

The AMERICAN ARCHITECT



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THE OLD MALT HOUSE, BROOK, SURREY
(From *The Cottage Homes of England*)

Developing Regional Types of Architecture

THE picturesque aspect of the small town in Europe, but more particularly in England, is without doubt due to the fact that the buildings are erected of local materials. The cottage homes of England, probably the most picturesque of all dwellings, really grow from the ground. Each house may be said to spring from the soil; the stone foundations are from the fields, the rough hewn logs from the nearby woods, the thatch from the threshing of the crops—all a part of the place itself.

The half timbering with its nogging of stone and the browning thatch, blend with the surroundings in an indescribable manner. These houses must be seen that their true artistic significance may be understood. In the years and sometimes centuries of weathering the material all assumes the general aspect and harmony of tone which characterizes the native landscape.

These small communities present a certain charm lacking in similar small towns in the United States. With us, the standardization of materials, the com-

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parative cheapness of transportation before the war, had made it possible for the man who built him a house in Missouri to use the same exterior materials availed of by a man similarly engaged in New England. For this reason much of the ingenuity resulting from an adaptation of local material is missing in this country and a monotony defeating artistic accomplishment is everywhere present.

Many of our young men, before the war engaged in the practice of architecture, will have had unusual



ROOF OF SLATE TILES, HALF TIMBERED, WITH
BRICK NOGGING

(From *The Cottage Homes of England*)

opportunities to observe while in Europe, and many of them, let us hope, will return to take up the practice of their profession in small communities all over the United States. The lessons they will have learned of the artistic possibilities latent in local material will be many. We shall, therefore, undoubtedly profit architecturally in the development of our small towns, and learn that much of the ready-to-hand material we have heretofore ignored is often better suited to our purpose than that we seek at long distances from home.

It may safely be said that the reason why we in America have not yet reached a nationally characteristic type of architecture is that we have failed to avail ourselves of the things close at hand



IN THE VALLEY OF THE POGLIA, ITALY

(From *Smaller Italian Villas and Farmhouses*, by Guy Lowell)

in working out the architectural development of our small towns. On the other hand, it may be claimed that the use of standardized material would enable us to achieve this national type more quickly.

It should be borne in mind that, contrasted with the comparatively small area and the certain conditions of climate in European countries, the United States is enormous and experiences within its borders every climate of the earth.

It would not, therefore, be possible to produce a type that would be fitting in every section of the United States under all these varying conditions,



A FARMHOUSE AT CINTOIA, ITALY

(From *Smaller Italian Villas and Farmhouses*, by Guy Lowell)

but it would be possible to group the country into certain zones or regional areas in each of which the architectural development would be along the lines of an artistic and architectural expression in local materials. This development of regional types would, without doubt, first occur in small communities. The opportunity will therefore fall to the competent architects practicing in small towns to

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co-ordinate their architectural resources and capabilities. It is not believed that we shall make the greatest progress toward this individuality of a regional style in the design of the large or monumental building. The tendencies of our present architectural educational methods are so largely toward adaptatives of classical precedent in design, and appear so likely to continue in that direction, that we shall for some time to come, as we have for so long in the past, follow this precedent, adapting

in the experience of practical employment in large cities. And, since this war has overspread the world, in the case of many men whose day dreams of a trip abroad have been realized not in the pleasure journeys they had planned, but in the grim business of war, there has been added to the education already acquired a post-graduate course in the school of life.

When the young architect returns to his community, straight from the firing line, and often



A TYPICAL ENGLISH COTTAGE

(From *The Cottage Homes of England*)

it with more or less success to our needs for large buildings.

The well worn quotation, "Young men think old men are fools, but old men *know* young men are fools," no longer holds good. In the days when men were born and raised in one community, and spent the whole of their lives there, the sameness of experience, the close and daily touch with common things, tended toward the "grading" of all men by the same standards. To-day the world has become restless. Both boys and girls go far afield in search of education, not only at school and college, but also

unfortunately from the hospitals in France, it will not be as a callow youth, fresh from college, cocksure of himself and of the future. He will have acquired, through months of the strictest discipline, all the poise and balance of a man many times his years. People will not question the ability of even a young man with such experience in life.

Here, then, will the young architect who essays to seek a livelihood in his home town, find opportunities, not only in matters strictly confined to the practice of his profession, but also in the wide field of citizenship. He may work for his ideals,

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IN WISHFORD, WILTS
(From *The Cottage Homes of England*)

not haltingly or apologetically; he can go forward to the things he wants to do, work to the ends he strives to gain, with every assurance of support and confidence. He may lead his community, not only in its esthetic or practical affairs, but in the broad development of the elements which will insure its steady and sturdy growth. There he may work in his sphere as may other young men in their fields, toward the development of a type or style in design that will be the application of those ideas and observations gained during military experience and making possible, effort toward the creation of a distinctive type in the region of his location.

The smaller town under such guidance will become, in each case, a distinct individuality, and that individuality will but reflect, in large part, the guiding genius of the young architect who will influence its growth. And with a strong mind in a sturdy body, he will represent in every way the manly type so essential in the "make-up" of the modern architect. He will not be a dreamer, nor will he affect the ultra-esthetic aspect. His training will have taught him to govern himself, the first real step toward the ability to govern others.

He will grow to be a good executive, and so



A HOUSE IN CORDOBA, SPAIN
(From *Domestic Architecture of Southern Spain*)

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A VILLAGE STREET, KENT, ENGLAND

(From The Cottage Homes of England)

clearly will he demonstrate his ability to do things that his capacity will not be measured by his few short years, but by what he has done, is doing, and can undoubtedly do.

We believe the future will develop, not only a national, regional type in architecture, but it will also develop a national type of architect, both emerging from the melting pot of experience gained during this war.

The type of architect developed will not be one which will lead the public to regard the profession of architecture as made up of visionaries, but, on the contrary, so strongly will manly characteristics be developed that it will not be possible in the future to overlook, as has been done in the past, the fact that the architect is the ruling, dominating personality in every building operation.

We are indebted to The Architectural Book Publishing Co. and Messrs. Longmans, Green & Co. for permission to publish the illustrations accompanying the foregoing article.

The War Trade Board, under a new ruling, has amended its restrictions so as to permit the importation from Italy of Italian marble and manufactures of Italian marbles, when coming from convenient ports where loading can be done without delay.



AN ENGLISH COTTAGE IN SOUTH DEVON

(From The Cottage Homes of England)

German Housing Plans

A PART from the devastations of war, Europe is faced with a severe shortage of housing on account of the general cessation of building operations since the outbreak of hostilities.

While the conditions in England and France have become generally well known, those in Germany have not been so easy to ascertain. We have now accessible a series of reports from our consular agents, from which it is learned that the housing situation in Germany is even more acute than in the countries of our allies. In various parts of Germany there has been great activity to deal with the problem, and several Federal States and towns are already contemplating many kinds of improvements. A report recently issued by the Department of Commerce and Labor is as follows:

The position in Germany was summarized recently in a memorial addressed by the National Association of Commercial Employees to various German legislative bodies. It stated:

Germany in the last fifty years has changed from being a preponderantly country-dwelling people into a nation of town dwellers. Even before the war, the housing question was becoming acute. The increase in population demanded a regular yearly supply of 200,000 dwelling houses, 75 per cent of which were small houses; but since the war, building activity has been at a standstill. During the war, many families are sharing houses, but they will wish to go into houses of their own when peace is signed; there will also be frequent moves from large to smaller houses. Rents must inevitably rise, and the families with many children will suffer most. All that has been done so far toward remedying the existing evils is a drop in the ocean, and a comprehensive system of Imperial housing reform is required.

Again, the situation in Berlin, which may be taken as typical of the position in larger towns, was described in a speech delivered recently by the Director of the Statistical Office at Schönberg, in which he stated:

The number of houses standing empty in the 46 communes of Greater Berlin in the period from May, 1916, to May, 1917, has diminished from 32,145 to 24,812, and is still falling. Soon after the end of the war, 20,000 dwelling houses will be required by soldiers' wives who have no home at present. At least another 20,000 will be wanted for the men who have postponed marrying until after the war. Then there will be a considerable number of single men returning who had their own houses before the war. Besides this, account must be taken of the increase of the normal demand from the young men who have grown up and from the influx of newcomers, so that in Greater Berlin during the first peace years there will be at least 60,000 dwellings required which will afterwards increase by 20,000 every year. This demand cannot be met by emergency expedients, such as the use of garrets and basements, old railway carriages, and barracks. The only method is to build new houses on a large scale.

In order to deal with the difficulty, the representatives of the municipalities and districts to Greater

Berlin have, according to the *Berliner Tageblatt*, decided to bring about an amalgamation of the municipalities and communal associations. Previous to this it was proposed to reopen the municipal housing bureau which was closed at the end of 1914, but this was found impracticable on account of the lack of labor and material.

The first legislative step in Germany has been taken by the State of Prussia, where a housing law came into force on April 1. Summarized, it is provided that:

This act opens up a field of new activity for the State and communes in the matter of welfare work and housing measures. It makes new provisions for the acquisition of building land. Special attention is paid to the need of small and moderate-sized dwellings, and the so-called "Communal building prohibition" is confirmed by the act. In order to meet the need of such houses and to improve the sanitary conditions of such houses, and to improve the sanitary conditions of building quarters, blocks of dwelling houses and such like, the necessary ground and sites may be expropriated until December, 1926. Communes with more than 10,000 inhabitants are bound by law to inspect the houses and institute a housing office. The act finally settles that the sum of 20,000,000 marks will be put aside by the State for public benefit building purposes.

Careful consideration, it would appear, is being given as to the certainty of a pronounced shortage of building materials, and the urgent necessity to set the building materials industry going again is foreseen. Among the means of accomplishing this it is decided that there should be timely discharge from the army of laborers necessary for this work, to facilitate which, the following general instructions have been issued:

The building materials set free by the army administration are to be given at reasonable prices to those communes where a shortage of houses exists.

Since, in spite of the quantities of building materials thus made available there will probably during the first few months after the war not be sufficient to meet the demand, care is emphasized that all buildings should be erected as far as possible in the order of urgency.

In order to provide accommodation at once for the homeless, suitable residential hutment colonies should be generally established within suburban zones in the vicinity of railway stations and so arranged that to each dwelling should be attached a vegetable garden, and if necessary, sheds for poultry, rabbits, etc.

Immediately after the conclusion of peace a commencement must at once be made for the provision of sanitary, suitably furnished, permanent small dwellings as far as possible of one story only.

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In all places where a shortage of houses is to be expected suitable cheap building land must be provided and opened up, and this must be facilitated by making available landed property belonging to the State.

Building plans should be prepared for all the more important types of small dwellings, *e. g.*, leasehold and freehold houses, houses for families of one, two or more members, houses for large families, detached houses, houses in terraces, houses for colonies, houses with a garden and sheds, corresponding to the building usages in the various Federal States and Provinces. The building regulations for small and one-storied dwellings should, as far as may be possible, be freed from all conditions tending unnecessarily to increase their price, *e. g.*, directions as to the breadth of streets, building materials, thickness of walls, height of rooms, staircases, precautions against fires, etc.

In the lists of the men first to be discharged from the army at the end of the war, the employees and workmen necessary for the erection of dwelling houses should be included.

In addition, efforts to encourage building are being made by the publication of orders relaxing the building regulations in various parts of the empire. One order emanating from the War Office is addressed to the twenty-nine sub-offices of that department. It permits the resumption of building operations during 1918, and states that, "wherever a serious shortage of houses exists, and its removal appears urgent, building operations are to be warmly supported and building materials released." The order further provides that building operations on houses which have already been begun may be continued.

With regard to the very important question of providing workmen, the order states: "The necessary labor for removing the shortage of housing accommodation will be provided by the Substitute and Labor Department. It is to be taken from 25 per cent of the labor in the building industry now available, and also from the ranks of those builders who are being slowly released from their employment on war buildings."

A second order was directed recently by the Prussian Minister of Agriculture and the Prussian Minister to the competent authorities, and provides that timber suitable for building purposes from Government forests may be sold on generous terms to the communes and public utility associations and companies for providing housing accommodation, especially emergency buildings, such as barracks, etc., on conditions that its employment for this object is assured.

In the meantime a merry war is being waged

between the landlords and the tenants of Greater Berlin. Both sides have organized and are holding meetings at which their grievances are discussed and resolutions asking for Government aid are adopted. The landlords demand the limitation of the functions and powers of the special boards appointed by the authorities to handle cases of disputes over rents involving soldiers' dependents, the abolition of the rule compelling them to make a reduction of about 25 per cent where the soldiers' family is assisted by the municipality, the abolition of the ordinance protecting the tenants and a general raise in rents of at least 25 per cent. The tenants call the present regulations for their protection inadequate, and ask the Commissioner of Housing to issue an edict limiting rent increases to from 5 to 15 per cent, according to circumstances, and providing against notices to move until two years after the conclusion of peace. While the landlords insist that their carrying charges and all other expenses have gone up enormously during the war, thus making rent raises inevitable, the tenants declare that the raises they propose would be ample to meet all these increases.

Contrary to the general impression, the German authorities have not taken very drastic steps toward protecting the dependents of the Kaiser's soldiers from the clutches of their fellow countrymen in the shape of landlords, and the Berlin papers are filled with accounts of wholesale evictions and stories of soldiers' wives wandering from house to house vainly seeking quarters for themselves and their little ones.

Housing for Farm Labor

Lumber may be the means of solving the farm labor problem, if the suggestions of writers for the United States Department of Agriculture are carried out.

G. I. Christie, assistant to the secretary of agriculture, and Clarence DuBose, special assistant, have written a bulletin entitled "Supplying the Farm Needs," in which they say:

"There is at this time a need for a larger number of comfortable homes for the tenants and hired help on the farms. The old shack that was simply a place in which to exist will no longer satisfy the workers. For the appearance of the farm and the beautification of the country, suitable, comfortable homes should be built and maintained. The building of houses for the help will allow many farmers, instead of moving to town, to remain in their own homes on the farms, where they can render the greatest assistance to the community and to agriculture."

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Architectural Education of the Future

THE tendency toward specialization in the practice of architecture is becoming more pronounced each year. We have long had theater and mill architects, and now we are developing school architects, landscape architects, town planning architects and a great many other specialists in some single branch of the profession. Without doubt the trend in this direction will manifest itself more strongly in the future.

This being the case, what are we doing, as a profession, to meet this condition? It is obvious that advances and changes in the present system of architectural education will be required. Tentative steps in this direction are under consideration now at the hands of the A. I. A., measures which should have the support and co-operation of those who have the future of the profession at heart.

It used to be that the student entering an architectural office, fresh from his academic courses, found opportunities for general training. He was sure of taking his part in all the different types of work that came up. Now, however, if he shows a special aptitude for any branch he is kept at that work alone, with few opportunities for absorbing general experience and information.

In a great many ways this intensive specialization seems unfortunate, but we must recognize it as inevitable and direct our efforts toward eliminating its evils as far as possible.

It will be recognized that a man cannot be a successful specialist in any line unless he has a thorough understanding of the basic principles and the fundamental truths underlying his profession as a whole. It is further indispensable that he have as a mental background a thorough and comprehensive training along general lines, in order that he may see his own work in proper perspective.

Since this general training and experience is no longer to be obtained in architectural offices, it becomes necessary to make provision for it during the years of academic training. The problem of modifying present methods of education to meet these needs is in itself not a simple one, and its difficulties are enhanced by the constitutional objections held by educators as a class for any departures from prescribed and established methods. Hence it is they who will need first to be convinced that different methods and additional courses have gradually become more and more necessary.

Each year there are issuing from our architectural schools increasingly large numbers of men who, while they may have completed their courses creditably, have little or no understanding of the actual

requirements or of the daily routine of architectural practice. Many of them are neither temperamentally nor by inclination, well adapted for the work. Some are archæologically inclined; others, brilliant designers of imaginary problems, where but few limitations occur, lack the balance wheel of sense; while there is a third class, sad to relate, composed of simple wayfarers who wandered into the field because it looked inviting. This classification, needless to say, has no reference to the vast body of men in the profession of real ability and talent, who are in large part responsible for the architecture and architectural institutions of the country.

To return to the subject of architectural educational methods, there are two main lines along which it might be well to work. The first essential should be the actual weeding out of the candidates unfitted for the work before their entry into the serious study of architecture as a profession. This, of course, would be possible only with the co-operation of the preparatory schools, and even of the parents.

The second development for which we should be striving is the prolongation of the period of actual technical training. An architect's education is never entirely completed, but the earlier the start, the more progress is possible. At the present time, architectural schools confine practically all of the professional training of students to three years, although four years may be specified in the catalogs; for the first year has little work that has distinct bearing upon the subject except in a disciplinary way. Three years is utterly inadequate for even the most enthusiastic and ambitious student to gain more than a smattering of the subject. Four years devoted to intensive professional training would be short enough; in fact, they would simply point the way to further endeavor.

Another point which might be noted in respect to the duration of the period of training is the fact that it takes the average student two years to learn how to study. These two years—which occasionally might reduce themselves to one—ought, then, surely to be devoted to the more disciplinary and “cultural” subjects, rather than to any consideration of basic and essential principles and methods. Adding these years—or possibly a single year—for preliminary work to the four years for serious professional training, the course will extend over a period of five or six years.

Such a change would bring into our ranks a class of men, possibly not so large in number, but surely enough higher in quality that they would make their mark in future years.

The “special two-year course,” provided by most schools, would seem to have outlived its usefulness,

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owing largely to the increase of facilities for technical and manual training offered by art schools, ateliers and the like. Such courses should, therefore, be abolished. The student who desired special work, and who could demonstrate his being fitted for it, either by previous education or by experience, could then undertake such of the regular advanced courses as he desired.

More distinct differentiation should also be made between schools of architecture and schools of draftsmanship. This is a distinction now more or less vague.

If the trend in architectural education were to manifest itself along these lines many modifications and extensions would doubtless need to be made. It has not been the attempt in the present discussion to deal with more than the first principles of the development suggested. Matters of detail, indeed, could not well be discussed with reference to a proposition which is still, unfortunately, in so nebulous a state.

Regional and Civic Centers as War Memorials

THE suggestion comes from England that inasmuch as "the drama of city building will reach its 'big scene' in the reconstruction of the devastated cities of Europe and the planning for new conditions created by the war," an appropriate and adequate memorial would be the establishment of an extensive program of regional and civic design.

Such a proposition is to be warmly commended. It would create in the most splendid way, regions that would be a dignified tribute by the various cities and towns to the valor and patriotism of its citizens.

Among the many schemes proposed for war memorials, none has larger or more dignified possibilities. Every nation that has been at war during the past two hundred years has had practically the same, and in almost every instance, unfortunate experience. The traveler in the capital cities of this country and in Europe has had his sense of artistic fitness shocked, and in many times his ire aroused on coming face to face with memorials that, while conceived in respect and affection, are so irredeemably bad as to be atrocious.

We should avoid all this in the future. It should be the duty of the respective governments to see to it that the memorials that may be erected shall receive the artistic supervision which their importance warrants.

Regional and civic centers designed and set apart

for memorial purposes would effect every good purpose and insure a dignified and artistic grouping.

When the resources latent in regional and civic design are carefully examined there is disclosed the great capacity to meet the requirements of a grateful people seeking to do honor to their soldiers and sailors. In fact the one and only good solution of the problem of war memorials would appear to be found in such a scheme; practical and artistic aims would be simultaneously realized.

No one will question that potentially the most appropriate places for these memorials are in these localities. With names that designate the purposes to which the various areas are set apart, and with proper and careful artistic supervision of their development and ornamentation, the states and cities would vie, each with the other, for a memorial that would be a lasting national honor. In a somewhat embryonic way this idea is now taking form in this country, and there may be noticed in many towns large and often well-designed wooden tablets on which is inscribed the town's "roll of honor." These temporary records are generally placed on the public common with a surrounding of well-kept flower beds. The extension of this idea into the creation of a civic memorial center, if properly led, is an easy and logical process.

After-the-War Housing in England

RAPIDLY changing conditions since England's entry into the war have developed in that country immensely increased housing needs, and these must be considered with a view to newly developed demands for town planning, legally limited rentals and the certainty of a scarcity of building materials. These conditions will not apply solely to England; they will be present, and perhaps to even a larger degree, on the continent as well.

The British Ministry of Reconstruction is giving careful consideration to all these important matters, and while going forward with its work it meets, as might be supposed, with a considerable amount of adverse criticism. This in no sense retards the work, but on the contrary has a tendency through broad discussion to avoid many costly errors.

In a report recently issued by the Ministry it is estimated that 300,000 new houses will be needed after the war.

Commenting on this estimate an expert on housing conditions is of opinion that if the war lasts until 1919 at least that number will be required for British rural districts alone. This makes the recent statement in these columns that it would

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require a half million houses to supply England's after-the-war needs a conservative one.

It appears to be the general opinion that in the supplying of this large number of houses, no considerable number can be built unless financial aid is forthcoming from public funds to make good the loss inevitable because of abnormal prices.

This revives the controversy as to the place of the private builder in the coming construction. If the means in these buildings are supplied by subsidies from the State, the only share of private firms in this work would be as building contractors. To further operations and expedite as much as possible the rapid erection of houses, organizations similar to our own building and loan societies are to be encouraged, but it seems inevitable that in the earlier months of building, or until an imperative

demand has, in a measure, been supplied, the bulk of the money must be provided by the State or the local authorities.

Of course, all this will be a direct blow to speculative building. In fact there will probably be none at all.

A feature of this report to be commended is the condition that "in order to maintain a high standard of design and layout in new building schemes, the work should always be in charge of an architect. It is not stated if this condition was included as the result of the insistence of the R. I. B. A., but it is probable that it was, and affords a suggestion to our Institute to watch carefully governmental action in this country on every building scheme, in order that the architect's place in the operation may be properly fixed.



FARMHOUSE OF THE VILLA SALVIATI, FLORENCE

(From *Smaller Italian Villas and Farmhouses*, by Guy Lowell)

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Men, Munitions and Money

THE most stupendous construction undertakings in this country are successfully executed within a stipulated period of time. The architect and engineer indicate the requirements in the form of plans and specifications, the contractor assembles the material and labor, and the project is completed as agreed. These operations are seldom brought to conclusion before the time agreed upon in the covenant, except when a bonus is awarded. Expeditious work is always accomplished with an added cost, but in these days time is the essential factor owing to the great co-ordinate interests involved. The added expense is an accepted part of the program. These great construction enterprises are started and finished as a matter of course because they are based on measurable conditions.

A contemporary engineering journal claims that war is essentially an engineering undertaking. This being undoubtedly true, and considering the waging of war as a contract, which it is, the necessity devolves on the Government to estimate the requirements to complete the work within the shortest possible period of time.

That estimate has been made. It is based on the Allied plan of operation. The portion allotted to

this country is known. It is simply a question of men, munitions and money in certain quantities. With these provided, a decisive conclusion is promised within a reasonably short time. Then why talk so fearfully of five years more of war? Is it not better for all to execute their part of the contract as best they can to provide the essentials *to-day* and win *to-morrow*? If the time of victorious completion is set for 1919, is the bonus for an earlier termination not worth the effort?

The Cost, Losses and Gains of the War

R. E. WHITTLESEY, chief statistician of the Guaranty Trust Co. of New York, has, in a recently published article, set forth an estimate of the cost, losses and gains of the four years of war. It is difficult to comprehend the figures he sets down, as they deal with amounts so very large as to leave the reader bewildered with their greatness. However, a statement from so excellent an authority is valuable as showing the magnitude of the conduct of the war as reduced to dollars, and as suggesting the equally large sums of money that will be required to repair the loss.

The money expended by the seven leading belligerents is set down as 134 billions of dollars. The immensity of this sum is of course beyond human comprehension, and can be only understood by comparison with other wars. The total cost of all wars fought since the American Revolution, covering a total period of sixty-eight years of warfare, was but 23 billion dollars, so that the expenditure of the present war, for a period of but four years, is six times as large.

Computing the actual destruction and its possible cost is not so easy. There can only be a statement of areas affected and these areas of course vary in importance and cost of rehabilitation.

The total active area of the war zone approximates 174,000 square miles, of which the western theater of the war in France and Belgium supplies 20,000 square miles and contains over three thousand cities and towns. Every one of these has been to a greater or less degree subjected to damage—in many instances this damage amounts to obliteration. The estimate of the National Foreign Trade Council, brought up to include the year 1916, makes specific reference to certain details of loss in the theater of war.

It is stated that in Belgium the damage to buildings exceeds one billion dollars and in France seven hundred millions. To these enormous totals of destruction to structures must be added those for 1917 and 1918, probably doubling the losses. The one

THE AMERICAN ARCHITECT

item of railway bridges destroyed in Belgium and France is stated as \$575,000,000.

In shipping there has been a total loss of 15,000,000 tons, an amount equal to about a third of the world's tonnage, and this loss, at a pre-war valuation, amounts to more than a billion dollars.

These material losses can in a measure be repaired; the sacrifice of human life, thus far estimated at 9,000,000, and with an almost equal number permanently wounded, is irreparable.

In summing up the gains, Mr. Whittlesey believes it is possible to speak of positive gains, both economic and spiritual. The more sympathetic understanding between capital and labor is of first importance. Greater efficiency in industry and a more economical utilization of productive potentialities of both men and materials have been attained. Business organization has become more permanent, waste has been largely eliminated, and extravagance curbed. These lessons which we are so thoroughly learning will never be forgotten and will exert a controlling influence in our future progress.

War is a costly price to pay for all this, but it is certainly a gain, the benefits of which we shall ultimately realize in the broadest and most valuable way.

In hundreds of other directions are there to be found positive gains as the result of our experience in this war. Without dwelling on the details of these gains it is necessary to name but a small proportion of the vast number of directions in which the war has "speeded up" a progress that would normally have taken many decades to bring to fruition.

Thousands of the most valuable inventions have sprung up as the result of military necessity. In every one of the nations engaged in war there has been developed the highest genius of which it was capable. Inventions that would have slumbered for years in the laboratories of scientists have been perfected, and many others not yet given to the world will undoubtedly result.

Improvements in means of communication, the higher application of mechanical power, the rapid and almost marvelous development of aeroplanes, the perfection of chemical processes—these are but a few of the many gains that result from the impetus that war has given in many directions where for

lack of this incentive they would have remained undeveloped for a long time. Nations which have become knit together in the brotherhood of arms, which have struggled for victory under conditions such as the world has never before known, are not likely to drift apart when they have returned to peace. There can be no doubt that as a result of all this turmoil the world of nations will emerge purified as by fire and each proceed to its destiny united by a stronger and more lasting bond of brotherhood than has ever been realized in this world.

War Saving Societies

IN this War Savings campaign, President Wilson has urged that everyone join a War Savings Society. Many do not understand what a War Savings Society is. It is a voluntary association of persons living in the same place, or working in the same store or factory or office, or belonging to the same club, church or lodge, who agree to support the Government in war time by refraining from unnecessary purchases, so as to release the labor and materials of which the President says we and our allies are so desperately in need.

The War Savings Society stands for community saving. It is often hard for an individual to save by changing his scale of living whether it be in personal expenditure, household budgets or amusements and recreations, if his neighbors and associates are spending just as much as ever on those items and are applying to each expenditure the test, "Can I afford it?" instead of the test, "Is it necessary for my health and efficiency?" which the President says should be the test in war time. But most people will gladly save if they find that others with whom they associate daily are also sacrificing comforts and conveniences, and unnecessary expenditures for the purpose of helping the Government. The War Savings Society makes organized saving easy where individual saving was hard.

But the standard the President has set for war-time expenditures is not a rigid standard; rather it is an elastic one to be determined by each individual for himself. Nor is it a grim and joyless standard; on the contrary, it must include such reasonable amount of relaxation and amusement as is necessary to maintain physical, mental and spiritual vigor and welfare.

Criticism and Comment

What Constitutes Unprofessional Practice in Architecture?

To the Editors, THE AMERICAN ARCHITECT:

The able discussion of "What Constitutes Unprofessional Practice in Architecture" appearing in the issue of THE AMERICAN ARCHITECT under date of August 14th is not only timely, but without doubt is in line with the present trend of professional thought. The great problem of all professions to-day is how to make our professional societies more influential in national as well as local affairs, as well as of more worth to their individual members. If our published professional codes of practice are not in accord with our unwritten codes, as charged, then let the published codes be revised.

Undoubtedly our architectural societies are undergoing a period of reconstruction; therefore, let us hope that the societies of the future will be truly representative of the democratic spirit of our times and that our published codes of ethics will be truly expressive of the so-called unwritten law. The problem of reconstruction is at present the big thing. Let all who believe in the more glorious future that is sure to come assist in making our professional societies what they should be and all that they may become if all earnestly work together to secure the better things for the future.

Chicago.

F. E. DAVIDSON.

To the Editors THE AMERICAN ARCHITECT:

Allow me to extend to you my sincere appreciation of the article which appears in the August 14th number of THE AMERICAN ARCHITECT entitled "What Constitutes Unprofessional Practice in Architecture." In this brief but excellent article there is completely covered the ground of what constitutes professional ethics and the final summing up is thoroughly sound in every respect.

I am one of the younger architects who has not joined the American Institute of Architects, and my reasons for not joining that society are fully expressed in this excellent article.

There are a large number of practitioners who are members of the American Institute of Architects who probably do not live up to its rules regarding professional practice, and, believing this, I made up my mind a number of years ago that it was wrong to join that society unless one believed in its rules and carried on one's business in strict accordance with them.

New York.

ARTHUR WARE.

War Department Plans for the Expansion of Camps

The War Department authorizes the following statement:

Expansions of camps and other changes at training centers have been decided on as follows by the General Staff:

Camp Hancock, Ga., is to be a machine-gun center and will be enlarged to accommodate between 55,000 and 60,000 men. The officers' training school, now housed in tents at this point, will be provided for in barracks and quarters similar to those already erected at other cantonments. The improvements for this purpose will cost about \$2,000,000. This figure does not cover the increased cost for other construction that will be necessary to care for the increased number of men to be located at this camp.

It has been decided to make Camp Grant an Infantry replacement camp to accommodate between 55,000 and 60,000 men. The present capacity of this camp is about 42,000. The alterations and additions made necessary by this change will be made after the division now located there is moved.

Field Artillery firing centers are to be located at West Point, Ky., Camp Jackson, S. C., and at Fayetteville, N. C. Options on sufficient land for this purpose have been secured at all these places. It is planned to locate six brigades at Fayetteville, six at West Point, and four at Jackson.

It has also been decided to erect permanent buildings for the officers' training schools at present housed in tents at Camps Lee, Gordon and Pike. These schools have a capacity of about 6,000 men. The estimated cost of erecting barracks and quarters and doing other construction work at each of these schools is about \$2,000,000.

Our Soldiers on Historic Ground

American soldiers, says a correspondent of a New York daily paper, are, during their brief leisure moments, wandering through ruins and over fields made familiar to students of history by centuries of wars and revolutions, and are manifesting considerable interest in the art and architecture of France. Some of them have already fought on the scene of some of Napoleon's operations in the region of the Marne.

Some are training over ground where the Normans fought the French, and where the French fought the Spaniards. Later they will, perhaps, be marching in line of battle over the country where the French and the Germans have fought again and again.

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Personal Responsibility for Fire Losses

In 1917 the United States paid over \$250,000,000 "interest charge on an investment in carelessness, waste and inefficiency." The quoted words are from an article in the Journal of the American Bankers Association entitled "The Public Dereliction of Preventable Fires as Related to War Efficiency." We find strong evidence sustaining this assertion in the Report of the Committee on Statistics and Origin of Fires, New York, May 23, 1918, and in recent addresses by A. R. Small and Dana Pierce, of the Underwriters Laboratories, and Wilbur A. Mallalieu, of the National Board of Fire Underwriters. From the above sources we gather five fundamental facts regarding fires and their prevention.

First—That electricity is by far the safest and most efficient form of energy for the production of light, heat and power.

Second—That fire losses in the United States are enormously out of proportion to those of any other nation.

Third—That a large majority of our fires are strictly preventable, and are due to carelessness or indifference.

Fourth—That there is evidence of lamentable ignorance on the part of the public of the huge annual waste of our wealth and resources by destructive conflagrations.

Fifth—That our fire departments and the various organizations for the prevention of fires must be backed up by a keener sense of personal responsibility on the part of the public.

The annual fire loss in the United States, as is conclusively shown by the accompanying statement for the year 1913, is out of proportion to that of other nations. The Actuarial Bureau of the National Board of Fire Underwriters has calculated the per capita loss in 1913, as follows:

United States	\$2.10
France	.49
England	.33
Germany	.28
Italy	.25
Austria	.25
Holland	.11

The *Wire Message*, commenting on these figures, states:

"We strain our bank accounts to buy Liberty Bonds and support the Red Cross and the Young Men's Christian Association; we hoard our pennies and nickels to purchase thrift stamps; we 'Hooverize' in our eating that our boys 'Over There' and our Allies may be adequately supplied with

proper food. All of this is fine and patriotic. The war is turning us from extravagant habits, and teaching us valuable lessons in economy and sacrifice. Is it not time we awoke to the necessity of rendering patriotic service to our country by doing our part in curtailing the enormous waste of our wealth and resources through fires? Never in our history was there a time when such an awakening was so needed."

"The Chance for a War Memorial"

Under this heading a correspondent of the *London Times* has put forward an interesting suggestion in regard to war memorials. He proposes to utilize the site in Abingdon Street, Westminster, facing the Houses of Parliament and the Victoria Tower Gardens, where the leases are falling in, making available for a building scheme one of the finest sites in London. There has long been a project for building there a cloister, or Campo Santo, where monuments could be placed for which there is no longer any room in the Abbey itself. "And what more appropriate, simple, and indeed useful war memorial could there be," he asks, "than such a cloister?"

Proceeding to discuss the architectural style of a cloister in such a position, the writer deprecates the idea that it should be sham Gothic to agree with the Gothic of the Abbey. "What is needed," he says, "to make the new building harmonize with the old is the same spirit, the spirit of builders building according to their own sense of beauty and fitness, and solving their problem in the terms of their own time. True, most of the cloisters in this country are Gothic; but that is only because they were built when Gothic was the natural style. Now it is not; but it would be easy enough for any architect who knew his business to design a cloister simply as a cloister, just as engineers design railway bridges." The architectural problem thus presented as a very interesting one. Few architects have had the opportunity of designing a modern cloister that is not an imitation of old work.

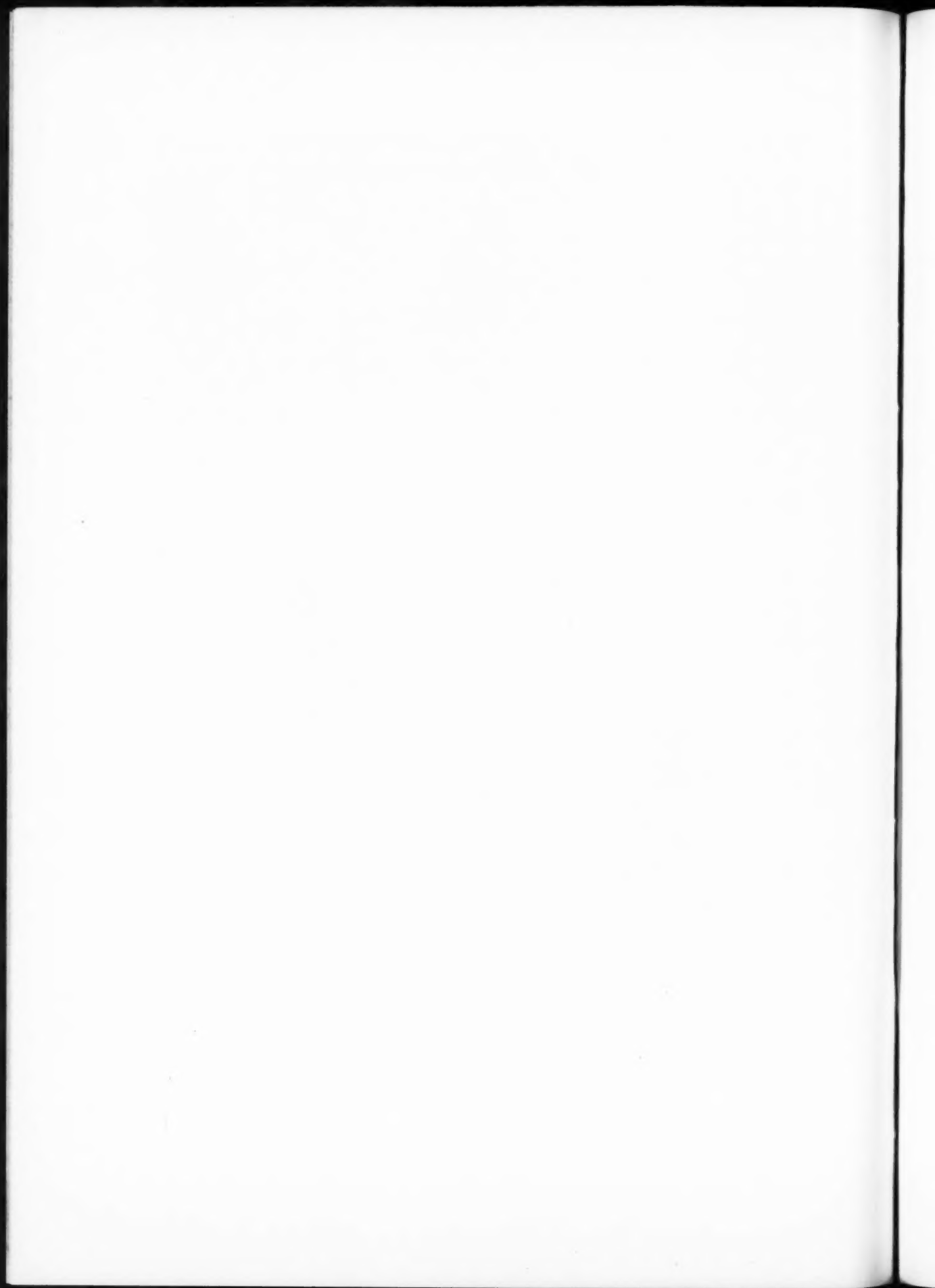
Use of Cement Is Restricted

Use of cement by industries engaged in other than war work will be greatly curtailed, if not completely stopped, by an order issued by the Fuel Administration restricting delivery of coal to cement manufacturers to 75 per cent of the normal amount. Manufacturers may make cement in excess of their allotment only if greater production is required by the Government.



PLATE 24

FOURTH CHURCH OF CHRIST SCIENTIST, FORT WASHINGTON AVE., NEW YORK
S. S. BEMAN, ARCHITECT



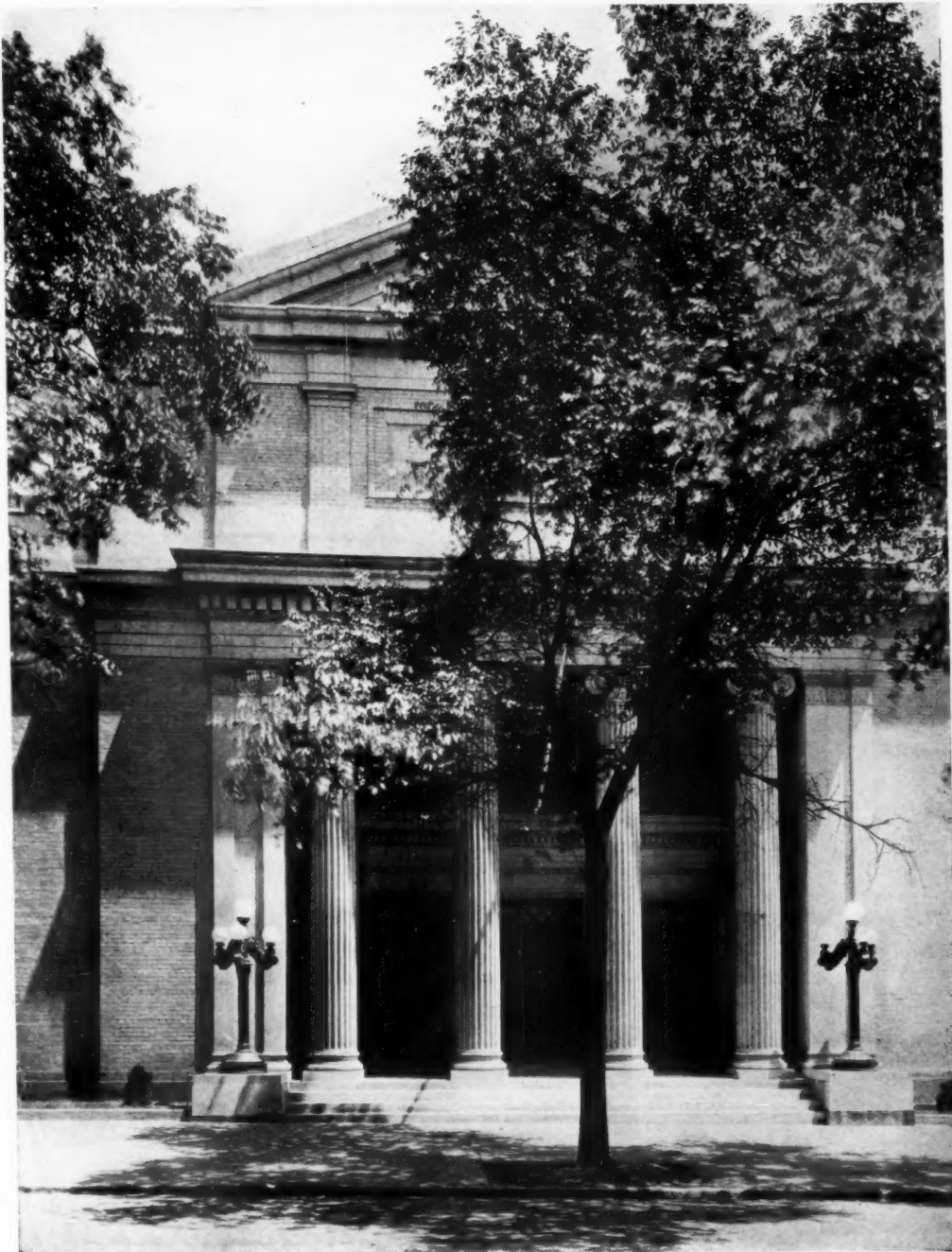
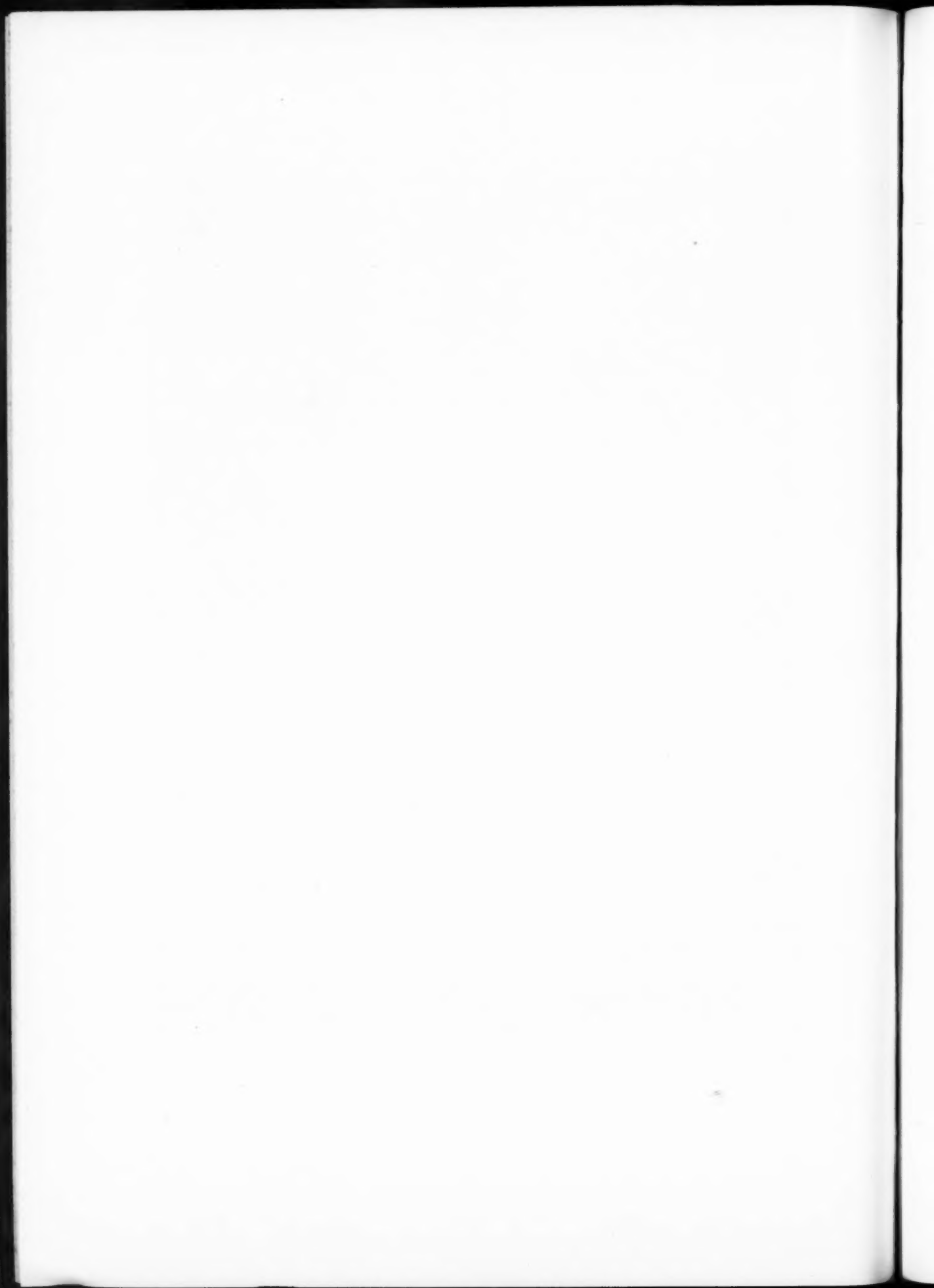


PLATE 75

MAIN ENTRANCE DETAIL

FOURTH CHURCH OF CHRIST SCIENTIST, FORT WASHINGTON AVE.,
NEW YORK

S. S. BEMAN, ARCHITECT



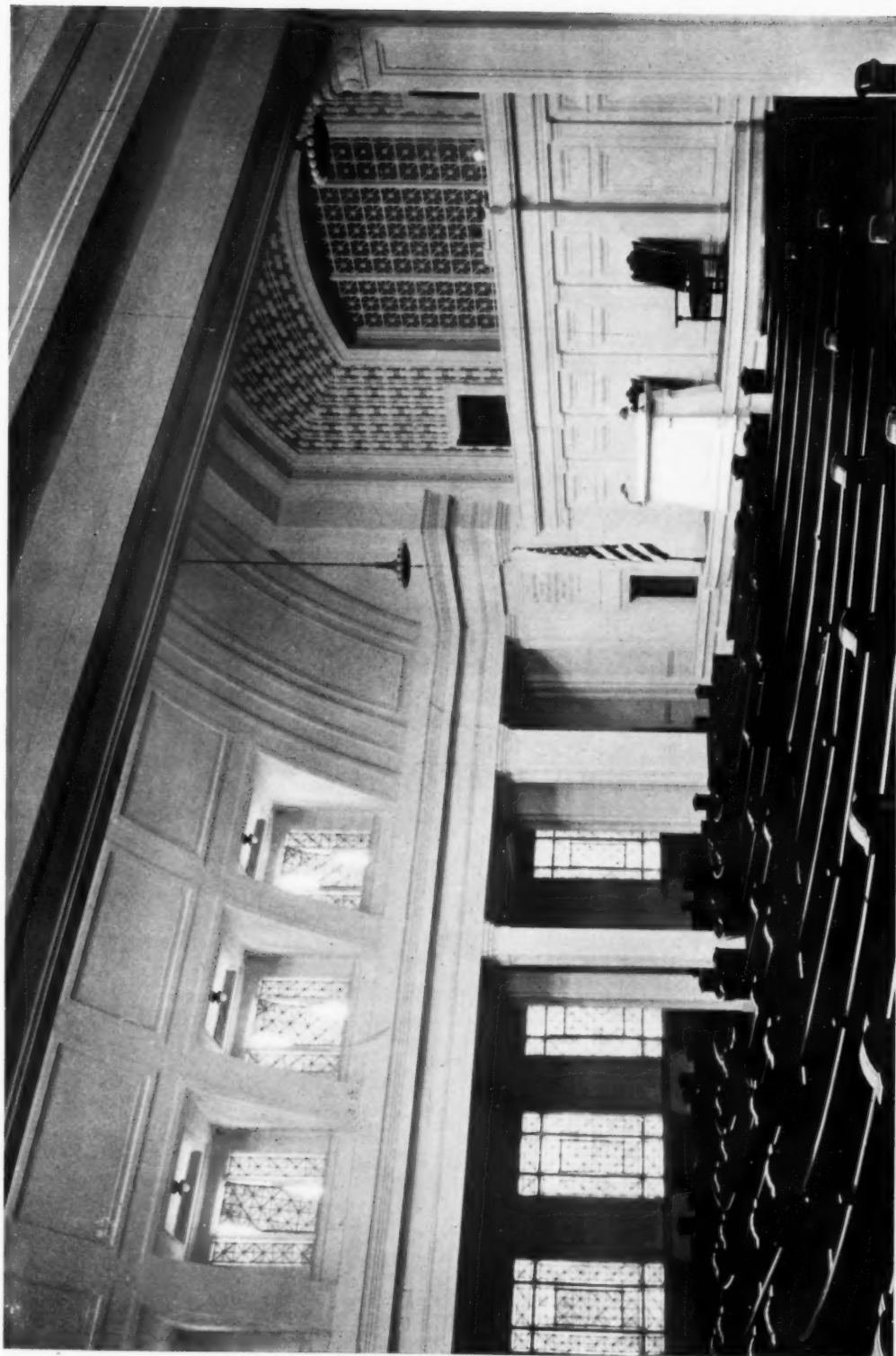


PLATE 76

FOURTH CHURCH OF CHRIST SCIENTIST, FORT WASHINGTON AVE., NEW YORK

S. S. BEMAN, ARCHITECT

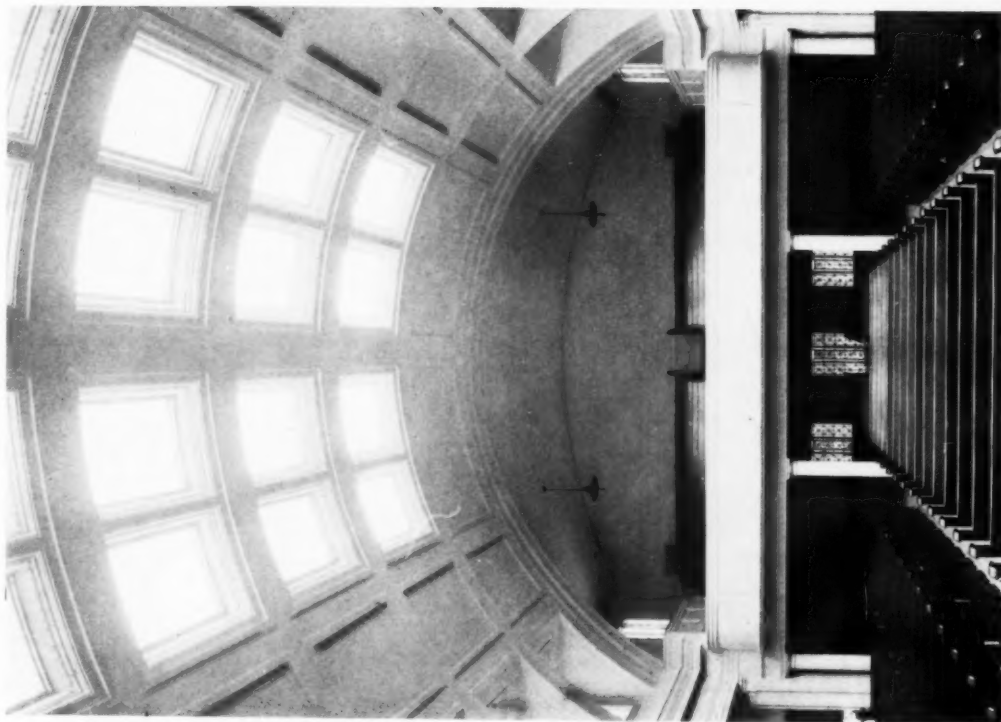
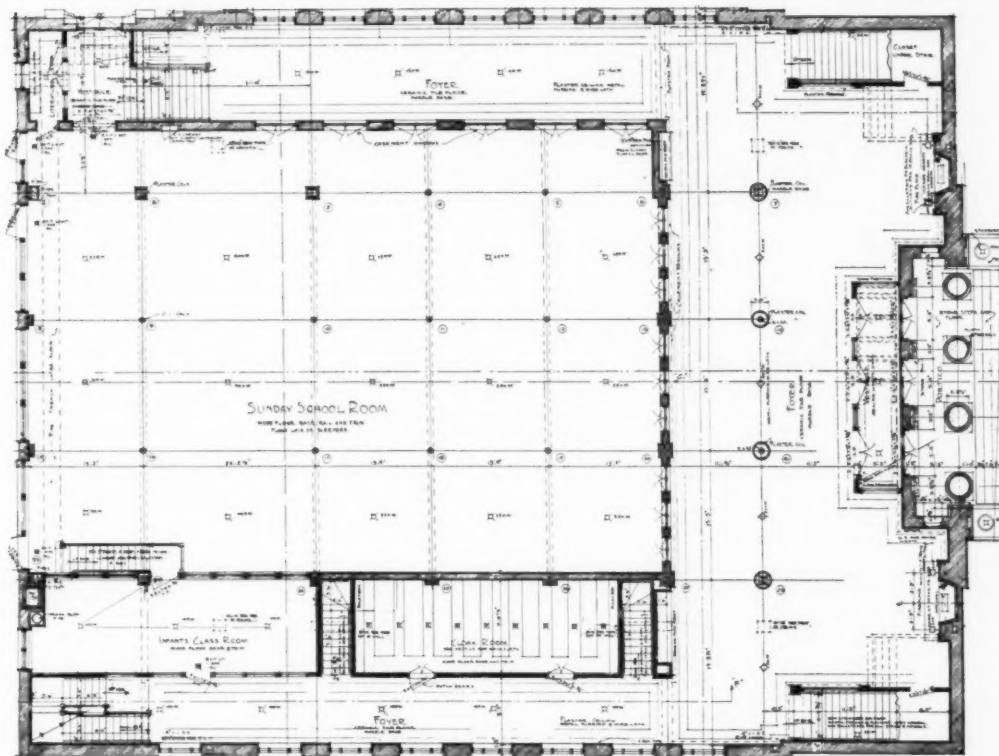


PLATE 77

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S. S. BEMAN, ARCHITECT



FOYER AND SUNDAY SCHOOL ROOM PLANS

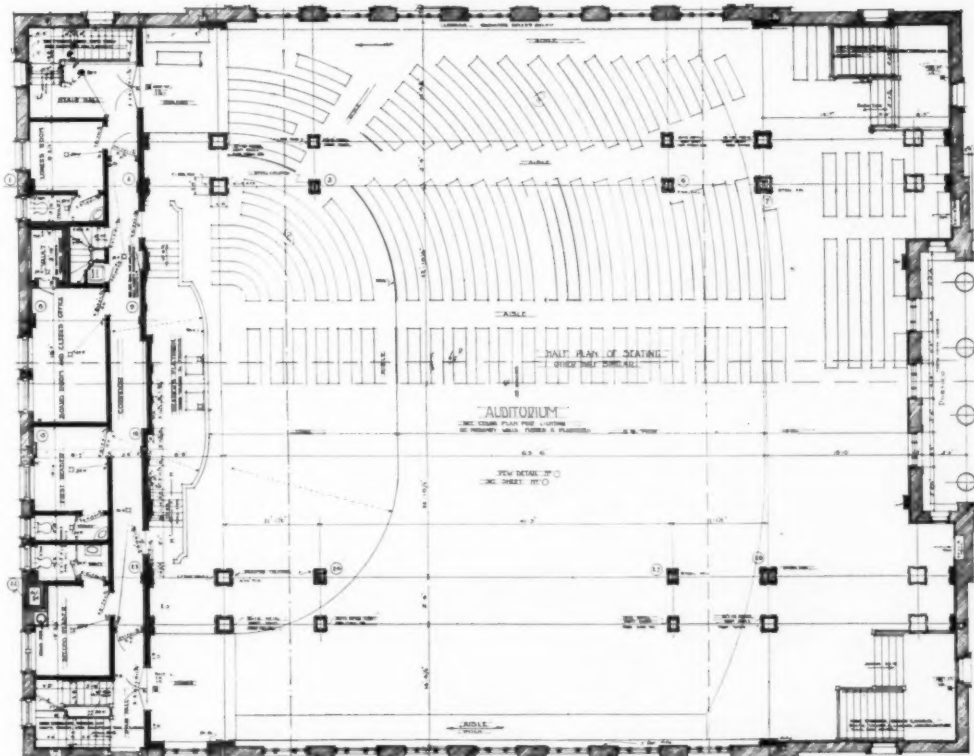
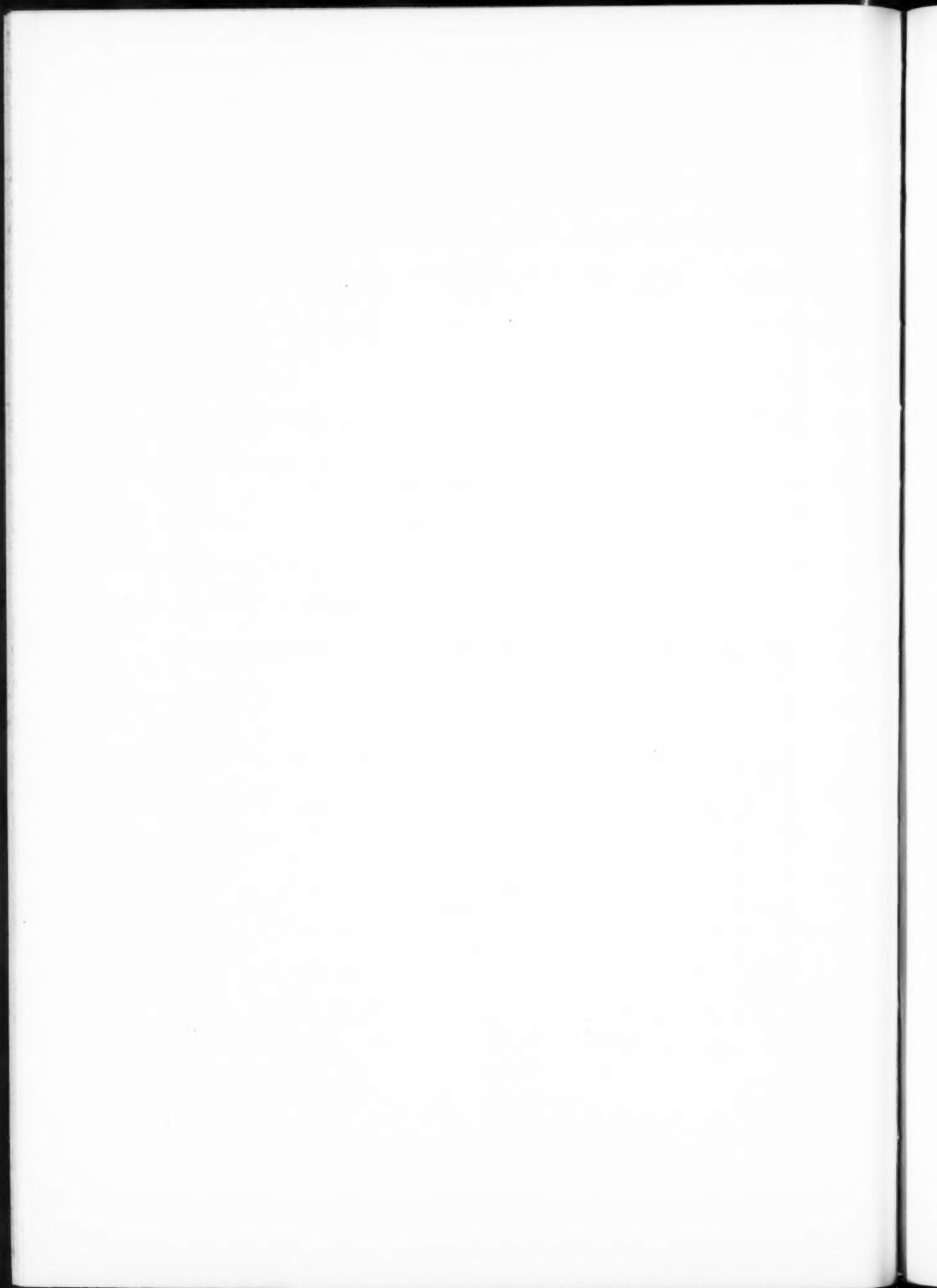


PLATE 78

AUDITORIUM PLAN

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S. S. BEMAN, ARCHITECT



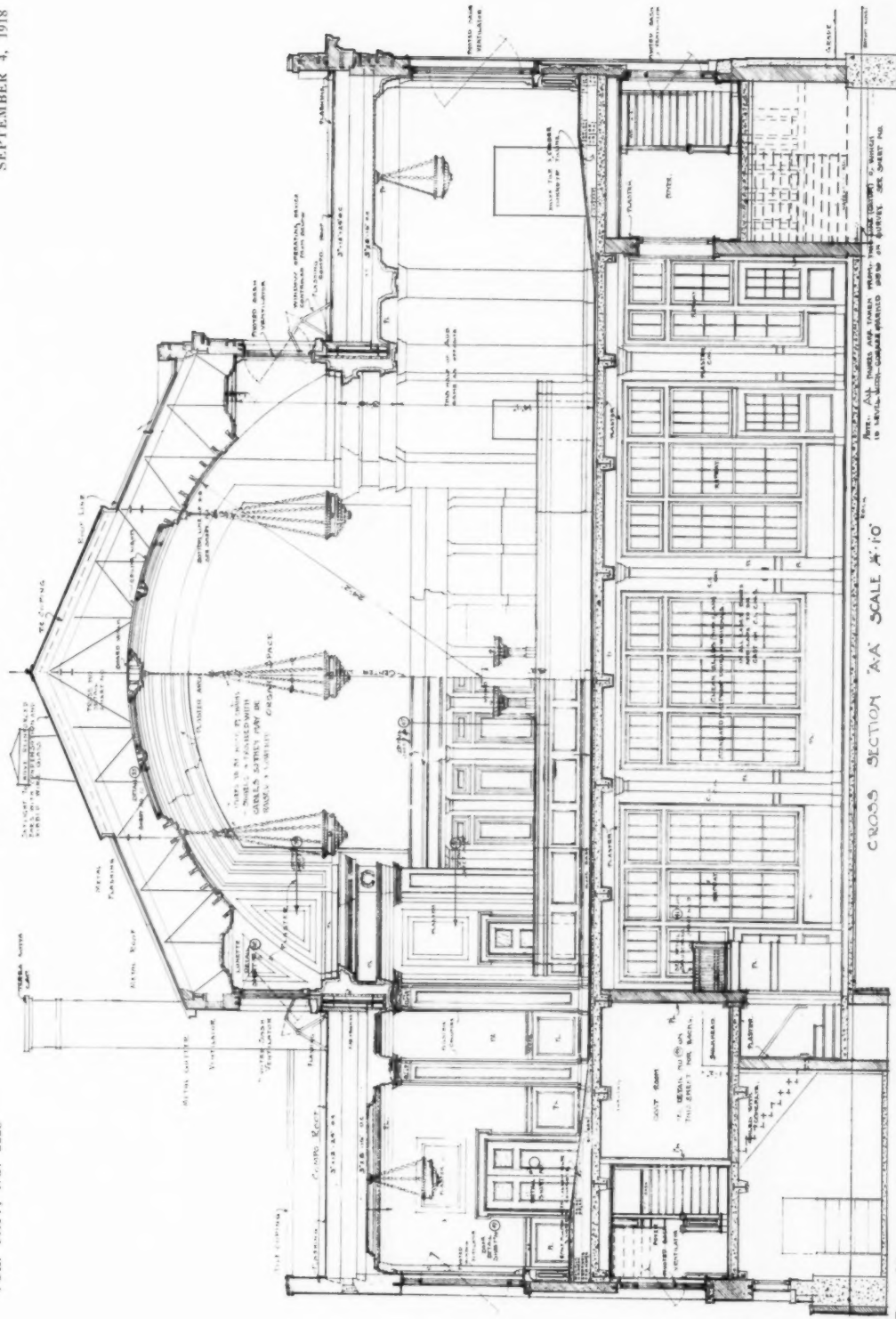


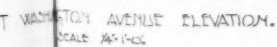
PLATE 79

FOURTH CHURCH OF CHRIST SCIENTIST, FORT WASHINGTON AVE., NEW YORK

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THE AMERICAN ARCHITECT

New York's Port Only Partially Developed

While the port of New York has reached the peak of its war shipment, it is assuring to learn that its fullest development would enable it to handle many times the present demands.

In an interview with William R. Wilcox, chairman of the Harbor Development Commission, he stated that the port of New York had a water front length of 770 miles, of which but 320 miles were developed. Of the 450 miles undeveloped, 50 miles are situated almost in the exact center of the port. The problems of development in New York are, however, more complicated than in any other port, owing to the lack of terminal concentration of the nine trunk lines, each of which has its separate terminal.

New York and the nearby New Jersey cities have undoubtedly suffered severely in development by reason of this scattering of railroad terminals. Might not the present war-time conditions offer a good opportunity for the work of a well-organized commission, which would devise a plan of terminal concentration, that would in the end solve all the many questions of railroad occupation of city streets now retarding the growth and development of areas affected, particularly in New York and its Riverside Drive Section?

Linking Up the Lincoln Highway

The Lincoln Highway Association has suggested a great border highway to follow roughly the coast lines east and west, and the north and south borders. The strategic value of such a highway is apparent. Across the continent from New York to San Francisco runs the great Lincoln Highway; the Santa Fe Trail from Kansas City to San Bernardino; the Dixie Highway from Chicago to Miami, Florida; the Jefferson Highway from Winnipeg to New Orleans; the Columbia Highway from Portland to Salt Lake City, and the Yellowstone Trail cutting across Wyoming and Montana and connecting the Lincoln Highway with the Northern Border Highway would provide a principal system of strategic highways that would serve as the ground work for a really co-ordinative system of roads.

And the beauty of such a highway system is that, though it would have military value, its value would not be solely military. The Lincoln Highway has brought prosperity to the country through which it runs. In time of peace such a system of roads covering the whole country would be invaluable;

it would make the great National Parks available as they have never been for those whose taxes maintain them, and it would probably do more than any other thing to make this one country—to abolish sectionalism, if this war leaves any traces of such a thing, which doesn't seem likely.

—WILLIAM ALMON WOLFF, in *Collier's Weekly*.

Nearly 1,500,000 Women Replacing Men in British Industry

Recent reports concerning the replacement of men by women in Great Britain are made available in the August issue of the *Monthly Labor Review* of the Department of Labor.

In April, 1917, the number of women directly replacing men was estimated at 1,256,000, of whom over three-fourths were found in industrial and commercial occupations and in Government employ. In January, 1918, according to the *British Labor Gazette* of June, 1918, this number had increased to 1,442,000.

The degree to which women replace men varies widely in different industries. In Government establishments, not including controlled establishments engaged in munitions work, they formed 36 per cent of the total employees; in banking and finance, 24.6 per cent; in commercial occupations, 16.9 per cent; in engineering firms, 7.14 per cent; and in all metal trades, 6 per cent. These figures refer only to the women directly replacing men. Many others are engaged in work which they replace only partially, or indirectly, men who have been withdrawn.

Philadelphia Protests Against Curtailment of Elevator Service

Philadelphia business men are protesting against the action of the Fuel Administration in the curtailment of elevator service as a fuel conservation measure.

Eighteen hundred hours a week, it is estimated, are lost to the occupants and those transacting business with one office building in Philadelphia by the curtailment of the elevator service at the price of saving three tons of coal. This building has 3000 tenants and five elevators, which are required for approximately 6000 persons every day. One of the elevators is not permitted to run by order of the Fuel Administration.

Four other Philadelphia office buildings within a radius of one block are larger and each has two elevators shut down by the Fuel Administration. Allowing not less than 1800 lost hours each for the

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four other buildings, it is claimed that 9000 working hours are lost every week in one of the busiest sections of this city as the result of the stoppage of nine elevators to save fuel.

Vocational Educational

Bulletin No. 1 of the Federal Board of Vocational Education has been issued.

The purpose of the act creating this board and appropriating Government funds for assistance in vocational education is set forth on Page 9 of the Bulletin and reads as follows:

"To the extent that it is subsidized by the Federal Government under the Smith-Hughes Act, vocational training must be vocational training for the common, wage-earning employments. It may be given to boys and girls who, having selected a vocation, desire preparation for entering it as trained wage earners; to boys and girls who, having already taken up a wage-earning employment, seek greater efficiency in that employment; or to wage-earners established in their trade or occupation, who wish, through the increase in their efficiency and wage-earning capacity, to advance to positions of responsibility.

Those who are interested in the subject and desire a copy of the Bulletin or further information should address their communications to the Federal Board for Vocational Education, Washington, D. C.

School of Town Planning in Paris

To aid in mastering the great problems of reconstruction which will arise in France after the war, a school of civic design has been established in Paris, with a staff of all the acknowledged masters of the subject available there. The official title of the school is the "Ecole Supérieure d'Art Publique," and the directeur-administrateur is M. Charles Patris, a well-known architect of Brussels. Many of the Belgians now in France are availing themselves of the teaching provided in this school.

Paving Roller Dates Back to A. D. 900

A writer by the name of Sagredo, in referring to building construction in Venice, says *Concrete Highway Magazine*, tells how Venetian pavement—to-day referred to as terrazzo floors—were laid. In A. D. 900, the usual method was to "lay down a floor of heavy planks, upon which a thick layer of

mortar and small pebbles was spread out and beaten down to a hard surface; upon this again a second layer of cement mixed with pounded bricks was spread, and this was beaten with heavy wooden beaters till it was perfectly hard and even." It was from this beginning that the so-called "Venetian pavement" soon developed. "For rich people caused small pieces of colored marble, and even of mother-of-pearl, to be set into the cement of the second layer, which was then no longer beaten, but rolled with a ponderous stone roller and then rubbed down with a smooth stone and sand and water, and at last polished to a brilliant surface."

So the roller for finishing concrete pavement is not so much of an innovation after all.

Americans Build Huge Refrigerating Plant in France

A recent issue of *Le Matin*, the Parisian newspaper, gives an interesting example of characteristic American energy and speed. In a certain spot in central France where last December stood a thick forest there has sprung up, under the hands of American engineers and workmen a huge meat-refrigerating plant. The encampment, which has for its special object the provisioning of American soldiers in France, covers a space of 10,000 acres. The refrigerating plant holds 10,400,000 pounds of meat, which is equivalent to 15,000 cattle weighing on the average 700 pounds apiece. It produces 500 tons of ice per day in excess of that used at the plant, which is used in the transportation of meat in the refrigerator cars and also for the conservation of other perishable foodstuffs, especially margarine.

Amiens Cathedral But Little Damaged

During April it seemed certain that the Cathedral of Amiens would share the fate of that at Rheims. The enemy was but seven miles away and his heavy shells were crashing into the town. Now the German line has been pushed back until at no point is it nearer to Amiens than twenty miles and the danger to this beautiful monument is practically averted.

The bombardment of Amiens has produced the ruin and desolation that are everywhere present in the theater of war, but, by great good fortune, the cathedral received but three direct hits, and it will require but a short period of labor to restore the building to its former grandeur.

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Educational Efficiency to be Maintained Despite War Burdens

President Wilson urges generous support for schools of all grades during war time. In a letter to Secretary Lane approving the Bureau of Education's plan for an educational campaign this summer and fall, he says:

"I am pleased to know that despite the unusual burdens imposed upon our people by the war they have maintained their schools and other agencies of education so nearly at their normal efficiency. That this should be continued throughout the war and that, insofar as the draft law will permit, there should be no falling off in attendance in elementary schools, high schools or colleges is a matter of the very greatest importance, affecting both our strength in war and our national welfare and efficiency when the war is over. So long as the war continues there will be constant need of very large numbers of men and women of the highest and most thorough training for war service in many lines. After the war there will be urgent need not only for trained leadership in all lines of industrial, commercial, social and civic life, but for a very high average of intelligence and preparation on the part of all the people. I would therefore urge that the people continue to give generous support to their schools of all grades and that the schools adjust themselves as wisely as possible to the new conditions to the end that no boy or girl shall have less opportunity for education because of the war and that the nation may be strengthened as it can only be through the right education of all its people. I approve most heartily your plans for making through the Bureau of Education a comprehensive campaign for the support of the schools and for the maintenance of attendance upon them, and trust that you may have the co-operation in this work of the American Council of Education."

Industrial Housing Now and After the War

The question as to whether the new industries of peace will retain the same manufacturing location as those of war is being seriously debated. The possibility of a very large shifting of workers is almost a certainty. It is doubtful if the present value of these properties will be saved by forecastings, common ownership or co-operative management, if we are to take past experiences along these lines as a guide in reaching a conclusion.

In a discussion of this important feature in our present industrial housing operations, L. B. Woodworth, secretary of the advisory council of Real Estate Interests of New York has stated:

"A point which relates to this discussion of disposition of housing facilities after the war must consider the assumption of industrial reaction. A large plant is erected in an isolated section. It cannot provide work to retain its labor supply. The plant without the housing facilities would be worthless and therefore the housing facilities must be maintained in order to conserve the value of the industrial property. Yet company houses are looked

upon with disfavor in England and even more so in this country. Can we expect co-operating residents to maintain property which becomes vacant after industry departs, or will the English style of public service societies pay for deficits when their limited dividends are not earned, or must the housing facilities become part of the plant? As a last resort, will Government ownership be necessary?

Grand Central Palace in New York to Become War Hospital

Negotiations under way between the Government and the owners of the Grand Central Palace in New York will, it is believed, result in the taking over of this large property for war hospital purposes.

In this event the Government will have acquired one of the largest hospitals in the country, and by reason of its central location, and surroundings of light and air, an ideal place for the care and nursing of our ill and wounded.

Good Housing a War-time Necessity

One of the many important lessons that England is learning as a result of war conditions is that the London, Liverpool and Manchester slums furnished many undersized weaklings, unfitted for the hardships of military service.

As a radical measure of reform, the areas of unhealthy conditions have been invaded, condemned structures razed and new buildings erected to take their places.

The value of proper town planning as a war measure has been so insistently shown that England has come to realize thoroughly that if she is to keep her industrial army fit, she must eliminate the slum and surround her working population with the best attainable conditions.

A budget has been prepared for this work of more than \$1,500,000.

To Convert Large Residences Into Apartment Buildings

A suggestion as to a means to increase the housing shortage in Philadelphia, and one also applicable to other cities where a large and unusual influx of labor of all grades has created an immediate need for more rooms, has been made to the Federal Government by the Philadelphia Real Estate Board.

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The president of the Board, when interviewed by a daily paper, is quoted as stating in part:

"The owners of many large houses are unable to finance the improvements necessary to change them into apartments. Houses of fourteen, sixteen or twenty or more rooms would make ideal apartments, capable of accommodating a large number of persons. Hundreds of these houses are to be found in the central residential neighborhoods. They are standing idle to-day, either because they are too large for intending tenants or because their equipment does not come up to the standard set by city regulations. In many cases owners are unable to put them into the condition necessary for occupancy.

"Some equitable method, by which the Government would receive a return on the capital invested, could be worked out easily.

"Some of these houses, for instance, have at present two bathtubs. The installation of two more and toilet facilities on each floor of, say four floors, would be the prime factors in their transformation into comfortable apartments. Of course, other alterations would be necessary—such as complying with the regulations in connection with fire-escapes, etc.—but there is nothing in the proposition which should not prove easy for the Government."

Spruce an Important Factor in Airplane Production

The War Department authorizes the following statement from the Bureau of Aircraft Production:

The frames of airplane wings, ailerons, fins, rudders, elevators, and stabilizers, the struts, landing gear, fuselage flooring, engine bed, after-deck, and seats are made of wood and preferably of spruce. This is because spruce is the toughest of soft woods for its weight and possesses tremendous shock-absorbing qualities. Furthermore, it does not splinter when hit by a missile. Sitka spruce, white spruce, and red spruce are used.

About 350 pieces of spruce are required in a single airplane, but not all of them are individually different; the wing beams are practically of similar dimensions, and the struts vary only in size according to the strains put upon them.

Practically all the available spruce is in the United States and along the western coast of British Columbia. In our country it grows close to the Pacific coast on the western slopes of the Cascade Range in the States of Washington and Oregon. The stand of Sitka spruce, which is the best airplane stock in these two States, is estimated at 11,000,000,000 feet, but less than half of it is near enough to transpor-

tation facilities, or in dense enough stands to be commercialized. The total spruce shipped for the first three months of 1918 was over 20,000,000 feet, but the United States Government and the Allies required more than three times that quantity in that time, showing that we were not up to requirements in March.

The vast total of 11,000,000,000 feet standing, however, is not all available for airplane construction, and never will be, because only a small per cent of the spruce is suitable for such use. It is stated that about 10 per cent of a good spruce log is available for airplane stock.

The Complete Organization of American Architects' Offices

An editorial in a recent issue of THE AMERICAN ARCHITECT, setting forth the completeness of the organization in the offices of architects in the United States, prompts our contemporary, *The Architects' and Builders' Journal* of London to comment as follows:

Architects, it seems, are aware that "time is money"; which, of course, it is not, but we all know what is meant by an expression that was perhaps originally intended to excite inquiry. At all events, it is good to be assured that "the idea, unfortunately too prevalent, that architects are not keenly alive to the value of time as money is an erroneous one. In most instances the apparent activity of the builders on the work is due simply to the fact that, thanks to the efficient preparation of plans and specifications, the careful forethought by the architect in every detail has made it possible to reach amazing records of construction." This quotation is from THE AMERICAN ARCHITECT, in which it is recorded that architects' offices engaged in planning for the many large industrial housing operations all over the country are setting new records in the prompt and efficient production of enormous numbers of drawings and voluminous specifications. Astonishment expressed by lay newspapers draws from our architectural contemporary the comment that they have "no accurate conception of the complete organization, in every department and every detail, of a large architectural office." It is excusable ignorance in the lay press, and we could wish that it did not extend to British architects, who, except for what they read about it, have seldom any adequate conception of the businesslike organization and equipment of a large American architectural office.

For swift and efficient draughtsmanship Britons are easily able to hold their own; but in order and system the large American office is, we suppose, unrivalled. Whether the subdivision and the specialization involved in the more highly developed system is good for draughtsmanship is open to question; but there can be no doubt that it makes for speed; and in war-time, at all events, speed is valuable, although at other times the necessity for it is much less obvious; while the "value" is a purely commercial asset or assumption, leaving artistic quality negligible. In the work of the drawing-office, however, there is much that is merely mechanical routine, set-square and compass work, and in this country the provisions for doing it well and quickly are not so complete as they are in America; for example, we have not yet arrived at the refinement of employing a siffleur to whistle lively tunes in order that the speed of the draughtsmen may be correspondingly lively. If this is not a recognized practice among the

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Americans, they have only their own humorists to blame for circulating the idle rumor. We have, indeed, much to learn from our cousins and allies; and the chances are that if our drawing-offices had been better equipped and organized, much work that is now in the hands of "specialists" would have remained with architects. It must be admitted, however, that in America this effect has not been very marked, for there as here architects are complaining bitterly of the competition of engineers for architectural work, and, assuming that over there highly organized drawing-offices are the rule rather than the exception, it is plain that they are not a specific remedy for the complaint. We have no doubt, however, that they would be an important factor in any well-conceived scheme of curative treatment.

To Change Astronomical Time

A proposal to change astronomical time to agree with civilian time, largely for the benefit of navigators, raised animated comment at a recent session of the American Astronomical Society at the Harvard College Observatory. A committee recommended that, effective Jan. 1, 1925, the civilian day, beginning at midnight, be substituted for the astronomical day, which begins at noon. The heads of observatories as well as navigators favor the change.

The Artistic Treatment of Side Walls of High Buildings

Edwin H. Hewitt, architect of Minneapolis, Minn., recently returned from France, where he has been in charge of Y. M. C. A. construction has, in connection with other members of the Minnesota Chapter of the A. I. A., contributed a treatise to be part of a volume to be later issued by the Chapter.

Mr. Hewitt writes on the subject of the artistic treatment of the blank walls of high buildings, and says in part:

"In the last few years the treatment of the rear and sides of office buildings, which of necessity remain a long time exposed, has enlisted the attention of designers and some very notable results have been achieved, particularly in New York City. While steel frame buildings are faced with stone, terra cotta or brick it is hardly to be expected that the more expensive treatment should be carried out on all sides, particularly where the sides and rear eventually will be obscured by neighboring buildings, if not covered by actual party walls. Taste, ingenuity and comparatively slight additional expense have been able to accomplish very interesting results. No one expects, for instance, that an expensive cornice treatment should be carried about the building, but an effort should be made so that by means of lines and shadows the purpose of the cornice, as a crowning motive, be carried about so as to tie the elements of the building together. Windows and piers may be so spaced and proportioned as to carry out and be a part of the entire design and not simply a curtain wall, wholly out of harmony with the rest of the design. It is, therefore, only a question of care and thought on the part of the designer and good will on the part of the owner.

"Furthermore, if signs advertising the name of the particular building must be used, care should be exercised both in lettering and construction so that the sign might be an

addition rather than a positive detriment to the building. This suggests that signs should be a component part of the design of building if they are admitted as a necessity. There seems little likelihood that signs can be disposed of and if such be the case time and effort should be expended on making them at least in harmony with architectural design. Signs added as a feature may mar many an otherwise beautiful building."

"Skip Stop" Plan to Conserve Fuel

We are learning many ways to effect conservation during these war times. If the experience gained through obedience to the many orders issued for the purpose of saving food and fuel will induce us to continue these war methods when peace has been declared, we shall undoubtedly become the most economical and the most thrifty of nations.

It will, however, require something more than casual experience to convince all of the people that during peace times they must practice rigid economy to effect savings for corporations. A new feature of coal conservation is to be found in the order of the fuel administration to put into effect the "skip stop" system on street railway lines.

The "skip stop" plan, which has been tried with success in many cities, is designed to save coal. Instead of boarding cars at any crossing at will, patrons are required to go to regular stopping places. Outbound cars will stop at every other corner on the way to the end of the line, and inbound cars at the intervening crossing on the return trip.

A large amount of electricity, and hence considerable coal, is expended in starting and stopping cars. The skip-stop plan is designed to reduce the consumption of power for this purpose very greatly.

Book Note

ITALIAN FURNITURE AND INTERIORS. Parts 7 and 8. With Text by George Lelaht Hunter. 200 plates. Size 11 x 14. Price, \$6.00. New York: Wm. Helburn, Inc.

This portfolio of Italian Renaissance material is uniform in size with those which have preceded it and which have been already commented on in these pages. In the parts now under consideration there are included a very valuable and comprehensive series of interiors from the less pretentious Italian dwellings to the palatial villa. These plates offer a very valuable suggestive medium for architects in the interior decorating and furnishing of the modern house, and while many of the views may be already found in the architect's collection, their grouping in this form makes them a readily accessible and valuable addition to the working library of architects and decorators.

Department of Architectural Engineering



THE UNITED STATES POST OFFICE GARAGE, NEW YORK
BALLINGER AND PERROT, ARCHITECTS

A Garage for Motor Trucks

THE automobile has assumed a multitude of shapes in which it serves many purposes. The development of this type of vehicle has been very rapid, and as yet no general standards as to size have been fixed, each manufacturer following individual standards. This condition makes the housing of automobiles a problem requiring the most careful consideration. The rapid increase in these vehicles has caused their housing to become a commercial proposition, and this is true to the extent that the commercial garage has become a distinct type of building.

In order to keep pace with the improvements and changes in automobiles it is necessary to make each new garage an improvement on its predecessors. While it is true that certain features have become fairly standard there is no fixed standard of design

possible for a commercial garage. The perfect garage is that one which fits the vehicle it is to house rather than a building which merely houses vehicles. This being true, the architect must know all of the general dimensions of the vehicles to be housed before he can plan his building; otherwise there will be waste floor spaces, structural interferences and other faults.

The recently enacted law which does away with pneumatic tubes for transporting mail has caused all mail in those cities to be transported by motor trucks. Pneumatic tubes were only able to transmit first-class mail in packages of very limited size. The changing character of localities causes a change in the kind and quantity of mail, necessitating a changed mail service. A tube system, being purely mechanical and buried in the ground, is immovable

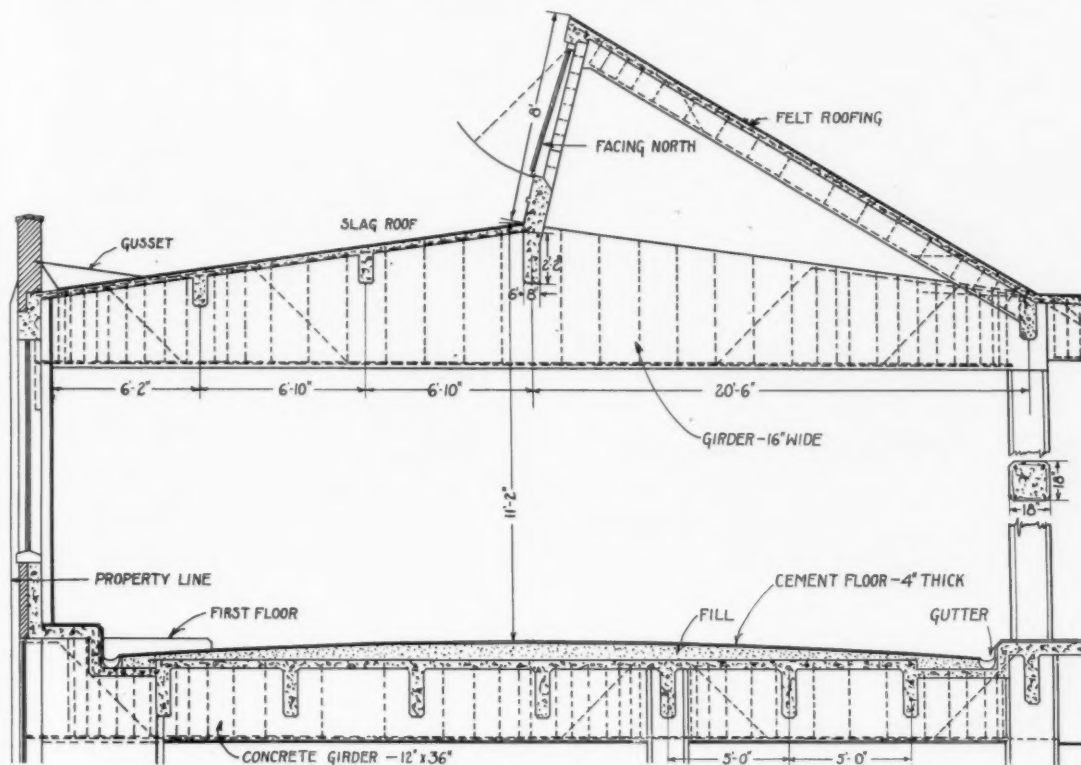
THE AMERICAN ARCHITECT

and limited in scope to its original purpose. It became necessary to adopt the flexible, easily modified motor truck service to render adequate service in the transmission of mails, especially in New York.

To accommodate this motor truck service the United States Post Office Garage has been constructed on West Thirty-seventh and Thirty-eighth Streets, between Eighth and Ninth Avenues. Here

izing, blacksmith, paint and carpenter shops are contained in the building and all kinds of repairs made on the premises by Government employees. The plant is operated by a general superintendent, master mechanic and a chief dispatcher.

The operation of this motor truck service has demonstrated its superiority over the tube service in the more effective transmission of mail matter



Detail Section showing the construction of the roof, sawtooth skylights, pitched floors, gutters, curbs and raised platforms.

are housed at this time 163 government-owned motor trucks which transport all classes of mail between the various postal stations and the railroad terminals in Manhattan, the New Jersey terminals on the North River and the General Post Office and stations in Long Island City. They also transport the mails between the sub-postal stations in Manhattan and parts of the Bronx. These trucks are operated on a regular time schedule exactly as are railroad trains, each truck working 16 hours per day and whose drivers work on eight-hour shifts. The balance of the day is used to clean and make such minor repairs as can be made in that time. As the cars come in they are supplied with oil and put into complete readiness for use. Machine, vulcan-

and in economy of operation. Also all classes of mail matter can be dispatched at the same time on any one motor wagon trip, while the pneumatic tube service was confined entirely to the dispatch of letters and small letter packages. The motor wagon service also possesses the advantage of being capable of extension, contraction or diversion into new localities without the large investments that are necessary for tube extensions, which can only be additions to routings not adapted to present requirements.

The garage has a frontage of 250 feet on Thirty-eighth Street and 50 feet on Thirty-seventh Street, each part being 98 feet 9 inches in depth. The basement on Thirty-eighth Street extends to the curb

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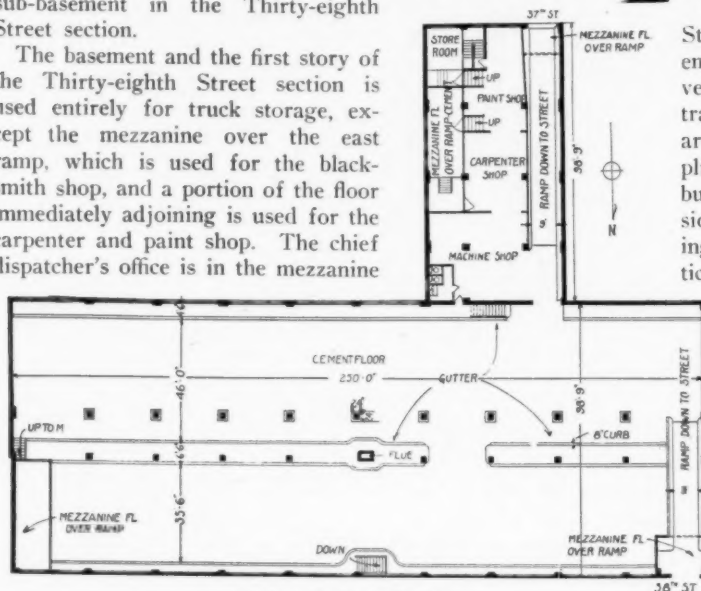
wall under a sidewalk which is 15 feet wide. This with the first story covers the entire area of the property; the second story is in the Thirty-seventh Street section. The boiler and pump room is in a sub-basement in the Thirty-eighth Street section.

The basement and the first story of the Thirty-eighth Street section is used entirely for truck storage, except the mezzanine over the east ramp, which is used for the blacksmith shop, and a portion of the floor immediately adjoining is used for the carpenter and paint shop. The chief dispatcher's office is in the mezzanine

credits for both systems. In this building the first 12 feet of the ramp at the doors has a rise or fall of 6 inches, and the balance of the ramps have pitch of 1, 1½ and 1⅝ inches per foot.

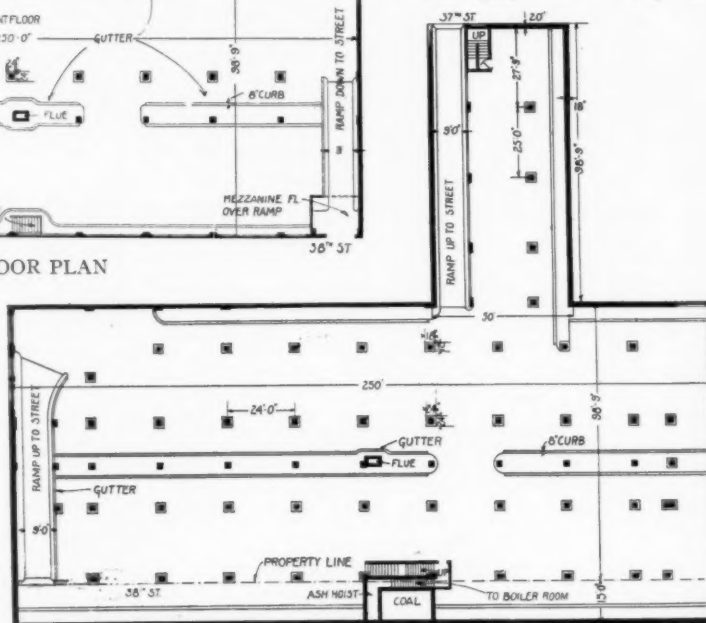
All trucks enter on Thirty-eighth Street and depart from Thirty-seventh Street; this arrangement prevents congestion by cross currents of traffic. In locations where two fronts are not available, this can be accomplished by entering at one side of the building and departing from the other side. It will be found that each building will require an arrangement particular to itself.

In a building where ramps are employed it is very nec-



FIRST FLOOR PLAN

over the west ramp. The first floor in the Thirty-seventh Street section has been rearranged to contain the master mechanic's office, the machine and vulcanizing shops and storerooms. The second story contains the swing and locker rooms, toilets and the general superintendent's office. The office space is too small to properly house the ten persons there employed and the persons doing business with that department. There are no elevators in the building, the trucks traveling under their own power to the different levels on inclines or ramps. For buildings up to three or four stories high this method of reaching the different levels offers some advantages. The initial cost is less than that of first-class elevators; the cost of power used in the vehicles is less; there is no maintenance cost; there is no operator required and there is greater speed in moving the vehicles. The ramp occupies from three to four times more floor area than an automobile elevator, and the rental value of this floor space is a loss. Whether to use the ramp or elevator is a matter of estimating the costs and



BASEMENT PLAN

essary to study the headroom for the trucks at all entrances and at all girders which may pass over the ramps. This study must be made for the maximum sized truck, and can be done by cutting out paper elevations of a truck to a scale and passing the model over the sectional drawing of the ramp, drawn to same scale, or by calculation.

The method by calculation is illustrated by Figs. 1, 2, 3 and 4. In Fig. 1 is given the over-all dimensions of the trucks housed in this garage, and which should control many of the details of design. In Fig. 2 we have for 1 foot horizontal run, ab , with a drop or rise, bc , of 0.125 feet, (1½ in.), a sub-

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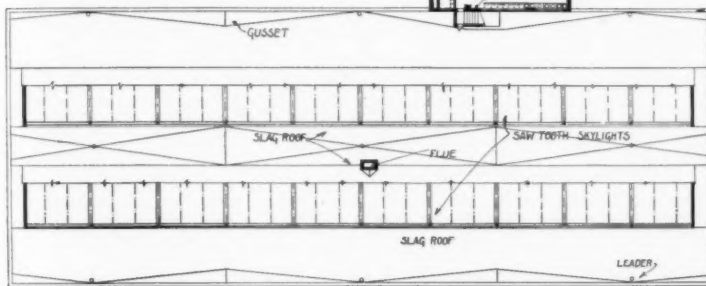
tended length of 1.0077 ft. on the rake, ac . For 1 ft. on the rake, ac' , the rise or drop is 0.124 ft. $b'c'$. Apply this to Fig. 3 by rule of simple proportion or similar triangles and we have, for a 3-ton long wheelbase White truck at the critical point with the rear wheel at the change of grade a drop of the front wheel of 1.674 ft., bc , for a 13 ft. 6 in. wheel base, ac . The overhang of the trucks is 5 ft., ac' , and the rise of the top at the rear of the overhang will be 0.62 ft. ($7\frac{1}{2}$ in.) at $b'c'$. This is further illustrated in Fig. 4. By this simple method of applying the factor 0.124 to any similar triangle all the

foot of horizontal run can be applied to a like distance on the rake without serious error. By careful study and designing in this particular the architect will forestall any modifications of the work after it is completed.

Turning space at the foot of inclines should be carefully provided for, and this requirement can be easily designed by making a piece of paper the size of the maximum truck, to the plan scale, and passing it through the area under consideration. Banking the ramp floor at this point similar to that done on a running track, making a wide easement and eliminating column obstructions are all factors in safe egress from a descending ramp.

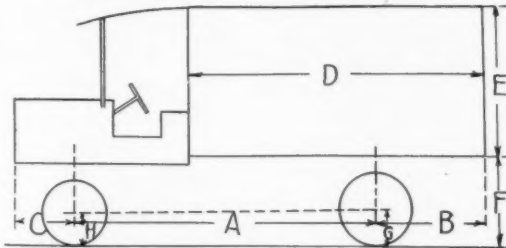
The floors should be pitched as shown in the sections and drain to a gutter, as in the street. This is necessary as the trucks are washed after being placed in their regular position. Hot and cold water and compressed air service is provided through outlets and hose at points along the raised platforms adjoining the gutters.

The width of these island platforms is an important feature of the design. They should be wide enough so that the overhang of the backed-up trucks will not interfere with each other or strike the wall adjoining. On an island platform there should be from 16 to 18 in. clearance between the backs of the trucks as a passage for workmen, and the same distance between the truck-end and wall on a wall platform.



SECOND FLOOR PLAN

necessary investigations can be made for ascending and descending ramps. By referring to Fig. 2 it will be seen that the difference between bc and $b'c'$ is negligible and the regular drop or rise per



MAKES	A	B	C	D	E	F	G	H	I*
3 TON WHITE	13'-6"	5'-0"	2'-9"	13'-4"	6'-9"	4'-0"	19"	17"	7'-8"
3 TON WHITE	11'-3"	5'-5"	2'-9"	11'-4"	6'-9"	4'-0"	20"	18"	7'-8"
1 1/2 TON WHITE	12'-2"	4'-4"	1'-10"	10'-4"	6'-2"	3'-0"	17"	17"	6'-1"
1 1/2 TON PACKARD	11'-10"	3'-8"	2'-1"	10'-5"	6'-3"	3'-0"	16"	16"	5'-9"
3/4 TON WHITE	11'-3"	3'-2"	1'-8"	8'-0"	5'-7"	2'-6"	17"	17"	5'-7"
750 LBS FORD	8'-4"	3'-11"	1'-5"	5'-2"	4'-10"	2'-3"	15"	15"	5'-4"

* I (OVERALL WIDTH-INCLUDING FENDERS)

FIG. 1. DIMENSIONS OF MOTOR TRUCKS USED IN THE P. O. GARAGE.

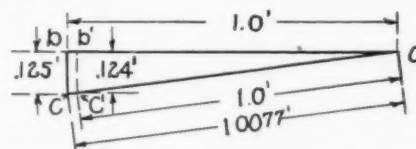


FIG. 2. PRELIMINARY CALCULATION

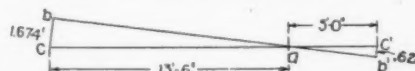


FIG. 3. DETAILED CALCULATION

Considering the short wheelbase 3-ton White truck, we have an overhang of 5 ft. 5 in. from wheel center. The 20 in. wheel will reduce this overhang by about 16 in. with the wheel in contact with an 8 in. high curb. Hence the net overhang on the platform is 4 ft. 1 in. Two overhangs plus 1 ft. 6 in. would require an island platform 9 ft. 8 in. wide

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and a wall platform 5 ft. 7 in. wide for this type of truck.

A garage without columns is ideal. When the vehicles are parked between columns it may be that

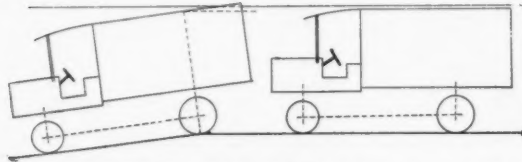


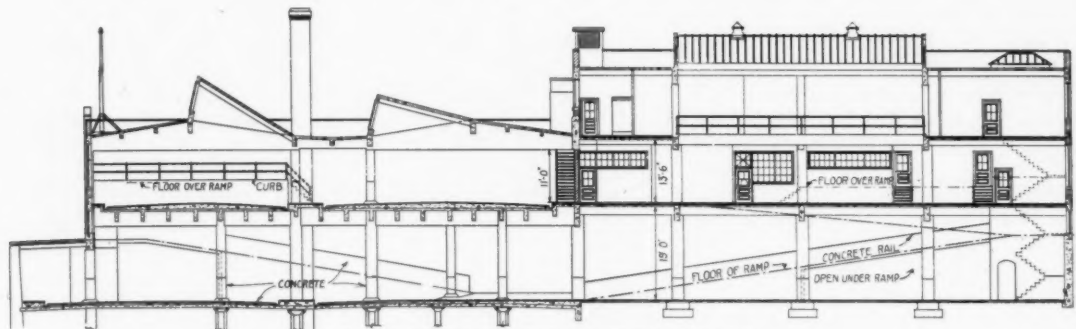
FIG. 4. SHOWING THE EFFECT OF A CHANGE OF GRADE OF A ROADWAY

one size can be so parked without loss of floor space, but it is impossible with a variety of sizes, as in this building. A column in the center of an island platform offers the least obstruction of any. A light

trucks soon destroy the concrete by abrasion. In some instances cast iron guards are provided, but a steel angle iron edging, such as is used on many street curbs, is very effective.

Electric door operators should be used at all the entrance and exit doors, and, although the initial cost may appear to be excessive, they soon realize on the investment in keeping out the cold air, saving the cost of manual operation and saving time. They are a convenience found in all first-class commercial and many private garages.

In this building the basement is daylighted through the bulkhead windows above the sidewalk level. These windows are 4 ft. 8 in. high and are effective. The windows are made of solid metal sash. The sawtooth skylights afford excellent light to the first story. In these locations the operating devices should be arranged to open individual sections,



TRANSVERSE SECTION LOOKING EAST

structural steel truss spanning the entire building is an economical method under ordinary conditions. Where the building codes permit wooden trusses on one or two story buildings in combination with an automatic sprinkler system, this kind of construction is very satisfactory and economical in cost. The very excellent garage roof illustrated in *THE AMERICAN ARCHITECT* of February 6, 1918, is an excellent example of this type of construction. In the central states a type of lattice wooden truss is very popular and entirely feasible for spans up to 125 feet, and they are used extensively to support the roofs of garages.

The concrete wheel guards along the sides of the ramps and about the bases of columns in the floor spaces should have iron protection, as the heavy



VIEW ON FIRST FLOOR. NOTE THE OVERHANG OF THE TRUCK OVER THE ISLAND PLATFORM SHOWING THE NECESSITY OF SUFFICIENT WIDTH FOR CLEARANCE FROM OPPOSITE TRUCKS

rather than to make a continuous opening, as this latter method furnishes excess ventilation during the winter.

The removal of harmful fumes and gases can be

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accomplished by using 4x16 in. flues in the walls at frequent intervals with 16x18 in. registers placed 1 ft. above the floor. This requirement of the Chicago Health Department has proved to be very effective. A short loop of steam pipe in each flue would actuate a positive movement of the air.

The artificial lighting can be easily accomplished by a direct lighting system, and with frequent wall

¾-ton White	4,630 pounds
750-pound Ford	1,870 pounds

With the offices, maintenance shops, mechanical equipment and the other essential factors to a complete garage, it is apparent that the designing of a satisfactory commercial garage is an undertaking requiring much study and care. This excellent



VIEW ON THE FIRST FLOOR. EXCELLENT DISTRIBUTION OF DAYLIGHT THROUGH THE SAWTOOTH SKYLIGHTS. NOTE OVERHANG OF THE TRUCKS OVER THE WALL PLATFORM AT THE RIGHT.

and column outlets for local lamps on chords for inspecting the trucks a complete service is had.

The weight of the trucks is as follows:

3-ton White, long wheelbase	10,030 pounds
3-ton White, short wheelbase	9,640 pounds
1½-ton White	6,130 pounds
1½-ton Packard	6,630 pounds

example of this type of building was designed by Ballinger & Perrot, architects.

The motor vehicle mail service in New York City was initiated and is successfully operated under the direction of Thomas G. Patten, Postmaster of New York City; E. M. Norris, Superintendent of Mails, and E. L. Sloat, Superintendent of Motor Vehicle Service.

An Automobile Sales Building

THE design of small automobile sales buildings is a matter of increasing importance and such buildings must comprehend special features. The building here illustrated is a good example of the successful solution of such a problem. This building has a frontage of 36 ft. and a depth of 118 ft., two stories in height, with a boiler room in the basement. There is an alley on the side and rear of the building, which affords ample daylight and access to the rear of the building.

On the first floor is located the show and sales-room with the sales offices. The front has a projecting display window which can contain an automobile with ample room for inspection. The show room is 30 x 40 ft. in size and is finished with a mosaic tile floor in rich red colors. The walls are finished in a putty gray color, and the ceiling, including the solid wood beams, is finished with an ivory shade of color. The lighting fixtures are of carved wood finished in ivory and gold. The sales

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offices adjoining are also paneled and finished in the same manner. The balance of the first floor is devoted to a repair shop and service station, and has a cement floor. This room contains the stock room, elevator, washing space and workmen's toilet. The corner on the alley is recessed in order to give ready access to the elevator and also to the repair shop. This feature is quite common in those cities that require the storage of gasoline to be in underground tanks located entirely outside of the building.

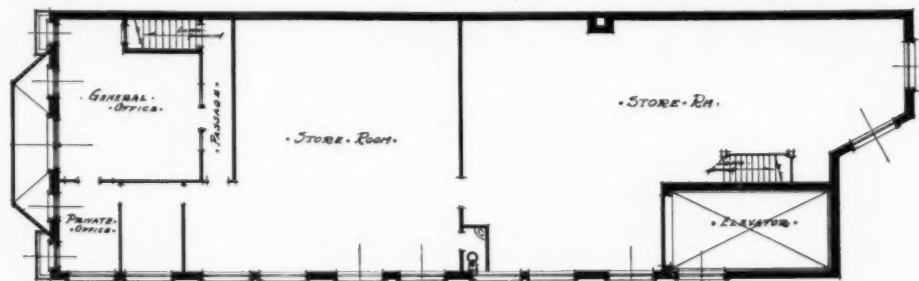
The second floor contains the general offices and store rooms for new and used cars. This floor is served by a large freight elevator and two flights of stairs.

The front of the building is faced with red brick with ivory colored trim. The roof of the projecting show window is covered with red tile. The entrances are subordinated, in size, to the projecting show win-

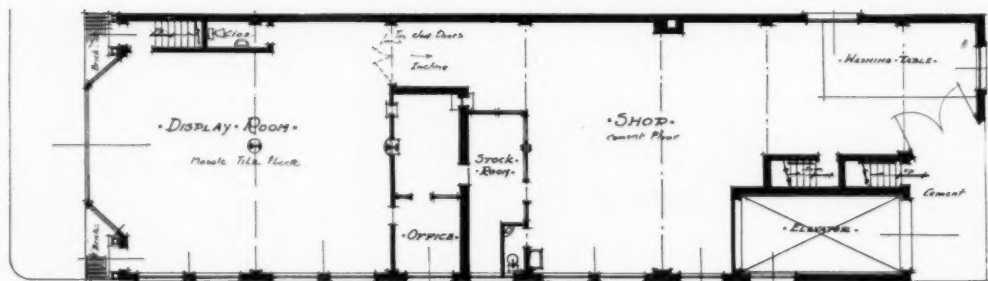


AUTOMOBILE SALES BUILDING, INDIANAPOLIS

FERMOR S. CANNON, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN

dow, but are easily distinguished by their architectural treatment.

The construction of the building is a combination of mill construction with steel columns and

girders, with a reinforced concrete slab over the basement boiler room. The windows on the side and rear are of solid steel metal sash. Electric light, plumbing, a low pressure heating plant and

THE AMERICAN ARCHITECT

the elevator are included in the total cost of 17.5 cents per cubic foot. The building was designed and its construction supervised by Fermor S. Cannon, architect.

The Possible Government Fuel Ration

THE fuel situation for the rapidly approaching winter is now becoming such that action is necessary. THE AMERICAN ARCHITECT has discussed some methods whereby fuel can be conserved. Attention was called to the utilization of exhaust steam for heating purposes, to be used in the building where it is generated, and in case of a surplus to extend a supply to adjoining buildings. This is entirely feasible through the application of the several very effective systems of steam heating without pressure, commonly designated as "vacuum systems." The exhaust head in a cloud of steam this winter will be an indication of the owner's ignorance, or worse, his heedlessness, and such an exhibition should be heavily penalized. It is a willful waste.

The foregoing applies to places where steam power is generated. The use of fuel for domestic purposes is a large factor of the total consumption. It is stated by Prof. L. P. Breckenridge* that the consumption of coal for domestic use is 22.3 per cent of the total output, and of which 13.3 per cent is bituminous and 9 per cent is anthracite coal, the total tonnage of both kinds so used in the year 1915 being 118,674,589 tons. The Fuel Administration has ruled that the supply for the coming winter can be only two-thirds that of 1917, and it may be within the range of possibility that fuel will be rationed in this country as in England. This can only be avoided by the intelligent and not wasteful use of coal.

The English coal ration has been fixed and the new household fuel and lighting order allows five tons of coal for the ordinary six room house for one fuel year. The allowance is based on occupied rooms only and is specific in excluding bathrooms, halls, dressing rooms or bed rooms, pantries, store-rooms, conservatories and the like. Rooms occupied will mean such rooms as are not above designated. Local fuel bureaus will make provision where there are sick persons or invalids. Diagram 1** shows the English limitations for ordinary circumstances. It should be remembered that this is based on English requirements, governed by climatic conditions

and other factors which influence the use of fuel for heating purposes.

The British order makes certain that the use of gas for heating will not be permitted. Gas and electricity may be used for illuminating purposes. Only one fuel source is permitted, which may be either coal, gas or electricity, and use of illuminating sources of supply for heating purposes is prohibited. To make the order effective, coal dealers are required to register and are licensed and regulated. For violations of the order a maximum penalty of \$500 fine and six months' imprisonment is provided. The English are preparing to cheerfully bear the

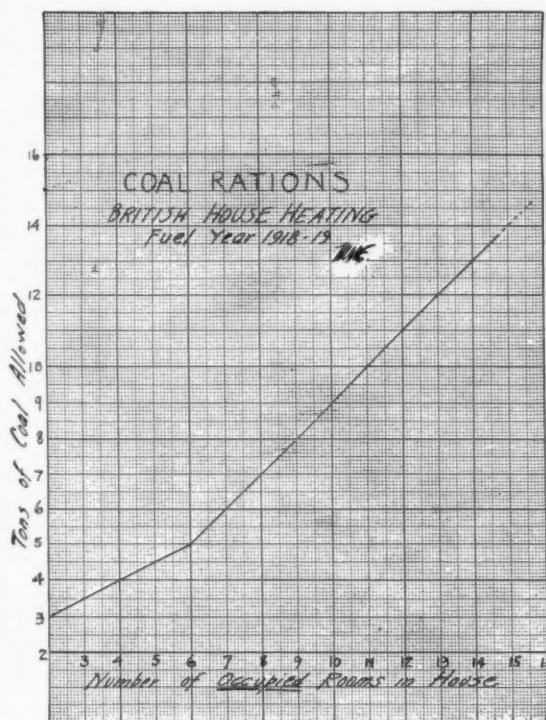


DIAGRAM NO. 1

inconveniences of this order as they realize its imperative necessity. The possibility of such regulations is confronting the people of this country, and it can only be avoided by care in the use of fuel and some measure of personal sacrifice.

In Diagram No. 2 Mr. M. William Ehrlich has indicated a rational use of fuel for heating purposes, based on the climatic conditions of the New York district. He states that Boston requires 10 per cent more and Philadelphia 4 per cent less fuel than New York. It is customary in New York to design for an interior temperature of 70 deg. F., with an

*Address on Fuel Conservation, Journal of the American Society of Heating and Ventilating Engineers, April, 1918.

**From the Metal Worker, Plumber and Steam Fitter, August 30, 1918.

exterior temperature of zero. In Chicago the outside temperature is figured on -10 deg. F., which would make a temperature difference of 80 deg. In some localities a difference of 90 deg. is necessary. As this difference in temperature is a multiplying factor in all modern formulas for estimating the British thermal units required to heat any space, the amounts given in Diagram No. 2 can be increased or decreased relatively as the difference be-

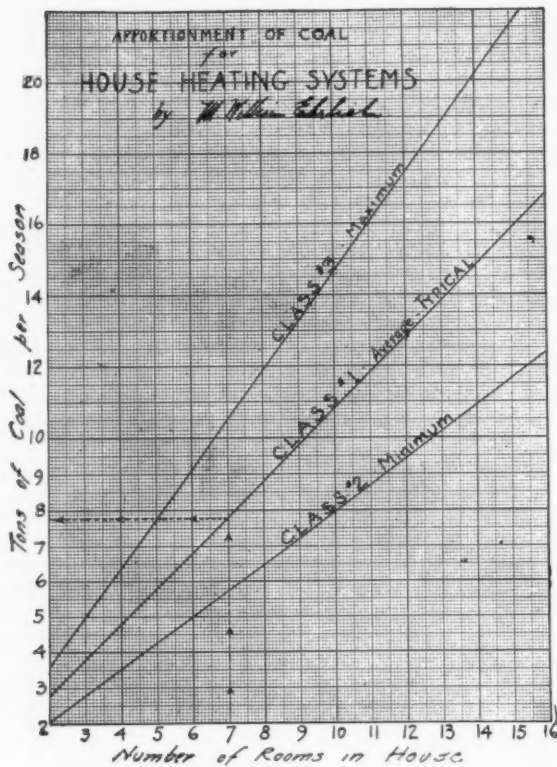


DIAGRAM NO. 2

tween the interior and exterior temperatures varies from 70 deg.

In this diagram Class 1 represents the typical house condition, Class 2 the minimum and Class 3 the maximum requirements. The ordinary suburban or detached house can be considered as typifying Class. 1. Houses built in blocks or that are semi-detached are of Class 2. An entire house should not be placed in Class 3 except in special

cases. Certain exposed rooms with large glass area can be placed in this latter class as occasion justifies. As an example, a ten-room house may have three rooms that have an extreme and seven rooms of ordinary exposure. Applying the diagram the three rooms of Class 3 require 5 tons and the seven rooms of Class 1 require 7.75 tons, or a total of 12.75 tons required to heat the house comfortably during the season.

The kind of coal used has some relation to these calculations, but the differences are hard to determine in a general way. All coals consist of volatile gases and fixed carbon, which is combustible matter, and has the same heat generating power per pound of combustible, regardless of the kind of coal. The non-combustible content consists of moisture and ash. This varies considerably according to the coal fields from which the supply is drawn. The diagram is based on anthracite coal.

The New York *Evening Sun* recently made editorial comment on the coal situation and compared the winter habits of the English and the Americans. The American heats his house in winter to a summer temperature, ranging from 70 to 80 deg. F., and dresses accordingly, only adding extra clothing protection when out of doors. The more sane Englishman heats his house from 60 to 68 deg. F., and wears more clothes during the winter both in and out of doors. He is naturally free from the winter diseases that afflict the American. Besides the English method makes for real conservation as warmer clothes serve to keep one warm *every* day and burned coal only serves to warm *to-day*.

With this data one can check up fuel requirements for any house within reasonable limits, and any decided variation indicates that a house is very poorly built, it has a poorly designed and inadequate heating apparatus, a good apparatus which is not properly maintained, or that the occupants are not sensibly clothed.

This is a matter for consideration to-day, and we can solve the problem correctly for ourselves, aid our neighbor in doing so and possibly stimulate the business of the manufacturer of heating apparatus by installing economical plants of whatever kind is used. If the Fuel Administration rations coal it will be on a basis of conditions that ought to obtain rather than conditions as they are, and it will not take cognizance of what happens to be the prevailing fashion governing human habiliments.

THE AMERICAN ARCHITECT

Book Review

SEWERAGE—THE DESIGNING, CONSTRUCTION, AND MAINTENANCE OF SEWERAGE SYSTEMS. Eighth Edition, Rewritten. By A. PRESCOTT FOLWELL, Mem. Amer. Soc. C. E., Past President Amer. Soc. of Municipal Improvements, Editor *Municipal Journal and Engineer*. xii+473 pages. 6 by 9. 80 figures. Cloth, \$3.00 net. John Wiley & Sons, Inc., New York.

THE practice of the profession of architecture involves a multitude of factors concerning which the architect must have some knowledge, even though he has recourse to specialists. This broad comprehension is necessary in order to assign to each factor its correct relative importance and to judge correctly the work of the specialist who is associated in his work. It is the province of the architect to properly co-ordinate all these related elements of a project. The successful architect does so. In these days when town planning is becoming a matter of much importance, the item of sewerage is equally important with any other feature of the undertaking.

This eighth edition of Professor Folwell's "Sewerage" is entirely rewritten and brought to date. This book is in two parts. Part I is devoted to Sewerage Systems, in which is a general outline of the subject, house and storm sewage is discussed and the methods of estimating their volume are described; flow in sewers, flushing and ventilating, sewer appurtenances, collecting data, designing, detail plans, specifications and contracts, supervision of construction, construction and maintenance, are the other topics treated of in this part. Part II treats of sewage disposal by the various methods in vogue at this time.

The book is well worth a place in the library of architects, engineers and students, either for reference, detailed or general information.

The Engineer in Politics

THE Illinois Society of Engineers has recently issued a bulletin calling on engineers to get into politics because of the necessity of having our public affairs at this time in the hands of men known for their loyalty, ability, public spirit, and strength of character, rather than for mere partisan or political reasons.

Government is a truly constructive proposition rather than a mere matter of regulation. The lat-

ter follows naturally from the former. As at no other time, the nation needs honest men as its representatives in the Government of the United States. The trained men are necessary to solve the serious problems of preparing for the carrying on of commerce and industry after the war.

"Every member is requested to consider his own personal responsibility in the support of his country and of its principles of freedom and democracy," the bulletin states. "Act upon this principle at once in helping to select the right men, and at the primaries in voting for them. Our country must be our first consideration."

Senator Calder of New York is the lone representative of the building industry with a vote at Washington, and his activities in behalf of that and allied constructive elements is very valuable to them. There should be an appreciable number of men at Washington with *votes* who are qualified to carry out real constructive legislation and stabilize the lawyers, "business men," politicians, and worse, who secure votes enough to exercise these important powers.

None are better qualified to legislate for the real needs of this country in municipal, county, state, and national legislative bodies than the broad gauge architect and engineer, who is trained by education and experience in large construction undertakings and these experiences naturally develop judgment, stability and worth.

Canadian Engineering Standards Committee Organized

THE Canadian Engineering Standards Committee has been organized in Montreal with official representation from the Government departments, the Canadian Manufacturers' Association and several important technical organizations. Its objects are to secure interchangeability of parts, to cheapen manufacture by the elimination of the waste occasioned by a multiplicity of designs for the same purpose, and to effect improvements in workmanship and design. It is expected to have the effect of harmonizing British and American practice.

The following officers were elected: Chairman, Sir John Kennedy; vice-chairmen, P. H. Vaughan and Capt. R. J. Durley; honorary secretary-treasurer, Dr. John B. Porter; secretary, Frank S. Keith. The headquarters of the committee will be at the Engineering Institute Building, 176 Mansfield Street, Montreal.

Industrial Information

Concrete Ships

The Portland Cement Association, offices in all principal cities, has issued a timely and interesting booklet on the subject of concrete ships. The discussion goes back to 1849, when a concrete row-boat was built in France. Illustration is given of a somewhat larger boat built in Holland in 1887; of a scow built in 1897 in Rome, typical of the concrete scows and barges built in large quantities there by one Carlo Gabellini; and of some of the larger freighters and barges built in 1909 and 1910 in Germany and Holland. Within the last four or five years concrete ship construction has progressed, judging from the photographs shown in this booklet, very materially, but it is only within the last year that large-scale concrete shipbuilding has been undertaken. The booklet under discussion shows photographs of concrete ships of every size and sort built the world over. The work along these lines which is now being done in France is portrayed fully, together with other illustrations of a concrete ship in the making.

Resiliometer Method

A recent invention, sold exclusively by the Advance Felt Specialty & Cutting Company, 322 S. Jefferson Street, Chicago, is a resiliometer, for measuring the hardness and resiliency of compressible materials. This instrument should be of value to a great many engineers and laboratory men, since it is obvious that more or less uncertainty obtains in the checking up of compressible materials. It is claimed for this instrument that it will make possible the establishing of a standard of specifications for such materials, and will make the purchase of such materials as felt, rubber and leather, or other

resilient material, a matter of certainty. The Widney Patent Resiliometer, it is stated, affords instant and accurate means for measuring the exact thickness, hardness and resiliency, or "life" of any resilient materials used for washers, packings, gaskets, bumpers, shock absorbers, etc. Full description of this invention, with information as to its operation, diversity of uses and the like, will be found in the booklet issued by the company, which will be sent, upon request, to anyone interested in the subject.

In *The Concrete Builder* for July the Portland Cement Association, which has offices in all principal cities, presents some very useful information regarding various farm buildings. There is an article entitled, "Warm, Dry, Sunlit Hoghouses Necessary to Profitable Hog Raising," which shows just how a hoghouse should be built; there is a double page of drawings showing plan, sections and various details of a design for a concrete cattle dipping vat, which, it is stated, will help mightily to speed up beef production; cuts and descriptive matter show the use which can be made of concrete for such structures as circular coal pockets, concrete block corn cribs, circular milkhouses built with silo forms, and many other such valuable items.

"H & C" Registers

The Hart & Cooley Company, New Britain, Connecticut, in their catalog No. 16, describe in full their wrought steel floor registers, faces, floor borders, grilles, ventilators, cold-air intakes, furnace regulators, and other products. Full and complete information is given regarding these products.