns during a hot fire is of course disastrous, but it

is common to find such columns entirely intact in the ruins of many fires. If fireproof protection is required it can be secured by the use of a 3-in. tile covering which would be at least as effective as the usual 1½ or 2 in. of concrete used in concrete columns for that purpose. Even thus treated, the possible small diameter of cast iron columns gives a result much less in size than any other form of construction.

Beams Reinforced for Compression

By ALLAN F. OWEN, M. W. S. E.

THE use of standard formulæ for designing beams reinforced for compression involves a great amount of labor and for that reason their design is often approximated. It sometimes happens that on account of clearances or head room a shallow beam is necessary. In that event a beam large enough to keep the shearing stresses within the allowed limits may develop excessive compression stresses in the concrete. The beam must then be reinforced for compression. The use of this type of beams is infrequent and for that reason working data is not common. It is to simplify the



design of such beams that the writer has prepared the graphic diagrams which accompany this paper.

NOTATION

- f_s = stress in steel, tension, lbs. per sq. in.
- f'_s = stress in steel, compression, lbs. per sq. in.
- f_c = stress in concrete, compression, lbs. per sq. in.
- n = ratio of moduli of elasticity of steel to concrete.
- C = total compression in concrete in pounds.
- C' = total compression in steel in pounds.
- M = bending moment in inch lbs.
- A = area of tension steel in sq. in. = pbd .
- A' = area of compression steel in sq. in. = $p'bd$.
- b = breadth of beam in inches.
- d = depth of beam in inches to center of tension steel.
- d' = depth in inches to center of compression steel.

k = ratio of depth to neutral axis to depth d .
 j = ratio of lever arm of resisting couple to depth d .

z = depth in inches to resultant compression.

p = steel ratio of tension steel A/bd .

p' = steel ratio of compression steel A'/bd .

R = coefficient of strength = $\frac{M}{bd^2} = f_s p j$.

The formula for the stress in the concrete is

$$f_c = \frac{k}{n(1-k)} \cdot f_s$$

from which we determine the position of the neutral axis in known terms of f_c , f_s and n .

$$k = \frac{f_c n}{f_s + f_c n} \dots \dots \dots (1)$$

The stress in compressive steel is

$$f'_s = \frac{n(k - \frac{d'}{d})}{k} \cdot f_c \dots \dots \dots (2)$$

The coefficient of resistance is

$$R = \frac{1}{2} f_c k (1 - \frac{1}{3} k) + f'_s p' (1 - \frac{d'}{d}) \dots \dots \dots (3)$$

The ratio between the total compressive stress in the steel and the total compressive stress in the concrete is

$$\frac{C'}{C} = \frac{2 p' n (k - \frac{d'}{d})}{k^2} \dots \dots \dots (4)$$

The arm of the resisting couple is

$$j = 1 - \frac{\frac{k}{3} + \frac{d'}{d} \frac{C'}{C}}{1 + \frac{C'}{C}} \dots \dots \dots (5)$$

The tension steel ratio is

$$p = \frac{R}{f_s j} \dots \dots \dots (6)$$

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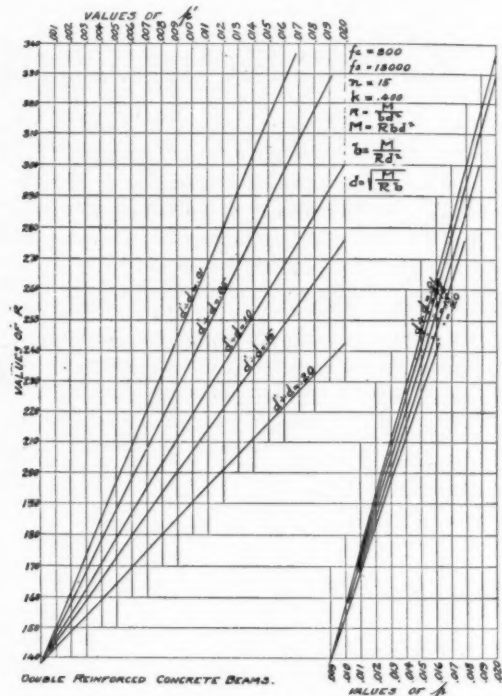
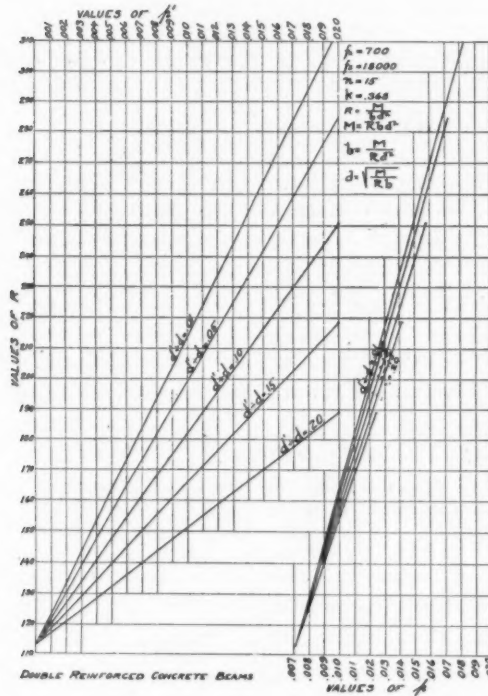
From these formulæ the diagrams were constructed. Using the stresses allowed by the Chicago Building Code for 1:2:4 concrete and high carbon steel we have

$$\begin{aligned} f_c &= 700 \\ f_s &= 18,000 \\ n &= 15 \end{aligned}$$

It is customary to allow 15 per cent added stress in concrete in beams subject to reverse moment at

for $\frac{d'}{d}$ and substituting in equation (2) the value of f'_s is found. With these values in equation (3) $R = 113$ for $p' = 0$. All curves then originate at $R = 113$ for $p' = 0$ and are straight lines. From equations (4), (5) and (6) with $R = 113$ and $p' = 0$; $p = 0.0072$ and $j = 0.877$. The curves for p are also straight lines.

To use the diagram we may have a beam with a



DIAGRAMS SHOWING VALUES OF p AND p'

the columns and a diagram is made for the added stress.

$$f_c = 800$$

The size of the beam is assumed with reference to the shearing stress and conditions governed by the location in the building. The bending moment is calculated and the value of R is found from the equation

$$R = \frac{M}{bd^2}$$

The position of the rods being assumed the ratio $\frac{d'}{d}$ is known.

The diagrams are constructed by first solving for k , from equation (1), which with $f_c = 700$, $f_s = 18,000$ and $n = 15$ is 0.368. Assuming values

bending moment of 960,000 in. lbs. and limited to a width of 12 in. and 20 in. deep to center of steel, the center of compressive steel to be 2 in. below the top of beam.

Then $\frac{d'}{d} = 0.10$ and $bd = 240$ sq. in. and $R = 200$. Entering the diagram at $R = 200$ proceed to $\frac{d'}{d} = 0.10$ and $p' = 0.0126$ and $p = 0.0126$ also. In this case then $A = A' = 3.024$ sq. in. When $f_c = 800$, $f_s = 18,000$ and $n = 15$ we find $p' = 0.0077$ and $p = 0.0127$ then $A = 3.048$ sq. in. and $A' = 1.848$ sq. in.

Diagrams for other fiber stresses, applicable for use under other requirements for working stresses will appear later.

Motor-Truck Garage for Sears Roebuck & Company

GEORGE C. NIMMONS & Co., Architects

THE garage built to house the automobile delivery trucks of the Sears, Roebuck & Company at Chicago is 220 ft. long with a depth of 112 ft. and has a 28 ft. wide space in the rear which includes a 15-ft. alley. On the west side is an 18-ft. driveway and on the east a storage yard space.

The building is divided into four 53 ft. wide sections, used for garage purposes, in one of which is a machine room 42 ft. deep. In this room is a pit 3 ft. x 10 ft. and 5 ft. deep, with a movable wooden cover and in the side walls of which are six recesses for electric lights. These sections are separated with brick walls, the door openings in which are protected with double steel fire doors. The concrete floors are pitched to gutters along the side walls. Wooden roof construction is permitted in Chicago in garages of this class when protected with a sprinkler system, and in this case the roof is

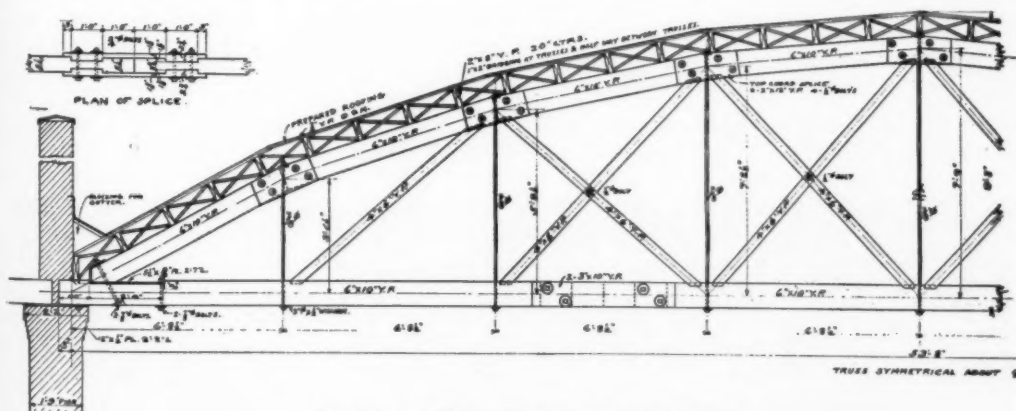
supported on combination wood and steel trusses. These trusses, made of longleaf yellow pine, have a span of 53 ft. and a center rise of 8 ft. 9 in., on which are placed the roof rafters. Between the

trusses are built monitor skylights, affording ample light throughout the building. The trusses have an attractive appearance and afford scarcely any obstruction to light from the skylights. The competing contractors were permitted to estimate on alternate designs of trusses of the same dimensions, but the architect's design was found to be as low in cost as any of the other designs submitted.

Adjoining these four sections on the east is a 25 ft. wide section which contains a chauffeur's lounging room, in the rear of which is a locker and toilet room, all having plastered walls and ceilings. The toilet room is equipped with water closets, urinal, lavatories and two showers. Adjoining the toilet is the machinists'



THE TRUSS AS BUILT



CONSTRUCTION DETAIL OF TRUSSES

THE AMERICAN ARCHITECT



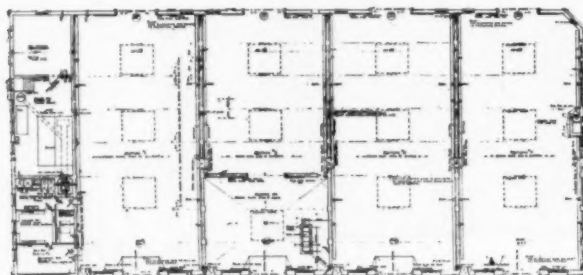
INTERIOR VIEW FROM REAR



FILLMORE STREET ELEVATION

room. This section also contains the boiler and fuel rooms, which, in accordance with the Chicago code, have no doors leading into any portion of the building and is only entered from the outside. The garage rooms are ventilated by means of 4 in. x 16 in. flues in the brick walls, with 16 in. x 18 in. registers placed 1 ft. above the floor, as required by the Health Department regulations. All windows

tract, which was carried on in Chicago without any material interruption. This contract, for a one-story-and-basement factory, 50 x 100 ft. in size, was awarded about the middle of last December. The entire work, including the excavating of the basement, constructing the foundations, basement walls and piers, and erecting the superstructure, was completed within the limit of five weeks.



FLOOR PLAN

on the rear and two ends have metal frames and wired glass, with lower sash pivoted. The rear doors are metal-clad fire doors.

This building was designed and constructed under the supervision of George C. Nimmons & Company, Architects.

Protecting Concrete in Cold Weather

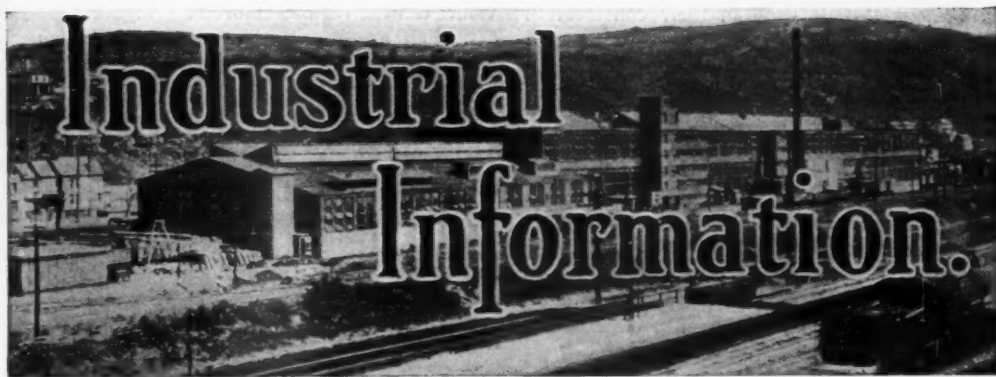
During the recent cold weather it was interesting to observe the development of a "time-limit" con-

The basement walls and a center row of piers were of concrete. Forms for the concrete were constructed in the usual manner. About one foot inside the basement wall forms, and the same distance outside the pier forms, another form was built. Before the concrete was placed this space between the inner and outer forms was filled with solidly tamped stable manure.

The mixing apparatus was so placed that the concrete was wheeled but a short distance. The sand was heated by piling it over a cylinder made of boiler iron, which extended through the pile. A fire was maintained continuously in this large pipe. The water was heated in a barrel on the mixer platform by means of steam from a small vertical boiler placed near the end of the mixer. The stone was not heated, and no anti-freezing preparation was used. As soon as a section of concrete was poured the top was covered with stable manure about a foot deep, and left there until the superstructure was started.

Work was carried on at a temperature of 14 deg. below zero, and during some of the most severe snowstorms in the history of Chicago.





Cast Iron as a Substitute for Steel

The Editors, THE AMERICAN ARCHITECT.

In the very interesting "Economics Number" of Jan. 2, we note an extract from a letter written by a firm engaged in the manufacture of ornamental iron, which leads to conclusions so at variance with our recent experience that we believe the matter, as it appears to us, should be brought to your attention.

We quote as follows from the letter in question: "In the wrought iron construction there is a considerable economy in labor, due to the fact that patterns are eliminated, and further owing to the fact that metal shapes can be obtained in the market at a much lower price than high grade gray iron castings can now be secured."

While it may be that a concern operating no foundry can purchase and assemble wrought shapes at a lower cost than would be entailed by the purchase of castings, the difference, if any, in favor of wrought shapes is less than before the war, these materials having advanced some 150 per cent, while pig iron is but 100 per cent higher.

Our actual experience under present conditions is that we are now able to manufacture ornamental cast iron, especially for work involving duplication, at a substantial saving over the cost of fabricating steel and wrought shapes and at an advance of only 20 per cent over former prices.

In discussing questions of construction and materials with our friends of the profession, in connection with recent contracts, we have found them very glad to avail themselves of the advantages of cast iron, its freedom from corrosion, practically dictating its use for exterior work, and its endless possibilities of form, texture and ornament rendering it, next to bronze, the pre-eminent architectural metal.

The use of cast iron wherever possible in place of steel is also dictated by the present requirements of the government. War Bulletin No. 2, issued by

the Chamber of Commerce of the United States, June 29, 1917, urges the conservation of steel by substitution of other materials, mentioning cast iron as one of the alternatives.

In bronze work we have found that it is not a question of price as to whether wrought or cast metal is to be used. Bronze sheets and plates are unobtainable and bronze bars and shapes are also practically out of the market. As a result our recent bronze contracts have been executed almost entirely of cast metal.

FLOUR CITY ORNAMENTAL IRON WORKS CO.,

By George B. Melcher, Designer.
Minneapolis, Minn.

Pyrobar Roof Tile

The Pyrobar roof tile, manufactured by the United States Gypsum Company, is designed to meet a multiplicity of needs. These tile are developed for ornamental uses and for purely structural purposes as well. The Pyrobar gypsum long span roof tile offer as advantages for structural use the fact that the tile are cast at the building site, are laid directly on the steel framing, and can be covered immediately after tile are set in place with any type of roof covering; they can be made to suit any live load requirements. Inasmuch as these tile are light in weight and of long span, they require a minimum amount of supporting steel. These qualities also contribute to speedy erection.

Fli-Bac Screens

The Empire Rolling Screen Company, Inc., of Rochester, New York, is advertising a new idea in window screens which should prove of interest to architects. The unique feature of these screens lies in the fact that they are adjustable, operating on rollers, somewhat after the fashion of window

THE AMERICAN ARCHITECT

shades. The materials used in their construction are steel and wire cloth. By a simple mechanical device the screen is clamped to the steel channels at the side of the window, and automatically locks at the bottom of the window, or at any height desired. The roller at the top is hid under the headboard of the window when the screens are installed on the erection of the building. In the case of installations on old buildings there is provided a rust-proof steel casing, which conceals the roller and protects it from the weather.

A screen of this sort is practicable for any type of building. It is easily adjustable, affording ease of operation when cleaning windows, in case of fire, or in winter when the screens can simply be rolled up to the top and left on. This eliminates the cost of removing, repairing and storing screens, and particularly in case of large buildings, should afford a considerable factor for economy in building equipment.

Atlantic Terra Cotta

The Postal Life Building, Forty-third Street and Fifth Avenue, New York City, has been awarded the gold medal for 1917 by the Fifth Avenue Association. This building has been chosen as the best example of new construction in the Fifth Avenue district. It is faced almost entirely with Atlantic terra cotta, as have been a number of the other recent buildings in this part of the city. The Winfield Building at Fifth Avenue and Fortieth Street, now under course of construction, and the recent Tiffany studio building at 13 West Fifty-seventh Street are notable examples.

Color Tones in Stucco

The Atlas Portland Cement Company published last year an illustrated monograph for architects entitled "Early Stucco Houses." This year the same company has prepared for distribution to architects a monograph called "Color Tones in Stucco," giving the results of recent experiments in surface treatment, texture and color tones. The text of this monograph describes the methods approved by these experiments, using with Atlas

White cement various colored aggregate, the sources of which are listed. There is also a convenient guide to specifications for color stucco, and ten plates reproducing in full scale and in color the more successful panels produced by this investigation.

This company states that inasmuch as it plans to continue its study of the problems of stucco, it will welcome suggestions from architects, and those who are interested in this scheme of co-operation are invited to ask for a copy of "Color Tones in Stucco."

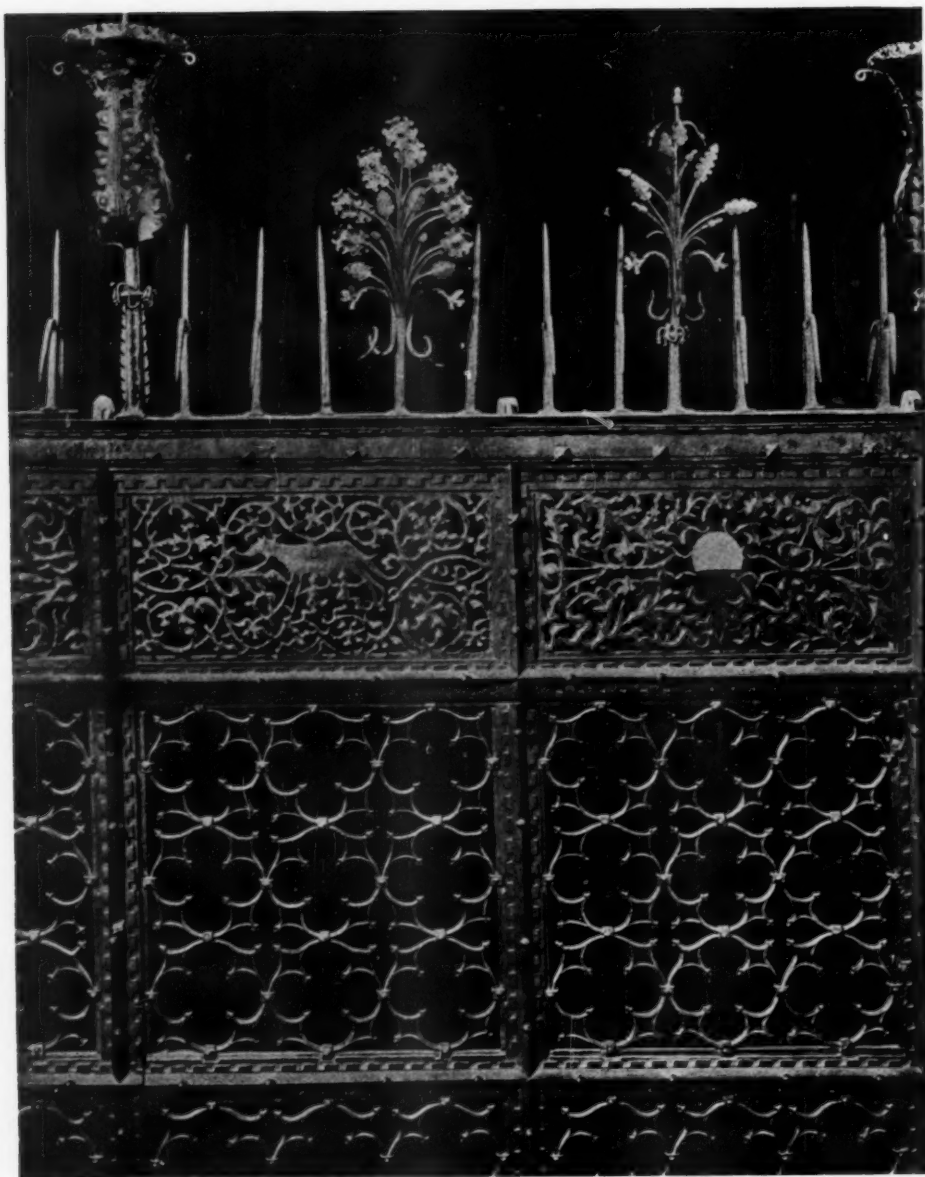
Wright Wire Lath

Metal lath has become one of the prime necessities in fireproofing the modern building. The Wright Wire Company of Worcester, Mass., are manufacturers of a wire lath which is said to be particularly valuable as a fire-retardant. This lath is made of cold drawn steel wire; it possesses great strength and protects ceilings and partitions from sagging. For stucco work and outside walls this lath combines the advantages of durability and permanence with speedy erection and low cost. Wright wire lath may be attached to any type of frame work, and when properly imbedded in plaster or cement it forms a barrier through which flames cannot readily pass.

Glidden Varnish Company Changes Hands

The Glidden Varnish Company of Cleveland, Ohio, and its subsidiary, the Glidden Varnish Company, Ltd., of Toronto, Canada, have been purchased outright by a newly formed corporation, headed by Mr. Adrian D. Joyce, formerly director and general manager of sales and distributions of the Sherwin-Williams Company. With him are associated Mr. O. A. Hasse and Mr. R. H. Horsburgh, both of whom were also connected with the Sherwin-Williams Company. All three have severed their connections with the latter organization, and it is definitely stated that the new company is not in any way connected with other paint and varnish interests.





IRON RAILING—PALAZZO DELLA SIGNORIA, ALINARI, ITALY (1436)

THE AMERICAN ARCHITECT