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A Series of Important Addresses

Delivered at The Convention of The Ohio State Association of Architects

The Address of President Lawrence S. Bellman

WE are assembled again in convention of the Ohio State Association of Architects, after a year in which has been written momentous facts of history, vital to us, not only as a nation, or a profession, but as individuals. Some of our number have the great privilege of serving actively in the fighting forces of our country; others have given their sons to the cause; some, like our secretary, are giving their entire time to the business of the draft, and some are serving only as the occasion gives us opportunity. Regardless of how we are trying to do our bit for our Government the war has come very close to us all and has engrossed our attention.

We left our convention last year with well outlined programs of activity. If these have not been carried out, if the committees appointed for the year have not accomplished what they set out and hoped to do, if the reports of work accomplished seem meager, we can still feel that, in the development of good fellowship, in the growing intimate acquaintanceship of the members of various Chapters and in the striving for the common good, we have accomplished much for which we are organized.

What the coming year holds for us we cannot foretell; let us hope it holds peace. It should mean a year of activity for us as an organization, for there never was a time when the opportunities for service of such a body were greater.

This critical period when we are not overcrowded with work would seem the logical time to consider this question of service, to take stock of ourselves, and "in time of war prepare for peace." A great deal of space in magazines has been devoted to questions of the general public's lack of knowledge and appreciation of architects and architecture. On every hand we hear discussions regarding the advertising of the profession. Is not this largely because we have failed to recognize our duty? Let us give our time and our knowledge and act as leaders in those activities and problems for which our training has fitted us.

In all the cities represented here to-day there are housing movements under discussion or in operation. What is our attitude to be toward them? The fact that we are at war should give new impetus to such movements rather than to retard them. We are all familiar with the great work being done in war-torn France, where they have passed a law making town planning compulsory; where, as in Marseilles, more than fifteen acres of tenements have been torn down for reconstruction along modern and sanitary lines.

In England a housing plan is proposed which will provide, during the four years after peace is declared, for the construction of one million sanitary cottages with modern conveniences, each standing in its own garden of not less than one-eighth of an acre. In our own country movements are under way greater in scope than any we have yet seen —some temporary, others of a permanent nature, but all vitally affecting city plan and development. In this time of high cost of living the small house well designed is attracting attention everywhere, as is evidenced in the competitions which have been held. In the one held under the direction of the Columbus Chapter, not only were entries made from nearly every State in the Union, but the newspapers of the State were ready to give almost unlimited space to the results. Such things are worth while.

As a result of the discussions at our convention a year ago we will have a report regarding architectural education at the State University and Case School. Should we not go further — familiarize ourselves with, and stand back of, the attempts that

are being made in our own cities to educate the coming generation in art, craftsmanship and civic pride?

At this time when the general public is at a loss as to what to believe regarding building operation, practically suspended as it is, can we not, through our various Chapters by means of newspaper articles, give publicity to those facts which will help to clarify the situation?

There is not one among us who does not feel that the winning of the war is the matter of greatest importance now, and the convergence of all energy and material necessary to that end justified, but we must not lose sight of the fact that if the organizations which have been built up in our offices and in the various trades and manufactures dependent on building activity are allowed to disintegrate unnecessarily we will not be ready when the call comes for help after the war; and I think we all anticipate great activity when peace comes.

The Administration seems to feel that it is necessary to advise against the building of any homes and public buildings not absolutely necessary. If it is proven that this course will bring about the greatest good in this time of need we, as an organization, should not attempt to interfere or oppose, but to find new ways of government service for our organization. But if the suspension of all building is shown not to be the wisest course, we should help to explain to the public the new era of values which have come upon us. We may thereby overcome the timidity of the investor and help to keep the whole fabric of the building world from being disorganized.

The price levels of labor and materials, which existed before the war, have gone forever; the value of the dollar has changed. Building costs have changed, but business acumen should recognize and meet this condition and if it does it will be rewarded. Net income measured in dollars in commercial work, and in terms of public service and personal comfort in others, is the measure of the real cost of building. To the architect falls the task of so designing, exercising judicious selection of materials, economy of construction, conservation of materials, advantageous disposition of space, that the net income is a correct percentage of cost. If this is achieved the cost is cheap. Educate the public to understand this fact. Demonstrate it by facts and figures, and the profession will advance in public opinion and in public interest.

A number of kindred examples of disinterested service might be profitably discussed at this convention, which, if put into action, during the coming year will earn a new-found respect for our profession and advance an appreciation and recognition of the public more rapidly than any paid advertising setting forth the ethics and usefulness of the profession of architecture.

We must demonstrate to the communities in which we live and to our Government that we can contribute something to the public good at this time when all energy is and should be bent toward war need. If our argument is based solely on self-preservation the authorities may answer us as Tallyrand is quoted as answering a persistent job seeker, who, when refused, had said, "But I must live." "I do not see the necessity," replied Tallyrand.

Address of Frederick W. Garber

I AM going to speak of architects and of our standing in the community to-day. We all know what a long and expensive task it is to prepare ourselves properly for our lifework. There are different ways of accomplishing this; some, the more fortunate, after leaving high school go to college, take a course in architecture and then go abroad for study. Upon their return they work in an office and finally get into practice. The less fortunate train in an office and in atelier, get what they can in special courses at college and then get into practice. I do not intend to discuss this phase of the problem, but we do lack a thorough and definite standard of requirements, and the type of training should not be left entirely to the individual.

Some lay stress on the engineering problems; some on the artistic, and usually one at the expense of the other. I suppose that no profession calls for a wider range of knowledge than architecture. To design is expected of one as a matter of course; to know structural and mechanical problems of all kinds is one of our easiest accomplishments. To do all these things overnight for a client is a natural request. Who of us would not design an "Amiens" overnight?

When I train my own boy I am going to send him to college and then to the Beaux Arts; take him into my office for a couple of years; give him a general knowledge of office work; one year must be spent in a structural iron shop; one year to study concrete

engineering with a contractor; one year with a decorator and one year with a general contractor. After assimilating all these craftsmen know, another year in my office ought to fit him for practice, provided he has spent his nights keeping up with design, studying the evolution and financing of building operations. If I am still alive I hope to see him set the world on fire, and I ought to retire, if my son has not married in the meantime, and live in affluence.

We ought to have lived in the olden days. Surely Brunelleschi and Peruzzi had a snap compared with the modern architect. They could build walls as thick as they pleased for architectural effects, and surely they would have died at an earlier age than Raphael had they been compelled to answer all the problems imposed upon us by a modern building project. We are underpaid; the greatest compensation we derive is a life interest in our work and some praise at times from our fellow architects. I often wonder why it is that at a formal opening of a building, space is found on the dedication tablet for everybody's name, including the hod-carrier's, but if the architect were to scratch his name on the reverse side, or if his name were inadvertently mentioned, the whole tablet and ceremony would be condemned. It is my humble opinion that we are responsible for this condition and that we should rectify it.

Take our standing in the community. How often are we consulted when problems come up with which we are conversant? Has the public the impression that we are organized only for profit? Can we not do our bit and act in an advisory capacity by delegating one man, or a group of our best men, to help toward the best solution?

Is it because we are exclusive? Our preparation calls for a secondary education and we are mostly, as a body, drawn from the rich or middle classes. Architecture as it is practiced to-day, and, as a matter of fact, in the past, is not the vocation of the very poor man, as he would find it too expensive. In like manner we want exclusive clients with large funds. We are all too jealous of each other. Our banding together in societies, originally to help the public, has resulted in the public and ourselves getting the idea that all our activities are for personal gain. Mind you, that is not my own opinion, but I am convinced that it is the opinion which others outside of our profession have of us. We are largely to blame for this condition ourselves. Look at the building laws that are in vogue in the cities of Ohio and the state building laws. How active are we in advising for legislature to insist upon more liberal and just regulations? Who can suggest wiser and better regulations, and who of us does not believe in regulation? Do we not more often build better than a few laws expect and demand of us, and why should we have specifications drawn for us instead of laws on broad, general and well-regulated lines? I wonder if we are at fault?

Where does the Institute stand to-day and what is our standing with the Federal Government? We are in a great war to win. We have a large, well-trained and skilled body of men that could do wonders for our Government. I am inclined, however, to think, from the lack of use of this body, that it is almost a criminal act to engage an architect. Engineers are doing our work and supplanting us in many fields in which they are not so well equipped as ourselves. Is it because we lay too much stress upon the artistic and put in the background our technical knowledge and business ability? In an ordinary commission we must see, and do see, that any number of widely divergent crafts co-operate and save our clients money. It is no light task, and we do it each day.

It is said that we in Ohio were all born politicians and all other things we possess are acquired. We are more than politicians. In order to have building operations function properly we become no mean diplomats, particularly in bringing inharmonious groups to work harmoniously for the general good. Is this all of no value to the Government at this time? Is the Government at fault, or is it our fault? Personally, I feel that we are at fault for not having taken a more active interest in the welfare of our Government in times of peace. Now it seems too late, and we must guide ourselves in such a way as to become more useful in the future.

I mentioned the Institute. Is it doing all it can? Much has been said in the architectural magazines on this subject, and I believe we should discuss this subject freely. I believe that the Institute has done wonders in the past and will accomplish more in the future. In my opinion it is not a body organized only to fix percentages and do police duty. I often wonder if the Institute should not place more directly upon the architect greater responsibility, and have that responsibility fixed by law. In certain philosophical lines of thought, and even in theology, some people have advocated that there is no God except our conscience. If a man be a burglar and his conscience dictates that he should crack a safe, that then would be a godly act. The doctrine fails because that particular kind of reasoning does not carry with it any obligation or responsibility to his God. Will the day come in architecture when the architect will become, with the owner and contractor, responsible and criminally liable for his acts? The Institute cannot impose such liability upon us, but will the State? I do not offer this as a solution, but it is a thought that has often come to me.

On the interchange of thought and study, do we accomplish all we should? In the National Body, the Institute, do we all follow it as closely as we should? Are the problems of Ohio the same as the problems of New York and California? Ought not our State body do something along these lines? Should the Institute be represented by the States rather than by individuals?

Take this State Body of ours. Can we not, with profit to ourselves and the community at large, discuss many of the problems that vex us to-day, such as city planning, city laws, State laws, financing of buildings, transportation as it affects factory and resident locations, etc.?

God forbid that we should do any advertising, but what would bring us to a better realization of what improvements we can make in our State than a public exhibition of the architect's work, that might travel from city to city?

What I am about to say might appear as a business-getting proposition, but I do not wish you to consider it in that light. In the larger problems, how often does it occur that Eastern men are brought in as experts? Is this fair to our community, and are problems always rightly understood by men outside our community? I do not deny that they often have better opportunities for large work, but do they always see our problems in our light? Who is better qualified to handle home affairs? I do not consider this a business-getting proposition, but believe it is our duty to the community to take an interest in these problems and help to answer them, because we are better qualified for the solution, as we know the conditions perfectly and live with them each day. Would a fine arts commission to advise with our Governor in a way similar to the Fine Arts Commission in Washington bring about a healthier condition?

When I left college and went abroad I promised to return to "Technology" and talk over the future with an old professor of mine. It was my intention to stay in the East and study archæology, and when I told him he had this to say to me: "Go home. The Middle West, when this country develops, will be the best and fairest field in the world. The East is too much influenced by Europe; the Far West by other external conditions and by certain Spanish traditions that have been handed down to them. Ohio, Indiana, Illinois and that neighborhood will come into their own and there we shall find a great rebirth, or the highest ideals of our American life developed in art, architecture, literature and theology." Gentlemen, I believe that firmly, and I feel that our opportunities are wonderful.

Will an exhibit held each year similar to the Architectural League of New York, which shall move from town to town in our State, help us to educate the community and to realize our possibilities and opportunities?

Architects want large and rich clients. Architecture is largely a question of clients and its first principle is to get the job. The middle class and the rich man know how to employ an architect, as a rule, but does the aggregate building of our State, compared with what we do, represent the bulk of the building executed? Are we not prone to let the small man, with a small commission, fall into the hands of men that do not know? In the medical profession all doctors do a certain amount of practice that might be considered community work. A criminal gets legal advice whether he has funds or not. Can a small investor get good architectural advice easily? Do we not owe something to the State in this direction? The type of work I am now speaking of might not be art, but it surely should be classed as service! Ought we not to be so organized that we could give these services? Are we not responsible for most of the bad design and worse construction that is inflicted upon those who can least afford it? I will confess that I do not know the answer, but surely there is one. I do know, however, that the housing problem is to-day one of the most vital questions before us and one for which we must bear the responsibility.

Do we make an honest effort to have our work understood? Does the average man know the function of an architect? Is it not our duty to do a lot of missionary work and bring the public to a realization of what we stand for, and, on our part, can we not trim our sails, to be a more useful body doing duty for the general public instead of presenting ourselves only at the court of the rich, as the agents only of the rich and then only as artists?

I am not attempting to offer a solution to these many problems and questions that I have asked. I am merely presenting them to you. You are already conversant with them. We have, I believe, a fine start, and iconoclastic measures will not solve these vexing problems.

Everybody is taking stock to-day and some are doing a much-needed house cleaning. "Introspection" is the watchword now, and if things continue as they are we shall certainly have more and more time to devote to this subject.

Do not think me a pessimist. I love architecture and all that has to do with this finest of the fine arts. Frankly, I really think we have stood too much in our own light in the past. The opportunities that will come to us all in the future will be many, when this world returns to a saner basis, and peace and good will shall reign again.

Let us prepare now and, God willing, I know that we shall give freely of ourselves, to all and for all.

Address of Herbert B. Briggs, Secretary

SINCE our last meeting war has come; architecture and building have nearly gone into the discard; our thoughts are upon, and our activities are directed toward, soldiers, munitions, conservation, food, fuel, war.

In one short year we have seen magical cities, to house, to feed, to train, to entertain and to fit our boys for military service, builded, as it were, between sunrise and sunset; we have seen class distinction and social barriers wiped out; we have seen political lines—except in sporadic cases and newspaper headlines—obliterated; we have seen virtual Government control of public service utilities come; we have seen business and professional men freely giving their time, their money, their brains, their energy to make the world democratic; we have seen the passage, the inauguration, the operation of a selective service system that, in the span of a scant six months, has produced a magnificent National Army nearly 600,000 strong; we have seen mothers bravely sending their sons into the service, and we have seen and we have felt a growing, broadening, elevating change within ourselves that makes for better men and for better architects.

You may say—and probably with propriety—that these things, these thoughts, are not a part of and do not belong to a report of the secretary of your association, but you will pardon me.

My work during the past seven or eight months, of inducting soldiers into the service of Uncle Sam, has brought home to me a keen and abiding realization of the fact that we are at war, that we are patriotic American citizens before we are architects.

War and its activities have slowed down our association work. Our time and our thought have of necessity been diverted into other channels, but, as will be found when we hear the committee and chapter reports, we have not been idle.

Your secretary directs your attention to the national movement legitimately to foster and stimulate building activities, and recommends that appropriate action be taken by our association toward participation in and furtherance of the movement.

In like manner he recommends that encouragement and help be given to the housing movement inaugurated by the American Institute of Architects.

Your secretary reports that it was his pleasure to attend a get-together meeting of the Dayton and Columbus Chapters at Columbus during the early spring, on a thoroughly cold and chilly day, and to participate in the furtherance and the development of the friendly and fraternal relationship that so particularly marks the work, and is such a dominant function of our Association.

The meeting of the Board of Directors of the American Institute of Architects at Cleveland, in September last, was made a reunion for many of our members and did much to cement and strengthen the ties that bind us together as men, as friends, and as architects.

Your secretary was invited to attend and to address the Builders' Exchanges of Ohio, at their annual convention in October at Akron, upon "The Relation of Architect and Contractor."

Your secretary begs to call your attention to a branch of military work in which the architectural profession is rendering a signal service—camouflage. The 40th U. S. Engineers, a camouflage regiment, Co. A, the only one thus far organized, is "over there" doing its part somewhere in France. No more companies are at present being organized, but additional ones will probably be organized in the near future.

Among the branches of military service camouflage has become conspicuous out of all proportion to the number of men engaged in it, although perhaps not out of proportion to its usefulness; and among the professions and trades which are conspicuously successful in producing the type of men who become good camoufleurs is the profession of architecture. This is for two reasons: first, the profession brings forth the ability to visualize results, and to make drawings or sketches which will enable others to produce these results; second, architects with any extended practice have learned to handle men, not only draftsmen, but mechanics and laborers. This latter qualification is of nearly as much importance as the first, since, contrary to the generally accepted idea of camouflage work, it does not consist chiefly of panoramic landscape painting, but in the preparation of large surfaces which in texture and color resemble or mimic natural objects, and which must be made and set up by squads of men and not by individuals.

Perhaps I may digress to explain why the camouflage work is being done by men trained and equipped as soldiers, since the idea seems to be widespread that camouflage could be just as well done by artists and landscape men without the fuss and lost time involved in running a military organization.

In the first place, it is essential that all men sent abroad should be absolutely under control. It must be obvious that a civilian, perhaps a volunteer, could not be picked out of bed at three o'clock in the morning and ordered to do something. He might

reply that office hours were from 8 a. m. to 5 p. m., and the only thing to do would be to discharge him. But one doesn't want to discharge men who have been trained for particular and indispensable duties and who have been transported abroad at considerable expense. Also military training does do one thing that even the best managed, civilian organization cannot do; it inculcates in employees, so to speak, the habit of doing what they are told to do instantly and regardless of circumstances. The civilian will run away from shell fire which the disciplined men, no braver to begin with, scarcely notice—one man is his own master, the other has no independent volition.

Quite a number of people seem to think the camouflage service offers a safe and easy army berth, and we have had a number of applications based on this understanding. As a matter of fact, it is as arduous as any, and as dangerous as any except the machine gun service; but for the most part the men who have written that they wanted to enlist have done so because they honestly felt that they could be of service, and among these have been a great many architects and architectural draftsmen. I have always been proud of my profession, but never more so than to-day when I have had an opportunity to see not only how many have been willing to come, but how they have made good. Most of them are young men of the type who are head draftsmen and superintendents in the big offices, and many of them will, no doubt, be commissioned before this war is over.

A great compliment was paid to the profession when Major Evarts Tracy (of Tracy & Swartwout) was selected to begin organization.

Company A is made up as follows: Architects, 22 or 23; carpenters, 40; iron workers, 30; painters—house, sign, and scene—48; artists, 24; stage carpenters and movie men, 30; tinsmiths, 20; plumbers, 10.

Preliminaries to Taking Bids and Letting Contracts

Part IV—The Acceptance

By Francis W. Grant

THE full legal significance of the acceptance of a proposal is not always appreciated by architects. Its timely utterance in writing or otherwise constitutes the final act in the negotiation of a contract if the parties so desire, and if it is in absolute form. A subsequently signed formal contract as a separate instrument is but supplemental to an acceptance and may be safely dispensed with entirely if the acceptance is in valid form and time and if the Invitation, Specifications, Drawings, Bulletins and Proposal are correct and complete. The only qualification to this statement is that verbal acceptances perfect contracts only when performance is possible within one year from date of utterance. Oral contracts are for other and obvious reasons unreliable.

The architect should have in mind at the time of issuance of an acceptance whether a formal contract is to follow or not and phrase the acceptance accordingly. If it is intended that a formal contract instrument shall be negotiated, it is important that the acceptance shall *not* be absolute but shall be conditioned upon the signing of the contract, and, if so desired, upon the signing of the drawings and specifications. Unless statements to this effect or other qualifying statements are contained in the acceptance a contract will have been perfected by its issuance and dispatch and the contractor may suit his own pleasure in the matter of signing such other documents as may be presented for his signature thereafter having for their alleged purpose the perfecting of the contract.

Most authors discussing building contract procedure seem to prefer the assumption that error and omission is the rule rather than the exception in specification writing and specifically recommend that all acceptances be made conditional upon the subsequent signing of a formal contract, which latter instrument is expected to serve as the vehicle for various "loose ends" and forgotten items.

Believing that there is no good reason or excuse for the omission from the specifications and other papers of the matter usually left for the separate contract instrument and that breaking away from the time honored formality of all parties getting around a lawyer's table to "sign up" is worthy of the effort to accomplish in the interest of simplicity of dealing, the author of these articles presumes to recommend the absolute acceptance and no subsequent separate contract instrument.

The three methods of procedure: (a) An absolute acceptance and no separate formal contract document, (b) a qualified acceptance with qualifications met by a formal contract instrument, or (c) a formal contract document not preceded by any form of acceptance, result alike in perfectly valid and enforcible contracts, other matters being lawful.

In the case of that imaginary library building previously mentioned, it was concluded by the Board of Commissioners that their architects had covered every essential point in the preparation of the Drawings, Specifications, Invitation, Bulletins and Bid Blank, and therefore that no need of a separate formal contract document existed, hence the following form of acceptance was issued and the contract deemed fully negotiated thereby:

Houston, Tex., Jan. 8, 1917.

Stoelker & Co.,
Houston, Tex.

Gentlemen:—

Your proposal dated Jan. 5, 1916, as reduced by alternative proposal No. 1, is hereby accepted in the net sum of one hundred seventy-four thousand, four hundred and ten dollars ($174,410.00).

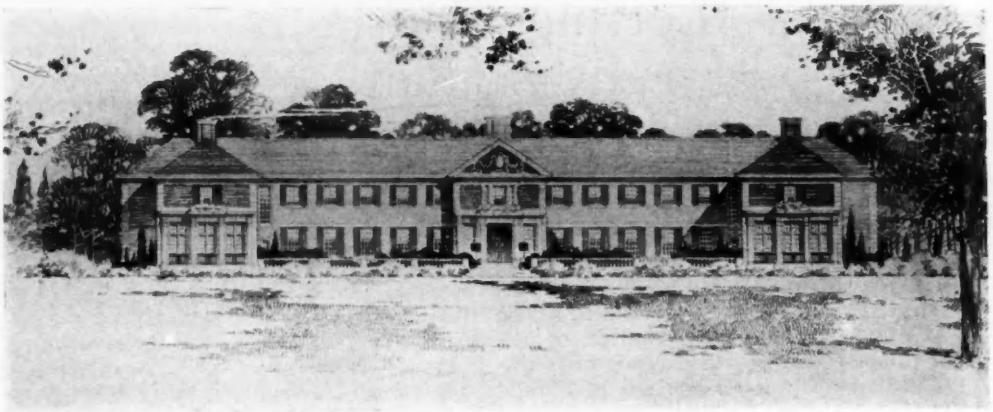
The proceeds of the certified check submitted with your proposal will be refunded upon the delivery by you of a satisfactory surety bond as described in the specifications.

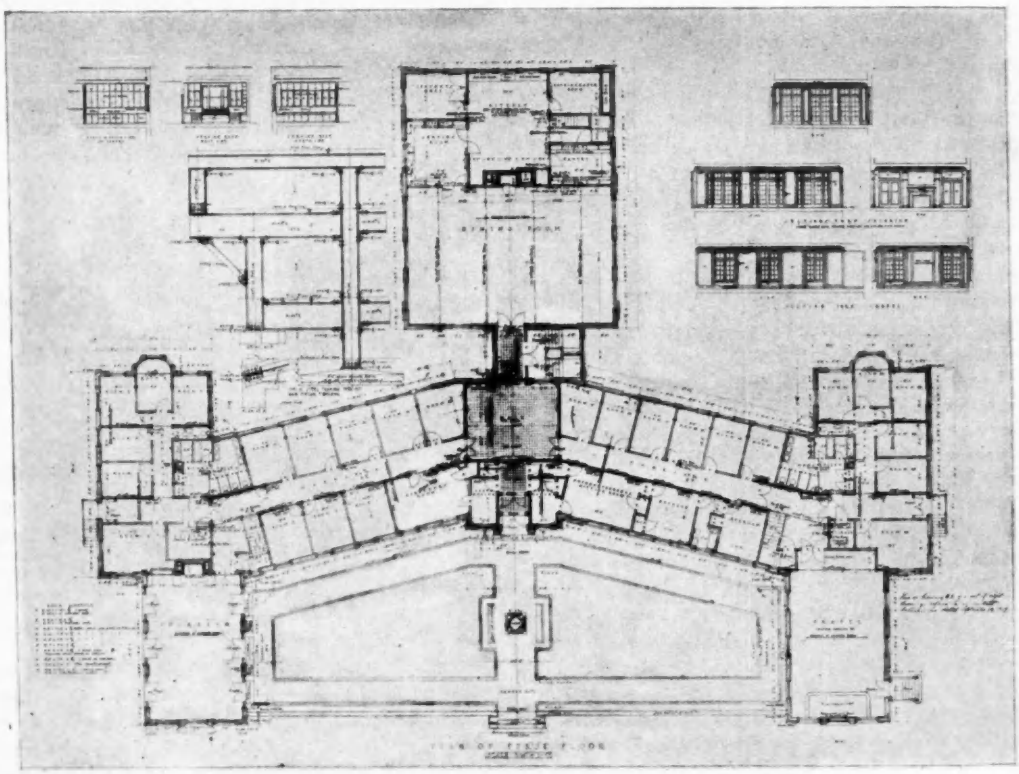
Board of Library Commissioners of the
City of Houston,
By Henry Hyslip, President.

I hereby certify that Henry Hyslip, whose signature is hereinabove attached, is the duly elected president of the Board of Library Commissioners of Houston, Tex., and that he has been authorized by resolution of said Board to negotiate the above instrument.

[L. S.] George Olds, Secretary.

The bidder is entitled by law to the privilege of treating his bid as null and void and rejected if not accepted as made. A modified acceptance is a rejection. Hence the acceptance should be in few words and without any strings to it whatever. An acceptance in the form of a contract signed by the owner and ready for the bidder's signature with provisions injected at variance with data submitted for the purpose of securing bids is but a modified





MONTEFIORE HOME, CLEVELAND HEIGHTS, OHIO

CHARLES R. GRECO, *ARCHITECT*

acceptance or a counter proposal which may be rejected by the bidder thus closing the deal.

Acceptances become effective immediately at the time sent to the bidder if lawfully transmitted. They will not be construed legal acceptances if the medium of transmission is contrary to that named in Invitation or Bid nor if sent to an address contrary to the one named by the bidder. They will be of full force and effect regardless of any act or subterfuge on the part of bidders tending to prevent legal delivery.

It is important that the architect should fully appreciate what constitutes a legal acceptance, for until a bid is legally accepted (unless it is fortified by a certified check or equivalent guarantee) the bidder is not bound at all. The bidder is entirely free to revoke his bid up to the moment of proper transmission of an unconditional and otherwise legal acceptance. The owner is therefore at the bidder's mercy during the time spent dickering in the office of the owner's attorney over what shall and what shall not be incorporated in a separate contract instrument. In the case of a particularly advantageous bid on a rising market this is a condition of affairs to be avoided. There are two ways open to its avoidance: first, by requiring a certified check guarantee with the bid and the submission of a complete contract form in blank with the specifications, and, second, by prompt and unconditional acceptance requiring no contract instrument. The latter course can only be safely adopted when the specifications and other documents are correct and complete.

In the absence of specific provisions to the contrary in the Invitation, a bidder may impose conditions in his bid as to the time by which, or the form in which, an acceptance of his offer must be made. He may also prescribe the mode of communication of the acceptance. He may also prescribe the form of acceptance, as for instance that it shall be in writing. An acceptance failing to take cognizance of these conditions when properly imposed by the bidder will not effect a contract. In the case of Eliason vs. Henshaw (4 Wheaton (U. S.) 225) the bidder designated the place at which he would receive an acceptance. He actually did receive the acceptance, but not at the place designated, and the bid was declared not accepted. (See also Pollock on Contracts, 25.)

If no contrary conditions are imposed by the bidder, the proposal may be accepted in the usual or any reasonable manner or time, and may, as a general rule, be communicated by the same means as the bid was communicated.

It has been held that even though a letter of acceptance be lost in transmission, it is effective and a contract in force from its dispatch, its proved form and the means of transmission being proper. (Haas vs. Myers, 111 Ill., 421; Washburn vs. Fletcher, 42 Wis., 152.)

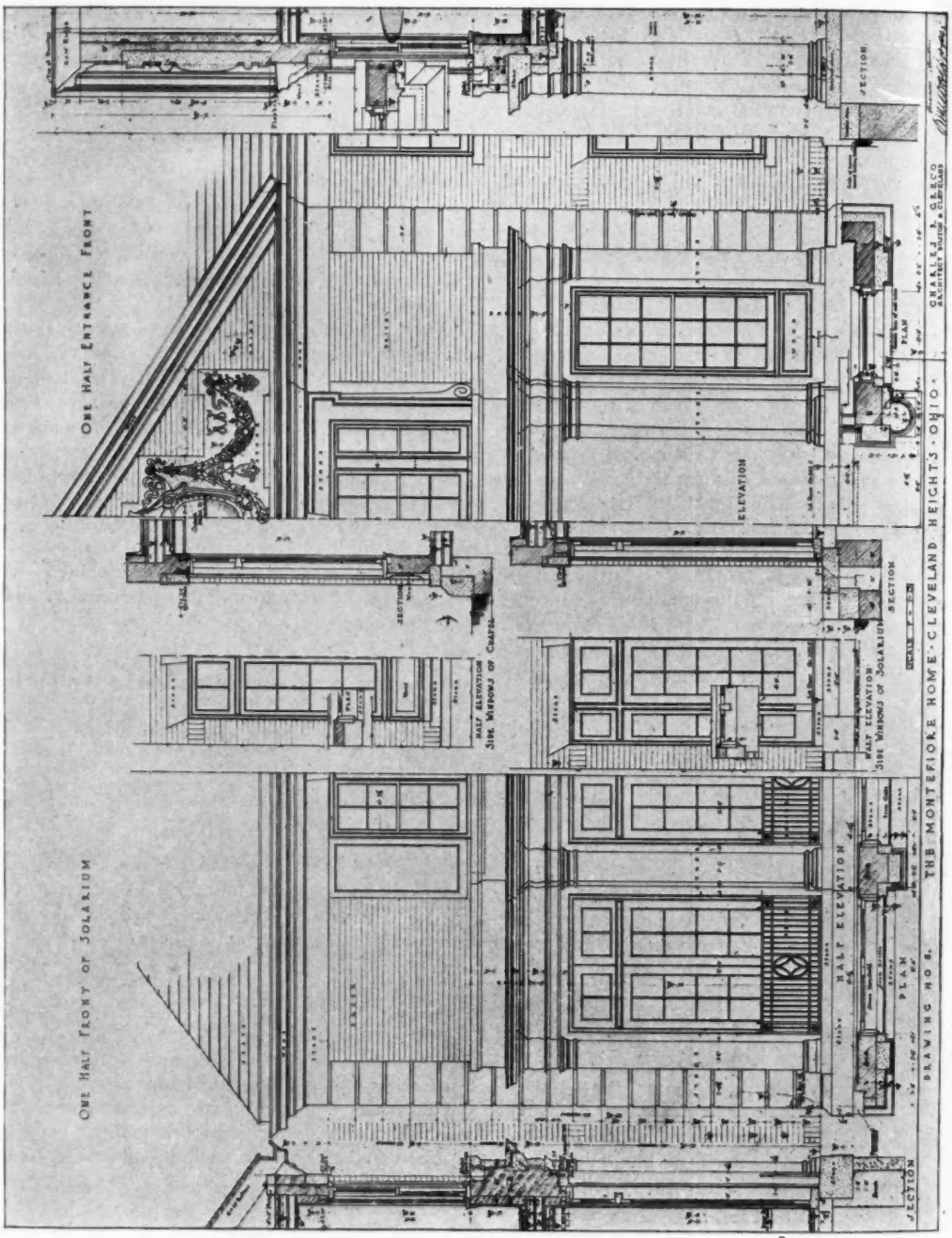
A bidder, under an advertisement for sealed proposals to the Government, has the right, previous to the opening of bids, to modify his bid by telegram; and the bid so modified, if accepted before withdrawal, will bind the bidder. (22 Opinions of the Attorney General, 45.)

When a certain hour has been named for the opening of bids it should be rigidly observed. To open bids, or any of them, in advance of the designated hour may annul all bids and involve serious expense, besides resulting in loss of advantageous proposals.

As to proposals received after the hour designated for opening, circumstances may justify these being considered. The rule in this connection under which the Federal Government acts is embodied in an opinion of the Attorney General found in Vol. 21, page 546 of such opinions, the syllabus of which is as follows:

> "A proposal received after the designated hour under circumstances which warrant the belief that it had been prepared and submitted in the light of the proposals submitted by other bidders which had been already opened and made known, should not be received or entertained; but a proposal received under conditions which preclude the possibility of such unfairness should not be rejected because it happens to be received by the Board of Award a few minutes after 2 o'clock p. m."

It is important to the interests of both parties that the signature to the acceptance be a perfectly valid one. If the owner be an individual and the architect sees fit to issue the acceptance he should definitely state over his signature that his act is by specific authority of the owner and be prepared to prove that statement. In the case of corporate or public ownership the authority to sign the acceptance should be stated by the secretary of the corporation or other proper official, under the corporate seal, acting under authority of official record. The making of the statement above referred to is not an essential, however, and failure to make it or otherwise attest the signature will not in itself render the transaction void.



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How Shall It Be Done?

NOW that the government is about to add very materially to the number of buildings at the cantonments, supply bases and base hospitals, it is the time to consider the desirable changes in the typical construction of these buildings. The present type of all-wood buildings has been in use long enough to indicate their faults in plan and structural detail. During severe winter weather the making of buildings of wood and non-plastic materials may be justified on the basis of expeditious erection. With the advent of the favorable building season plastic materials can be used with no loss of time or material.

The design of these groups of buildings should be considered from several aspects and each measured in relation to the ultimate objective. Each unit has its specific purpose and all of them, except the store-houses, are used for human habitation.

The new hospitals naturally demand a greater degree of security and comfort than buildings occupied by the physically fit; yet, these men are entitled to such protection as can be reasonably provided, although they are amply able to care for themselves in emergencies. An all-wood building is more sensitive to the changes of temperature than other types owing to the rapid infiltration of air through the walls. These walls also provide harbors for various kinds of vermin, and both of these conditions are objectionable to the occupants.

The safety of the person and protection against monetary loss from fire are features that should be considered together. No one questions the absolute necessity of the first, especially in hospitals, and the vital importance of the latter is very evident. The type of buildings now in use possesses no inherent resistance to fire and their preservation depends entirely on a fire-fighting service.

These conditions should be materially improved and it can be done without any radical changes in the general design as now followed. The use of brick, tile or concrete walls, tile or concrete floors and roofs is impracticable. The availability of the materials, slowness of construction and costs are prohibitive. As a very large proportion of the buildings are intended for a temporary use, this feature must also be considered as a factor in the element of economy.

In making the present type of buildings more comfortable, secure and fire resisting, the wood frame in the items of sills, studs, joists and rafters can be retained, but their retention made with an absolutely complete and carefully installed system of fire stops within the walls, floors and roofs. In this regard this is no addition to what the buildings should possess as now built. The change that appears as the most important is in the exterior and interior wall coverings and partitions.

By covering the outside walls with cement mortar, stucco and metal lath, the inside surfaces and the partitions with plaster and metal lath, there is a decided gain in the insulating value of the walls, protection from vermin and a vastly increased resistance to fire. There is also the element of durability and cost of maintenance which has its place in the final analysis.

The resistance to fire is important. These buildings are not insured, and if burned there is an absolute loss of material, and the loss of their *use* may far outweigh the material loss In the case of a hospital the loss of life would be a calamity.

The cost of this type of construction is not excessive in comparison with the standard design now used. It is a small percentage, possibly ranging from 2 to 5 per cent according to location, and this increased cost applicable to the materials and labor displaced. In the matter of durability, maintenance and real intrinsic value of the whole combination there is no real added cost. The materials, such as cement, stucco, metal lath and plaster, are abundant in quantity and as easily procurable as those now used. The plasterers and lathers are available in adequate numbers. In fact, these trades are not now at all well employed owing to the depression in the general building industry, and their extensive employment would release carpenters for use in shipbuilding and other activities where they are really essential to much-needed production.

The same things that have been stated are ap-

plicable to the erection of houses for employees in our new industrial centers. Unless prohibited by local municipal regulations, this type of construction is desirable. It is true that the house is built for permanent use, but these houses are as desirable and kept in repair as cheaply as any other kind of buildings of that class. It should be remembered that labor will flow to the good and desirable houses. This fact will compel corporations and individual builders of such buildings to consider with extreme care the type of construction to be used. Unsalable and unoccupied houses are a poor investment and American labor will, within reasonable limits, select its habitation. This is especially true of the skilled and well-paid craftsman. These houses will be insurable at reasonable rates also.

The fire losses in 1915 were 172 million dollars; in 1916, 214 million dollars, and the best authorities state that the final and valid figures for 1917 will exceed those of 1916. There is nothing in this country that we can afford to waste, especially by fire. It is imperative that the risk of loss by conflagration be reduced to a minimum. The deplorable and inevitable loss of life that confronts the nation should not be increased through faulty building construction.

Is it not the duty of the architect, who is so intimately related to these matters, to take a decided stand and in no uncertain voice express the necessity of the better construction of these buildings? To do so as individuals and as organizations, presenting a united front, will have its effect and instill into the public mind the power of the profession when it is asserted. Immediate action is imperative, for the work will soon be under way and now is the time to act.

Some Notable Addresses

THE address of President Bellman and other members of the Ohio State Society of Architects, delivered before the recent convention of that society, are documents of interest to the entire profession. They disclose keen insight into the vital problems affecting the practice of architecture, point out present dangers, and suggest remedies.

It is by such clear and definite statements that the public may be best advised as to the real functions of architects, especially at this time when every technically trained man has, or should have, assigned to him work for which he is best fitted by education and professional training.

It is important that addresses of this able character should have wide publicity. Much valuable propaganda has been made futile because it has not been sufficiently widespread. It would seem, inasmuch as the greatest activity in architectural circles is to be found, just at this time, in the meetings of the various State societies, that the practical work being accomplished could be augmented largely by press committees, whose duties it would be to see that the record of these activities found adequate space in the daily press. Money spent in other directions might be more valuable applied in meeting the expenses of a press committee.

A Committee on Public Information was created by the Institute several years ago. At the outset its activities were pronounced, and it accomplished much good in directing attention to many important matters that it was essential to have widely known and understood. Its duties were primarily to correct numerous errors of statement, and items containing misinformation, constantly appearing in the columns of the daily press. The opportunities since the outbreak of the war for broad and valuable services have been greater than at any other time. Many, if not all, of these opportunities have not been used to the best advantage.

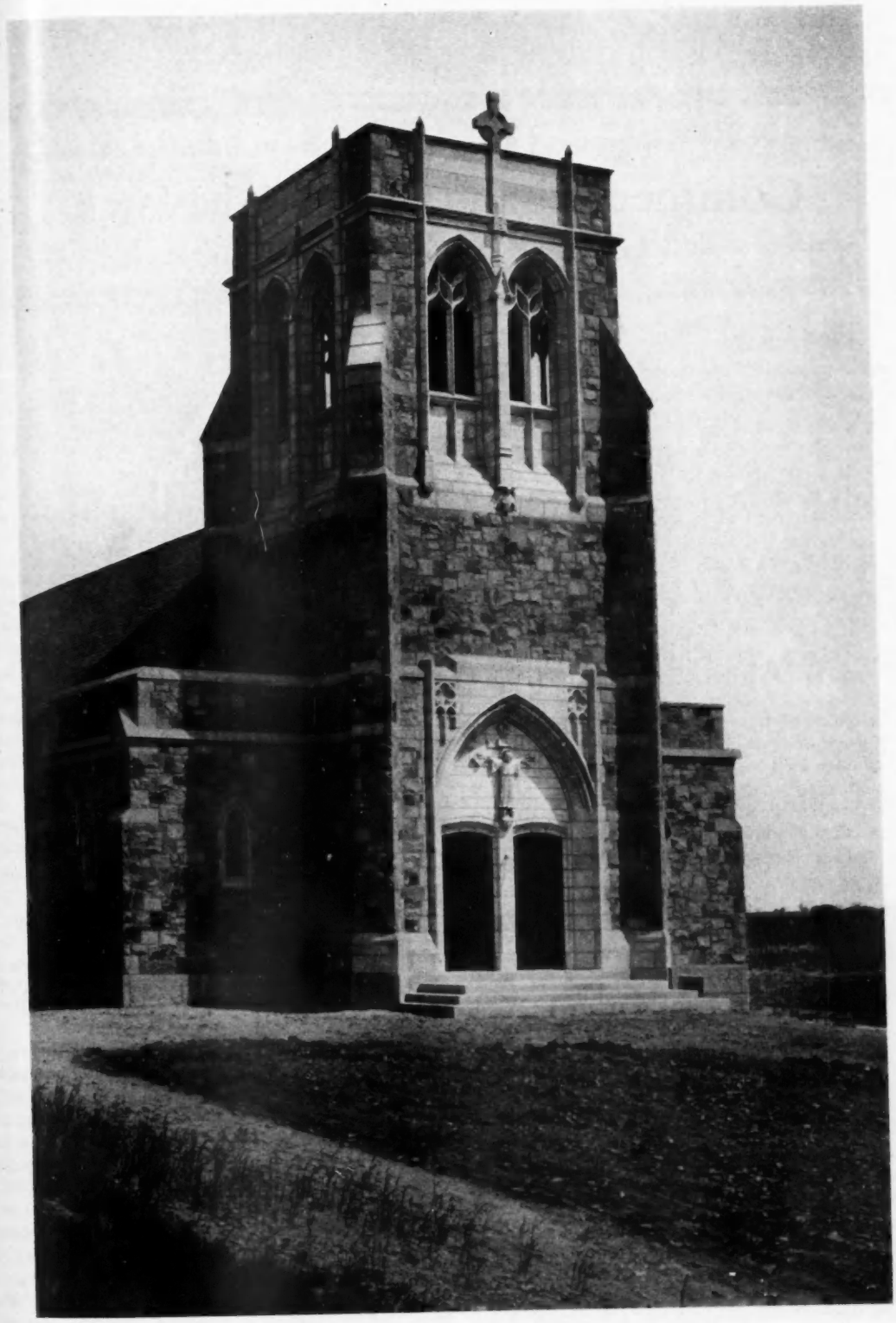
President Bellman states in his address that now, when architects are not overcrowded with work, would seem to be the logical time to consider the service that architects, as architects, could render to the nation. Nothing could be truer. There is yet time to improve conditions.

But, while it is important that these matters be brought to the attention of all in the profession, it is of even greater moment that they be brought to the attention of the general public, as an important part of the work to clearly define the status of architects. Let something be done in this way.

President Bellman urges in his address that the public be educated to understand facts as relating to the work of architects. It is the public, be it noticed, that he desires should become aware of just what is the value of an architect's training at this time. He calls for a demonstration by facts and figures. Let this demonstration be made by men who can speak as forcefully as the president of the Ohio State Society and other men of that group, and let it be known to a public, now obsessed by ignorance, or what is even more harmful to architects, indifference.

Just what will be the policy of those who will arrange the program for the forthcoming convention of the Institute we, of course, do not know. But if they will see to it that the various addresses dealing with essential things be so condensed and placed in proper form that editors of daily papers and magazines may avail themselves of them, much good will have been accomplished.

It may be very well to publish all this information in the *Journal of the A. I. A.*, and such condensed portions as may be given out to the architectural press, but it is essential just now that the public at large should know these things.



ST. GREGORY'S CHURCH, NORTH WEYMOUTH, MASS.
CHARLES R. GRECO, *ARCHITECT*

Digest of Commercial and Financial News

Affecting the Practice of Architecture

The "Cost Plus" Contract

In a discussion of the features of the "cost plus" contract, *The Annalist* states:

When the demand for labor is far greater than the supply, as is the case at present, it is only natural that labor should go to the highest bidder. The Government was cognizant of this when it let contracts for rush-work construction of cantonment, shipyard and shell-loading plants. In order that the contractor might be in position to draw as much and as good labor as he needed for tasks necessary to the conduct of the war, he was empowered to work on a "cost plus percentage profit" basis. The cost was put secondary to speed. The contractor sought terms of this sort, on his part, because he was unwilling to commit himself in advance to a fixed sum and a time limit for completing a piece of work when war conditions had upset ordinary methods of figuring on a contract.

There is no doubt that the "cost plus" method of performing work for the Government has unsettled labor conditions in localities where Government tasks are being put through. The high wages paid by the contractor on Federal undertakings has upset existing wage schedules, drawn men away from private industries, and forced the latter to employ workers who are less efficient than the old. The investigation of the Hog Island shipyard indicates a suspicion in Governmental quarters that the system may have been abused, that employers may, in some cases, have employed more men and paid higher wages than was necessary. There has been complaint that essential as well as non-essential industries have suffered from loss of workmen to the jobs where haste is considered after costs.

Overshadowing the objections to the system stand the necessity which prompted it and the results obtained. The Government could not afford to compete for labor with private enterprises. The time element was all important; the war would not wait while employers sought to effect the economies possible under ordinary circumstances. Where the industries necessary to the conduct of the war have been impaired through the loss of workmen, as in the case of the copper refineries in New Jersey, it may be expected that the Government will take a hand, and find means to furnish labor. The enterprises whose activity has no connection with the war will have to get along as well as they can. That is one of the products of a world conflict which leaves no one untouched.

America's Financial Position Changed by the War

During the year 1914 the foreign standing indebtedness of the United States was estimated at $6,000,000,000. Not less than $580,000,000 was paid every year by Americans to other countries to correct the adverse trading balance, and it is said that 55 per cent of the bonded indebtedness and 25 per cent of the dividends of American corporations were paid to non-Americans. The most important item consisted in $225,000,000 for dividends and interest, while $170,000,000 was spent by Americans living abroad, and $150,000,000 at least was paid by American immigrants to members of their families remaining in Europe and at least $25,000,000 was collected from American merchants and manufacturers in the form of payments for ocean transportation. Since the outbreak of the war this position has rapidly improved. Americans have returned to this country and have spent their money at home, fewer Americans have traveled, and part of the money saved in this way has been used for buying back many of the American securities lost to foreign holders before the war. All in all, stocks at a value of at least $1,000,000,000 have returned in this way into American possession. At the same time America has lent great sums to foreign countries. The American financial holdings in South America are now valued at $400,000,000 and a good deal of investing has gone on in Asia and other countries. All these, however, are overshadowed by the enormous operations of the United States Government in expending more than $3,000,000,000 in loans to the Allied Nations. Adding this amount to earlier loans given and to the value of the securities bought back, it seems that the former indebtedness of the United States to Europe has been practically wiped out.—*Scientific American.*

The High Cost of Discharging Labor

During the year 1912, comments the *Scientific American*, a group of factories with 37,274 employees hired 42,571 men with a net increase of 6,697 men at the end of the year, 35,874 men having left during the same period and gone into other employment. It is estimated that in an average big factory employing 2000 men, approximately 1000 renewals will take place every year; that means that of the 7,000,000 men making up the industrial labor force of the United States 3,500,000 change their places at least once every year. It is, of course, not unusual that in industries having a very sensitive seasonal trade, changes take place considerably oftener. The economic loss to the United States industry caused through this unsteadiness in the labor market is enormous. The cost of training a new man in an industry is valued as between $30 and $200, according to the industry and character of the work to be done. Taking even the lowest figure, it appears that our industries are losing more than $100,000,000 every year from that item alone. In addition to that there must be taken into consideration the expenses for hiring and discharging a man which is commonly put at between 1½ to 2½ per cent of the payroll of the man, according to industry, amounting to $40,000,000 more. Much money doubtless might be saved by eliminating the necessity of discharging labor during slack seasons. In Europe good results have been obtained by using the quiet season in the home market for manufacturing for foreign trade. The changing seasons of the Southern Hemisphere bring orders to Europe just at the time when business gets slack in the European market.

London Proposes National Labor Institute as War Memorial

In trade union and labor circles there is a movement on foot to erect in London a war memorial which it is proposed shall take the form of a National Labor Institute, situated in London, to be the headquarters of British organized labor, with conference hall, committee rooms, reference library, reading room, and hotel and restaurant accommodation for trade union and labor delegates on labor business. Several trade unions having their head offices in London desire to be housed at the National Institute. It is proposed that any profits and balance from the original fund should be devoted to the founding of scholarships, boarding school or university charges, or other educational assistance for the children of members of trade union and labor organizations who have been killed in action or maimed in the war. It is hoped that a sum of £300,000 may be secured.—*Architect & Contract Reporter* (London).

Production of Lime in 1917

DECREASE OF TEN PER CENT COMPARED WITH RECORD YEAR, 1916

The estimated production of lime made and sold in 1917 in the United States, including Porto Rico and Hawaii, according to the *Official Bulletin*, was 3,663,818 short tons, a decrease of 10 per cent compared with the revised total for the record year, 1916, which was 4,073,433 short tons. It surpassed, however, all records previous to 1916. This estimate is based on returns made by the principal producers to G. F. Loughlin, of the United States Geological Survey, Department of the Interior.

Of the forty-two producing States only eleven reported increased sales. Virginia and Indiana were the only States in the group having sales of more than 100,000 tons to show increase, which amounted to 1 per cent and 3 per cent respectively. Other States of this group showed decreases ranging from 5 per cent (Pennsylvania) to 36 per cent (Wisconsin). Vermont, with an output of 53,143 tons, showed an increase of 23 per cent.

Housing Problem Frequently One of Local Transportation

In treating of the housing problem in connection with local transportation, which is a matter of general and vital interest at this time, *Engineering News-Record* says that one of the evidences that the government departments are striking their stride, and soon will be operating under conditions of efficiency, is the work done recently by the Government in demonstrating that much of the clamor being raised for the purpose of securing emergency housing for this or that community can be stilled by demonstrating that the problem is one of local transportation. Chambers of commerce in many industrial sections have been seeking Government subsidies for this purpose, seeing in their local situation and the national emergency a chance to build up their towns. Had every demand been granted, even when the need was apparent, the cost to the nation would have been almost beyond belief.

As for instance: A certain factory having large government contracts found that 40 per cent of its machines were continually idle because of a labor shortage. The immediately suggested remedy was

emergency housing, but a brief investigation showed that the cost of such a project would run to $750,000. The very size of this estimate called for pause, for the factory was only five miles from a city which had a labor surplus.

A not very extensive investigation revealed that the trouble lay in the fact that the electric traction lines, which had been attempting to handle the transportation of workers, had fallen down utterly because of a lack of co-ordination of existing facilities. A demonstration of this to the management of the three lines involved resulted in such a betterment of the service that the trouble of the plant in question was immediately eliminated. When the traction system broke down from lack of proper maintenance it was a matter of but a few hours to arrange with a railroad connecting city and plant to inaugurate a through train service of seven cars between the union station and the factory door.

Situations similar to this have arisen not once but many times within the past few weeks. With the railroads under government management such difficulties as the necessity of using two or more lines, which might have been an obstacle in the past, disappear. The query arises as to how many of the emergency housing projects, which have been filling the daily papers mainly because of their novelty and cost, will be found upon investigation to be *prima facie* evidence of hastily drawn conclusions and lack of study.

New York Chapter, A. I. A., Protests Erection of Replicas of the Barnard Lincoln

The following resolutions were passed by the New York Chapter, American Institute of Architects, at its February meeting:

Whereas, It has come to the notice of the New York Chapter of the American Institute of Architects that a movement is on foot to present and erect in prominent places in the capitals of one or more of the nations now allies of the United States replicas of Barnard's statue of Abraham Lincoln; and

Whereas, There is ample and conclusive evidence that this statue does not adequately or correctly represent the personality of that great American; and

Whereas, Many competent authorities, including this body, feel that the artistic and sculptural value of this work is open to question,

Therefore, Be and It Hereby Is Resolved that the New York Chapter of the American Institute of Architects protests against this movement, and the presentation of this statue to any government or municipality, on the ground that it is an unsuitable and improper representation of Abraham Lincoln.

New York's Committee on Heights of Buildings Dispersed

Much comment in the daily press is made on the dismissal by Mayor Hylan of the Committee on Heights of Buildings. The operation to date of New York's zoning regulation has restored confidence in building circles and has also had a tendency to stiffen real estate values. *The Evening Post* condenses the general opinion of the New York press in the following editorial:

"The Mayor clearly throws down the gauntlet to good government by his dismissal of the members of the Board of Appeals of the Committee on Heights of Buildings. This body has under its control vast real estate interests; it renders final decision on all questions that may arise under the new zoning law. The next appeal is to the law courts. Not only individual property owners are subject to its jurisdiction, but the city also may be made or marred by the board's rulings. The purpose of the zoning law is to give the city a healthy and normal development, grouping manufactures, skyscrapers, and residences in different quarters of the town. On the other hand, this districting was to be done with the least possible hardship to real estate holders. The board, as constituted before Mr. Hylan began to 'reorganize it,' had an excellent reputation for absolute integrity and ability. Mr. Hylan will be under close scrutiny while appointing the new board. The quality of these appointments will be the final test of the nature of his interest in the honest and capable governing of this city."

Where Good Ventilation Pays

"Plenty of fresh air and good ventilation will help keep occupational diseases at a minimum," says the factory inspector of one of the important industrial states. "Monthly medical examinations and strict shop discipline come next in line supplemented by adequate sanitary facilities, such as shower baths, wash troughs, separate clothes lockers, towels, working clothes, nail brushes and an abundant supply of soap and water.

"Every factory engaged in work which gives rise to occupational diseases must install a suitable dining room for its employees, as eating and drinking in the work rooms, where the process of manu-

PLATE 85

APARTMENT HOUSE, CAMBRIDGE, MASS.

CHARLES R. GRECO, *ARCHITECT*

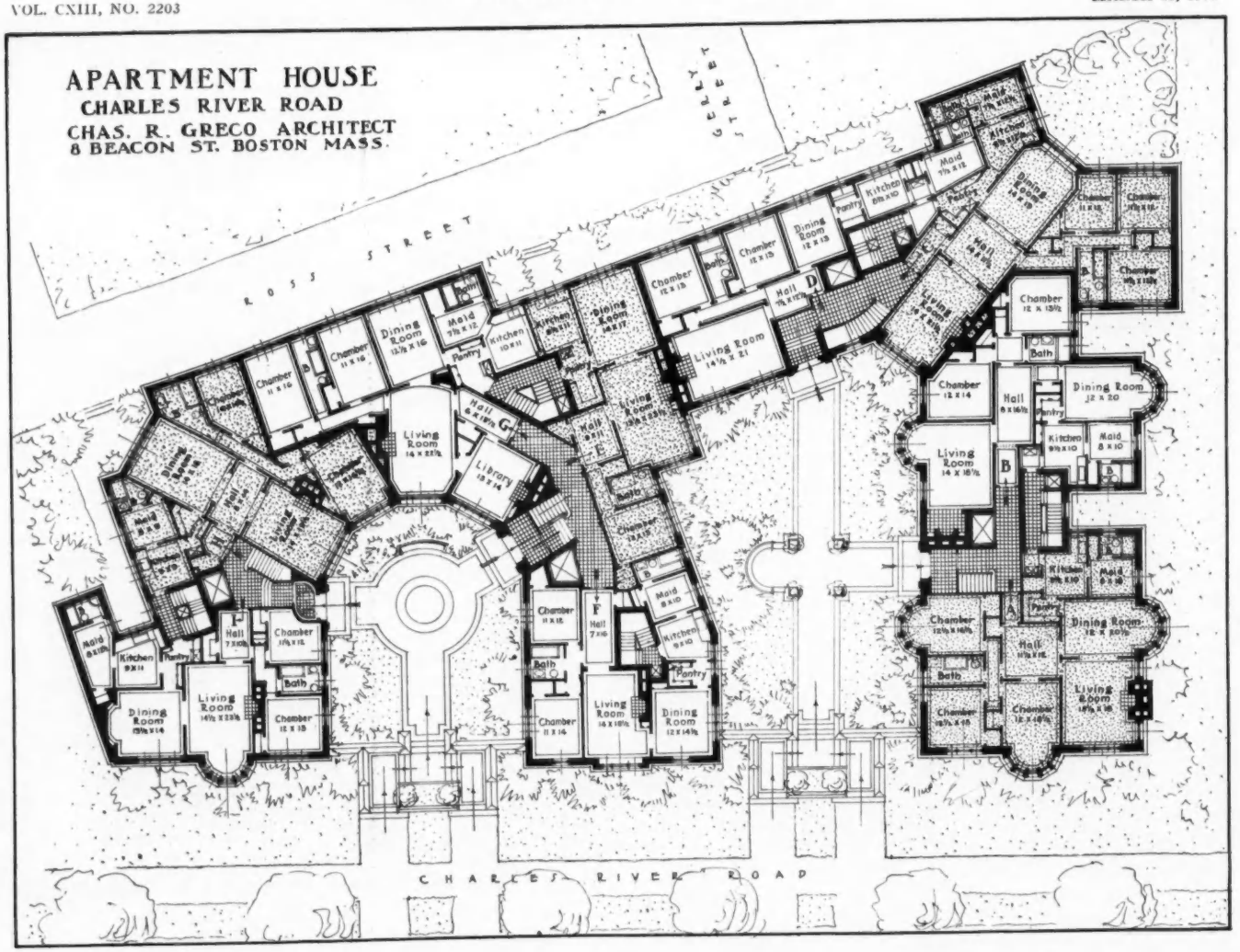
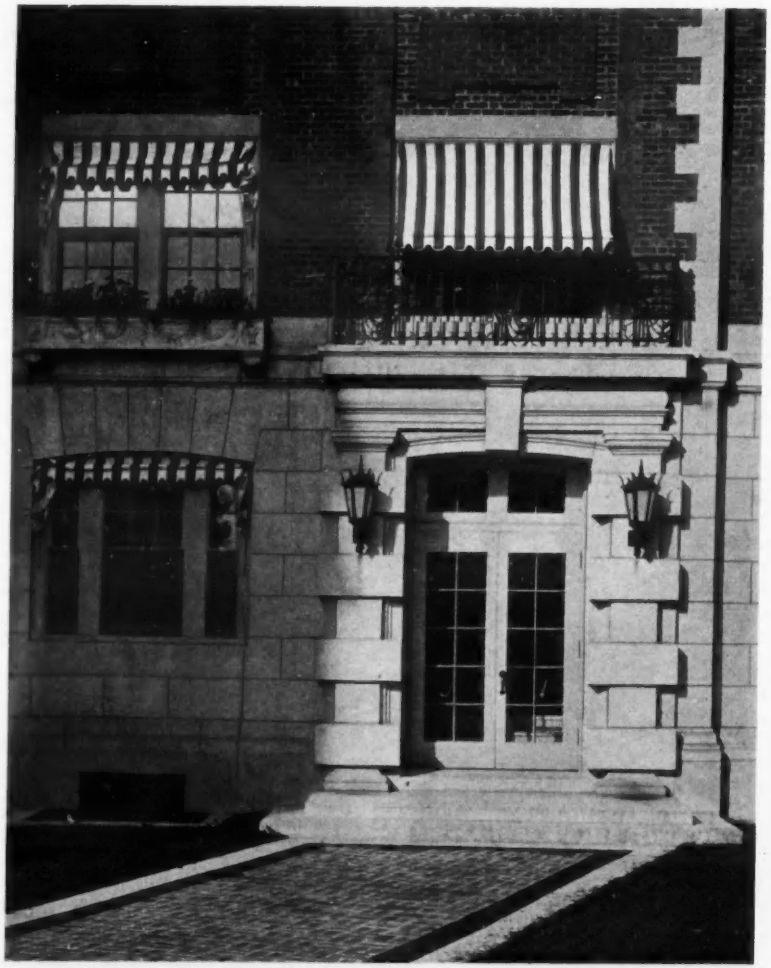

APARTMENT HOUSE
CHARLES RIVER ROAD
CHAS. R. GRECO ARCHITECT
8 BEACON ST. BOSTON MASS.
ROSS STREET
CHARLES RIVER ROAD

PLATE 86



DETAIL IN COURT

THE COURT

PLATE 87

AN APARTMENT HOUSE IN CAMBRIDGE, MASS.

CHARLES R. GRECO, *ARCHITECT*

PLATE 88

ST. JOSEPH'S CONVENT, ROXBURY, MASS.

CHARLES R. GRECO, *ARCHITECT*

PLATE 89 ENTRANCE DETAIL

ST. JOSEPH'S CONVENT, ROXBURY, MASS.

CHARLES R. GRECO, *ARCHITECT*

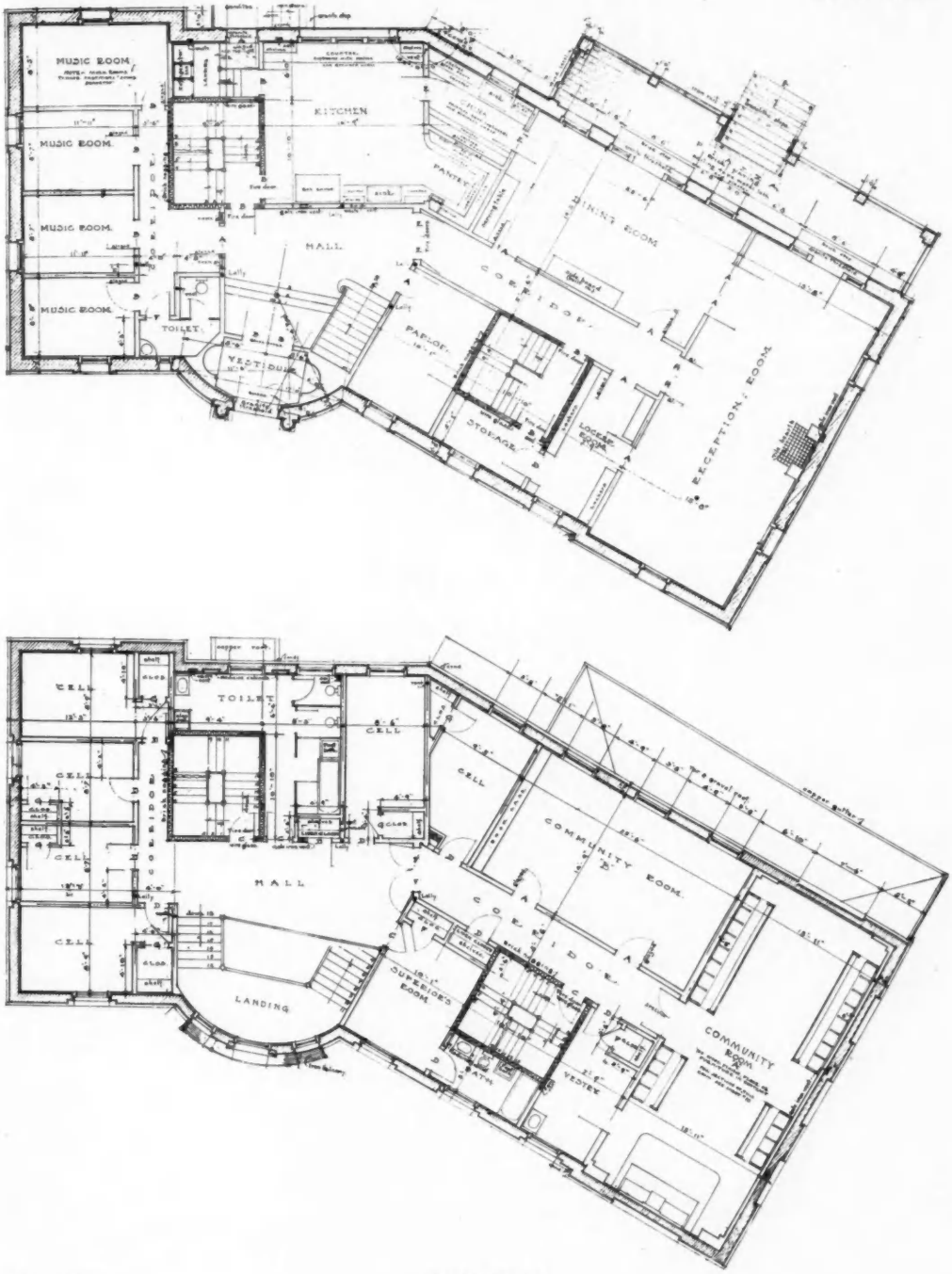


PLATE 90 FLOOR PLANS

ST. JOSEPH'S CONVENT, ROXBURY, MASS.

CHARLES R. GRECO, *ARCHITECT*

PLATE 91

HOUSE OF E. J. FEELEY, NORTH SCITUATE, MASS.

CHARLES R. GRECO, *ARCHITECT*

ENTRANCE DETAIL

PLATE 92 GARAGE

HOUSE OF E. J. FEELEY, NORTH SCITUATE, MASS.

CHARLES R. GRECO, *ARCHITECT*

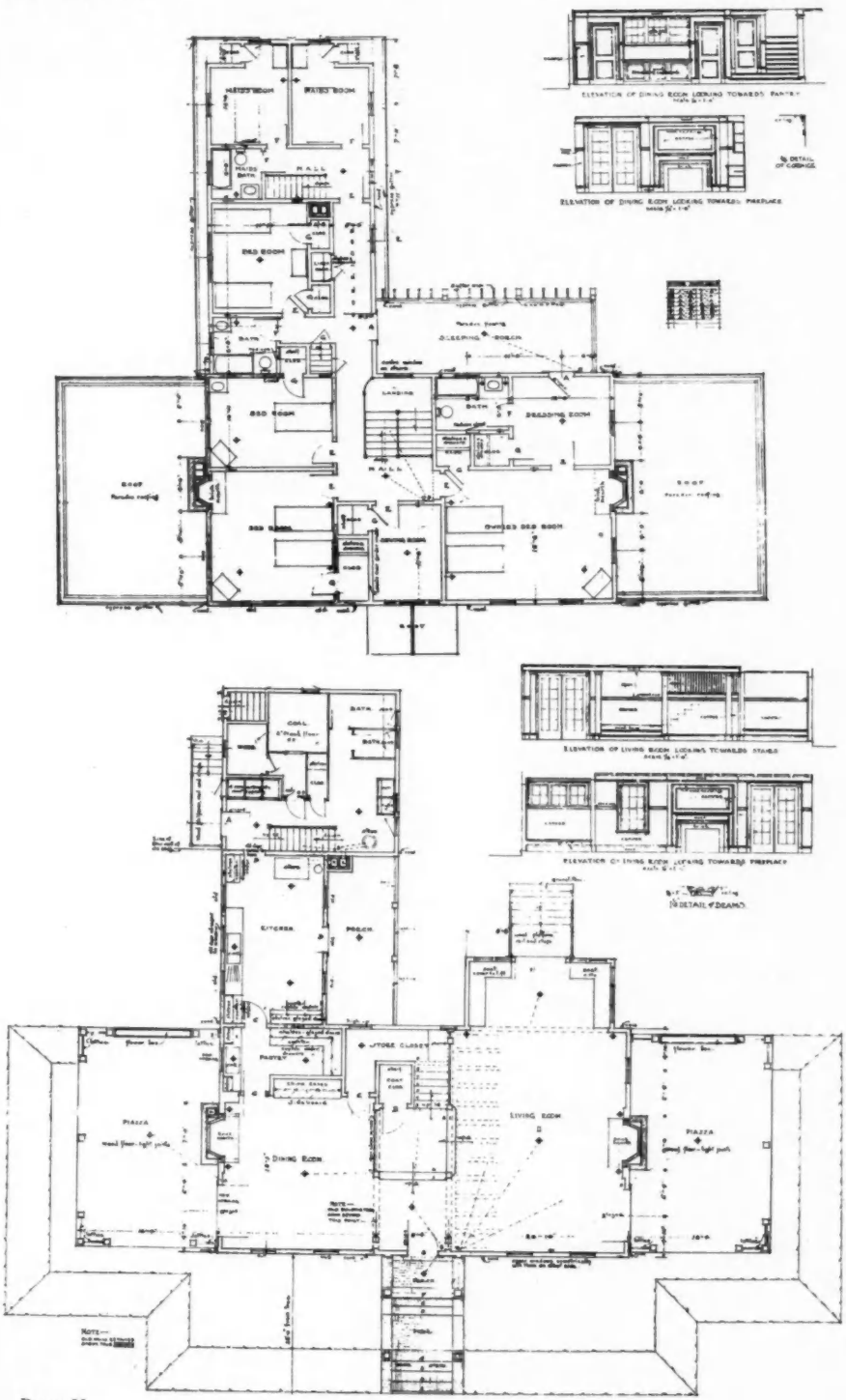
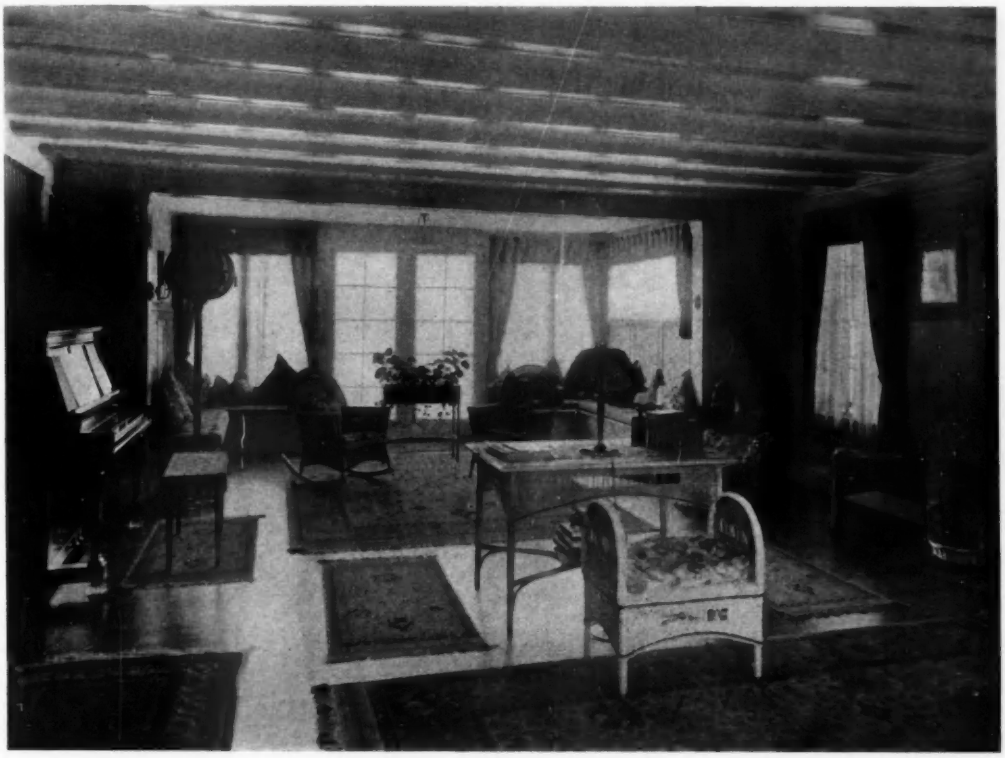


PLATE 93

HOUSE OF E. J. FEELEY, NORTH SCITUATE, MASS.

CHARLES R. GRECO, *ARCHITECT*



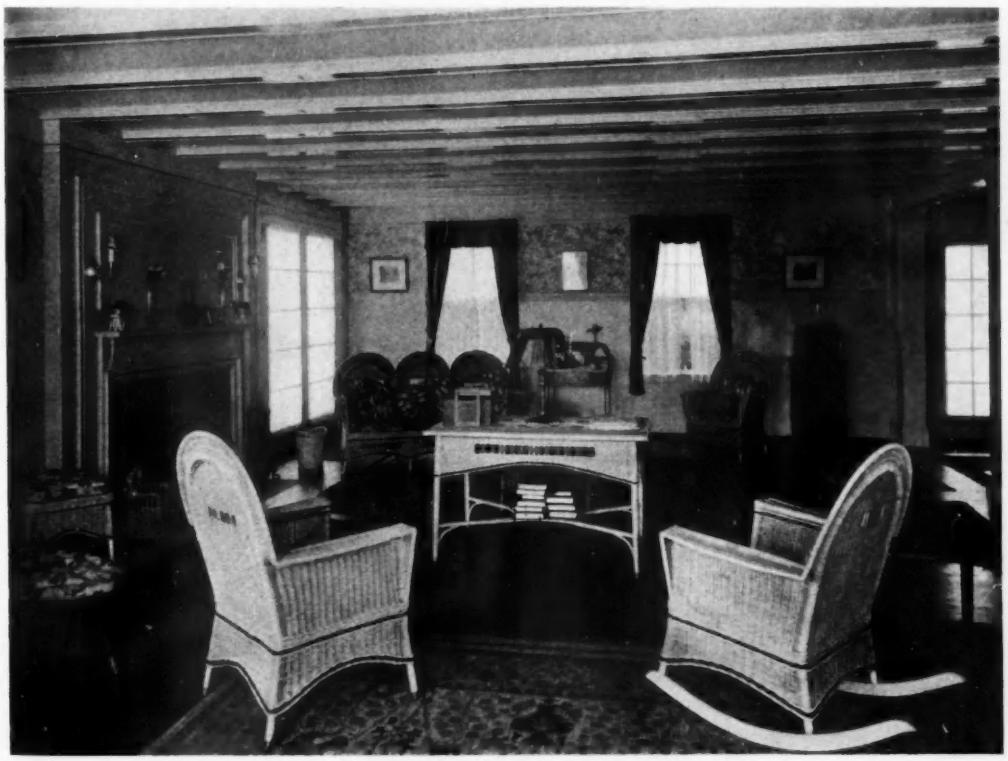


PLATE 94 TWO VIEWS IN THE LIVING ROOM

HOUSE OF E. J. FEELEY, NORTH SCITUATE, MASS.

CHARLES R. GRECO, *ARCHITECT*

DINING ROOM

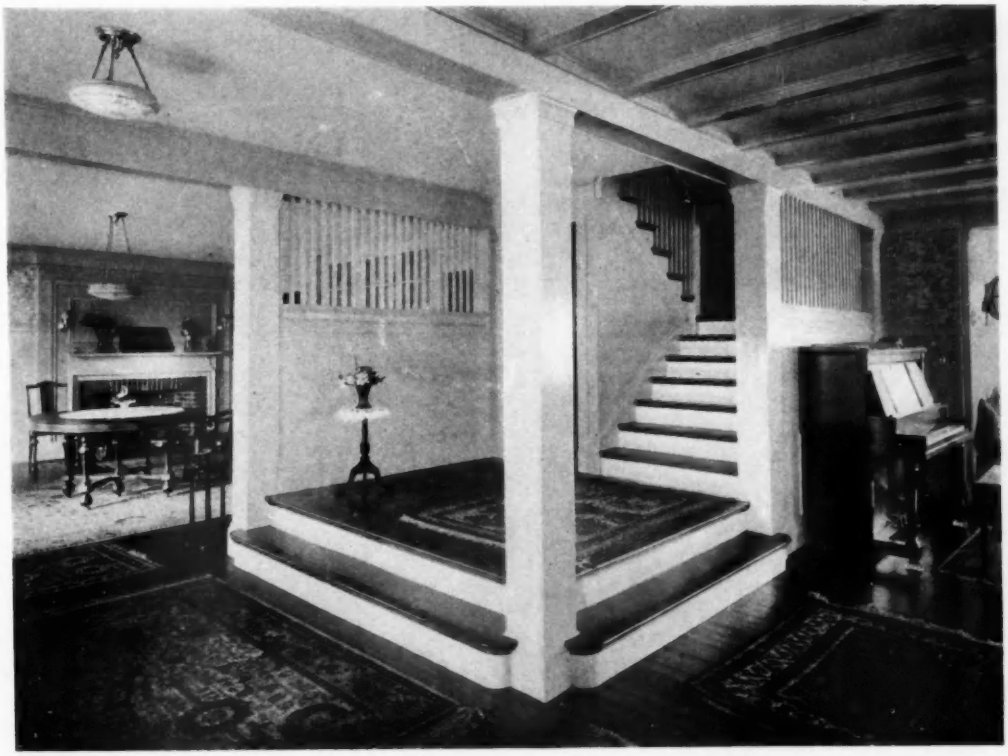
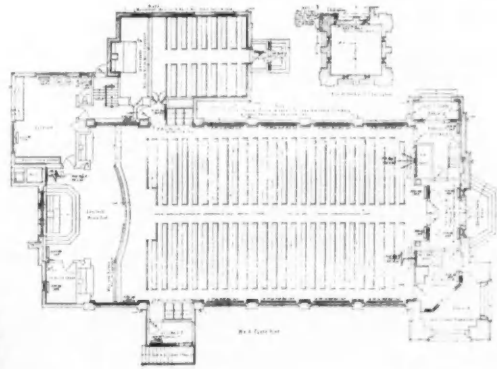


PLATE 95 STAIRCASE HALL

HOUSE OF E. J. FEELEY, NORTH SCITUATE, MASS.

CHARLES R. GRECO, *ARCHITECT*



CHURCH OF THE SACRED HEART, MIDDLEBOROUGH, MASS.

□ □ □

CHARLES R. GRECO
ARCHITECT

facture includes dangerous substances, is strictly prohibited by law.

"The department discovered that acetylene welders frequently become sick. It was thought that acetylene gas, which has been adopted as the most desirable agent in welding metals, though previously looked upon as only a chemical curiosity, might be the cause.

"In one factory where oxy-acetylene welding was being done, the employees complained of chills and other symptoms. Safety depends on the work of every man, and all must pull together for good results.

"Your safety depends on the other fellow. The other fellow's safety depends upon you. Are you with us?"—*Factory.*

The Biggest Employer of Labor

Our Government to-day is the biggest employer of labor in the United States. In normal times Uncle Sam employs approximately 400,000 hands in all kinds of civilian positions. Since the outbreak of the war this number has increased to 600,000. The Brooklyn navy yard alone has added 8000 men to the 6000 employed there before the war, and the national capital houses, to-day, over 30,000 civil employees above the number before the war. With the completion of an ordnance base in France another 15,000 men will be added to the civilian payroll of the government, and the day is not far when more than 700,000 men will be in the direct employment of the United States outside the millions of the army and navy. As a comparison it may be mentioned that the United States Steel Corporation employs 300,000 men and the Pennsylvania Railroad 250,000. The significance of these figures only appears when they are compared with the average number of men employed in an American factory, which is only 22.—*Scientific American.*

Landmarks of New York

A report has lately been presented to the New York State legislature by the American Scenic and Historic Preservation Society. This includes an account of some of the historical landmarks in New York State which have within recent years been acquired either by purchase or gift, for permanent preservation. In addition, extended comment is made upon the historic preservations in other sections of this country and abroad.

It is stated that New York State now owns thirty-five parks which for scenic, historic or scientific interest have been considered worthy of the State's protection.

A Recent Book

MEMOIRS OF THE AMERICAN ACADEMY IN ROME. Volume I, School of Classical Studies, 1915-16. Cloth, 10 x 13 inches, 167 pp. Bergamo, *Istituto Italiano D'Arti Grafiche*, Rome.

This volume in reality constitutes a continuation of the two volumes of "Supplementary Papers of the American School of Classical Studies." As the name would imply, it consists of a series of studies of classical antiquity, covering a wide variety of subjects in a scholarly manner.

The topics discussed are: The Reorganization of the Roman Priesthoods, by Jesse Benedict Carter; The Vatican Livy and the Script of Tours, by E. K. Rand and George Howe; The Aqua Traiana and the Mills on the Janiculum, by Albert William Van Buren, in collaboration with Gorham Phillips Stevens. The discoveries taken up in the last-named article were brought to light at the time of building the new structures for the American Academy.

There is an interesting and exhaustive study by C. Densmore Curtis of Ancient Granulated Jewelry of the VII Century and Earlier. A monograph by Stanley Lothrop on the works of Bartolomeo Caporali, one of the lesser Umbrian painters of the Perugian period, vies with it in interest. *Capita Dissecta* and Marble Coiffures, by John R. Crawford, and The Military Indebtedness of Early Rome to Etruria, by Eugene S. McCartney, complete the series.

All of this work has been undertaken in a thoroughly scholarly manner. The wealth of detail and of illustrative material add to the interest inspired by the subject matter.

Lincoln Highway Progress

NATIONAL ASSOCIATION HAS AMBITIOUS PLANS FOR FUTURE

Meritorious credit is now being given to the Lincoln Highway Association, the American Institute of Architects, and to all those who by hard and concentrated effort have definitely established the great continental route which looms up to-day as a saving measure to relieve the railroads of their overburden of traffic, and instrumentally advancing the war plans of the United States. For the remainder of 1918 and for an indefinite time in the future the steam roads, electric roads, waterways, and highways of the country are to be called upon to bear a maximum of traffic. At the time of the establishment of the Lincoln Highway in 1913, it would have been preposterous to have considered the country's roads and highways as a dependable auxiliary in

this connection. The Lincoln Highway idea of a through, connected route, leading from one definite point to another equally definite point, has well served a great purpose in this connection as an example in roads promotion, and, in consequence, national road authorities are confident that the highways will be able to aid materially in the needed plan of transportation.

Progress in the actual improvement of the Lincoln Highway itself has been entirely satisfactory this year. Great advances have been made in the Lincoln Highway Association, as well as well-defined plans for future efforts of greatly broadened scope. During 1917 local improvements of varying character were made upon the Lincoln Highway from New York to San Francisco by practically every state, county, township and municipality traversed by the route. Figures compiled by the Association indicate that a sum in excess of $2,250,000 was expended in this work. In bettering the Lincoln Highway every conceivable method of road working was employed, running from the simple dragging of the earth's surface in some localities to the laying of brick and concrete in others.

Half a Million Houses Needed in England

Mr. Stephen Walsh, Parliamentary Secretary to the Local Government Board, speaking at the Housing Committee at Wigan on Oct. 27, said the return received by the board showed that about 100,000 new workmen's dwellings were urgently required. His own belief was that more than 500,000 would be required to cope with the conditions after the war.

Utilizing the British Museum for War Office Purposes

The proposal to utilize the British Museum for war office purposes is being strongly opposed by all of the English architectural papers.

The possibility of removing without danger or trouble a certain part of the contents is admitted, but the monuments of antiquity that are perhaps the most important of the museum's collection could not be disturbed without serious damage.

The British Academy has presented resolutions to the government in which it is stated that it is the opinion of the council of the academy that irreparable loss to the interests of learning and humane studies would be sustained were this famous collection to be disturbed.

Los Angeles Architects Escape Death on Tuscania

Captain Albert B. Waddingham and First Lieutenant Warren Smith, both architects and from Los Angeles, were aboard the transport Tuscania when she was torpedoed by a submarine.

Advices received report that both were rescued and are now ashore in England.

Architect and Engineer Form Partnership

Seattle, Wash.—John W. Nevins, engineer, and Earl G. Park, architect, both of whom have been connected for the past sixteen years with the architectural firm of Bebb and Gould, Securities Bldg., Seattle, Wash., have announced their intention of opening offices at 1708 Hoge Bldg., on March 1.

Kenneth M. Murchison Now a Captain of Engineers

The War Department has announced the appointment of Kenneth M. Murchison, architect, whose offices are at 101 Park Avenue, New York, as a Captain of Engineers.

Personal

Carl Boller & Bro., architects, Kansas City, have moved their offices to the Ridge Building.

Paul De Lorenzo, 413 Engineers Building, has closed his office and entered the army service.

Mr. William H. Sayler, architect, Kansas City, Mo., announces the removal of his offices to the Ridge Building.

F. R. James, architect, Danville, Va., announces that he has opened an office in the Dudley Building, where he will practise his profession. He desires to receive manufacturers' samples and catalogues.

The firm of Janssen & Abbott having been dissolved, Benno Janssen wishes to announce that after the thirty-first of December, nineteen hundred and seventeen, he will continue in the general practice of architecture, with offices in the Century Building, Seventh Street, Pittsburgh, Pa.

Department of Architectural Engineering

SHOP EQUIPPED WITH SIDE WINDOWS AND SKYLIGHT

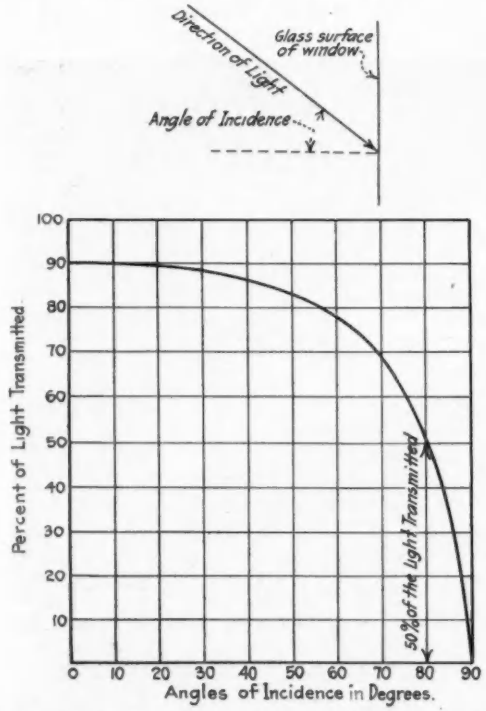
Daylighting the Factory

THE admission of daylight to the building is effected by means of the window, and the intensity of illumination is governed by the size and location of the window, the kind of glass used and the angle with which the light strikes the glass. While plain window glass transmits about 90 per cent of the light which falls upon it, this is true only when the angle of incidence is small, that is when it lies approximately between zero and 30 degrees. The rapid decrease in the amount of light transmitted through plain glass when the angle of incidence increases is indicated by the curve in the diagram. It will be noted that when this angle is 80 degrees, only about 50 per cent of the incident light gets through the glass into the interior.

When the sky angle is small (as shown in Fig. 4, page 216, THE AMERICAN ARCHITECT of Feb. 20, 1918) the angle of incidence is large, and it follows that the amount of light falling in the space *a* is greatly reduced. When this angle of incidence is large and the glass is a plain window glass a large amount of the light is reflected on the surface of the

glass away from the building and is lost as far as the interior is concerned. To overcome this difficulty it is advisable to resort to the use of rough, ribbed or prism glass, through which the light is refracted into the building.

Tests on factory ribbed glass for the upper sashes of windows, where the windows must furnish light



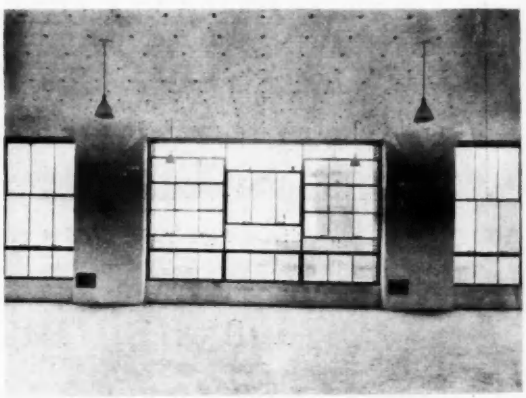
CURVE SHOWING DECREASE IN THE LIGHT TRANSMITTED THROUGH CLEAR WINDOW GLASS WITH VARYING SKY ANGLES

for a considerable distance into the building, show that the effect is to increase the light from 3 to 15 times over that furnished by plain glass. In the case of prism glass this increase has amounted to as much as 50 times the work done by plain glass. In wired glass the transmitting power is reduced very slightly by the wire mesh, but its value as a fire resistant often requires its use. The use of these kinds of glass should be restricted to the upper sash, as they have a brightness or glare, under certain conditions of light, which is very trying and therefore should be placed above the general eye level.

The one drawback to the use of rough, ribbed or prism glass is their ability to accumulate dirt, and dirt is the greatest hindrance to light transmission through glass. In this connection there should be provided means for washing windows with a mini-

VIEW IN MALLEABLE IRON FOUNDRY, ERIE MALLEABLE IRON CO., ERIE, PA.

mum cost. The appliance will vary with the conditions. But generally a horizontal bar or track could be placed over and under the windows, both inside and outside, from which a well constructed washing ladder or platform could be suspended, possibly a contrivance similar to the rolling ladders seen in high retail stores. As a part of a window washing apparatus facilities can be arranged for holding the water buckets or have water connections at stated intervals to which a short hose could be attached. A similar apparatus is often used in



COUNTERBALANCED TYPE OF WINDOW, AS AN AID TO VENTILATION

large banks, depots and other places where high and large windows are installed. Clean windows are as valuable an asset to a factory as any other feature, and if the architect installs a usable apparatus for that purpose he has performed his duty to his client in that respect.

The construction of the window is equally im-

portant as any other feature. The great improvement in the design and manufacture of solid section metal windows has eliminated the few objections to their early form and construction. The outstanding advantage, from the illumination viewpoint, is their slight obstruction to the light. As compared with the ordinary factory window made of wood and with the usual size of lights, the steel window has approximately 25 per cent more glass area than the wooden window, both with the same brick opening.

The operation of a wooden window, either hung or pivoted, is affected by the moisture content of the air and must be fitted loosely in order to be operated in damp weather. In dry weather this looseness results in a great loss of heat during the winter with its consequent waste. In addition to its unchanging form, the metal window has the advantage of being a permanent construction of real structural strength and rigidity. When properly installed and adjusted the working parts are easily operated by various mechanical devices made for that purpose or by hand. When closed the sash contacts are tight and the wall contacts are also weatherproof. In extra large openings they can be structurally reinforced to resist wind pressure or other strains, without noticeable interference with the light area.

While these windows can be made in any desired combination of glass sizes, the manufacturers make a wide range of stock units and are able to fill any reasonable requirement from warehouse stocks and without delay.

The recommendations of the Illuminating Engineering Society for the lighting of industrial buildings and the state codes already adopted are practically the same.

The minimum intensity to be maintained and the intensities of good practice, in foot-candles, is as follows:

ANNEALING ROOM OF THE MOLINE MALLEABLE IRON CO.

SHOP LIGHTED WITH SIDE WINDOWS

	Minimum	Good Practice
Stairways, passageways, aisles, storage spaces	0.75	0.75– 1.50
Rough manufacturing operations such as foundry, rough machine, rough assembling and bench work	3.75	3.75– 7.50
Fine manufacturing, as fine lathe work, pattern and tool making, light colored textiles, tobacco, etc.	10.50	10.50–18.00
Special cases of fine work, as watch making, engraving, drafting, dark colored textiles, etc.	15.00	30.00–45.00

These intensities of illumination are three times as great as those recommended for artificial illumination because the physical condition of the eye during daytime is usually such as to require a higher intensity of natural light for satisfactory vision than is required at night under ordinary well-designed artificial lighting systems.

While many rules of thumb are in use, which will be referred to again, a rational solution is proposed by Mr. L. B. Marks, illuminating consulting engineer, along these lines: An average sky brightness of 250 candle-feet will be a probable fair average in the United States, with a minimum average of 100 candle-feet. Allowing 25 per cent for loss in windows, we have 75 candle-feet per square foot in any direction from which the sky can be seen. Then with

a = area of glass exposed to the sky from the point to be lighted, in square feet;

i = required intensity of light at point to be lighted, in foot-candles;

d = distance from point to be lighted to window, in feet;

l = daylight intensity at window, in foot-candles;

f = floor area, in square feet,

we have

$$a = \frac{i\,d^2}{l} \quad \text{and} \quad i = \frac{a\,l}{d^2}$$

For example, we wish to light a hallway 40 feet long with a window at one end 5 x 5 feet in size and with the upper half having a sky aspect. Then

$$i = \frac{2.5 \times 5 \times 75}{1600} = 0.58 \text{ foot-candles.}$$

As the requirement of the code is 0.75 foot-candles there will be required a larger glass area or the use of artificial light. The required effective glass area would be

$$a = \frac{0.75 \times 1600}{75} = 16 \text{ sq. ft. effective glass area.}$$

To light an area on a floor 20 feet below a roof skylight with an intensity of illumination of 10.5 foot-candles, the area of the glass would be,

$$a = \frac{10.5 \times 400}{75} = 56 \text{ sq. ft.}$$

Another method of calculation is proposed in a formula, based on unobstructed light conditions, with which the glass area is determined as follows:

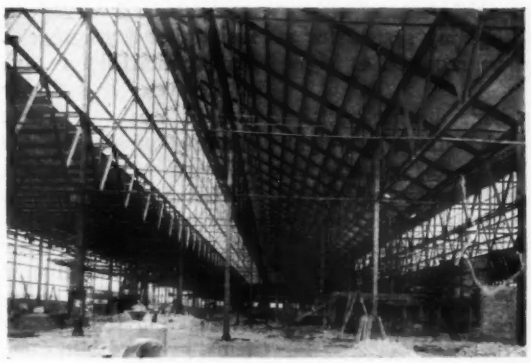
$$a = \frac{f\,i}{35}$$

The use of this formula gives results that corre-

SHOP WITH BOTH SIDE AND ROOF LIGHTING. BUILDING OF HYDRAULIC PRESSED STEEL CO.

spond with good practice and makes certain that an adequate glass surface is installed for satisfactory natural lighting under specific working conditions. The results do not show a constant ratio of glass to floor area, but vary with the class of work carried on in the building. The amounts obtained by the application of this formula must be increased for obstructions, as noted in a previous article to which reference has been made. These corrections can only be made after a careful survey of the surrounding conditions and allowance should be made for probable future changes in them.

Some general rules have been used for proportioning window areas. Among them it is said that a room over 20 feet wide cannot be well lighted by windows on one side only. That in this situation the window area should be at least 25 per cent of the floor area. When lighted on two sides the window area should be 20 per cent of the floor area. Or that no part of the room is more distant from the window than twice the height of the top of the window above the floor. These assumptions are evidently based on no adjacent obstructions to light. Another rule, based on an unobstructed horizon, requires that the visible sky subtend an angle of at least 5 degrees at any working point of the room. These assumptions may serve as a rough basis of calculation, but are too general in their terms.



VIEW IN ONE OF THE BUICK MOTOR COMPANY'S BUILDINGS

In designing for daylight it is obvious that each case must be solved individually, after all the attending conditions are known.

After the required amount of glass surface is calculated, its disposition in the wall or roof is a very important consideration. In general the top of a window should be as close to the ceiling as possible and extending downward as far as necessary or the occupancy of the building permits. The window and skylight have another function also in serving as a means of ventilation. This use is very important and should receive careful study in order that the ventilating units may serve their purpose.

The basic principle in design is the assumption that for all points within a room receiving an unobstructed view of the sky through any given window, the window itself may be considered as the surface lighting source with an emitting density equal to that of the sky. But it must be remembered that when the sky is partly cut off from view through a window, the amount of window area which is effective in transmitting the full sky brightness is reduced and that a lower value must be assigned to the part of the window area which is cut off from the sky, based on the reflecting power of the obstructing surfaces opposite to the window.

The following is a summary of the factors which govern the admission of day-light through windows, as outlined by Marks and Woodwell:

1. The size, shape, depth and position of the window opening.
2. The brightness of the sky.
3. The sky angle.
4. The diffusion from the street surface and from adjacent buildings.
5. The character of glassware in the windows.

They classify the exterior aspect into four groups:

1. An unobstructed sky.
2. A partly obstructed sky by buildings with a low reflecting power.
3. A partly obstructed sky by buildings with a high reflecting power.
4. Sky completely obstructed.

These authorities recommend that comparative results in quantitative form for any given case be determined by a portable photometer under conditions which most closely correspond to those of the problem in hand, and where such variations as the effect of different seasons of the year, the architectural outlines of the building, and the like, are properly taken into account. In other words, when a shop is planned, and the window arrangement is to be planned in advance, one scheme is to make a study of some other existing location where the conditions are very similar to those of the proposed shop.

Nearly everyone is more or less familiar with the fact that artificial light, which is entirely satisfactory at night, may be far from satisfactory if turned on at dusk or during the late afternoon to help out the fading day-light. Various explanations are offered for this feature, which is an important item, because it shows that any shop, which has inadequate window space for the entire working day, presents a more difficult problem in the supply

of artificial light for the early morning and later afternoon hours than in a simple case of night-lighting.

Cravath, Harrison and Pierce offer the following explanation. When complaints are made that day-light and artificial light do not mix in color or for other possible reasons at or near dusk, for example, the trouble is usually due to an insufficiency of artificial light for the work in hand, but it may be exaggerated by the presence of sky areas visible to the worker but hidden from the work. Such bright areas simply blind the worker without contributing to the lighting of the work. They therefore tend to make his power of vision unsuited to the quantities of artificial light provided.

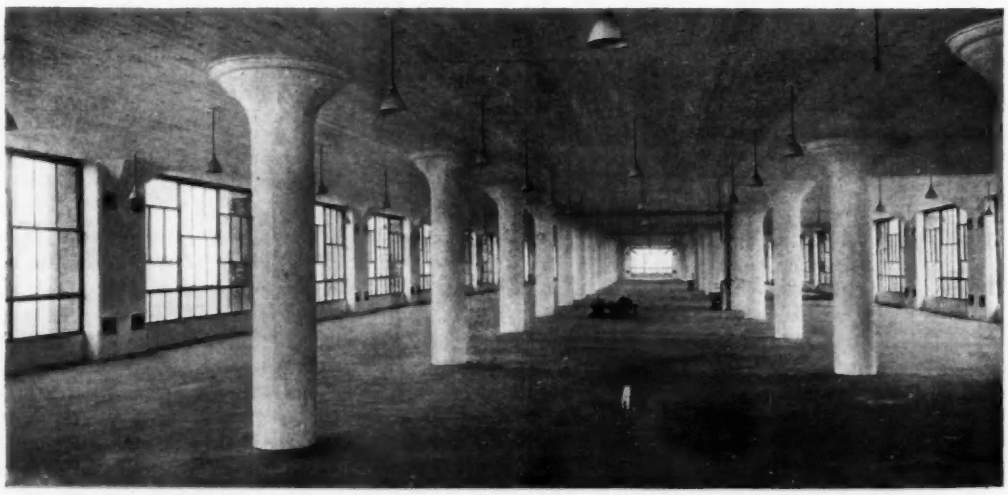
It may be added that when artificial light is mostly to be used along with some day-light, as at dusk, rather than purely for night work, it may be desirable to design the artificial lighting system for a higher intensity than would be required at night only.

A very dense window shade is not usually so desirable for excluding the direct sun-light in a shop, as a shade which is less dense. To pull down a very dense shade, so as to reduce excessive sun-light near the windows, means usually that the interior spaces have much of their natural light cut off. Besides, the opaque shade over the upper part of the window makes the contrast of the lower bright window surface much higher and objectionable.

A less dense shade, however, may be pulled down over the upper part of a window without interfering so greatly with the lighting in the interior spaces of the shop, and the contrast between the upper shade surface and the lower window area is not so pronounced and hence makes the general lighting conditions more favorable throughout the entire shop space.

In providing a system of illumination, it should be the aim of the designer to give a result which will produce distinctness and ease of vision, and this depends on what is known as diffusion. Day-light has a distinct natural advantage in this respect, for even on a cloudy day it gives perfectly diffused light rays of equal power, which come from all directions. Perfectly diffused light produces no shadow whatever and is distinctly agreeable as well as easy to the eyes. Such light is commonly spoken of as "soft light," while undiffused light is spoken of as "hard light" or as being "hard on the eyes." E. L. Elliott says that it is largely due to its high state of diffusion that day-light, even when vastly more intense than artificial illumination, is the easiest of all light on the eyes. It is a common and serious mistake in case of weak or overstrained eyes to reduce the intensity of the light instead of increasing the diffusion.

That this subject is one of the most important to the designer of industrial buildings is evidenced by the fact that state governments are making regulations concerning it. The proposed code in Ohio, which will undoubtedly soon be in force, divides industrial operations into 245 separate items, grouped into five classes. This matter is of importance to the architect and the final result should be largely their handiwork and not exclusively that of other interests and professions.



SHOP SPACE WITH SIDE WINDOW LIGHTING

A Protective and Decorative Treatment for Plastering

CRACKS in plastering are not generally caused by any inherent weakness in the plaster but rather by the shrinkage of the wooden structure to which it is attached or to unequal settlement of foundations. Abrasions of the surface will occur notwithstanding the hardness of modern plasters is much greater than formerly. As plaster is a brittle and inelastic material, it is always liable to damage.

To protect the plastering from surface damage, to cover existing cracks and to cover those that may develop later, it is customary, in good work, to cover the walls with paint applied to a fabric. For this purpose the wall is first coated with a sizing on which an unbleached sheeting is pasted. To the sheeting is applied a coating of filler on which is applied as many coats of paint and oil as may be desired. This style of finish has the added advantage that it can be cleaned by washing in the ordinary manner.

As this method of wall treatment involves seven distinct labor operations, when four coats of paint are applied, it is naturally a very expensive finish. It has disadvantages in the inability of the mechanic to remove the fuzz, lumps and tight threads which are common to the cotton sheeting used. For that reason a perfect surface is impossible. The application of paint by hand is of necessity uneven because the brush, when first applied, is well charged with paint and the coat becomes quite attenuated at the stroke-end. Assuming a brush stroke to be about 48 in. long, it is apparent that there will be perceptible ridges of paint along the line where one stroke ends and another begins. In fact, this method possesses all of the defects that must go with hand work.

By mechanical means the lack of uniformity in hand processes is often overcome and with no depreciation in value or appearance, and it is by such means that the type of wall finish just described has been reproduced.

The fabric base is the standard brown 48 inch sheeting. This sheeting is calendered mechanically and the fuzz, lumps and tight threads removed. The filling coat is then applied to one side which penetrates to the center of the fabric, leaving the interstices on the opposite side as a key for the paste. There is then added the equivalent of four coats of lead and oil. Uniformity in material and mechanical fabrication makes such a product absolutely dependable.

There is also produced a material in which the coats of lead and oil are omitted and to which the decorator can apply any treatment he desires, either in oil or water color. Another product is prepared with linseed oil up to the last coat and is ready for the finishing coat. These products are finished in a large number of plain tints and in a great number of designs, offering a very complete line from which suitable selections can be made if individual design is not required. The textural finish is made in smooth, egg-shell or burlap effect, either dull-flat or gloss finish.

Aside from the natural merits of a mechanical product, this material has many advantages in economy. In the first instance, seven applications of hand labor are required as against two necessary to the installation of this product. This means a saving of labor and of time, both important elements in these times. By using the filled material a saving is made; by using the "up to the last coat" material a greater saving can be made and the architect's individual design is applied to a more suitable foundation than can be otherwise secured.

The advantages of these products are uniformity and mechanical perfection, economy in labor and time and the choice of material in various stages of completion to which can be added any desired treatment.

Collapsion of Tubes

Prof. A. P. Carman of the Department of Physics, University of Illinois, has completed a series of experiments on the collapse of short thin tubes. The purpose of these tests was to find an equation by the application of which the pressure required to collapse a tube can be calculated when the dimensions of the tube and the elastic properties of the material are known.

The results of tests of longer tubes were published by the Engineering Experiment Station in 1905, and the present report contains a brief summary of these earlier tests. Seamless steel, seamless brass, aluminum, glass, and rubber tubes were used in the new tests.

Bulletin 99 of the Engineering Experiment Station contains the results of these tests. Copies may be obtained gratis by addressing the Engineering Experiment Station, Urbana, Ill.

Treasury Department Checks Its Building

Secretary McAdoo authorized a statement, in which he said that he had received several inquiries as to whether building operations of one kind and another should be discouraged. With regard to plans for public buildings under the control of his department, he has stopped letting contracts except in cases where they were absolutely necessary.

Industrial Information

A Varnish Catechism

In the "Varnish Catechism for Varnish Men," compiled and published by G. B. Heckel, secretary of the National Varnish Manufacturers' Association, 634-636 The Bourse, Philadelphia, Pa., the following broad classifications of varnish are made: Oil varnishes: spirit varnishes; Japans (painters' Japan and decorative Japan); enamels.

Substantially speaking, oil varnishes are solutions, effected by heat, of gum resin in a fixed oil (commonly a vegetable oil) with a small proportion of metallic salts, to facilitate drying, and sufficient volatile liquid to obtain the required fluidity.

Spirit varnishes are solutions of gum resins, effected with or without heat, in volatile liquids. They are not used very widely in this country.

Painters' Japan is only secondarily a varnish; the term should be restricted to such drying liquids as contain gum resin, the terms "liquid dryer" and "oil dryer" being applied to other materials of the same class. In addition to gum resin, painters' Japan contains a solution of metallic salts and volatile liquids for fluidity. A minimum of gum resin is used in a drying oil. A Japan when added to paints tends to increase their luster, while liquid dryers will not add luster to "flat paints" and will sometimes decrease the luster of "gloss paints."

Decorative Japans, which are dark varnishes containing asphaltum, etc., are designed to produce a lustrous surface on metals, wood and other materials. Depending upon the method of application, they are divided into "baking," "semi-baking" and "air-drying" Japans.

The term "enamel" is very broadly and loosely applied, but in general it is understood to mean an air-drying or baking varnish to which color and opacity have been given by the addition of pigments, and, in some cases, of dyes. It may have high, medium or no luster.

The qualities desirable in interior varnishes are: Fair body, moderately rapid drying qualities, rather light color, fluidity, moderate hardness, indifference to occasional moisture, permanence of luster and durability. Varnishes for exterior use must be durable, elastic, with strong resistance to abrasion, moisture, the atmosphere, light and heat of the sun.

For such purposes as use on floors, where usage is heavy and constant, where recurrent applications of the varnish are desired, the qualities most necessary are those of high elasticity, toughness and resistance to shock or abrasion; a varnish which dries moderately hard over night and is ready for use in forty-eight hours is desirable, and it must not be affected by moderate contact with moisture. Physical tests may be made of the serviceability of floor varnishes, as to speed of setting, hardening and resistance to moisture, the latter two being most successfully carried out on glass; the resistance to rupture, abrasion, etc., by tests on small boards. Shellac varnish does not produce a satisfactory floor varnish, because the surface produced is too brittle and too readily affected by moisture. A specially designated floor varnish is the only sort that should be selected for this purpose, and no other grade of varnish will give entire satisfaction. The most important precaution to be borne in mind in the maintenance of varnished floors is the fact that new coats of varnish should be applied before the old one has entirely worn through. If this precaution is neglected it will be impossible to produce an unbroken surface without removing the entire original coating.

Electric Hoists for Industrial Purposes

The Link-Belt Company, which maintains sales offices in all the principal cities, manufactures electric hoists and accessories to meet a wide range of requirements. Their machines are used for overhead hoisting and conveying. They handle great loads at specified speeds, with a minimum expense for power consumption and maintenance.

The variety of needs which these hoists will fill is great, indeed; in manufacturing, in building, firing, transportation, these hoists find a place. The materials and workmanship employed are of the best; the hoists are designed and constructed for hard and continuous service within their maximum rated capacity. All parts are of ample proportion for the purpose intended, having been designed with a liberal factor of safety.

VILLA D'ESTE, ROME, ITALY