

The AMERICAN ARCHITECT



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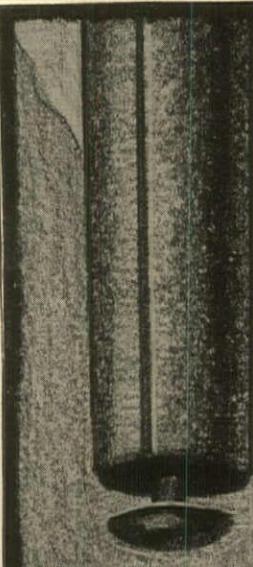
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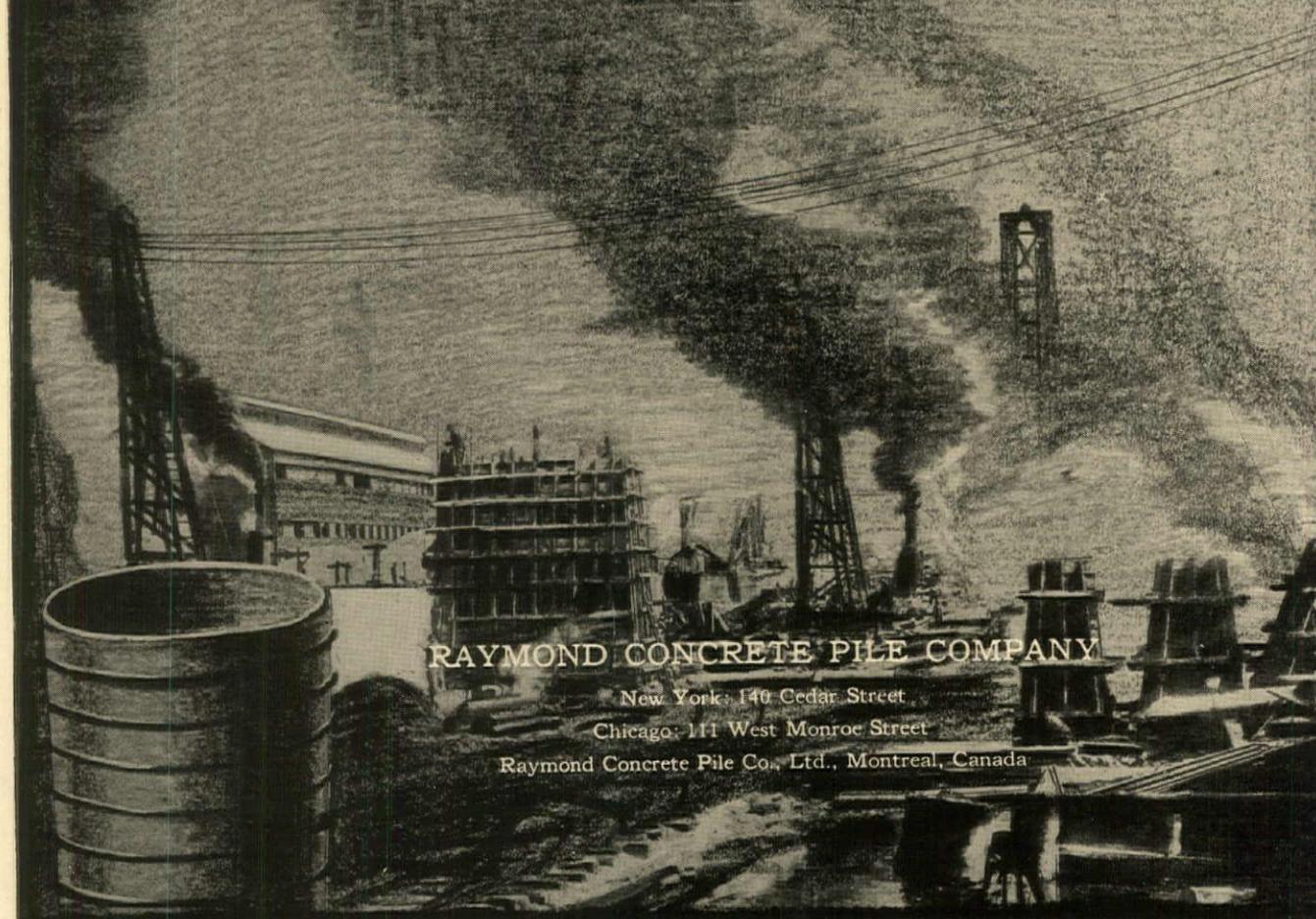
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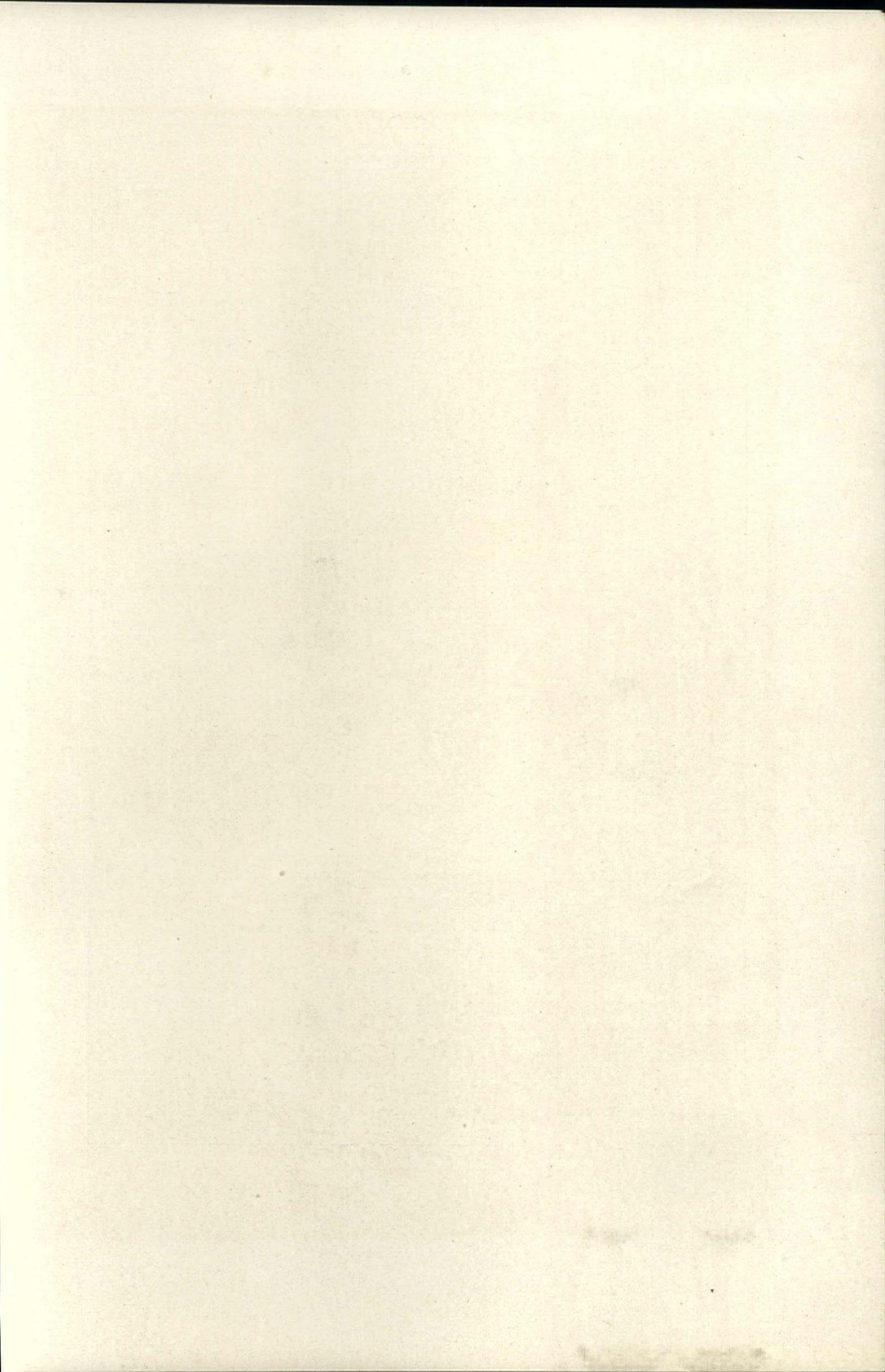


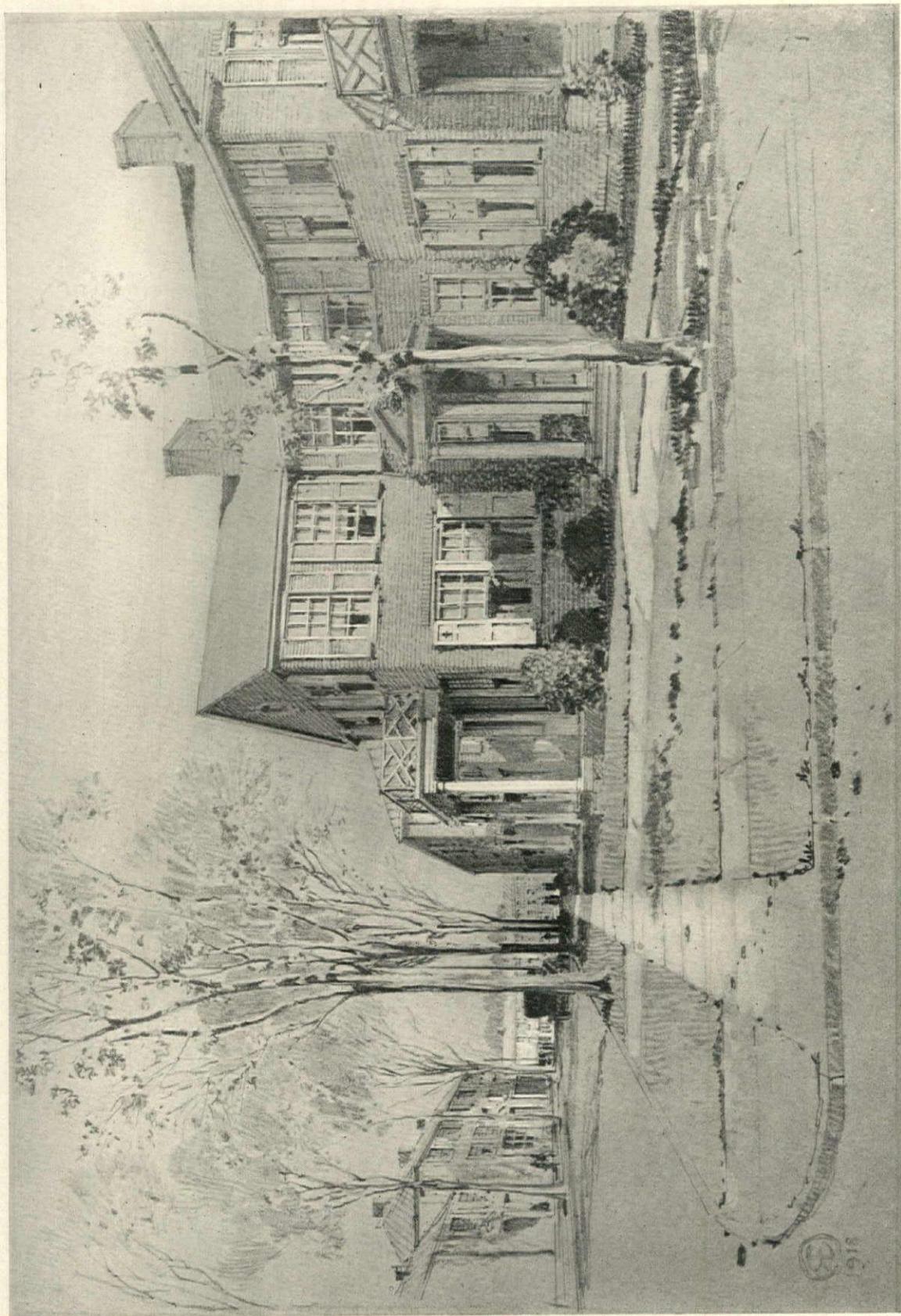
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What Constitutes Unprofessional Practice in Architecture?

DURING a time of stress two psychological conditions manifest themselves, seemingly very opposite but really almost identical. The one is a loosening of restraint, a throwing off of conventions and an increase in the intensity of competition; the other is an exaltation of ideals, a seeking for new standards and a greater intensity of emotionalism. The architectural profession is just now experiencing both of these moods. We are certainly in times of stress; we certainly are filled with emotions which tend to raise our ideals, and we certainly are throwing over some of the restraints which in the past have made us one of the most straight-laced professions, ranking in that respect only after that of medicine. Now, restraints, ethics, codes of practice are such necessary things and contribute, when properly devised and applied, so much to the enjoyment of the practice of a particular profession that we cannot afford to throw over any code which has a real value. We cannot afford to blunt the keen edge of our ideals; and it is, therefore, fitting that while we are going through the melting pot, while we are trying so many lines and losing so much that we once thought fundamental, we should consider very carefully in what our code of ethics should consist and what is to be the standard of professional conduct in the light of the revolutionary episode of the war.

A code of ethics is simply a statement of the conditions under which a man can follow his calling with fairness to his competitors and with justice to his clients, his employees and his associates. So far the question of ethics seems very simple, and it is really only a constant application of the golden rule, but unfortunately the element of business is a very prominent one in architectural practice, and it is right there that the line begins to waver. The American Institute of Architects for the last fifty years has been formulating codes of ethics and trying to define professionalism, but always the point of view has been backward, applying to the future

only the tried and proven experiences of the past, and experiences which have been interpreted by the members of the profession who have been successful and have won their full share of opportunity. I often wonder what our code would be like if it had been drawn up in every case by men under twenty-five, if it were based not upon the practice of the past alone but upon the hopes of the future, as judged with the restraining point of view of the golden rule. It has not required the upheaval of the present war to make our past codes of ethics seem strange and illogical to at least some of the young men who are coming out of the architectural schools and are eager to take their place in the profession, but are met right at the very start with restrictions that they do not always understand, and for that matter which very few of us clearly comprehend.

The fundamental essential of the practice of architecture is to get a job, and to get a job one must have friends or acquaintances, or business connections who are willing to take a chance on an untried quantity, if the architect is just beginning; or at any rate a certain amount of uncertainty is involved even when the older and more experienced architects get their chance, and right there the difficulties begin. We tell the young man he must not seek out a possible client and offer professional services, and yet in most cases how will an unknown man otherwise get a job? We tell him he must not let his talents be known, and yet if he cannot sound his own praises how can he expect anyone else to? We tell him he must sedulously keep his personality in the background, suppressing his name, suppressing his connection with the work, and yet architecture of all professions is one of personality, and if we tell him to suppress the vital part thereof how is he going to find his chances? We tell the young man that his best program is to do every piece of work that comes to him just as well as his abilities will allow,

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to give the most rigid attention to details; in fact, to carry out all of the conditions of most efficient service and that then the rewards will come if he has the ability, and yet on the other hand we all of us know of architects who give their very life blood to the profession, who do creative work of the highest rank without fair reward, and there are scores of young men in all our cities who are able, sufficiently experienced, and certainly honest and well meaning, but whose average income from architecture is a mere pittance.

Again we tell a young architect he must be a business man, must run his profession as a business, and yet we tell him he must not make good in the very fundamental of all business transactions, namely, responsibility; that since he is only an adviser he must never be responsible for results; that since he is a professional man in a calling which requires a great deal of business management, he must not stand behind any of his statements financially, must not guarantee anything; that his motto to his clients can be only "caveat emptor." Again we impress it upon the young man that his profession is a creative one, that his work over the drawing board is purely objective, that the building is the thing and not the drawing, and yet we absolutely prohibit him from taking any part in the actual building. Architects often refer to the structures they have built. This is an unconscious derogation of a part of the code of ethics. Architects do that really far more than the profession sometimes admits, but theoretically the young man may have no affiliation or connection of any sort with the building and may take no contracts from anyone to do anything.

Again, and this is a point which is held most tenaciously by most of the older architects who have arrived, the young man starting out must not enter any competition unless it has received an official sanction from a body of men who may have had absolutely no connection with that particular problem. He must make no attempt to show on paper what he is good for unless such an attempt is so surrounded by restrictions that he has slight chance to show his ideas and he must perforce, if he is to be professional, stand back and see men of less ability, fewer scruples, but far more freedom of action, sail right by him and take the job out from under his nose.

So, therefore, it is, or has been at least, unprofessional to solicit work, to advertise, to guarantee a contract, to accept a contract for carrying out work or to enter an unauthorized competition, and the last item has been construed to mean that if a certain client wants the combined advice of two or more architects they cannot furnish it to him under

any conditions, except it be that of a recognized competition approved by the Institute, even though the client is perfectly ready to pay full professional fees for all the advice that is given him. We save our whole trade, our whole occupation is giving advice and yet we prohibit ourselves from offering that advice freely even when paid for.

Now these provisos are not the result of an attempt to suppress individuality or to deny access to the field on the part of the younger men, but they are rather the results of the code of ethics being a backward look instead of a forward prospect, and they represent the reactionary element of the profession rather than the alert, striving, active element which looks at results first rather than theories. The American Institute of Architects at its last meeting dodged the matter of advertisement and simply struck out the clause relating to it in the code of ethics. That body did not quite dare to accept the developing facts, and it was quite right in doing so, for we shall always have two codes of ethics, one the written code which will invariably lag behind actual practice, will invariably be archaic and harmful in many cases; and the other will be the unwritten code, the real constitution of the profession and the voicing of custom which has sprung up as result of real, practical experience.

Looked at in the light of what is done, and being really honest with ourselves, we can write a very distinct negative code of ethics.

1. It is not unprofessional to solicit work.

By no possible explanation, except on the ground of pure selfishness, can we deny to another the perfect right to go and ask for a job. It may be inexpedient at times to do so, the method of asking may defeat its own ends and it may be far wiser to adopt the indirect method and have our friends do the asking for us, but no matter how it is done it is asking just the same, and there is absolutely no wrong to anyone or to the profession in presenting one's case, one's experience and one's ability in the most judicious light so long as the golden rule is observed and the presentation is made in absolute fairness and truth.

2. It is not unprofessional to advertise.

This again is a matter of expediency and method. The profession has hid its light under a bushel for so long that it has come to feel a comfortable glow under the suppressed light of the candle and think that means moral victory. It is really nothing of the sort. We are simply refusing to let other people stand like an ostrich and refusing to let other people even dream we are on earth. With a natural result they take us at our own estimate and pass us by. There is a right and a wrong way to advertise, and

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no code can say which is which, but that an architect should condemn himself to voluntary oblivion is at least a needless limitation.

3. It is not unprofessional to guarantee results.

If an architect has not the courage of his own convictions and can prove it, he has no place in this busy, practical world. If he is a mere dreamer, changing his mind as easily as he changes his drawings and cannot maintain his promises to his clients, he is a bad and faithless business man, and I would that every architect were held to the same degree of accountability which exists in France, where for ten years after the completion of a building the architect is liable for damages if anything wrong happens, and where not infrequently an architect financially guarantees the results of his work. No individual could possibly be harmed by accepting responsibility and facing the consequences.

4. It is not unprofessional for an architect to assume the capacity of a master builder.

If an architect is not a builder, pray what on earth is he? If he who creates in his mind is to be barred from creating in fact, we then go back on all the principles of the world previous to the Renaissance. The architect is preëminently the one to carry out his own ideas and give them just the right shape. We admit it in our practice by our close supervision and by our wrestling with contractors who have no interest except a financial one, but just because the profession has tried to put itself apart and assumed a cloistered attitude we try to believe that we are taking high professional ground when we refuse to carry our directing to its logical conclusion, and, by declining to give the final personal touch which will make the building just right, we stamp ourselves as poor business men, as unfaithful servants and as inconsistent artists.

5. It is not unprofessional to compete.

As to the expediency of competitions at all, that is a very different question, but with every young man there comes hundreds of cases where he is eager and anxious to show what he can do, and suppose he does take part in a competition which has not received the sanction of the Institute, wherein is he wronging anyone on earth if he is honestly trying to show what he can do? I do not say he might not be very unfair in his methods, but certainly we have had plenty of cases of unfairness and rank injustice perpetrated by competitors in competitions which have been approved by the Institute. No code of ethics would of itself change human nature, but we to-day do compete in lines that the Institute looks at askance, we do offer our

services provided the conditions of employment are satisfactory, and to say that we should not unless we are acting under strict union rules is simply making it easier for the untrained, ignorant practitioner to impose on the public while we stand aside and refuse to give our best to the community.

There is a positive element of professional practice which must not be ignored. It is unprofessional to take a job away from another architect. Everyone agrees to that, always has and always will, but that is simply the golden rule put in practice and needs to be neither defined nor explained. The line between fairness and unfairness in our dealings with our neighbor cannot be laid down by mere words. Sometimes an architect will unconsciously take work away from another man by doing his own work better and thereby unknowingly influencing a client, but that is not his fault. In the great majority of cases we know perfectly well when we are acting fair in the matter of infringing upon someone else's territory, and I believe if rigid distinctions were obliterated from a code and the matter were left to individual honor we would have no more trouble than we have now and might have a great deal less, while each architect would be freer to take what comes to him in a perfectly fair, honorable way and would not be liable to vituperation and charges of unprofessionalism by a disappointed fellow practitioner who did not get the job.

Now why is it not possible to formulate a positive code of ethics something like this?

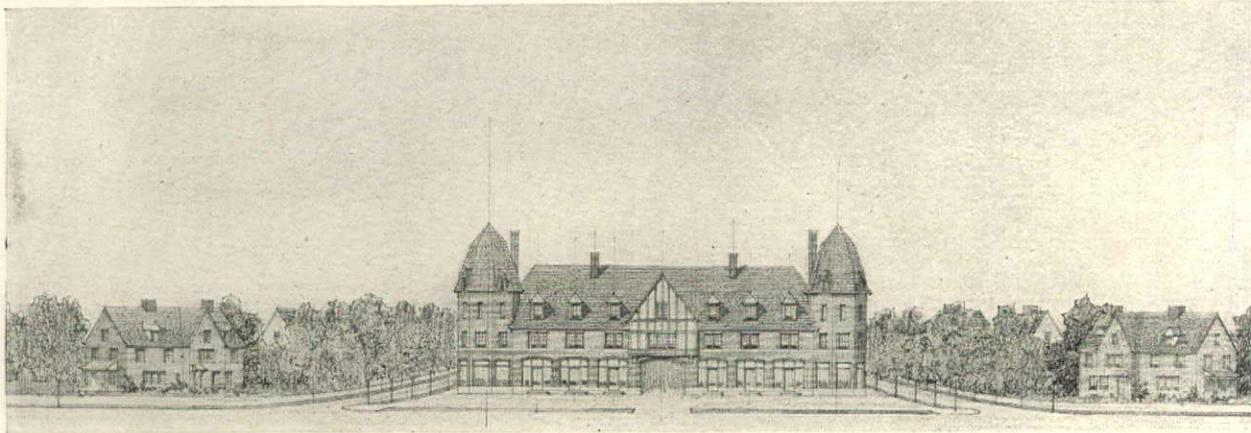
1. Do unto others as you would have them do unto you.

2. Be a self-respecting gentleman in every act of life.

3. Be a conscientious, faithful business man in all your dealings with clients, builders and associates.

4. Give everybody a square deal.

What more is there to say? The architect who conscientiously carries out the four foregoing can solicit work, advertise, guarantee his contracts, act as a builder, finance an operation if he has the means and ability, roll up his sleeves and go into competition of any sort, sell his services for cash or its equivalent just because he likes the job and yet be self-respecting, professional and square with the world and all about him. Is it not about time that we admitted that is just what we are doing now, that these four comprise the duty of man toward man, and these duties are no more specialized in the case of architecture than they are in any other calling, and that professionalism after all is fundamentally the golden rule and a square deal?



THE COMMUNITY BUILDING

Showing the streets at both sides running into the court. In this building are the small stores, hall, company offices, library, recreation and club rooms, superintendent's living quarters, social welfare office and medical clinic.

Housing as a War Problem

By A. RAYMOND ELLIS, *Architect*

AS the natural result of a general slowing up of building there are not enough houses under construction to take care of the normal increase in the population. The lowest average for new building for ten years was reached last July. Housing bears an important relation to Americanization and civic conditions. For a long time architects have been working toward economic plans for low cost houses for all classes.

Housing conditions have become acute owing to the abnormally large influx of labor to manufacturing centers. After the war it is believed these conditions will be even worse than now. The progressive cities are drawing skilled workers from those that lack economical and comfortable housing, and these cities will be far ahead of many of their competitors in the race for business after the war. The progressive Middle Atlantic states, while newly embarked in manufacturing, have the advantage of newer factories, and with it the opportunity to build the modern type of industrial housing without the attendant handicap of being hemmed in by all kinds of buildings and houses that complicate their problem of expansion, which the Eastern manufacturers have. For them to make a fresh start means an upheaving and alteration of old buildings or a removal to outlying districts, a risky thing in busy times. It has been said America must pay for her inexperience and unpreparedness in these problems, as in many others, and at the same time undertake to solve

them successfully with feverish haste and confusion.

On the occasion of a recent visit to Bridgeport the writer could detect by certain unmistakable signs the haste in which the first industrial houses were built, and the wonderful improvement that followed in the later ones. But Bridgeport has secured large war contracts and with it an influx of perhaps 30,000 to 40,000 workmen, who had to be housed.

Governmental aid in industrial housing has necessarily been given by Germany, England and Italy for many years, because it was a problem that was not interesting financially to individual capital. It was found that private enterprise furnished relief only to the middle classes who could afford to pay fair rents, while the immigrant workingmen, most in need, were left in the slums to become a menace to society. Governments soon found slums an expensive burden and set about relieving the conditions attendant on overcrowding.

Gerald Trafford Hewitt of the British Garden Cities and Town Planning Association, says that in 1914 David Lloyd-George proposed the most comprehensive national housing scheme ever offered and one estimated to cost one billion dollars for about one million houses throughout Great Britain; it was based on a careful survey of known needs and financed by Government loans at low rates of interest. British municipalities have already made reforms. Liverpool in 1864 pos-

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essed the worst slums in England, but since then has spent millions in eliminating them and rehousing its citizens in model tenements and cottages. The death rate has been reduced from 67 per cent to 27 per cent per thousand. Tuberculosis has declined from 7 to 1 per thousand and crime has been reduced 70 per cent. Liverpool estimates she has saved \$350,000 per year by proper housing.

Birmingham spent \$15,000,000 clearing out its slums and erecting municipal housing, and has more than paid back the original $3\frac{1}{2}$ per cent bond issue created to finance the work.

The London County Council has for years raised money at from 3 to 4 per cent to provide industrial housing, and has housed 60,000 people. The gross annual rentals amount to over \$1,250,000. Just before the war they were planning housing to the amount of \$17,000,000. This is the result of 20 years work and housing education, in a country older, of course, than ours and with a population more congested in its cities.

There are also the private housing companies which have built over 12,000 houses with a valuation of over \$42,000,000. There are about 50 estates varying in size from 4 to 600 acres, making a total of about 15,000 acres, of which about 3000 acres have been developed with over 13,000 houses, representing an investment of \$17,000,000. A large proportion of this money for housing has been loaned by the British Government at from $3\frac{1}{2}$ to 4 per cent, and this financial aid has been largely the cause of the successful housing results in England.

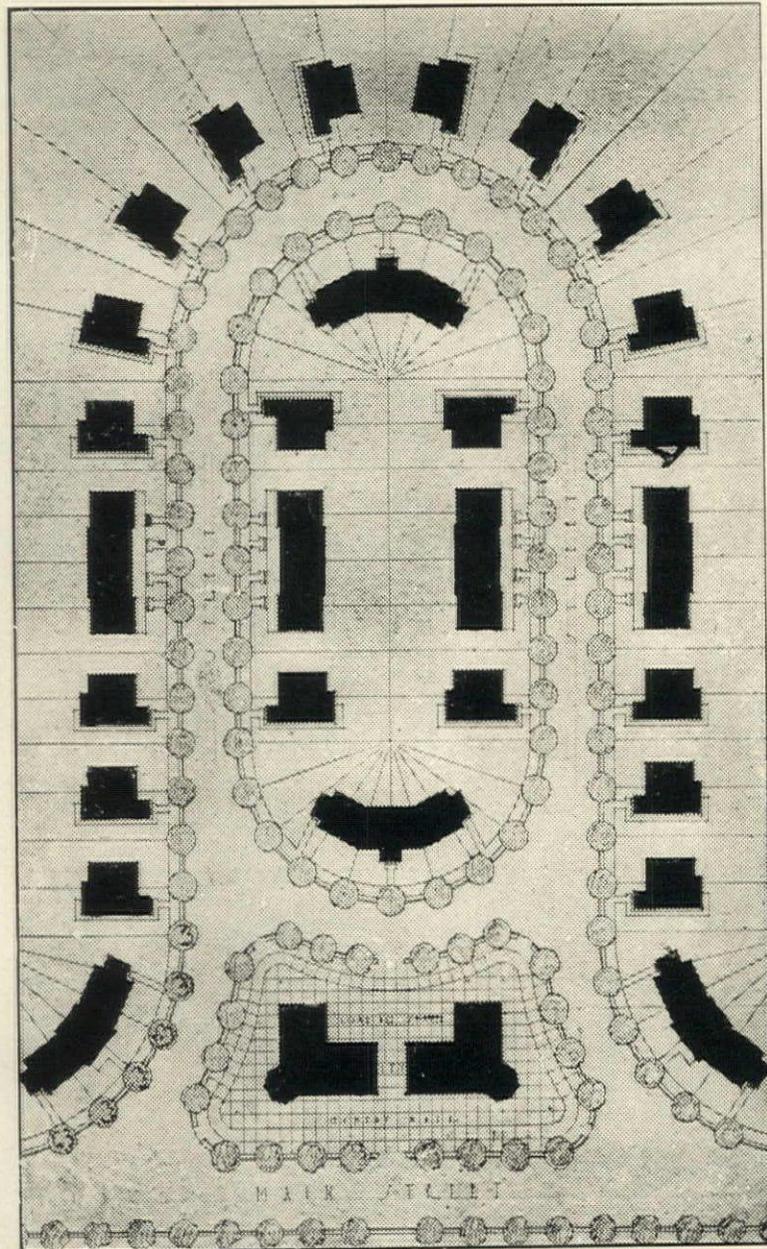
Ireland in the last 15 years has built 40,000 cottages through governmental aid.

Many other European countries found that industrial housing was a national obligation. Stockholm for some years has been building and financing industrial housing. Frankfort-on-the-Main has spent millions on housing and at the outbreak of the war had started to build a new harbor at a cost of \$18,000,000, which included an appropriation for workingmen's homes. The city of Ulm has acquired 80 per cent of all the available building land within the

city to sell or lease to its citizens on easy terms for building homes.

In Hungary no less than 12,000 homes have been built in the last few years with governmental aid. Italy for many years has aided and interested itself in housing reforms.

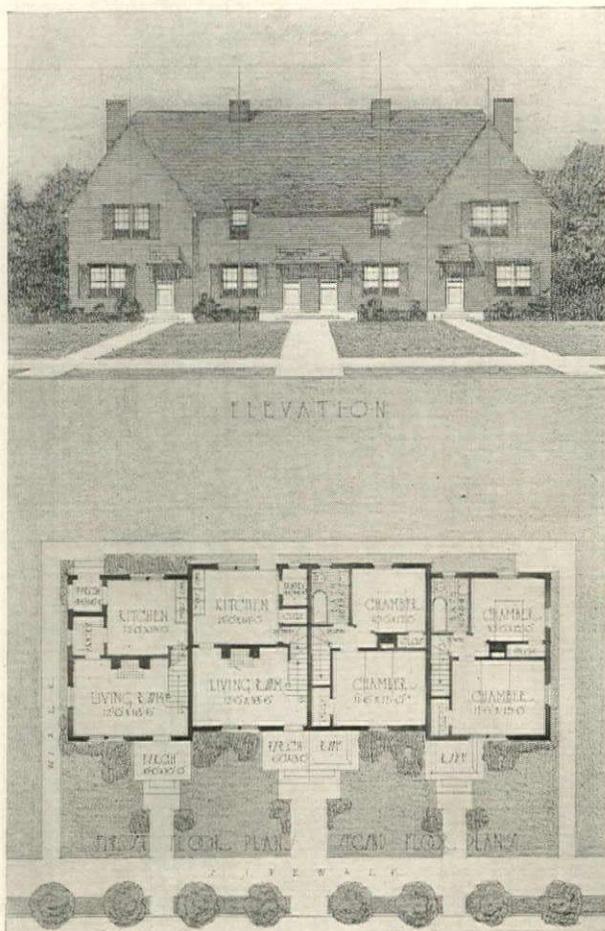
The architects of Germany in 1901 had already solved the Industrial Housing problem and were working it out on a large scale for towns and villages. These plans included housing for the farmer and clerical worker.



PLAN OF COURT

Showing the development of a piece of land, 450' x 650', on a main road having water, gas, electricity, sewer and trolley service available.

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CLASS I. PLAN I

A row of attached brick houses, having 4 rooms each to rent for \$18.00 to \$20.00 per month.

In 1914 the housing problem became so acute in England that governmental aid was necessary to provide housing for the men concentrated about plants engaged with war work. To avoid building houses of such a flimsy construction that the neighborhood would deteriorate into "slums," it was decided to erect "Huttage," with a certain proportion of permanent housing, so that at the end of the war the "Huttage" could be demolished and scrapped to give room around the permanent houses for a better development in proportion to the reduced manufacturing conditions after the war. These were built in three classes:

FIRST CLASS: Semi-detached houses, with three rooms on each side, one story high, to be scrapped after the war.

SECOND CLASS: Hotels containing eight or ten rooms, run by a man and his wife, who took eight lodgers. To be permanently used later for a whole family. These were also used for officers' quarters.

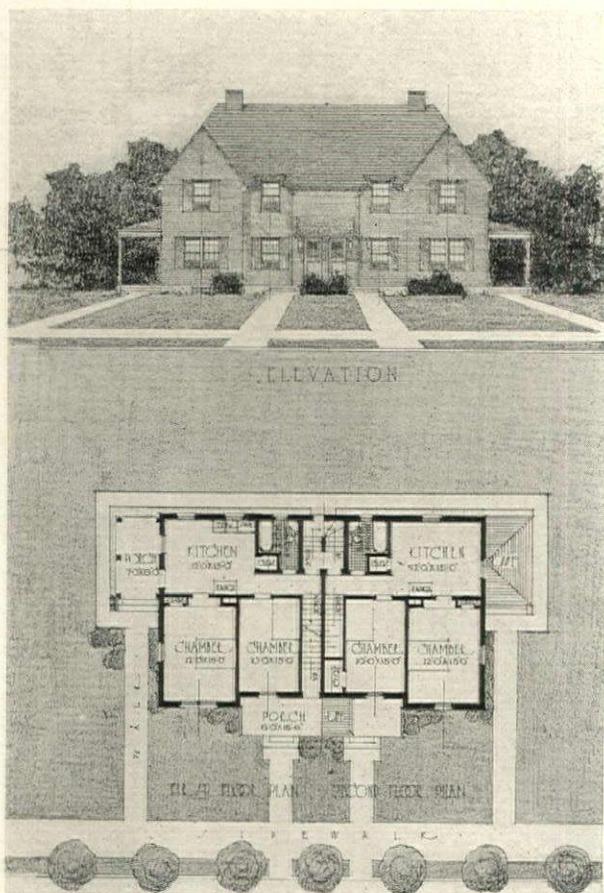
THIRD CLASS: Hostels, of the type of barracks, for housing and feeding a larger number. England was forced to this last type to meet abnormal conditions quickly.

In this country about sixty cities have undertaken housing plans; twenty-six are just taking it up, and there are now about 240 Housing Companies in the United States. From meager statistics it is found that only about 53,000 houses have been built; over half of them are of frame construction and 35 per cent are without any modern conveniences.

Within a few years several of our largest industrial organizations have built Industrial Houses of an improved type. These are situated in well-planned villages and towns and are probably superior to any housing found in Europe.

In each case the scheme has been properly studied under the advice and plans of experts. The results, when calculated in terms of dollars and cents and interest return, have proved successful.

The model village at Port Sunlight, England, has been maintained at a loss of thousands of dollars on account of the indirect benefit. But in America this



CLASS I. PLAN I

Brick building containing 4 units of three rooms each to rent for \$15.00 per month.

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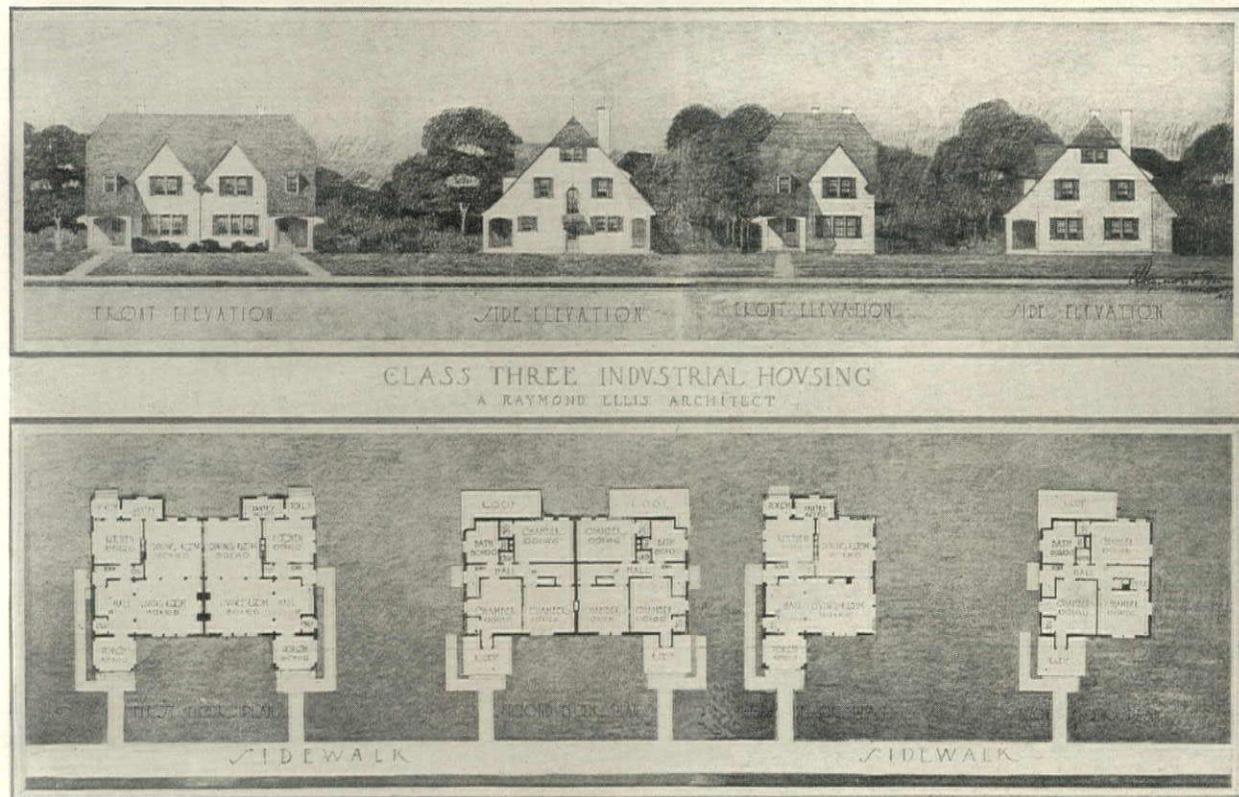
financial loss is not necessary, as in most cases a net return of 5 per cent can be obtained. But the scheme should not be undertaken with the idea of making a profit at this end. The object is to establish an industrial community of model homes for the benefit of the industries served as well as for the wage-earner and his family.

The relation of wages and standards of living as applying to the industrial classes bears an important relation to housing, for the following reasons:

will be cheaper than near a bustling city, with a demand for labor and first-class building restrictions.

A house costing \$2,500 cannot be offered at a rent of less than \$15 per month to return 5 or 6 per cent. Unless a wage-earner with an average family of wife and three dependent children has an income of \$15 a week or \$800 per year, he cannot afford to pay \$15 per month.

It is estimated that the average wage-earner pays about one-quarter or more of his pay in rent, which



CLASS III. PLAN III

A double or semi-detached house of frame construction, having seven rooms to rent for \$22.00 or \$25.00 per month.

A single frame house of seven rooms to rent for \$26.00 per month.

A comfortable single house of four or five rooms cannot be built in the industrial centers of the United States for less than \$2,500 with land and sanitary conveniences.

NOTE:—While this statement is true generally, the cost of building in the United States varies greatly in different sections, due to the different climatic conditions, soil, native or local materials, density of population and percentage of skilled American labor to foreign labor, and established building restrictions, covering construction, sanitation and fire hazards. Therefore, one can readily see that in rural sections, thinly settled, with no great demand for skilled labor, the cost of housing

is all that he can afford, and many wage-earners with families earn less than \$15 per week.

Houses can be built the cheapest in rows having a 16' 0" front and a depth of 23' 6", separated by party walls of brick, with two rooms on the first floor and two rooms on the second (and one in the attic), with land, for \$2,600, to rent for \$16 per month and return 6 or 7 per cent gross; to be heated with a small furnace and to have a kitchen sink, wash tray, bathroom, electric lights and coal range, sanitary walls and finish, closets, direct light and air, with sunlight in every room. These people are frugal, accustomed to simple living and forced economies, and the object of the improved sanitary

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housing is to improve their living conditions, physically and morally, but not beyond what is essential.

As soon as they are built they should be taken on leased rental or by purchase, encouraged by easy terms, such as small monthly payments over a period of 10 or 12 years. But the wage-earner cannot then develop without social service and supervision; recreation and child welfare work must continue, but it will be far easier and will bring better results under these improved conditions.

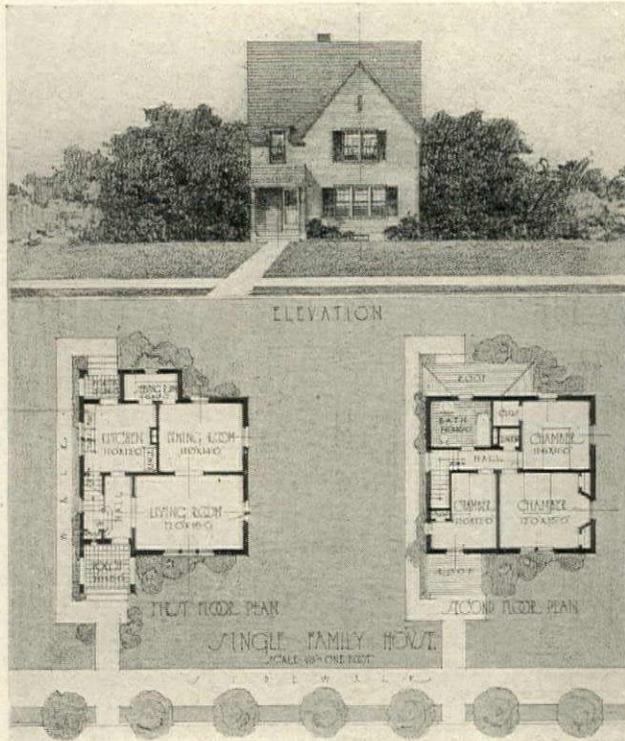
It has been found that in some factory villages in the Middle West men are paying a rent of a quarter or more of their income for poor houses, whereas in the model villages by paying one-third of their income as an installment on the purchase price, they can, at the end of ten or twelve years, own their own homes, or by paying not more than one-fourth of their salary in rent, they can be housed in comfortable quarters. With this scheme a plan of insurance was worked out whereby men who were sick or temporarily disabled were relieved of their installments, and those who died before the purchase was completed were credited with the amount paid and the principal from the insurance policy took care of the balance. In some sections co-operative banks have been established to accomplish the same result.

The location of these houses is important. They should be built upon land that is healthful and restricted so that it will not become congested or linked up with speculative, competitive development schemes, city dumps or freight yards. The tract upon which the houses are to be built should first be laid out with attractive streets, by an engineer experienced in this kind of work, working in co-operation with the architect, for the general layout and street plan must be worked out with proper grades for the streets and sewers, and so that the houses may be properly orientated. Each house should have a small front lawn and a backyard

large enough, if possible, for a small vegetable garden. As the community grows, there should be added the general small stores, neighborhood club, library, playgrounds, and chapels or churches necessary to serve the community so that the outgrowth of the scheme would be a self-contained village or town. The district should be within walking distance of the factories, if possible, or connected with main lines of travel so that the employees can reach their work promptly.

Many of the large cities have welcomed the advent of housing companies for the reason that it meant the end of the cheap, poorly-built tenement blocks and wooden three-deckers which, within the city limits, add greatly to the fire hazard, and as they are usually built for speculation and quick profits from rents, little effort is made to provide for the health and efficiency of their tenants.

The tenement house is the most undesirable form of housing as well as the most economical. It is a necessary evil only in large and densely populated cities, where limited space and congested areas force the erection of the tenement house as a means of providing fireproof, sanitary apartments with open stairways and



CLASS III. PLAN IV

A seven room brick house to rent for \$30.00 per month.

windows in each room opening on light courts to obtain light and fresh air. Under proper supervision it may be a model, as far as a tenement can be model, but there is no excuse for allowing the tenement house evil to obtain a foothold in small cities.

The building of industrial villages has, in some cities, eliminated the poorest parts of the tenement districts, by drawing the tenants to these houses, built on the outskirts of the city which were nearer their work and healthier, and in some cases at a lower rent. This works no hardship on the deserted tenement in the city, because the tenement districts can be reclaimed for commercial purposes at greater values.

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But with low rents must go essential sanitary conditions. The lack of these has not been due to the landlord, lack of legislation or inability to pay rents, but rather to the fact that many of the buildings were built for different living conditions and have deteriorated. Those cities which have housing laws, good building laws and health boards will prevent its becoming worse.

While standardized types of housing will help, each type must be governed by its local conditions, which depend upon the classes employed and the kind of manufacturing, but it should be kept down to practical considerations.

It has been proven that factories surrounded by poor living conditions secure only the poorer class of labor, with lower standards of efficiency, which makes the cost of production higher. It has been known for years that poor housing creates poor health, inefficiency and bad morals. It has been shown that in model industrial villages the loss of labor by sickness is practically nothing, with a very low death-rate; while there is a loss of 10 per cent and a high death-rate in communities having poor housing. There is a great improvement in the quality of the men's work, which is of direct benefit to the manufacturer, so that besides providing housing at a net profit of from 5 to 6 per cent to the operating company there is the benefit from increased efficiency and quality of production which cannot be directly figured in the income.

It is estimated that the labor shift in factory communities without housing facilities is about \$50 per man or \$50,000 for 10,000 men, which, while concealed in the payroll, is an overhead charge, since improved housing and living could reduce it from 30 to 40 per cent. This amount alone would go a long way toward financing or paying the interest on capital required for housing, without calculating the benefits accruing from improved health, stability, efficiency and, over a period of years, the benefit to the growing children who eventually become workers.

The testimony of employers shows that improved industrial housing has been of direct benefit to them by the reduction in the labor shift, which in some factories was one-third of the total force per month, due primarily to lack of stabilizing or interest-forming ties. If it costs from \$30 to \$80 to train each new man, it is apparent at once what a tremendous saving this is.

After studying this problem carefully the writer has finally arranged these houses in three classes, with plans to correspond to the needs of the three average classes of workmen, as follows:

Class 1, Plan 1—For the wage-earner who earns \$15 per week and has a wife and one child, re-

quiring one large room for general living purposes; two chambers 10 x 15, with closets, and bath, with separate entrance and porch and a small yard. The rooms can all be heated from the cooking range in the general room. While there is a cellar, it is more to provide a dry air space than anything else, although it may be used for coal, wood, vegetables and storage.

To charge a rent as low as \$3.75 per week it is necessary to construct them in blocks of 4, 6, 8 or 10 units, with one unit on the first floor and one exactly like it on the second floor, but with separate stairs to each, as will be seen from the plan. There is room in the attic to provide an additional chamber to be used in connection with the second floor units.

The frontage required for each unit is 26 feet, with a depth of 28 feet, two full stories high, with attic. The exterior walls are of common brick, 8 inches thick, laid up with a raked joint of white mortar, furred on the inside of the two exterior walls, lathed and plastered. There is an 8-inch hollow tile party wall between each two units. The roofs are of slate. The interior partitions are of 2 x 4 studding, lathed and plastered. The floor joists are of N. C. pine, over which is a rough spruce lining floor, deadening felt and a N. C. pine finished floor. The plastered walls and ceilings have coved and rounded corners at all angles, with a plain sanitary finish. The wall surfaces are painted with three coats of sanitary paint which can be washed. The wooden trim is varnished. The doors and sash are of stock patterns and sizes. The exterior porch floors and steps are of concrete with iron railings.

This method of construction is most economical, compared with its durability and expense of maintenance repairs. These houses should last for fifty years. Construction of this type effectually prevents an exterior fire from sparks or grass fires, and confines an interior fire to the three main division partitions and floors, which would burn out without intensity enough to spread beyond the party walls of the unit in which it started. While it might be considered essential to make the construction semi-fireproof inside, the cost is prohibitive. Stucco on metal lath is a very durable finish for the exterior of frame walls.

Cost: In blocks of ten these three-room units will cost about \$2,000. With a rental of \$15 per month would return about 6 per cent.

Class 2, Plan 2—For the wage-earner who earns \$18 per week and has a family of three, requiring a kitchen, living room, pantry on the first floor and two large chambers with closets and bath on the second floor, an attic chamber can be obtained. This type I consider the most practical and econom-

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ical, as it affords each family privacy; they have their own private entrances and porches, with a lawn in front and small yard on the rear. The houses, being only two rooms deep, can be plotted to get sun all day, and the view is never into a neighbor's rooms or blank walls. They work out well architecturally, without any expense for architectural features as an adornment. The tenants have a feeling of independence and self-respect from the fact that they are virtually living in a single house. Under each is a cellar. The house may be heated by furnace or by two stoves.

These houses can be built for \$2,500 without land and improvements, and each will rent for \$18. The construction of this type is exactly the same as specified for Class 1. The simplicity of the design and plan are both factors which reduce the cost of labor slightly over Class 1. They are designed to be built in terraces or rows composed of four, eight or ten houses. See C. 2, P. 3, showing a row of eight. The end houses in these blocks will rent for \$20.

Class 3, Plan 3.—For the wage-earner who earns \$20 per week or more and has a family of four or more I have designed a semi-detached house of six rooms to be built of frame and stucco, to cost about \$5,700 or \$2,850 per unit; to rent for \$22 per month; to contain hall, living room and fireplace, dining-room, kitchen, pantry and porches on the first floor, with three chambers and bath on the second, and a chamber in the attic.

For the last class a six-room single house is planned (see paragraph 4), built of brick, to cost about \$3,500 without land and improvements, and to rent for \$30 per month. This type should be built for the men purchasing on the instalment plan.

To accomplish any far-reaching results it will be necessary to educate the constructive forces interested in housing to the point of co-operation with the manufacturing and business interests, who are vitally affected by good housing. Place it on a sound financial basis for industrial preparedness and it will pay.

There seem to be four groups interested in housing problems, who look at it from widely different points.

1st. The health and city officials and social workers, who are interested in the social and moral welfare.

2nd. The architects, city and town planners, who are interested professionally.

3rd. The manufacturers who are interested as employers of labor.

4th. The real estate agents, contractors, material men, manufacturers of specialties and economic process methods.

We have the idealist who thinks each workman is entitled to an attractive cottage with all modern improvements and a bit of land, with flowers in the front yard and a vegetable garden in the back. The economist would give to all workers plain shelter, allowing their individual initiative to supply the non-essentials. Some advocate the terrace type of attached house, built in groups. It is the opinion of the writer that each community should have three types to suit the three average classes of workmen—three rooms and bath for the minimum family, built in blocks, with no rooms less than 10 x 10; four rooms and bath for the family of three or four, built in terrace rows, and small single houses of five or more rooms for the skilled worker or clerk with normal family.

Recent investigation shows that there are two houses of frame construction to one of brick; that four-room houses predominate over five and six-room houses about two to one and that single houses predominate over double houses or terrace blocks. Thirty-five per cent of these are without any modern conveniences, 20 per cent only having running water and 15 per cent water, electricity, gas baths and sewers.

It will be apparent that any housing company with a small capital will not accomplish much if it builds many single or double houses. Therefore plan No. 2 comes nearer to being the most economical and permanent form of housing for the average wage-earner. This type is economical in the use of land, which is quite an item of expense.

The plot plan shows the general arrangement of a small scheme for a level piece of ground 450 x 650, having a frontage on a main road, and having water, gas, electricity, sewer line and trolley service. This general plan has been used frequently in both large and small schemes for suburban property development, with excellent results, the water and sewer mains form a continuous loop, without dead ends to cause a sluggish flow. The main axis runs north and south, providing correct orientation for nearly every unit. The central plot may be used as a common and playground until the outside row of houses are all built. The houses have been spaced to produce both a good effect and an economical use of the land. The houses and blocks are so placed that in perspective they would appear as a community of single houses, surrounded by lawns, shrubs and trees to break up the masses of brickwork and continuous roofs, thus making a very attractive little community. The delta-shaped plot at the entrance of the court is a fine location for the community building, in which could be the "Neighborhood Club," reading-room and small hall for meetings and moving pictures, as well as the offices

THE AMERICAN ARCHITECT

of the housing company. The superintendent and family should have living quarters in this building, and there should be a social service department and medical clinic, if it is to be complete and operated under good supervision. The religious needs of the community are harder to solve if there are many creeds, but there is room in the building for a small chapel if there are no churches within a reasonable distance. The ground floor should be given up to the necessary small stores.

The building would not be built until nearly all of the houses had been built, or at least enough, with those in the adjoining neighborhood, to make it necessary. The scheme as planned would accommodate about sixty families and undoubtedly would grow rapidly, so that some future growth and extension should be considered. This scheme is worked out as an example of what a complete

scheme on a small scale should comprise. The approximate extent of the investment in this scheme would be about \$175,000, or perhaps \$200,000, with a gross return of \$20,000 yearly, or 10 per cent.

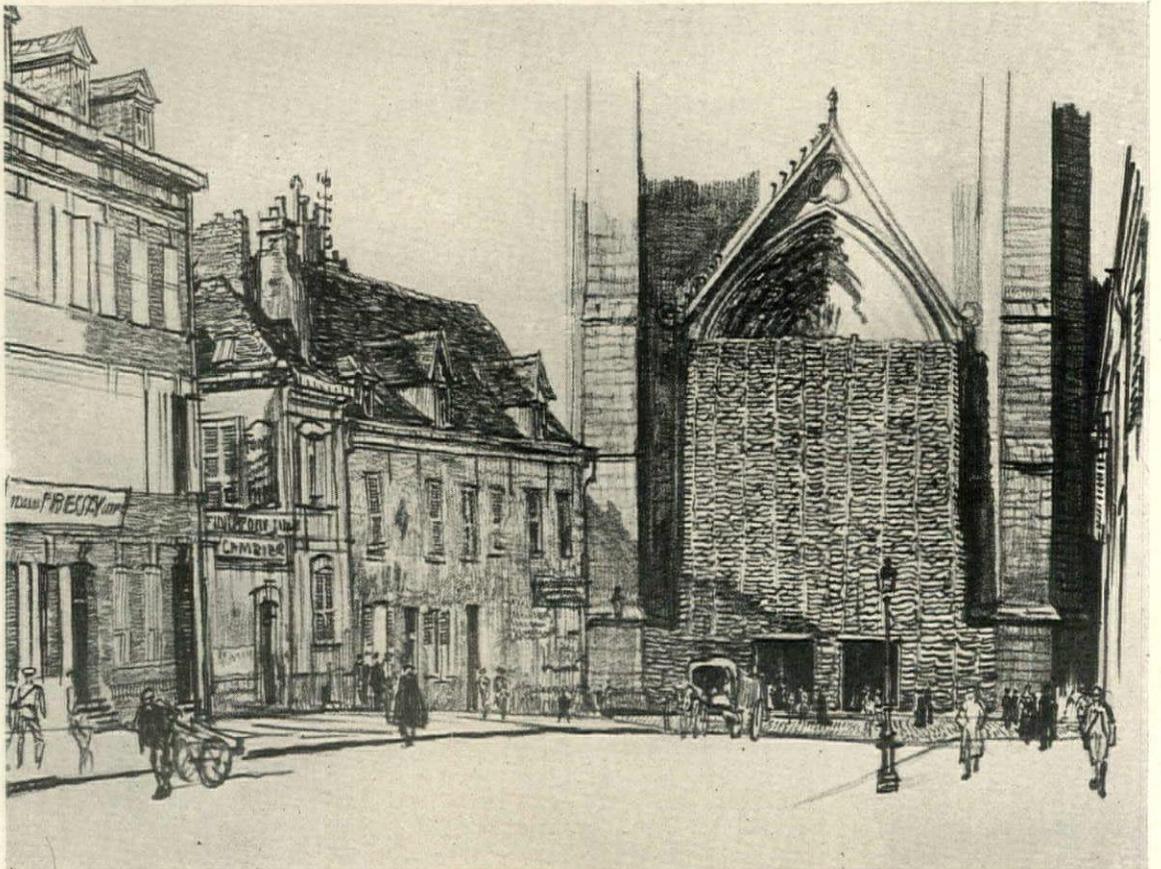
If the houses are sold there should be certain conditions and restrictions, binding upon both owner and company, in order to maintain the standard established as essential to the upkeep of the community for its original purpose. While these estimates have been carefully made, they are subject to some revision, when worked on definite plans, to suit the land developments and number and type of houses that might be built. A slight change in the dimensions or materials, or a reduction in the number of single houses would make quite a difference in the estimates; but I think the example is graphic and the estimates near enough to give an idea of the capital required for even a small undertaking.



CLASS II. PLAN III. A ROW OF EIGHT ATTACHED HOUSES IN A TERRACE



THE SQUARE IN PERONNE.
FROM THE PAINTING BY W. ROTHENSTEIN

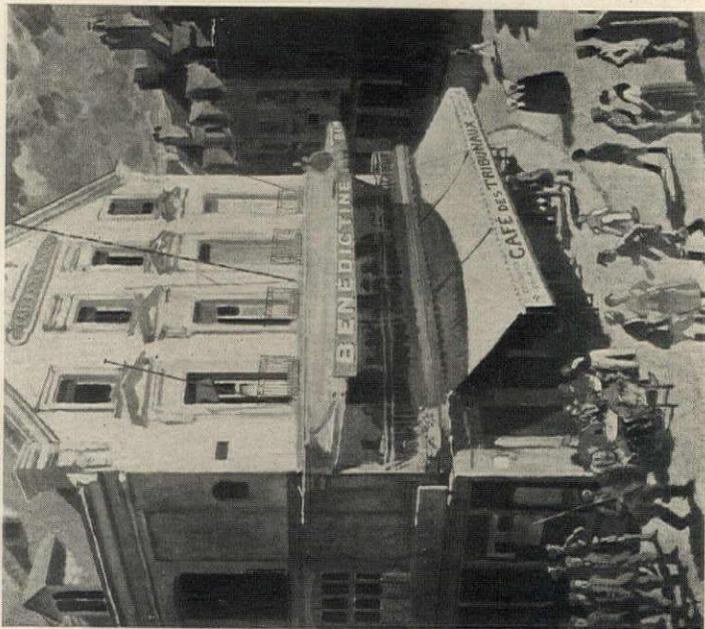


A DRAWING OF AMIENS CATHEDRAL, SOUTH ENTRANCE
BY MUIRHEAD BONE
WORK BY BRITISH WAR ARTISTS.

British War Artists

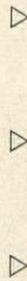
In the issue of March 20th illustrations were given of work by some of the official British artists. A further selection is presented in this issue. Mr. Muirhead Bone's great talent for architecture is shown once more in his drawing of the sandbagged entrance to Amiens Cathedral. By Professor W. Rothenstein is "The Square in Peronne," sadly disfigured and more so, probably, since the drawing was made. Sir William Orpen's pictures are proving exceedingly popular in London, the exhibition at the Agnew Galleries competing as a rendezvous with the Royal Academy. Two examples of the painter's work chosen for their architectural interest are given herewith.

The British artist in Palestine, Mr. James McBey, is recording scenes with dignity and distinction, as will be realized by the illustrations. The artists are at work in their different spheres under the direction of the Ministry of Information, London.

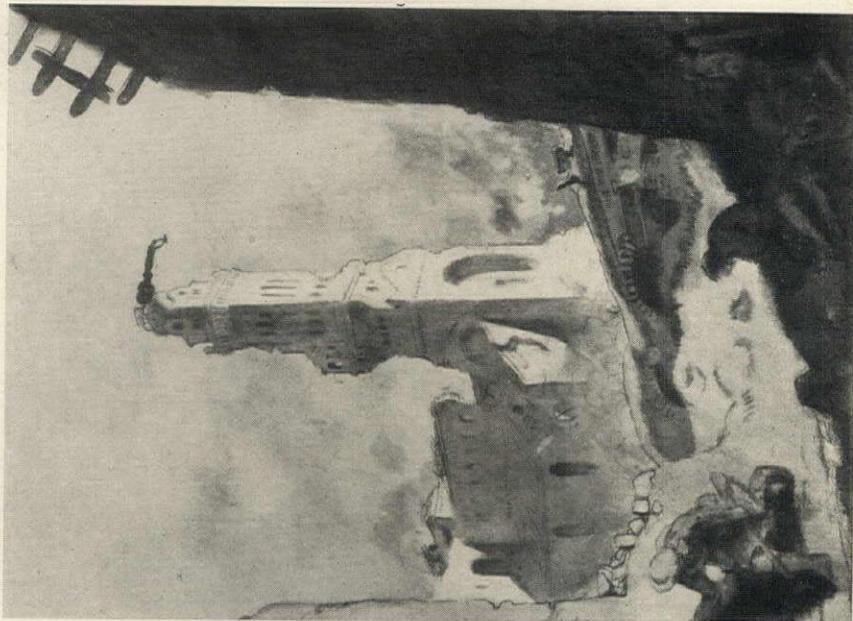


DIEPPE

FROM THE PAINTING BY SIR WILLIAM ORPEN, A.R.A.



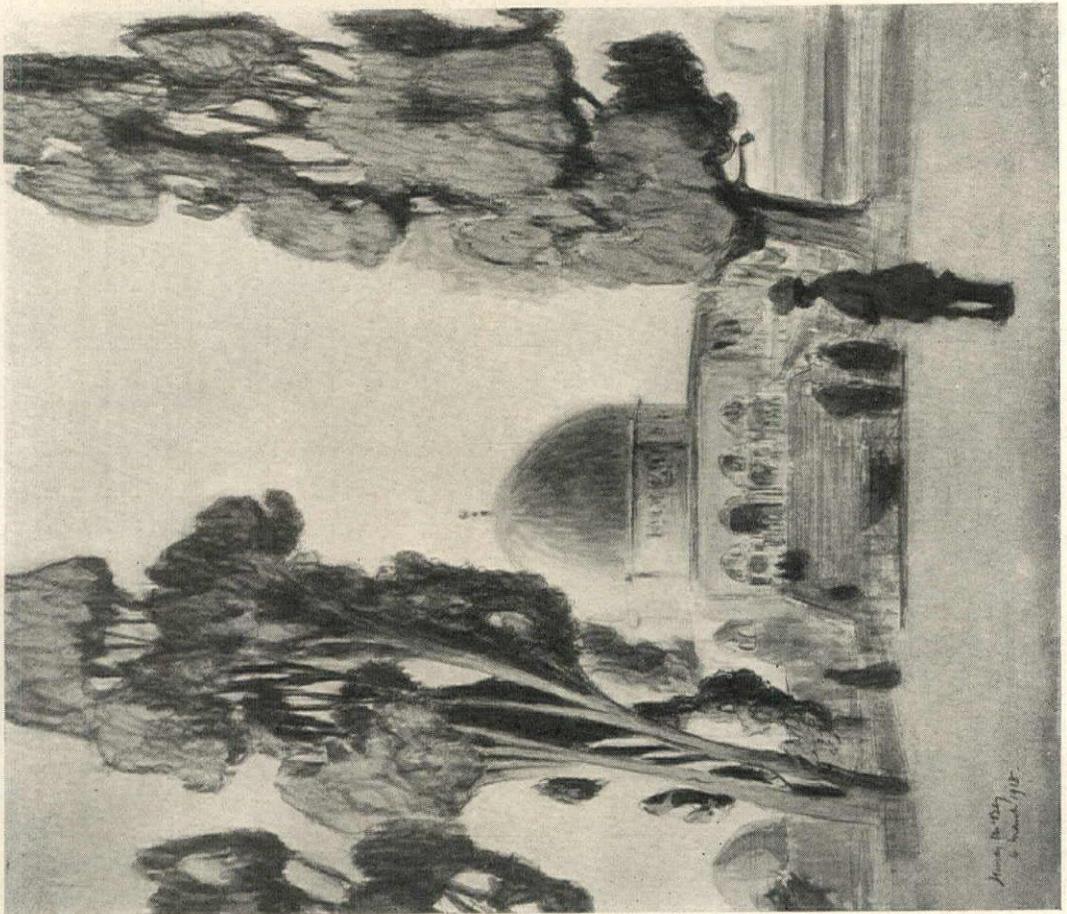
The Editors are indebted to Mr. Albert Yockney, London, England, for the illustrations of work by British War artists shown on this, the preceding and following pages.



ALBERT

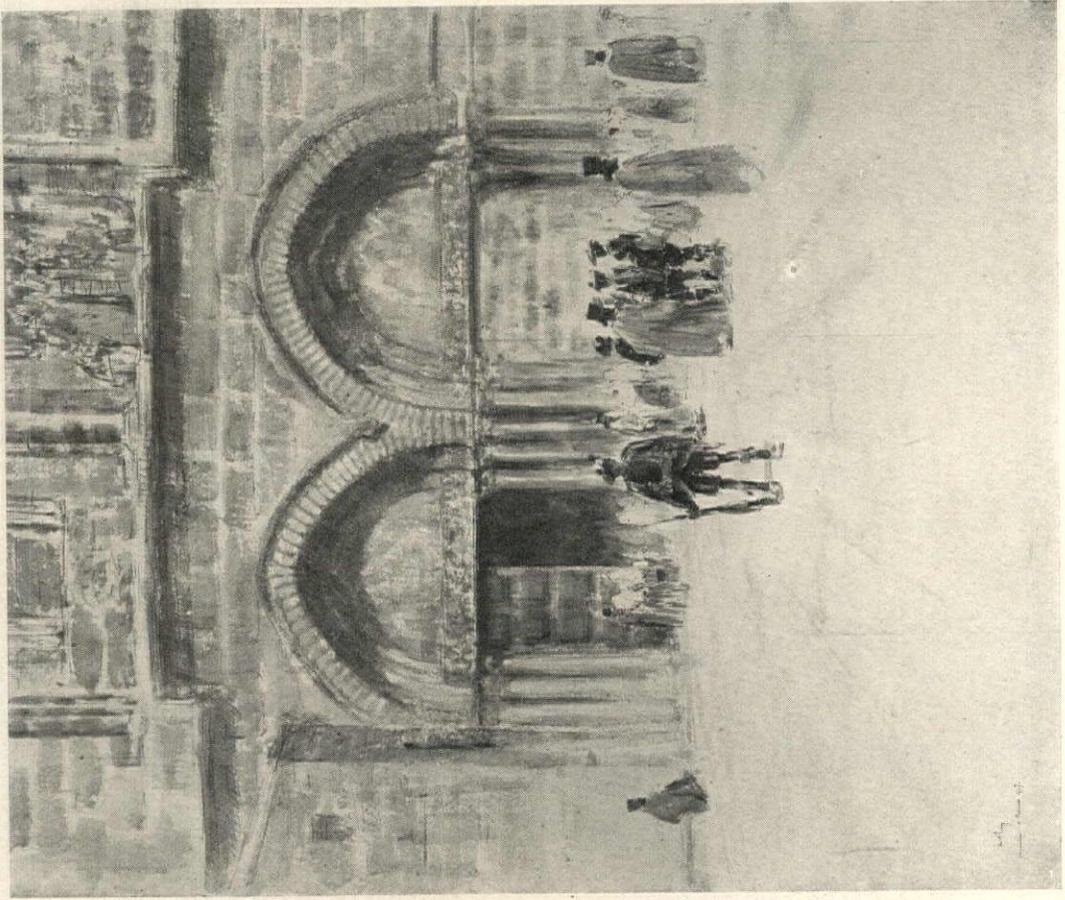
FROM THE PAINTING BY SIR WILLIAM ORPEN, A.R.A.

THE AMERICAN ARCHITECT



THE MOSQUE OF OMAR.
FROM THE PAINTING BY JAMES McBEY

WORK BY BRITISH WAR ARTISTS.



THE BLACK WATCH GUARD AT THE CHURCH OF THE HOLY
SEPULCHRE, JERUSALEM.
FROM THE PAINTING BY JAMES McBEY

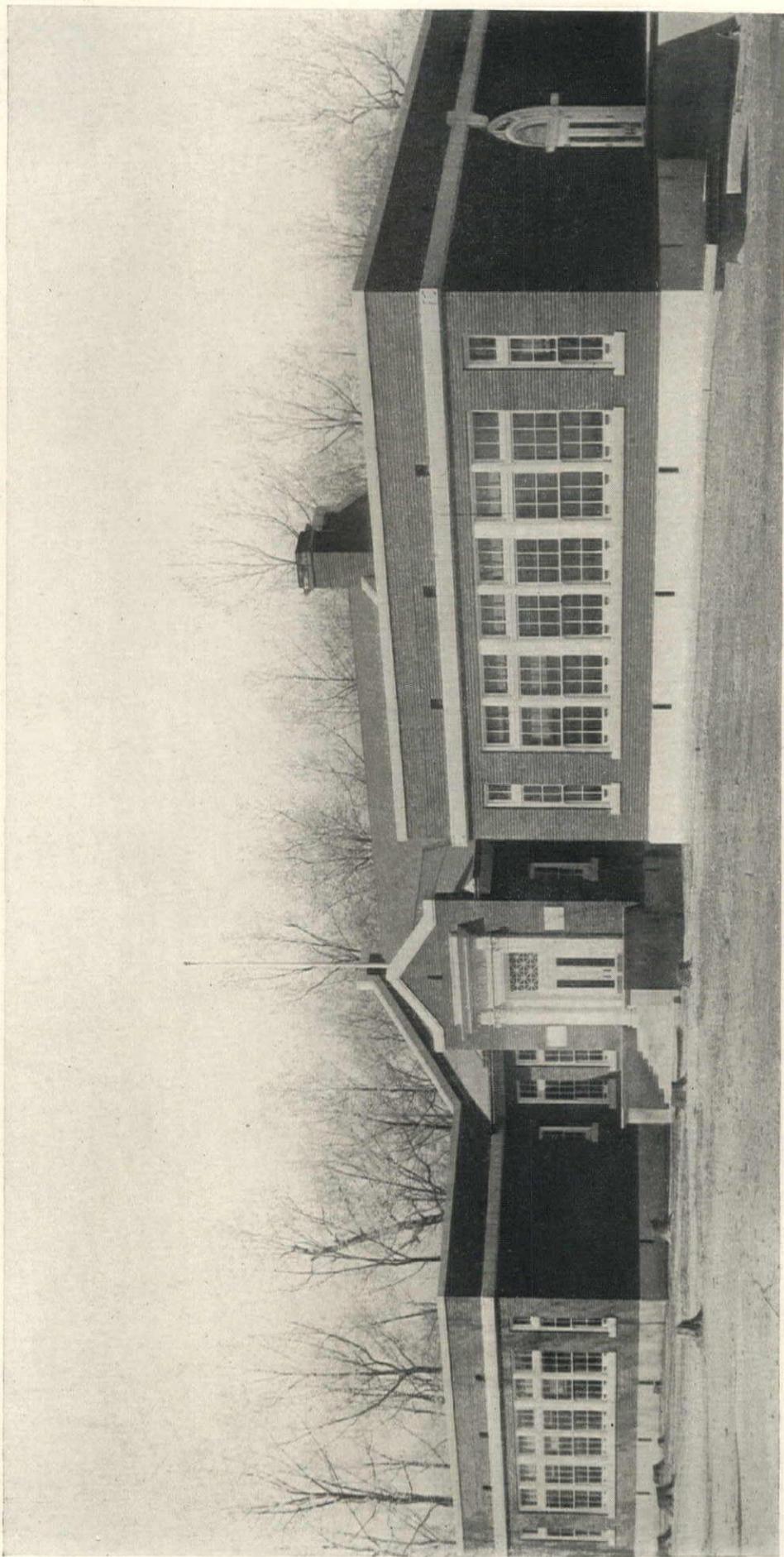
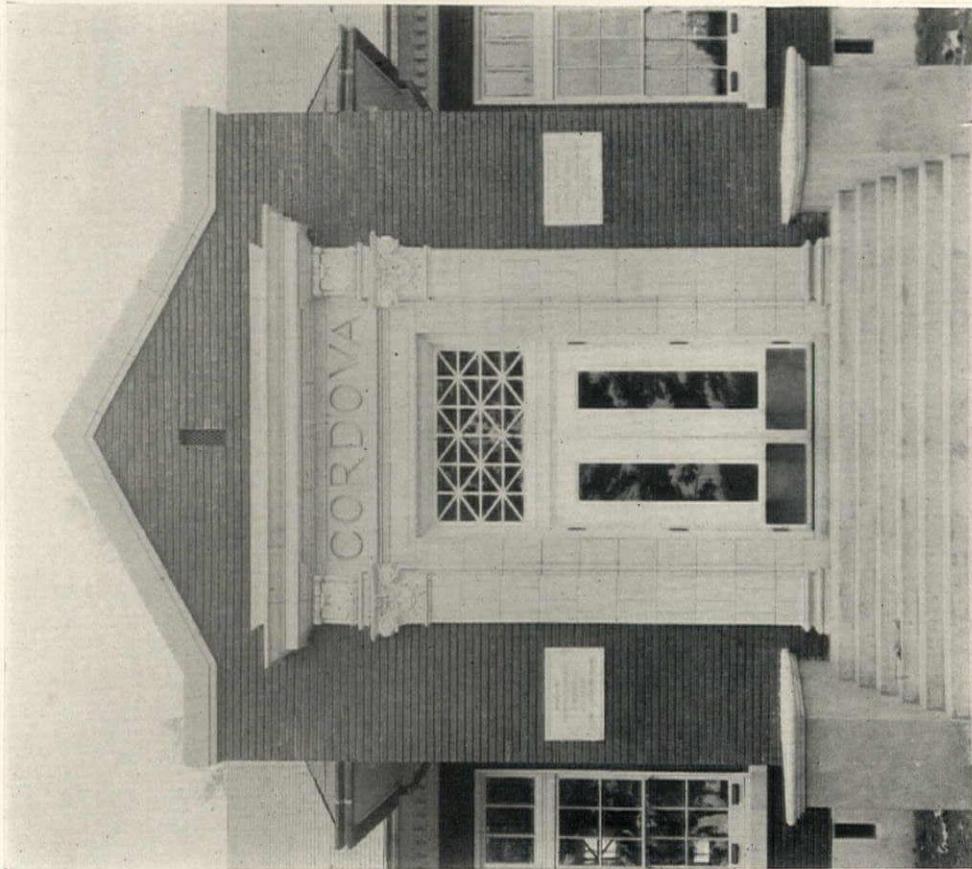


PLATE 53

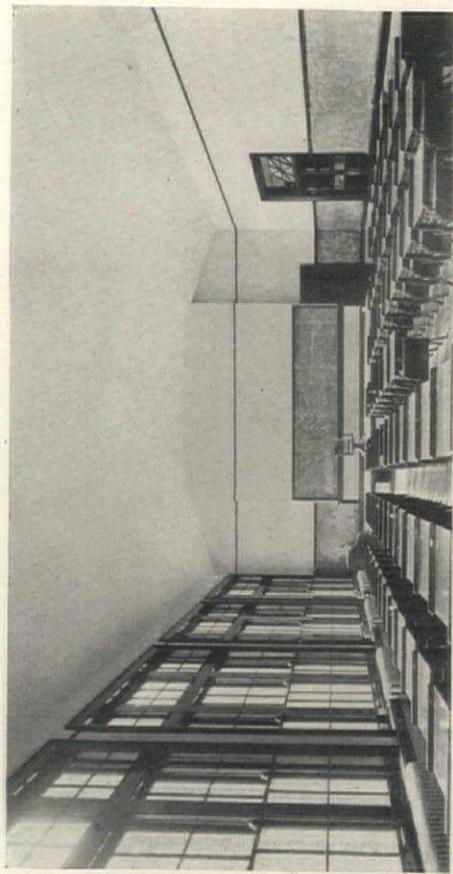
HIGH SCHOOL, CORDOVA, TENN.
JONES & FURBRINGER, ARCHITECTS

1872

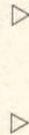


DETAIL OF ENTRANCE

PLATE 54



INTERIOR OF AUDITORIUM



HIGH SCHOOL, CORDOVA, TENN.

JONES & FURBRINGER, ARCHITECTS



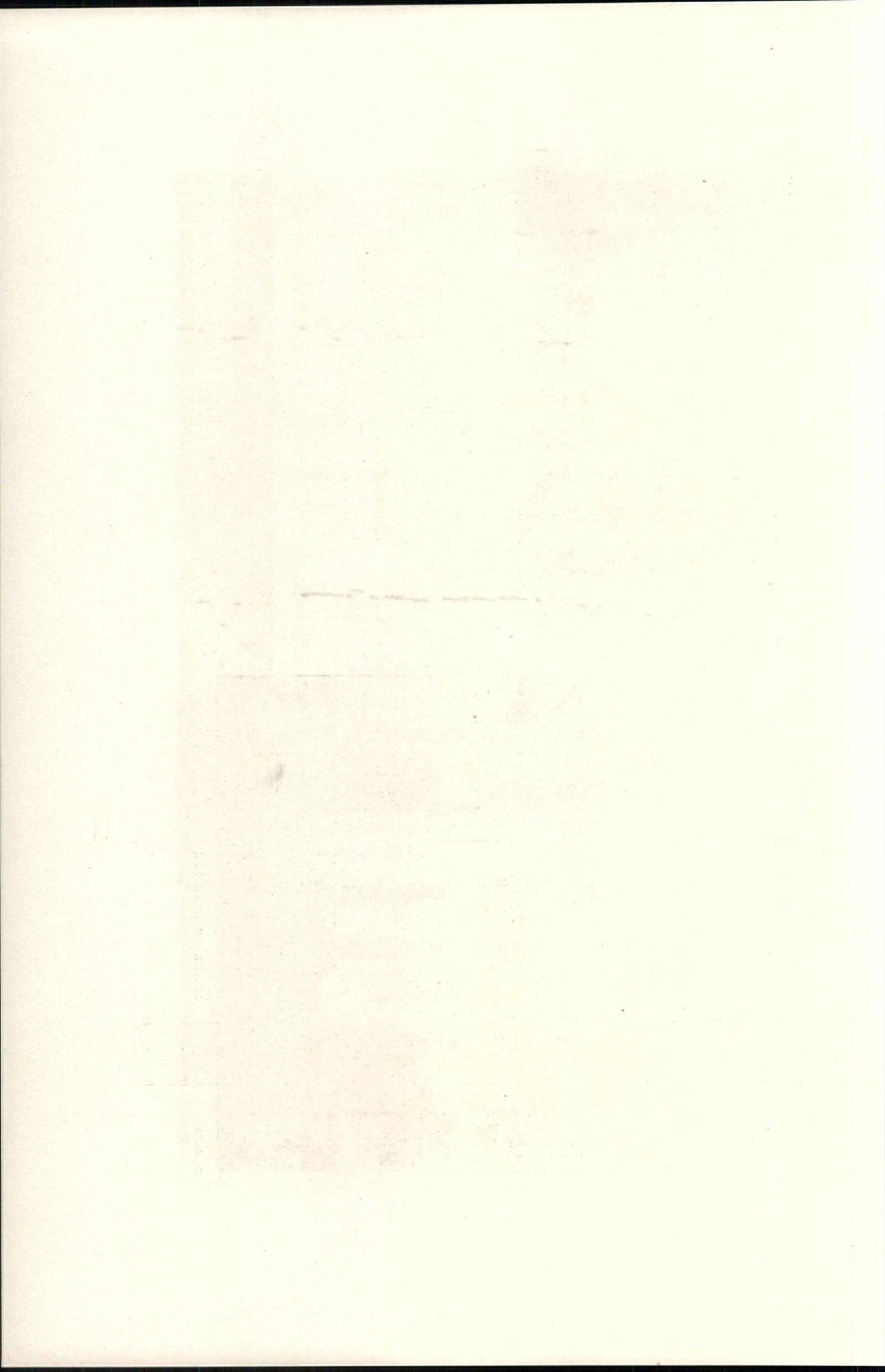
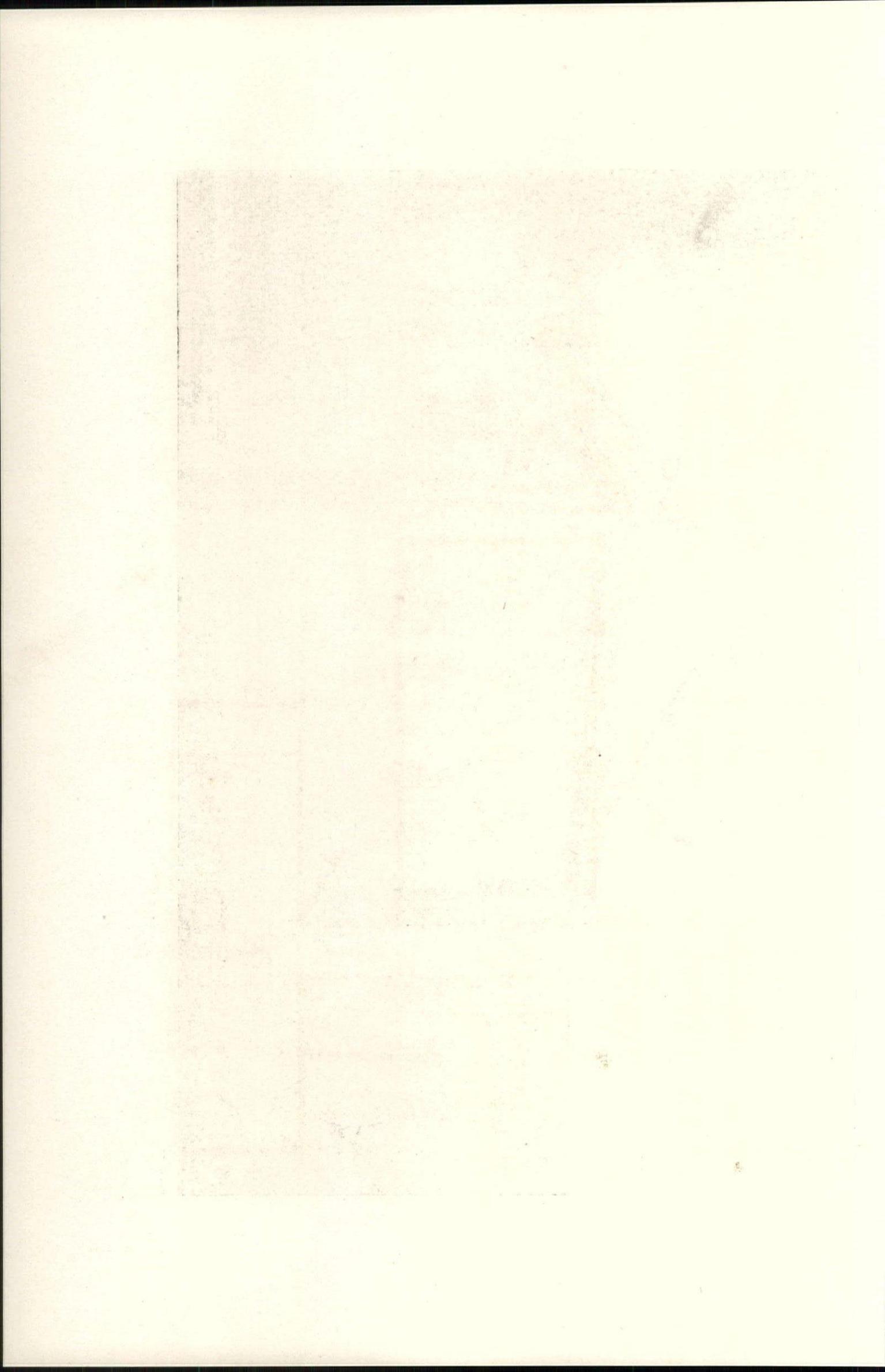




PLATE 55

GRAMMAR SCHOOL, LA CANADA DISTRICT, LOS ANGELES, CAL.
ALLISON & ALLISON, ARCHITECTS



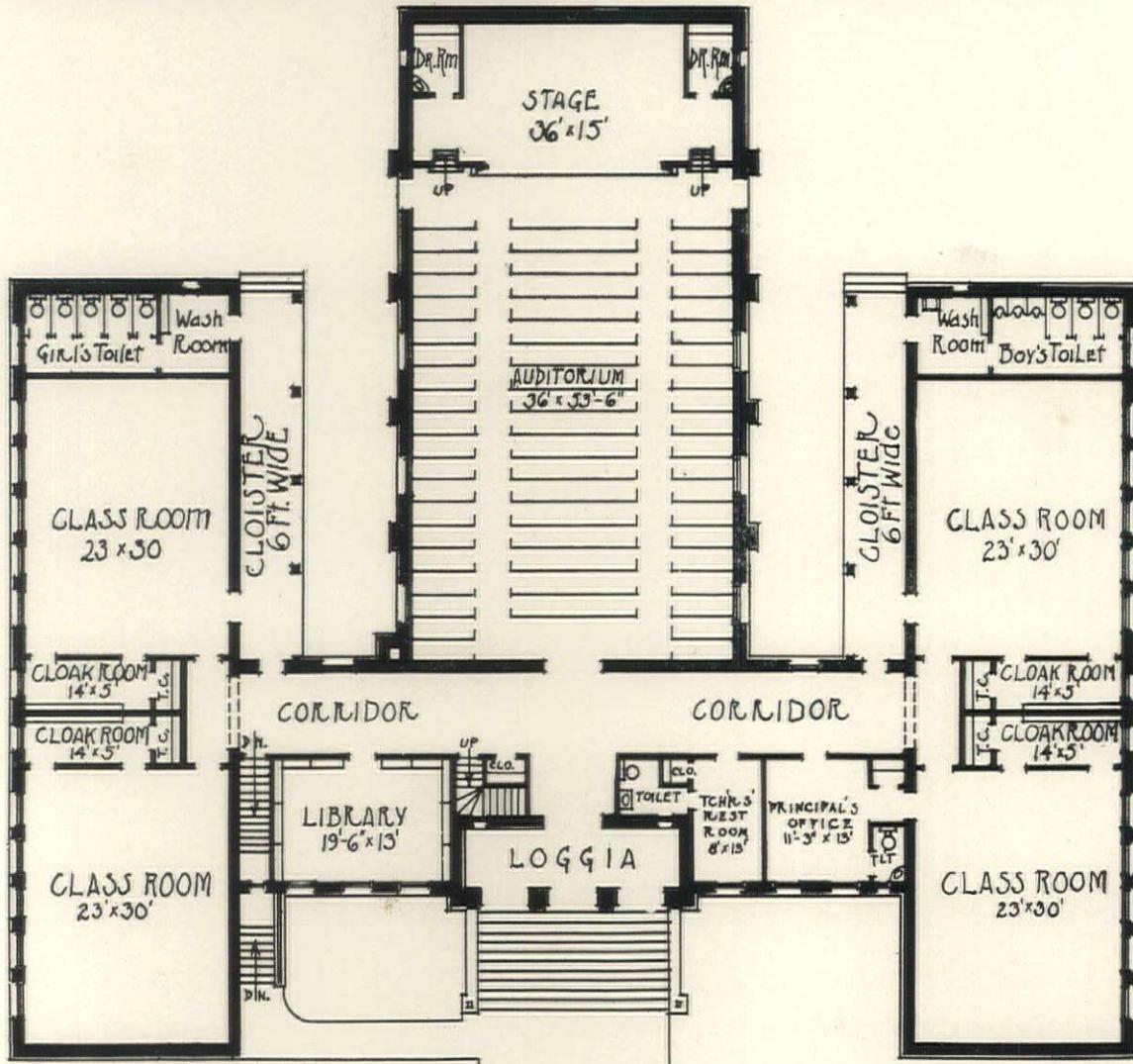
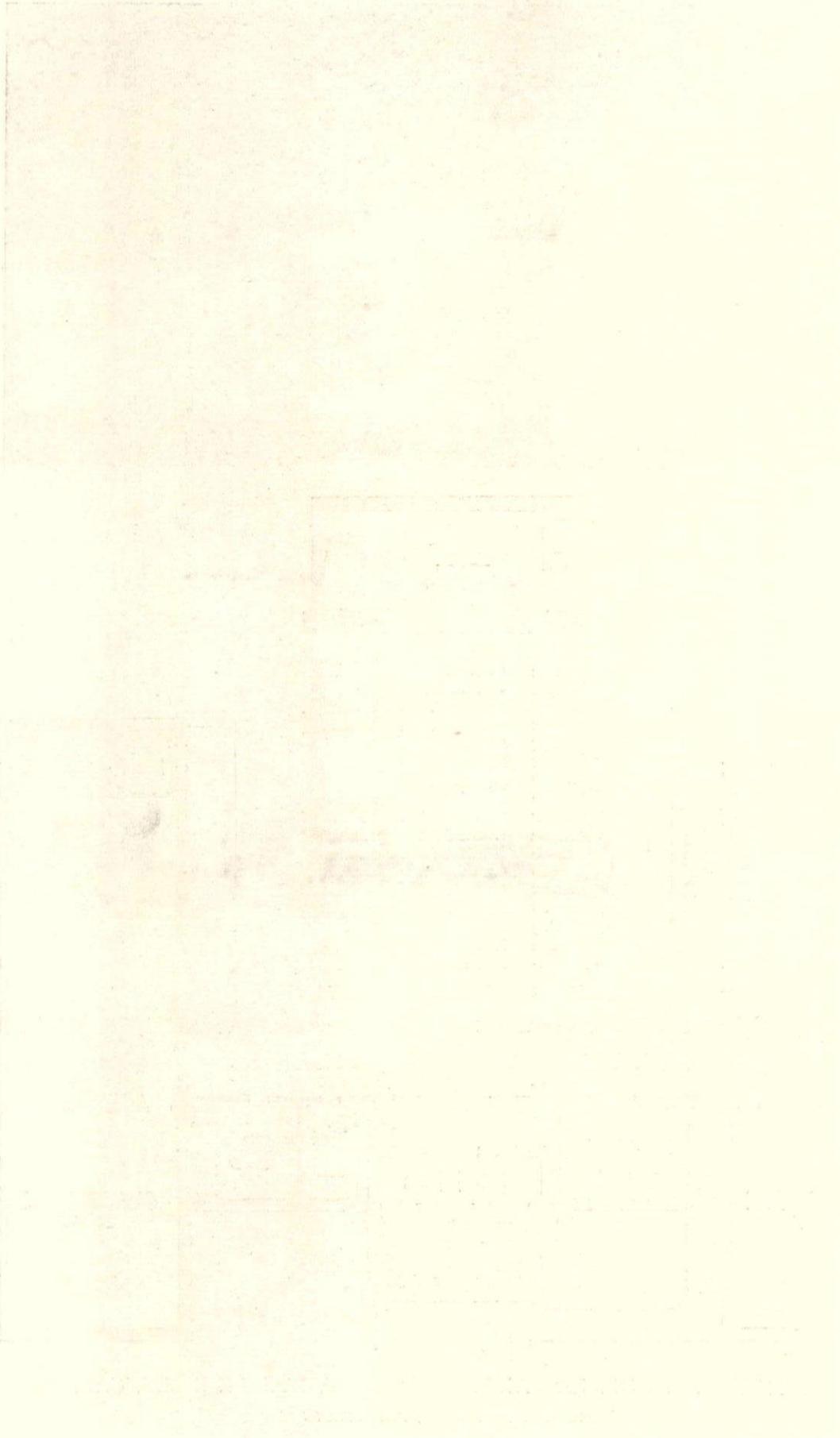


PLATE 56

GRAMMAR SCHOOL, LA CANADA DISTRICT, LOS ANGELES, CAL.

ALLISON & ALLISON, ARCHITECTS



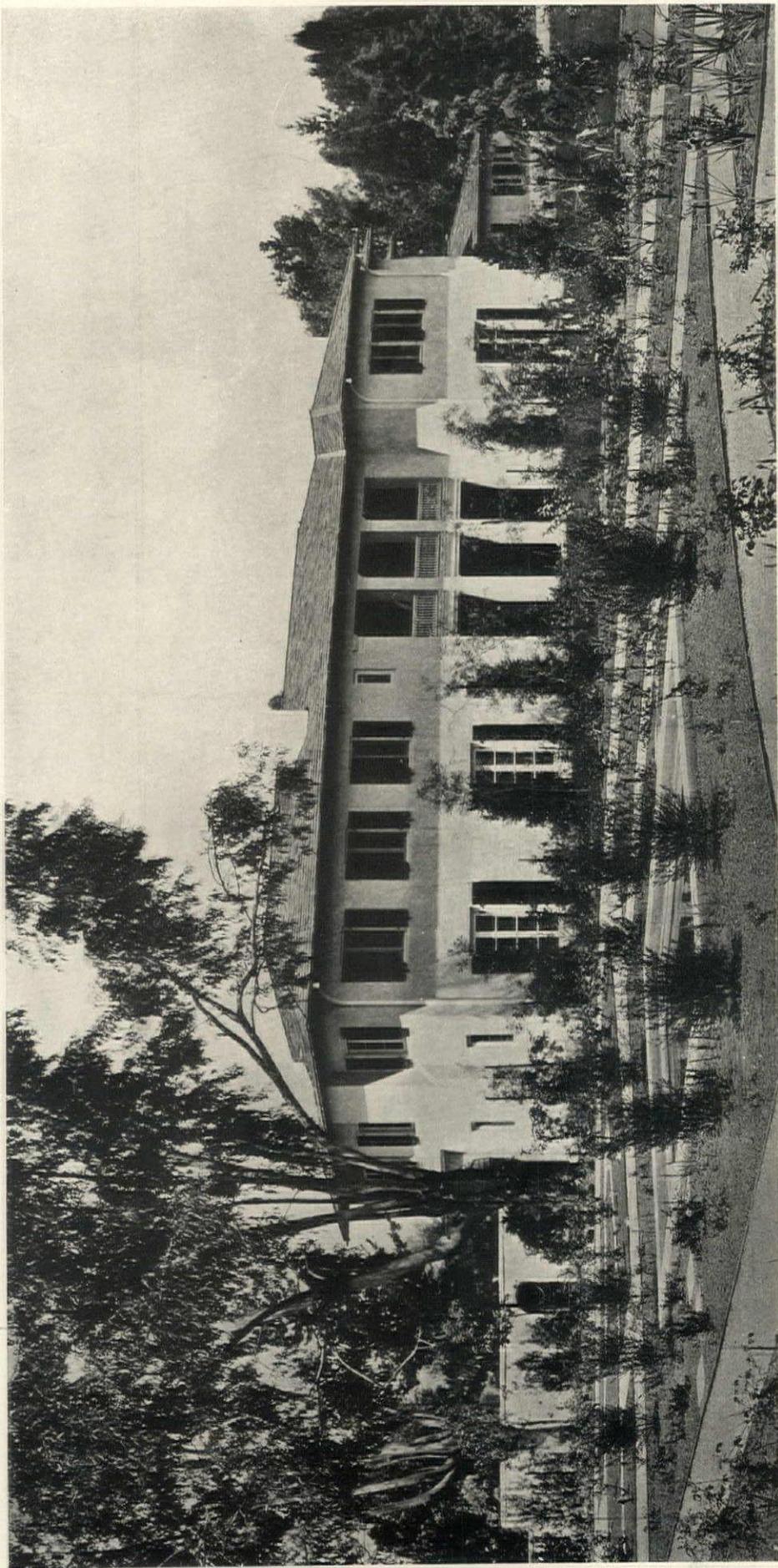
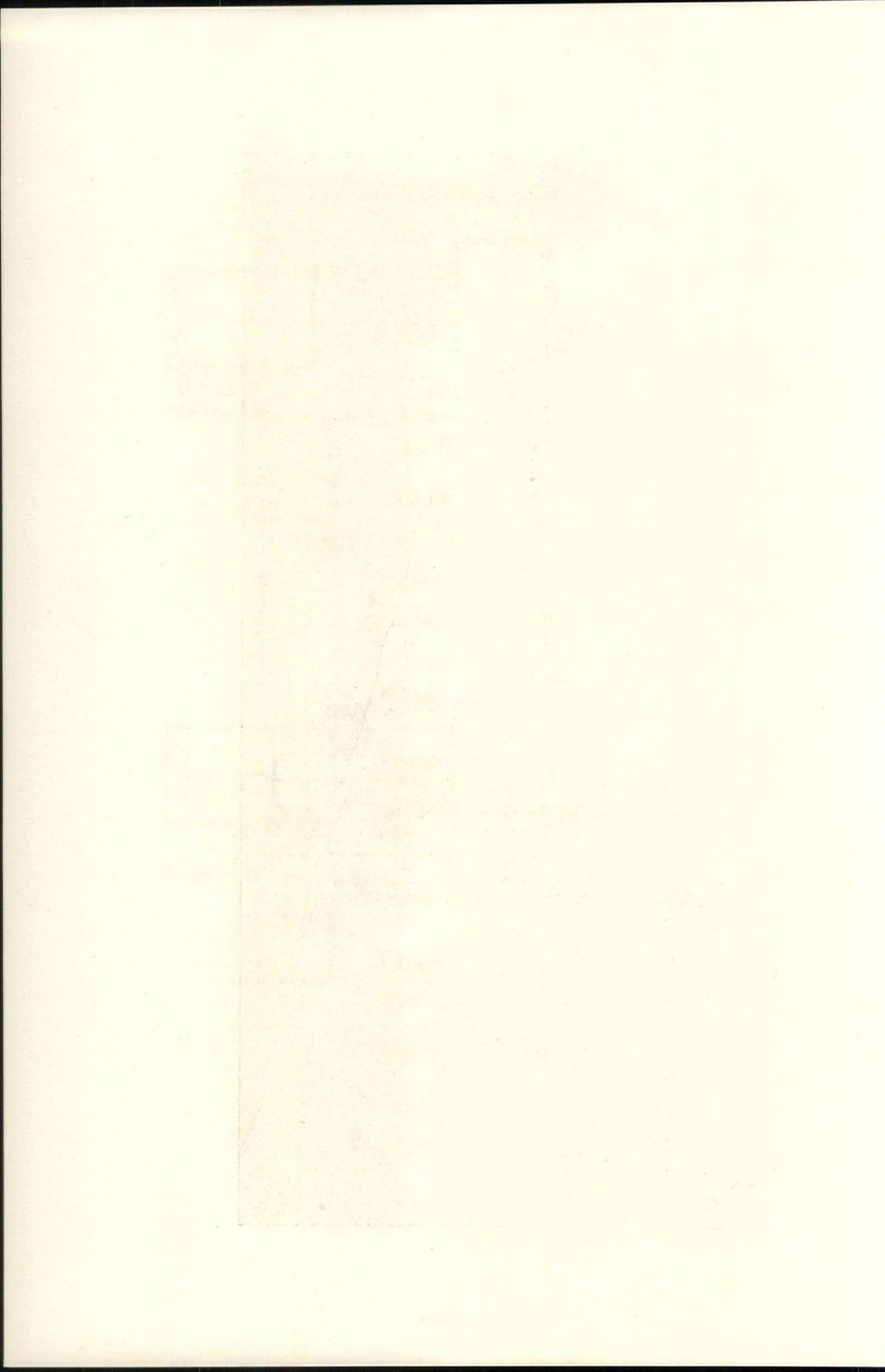
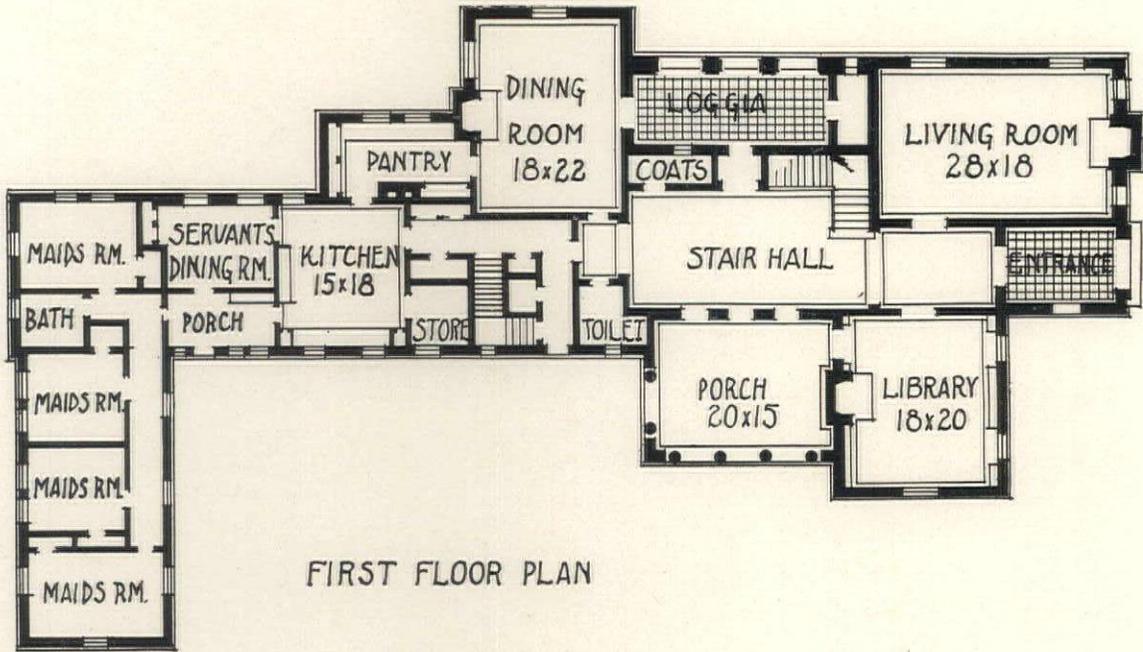


PLATE 57

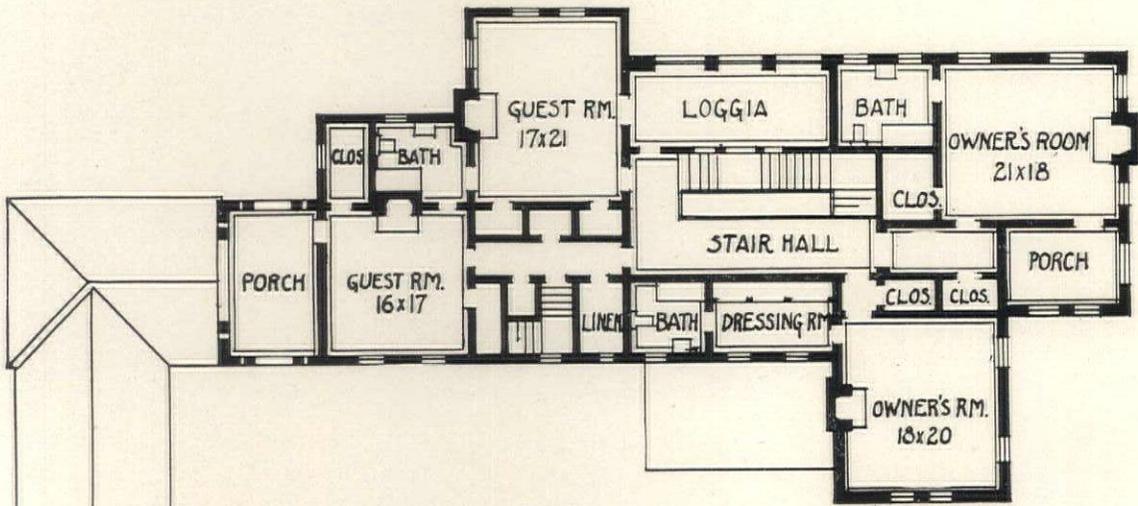
HOUSE OF H. A. FULLER, PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT





FIRST FLOOR PLAN

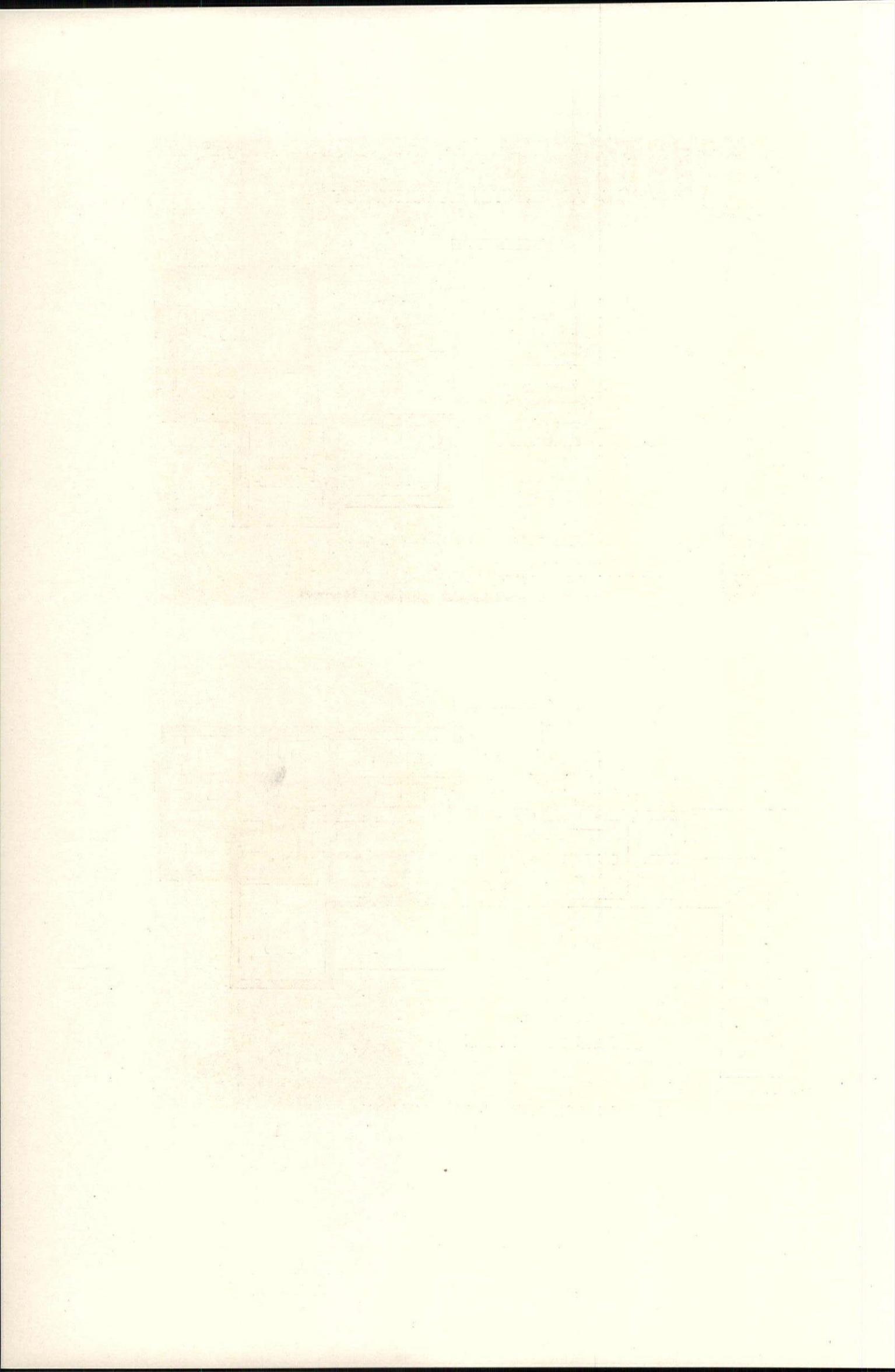


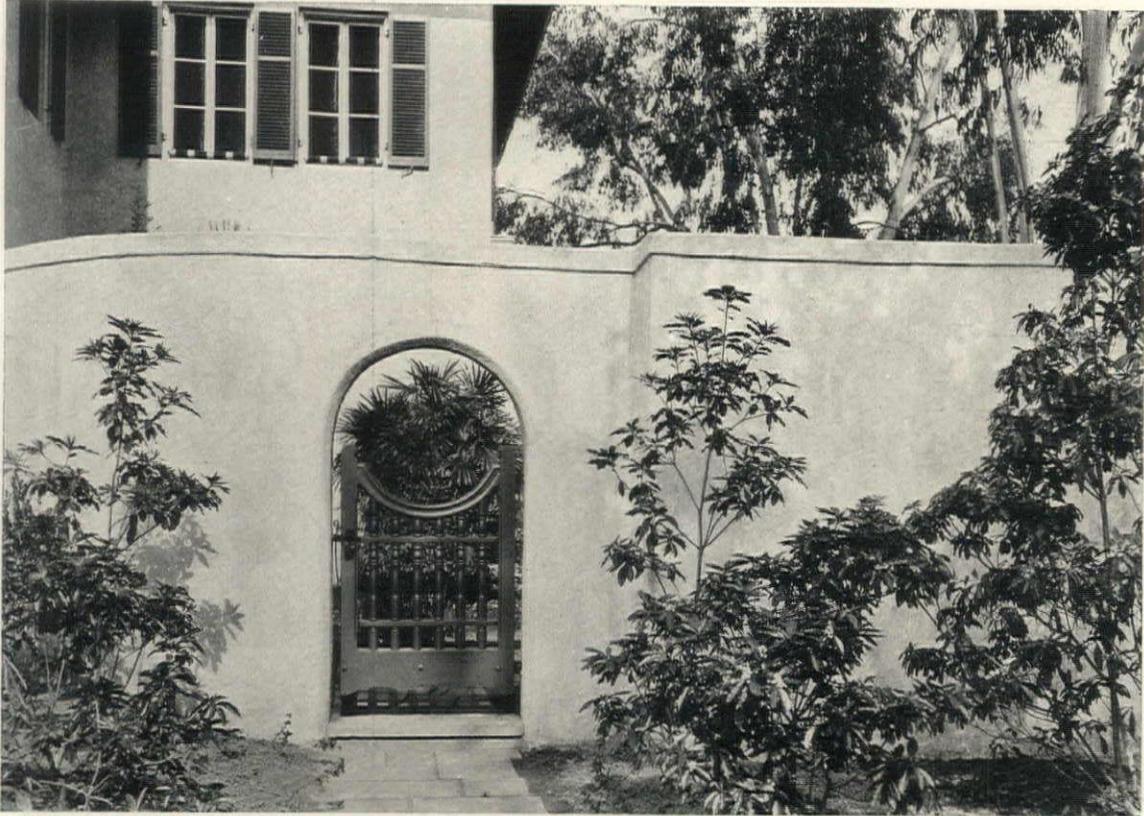
SECOND FLOOR PLAN

PLATE 58

HOUSE OF H. A. FULLER, PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT





GARDEN DETAIL

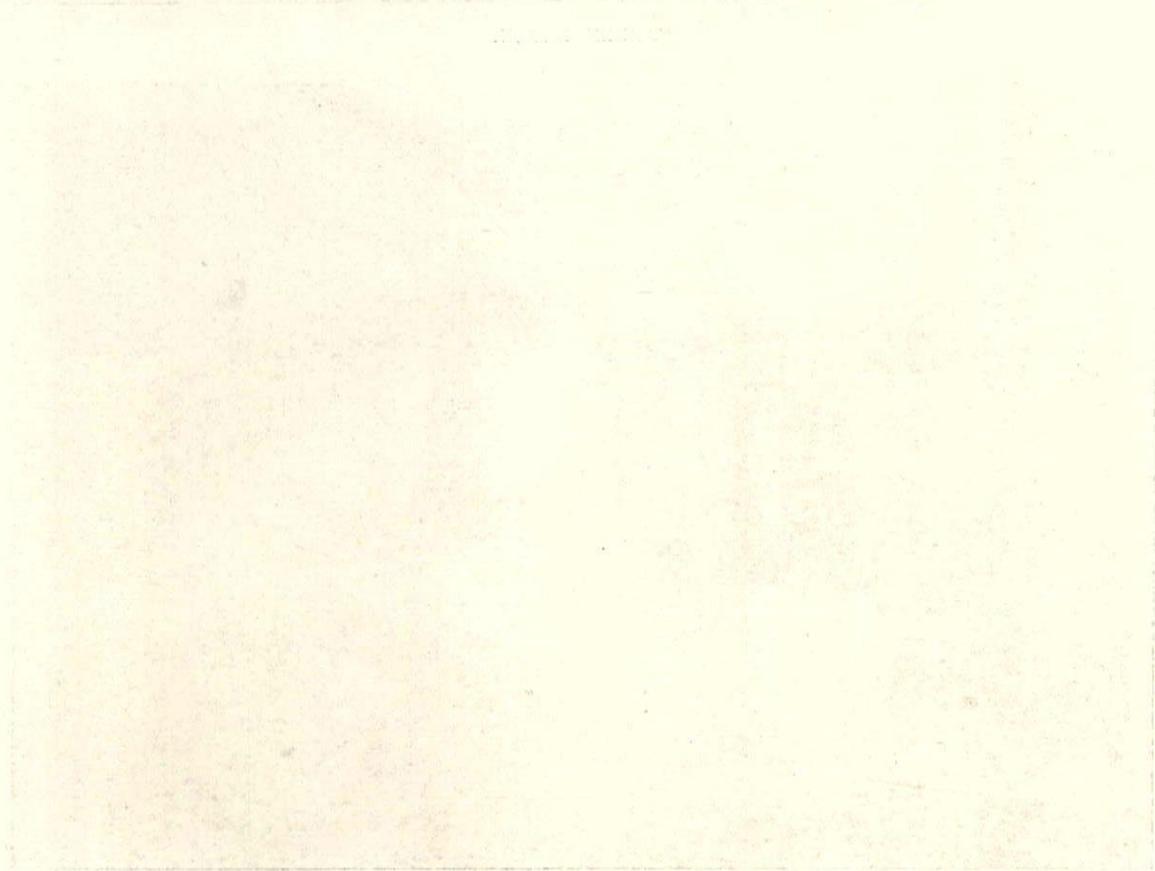
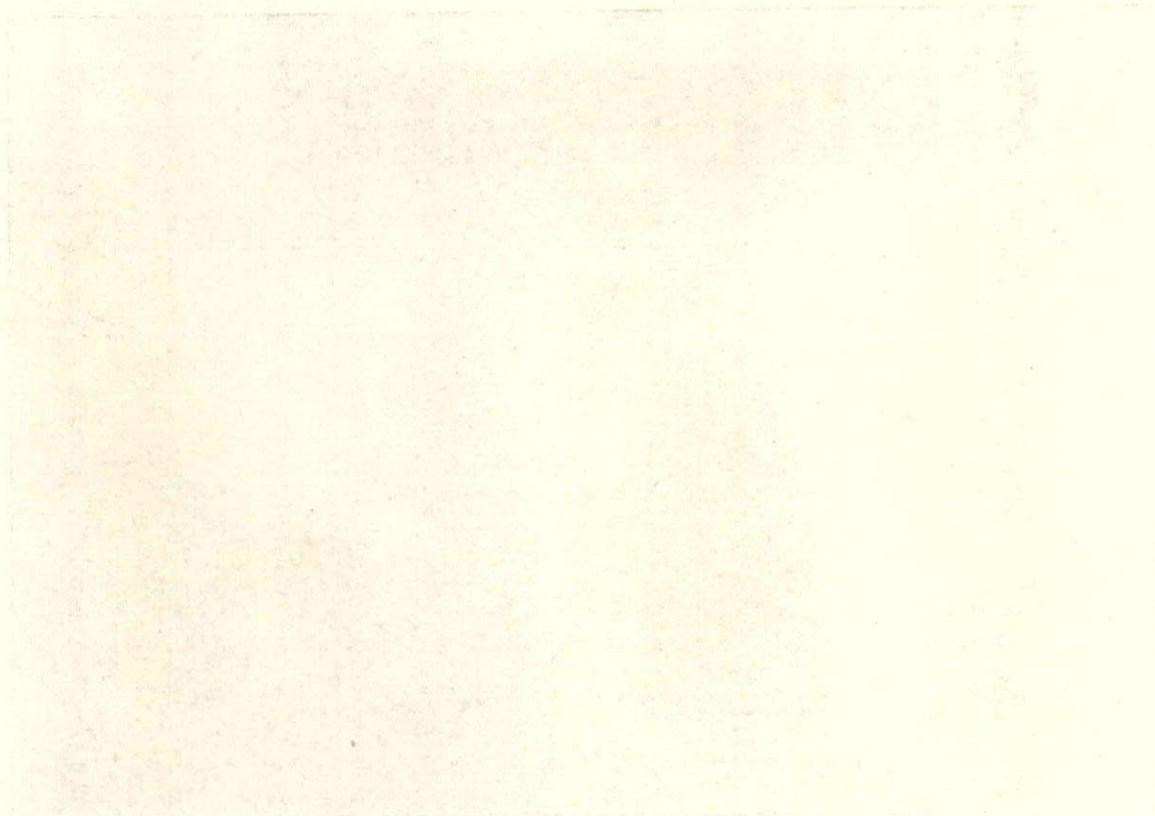


PLATE 59

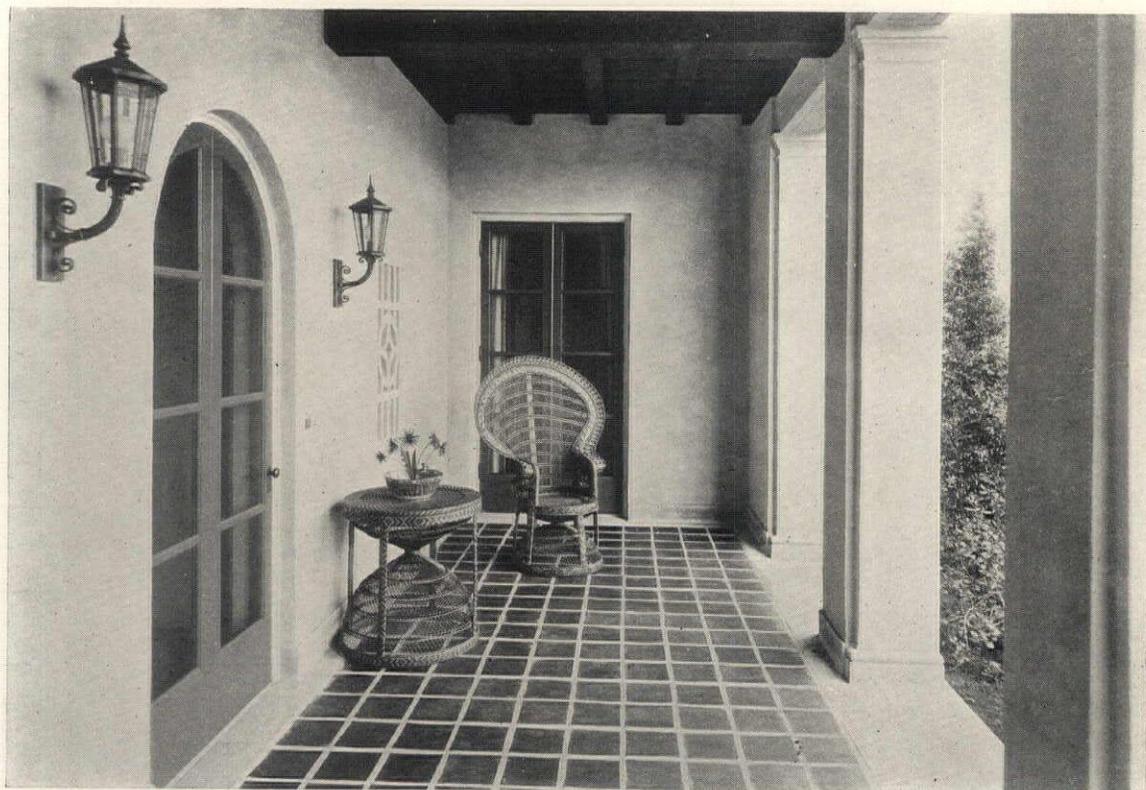
HALL

HOUSE OF H. A. FULLER, PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT



THE UNIVERSITY OF CHICAGO
LIBRARY



PORCH



DINING ROOM

PLATE 60

HOUSE OF H. A. FULLER, PASADENA, CAL.

REGINALD D. JOHNSON, ARCHITECT

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Retrogression in Building Standards

THE Board of Aldermen of Bridgeport has adopted a resolution granting the Government the privilege to build houses as it sees fit, and the Bridgeport building code will not apply to houses constructed by the Government. The Bureau of Housing, Department of Labor, informed the Board that its specifications did not conform to the Bridgeport requirements in some respects, more especially in using 8 in. brick walls for two-story buildings, whereas the Bridgeport code required 12 in. walls in buildings not over two stories high; and that some departures were made from the plumbing requirements. As the Government is going to build these houses, the Board of Aldermen had practically no option in the matter.

It will be granted that it is entirely desirable for the Government to adopt a standard of construction in its housing operations and that such a standard cannot possibly comply with the various building codes that are in force in our cities. There are several perfectly satisfactory ways of installing a system of plumbing, varying in some of the multitude of details that enter into such work, any of which would be perfectly sanitary and durable.

The walls of a house, however, almost constitute the house, and a radical change from the best canons

of construction is to be deplored. Good construction regulation by ordinance is only accomplished by persistent effort on the part of code builders, who must overcome the greed and cupidity of the speculative builder. With the latter, the chief idea of construction is to erect as attractive an *appearing* house as possible with the least expense. This phantom structure is sold to the ignorant purchaser with a profit and immediately the new owner is compelled to undertake the task of maintenance and reconstruction. The 8-in. brick wall has long been a favorite of the shoddy builder, for, in truth, it *looks* like a wall, and what more is needed? It is surprising that the Department of Labor has set a standard so far below that universally acknowledged to be proper, and to have joined the ranks of those who profiteer in the construction industry. The moral effect of Government houses with 8-in. brick walls will be bad and hard to overcome. The unsuspecting purchaser of a Government house is entitled to an adequate return for his expended funds.

Penalize the Careless

IN almost every undertaking in which men engage there is recognized their responsibility to others for the harmful results of their acts. This is extended to include responsibility for the acts of their employees and representatives. When the responsibility is fixed and measured by laws the principal is careful not to become liable for the negligence of himself or his representatives. The one great exception to this universal rule obtains in the matter of fire insurance.

As long as a man is insured with responsible underwriting organizations his losses and those of his neighbors are reimbursed in so far as fire insurance can do so. Unless he is proven to have committed arson he has no personal liability whatsoever. There is no incentive for him to prevent losses of this kind except when such losses are not profitable to himself, as there is no premium on the care he would exercise, in a greater degree than employed by any other man.

This situation cannot be changed by a campaign of education or moral suasion; more drastic methods are necessary. Penalties, either financial or personal, will make the strongest appeal. If the insured were unable to recover a loss caused by his own lack of care or the negligence of his employees and, in addition thereto, were held for such damages as innocent third parties may suffer, he would make an immediate and very apparent effort to safeguard himself. In fact the complexion of structure and their contents would change overnight. The wasteful policy of letting the entire body of the insured

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pay the individual losses would be done away with immediately.

Under existing conditions the honest property owner is unjustly compelled to pay the losses of his careless and unscrupulous neighbors. This condition offers no inducement to owners to safeguard their property, because both classes appear to be equally protected under the law. The man suffering with a contagious disease is segregated and while in that condition is rightly looked upon as a menace to his fellowmen. In exactly the same way the owner or occupant of a dangerous fire hazard should be considered.

Legislation is proposed in several States, dealing with fires due to negligence and inadequate fire prevention, construction and appliances. It is proposed to assess the cost of the fire department work against the property and also any damages accruing to adjoining property. These are measures that should receive the hearty support of architects and engineers in every community.

Patriotism as Manifested on Our Public Monuments

THE business of war is an intensely serious proceeding, inspiring, as it does, the sternest and most tragic of human emotions. It is unfortunate when its solemnity and the character of its purposes are marred by hysteria, whether it be the hysteria of grief, of fear, or of patriotism.

Attention has recently been called in the editorial pages of *THE AMERICAN ARCHITECT* (issue of July 10) to one particularly virulent and unfortunate manifestation of the last-named sort, in the way of general disfigurement of public monuments by bill-posters. This practice is to be condemned, not only because it makes a mockery and a caricature of the worthy cause it represents, but because it also assails the rights of another element in our civilization of as great magnitude, surely, as the business of war—that is to say, the arts, and in particular that Fine Art of architecture.

In the city of New York tardy recognition is at last beginning to be given to the fact that our war activities can be carried on with all energy and de-

termination without abusing and mutilating existing monuments to these arts. The terraces of the Public Library still have the untidy appearance of a disorderly small-town carnival, it is true, and defacements existing elsewhere are not being removed, but there is at least the satisfaction of knowing that legal action has been taken against one bill-poster in that city who plastered Grant's Tomb, the Washington Arch and other public structures of this sort with Y. M. C. A. recruiting bills.

Let us hope that this action heralds a period of greater discretion and discrimination in these matters, and that the fine keen edge of public patriotism may not be dulled by the continuance of this ugly mutilation of our finest monuments.

Preparing for Peace

THE extent to which the British Government is planning and preparing for its overseas business after the war is indicated by the fact that the British Ministry of Munitions recently sent circular letters to South American railway companies controlled by British capital asking them to submit detailed information as to the goods which they will require after the war. It is rumored that a similar letter has gone, or is to go, to such companies all over the globe, including India, Australia and the Crown colonies.

Such forehandedness indicates that that Government is keenly alive to the necessity of giving constant consideration to its future foreign trade.

The letter points out the desirability of having the industries which are at present almost entirely employed in governmental work prepared in such a manner that serious dislocation in the continuity of production may not occur at the conclusion of peace. Correspondents are asked, in order to assist the Government in regulating priority, to indicate clearly upon return schedules whether or not material outlined therein was "urgent," "less urgent" or "not urgent."

It is to be hoped that in some way American industry may be equally prepared to supply foreign and domestic needs when the war is over, and equally protected from disruption when the demand for Government material ceases.

The United States Employment Service

The supplying of war industries with common labor has been centralized in the United States Employment Service of the Department of Labor. All independent recruiting of common labor by manufacturers having a pay-roll of more than 100 men will be diverted to this service. This action has been found necessary in order to overcome a perilous shortage of unskilled labor in war industries, which has been aggravated by an almost universal practice of labor stealing.

While at this time these restrictions apply only to common labor, they will, as soon as possible, be extended to include also skilled labor. In the meantime recruiting of skilled labor for war purposes will be subject to federal regulations now being prepared. The Department of Labor announces that non-essential industries will be drawn upon to supply the necessary labor for war work, and it is further announced that any withdrawal will be conducted on an equitable basis in order to protect the individual employer to the fullest extent.

Under the operating methods adopted, states the bulletin of the Department of Labor, the country has been divided into thirteen federal districts, each district in charge of a superintendent of the U. S. Employment Service. The states within each district are in turn in charge of a state director, who has full control of the service within his state. In each community there is being formed a local community labor board, consisting of a representative of employers and a representative of the employed. This board will have jurisdiction over recruiting and distributing labor in its locality.

A survey of the labor requirements is being made, and in order that each community may be fully protected, rulings have been issued that no labor shall be transported out of any community by the U. S. Employment Service without the approval of the State Director; nor shall any labor be removed by the service from one state to another without the approval of the U. S. Employment Service at Washington. Every effort will be made to discourage any movements from community to community or state to state by any other service.

This labor program has the approval of all producing departments of the Government, through the War Labor Policies Board.

It must be understood that farm labor will be protected, for the industrial program distinctly includes special efforts to keep the farmer supplied with labor.

The requirement that unskilled labor must be recruited through the sole agency of the U. S. Em-

ployment service does not at present apply in the following five cases:

1. Labor which is not directly or indirectly solicited.
2. Labor for the railroads.
3. Farm labor—to be recruited in accordance with existing arrangement with Department of Agriculture.
4. Labor for non-war work.
5. Labor for establishments whose maximum force does not exceed one hundred.

When the survey of labor requirements has been made and the aggregate demand for unskilled labor in war work is found, each state will be assigned a quota, representing the common labor to be drawn from among men engaged in non-essential industries in that state.

These state quotas will in turn be distributed among localities. Within each locality, employers in non-war work, including those who are only partially in war work, will be asked to distribute the local quotas from time to time among themselves. Quotas by localities and individuals are to be accepted as readily as they are for Liberty Loan and Red Cross campaigns. This plan of labor quotas is a protection for all communities.

The object is to keep any community from being drained of labor, and to use local supply, as far as possible, for local demand. The situation, however, is such that in certain cases some men may have to be transported over long distances.

It will be noted from the above outline that this is probably the most drastic action that the Government has taken since putting the National Army draft into effect. The absolute necessity for this program can be seen when it is realized that in Pittsburgh, for instance, there are advertisements calling for men to go to Detroit; while in Detroit street cars there are posters asking men to go to Pittsburgh. This same condition is apparent all over the United States and in the consequent shifting of labor a great part of our war effort is dissipated.

Germans to Build Concrete Ships

According to Capt. L. Persius, who writes in the *Berliner Tageblatt*, the Germans have been quick to make use of the scheme of constructing ships of concrete. He states that, owing to prospective shortage of wood, steel and iron for shipbuilding after the war, leading German and Austrian dockyards are preparing to use ferro-concrete on a large scale. Yards are now being constructed to that end.

As told in the London papers, Captain Persius takes the view that all the great shipbuilding coun-

tries will be put to the same necessity as Germany to find substitutes for wood, iron and steel. Germany, he thinks, will be in better position than any of the rest for ferro-concrete construction, because:

"We possess the most important cement industry in the world. We have far outstripped France, the country where the most versatile uses were formerly made of cement, while we have given the English, the inventors of cement, the fiercest competition in the markets of the world. There seems every reason to hope that in the future the largest ships flying the German flag will be partially of ferro-concrete construction."

War Labor Housing Project at Bethlehem, Pennsylvania

The Department of Labor authorizes the following:

The Bureau of Industrial Housing and Transportation is proposing to build from 1200 to 1500 houses at Bethlehem, Pa. A tract of land about 300 acres in extent has been acquired on the outskirts of the city just across the river from the plant of the Bethlehem Steel Corporation.

Because of the large size of this development it is impossible to locate it nearer the city. It was, therefore, necessary to provide, in addition to the houses, certain community facilities, such as stores, a moving-picture theater, and a recreation building. It was also necessary to supplement the existing school facilities. This will probably be done by an arrangement with the city authorities.

The contract was awarded a short time ago for the construction of sewers, water supply, electric light, sidewalks, streets, etc. The contractor now has a large force at work.

The houses are generally grouped in rows of from four to six. The lots on which they are to be built average about 40 by 100 ft. The construction will be of brick because that is the most available building material in the region. The United States Housing Corporation has been advised by the War Industries Board on this account to use brick, which can be brought on trucks to the building site, thereby avoiding any further burden on railroad facilities.

The houses will contain five and six rooms and in some cases will have large attics in which one or two other rooms might be added. Enough variation in type to avoid monotony has been planned.

In addition to these houses the corporation proposes to build a men's club in South Bethlehem immediately adjacent to the Bethlehem Steel Corporation plant. This club will be provided with billiard rooms, bowling alleys, assembly hall and other rec-

reational facilities. The need for this arises from the fact that that section of the city is entirely without recreational opportunities other than those furnished by the corner saloon. The Government Club is designed to compete with these and was especially asked for by Army representatives.

The Ordnance Department is building a temporary dormitory to house 1000 men in another section of Bethlehem.

The need of the Government houses in Bethlehem is very acute. There are in storage now 70 sets of household furniture. This furniture is not being used because no houses are available. In many cases the men and their families have left the city because they found no place in which to live.

Washington to Banish Those Not Needed

Washington no longer will be the winter rendezvous of the rich when cold weather comes. The Federal authorities, in order to relieve the population congestion and to make room for the thousands of new Government workmen who will be needed as the activities of the War and Navy Departments increase, will banish all persons from the city who are not in the Federal service or not engaged in some essential occupation.

At the present time it is declared that it is impossible to find an apartment for rent in Washington. There are a few houses for rent, but the prices are much higher than those asked during the pre-war period. The Government's plans to spend \$10,000,000 in apartment houses and houses for the Government workers are proceeding slowly, and probably will be six months before any of the buildings will be ready for occupancy.

Families of many of the army and navy officers are living in Washington while the latter are absent. It is declared that these families could live in some less-congested city and make available a large number of houses and apartments for essential workers. There are also a large number of people who come to Washington to spend the winters only. They are not engaged in Government work, and the plan talked about will bar them from the city.

Our Food Economies and What They Mean

Sir William Goode of the British Food Ministry says that from July, 1917, to April, 1918, the United States exported to the allies 80,000,000 bushels of wheat products. Of this it is asserted that 50,

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100,000 bushels represented voluntary sacrifices by the American people in their consumption of wheat.

There is a triple economy, a triple aspect to this saving of wheat. It saved wheat for our army and the armies of our allies; it saved money to the American people, and for the most part this money went for the purchase of Government war securities.

There is another saving still; this sort of sacrifice and economy is helping win the war—shorten the war—with the resultant saving of soldiers' lives.

A Comparison of American and German Finances

The total resources of the United States are estimated at about \$250,000,000,000; our annual earnings are estimated at about \$50,000,000,000. Our national debt, including the third liberty loan, may be put around \$12,000,000,000.

Before the war our Government was spending about \$1,000,000,000 a year. When the war is ended, interest charges, less the interest collected from our loans to our allies, Government insurance expenses, and other necessary expenditures growing out of the war may conservatively be estimated at something like \$1,000,000,000. We are confronted, therefore, when peace comes, with raising only a couple of billions a year revenue, a slight task for a nation of such tremendous wealth, capacity and resources.

The resources of Germany before the war were estimated to be \$80,000,000,000. The annual expenditures then of the Imperial Government were about \$800,000,000. Her debt now is \$30,000,000,000 and her resources and man power have been severely impaired. After the war she is confronted with additional expenditures growing out of the war totaling some \$4,000,000,000.

The interest of her war debt, even if the debt grows no larger, will be about \$1,500,000,000. Although she is niggardly in her pensions to private soldiers and their families, \$1,000,000,000 a year would hardly suffice to pay even small pensions to her injured and the families of her soldiers who have been killed. Her war debt must be paid some time and a sinking fund of 5 per cent would add \$1,500,000,000 to her annual taxation. Here is a total increase of \$4,000,000,000 all due to the war.

Of course both the United States and Germany may greatly increase their debts, but the increases will not change the relative situations.

The German Government has drained the German people of their gold, even their jewels and heirlooms, and yet the Imperial Bank of Germany now has but little over \$500,000,000 of gold in its vaults.

The United States has made no special effort to obtain gold, has made no call upon the people for the precious metal, and yet to-day has in its Treasury vaults practically \$2,500,000,000 of gold coin and bullion.

Good Roads Saved France in Its Hour of Need

Good roads have twice saved France in the present war, says a contemporary. Had it not been for the radiating road system maintained by the French Government, the Germans would have won the battle of the Marne and reached Paris. The Germans had calculated on only three divisions being sent out from Paris to stop the invasion. Instead, the excellent system of highways made it possible for five divisions to be sent to this front.

Again, shortly after the battle of Verdun started, the French railroad which was to furnish many of the supplies to the troops was destroyed. The French Government, however, had a macadam road thirty-two feet wide on which four lines of traffic, two in either direction, were maintained. Day and night, 14,000 motor trucks carried men and equipment. The traffic never stopped. When a hole was made in the road, a man with a shovelful of rock slipped in between the lines of trucks and threw the rock into the hole, then jumped aside to let the trucks roll the rock down.

Honor 18th Century Architect

The memory of Peter Harrison, the architect of King's chapel, Boston, Mass., has recently been commemorated by a dedicatory tablet, the gift of architects of the city. Harrison was an Englishman from Yorkshire, and was the first trained architect and builder of monumental edifices whom the eastern section of the new world developed. He settled in Rhode Island in 1740 and at once entered into architectural work, study of which he had completed in England.

New Site Inspected for Francis Scott Key Memorial in Baltimore

A committee from the National Fine Arts Commission has visited Baltimore to inspect the proposed City Hall Park as a site for the memorial to Francis Scott Key, which was to have been erected just inside the entrance of Fort McHenry.

The committee acted at the suggestion of Secretary of War Baker, who was asked by the Mayor and the Sons of the American Revolution to place

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the memorial in the park, which will be at the head of the civic center. It is thought that the recommendation of the Fine Arts Commission will determine the site for the statue, which is of bronze, and which, including the base, cost \$75,000.

A home for nurses has been built on the site at the fort, and the memorial cannot be placed there until after the war. The statue is ready for shipment to Baltimore, and the stone for the base has been there for some time.

Entente and Teutonic Resources

The Entente Allies—excluding Russia and including only those British dominions which are self-governing and only the United States proper—have 11,000,000 square miles of territory, 303,000,000 people and \$495,000,000,000 of national wealth.

The Central Powers have 1,250,000 square miles of territory, 147,000,000 people and \$134,000,000,000 of national wealth.

The Entente owe an aggregate debt of \$69,000,000,000, which is about 14 per cent of their total assets. The Central Powers owe \$37,000,000,000, or 28 per cent of their national wealth.

Architectural League Competition

Two competitions are to be held under the auspices of the Architectural League of New York. One is the Henry O. Avery Prize, for sculpture, a prize of \$50 presented by the late Mrs. Samuel P. Avery in memory of the late Henry O. Avery; and the other is a special prize of \$300, for the best design submitted by an architect, sculptor and mural painter in collaboration.

The subject: Two spaces have been assigned in the coming exhibition of the Architectural League on either side of the steps approaching the Vanderbilt Gallery for the installation of two jardinières in arched recesses. The design of one of these is the subject of this competition.

From the designs submitted the jury will select the two which in their judgment are the best and the authors of each of these two designs shall receive the sum of one hundred dollars to cover the cost of producing their design at full size and installing same in the exhibition. The production of these designs at full size does not necessarily imply the execution in the actual materials, but merely a sufficiently complete indication of form, color and texture to enable the jury to judge of the finished effect.

The judgment for the special, "Collaborative" prize and for the Avery prize for sculpture will be

confined to these two designs. In order to be eligible for the prizes and for the appropriation of one hundred dollars these designs must be ready for installation in the exhibition not later than January 15, 1919.

For further information address the Committee on Competitions and Awards, the Architectural League, 215 West 57th Street, New York City.

Staten Island Shipbuilders to Be Housed

GOVERNMENT TO BUILD HOUSES ON LAND GIVEN BY COMPANY

Houses capable of accommodating 30,000 persons including the families of workmen, will be built on Staten Island to accommodate the shipbuilders at work there. The construction will be started at once, and many of the buildings will be ready for occupancy by fall.

The Staten Island Shipbuilding Co., which operates three of the largest yards, has donated the land for the project, which the Federal Government is financing in all other ways. It is said that at least \$5,000,000 will be expended on the project.

The site offered to the Government is at Mariners Harbor, and is bounded by Richmond Terrace, Holland and Western Avenues, and the tracks of the Staten Island Rapid Transit Railway. New York architects have been retained for the work but it is not as yet known just what character the buildings will take. The Staten Island Civic League has urged the erection of small houses of a permanent character.

Illinois State Capital Erects Statue of Lincoln

Andrew O'Connor's statue of Abraham Lincoln has been erected in the capitol grounds at Springfield, Ill., and accepted by the Illinois centennial commission and the state board of art advisers. It will be dedicated at the October exercises.

The bronze figure, facing east and established on a massive base of granite, portrays Lincoln in his last years.

Personal

Owing to the absence of Major M. B. Payne, with the American Expeditionary Forces in France, and the ill health of B. B. Adams, the architectural firm of Payne & Adams, Barrows Building, New London, Conn., will be discontinued after Sept. 1.

Department of Architectural Engineering

Prevention of Corrosion in Hot Water Service Lines

EVERY metal, when placed in water, is subjected to a certain fixed tendency to go into solution. This effect is wholly a matter of electrochemical activity and varies to a definite extent with each metal. That all ferrous materials are subject to corrosion, when in contact with water, is a fact so well established that the prevention of corrosion is engaging the constant attention of investigators.

The service to which ferrous materials are put governs the manner of protection. Structural parts, machinery and enclosing materials are treated with protective coatings of paints made for a particular service. Coatings of lead, copper, nickel and other very slow corroding metals are applied to iron and steel articles to protect them from corrosion and also to add to their appearance. Galvanizing is a very effective and comparatively inexpensive means of preservation, to which paint is usually applied for further protection and appearance.

For various reasons, iron and steel pipes, used to conduct water, are not treated on their inner surfaces, unless they are galvanized. This latter method adds materially to the cost and is not always an entirely satisfactory means of preventing corrosion. To be effective, all scale must be removed from the surface which is galvanized. To accomplish this, it is generally customary to pickle both wrought iron and steel pipe in order to remove the scale. This process is difficult to carry out with thoroughness, and as a consequence, galvanized pipes in general do not show the increase in durability in hot water line service, which would be expected of them.

The greatest trouble caused by corrosion of pipes occurs in hot water service lines, and to overcome this difficulty brass and lead lined pipe has been used to some extent. This practice is limited, owing to the high initial cost of such installations. A practical and economical method of prevention is of interest to the architect and well worthy of his

attention, and such a method will be described.

In order to prevent an effect the cause must first be ascertained, and the cause of corrosion has received a great deal of attention from scientific investigators. Without water contact there is no corrosion, and for that reason waters can be comparatively classified as *active* and *inactive* with reference to corrosive action. The acid, alkaline or neutral condition of a water is not the primary quality of active water, but it is certain dissolved substances which exert a modifying influence upon the universal tendency of even the purest water to initiate the corrosive process. When dissolved gases exist in pure water, its inherent tendency to attack metal may be greatly strengthened and the term active describes its corrosive qualities. An inactive water is one that is not able to promote in any marked degree the corrosion of iron.

The initial reaction in the process of corrosion of iron by water is exactly analogous to its solution in acid. The breaking up or dissociation of the water's molecules, with attendant electrochemical action, is very clearly described in a recent publication*, and in a discussion of the mechanism of corrosion the following main conclusions were made:

- (a) That corrosion is purely an electrochemical phenomenon, due to the fundamental nature of water itself, but aided by even a very minute acidity;
- (b) That corrosion is promoted and made progressive and continuous by the action of dissolved oxygen in water; the gas acting as a depolarizer and thereby carrying on the activity of the corrosion process;

*The Preservation of Hot Water Supply Pipe. By F. N. Speller, Metallurgical Engineer, and K. G. Knowland, Department of Applied Chemistry, Massachusetts Institute of Technology. Journal of the American Society of Heating and Ventilating Engineers, January, 1918.

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(c) In domestic water, dissolved oxygen is the only depolarizer or activator present, hence the term *Deactivator* may be applied to describe the apparatus used to remove dissolved oxygen from water.

With the cause of corrosion in hot water service lines known, F. N. Speller has devised a means of prevention which has been tested under the direction of the Department of Applied Chemistry, Massachusetts Institute of Technology and the Pittsburgh Testing Laboratory. These tests naturally lead to changes being made in the apparatus after succeeding tests, and the latest device used for this purpose is here described. This apparatus, known as a *Deactivator*, was installed in the apartments at Hemenway Terrace in Boston, operated and results recorded under the direction of the Department of Applied Chemistry, Massachusetts Institute of Technology.

The hot water service in this building had been in operation for several years, and serious trouble had developed as a result of corrosion. Here was an excellent opportunity to test the device, not only to show its ability to remove the active destructive elements of the hot water, but also to demonstrate its ability to conserve for satisfactory use an installation already depreciated.

The hot water supply at Hemenway Terrace is furnished by two heating and circulating systems, each complete in itself and separate from the other. The amount of water heated is about the same for each system and reaches a week-day maximum of about 650 gallons per hour. The *Deactivator*, which went into operation on March 15, 1917, was placed on one of the supply systems, thus leaving the other free for purposes of comparison.

The success of the apparatus in removing the dissolved oxygen from the heated water is shown in Table I. In Table II is shown the amount of the dissolved oxygen in the system not equipped with the *Deactivating* process. The comparison shows in a most striking manner the efficacy of this method of treatment. This is further illustrated graphically by Fig. 1.

That this removal of oxygen is accompanied by highly beneficial results will be understood from a comparison of present and past conditions at the apartments. When the *Deactivator* was placed in operation, each hot water system had been in service for about eleven years. The one which is being particularly considered had been the source of great trouble and complaint, and pipes were giving away frequently. It had also been necessary to place three plugs in the supply tank when corrosion had caused the formation of large pits, which broke through the metal. Everything in fact

pointed toward the rapid destruction of the system. When the *Deactivator* was installed, these source of annoyance immediately ceased; and since that date no replacements have been necessary. On the other hand, the system which was not equipped with a *Deactivator* went to pieces in a few weeks time. Fifteen holes in the tank were plugged and

TABLE 1—RESULTS IN REMOVAL OF DISSOLVED OXYGEN

Month	Temp. in Deg. Fahr. (Average)	Oxygen in CC/Liter	
		Cold	Hot
March	163	8.29	0.11
April	174	8.12	0.05
May	175	6.97	0.07
June	176	5.66	0.00
July	185	4.56	0.00
August	163	3.91	0.00
September	148	4.33	0.00
October	182	4.87	0.45*
November	155	6.16	0.26*

*This value is not an average for the month, but was taken at a time of severest demand when the requirements probably amounted to 1,200 gal. per hour. The system was designed for a maximum of 650 gal. per hour.

In summer, there is less dissolved oxygen in water than in winter; the phenomenon being due to the lower solubility of gases in water at the higher temperatures.

TABLE 2—AMOUNTS OF DISSOLVED OXYGEN DETECTED IN SYSTEM NOT EQUIPPED WITH DEACTIVATING TANK

Month	Temp. in Deg. Fahr. (Average)	Oxygen in CC/Liter	
		Cold	Hot
March	176	8.29	2.26
April	158	8.12	1.58
May	141	6.97	1.69
June	144	5.66	2.01
July	144	4.56	2.32
August	148	3.91	1.45
September	138	4.33	1.53
October	120	4.87	3.76
November	138	6.16	3.02

The average of 65 analyses on the deactivating system shows that a final oxygen content of 0.06 cc/liter is to be expected in the deactivated water, starting with an initial content of 6.41 cc/liter.

The same number of analyses on the non-deactivating system shows a final oxygen content of 1.74 cc/liter with an initial content of 6.41 cc/liter.

The theoretical increase in life of tank and piping, therefore, when equipped with a deactivator will be $1.74/0.06=29$ fold. This theoretical increase is affected by the fact that corrosion is not always uniform, but is usually accompanied by pitting which is the actual destroyer of the tank and piping. It goes without saying, however, that the deactivator will increase the life of a hot water supply system many times. Conservative estimates would make the increased usefulness of the apparatus lie between five and fifteen fold, depending upon local conditions of the installation. Such an estimate obviously holds only for plants designed in the proper proportions based mainly upon the character, maximum hourly consumption, and the temperature of the water.

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Finally it became necessary to replace this bodily, the destruction of pipe in that system continuing as before.

In removing contiguous piping for installing the apparatus, it was found that it was almost com-

This installation is the latest development of the apparatus. It consists of a coal-fired heater, a treating and storage tank and a filter as shown in Fig. 2. The tank was built with a 42-inch flanged head, which permitted the easy packing in horizontal layers, of the perforated metal lath with which the tank was filled from bottom to top. The water circulates, as indicated, from the heater up into the Deactivating tank, where it makes a contact with the perforated metal lath at a high temperature (about 170 deg. Fahr.). It moves through this slowly, as cooling currents or as water from the cold supply urge it, and back into the heater or into the house supply line.

The hot water house supply leaves the tank at the top and passes through to the filter, part of its contents being shunted off through the coil in the filter. This constant circulation through the coil maintains a temperature in the filter that is

approximately equal to the temperature in the Deactivator itself. Through a four-way valve at the top of the filter the water for circulation in the house system passes through the space above the filter bed and down through the sand into a chamber at the bottom. In this passing, the rust formed in the deactivation of the water is wholly removed. The house supply is withdrawn through the vertical pipe

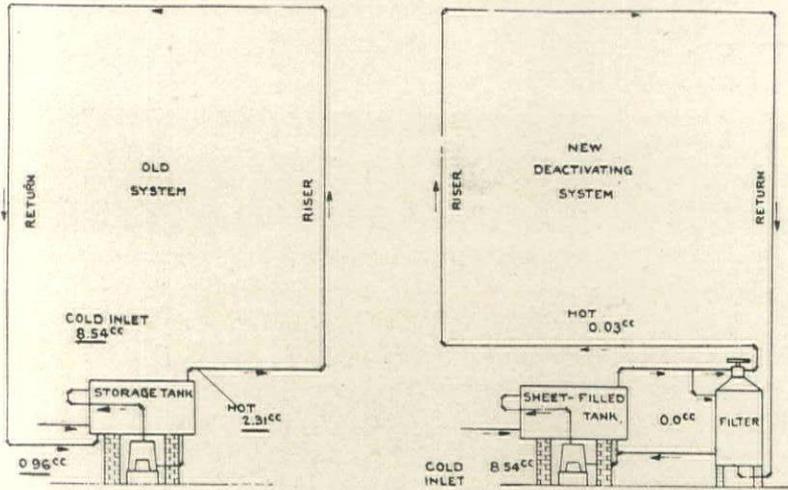


Fig. 1. Sketch of the hot water system at 143 Hemenway Street, Boston, showing the free oxygen in the water at various points.

pletely filled with rust and dirt of various kinds. After four months' use of the Deactivator it was found that the pressure throughout the building had doubled. That this is due to the cleansing effect of the water is certain, since for two months after the apparatus was put in operation the hot water occasionally carried oxide of iron, which apparently had become loosened from the inside of the pipe.

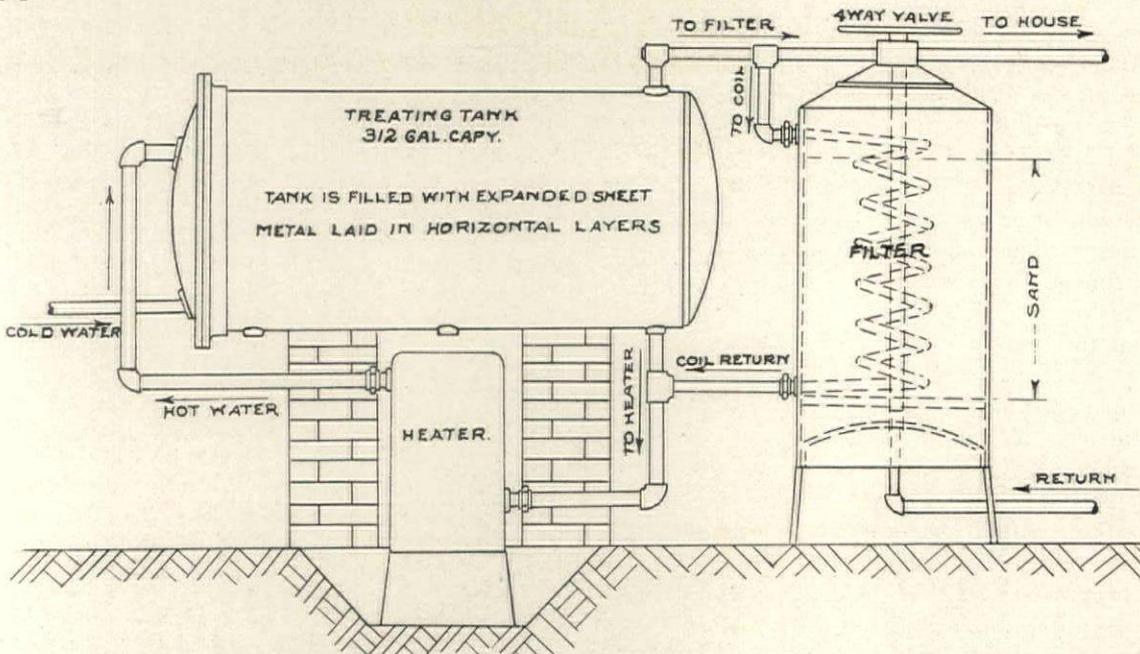


Fig. 2. Sketch of the hot water heater, deactivator and filter at 143 Hemenway Street, Boston.

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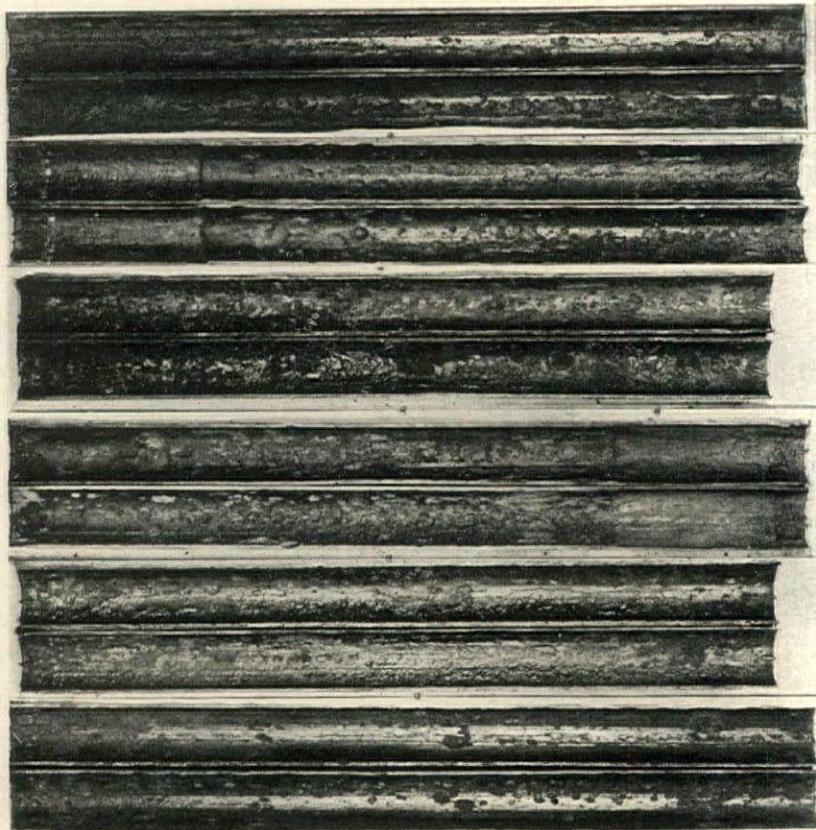
in the center of the filter, while the gravity return line entering at the bottom provides for a continuous circulation of water. By this means there are three complete and independent systems of circulation: (1) the one between the heater and the tank, (2) that between the filter and the tank for keeping the former hot, and (3) the house and filter system. In a later design it is proposed to heat the Deactivator tank with a steam coil when a steam supply is constantly available.

It will be noted that the storage or Deactivator tank must have sufficient size to allow the water to pass through slowly enough to permit the hot water to act on the perforated metal lath. This is clearly shown in Table I, where the oxygen content of the hot water was abnormally high at one time, due to the greatly increased consumption of hot water, which exceeded the amount for which the plant was designed.

In the majority of the existing hot water supply installations in the main parts of this system of deactivating hot water are already installed. The heater and storage tank already are in use, as they are essential factors in any system. In many localities the filter is in use, but in some places a filter would have to be added. But ordinarily the use of this method would involve only the altering of the storage tank to permit the placing of the metal lath within it, with some minor changes in the pipe connections. In a new system the expense would, under ordinary circumstances, be but little, if any, in excess of an ordinary installation.

Under date of April 10, 1918, the Pittsburgh Testing Laboratory, Pittsburgh, Pa., report on the second Irene Kaufmann settlement corrosion test. The Irene Kaufmann settlement was built in 1910, using wrought iron and steel pipe for the hot and cold water lines, with storage tanks and gas heaters. One branch of the system supplied the pool and showers and another supplied the residence and laundry. All of the hot water piping was showing signs of serious corrosion by 1915, a number of pieces having already been replaced with brass pipe. Every week or two replacements and repairs had to be made.

With the approval of the directors there was installed experimentally a new hot water heating system to supply the residence and laundry alone, and which was put into use in December, 1915. A series of tests were run thereafter by the Pittsburgh Testing laboratory and a second series run during 1917, the results of which are here given. The results of the second test coincide and verify the results of the first test.



Tests by The Pittsburgh Testing Laboratory, showing the corrosive effect of untreated hot water on eight steel and four wrought iron pipes.

This second test was started October 25, 1916, and continued until December 24, 1917, in which 2-inch ungalvanized pipes in 31-inch lengths were used. They were connected in series, in the horizontal part of the line from the hot water storage tank to the shower baths. The pipes were connected by couplings, except in the case of one union being used. The pieces used in this installation consisted of steel and wrought iron pipes, both lap and butt weld, and were purchased in the open market. The first perforation occurred December 10, 1917, but the line was kept in service until December 24 by clamping a patch over the perforation.

The volume of water used was not measured, but it was about 600 gallons per day or approximately 252,000 gallons in all. The water was the Pitts-

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burgh city supply, which is taken from the Allegheny River, filtered and sterilized. It is free from suspended matter and contains no corroding agents except dissolved oxygen and carbon dioxide.

There was not enough variation in the chemical constituents of the various pipes to influence the results of the test. All of the pipes, both wrought iron and steel, including butt weld as well as lap

steel and wrought pipes were corroded by pitting to a depth sufficient to cause actual perforation in the thinner walled steel pipe and to an equal depth, without perforation, in thicker walled steel and wrought iron pipes.

While the corroding agent causing the pitting of the pipes was dissolved oxygen (and carbon dioxide), it was observed that the pits were most

numerous and deepest where there had been adherent roll scale adjacent to the pits. In other words, the corrosion had been accelerated by the difference in electrical potential between the magnetic oxide of iron of which the roll scale is composed, and the iron or steel exposed at points where the roll scale had cracked or fallen away. The galvanic action thus brought about had localized the corroding effect in the form of pits of various shapes and sizes. If the test had been continued a month longer, all of the pipes would have been perforated. The depth of the deepest pit at the time that the test was discontinued nearly equaled in every pipe the thickness of the wall.

Two pipes in each set, excepting one make of steel pipe, were machined inside at one end for a length of about 6 inches. This had the effect of entirely removing roll scale, although the pipe was only reduced 10 per cent in thickness. The loss in

thickness in these parts was practically the same. (This loss for wrought iron pipe averaged .0225 and for steel pipe .024 inches). These cleaned surfaces resisted corrosion remarkably. There was no deep pitting, but only a general roughening of the surface by a number of small contiguous pits. The total loss of metal, as shown by decrease in thickness of the walls of the machined sections, was approximately the same in each case, from 18 to 21 per cent.

In the system supplying the residence and laundry the hot water from the same source had been passed through a Deactivating apparatus and afterwards through a line of black pipe containing both steel and wrought iron sections, as above described. These pipes show no pitting whatever and are prac-



Tests by The Pittsburgh Testing Laboratory, showing the corrosive effect of untreated hot water on six steel and four wrought iron pipes.

weld, showed corrosion by pitting. The number of pits and their general shape and size is shown by the photographs made after the pipes had been cut in half lengthwise and the loose rust removed. The pits in the wrought iron pipe, while they had a somewhat different shape, they were quite as large and as deep as any found in the steel pipe.

The measurements of the corrosive destruction when summarized show no significant differences between the steel and the iron pipe in the depth and extent of the pitting. The slight differences shown are in some cases in favor of the wrought iron and in other cases in favor of the steel pipe.

The striking fact which was developed was that in fourteen months, in a hot water service line, both

tically free from corrosion in any form. This shows very conclusively that the dissolved gases are the active corroding agents.

This test and other similar tests have shown beyond question that in the Pittsburgh District wrought iron and steel pipes in hot water lines are rapidly corroded by pitting. The controlling factor which enables either steel or wrought iron pipe to offer smaller resistance to corrosion by dissolved gases in hot water lines is the roll scale. If this is removed by mechanical processes the rate of corrosion is diminished to about 20 per cent of the rate for pipes carrying the usual covering of roll scale. This means a 400 per cent increase in length of service.

Recent developments in methods for mechanically removing roll scale by rerolling pipe sections after the scale has solidified, give a surface almost entirely free from scale and therefore far more resistant to corrosion. Such scale as does remain can be readily removed by brief pickling before galvanizing. In this way steel pipes of maximum durability in hot water line service may be produced.

This method of preventing corrosion is based on the fundamental fact that the heating of water releases destructive elements which attack ferrous materials. The amount of these destructive elements will vary with the composition of the water, and the volume of the disassociated gases increases as the temperature increases. To expand the corrosive energy of hot water before it enters the service lines appeared to be the logical and direct course to follow. By experimentation and trial it has developed that this can be accomplished by bringing the heated water in contact with comparatively inexpensive perforated sheets of metal lath as described. By this means not only the free oxygen, but all other harmful gases, acids and their destructive agencies, exhaust themselves in attacking the metal lath, and the hot water is harmless when it enters the expensive service lines. The very simplicity of the method is appealing.

The attacks of water in sprinkler systems are of little moment, as the water is cold and does not change by added fresh water, therefore whatever destructive power it may have is soon expended. In hot water heating systems the same thing applies because after the heated water has attacked the piping system and become inactive very little fresh water is added.

Not only should this method of prevention be considered when new installations are made, but it is of importance to consider its use in existing plants where the service lines are not yet so badly corroded as to be useless. The stoppage of this corrosion is a distinct conservation of materials, labor and money, and hence worthy of attention.

Operating Expense of Office Buildings

THE use to which a building is to be put naturally controls the main features of its design. A secondary consideration is its operation and maintenance. The annual cost of maintaining and operating a building can be closely estimated during normal times. The design, plan and equipment of the building has a great influence on this annual cost, and it is important that these be carefully studied from that aspect during the entire designing of the project. In fact, the design of an office building should always be done with the assistance of a competent building manager. A building manager in these times has information concerning the cost of maintenance of each portion of the building and knows in terms of money the difference in maintaining one kind of finish as compared with another, the cost of keeping both interior and exterior glass cleaned, the cost of maintaining and cleaning different kinds of floors and a multitude of other things that affect the costs of operation.

Architecture as an art may demand certain things, but an office building as an investment is entirely another proposition. It is true that the artistic appearance of the building, both in its exterior and interior aspect, has a distinct influence on its renting value, but this influence is limited, and the intelligent architect will weigh the appearance against the cost of upkeep and find a logical and sensible ground common to both factors. This knowledge pertaining to upkeep and operation is essential to an architectural organization, and is of importance as much as the knowledge necessary to design the mechanical equipment or any other feature of the building. Its importance is very much neglected, and the present economical conditions make it an especially significant feature.

At the recent meeting of the National Association of Building Owners and Managers held in Chicago, E. S. Jewell, chairman of the Operating Cost Committee, made a very interesting and valuable report. The preliminary work, which makes these reports possible, consisted of adopting a standard method of floor measurement in 1915 and a standard classification schedule in 1916. A temporary clearing house for office building experience was succeeded by an experience exchange.

During the months of March and April, 1918, fifty office buildings and one apartment house filed reports with the committee. These reports came from twenty-six cities:

Atlanta, Birmingham, Cleveland, Cincinnati, Chicago, Detroit, Davenport, Duluth, Dayton, Des Moines, Evansville, Grand Rapids, Kansas City,

THE AMERICAN ARCHITECT

Minneapolis, New York, Oklahoma City, Omaha, Peoria, Portland, Philadelphia, Seattle, Spokane, Spartansburg, N. C.; St. Louis, Toledo, Worcester.

It is obvious that the details of the reports cannot be made public, but a table has been prepared which is submitted with the report of the committee.

It should be explained in connection with the record of building 37 that conditions were not normal in 1917. This building shows a smaller net return than any other building which was caused by approximately 25 per cent vacancies during the period covered by the report and this undoubtedly accounts for its low net earnings.

The record of building 27 deserves special comment as it shows larger net earnings than any other building. This building has been occupied about two years, is six stories high, constructed of reinforced concrete with glazed tile exterior. The building stands on one of the highest priced corners in a city of about 200,000 population. The basement is occupied by a pool room, barber shop and savings bank. The stores are used for drugs, optical goods, women's shoes, jewelry, men's furnishings, cigars, florist and bookblack stand. The second floor is devoted entirely to retail shops, such as women's suits, corsets, millinery and like objects. The four floors above the shops are occupied by miscellaneous office tenants, with advertising physicians and dentists predominating. Several reasons for the abnormal success of this building seem to stand out prominently:

1. A low building evidently pays better than a tall building on a high-priced piece of ground.

2. In this case the tenants seem to fit the building and the location particularly well. It is the opinion of many that on cross-roads corners, advertising physicians, dentists and tenants of kindred nature will pay more rent and be satisfied with less service than any other class of occupants.

3. This building must be skillfully managed. This is evidenced by the fact that the compensation paid the manager amounts to more than the total wages paid in the janitor department.

4. We are informed that an experienced building manager was employed to work with the architect and that his services continued during the period of construction.

A comparison has been made between the 1916 and 1917 experience, and the result indicates a much smaller increase in 1917 expense than might have been expected. The average in 1916 was \$54.56 of each \$100 of income, while in 1917 it was \$56.09. The cost of coal and janitor materials increased enormously in 1917, but building managers must have largely overcome these increases by economies in other departments.

It is evident that many managers were not awake to the necessity of higher rents during 1917 to offset increased operating costs. It might have been caused by a feeling that the increases in cost were temporary, but it is apparent that these increased costs will continue for several years to come. Therefore an average income of \$1.32 per sq. ft. for these

Building	Square Feet of Rentable Area	Portion of Each \$100 Used for Expense	Total Receipts per Square Foot	Total Expense per Square Foot	Net Earnings per Square Foot	Janitor Service per Square Foot
No. 1..	90,000	\$49.92	\$1.359	\$.678	\$.681	\$1.85
No. 2..	47,336	45.26	1.894	.857	1.037	.121
No. 3..	141,846	57.78	1.186	.685	.501	.181
No. 4..	32,957	59.60	.885	.527	.358	.185
No. 5..	119,000	67.25	1.236	.831	.405	.11
No. 6..	70,000	53.49	1.475	.789	.686	.113
No. 7..	45,047	48.62	1.588	.772	.816	.12
No. 8..	70,000	67.82	1.31	.888	.422	.133
No. 9..	128,000	61.93	1.126	.697	.429	.094
No. 10..	57,350	65.82	.913	.601	.312	.138
No. 11..	143,035	54.61	1.326	.724	.602	.144
No. 12..	74,000	58.22	1.057	.615	.442	.138
No. 13..	25,360	71.22	.898	.64	.258	.143
No. 14..	244,646	51.18	1.376	.704	.672	.157
No. 15..	152,371	42.56	1.129	.48	.649	.081
No. 16..	253,750	50.99	1.037	.529	.508	.087
No. 17..	55,397	54.65	1.519	.83	.689	.11
No. 18..	273,000	45.32	1.487	.674	.813	.14
No. 19..	79,800	46.76	1.264	.591	.673	.124
No. 20..	155,140	70.68	1.156	.817	.339	.198
No. 21..	44,000	51.17	1.258	.643	.615	.174
No. 22..	93,000	60.32	1.37	.826	.544	.142
No. 23..	132,500	66.93	1.298	.869	.429	.191
No. 24..	245,000	38.71	1.216	.471	.745	.096
No. 25..	66,316	52.96	1.578	.835	.743	.171
No. 26..	50,000	49.44	1.564	.773	.791	.157
No. 27..	47,875	32.23	2.203	.71	1.493	.12
No. 28..	50,500	48.63	.717	.349	.368	.084
No. 29..	65,926	75.87	1.308	.992	.316	.14
No. 30..	75,000	56.92	2.356	1.341	1.015	.20
No. 31..	116,000	59.49	1.357	.807	.55	.131
No. 32..	141,617	49.27	1.207	.594	.613	.157
No. 33..	165,000	57.37	1.624	.932	.692	.128
No. 34..	124,602	63.25	1.225	.775	.45	.099
No. 35..	113,845	53.89	1.40	.754	.646	.142
No. 36..	104,000	55.67	1.563	.87	.693	.165
No. 37..	34,590	84.44	1.035	.874	.161	.157
No. 38..	30,000	33.74	1.284	.433	.851	.031
No. 39..	118,000	44.86	1.328	.595	.733	.102
No. 40..	31,164	60.58	.707	.428	.279	.088
No. 41..	62,299	76.78	1.564	1.201	.363	.188
No. 42..	50,647	59.74	.901	.538	.363	.11
Average.	100,474	56.09	1.316	.727	.589	.133

forty-two buildings is not sufficient to produce a fair return on the capital invested. An average gross income of \$1.45 per square foot for 1917 would have been about right. From all appearances an average income of \$1.50 per square foot will be needed in 1918 by the forty-two buildings mentioned in this report if an equitable balance between receipts and expenditures is maintained. With a strong demand for space existing and no new buildings being built on account of the scarcity and high

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cost of material and labor and the probability of this condition remaining for several years, it should not be difficult for building managers to secure the necessary advance in rentals to provide for existing conditions.

There is reason to believe that on account of the abnormal and unexpected increase in operating expenses, many properties have been permitted to deteriorate physically. Managers are undoubtedly following the lines of least resistance, but this is a policy that will bring ultimate grief if not overcome through increased revenue before the deterioration is observed by the public.

The average compensation paid building managers during 1917 amounts to $3\frac{1}{2}$ per cent of the gross income of the properties. The committee is of the opinion that the owners lose when they fail to employ managers who have the ability to earn at least 4 per cent of the gross income. A compensation of 4 per cent would have increased the income of the managers of the forty-two buildings referred to in this report by more than \$25,000 in 1917. A careful study of the reports reveals the fact that the most successful buildings pay their managers salary or commission equal to 5 per cent of the gross revenue of the property. It should be remembered that office buildings ordinarily represent an investment of a million dollars or more, and that the same skill is required to successfully handle a million dollars in the form of an office building as would be required to handle a million dollars invested in a bank, a factory or any other large enterprise.

The manager of building 11 furnishes a record of electricity generated during 1917, with items entering into the cost. The same manager furnished a record of elevator operation.

BUILDING NO. 11—ELECTRICITY.

Public lighting.....	128,200 KWH
Elevators.....	138,290 KWH
Metered to tenants.....	155,708 KWH
Engine and boiler room.....	16,500 KWH
Lost through battery regulation.....	29,600 KWH
Power—fans, pumps, etc.....	88,623 KWH
Total generation.....	556,921 KWH
Average cost coal per KWH.....	\$.00956
Average cost labor per KWH.....	.00867
Average cost misl. per KWH.....	.00514
Total cost per KWH.....	.02337
Average coal used in 24 hrs.....	7302 Lbs.
Average cost per ton.....	\$4.01

BUILDING NO. 11—6 ELEVATORS—18 STORIES.

	K.W.H.	Trips	Miles
Total 1917.....	138,290	392,690	38,773
Average daily.....	871	1,078	106
Daily per elevator.....	61	179	17

The manager of building 14 reports statistics on the square foot rentable area basis. As this building is central in its geographical location, does not receive unusual rent from its stores, is strictly mod-

ern in construction, well managed and well tenanted, it will serve as a good example of the average experience of a first-class office building in 1917.

BUILDING NO. 14—EXPENSES PER SQUARE FOOT RENTABLE AREA BASIS.

Administration.....	.044
Janitors.....	.157
Engineering and electricity.....	.152
Elevators (without power).....	.053
Alterations and repairs.....	.116
	.522
Insurance.....	.003
Taxes.....	.18
Total.....	.705
Net earnings on investment, per cent.....	5.596

The manager of building 18 is of the opinion that building owners and managers are not giving sufficient thought to the subject of depreciation. The supplementary data furnished reveals the interesting fact that the building in his charge deducts an amount for depreciation annually equal to one-third the entire expenditure for operation, taxes and insurance.

BUILDING NO. 18—RENTABLE AREA BASIS.

Total income per sq. ft.....	\$1.49
Total expense per sq. ft.....	.67
Depreciation, 2.66 per cent, or, per sq. ft.....	.23
Net, per sq. ft.....	\$.59

The question of depreciation and obsolescence is so new that a definite policy or fixed percentage to be charged off annually has not been agreed upon, but there is increasing evidence that building managers and owners in all parts of the country are coming to the conclusion that a depreciation charge equal to approximately 3 per cent of the gross income will be necessary to offset the rapidly changing conditions due to buildings becoming obsolete and neighborhoods becoming unpopular.

One apartment house manager reported. The problems of the apartment house manager are similar in many ways to those of the office building manager. As time goes on, apartment houses will require very skillful management for the reason that there is not the same opportunity to recoup losses and overcome mistakes through increased land values. The apartment house report gives the following experience for 1917:

Total receipts.....	\$10,260.00
Total expenditures.....	4,010.90
Net earnings.....	\$6,249.10

Without other reports for comparison, it is impossible to determine whether this is a good or a bad record.

The reports show that success or failure is not a matter of population or geography. They prove conclusively that the large city manager has not attained a record for efficiency that has not been equalled by the smaller city manager.

Industrial Information

“As a Man Liveth”

The Associated Metal Lath Manufacturers, 901 Swetland Building, Cleveland, Ohio, have published a book, 9 x 11 in., bound in brown paper boards, and selling for \$1.00, which takes as its text “As a man liveth, so shall he work,” and deals with some of the varied aspects of industrial housing.

The book divides itself into discussions, first, of the vital necessity for stable labor in these times and of the influence that good housing will have on this stability; second, the advantages accruing from the use of metal lath for these purposes; and third, a technical discussion of the methods and uses of metal lath for all needs. Perhaps the most attractive part of the book, from the architect's standpoint, consists in the presentation at the last of a number of very attractive sketch plans and elevations, showing how the problem of housing labor has been handled in various sections of the country, and what interpretation of the issue has been made by each of different architects. A development planned by Mann & MacNeille, architects and town planners, which was illustrated in *THE AMERICAN ARCHITECT* of May 15, is included here, as well as a project by Murphy & Dana at Elizabeth, N. J., and some of the work of Kilham & Hopkins.

The book is one of interest and value and fulfills its purpose of portraying the merits of metal lath very fairly and adequately.

Handbook of Fireproof Construction

The Concrete Engineering Company, Omaha, Nebraska, has published an elaborate handbook, the purpose of which is to familiarize the architect, engineer and builder with the good points of Meyer Steelform construction and Ceco fireproofing materials. It is said in the introduction that inasmuch as this system of construction and the manufacture of these materials are after the most approved standards and methods, the handbook may well be said to be a handbook of fireproof construction.

In this book fully detailed information is presented, through reading matter and illustration, regarding every phase of these products. Construction details, specifications, tables of safe loads, and description of tests are all given. Some of the other products of the company are Ceco expanded metal lath, economy lath, self-furring lath, Ceco crimped furring, corner, rail and base beads, studding and cold rolled channels. Full construction information is also given regarding these materials.

Some photographs of installations and a partial list of the buildings in which the products have been used concludes the book.

“Red Lead Saves”

The conservation and general economy effected by the use of red lead forms the subject of discussion in a recent pamphlet issued by the National Lead Company, which has offices in all principal cities. Pictorial representation is given of the many fields in which red lead may be used to save, and facts are presented as to how this product may be used to accomplish the greatest conservation of building materials.

Whitney Casement Sash Hardware

A large and complete book of photographic illustrations is published by the Whitney Window Corporation, 305 Fifth Street South, Minneapolis, Minn. This company, which furnishes only the hardware for this type of sash, has devoted considerable attention to such subjects as ventilation, sleeping porch construction, screens, and the more purely architectural aspects of the question. Photographs are given of a great many delightful homes. This sash is particularly desirable for sun parlor and sleeping porch construction, although its use in an ordinary room gives it unusual airiness. Several pages of details and other practical information are given at the back of the book.

Washington Office of Aspromet Company

The Aspromet Company of Pittsburgh, Pa., announces the opening of its offices at Washington, D. C. This company manufactures a number of building materials, including asbestos protected metal, Aspromet gypsum roof, Aspromet glazing construction, and Aspromet ventilators.

Coal Bins

The Milwaukee-Western Fuel Company, Milwaukee, Wis., has published a booklet entitled "Making the Coal Bin a Safe Investment," and dedicated to owners, architects and builders of factories, apartment houses, dwellings and other buildings. The importance of efficiency and service in coal delivery is discussed; the necessity of having sufficient storage capacity for coal, the need of speedy and facile deliveries from dock or yard into the cellar, are all taken up in their relation to the methods shown of making the coal bin efficient.

This seems to be a more or less altruistic presentation of very vital, urgent facts, and it would doubtless benefit many persons, professionally or otherwise, to avail themselves of the information presented here.

Paint

The Carter Times, of June, published by the Carter White Lead Co., Chicago, Ill., is as usual full of timely painting interest. Hand or machine mixed paints are discussed; there is an article on removing old paint, a leading article entitled "A Cheaper Paint," and a great deal of other useful information on paint is to be found scattered through the little bulletin.

Nonpareil Insulating Brick

The Armstrong Cork Company, Pittsburgh, Pa., has recently published a small folder describing its Nonpareil insulating brick for furnaces and ovens. This booklet, which discusses the merits of the product very thoroughly, may be obtained upon request to the manufacturers.

"Don't Worry About Coal"

"Don't Worry About Coal—Heat Your House with Kerosene," is the title of a booklet published by the Doble Company of Detroit, Mich. It is claimed that the Doble system can be installed in any existing heating apparatus by removing the grate bars and installing this patent combustion device. This apparatus is very simple in construction and operation, and a great deal of efficiency and success is claimed for it. The method of operation and other important facts concerning the Doble System are presented in this booklet, which may be obtained from the manufacturers.

"Ornamental Ideas"

"Ornamental Ideas" is the title of a new booklet issued by the National Mfg. Company, Sterling, Illinois. These ideas have been developed in connection with the "National" butts and hinges manufactured by this company. A great many deviations from the ordinary in door hardware are shown in this book, some of which are very attractive.

New Electrical Catalog

The Steel City Electric Company, 1207-1219 Columbus Avenue, Pittsburgh, Pa., has issued a new catalog, No. 33, showing all of the products manufactured by this company. With this first edition of a complete catalog the previous plan of issuing special bulletins has been discontinued.

A complete line of electrical accessories is included in this book, which may be obtained upon request to the manufacturers.

Builders' Exchange Publication

A bi-monthly magazine is published by the Builders' and Traders' Exchange of Detroit, Mich., whose offices are in the Penobscot Building in that city. In this publication the varied interests of the industry are set forth, its news is featured, and every effort made to knit the membership in the exchange and allied interests more closely together. Such a magazine might be of help to many such building organizations, effecting as it would a spirit of co-operation and unity therein.



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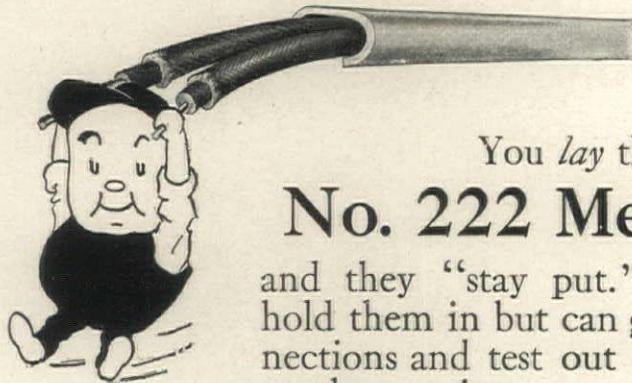
Wood shingles are two or three times warmer than the gummed-paper substitutes, and they are cheaper, last longer and are incomparably more artistic and attractive. When stained with the soft moss-greens, bungalow-browns, tile-reds and silver grays of

Cabot's Creosote Stains

they have a richness and beauty of tone that no other finish can equal, and the creosote thoroughly preserves the wood. Use them also on siding, boards, sheds and fences. Anyone can apply them, with best results, at least expense.

*You can get Cabot's Stains all over the country.
Send for samples and name of nearest agent.*

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Cabot's Quilt, Waterproof Stucco and Brick Stains, Conservo Wood Preservative,
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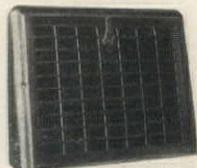
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(8-3)

BUILDING NEWS

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it at all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

ALABAMA

MOBILE, ALA.—Peoples Bank, A. L. Staples, president, will erect a two-story addition, 19 x 75 feet.

CALIFORNIA

SAN FRANCISCO, CAL.—Howard Maybeck, Lick Building, San Francisco, is Architect for the \$30,000 Red Cross building to be erected on the site of the former Hall of Records in the Civic Center.

COLORADO

COLORADO SPRINGS, COL.—The *Evening Telegraph* has acquired the property at Pikes Peak and Cascade Avenues and will erect a building about 50 x 100 feet on the site.

CONNECTICUT

BRIDGEPORT, CONN.—T. W. Lamb, 644 Eighth Avenue, New York City, has plans in progress for a theater for S. Z. Poli, 10 Howe Street, New Haven, to be erected in Bridgeport at a cost of \$300,000.

BRIDGEPORT, CONN.—Mendelson Bros., 622 Water Street, will erect two-story store building, 60 x 220 feet, concrete and brick, on Stratford Avenue and Kosuth Street, from plans by F. A. Cooper, Connecticut National Bank Building. \$30,000.

BRIDGEPORT, CONN.—E. B. Caldwell, Architect, 886 Main Street, Bridgeport, has drawn plans for a four-story, 80 x 100 foot clubhouse, of reinforced concrete, brick and steel, on Main and Thomas Streets. The Bridgeport Christian Union, Inc., will erect the building at a cost of \$100,000.

NORWICH, CONN.—American Thermos Bottle Company, Laurel Hill Avenue, is having plans drawn for a three-story factory, 42 x 145 feet, to cost \$35,000.

WELLINGFORD, CONN.—W. Arnold, 105 Elm Street, Meriden, has completed plans for a four-story, 84 x 102 foot, reinforced concrete, brick and steel home for Masonic Lodge, Meriden. \$100,000.

FLORIDA

JACKSONVILLE, FLA.—Y. M. C. A. plans to erect two additional buildings at Camp Joseph E. Johnston. Dr. L. C. McNair, camp secretary.

PALM BEACH, FLA.—Frank H. Clements will erect a \$12,000 garage.

GEORGIA

ATHENS, GA.—An appropriation of \$60,000 has been made by the Government to erect a building at the University of Georgia for training men for the military forces of the United States.

AUGUSTA, GA.—Haynie & Hillhouse will erect building to serve as pasteurizing plant, two stories, 40 x 91 feet, brick and concrete. \$15,000. T. M. Campbell, Johnson Building, Architect.

CARTERSVILLE, GA.—Farmers Gin & Fertilizer Company, H. Lee Smith, manager, will erect a factory, 40 x 86 feet.

ILLINOIS

CHICAGO, ILL.—Van Cleef Bros., 7711 Woodlawn Avenue, will construct a \$25,000 factory.

CHICAGO, ILL.—The Congress Hotel Company has bought a site for a \$1,500,000 annex, 80 x 172 feet, on Wabash Avenue and Harrison Street.

CHICAGO, ILL.—A nine-story cold storage plant to cost \$350,000 will be erected by the William Davies Company, South Union Avenue, Chicago. It will be 125 x 145 feet and will be located at Union Avenue and Forty-first Street.

CHICAGO, ILL.—A new one-story plant will be built by the Acme Steel Goods Company, Archer Avenue, Chicago, at a cost of \$100,000.

CHICAGO, ILL.—The Corwith Plant of the Crane Company, Kedzie Avenue and Forty-first Street, Chicago, will erect a two-story building to cost \$400,000.

CHICAGO, ILL.—The Manufacturers Equipment Company has property at Waller and Fillmore Streets, 316 x 330 feet, and will erect a \$50,000 factory.

CHICAGO, ILL.—C. E. Frazier, 30 North Dearborn Street, is Architect for a building to be occupied by the Chicago Tanning Company. It will go up at Blackhawk and Dayton Streets, at a cost of \$13,000.

CHICAGO, ILL.—Central Trading Company, 135 South La Salle Street, had plans drawn by Louis & Dougherty, 135 North Dearborn Street, for a \$70,000 warehouse.

CHICAGO, ILL.—H. Siercks, 180 North Dearborn Street, has prepared plans for a two-story shop and warehouse on Ashland Avenue and Cortland Street for L. Lunsberg. \$120,000.

CHICAGO, ILL.—Dillard & Bacon, 343 South Dearborn Street, have drawn plans for garage, office and warehouse to cost \$60,000, for Grasselli Chemical Company.

EAST ST. LOUIS, ILL.—The Methodist Episcopal Church of Philadelphia, Pa., will build a \$50,000 structure on Forty-third Street, East St. Louis, Ill.

MONMOUTH, ILL.—Plans are under consideration by the Monmouth Plow Company for the erection of a five-story building, 60 x 90 feet, to cost \$40,000.

SHOPTON, ILL.—Plans have been completed by the Atcheson, Topeka & Santa Fé Railroad Company for the erection of a new power plant, 100 x 100 feet, in Shopton, Ill.

SPRINGFIELD, ILL.—A Centennial Memorial Building, 260 x 100 feet, will be built of brick and stone, at a cost of \$10,000,000, after the war is over. Edgar D. Martin, 104 South Michigan Avenue, Chicago, State Supervising Architect.

INDIANA

GARY, IND.—Gary Motor Truck Company, 2300 West Ninth Street, will erect a \$25,000 brick addition to plant, 75 x 135 feet, two stories.

IOWA

CEDAR RAPIDS, IOWA.—R. R. Mayberry, Cranby Building, Cedar Rapids, has plans in progress for a store and club building, two stories, 100 x 150 feet, for the Waterhouse Estate, care of W. K. Wisner. \$50,000.

CLINTON, IOWA.—Klein Paper Mill is preparing plans for a \$175,000 plant.

COUNCIL BLUFFS, IOWA.—Plans have been drawn by J. C. Woodward, 1282 Canning Street, Council Bluffs, for a three-story reinforced concrete apartment house, 20 x 48 feet. Miss J. Thrush, 80 Arch Street, owner, will spend \$12,000 for the building.

DES MOINES, IOWA.—S. Davidson & Bros. contemplate building a \$100,000 warehouse to take the place of the one recently destroyed by fire.

FORT DODGE, IOWA.—Carter Iron & Steel Company, C. L. Carter, manager, will build a \$200,000 plant.

MALCOM, IOWA.—Farmers State Bank will erect a structure, 50 x 50 feet, brick and terra cotta.

MERIDEN, IOWA.—Lytle Company, Masonic Building, Sioux City, has designed a \$12,000 building for Meriden State Bank, Robert Gracie, clerk. One story and basement, 25 x 52 feet.

SIoux CITY, IOWA.—Gardner & Lindberg, 148 South Dearborn Street, Chicago, have designed a packing plant (five buildings) for the Midland Packing Com-

Housing Our War Workers

ARCHITECTS are helping the government and the great industries doing government work to plan artistic as well as economical homes for war workers. More and more is the fact becoming apparent that workers will not be content with cheap, temporary, inartistic homes.

At very slight additional expense and effort designs may be varied, groupings arranged, surroundings improved and the whole project made architecturally attractive.

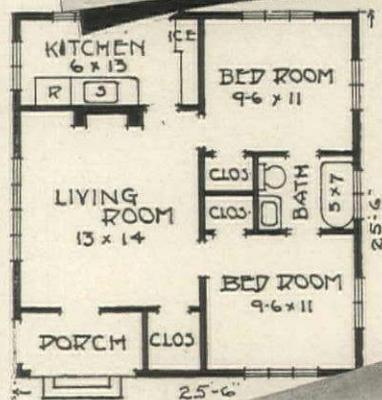
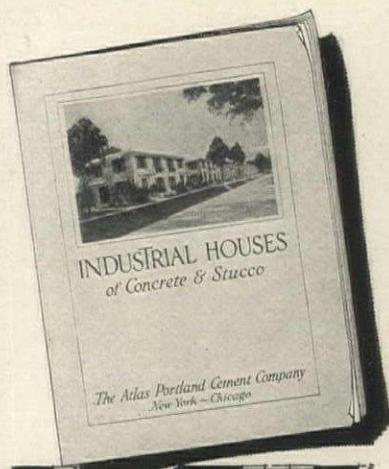
The possibilities of plain or stuccoed reinforced concrete as a medium of beauty, as well as utility, are becoming more and more recognized. It is quickly built, fireproof, permanent, sanitary, practically never needs repairs and never requires painting. The materials are generally obtainable locally, which reduces cost and accelerates construction.

Our new illustrated book, "Industrial Houses of Concrete and Stucco," will be sent free on receipt of the coupon.

The Atlas Portland Cement Company

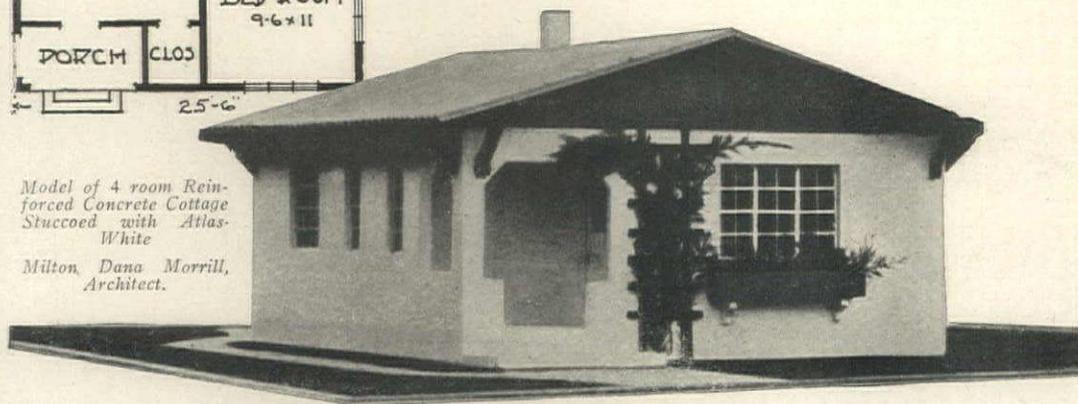
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Model of 4 room Reinforced Concrete Cottage Stuccoed with Atlas White

Milton, Dana Morrill, Architect.



ATLAS CEMENT

THE ATLAS PORTLAND CEMENT CO., 30 Broad St., N. Y., or Corn Exchange Bank Bldg., Chicago. Send book on Industrial Houses of Concrete and Stucco to name and address written on margin, also book on Industrial buildings. I am particularly interested in subjects checked:WarehousesFactoriesLoftsCold StorageTerminalsHospitalsSchoolsBusiness GaragesStables.

If you will state kind of business for which building is intended _____ special information will be furnished.

pany. Fred V. Sawyer, president, care of Simon Day Company, 332 South La Salle Street, Chicago. \$1,000,000.

KANSAS

CUNNINGHAM, KAN.—F. G. McCune, Black Building, Wichita, has designed a \$30,000 building for the Farmers State Bank, Cunningham. Two stories, 50 x 140 feet.

PLEVNA, KAN.—W. E. Hulse & Co., Hutchinson, Kansas, have plans in progress for a three-story high school, 55 x 72 feet, reinforced concrete and brick, to be erected in Plevna, Kan., at a cost of \$32,000.

PRATT, KAN.—A high school building, three stories, reinforced concrete and brick, has been designed for the Pratt Board of Education by W. E. Hulse & Co., Hutchinson, Kan. Cost, \$32,000.

KENTUCKY

LOUISVILLE, KY.—Ohio Falls Dye & Finishing Works, Madison and Clay Streets, will build a \$65,000 addition, 60 x 160 feet, brick.

MARYLAND

BALTIMORE, MD.—F. White Estate, Keyser Building, plans a three-story, 120 x 145 feet, reinforced concrete, steel and brick parcel post office, on Calvert and Read Streets, Baltimore, to cost \$75,000.

CUMBERLAND, MD.—The plant of the American Cellulose & Chemical Company to be built at Cumberland, Md., will cost several million dollars, and will be financed, it is reported, by the Vickers Company, New York, and the Nobel Company, London, England.

MASSACHUSETTS

LAWRENCE, MASS.—A three-story store, 40 x 69 feet, has been designed by J. E. Allen, 282 Essex Street, Lawrence, for C. Brown of Methuen.

NEWBURYPORT, MASS.—Newburyport Gas & Electric Company has acquired a site on the Merrimac River for the construction of a new central power station. Cost about \$7,500,000.

ROXBURY, MASS.—The Young Men's Hebrew Association has retained Blackall, Clapp & Whittemore, 20 Beacon Street, Boston, to design a \$100,000 school at Warren and Howland Streets, Roxbury, Mass.

MICHIGAN

DETROIT, MICH.—Dr. James W. Inches, Health Commissioner, announces that a tuberculosis sanitarium will be erected at a cost of \$350,000.

DETROIT, MICH.—The Central Forge Company, Boyer Campbell Building, Detroit, is building a new drop forge works on Euclid Avenue to cost \$350,000.

DETROIT, MICH.—The Metal Mfg. Company, Milford Street, will spend \$35,000 for a 60 x 20 foot factory for motors, designed by G. W. Graves, Rowland Building, Detroit.

DETROIT, MICH.—Stratton & Snyder, Union Trust Building, are preparing plans for a \$350,000 sanitarium.

DETROIT, MICH.—R. E. Olds, Capitol National Bank Building, Lansing, will spend \$500,000 for a mercantile building, plans for which are in the hands of Baxter, O'Dell & Halpin, Hammond Building, Detroit. Nine stories, 100 x 200 feet, reinforced concrete and brick.

DETROIT, MICH.—A garage and paper storage building to cost \$150,000 has been designed by Albert Kahn, Marquette Building, Detroit, for Detroit Evening News Association, George B. Booth, president, Second and Lafayette Boulevard. Three stories, 150 x 130 feet.

DETROIT, MICH.—A three-story addition, 70 x 101 feet, will go up on Jefferson Avenue and Fifteenth Street for William P. Hartwig Company, 205 Jefferson Avenue. Mildner & Eisen, Hammond Building, Architects.

GRAND RAPIDS, MICH.—A \$2,000,000 picric acid plant will be erected for Semet-Solvay Company, Milton Avenue. H. N. Cole, engineer, care of owner.

PORT HURON, MICH.—Port Huron Foundation Company plans to enlarge shipbuilding plant at a cost of \$800,000. A. R. Morrison, manager.

MINNESOTA

CANBY, MINN.—Cereal mill and flour warehouse are to be built at Canby for G. W. Vandusen at a cost of \$50,000.

MINNEAPOLIS, MINN.—President Marion L. Burton of the University of Minnesota has received official approval to construct an army building at a cost of \$28,000. John R. Allen, dean, College of Engineering, has plans ready.

ST. PAUL, MINN.—A new \$700,000 sub-postoffice may be built in St. Paul in connection with the new Union Depot.

ST. PETER, MINN.—State Board of Control, St. Paul, has authorized the erection of a three-story dormitory, 40 x 160 feet, reinforced concrete, brick and steel, for the Hospital for Insane. C. H. Johnson, Capital Bank Building, St. Paul, Architect. Cost, \$50,000.

WORTHINGTON, MINN.—Specifications have been prepared by Charles L. Pillsbury, Metropolitan Light Building, Minneapolis, for a water and light plant. W. H. Buchen, City Clerk.

MISSISSIPPI

CLEVELAND, MISS.—Bolivar Compress Company will erect a building for cotton compress and storage sheds, 300 x 600 feet, brick and frame, composition roofing.

MISSOURI

HOLDEN, Mo.—Archer & Stevens, New England Building, Kansas City, are preparing plans for a \$30,000 municipal electric light plant.

KANSAS CITY, Mo.—E. A. Brostrom, Reliance Building has planned a three-story laboratory on West Pennsylvania and Pennsylvania Avenues, for Jensen Salsberry Laboratories, 132 Main Street.

KANSAS CITY, Mo.—Kansas City Light & Power Company, 1500 Grand Avenue, will build an oil storage station, 100 x 225 feet, to cost \$75,000.

ST. LOUIS, Mo.—Two sites have been selected for munition plants costing \$8,000,000, to be built in St. Louis, for Government work, under the control of Charles L. Holman, president of the Laclede Gas Light Company.

ST. LOUIS, Mo.—The Monsanto Chemical Company, 1600 South Second Street, St. Louis, is retaining T. C. Link and W. E. Trueblood, 1600 South Second Street, to plan a three-story, 90 x 100 feet, reinforced concrete and brick warehouse and office at 1806 Kosciusko Street \$50,000.

NEBRASKA

LINCOLN, NEB.—Plans have been completed by Jesse B. Miller, Little Building, for a three-story apartment building, 142 x 100 feet, to be built of Bedford cut stone, brick and reinforced concrete, at a cost of \$125,000, for the National Mutual Life Company.

OMAHA, NEB.—N. R. Brigham, City National Bank Building, is Architect for a one-story, 103 x 128 feet, brick garage for D. G. Kellogg. \$150,000.

NEW JERSEY

BAYONNE, N. J.—Shattuck & Hussey, 19 South La Salle Street, Chicago, have prepared plans for a three-story Y. M. C. A. building in Bayonne to cost \$90,000. Brick and concrete, 91 x 190 feet.

ELIZABETH, N. J.—A housing colony has been designed by E. Allen Wilson, 1208 Chestnut Street, Philadelphia, Pa. Houses will be two stories, brick, 16 x 33 and 15 x 38 feet.

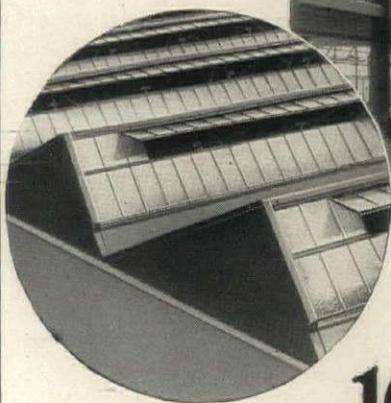
HOBOKEN, N. J.—The Railroad Administration is reported to be considering the construction of a new railroad car yard, including shop and repair works, etc., at cost \$1,000,000. Col. M. B. Gunby, Seventh and B Streets, S. W., Washington, is advisory engineer.

JERSEY CITY, N. J.—The Erie Railroad Company has filed plans for the erection of a one-story addition to the forge and blacksmith shop at its Provost yards, to cost \$30,000.

JERSEY CITY, N. J.—A five-story brick and concrete cooperage plant, to cost \$125,000, will be erected by

Building No. 40, B. F. Goodrich Co., Akron, Ohio. A. P. Lohman, Mgr. Engineering Department. Osborn Engineering Co., Consulting Engineers.

14 sawtooth lines 70 feet long over one wing; 3 sawtooth lines 140 feet long over the other, all with Top-hung Pond Continuous Sash. Underlapping storm panels at ends. Lupton Counterbalanced Sash in windows.



Fresh Air for 1000 Workers per Acre

On the top floor of this B. F. Goodrich building, totalling 100 by 500 feet, over a thousand skilled workers are employed. How is it ventilated?

No ordinary roof would serve. A sawtooth gives light; but ordinary types of sawtooth sash gives only haphazard ventilation if any.

The answer was to open the top lines of sawtooth sash in each wing **ALL AT ONCE** by an electric switch. Thus stale air escapes uniformly everywhere and the foreman has complete control.

Inlets are as needful as outlets. Each side wall has a line of continuous sash, regulated by the foreman, over the counterbalanced windows. Inflow is as uniform as outflow.

Both inlet and outlet lines are

Pond
CONTINUOUS SASH
PATENTED
WEATHER-PROOF WHEN OPEN

Not only does it give mass control of ventilation, but it can stay open in any ordinary rain—a vital feature for many industries. And it is exceptionally rugged—strong to protect the glass—corrosion resisting—the embodiment of efficiency in industrial sash.

This is only one of many special designs that have helped our customers to get 100 per cent. results from Lupton Products. Our Service Department will gladly study **YOUR** problems, and co-operate with your architect or engineer.

Booklet, "Air, Light and Efficiency," tells how Lupton Products have been applied in some famous factories. It's free.

DAVID LUPTON'S SONS COMPANY

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Makers of modern equipment for daylighting and natural ventilation

Pond Continuous Sash for Pond Truss, sawtooths, monitors and side walls
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Lupton Rolled Steel Skylight

Lupton

Lupton Steel Sash
Pivoted Factory Type
Counterbalanced Type
Counterweighted Type
Lupton Steel Partition and Doors

INVESTMENT VALUE

Swift & Co., 154 Ninth Street, Jersey City, on a site at 209 Tenth Street, Jersey City, N. J.

KEARNEY, N. J.—Plans are being drawn by C. F. Zachan, 437 Highland Avenue, Arlington, N. J., for a brick and concrete fire and police station, 60 x 300 feet, to be built at a cost of \$60,000 on Kearney Meadows.

NEWARK, N. J.—Klaxon Company, 194 Wright Street, will construct a 200 x 700 foot brick and concrete mill.

NEWARK, N. J.—The Lovell McConnell Mfg. Company, 194 Wright Street, Newark, N. J., manufacturer of automobile horns, has acquired a plot 200 x 700 feet, at Wright and Miller Streets, Avenues A and B, for an extension to its works. Duncan A. McConnell, president.

NEW YORK

BROOKLYN, N. Y.—Frank Schule will build four two-story frame houses, 18 x 44 feet each, to cost \$36,000, at Seventh Avenue and Eighty-fourth Street, Brooklyn.

BROOKLYN, N. Y.—Elroy Corporation, 5316 Sixteenth Avenue, Brooklyn, will spend \$10,000 for a two-story house on Fiftieth Street and Seventeenth Avenue, Brooklyn.

BROOKLYN, N. Y.—Albert C. Kunzi, 65 Elliot Avenue, Brooklyn, will design a \$7,000 one-story brick office and garage for the Debevoise Paint Company, 968 Grand Street, Brooklyn.

BROOKLYN, N. Y.—India Wharf Brewing Company will build a six-story brick extension to brewery building on Hamilton Avenue and Conover Street, Brooklyn. \$36,000.

BROOKLYN, N. Y.—The Howard Investing Corporation will erect six two-story brick houses, 19 x 60 feet, at a cost of \$63,000, at West Thirty-seventh Street and Neptune Avenue, Brooklyn.

BROOKLYN, N. Y.—Henry J. Wolf will spend \$60,000 for ten two-story brick houses at Eighty-second Street and Third Avenue, Brooklyn.

BROOKLYN, N. Y.—A three-story brick house for D. Siegel, 570 Powell Street, Brooklyn, will be erected at a cost of \$13,500 from plans by M. Rothstein, 1767 Pitkin Avenue, Brooklyn.

BROOKLYN, N. Y.—The Otis Elevator Company will spend \$20,000 for alterations on Auburn Place, from Portland to Elliott Place, for the city of New York.

BROOKLYN, N. Y.—The garage of J. J. Hillis 26 Waverly Avenue, will have a \$5,000 extension made from plans by A. C. Kunzi, 65 Elliot Avenue, Brooklyn.

BROOKLYN, N. Y.—Shampan & Shampan, 772 Broadway, Brooklyn, have designed a two-story brick garage for S. Kornblum, 426 East Third Street, to cost \$15,000.

BROOKLYN, N. Y.—S. Millman & Son, 1780 Pitkin Avenue, Brooklyn, have designed two two-story houses for the F. R. Realty Company, 181 Martense Street, to cost \$15,000.

BROOKLYN, N. Y.—Plans have been prepared by E. M. Adelson, 1776 Pitkin Avenue, Brooklyn, N. Y., for a three-story brick factory, 50 x 280 feet, for the Pines Rubber Company, Joseph Pines, president, 148 Thirty-ninth Street, Brooklyn. \$100,000.

BUFFALO, N. Y.—The Kellogg Structural Steel Company, Buffalo, will build an addition to its fabricating shop at Stone Street. \$12,000.

BUFFALO, N. Y.—The Buffalo Dry Dock Company, Ganson Street, will build a machine shop, 72 x 150 feet, to cost \$27,000.

BUFFALO, N. Y.—The Lake Erie Boiler Works, Perry and Chicago Streets, Buffalo, will build an addition to its plant to cost \$14,000.

BUFFALO, N. Y.—Pierce-Arrow Motor Company, 1693 Elmwood Avenue, will build a one-story, 25 x 350 feet, reinforced concrete, steel and brick testing building. \$25,000.

CORTLAND, N. Y.—The Brockway Motor Company, Cortland, N. Y., George Brockway, president, will build a one-story addition, 50 x 200 feet.

LONG BEACH, L. I., N. Y.—Plans are being prepared by J. H. Phillips, 681 Fifth Avenue, New York City,

for a yacht club building for the Long Beach Yacht Club. The structure will be of terra cotta and stucco, two stories, 50 x 100 feet, and will be erected at a cost of \$30,000.

NEW YORK, N. Y.—A. J. Schwartzwalder, 369 East 167th Street, is having plans drawn by S. J. Kessler, 529 Courtlandt Avenue, for two story, 123 x 256 feet, garage on 151st Street and Walton Avenue. \$30,000.

NEW YORK, N. Y.—A. Lony Company, 511 West Twenty-first Street, has plans drawn by J. E. Mitchell, Architect, 332 West Twenty-fourth Street, for five-story brick factory, 50 x 90 feet. \$50,000.

NEW YORK, N. Y.—O. L. Spannhake, 13 Park Row, has drawn plans for a five-story storage building for the Metropolis Silk Company, 25 Madison Avenue. \$50,000.

NEW YORK, N. Y.—Alterations costing \$20,000 will be made to the four-story house of Dr. S. McLean, 776 Madison Avenue, from plans by H. A. Jacob, 320 Fifth Avenue, New York.

NIAGARA FALLS, N. Y.—A courthouse to cost \$25,000 will be built from plans by Chester R. Phelps, Gluck Building.

PEEKSKILL, N. Y.—Plans have been prepared by the Weehawken (N. J.) Dry Dock Company for the construction of a shipbuilding plant at Peekskill, N. Y.

ROCHESTER, N. Y.—The Paige Metal Products Company is considering the erection of a plant at Clyde, N. Y., for the manufacture of aluminum specialties.

ROCHESTER, N. Y.—R. S. Beyers, Chamber of Commerce Building, Rochester, N. Y., has completed plans for a two-story factory, 156 x 275 feet, reinforced concrete, steel and brick, to be erected on Winton and Blossome Roads, for the Bridgeport Tool & Machine Company. \$80,000.

SYRACUSE, N. Y.—The Onondaga Steel Company, Syracuse, contemplates four additional buildings, office, warehouse and others, on its 12-acre site in Eastwood. Samuel S. Buckley, president.

WATERTOWN, N. Y.—J. B. Wise, Inc., Mill and Moulton Streets, Watertown, manufacturer of brass plumbing goods, is considering the construction of a two-story addition, 43 x 65 feet, to cost \$60,000.

YAPHANK, L. I., N. Y.—Franklin B. Ware, 1170 Broadway, New York City, has been selected Architect for a \$75,000 hostess house at Camp Upton for the Knights of Columbus National Catholic War Council, care of Mr. Hook, 154 East 138th Street, New York City.

NORTH CAROLINA

GREENSBORO, N. C.—C. B. Keen, 1218 Chestnut Street, Philadelphia, Pa., has designed a two-story office building for the Southern Life & Trust Company, Greensboro. Brick and reinforced concrete, \$100,000.

RALEIGH, N. C.—The Central Hospital for the Insane will build a new electric power plant to cost \$23,000. Equipment will cost \$45,000 additional.

NORTH DAKOTA

WILLISTON, N. D.—A site has been selected by the Williston Creamery Association, John Bruegger, president, for a creamery and storage plant. \$30,000.

OHIO

CLEVELAND, OHIO.—The Aluminum Castings Company, Harvard and East Forty-second Street, Cleveland, will erect a one-story brick, steel and concrete factory, 140 x 260 feet. \$100,000.

CLEVELAND, OHIO.—The Chicago Pneumatic Tool Company, 343 South Dearborn Street, Chicago, will build a \$200,000 factory on Lakeside Avenue, reinforced concrete, brick and steel.

CLEVELAND, OHIO.—Kahn Mfg. Company, St. Clair Avenue and East Fifty-third Street, will have plans drawn by Allen Osborn Company, Rose Building, for a reinforced concrete brick and steel factory costing \$25,000.

COLUMBUS, OHIO.—Frank L. Packard, Hayden Building, Columbus, Ohio, is drawing plans for the machine shop and roundhouse to be erected by the Pennsylvania Railroad Company in Columbus, Ohio.



THE REASON!

Does your organization know why

EUREKA PARAGON RED CROSS

brands of fire hose are reliable hose, and why they are giving satisfaction everywhere? May we tell you?

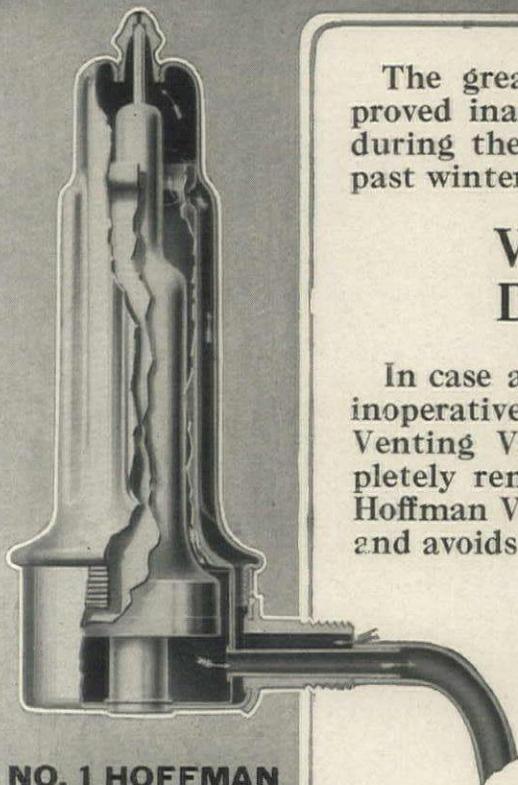
The inner tube is of exceptional construction, the specially woven jackets acting in conformity to each other add to the strength and durability of the hose.

Real satisfaction may be derived from the use of these brands. They are built for high pressure.

United States Rubber Company

Mechanical Goods Division

EUREKA FIRE HOSE DEPARTMENT, P. O. BOX 1330
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**NO. 1 HOFFMAN
SIPHON
AIR VALVE**

The great number of steam-heating systems that proved inadequate to the demands made upon them during the severe and protracted cold weather of the past winter demonstrated conclusively that

Venting Valves Must Be Dependably Operative

In case after case the whole trouble was found to be inoperative venting valves. The installation of Hoffman Venting Valves—always dependably operative—completely remedied the difficulty. The specification of Hoffman Venting Valves in the first place anticipates and avoids such troubles.

There is a Hoffman Venting Valve for Every Service.

HOFFMAN SPECIALTY CO.

128 North Wells Street, Chicago

NEW YORK
512 Fifth Avenue

LOS ANGELES
215 West 7th Street

HAMILTON, OHIO.—The Mosler Safe Company, Hamilton, Ohio, has retained F. G. Mueller, Hamilton, to design a machine shop 50 x 500 feet, one story, brick and concrete, and a warehouse 50 x 350 feet.

LIMA, OHIO.—A two-story bank will be erected by the Citizens Loan & Building Company, Owen Francis, president, 321 North Main Street. A. C. De Curtins, Opera House Block, Architect. \$50,000.

OKLAHOMA

TULSA, OKLA.—The Jarecki Mfg. Company, 20 Main Street, will spend \$150,000 for a two-story store, 25 x 100 feet.

TULSA, OKLA.—Frick Reid Supply Company, E. D. Thornburg, will build a two-story, 100 x 150 feet, reinforced concrete, brick and steel, warehouse, on West Archer Street, to cost \$85,000. F. A. Duggan, Seaman Building, Architect.

OREGON

MARSHFIELD, ORE.—The Oregon National Guard will erect an armory to cost \$40,000. Architect not yet chosen.

PORTLAND, ORE.—Lewis I. Thompson, 91 North Tenth Street, Portland, is drawing plans for a boys industrial school.

PORTLAND, ORE.—The store of Chanslor & Lyons, Broadway and Couch Street, Portland, will be remodeled at a cost of \$10,000 by Architect Lewis I. Thompson, 91 North Tenth Street, Portland, Ore.

PORTLAND, ORE.—Plans have been prepared by Lewis I. Thompson, 91 North Tenth Street, Portland, for a 50 x 60 foot brick garage for the Portland Woolen Mills at St. Johns.

PORTLAND, ORE.—The Mechanical Products Company, Portland, Ore., contemplates the immediate construction of a plant to manufacture iron valves and heavy forgings.

PORTLAND, ORE.—It is believed that a \$3,000,000 steel plant will be established in Portland, Ore., with C. C. Overmire, formerly of the United States Steel Products Company, at the head of the enterprise.

PENNSYLVANIA

ALLENTOWN, PA.—H. Sofransey Company, Furnace Street, will build a two-story, 40 x 185 feet, factory addition to cost \$40,000.

ERIE, PA.—A new municipal hospital will be built for Erie, Pa., probably in Glenwood Park. Dr. Reed, president Board of Health.

PHILADELPHIA, PA.—Plans have been prepared by the Department of Public Safety for the construction of a new municipal repair plant at Eleventh and Reed Streets to cost \$40,000.

PHILADELPHIA, PA.—E. Allen Wilson, 1208 Chestnut Street, Philadelphia, has drawn plans for three-story apartment building, brick, 92 x 100 feet, to cost \$100,000, and to be erected in West Philadelphia.

PHILADELPHIA, PA.—E. Allen Wilson, 1208 Chestnut Street, Philadelphia, Pa., has plans for a garage, brick, 60 x 100 feet, to cost \$25,000.

PHILADELPHIA, PA.—A two-story brick and terra cotta store and apartment house, 60 x 70 feet, has been designed by E. Allen Wilson, 1208 Chestnut Street, Philadelphia.

PHILADELPHIA, PA.—Sixteen three-story brick, stone and stucco houses, 16 x 63 feet each, will go up on Northeast Boulevard, Philadelphia. E. Allen Wilson, 1208 Chestnut Street, drew the plans.

PHILADELPHIA, PA.—J. Ethan Fieldstein, Hale Building, has drawn plans for a medical research laboratory at 1823 Naudain Street, 31 x 70 feet, three stories, brick.

PHILADELPHIA, PA.—A 21 x 120 foot addition of brick and stone has been designed for the Ninth National Bank, Front and Norris Streets, Philadelphia, by Paul A. Davis, 3d, Pressure Building, Philadelphia.

PHILADELPHIA, PA.—A. Pasquarello, 4906 Wayne Avenue, will build a one-story brick garage, 60 x 120 feet, to cost \$25,000. E. A. Wilson, 1208 Chestnut Street, Philadelphia, Architect.

PHILADELPHIA, PA.—Department of Public Safety plans to build municipal repair shop at 112 Reed Street to cost \$40,000.

PITTSBURGH, PA.—Baltimore & Ohio Railroad has had plans drawn for a four-story repair shop and freight house to cost \$37,000. H. A. Lane, Baltimore, Md., chief engineer.

PITTSBURGH, PA.—J. F. Mumper, Hartje Building, Pittsburgh, is Architect for a building for the African Methodist Episcopal Church of Zion, care of G. W. Gaines, 40 Arthur Street, Pittsburgh. Two stories, 25 x 40 feet, \$50,000.

PITTSBURGH, PA.—The Pittsburgh Steel Screw & Bolt Company will erect a two-story concrete building, Northside, Pittsburgh, to cost \$200,000.

READING, PA.—A theater at Eighth and Penn Streets, Reading, will be rebuilt at a cost of \$70,000, from plans by Hoffman Company, Finance Building, Philadelphia. Owner, Berks Amusement Company, care of Vincent & Wilson, Commercial Trust Building, 1450 Broadway, New York City.

SOUTH CAROLINA

COLUMBIA, S. C.—It is stated that the Carolina Public Service Company will increase the capacity of its ice plant at a cost of \$250,000.

GREENVILLE, S. C.—The Board of Directors, Greenville City Hospital, contemplates the erection of a \$130,000 addition to the present institution.

TENNESSEE

KNOXVILLE, TENN.—An administration building to cost \$50,000 is contemplated by the University of Tennessee.

KNOXVILLE, TENN.—The University of Tennessee proposes the construction of an armory to cost \$150,000.

TEXAS

CAMERON, TEX.—The city of Cameron, Tex., will erect a high school at a cost of \$65,000.

DALLAS, TEX.—Dallas Power & Light Company is planning for the erection of a new brick and concrete addition to its plant to cost \$15,000.

DALLAS, TEX.—The Tyler Street Methodist Congregation plans to build a home costing about \$75,000. Address C. Young, 918 Sunset Avenue, Dallas.

FORT WORTH, TEX.—Jule C. Smith will build a \$40,000 home at 1315 Elizabeth Street, two stories, brick and tile.

FORT WORTH, TEX.—The Texas Motor Car Association, Flatiron Building, plans to rebuild a garage at a cost of \$25,000.

GAINESVILLE, TEX.—Nordyke & Marmon Company, 250 North Meridan Avenue, Indianapolis, Ind., have designed a seven-story, 34 x 100 feet, flour mill, of reinforced concrete, to cost \$80,000, for the Whaley Mill & Elevator Company, 110 North Denison Street, Gainesville, Tex.

UTAH

OGDEN, UTAH.—A new cottage for boys is planned on the grounds of the State Industrial School, to cost \$20,000.

OGDEN, UTAH.—Globe Grain & Milling Company, Santa Fé Avenue, Los Angeles, will spend \$500,000 for a mill and warehouse in Ogden.

VIRGINIA

NORFOLK, VA.—Banks Bros., Cooper Street, Norfolk, will rebuild packing plant at a cost of \$175,000.

RICHMOND, VA.—Carneal & Johnson, Chamber of Commerce, Richmond, will alter the building of the American Trust Company at cost of \$25,000.

WINCHESTER, VA.—W. Leon Clark, 220 South Fairfax Street, Alexandria, Va., has drawn plans for a \$30,000 cannery for National Fruit Products Company, care of Cooper Dawson.



RESIDENCE OF JAMES DEERING, MIAMI, FLORIDA
F. Burrall Hoffman, Jr., and Paul Chalfin, Associate Architects; John B. Orr, Stucco Contractor

A Masterpiece in Stucco

Such is the magnificent James Deering residence—a work of art which has few rivals in this country.

To make the stucco of this \$5,000,-000 residence waterproof, decay-proof, crack-proof and permanent, it was waterproofed throughout with



TRUSCON *Waterproofing Paste* **CONCENTRATED**

Structural Waterproofing, a handsomely bound volume, 8 1/2" x 11", giving full information upon Truscon Waterproofing Paste, Concentrated, for stucco work and for waterproofing in general, will be sent free on request written on business stationery.

Truscon Waterproofing Paste, Concentrated, is an integral waterproofing compound in paste form, which is added directly to the water used in mixing the stucco. It makes the stucco absolutely impervious to moisture, prevents cracking and disintegration and gives to the stucco the vital element of permanence.

The Truscon Laboratories
Manufacturers and Inventors of
Waterproofings, Dampproofings, Technical Coatings and Floor Hardeners
1268 TRUSCON BUILDING
DETROIT, MICHIGAN

WASHINGTON

HOQUIAM, WASH.—Lamb Machine Company, F. H. Lamb, president, will build a steel mill costing \$50,000.

SEATTLE, WASH.—Crane Company, Second and King Streets, plans to construct a one-story, 146 x 269 feet, warehouse on East Marginal Way and Hinds Street. G. W. Lawton and H. A. Moldenhour, Alaska Building, Architects.

TACOMA, WASH.—Sisters of Visitation will erect a brick academy and other buildings costing \$250,000.

WEST VIRGINIA

WINDSOR, W. VA.—A new power plant will be constructed in Windsor, W. Va., at a cost of \$3,500,000, as an addition to the Central Power Company's works in Canton, Ohio.

WISCONSIN

EAU CLAIRE, WIS.—First Congregational Church will soon select an architect to design an \$85,000 building.

EDGERTON, WIS.—F. H. Kemp was retained to draw plans for a \$25,000 factory for Trailer Company.

EDGERTON, WIS.—Highway Trailer Company will build a \$25,000 brick factory, 50 x 250 feet. J. Menall, Edgerton, Architect.

MILWAUKEE, WIS.—Landine Gear Company will build a \$40,000 plant.

MILWAUKEE, WIS.—Elkert Bros., 1118 Twenty-sixth Street, will construct a three-story, 47 x 64 feet, brick tannery to cost \$50,000.

MILWAUKEE, WIS.—The International Harvester Company will erect a building adjoining its plant, 37 x 261 feet, at a cost of \$35,000.

WASHBURN, WIS.—A Y. M. C. A. building costing \$50,000 will be built in Washburn, Wis., for the Du Pont de Nemours Company, according to F. T. Beers, manager of the TNT plant at Barksdale, Wis. Brick, stone and stucco construction, 50 x 104 feet.

WAUKESHA, WIS.—W. G. Herbst, Caswell Block, Milwaukee, has made plans for a one-story addition, 55 x 250 feet, to the water bottling plant of the Henk Mineral Spring Company, 406 West Avenue, Waukesha. \$65,000.

WAUKESHA, WIS.—Thompson Malted Food Company is retaining Henry C. Hengels, First National Bank Building, Milwaukee, to design a factory addition.

WEST ALLIS, WIS.—Atlas Foundry Company, Thirty-ninth Avenue and Burnam Street, Milwaukee, will build a \$50,000 foundry in West Allis.

WEST ALLIS, WIS.—Klug & Smith, Mack Building, Milwaukee, have designed a \$40,000 factory for the Obenberger Forge Company, Fifty-third Avenue and Burnham Street.

FIRE LOSSES

Reports of fires published in this department include only cases in which the magnitude of losses sustained and the surrounding circumstances indicate the probability of restoration or reconstruction.

BROOKLYN, N. Y.—Fire broke out in the Atlas Dye Company's premises at 113 Ninth Street, causing \$10,000 loss.

DAYTON, OHIO.—The Maxwell Plant, Dayton, Ohio, has burned with a loss of \$325,000. P. Kreitzer, president.

GOSHEN, N. Y.—Damage of about \$125,000 was caused by the destruction of three of the four buildings of the Duffy Cider & Vinegar Company, Goshen, N. Y.

HARTFORD, WIS.—The Hartford Canning Company suffered a \$50,000 loss from fire in its three-story 250 x 50 foot factory.

HINSDALE, MONT.—The Hinsdale Mercantile Company suffered a \$30,000 loss. John Survant of Malta, owner.

INDIANAPOLIS, IND.—A fire causing \$235,000 loss broke out in the four-story brick building of the Mutual China Company, 128 South Meridian Street, destroying building and contents. F. L. Hollweg, president.

LINCOLN, CAL.—Gladding, McBean & Co., San Francisco, have suffered a loss of \$100,000 in their pottery works, Lincoln, Placer County, Cal.

MADISON, ILL.—The planing mill of the Kettle River Creosoting Works was burned at a loss of \$50,000.

NEW YORK, N. Y.—Fire caused a loss of \$200,000 in the rope and twine manufacturing plant of George W. Millar, 284 Lafayette Street, New York City.

O'NEILL, NEB.—Fire recently destroyed the creamery plant and electric light plant owned by McGinnis Creamery & Produce Company. Loss, \$40,000. Will be rebuilt.

PADUCAH, KY.—Fire destroyed the plant of the Howard Shipyards Company in Paducah, at a loss of \$140,000.

PENN YAN, N. Y.—A loss of \$20,000 is the result of a blaze in a Penn Yan factory in the basket making department of the Yates Lumber Company.

PHILADELPHIA, PA.—Fire caused a loss of \$30,000 in the blacksmith and forge shop in the works of the William Cramp & Sons Ship & Engine Building Company, Beach and Ball Streets.

PROVO, UTAH.—The Provo Woolen Mills, engaged in Government contracts, has suffered a \$500,000 fire loss.



G & G Telescopic Hoist Removes Ashes Economically

When economy and conservation of man power are uppermost in the minds of the men who build—even the detail of ash removal from buildings must be carefully considered.

G & G Telescopic Hoists reduce the work, time and cost of ash removal to an absolute minimum. Model E, illustrated, is electrically operated and will handle any quantity of ashes quickly, quietly and economically.

Five telescopic models are made to meet the requirements of various types of structures. Let us suggest the model best fitted for your next building.

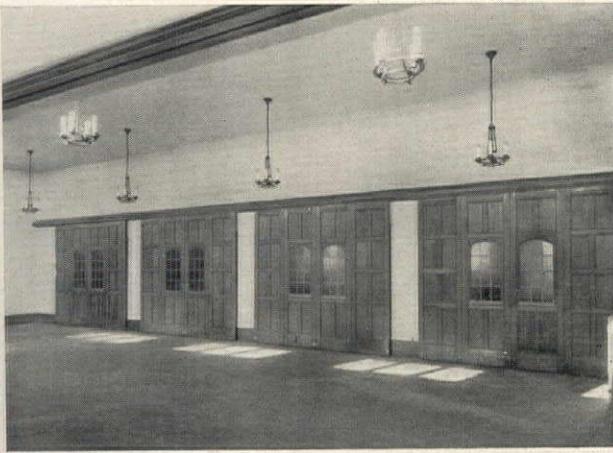
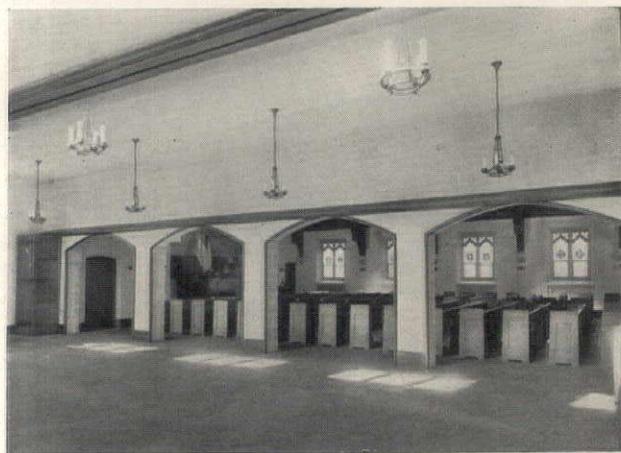


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ESTABLISHED 1866

545 West Broadway, New York City

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WILSON FOLDING PARTITIONS are adaptable to almost any condition. The accompanying cuts illustrate how any number of openings may be equipped with **Wilson Folding Partitions**, without the necessity of folding against the columns.

The special features of the **WILSON FOLDING PARTITIONS** are *they do not hang and there are no half doors.*

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American Sheet & Tin Plate Co.	37
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Automatic Refrigerating Co. (e.f.w.)	

Barrett Co. (e.f.w.)	
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Detroit Steel Products Co.	39
Dixon Crucible Co., Jos.	35
Dunham, C. A., Co. (o.a.m.)	

Edwards Mfg. Co.	36
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Fli-Bac Screen Corp.	
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General Electric Co. (e.o.w.)	
General Fireproofing Co.	
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Globe Automatic Sprinkler Co.	

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Hartmann-Sanders Co. (o.a.m.)	
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Hemlock Manufacturers, The (o.a.m.)	
Higgins & Co., Chas. M. (e.o.w.)	
Hoffman Specialty Co.	25

Imperial Paint Co. (e.f.w.)	
Indiana Limestone Quarrymen's Ass'n (o.a.m.)	

Jenkins Bros.	34
Johns-Manville Co., H. W.	35

The Architect's Laboratory

From one point of view the factories of manufacturers of architectural materials and equipment may be considered the laboratory department of the architectural profession. It is the department in which experiments are made, tests are conducted, and the merit of new devices proved or disproved. Be it stated further that the expense of this research work is all borne by the manufacturers. But the results of their investigations are placed at the disposal of architects, free of all charge. There is not one responsible manufacturer who would not welcome the personal cooperation of architects in this development work. And it would seem that architects would simply be advancing their own, and the profession's, interests by forming closer relations with manufacturers specializing on architectural products.

Kimball Co., W. W.	36
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Society of Beaux Arts Architects	36
Standard Oil Cloth Co., Inc., The	34
Stanley Works	35

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Truscon Steel Co.	38

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Vendor Slate Co., Inc. (e.o.w.)	40
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Western Brick Co. (e.o.w.)	
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Winslow Bros. Co.	37
Wolf, L., Mfg. Co. (e.o.w.)	
Wright Wire Co. (o.a.m.)	

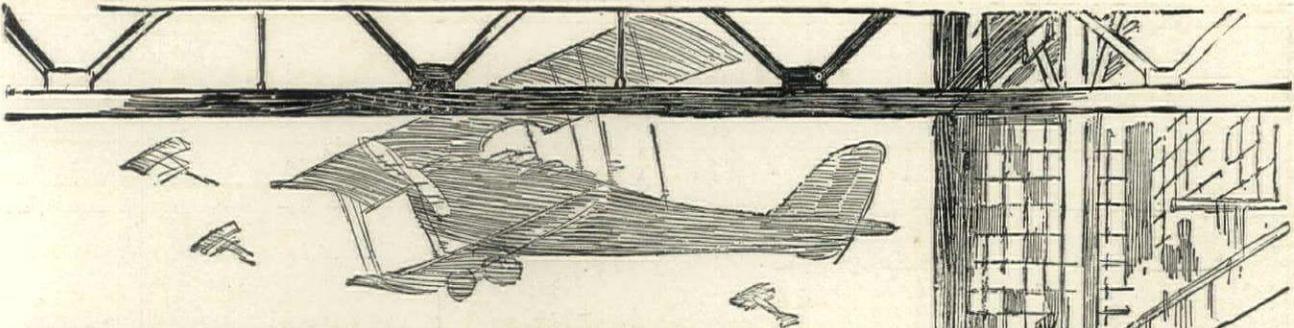
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Zouri Drawn Metals Co.	
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Ads. marked O.A.M. appear once a month



The Right Men in the Right Jobs Will Win The War

THE true American wants to work where he will help win the war. He wants to fit in. America needs the Right Men in the Right Jobs. Only when this comes about can maximum production be obtained to support our armies at the front.

The needs of all war industries can be anticipated and met by the Government if employers and laborers will avail themselves solely of the nation-wide machinery which is at hand. The length of the War depends directly on our Country's ability to supply all War Industry with the best workers the country can produce the moment they are needed.

The U. S. Employment Service is the official bureau of the Federal Government in charge of the distribution of labor. The President has declared that it is the official agency for recruiting and distributing unskilled labor for war work.

PRESIDENT'S STATEMENT

"Industry plays an essential and honorable a role in this great struggle as do our military armaments. We all recognize the truth of this, but we must also see its necessary implications—namely, that industry, doing a vital task for the Nation, must receive the support and assistance of the Nation."

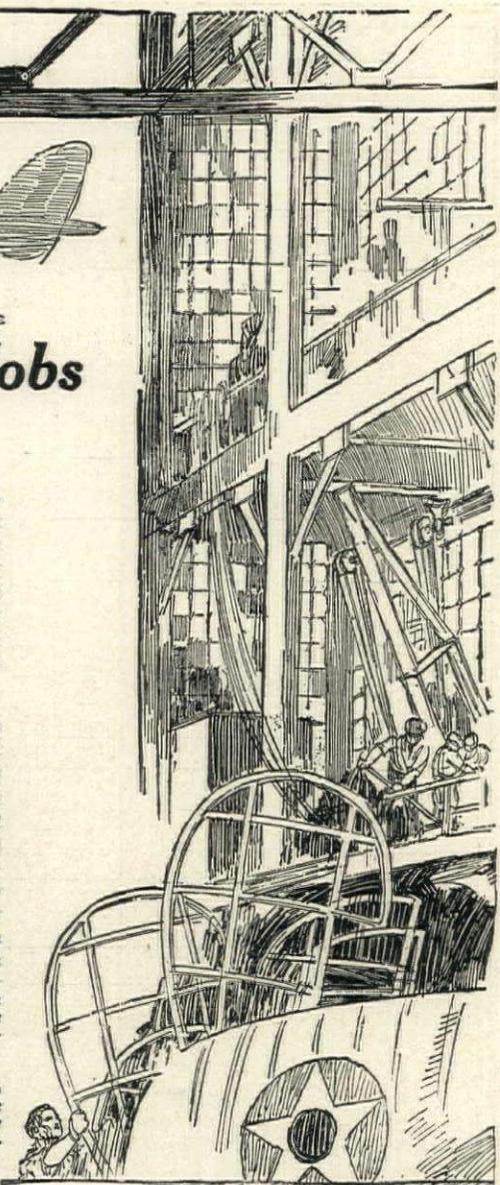
"Therefore, I solemnly urge all employers engaged in war work to refrain after August 1st, 1918, from recruiting unskilled labor in any manner except through this central agency [the U. S. Employment Service]. I urge labor to respond as loyally as heretofore to any calls issued by this agency for voluntary enlistment in essential industry. And I ask them both alike to remember that no sacrifice will have been in vain, if we are able to prove beyond all question that the highest and best form of efficiency is the spontaneous co-operation of a free people."

WOODROW WILSON.

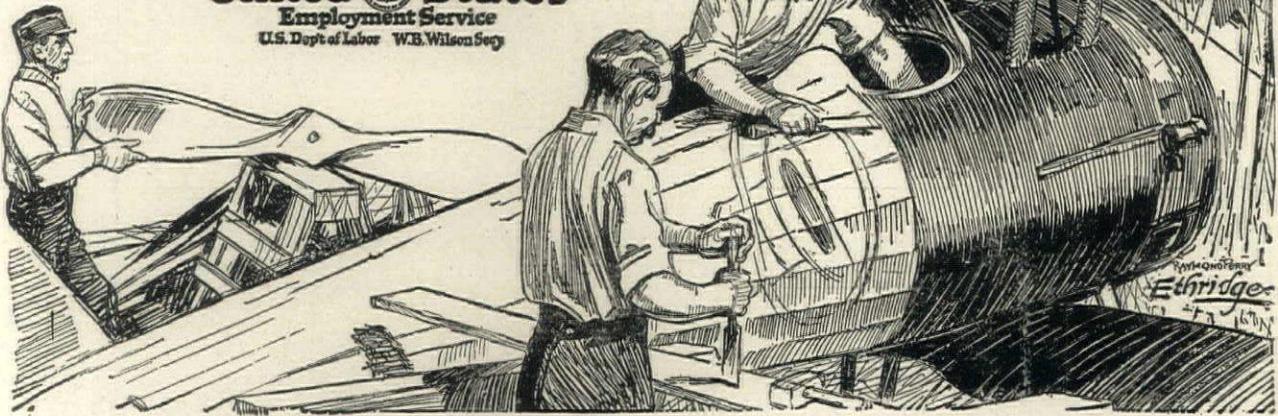
It has over 500 branches throughout the nation, and 20,000 U. S. Public Service Reserve enrollment agents. Ask the local post office or newspaper for name and address of the nearest representative, or write to the U. S. Employment Service, Washington, D. C.

Those employers in war work who seek to get labor through their own or private recruiting agencies are interfering with the Government's machinery and preferring their interests to those of the nation. Only through strict compliance with the Government's program can the constant, restless shifting of labor from one war job to another, with the consequent diminution in production and efficiency, be prevented.

Above all, the Government urges every man engaged in war work to stick to his job until the Government recommends that he change. Any man not engaged in war work should put himself at the disposal of the nation by registering with the Public Service Reserve. This is a tremendously important duty! The war worker ranks with the fighter in the trenches. He will help beat the Hun.



United States Employment Service
U.S. Dept of Labor W.B. Wilson Secy



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This space contributed for the Winning of the War by
THE AMERICAN ARCHITECT

DIGEST

Of Manufacturers' Data

ARCHITECTS' OFFICE EQUIPMENT

PENCILS:

Dixon Crucible Co., Jos., Jersey City, N. J.

CASEMENT WINDOWS

METAL:

Pomeroy Co., Inc., S. H., 30 E. 42d St., N. Y.

CEMENT AND PLASTER

CEMENT:

Atlas Portland Cement Co., The, 30 Broad St., New York. Manufacturers of Atlas Portland Cement and Atlas-White Portland Cement. Sales Offices: Chicago, Philadelphia, Boston, St. Louis, Minneapolis, Des Moines, Dayton, Savannah. Mills: Northampton, Pa.; Hudson, N. Y.; Hannibal, Mo. Sales Manager: C. A. Kimball.

PLASTER:

National Kellastone Co., The, Chicago, Ill.

SPECIALTIES:

Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. Corner beads, "Kahn" curb bars, "Trus-Con" slotted inserts; "Kahn" adjustable inserts; "Trus-Con" National socket inserts; "Kahn" elastic filler and armor plates for expansion joints.

STUCCO:

National Kellastone Co., The, Chicago, Ill.

CONCRETE REINFORCEMENT

REINFORCEMENT:

American Steel & Wire Co., Chicago-New York. Berger, The, Mfg. Co., Canton, Ohio. Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. "Kahn" System reinforced concrete; "Kahn" bars; "Rib" bars; "Rib" lath; "Florestyles," "Floredome," etc.; flat and beamed ceilings of all types.

DAMP-PROOFING

(See Water and Damp-proofing)

DAYLIGHTING

Berger, The, Mfg. Co., Canton, Ohio.

DOORS AND TRIM

HOLLOW STEEL DOORS:

Interior Metal Mfg. Co., Jamestown, N. Y.; Bankers Trust Bldg., 501 Fifth Ave., New York. Hollow steel doors in all standard sizes.

STEEL ROLLING DOORS:

Edwards Mfg. Co., The, 319-349 Eggleston Ave., Cincinnati, O. Send specifications for estimate.

THIS department is intended to assist our subscribers in readily determining the names and addresses of manufacturers of products in which they may be interested, together with brief data about their material.

The headings and sub-headings are arranged alphabetically and have been selected in accordance with the intent of meeting the architect's thought in preparing his specifications.

If the information desired is not found here, it will gladly be supplied by the Service Department of THE AMERICAN ARCHITECT.

DUMB WAITERS

Sedgwick Machine Wks., 159 W. 15th St., N. Y.

ELECTRICAL EQUIPMENT AND SUPPLIES

CONDUITS AND FITTINGS:

National Metal Molding Co., 1111 Fulton Bldg., Pittsburgh, Pa. "NATIONAL" metal molding for surface wiring; "SHERADUCT" Sherardized and "ECONOMY" enameled conduit "FLEXSTEEL" flexible conduit and armored cable and a complete line of fittings.

Youngstown (O.) Sheet & Tube Co. "BUCK-EYE" rigid conduit. "REALFLEX" armored conductor.

OUTLET BOXES:

Hart & Hegeman Mfg. Co., Hartford, Conn.

RECEPTACLES:

Hart & Hegeman Mfg. Co., Hartford, Conn.

SOCKETS:

Hart & Hegeman Mfg. Co., Hartford, Conn.

SWITCHES:

Hart & Hegeman Mfg. Co., Hartford, Conn.

ELEVATORS AND HOISTS

CONVEYORS:

Otis Elevator Co., 11th Ave. and 26th St., N. Y. C. Gravity spirals.

ELEVATORS AND HOISTS

Continued

ELEVATORS:

American Elevator & Machine Co., Louisville, Ky.

Otis Elevator Co., 11th Ave. and 26th St., N. Y. C. Offices in principal cities of the world. Electric, hydraulic, belt and hand power, inclined freight elevators and escalators.

ELEVATORS (Hand Power):

Sedgwick Machine Wks., 159 W. 15th St., N. Y.

ELEVATOR CABLE:

American Steel & Wire Co., Chicago-New York.

HOISTS (Ash):

Gillis & Geoghegan, 545 W. Broadway, N. Y. C. "The G. & G. Telescopic Hoist"; Model A, hand power cellar to sidewalk; Model B, cellar to wagon; Model C, like A, but electric power; Model D, like B, but electric power.

Otis Elevator Co., 11th Ave. and 26th St., N. Y. C. Automatic coal and ash hoists, blast furnace and ship hoists.

FIREPROOFING MATERIALS

Johns-Manville, H. W., Co., N. Y. C.

METAL LATH:

Berger, The, Mfg. Co., Canton, Ohio.

Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. "Fly Rib," "Rib" lath; "Diamond Mesh" lath.

FIRE PROTECTION

HOSE:

United States Rubber Co., New York City. Cotton-Rubber Lined; "Eureka" Paragon and "Red Cross" Brands. Unlined Linen-Hose: "Eureka Best," "Eureka 20th Century" and "Eureka Worthy" Brands.

FLOORS

COMPOSITION:

Johns-Manville, H. W., Co., N. Y. C.

Franklyn R. Muller & Co., Waukegan, Ill.

National Kellastone Co., The, Chicago, Ill.

FOUNDATIONS

PILES:

Raymond Concrete Pile Co., 140 Cedar St., N. Y. C. "Raymond" concrete piles are made by driving a reinforced steel shell which is left permanently in the ground. This shell is then filled with concrete.

ALPHABETICAL INDEX OF ADVERTISERS ON PAGE 30

FURNITURE AND DECORATIONS

CHURCH:

Kundtz, The, Theodor, Co., Cleveland, O. Church and auditorium seating.

DRAPERIES, UPHOLSTERIES, WALL COVERINGS:

Chase & Co., L. C., 89 Franklin St., Boston, Mass. "Chase" Mohair Velvet Coverings.
Standard Oil Cloth Co., Inc., The, 320 Broadway, New York. "Sanitas" Tinted, Decorative and Glazed. Fast colors, sanitary. For private homes, hotels, auditoriums, institutions, etc.

METAL:

Canton Art Metal Co., Canton, Ohio.

GARDEN ACCESSORIES

Mathews Mfg. Co., The, Cleveland, O. Seats, arbors, pergolas, gateways, etc., of wood.

HARDWARE

BOLTS:

Corbin, P. & F., New Britain, Conn.

BUILDERS' HARDWARE:

Corbin, P. & F., New Britain, Conn.
Stanley Works, The, New Britain, Conn.

BUTTS AND HINGES:

Corbin, P. & F., New Britain, Conn.
Stanley Works, The, New Britain, Conn. (Ball-Bearing)—Steel, brass, bronze.

DOOR CHECKS:

Corbin, P. & F., New Britain, Conn.

GARAGE HARDWARE:

Stanley Works, The, New Britain, Conn. Garage door holders and garage door hinges.

HEATING, VENTILATION PLUMBING

BLOWERS AND EXHAUSTERS:

Buffalo Forge Co., Buffalo, N. Y.

BOILERS:

American Radiator Co., Chicago, Ill.

DRINKING FOUNTAINS:

Cahill Iron Works, The, Chattanooga, Tenn.

FLOOR DRAINS:

Crampton-Farley Brass Co., Kansas City, Mo.

FURNACES:

Hawley Down Draft Furnace Co., Easton, Pa.

LAUNDRY TUBS:

Cahill Iron Works, The, Chattanooga, Tenn.

LAVATORIES:

Cahill Iron Works, The, Chattanooga, Tenn.

PIPE, IRON:

United Lined Tube & Valve Co., 173 Franklin St., Boston, Mass. Lead, tin or brass lined iron pipe.

PIPE (Steel):

Youngstown Sheet & Tube Co., Youngstown, O.

HEATING, VENTILATION, PLUMBING—Continued

RADIATORS:

American Radiator Co., Chicago, Ill.

REGISTERS:

Waterloo Register Co., Waterloo, Iowa.

SINKS:

Cahill Iron Works, The, Chattanooga, Tenn.

SINKS (Slop):

Cahill Iron Works, The, Chattanooga, Tenn.

TANKS (Closet):

Cahill Iron Works, The, Chattanooga, Tenn.

TRAPS (Radiator):

Johns-Manville Co., H. W., New York City.

TRAPS (Steam):

Jenkins Bros., 80 White St., N. Y. C.
Johns-Manville Co., H. W., New York City.

TUBS (Bath):

Cahill Iron Works, The, Chattanooga, Tenn.

URINALS:

Cahill Iron Works, The, Chattanooga, Tenn.

VALVES (Air):

Hoffman Specialty Co., 130 No. Fifth Ave., Chicago, Ill. Siphon Air valves; Siphon Air and Vacuum valves; "Air Line" valves; Junior Quick Vent Air valve; Quick Vent "Float" air valve; Quick Vent "Float" Air and Vacuum Valve; Return Line valve for vapor, vapor vacuum, modulating and vacuum heating systems; vapor vent valve.
Jenkins Bros., 80 White St., N. Y. C.

VALVES (Radiator):

Jenkins Bros., 80 White St., N. Y. C.

VALVES (Steam):

Jenkins Bros., 80 White St., N. Y. C.

VALVES (Water Line):

Jenkins Bros., 80 White St., N. Y. C.

VAPOR HEATING SYSTEMS:

American Dist. Steam Co., No. Tonawanda, N. Y.

VENTILATORS:

Burt Mfg. Co., The, 77 Main St., Akron, O. Manufacturers of all types of ventilators, both stationary and revolving.

HOISTS

(See Elevators and Hoists)

INSULATION (Sound and Heat)

BUILDING:

Cabot, Samuel, Inc., Boston. "Cabot Quilt."
Johns-Manville Co., H. W., New York City.

LIGHTING FIXTURES

GLASSWARE:

Mitchell-Vance Co., 503 W. 24th St., New York City.
Northwood, H., Co., Wheeling, Lighting Glass.

METAL:

Mitchell-Vance Co., 503 W. 24th St., New York City.

MUSICAL INSTRUMENTS

ORGANS:

Kimball, W. W., Co., Chicago, Ill.

ORNAMENTAL BRONZE AND IRON

Polachek, John, Bronze & Iron Co., 480 Hancock St., Long Island City, N. Y.
Winslow Bros. Co., 4600 W. Harrison St., Chicago, Ill.

PAINTS, VARNISHES, STAINS

PAINT:

Patton Paint Co., Milwaukee, Wis., Newark, N. J. Patton's "Velumina" Oil Flat Wall Paint.

PAINT (Steel Protective):

Dixon, Joseph, Crucible Co., Jersey City, N. J.

STAINS:

Cabot, Samuel, Inc., Boston. "Cabot's" Creosote Stains, Stucco Stains, Brick Stains, Old Virginia White and Old Virginia Tints.

VARNISHES:

Pitcairn Varnish Co., Milwaukee, Wis.

PARTITIONS

METAL:

Berger, The, Mfg. Co., Canton, Ohio.
Interior Metal Mfg. Co., Jamestown, N. Y.; Bankers Trust Bldg., 501 Fifth Ave., N. Y. Interchangeable Hollow Metal Partitions.

FOLDING:

Wilson, J. G., Corp., 8 W. 40th St., New York.

ROLLING:

Wilson, J. G., Corp., 8 W. 40th St., New York.

PLASTER

(See Cement and Plaster)

PLUMBING

(See Heating, Ventilation, Plumbing)

REFRIGERATION

REFRIGERATING APPARATUS:

Johns-Manville, H. W., Co., New York City.

ROOFING

ASBESTOS:

Johns-Manville, H. W., Co., New York City.

SHEET METAL:

American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

SLATE:

Rising & Nelson Slate Co., West Pawlet, Vt.; 101 Park Ave., N. Y. C. Special slate to architect's design.
Vendor Slate Co., Inc., Bangor, Pa.

TILE (Reinforced-Cement):

American Cement Tile Mfg. Co., Pittsburgh and New York. "Bonanza" roofing tile.

SASH

(See Windows)

SASH CORD
Samson Cordage Works, 88 Broad St., Boston.

SCREENS
Fli-Bac Screen Corp., Rochester, N. Y.

SHEET METAL
American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

FORMED PRODUCTS:
American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.
Berger, The, Mfg. Co., Canton, Ohio.

METAL CEILINGS:
Berger, The, Mfg. Co., Canton, Ohio.
Canton Art Metal Co., Canton, Ohio.

STAINS
(See Paints, Varnishes and Stains)

STONE
GRANITE:
National Building Granite Quarries Association, Inc., 31 State St., Boston, Mass.

STRUCTURAL STEEL
PRESSED STEEL CONSTRUCTION:
Berger, The, Mfg. Co., Canton, Ohio. "Metal Lumber." Pressed Steel Joists and structural members.
Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities.
"Kahn" pressed steel beams, joists, studs, plates, etc.

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PLASTER BOARD:
Bishopric Mfg. Co., The, 744 Este Ave., Cincinnati, Ohio. Bishopric Stucco or Plastic Board. The dove-tailed key locks the plaster. Made of creosoted lath, asphalt-mastic and heavy fibre board.

STUCCO:
National Kellastone Co., The, Chicago, Ill.

TERRA COTTA
TERRA COTTA (Architectural):
N. Y. Arch. Terra Cotta Co., Tel. Astoria 700.

TILE
(See Flooring and Roofing)

VACUUM CLEANERS
American Radiator Co., Chicago, Ill.

VARNISHES
(See Paints, Varnishes and Stains)

VENTILATION
(See Heating, Ventilation, Plumbing)

WALL BOARD
(See Stucco and Wall Board)

WATER AND DAMPPROOFING
Cabot, Samuel, Inc., 141 Milk St., Boston.

WATER SUPPLY SYSTEMS
Carter, R. B., Co., 152 Chambers St., N. Y. C.

WINDOWS METAL
Detroit Steel Products Company, Department No. 9, Detroit, Mich. Fenestra Solid Steel Windows are made from Solid Rolled Steel Bars interlocked by patented Fenestra joints. Ventilators are equipped with adjustable, removable butts. Fenestra Gravity Cam Latch automatically locks ventilators when closed. Patented Channel Section gives ventilators double weathering.
Lupton's, David, Sons Co., Philadelphia, Pa.
Pomeroy, S. H., Co., Inc., 30 E. 42d St., N. Y. Hollow metal fire retardant windows in 27 standard types.
Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. "United" steel sash in all types; horizontally and vertically pivoted sash; counterbalanced and counterweighted sliding sash; center pivoted and top hung continuous sash; steel and glass partitions; sliding and swinging doors; casement sash of all designs.
Winslow Bros. Co., 4600 W. Harrison St., Chicago, Ill.

CASEMENT:
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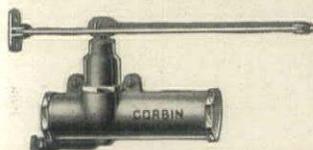
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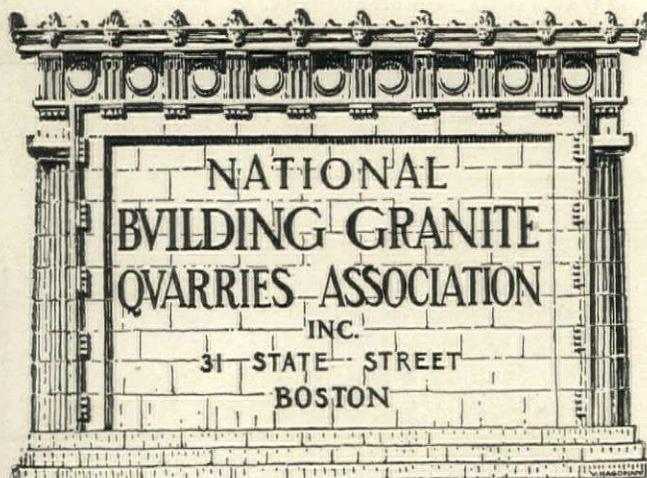
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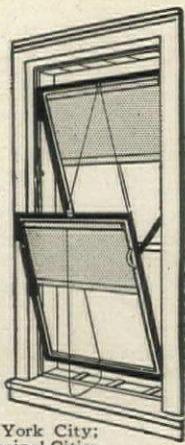


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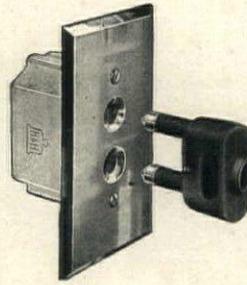
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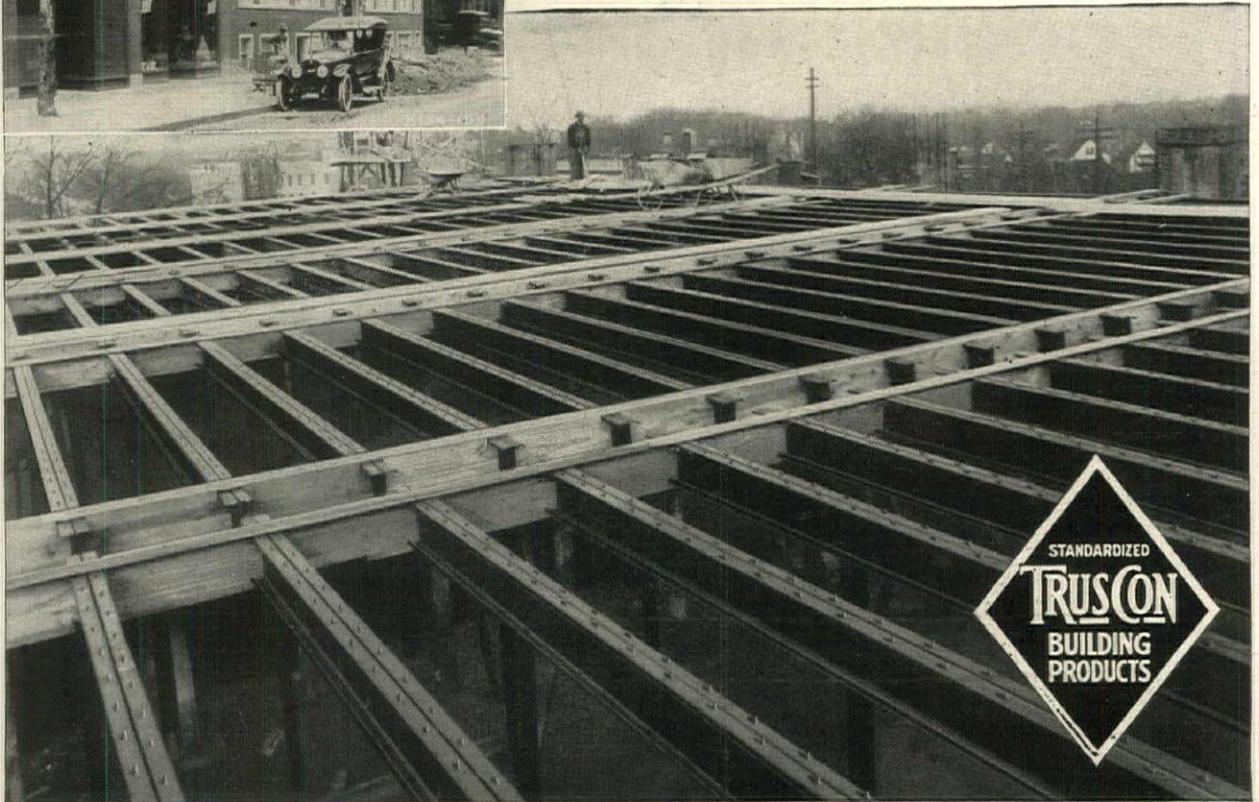
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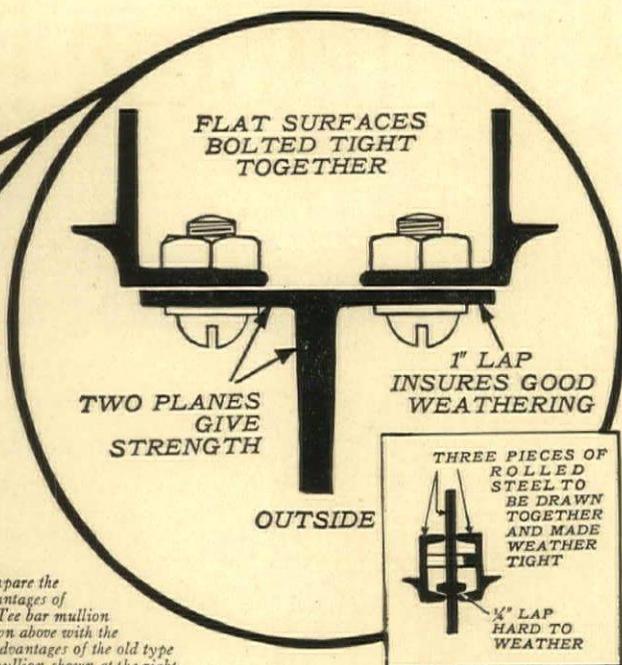
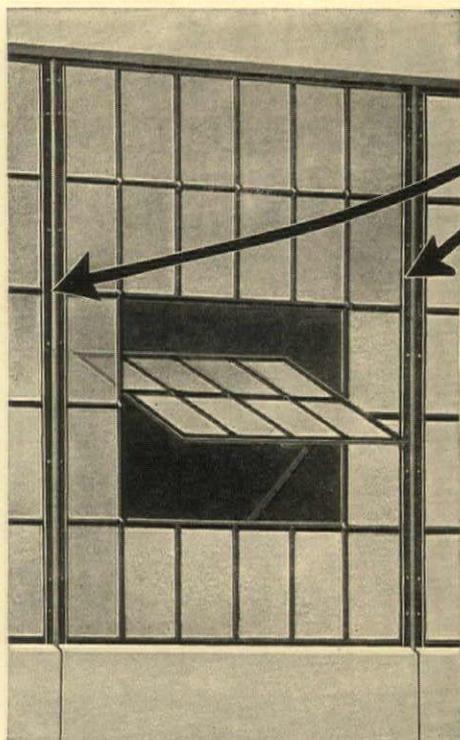
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