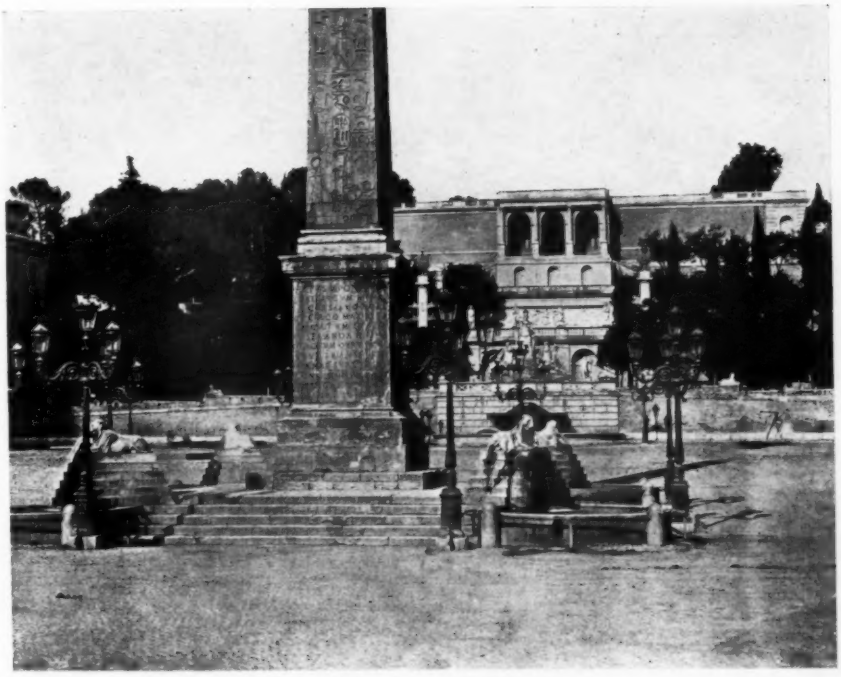
The AMERICAN ARCHITECT



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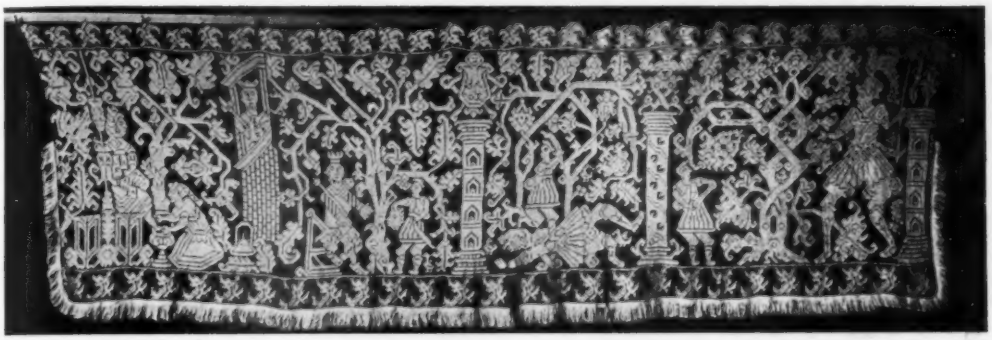
COURT IN THE MUSEUM, PALERMO, ITALY

THE AMERICAN ARCHITECT

VOL. CXIV WEDNESDAY, JULY 31, 1918 NUMBER 2223



THE STORY OF KING DAVID.

This antependium of Spanish network of the 16th century illustrates the resources and limitations of network and drawn-work, in which the rectilinear character of the design is a very important factor.

The Weaver's Art in Architectural Design

By WILLIAM LAUREL HARRIS

IN a previous article an effort was made to establish a practical and historical basis for a wider and more general appreciation of the varied uses of open work fabrics in decorative design and textiles ajoure, as valuable details for the architectural embellishment of American homes.

With increasing educational facilities, and the present-day development of knowledge concerning historical periods and styles, the tendency in architecture has been toward more careful planning in all questions concerning ornamental and architectural effects. Little by little this artistic progress has advanced, as the popular conceptions of good taste have slowly improved, and a sense of architectural fitness and beauty has come to influence all the innumerable details of housefurnishings.

Until quite recent years, for instance, locks, hinges and door knobs received but scant consideration in architectural offices and designing rooms throughout America. But to-day special lines of hardware prepared by the best of craftsmen are to be found in every city, and an increasing variety of metal work is constantly required to satisfy the refined judgment of discriminating builders and home makers. A successful architect can no longer rest contented with a vague knowledge of decorative housefurnishings. To supply his client with the best advice in all matters of home making, the architect must keep himself well informed, not only concerning modern developments in hardware, electric lighting fixtures and other varieties of iron and bronze working, but he is expected to understand the great resources of our day in the extensive realms of fine tapestries, laces, furniture, floor coverings, and all the other stylistic adjuncts of interior decoration and household embellishment.

This necessary information is comparatively easily obtained because of the widespread activity of national advertisers and their agents. If an architect fails to inform himself on these important matters of interior decoration he does so at his financial peril. The client of to-day is apt to be well instructed in the intricate details of appropriate furnishings for his or her contemplated home, even if the architect ignores such questions.

Within the month a case in point has come to the writer's attention: an architect who is most able in all ordinary structural affairs was entirely discredited by his client because he had neglected the forms and patterns of the lighting fixtures used

AN EXCELLENT EXAMPLE OF "BUILT UP" LACE CURTAINS.

Such as are being made to-day with materials and hand-worked details from every part of Europe

in a splendid mansion which the architect had designed and built for one of our well known financiers. This client, who is a very influential person in America, now declares that in all the future buildings he has constructed he will employ only structural engineers and decorators working together; and that he has banished forever the idea of employing architects. What this client considered important the architect thought unworthy of attention.

Any negligence concerning the many decorative adjuncts of architecture is particularly noticeable in matters which pertain to window draperies and lace curtains.

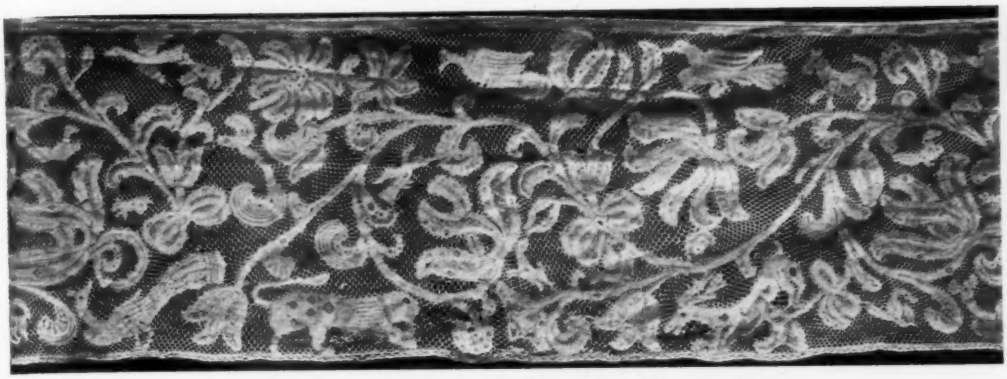
Curtains are not only most important and often the dominant features of interior decoration in American homes, but they frequently play a very important role in exterior architectural effects as well. Illustrations pages 131, 135 and 136 show clearly the effective use which architects may make of modern lace panels as intimately related to exterior architectural effects.

An intelligent understanding of styles and period patterns as applied to the draperies of windows tends to increase greatly the harmony of architectural forms and shapes. City houses in particular demand handsome lace panels at the windows, because the whole frontage is frequently devoted to window openings which make or mar the ultimate appearance of the building.

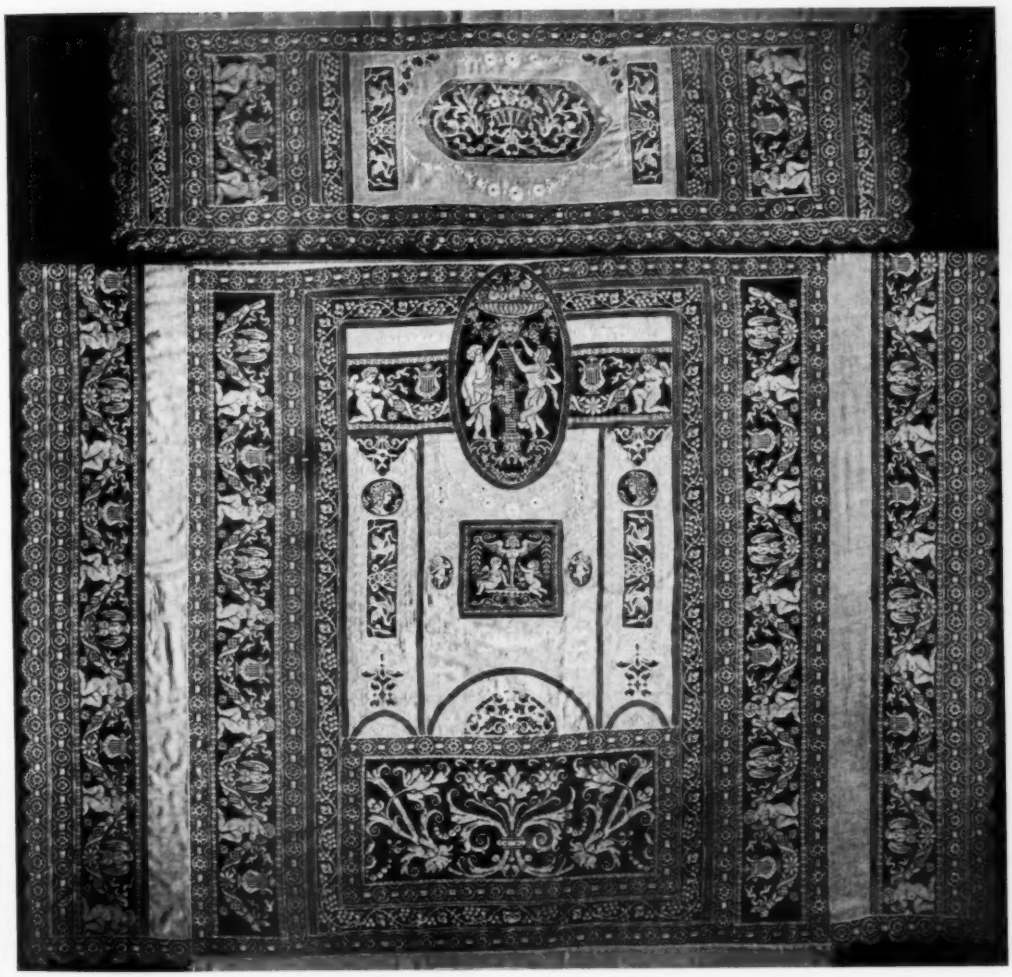
All too frequently the selection of curtains, which in such cases really become important architectural

XVIII CENTURY ITALIAN

BOBBIN LACE, ITALIAN XVII CENTURY

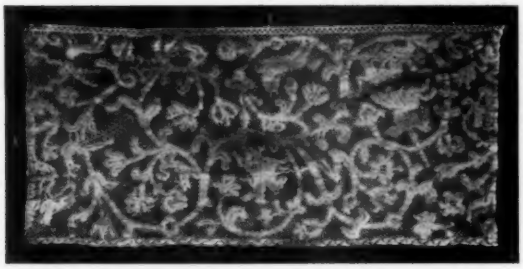


BOBBIN LACE, POINT DE MILAN, MADE IN ITALY.

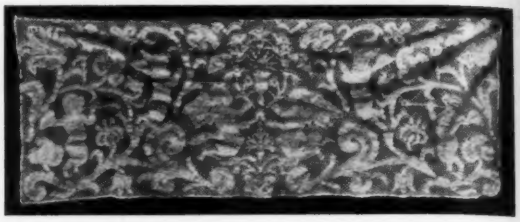


DESIGN OF FILET FINE FLANDERS.

The same method is employed in the assembling of this design as shown in illustration on page 128. Photographed from the finished product



POINT DE MILAN. MADE IN ITALY



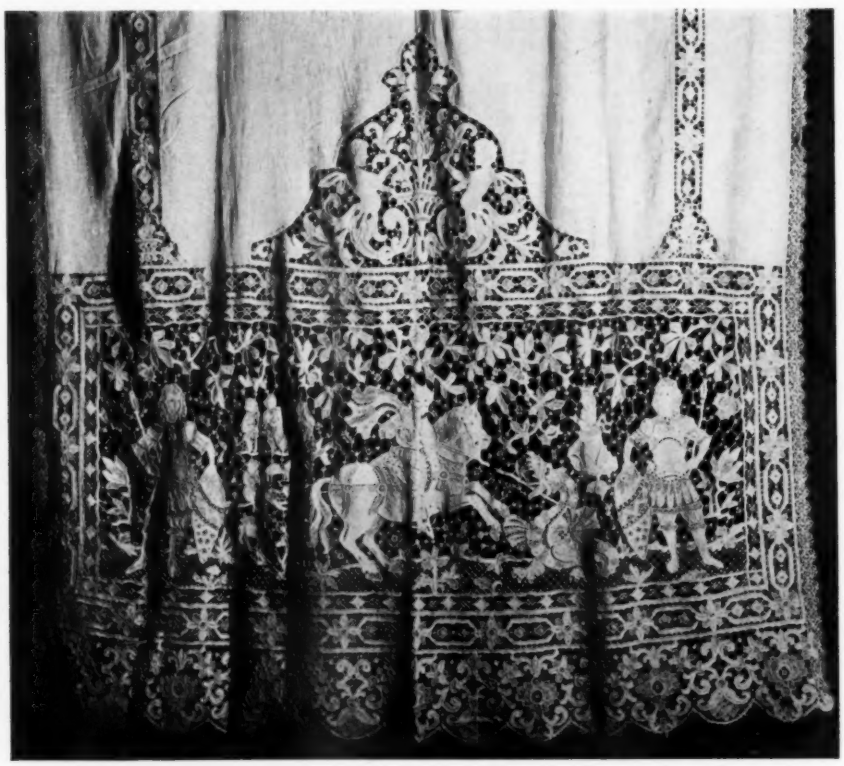
POINT DE MILAN. MADE IN ITALY

panels ajoure, is left very largely, if not entirely, to chance. Or, worse still, the selections made may be entirely directed by the misleading representations of some person to whom these fabrics are simply merchandise to sell, and in the selection of which they have no personal interest.

If the architect neglects this question in a city house he frequently places one of the most important features of his design in the hands of enterprising but unfriendly promoters of poorly manufactured materials. The unsuspecting clients of the architect in this way purchase materials which are not at all in harmony with the architectural character and setting of their homes, though possibly very intricate and complex in pattern.

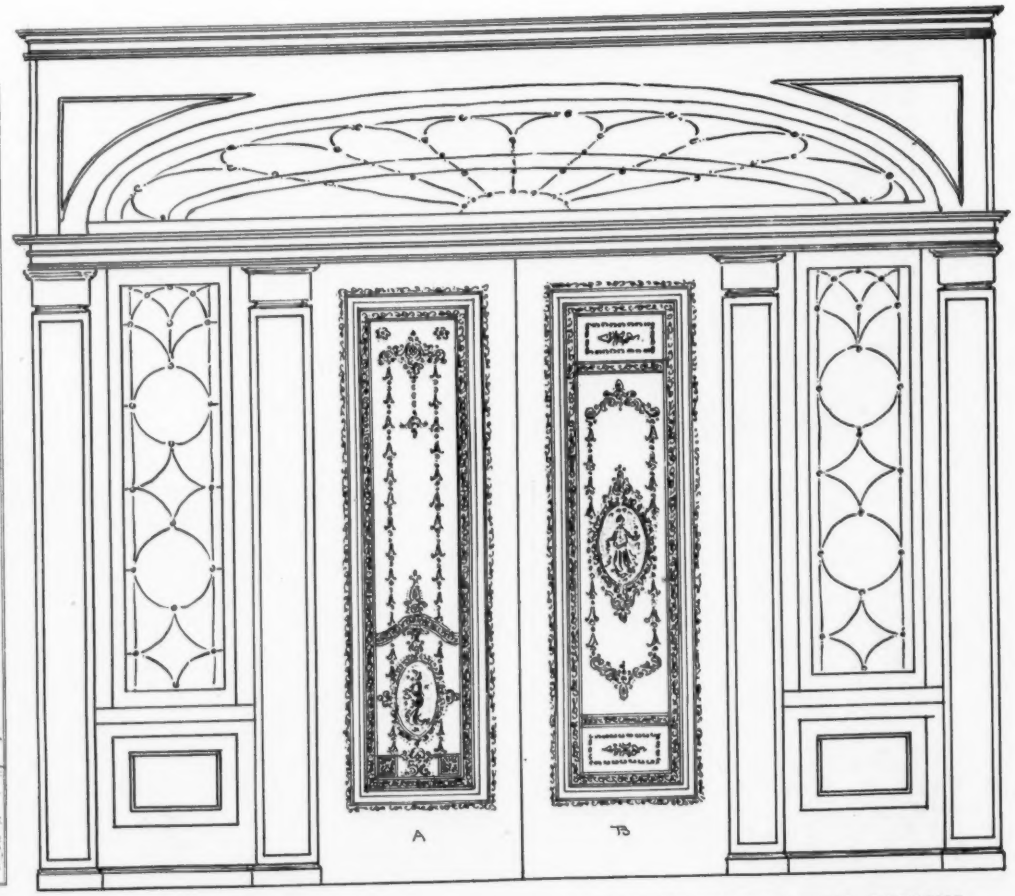
In contrast to thoughtless practitioners of the building crafts, there are architects who not only know good lace and fine textiles when they see them but who actually design lace panels for the windows of the fine residences built under their direction. The better class of lace manufacturers are willing to co-operate with architects in all questions relating to style and decorative design.

Manufacturers of the finer qualities of lace curtains are, in fact, more or less dependent on architects and decorators, who have become, perhaps unconsciously, the creators of new styles for the more expensive sorts of textiles and interior furnishings. Furthermore, the three years of world war have shifted the center of many industries from Europe to America. A violent interruption of international trade and commerce has thrown new and unexpected opportunities in the way of our native industries. The development of our dye industries, for instance, has become a classic story. It is said that before the war seventy-five million dollars went up in smoke through



ST. GEORGE AND THE DRAGON. HAND-MADE LACE PANEL
Executed in Italy after drawings made in New York. The curtain is of Irish lace, while the minor details were made in France and England

SKETCH, SHOWING LACES IN INTERIOR DECORATION.



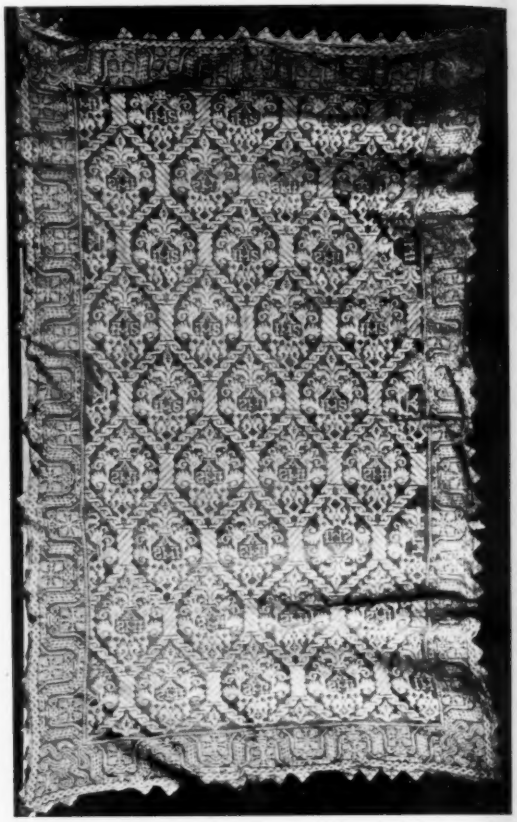
LAYOUT FOR THE ARCHITECT, GIVING SELECTION IN ALTERNATIVE DESIGNS.

the coke chimneys in the United States. Now we are told that improved methods of burning coke are producing forty million dollars' worth of dyes and chemicals, and, besides this forty million dollars gained, the new coke ovens fire themselves, thus saving fuel and hard labor.

The American paint industry has also been strongly stimulated by the war, since many European chemical products are no longer in the market. English, French, and it is said, even German, firms of paint manufacturers are now transferring machinery and labor to the United States to satisfy the urgent necessities of our market. The great difficulties of ocean transportation have placed a premium of profit on all articles manufactured in this country, and the United States is becoming industrially independent, unexpectedly perhaps, and almost against its will.

THIS SELECTION FROM THE METROPOLITAN MUSEUM OF ART SUGGESTS VARIOUS DECORATIVE TREATMENTS POSSIBLE IN ITALIAN NET.

The narrow strip, second from the bottom, though attributed to the XVIth century, shows many of the quaint characteristics of the figure composition of earlier periods, such as the XVth century "Saint Francis" lectern cover. The large square is a XVIIth century corporal unusually rich in color and ornate in design



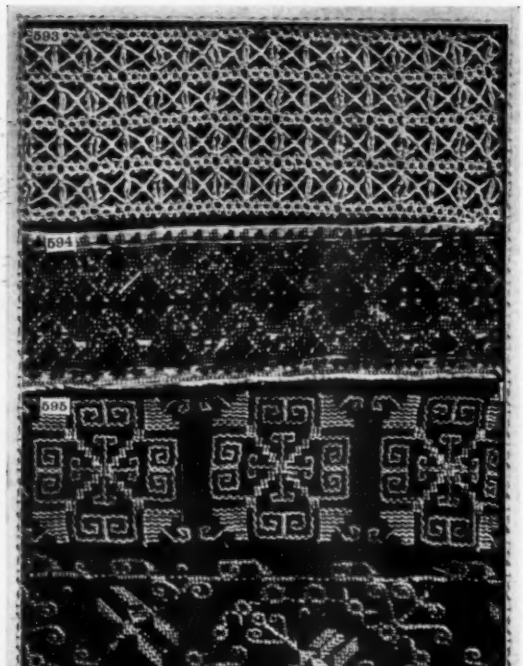
ORNAMENTAL NETWORK.

To be used in church services. Made in Italy about 1600

Textiles and laces made in America are having increasing vogue, because our people are discovering that the very finest fabrics are made in our home factories.

In selecting decorative materials of all kinds, an advantage now exists in having the major portion of the work within telephoning distance of the office of the architect. Easy, expeditious communication between designer and producer can, in many cases, materially reduce the time needed to develop and complete important and complex orders for home furnishing materials. At the present time we possess in this country great and well ordered factories, the most skillful artisans, museums containing rare historical examples of industrial art to guide the designers in their work, and a public anxious to secure fine things to decorate their homes. The most serious deficiency is a great lack

At Left—Different varieties of drawn and cut-work made for ecclesiastical purposes. The upper piece is modern cut-work, the second piece is XVII century border of cut-work; the lower piece is antique drawn-work. At right—A curtain made in New York City with insertion of modern hand-made Lace from several different countries. The cut-work patterns were designed and made in America.



ITALIAN XVIII CENTURY.

of efficient collective action and co-ordination in methods of distribution.

Architects, if they will make the effort, can become a guiding force, not only in this craft but in all matters pertaining to the crafts allied to building. The present method of making fine lace curtains gives a particularly well defined example of how architects may exercise their taste and judgment in these directions.

A New York architect or decorator may easily direct, through his drawings and designs formulated in his own draughting room, the industry of lace making, even in foreign lands. By his professional advice and judgment he may direct the general tendencies of large manufactories in America and even influence the lives and thought of skilled craftsmen in war-stricken Europe.

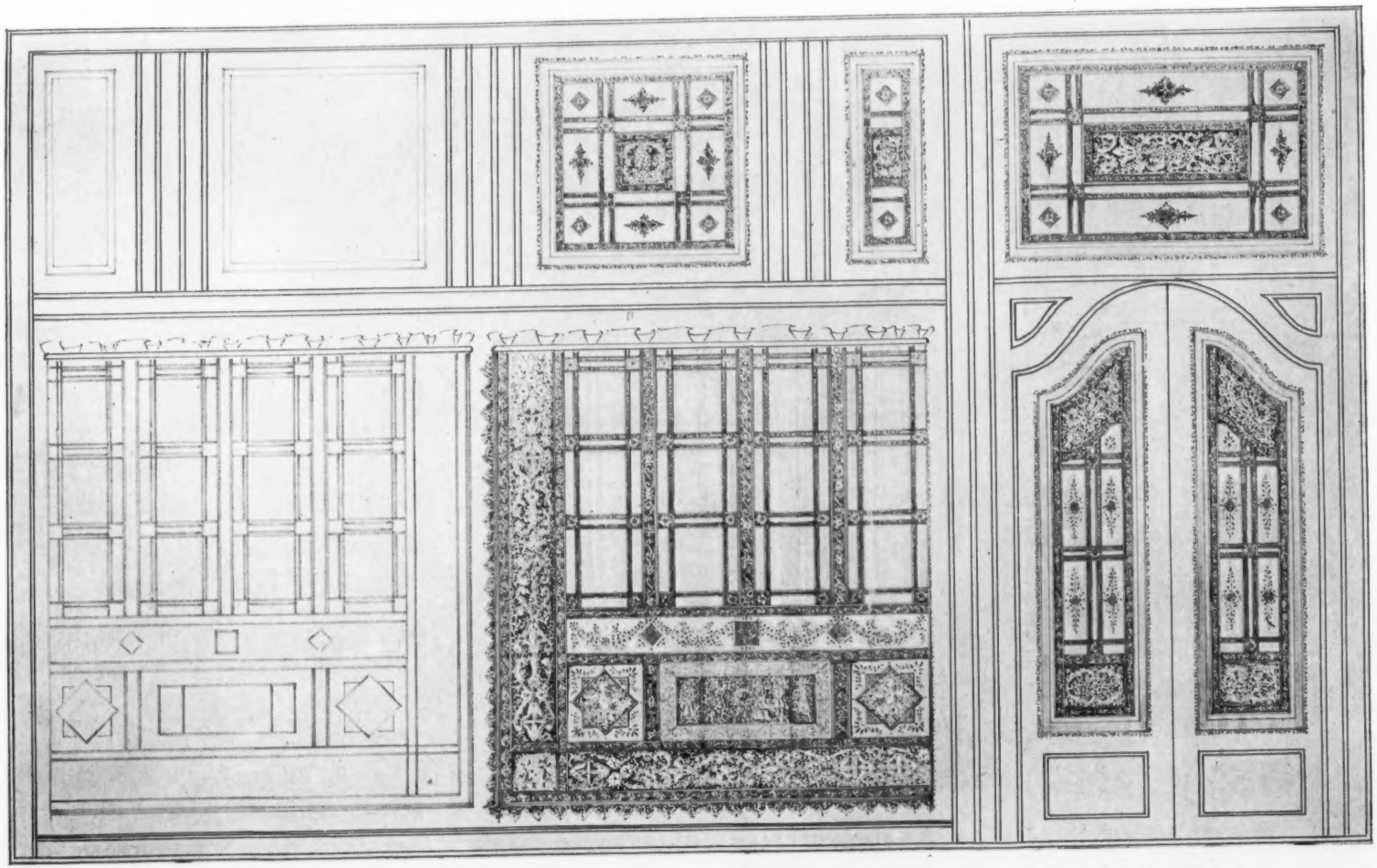
In a previous article on the subject, reference was made to window patterns designed in New York City and executed, in part, at least, in several different foreign countries, where the industry of making lace by hand is still a source of income for poor people. Indeed, New York architects have, by their generous patronage of the last year or two, greatly assisted the poverty-stricken refugees from Belgium as well as the more fortunate fabric makers of France, Italy and England.

The purpose of several of the illustrations reproduced herewith is to stimulate an interest in the untried resources of design in this medium now available to architects, which may aid architects, manufacturers and craftsmen.

Our great museums place at our disposal the matchless and equisite heritage of the ages. At the

EXAMPLE OF POLYCHROME EFFECTS FROM THE COLLECTION IN THE METROPOLITAN MUSEUM OF ART.

The Renaissance border at the bottom is unusually handsome in design. The two upper panels are from Southern Italy and reflect the Oriental love of color, a characteristic of countries once held by Byzantine and Moslem Rulers



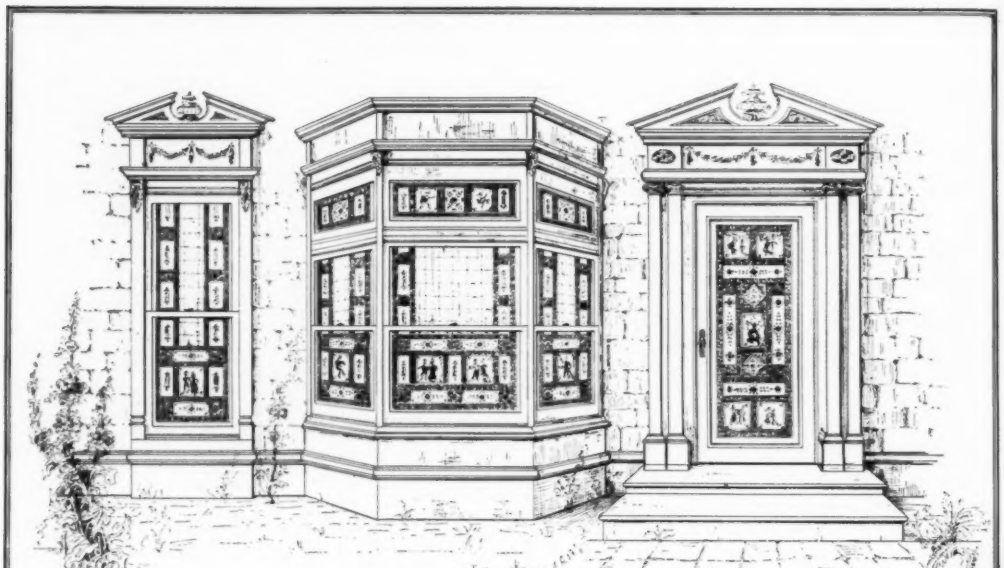
DETAILED STUDY, SHOWING PROGRESSIVE METHOD EMPLOYED IN DESIGNING LACE USED IN DECORATION

At the Metropolitan Museum of Art, the Brooklyn Museum and the Cooper Union one can find numerous decorative forms of textiles ajoure as yet little known or appreciated by decorators or architects, but most appropriate for modern use when adapted to modern methods of manufacture. The splendid resources of lace work in gold, silver, and polychrome effects are as yet but slightly understood by the people who ought to be most keenly interested.

Time and space will not permit the writer to describe this phase of textile weaving in detail, but the day is evidently at hand when colored laces will receive the practical recognition which this form of textile making deserves.

If the architects cannot find time to make necessary studies in this direction, other designers and household decorators will show the way, possibly to the architects' discredit.

Lace curtains in gold and silver, in purple, pale blue or green are all within the province of modern industrial art. All the colors of the rainbow may be utilized in stately and splendid patterns and historically correct designs, to enhance and glorify the architectural beauties of modern homes.



DESIGN AS SUBMITTED TO ARCHITECT, SHOWING THE DECORATIVE EFFECT ON THE EXTERIOR OF WELL-DESIGNED LACE CURTAINS.

Interest on Bank Loans

"Many national banks in the United States," declares John Edson Brady in the *Banking Law Journal*, on no less authority than that of the Comptroller of the Currency, "are charging usurious interest on their loans." And he calls attention to the circular of the comptroller sent under date of February 27, giving such national banks "a further admonition."

The warning on which this circular letter was based was the direct result of a decision recently entered by the Supreme Court of Erie County, New York, in the case of McCutcheon v. The National Marine Bank of Buffalo, which decided, in effect, that where a bank has not openly charged interest in excess of 6 per cent, the legal rate, but has nevertheless required the borrower to carry a certain deposit balance as a condition of the loan, it is guilty of usury.

That the transactions involved in this particular case happen to have been rather complicated does not alter the simple principle decided. The plaintiff, a depositor with the defendant bank, had, at various dates, made a series of loans from the bank in return for which he gave promissory notes. Occasional part-payments were made by checks drawn upon the plaintiff's account, and surrender was made of two of the notes by the bank. But the crucial fact was that in September, 1914, the bank held six of the plaintiff's promissory notes, aggregating $100,000, whereas the plaintiff had had the benefit of only $85,000, which was all that he then actually owed the bank.

Nevertheless, under the arrangement between the plaintiff and the bank, the plaintiff was required to pay interest on the entire $100,000. And, since all of the notes involved were discounted at the rate of 6 per cent, the highest rate of interest legally collectible in the State of New York, it is clear that the plaintiff was paying interest on the $85,000, at a rate higher than 6 per cent.

The court order was to the effect that an interlocutory judgment overruling the defendant's demurrer be entered in favor of the plaintiff; and in case of the defendant bank's failure to answer and pay costs within twenty days, the plaintiff was to have judgment in the sum of $17,740.86, and interest. The case, however, was carried no further but was settled out of court for a round $17,000.

In New York State, Mr. Brady goes on to say, a leading decision dealing with this same question of usury, is the case of The East River Bank v. Hoyt, 32 N. Y. 119. In this case the bank, which held the defendants' overdue note of $1,000, offered to discount the paper for $1,500 on condition that $1,000 of the proceeds should be appropriated in renewal of the overdue note, and that $500 should remain on deposit until the discounted paper matured; and that the defendants should leave with the bank their check of $500 to meet and pay the note in suit, at maturity. The note was held void for usury; and in course of the opinion the court said:

"If the statute prohibiting usury can be evaded by such a subterfuge as has been offered in this case, it has become a dead letter, and had better be repealed at once. By such a contrivance, an individual or a bank, in the loan of one-half of their capital, may draw interest upon the whole. The device in this case lacks even the merit of ordinary skill in its consummation; it is an act of cupidity and extortion, that is not provided with even the decencies of a cloak to cover its nudity."

In this connection, concludes the writer, every national banker and business man is, or should be, interested in two things—what constitutes usury, and what penalty may be expected to follow.

On the first proposition it may be said that, where a bank makes a loan or discount and intentionally reserves or receives more than the lawful rate of interest, there is usury, no matter what may be the form of the transaction. It is the substance, not the form that counts. It depends on whether the banker receives or contracts for more than the lawful rate of interest, not on the number or character of the documents executed by the parties. This applies to state as well as national banks and, for that matter, to other corporations and to individuals.

On the second proposition the reader is referred to sections 5197 and 5198 of the Revised Statutes quoted above.

That portion of the section referred to, defining the penalty of usury, runs as follows:

"The taking, receiving, reserving, or charging a rate of interest greater than is allowed by the preceding section, when knowingly done, shall be deemed a forfeiture of the entire interest which the note, bill, or other evidence of debt carries with it, or which has been agreed to be paid thereon. In case the greater rate of interest has been paid, the person by whom it has been paid, or his legal representatives, may recover back, in an action in the nature of an action of debt, twice the amount of the interest thus paid from the association taking or receiving the same; provided such action is commenced within two years from the time the usurious transaction occurred."

War Time Economy in Design

The great war has caused us to change our ideas and conceptions of things, our ways of doing things and our ways of living. With such vital changes affecting the entire nation, it is not at all strange that the structural designer, if he would live up to his general reputation for economy, has been forced to alter standards of design, especially in reinforced concrete construction.

A few years ago ordinary spread footings for buildings could be built cheaper of reinforced concrete than of plain concrete, except perhaps, in very special cases where footings had to be carried down to a considerable depth in order to obtain a suitable foundation. In such cases the objection of greater excavation being required for a plain concrete footing was absent and by its use a saving was made in the length of reinforced concrete column, owing to the greater depth required for a plain concrete footing.

Nowadays with the prevailing high cost of steel and cement, computation will show that spread footings of plain concrete are cheaper than those of reinforced concrete, and what is more, the job will not be delayed in waiting for reinforcing steel for the footings. With steel costing 5 cents or more a pound in place, and the saving effected by the use of a leaner mixture of concrete for the plain footings, it is readily apparent why the above statement is true. When steel and cement are cheap, and when a satisfactory foundation can be found a few feet below the ground floor level, this will not be the case; but with present prices it is.

Footings of plain concrete do not require as rich a mixture of concrete as a reinforced footing, common practice being to use a 1:2½:5 or even a 1:3:6 mixture instead of a 1:2:4 mix for footings. By the use of the leaner mixtures a saving of from 3 to 8 cents per cubic foot of concrete can be made, and in these times this is worth considering.

Any designer who will do a little investigating will find that the cost of a building can also be reduced considerably if the columns are properly designed. This means that under present prices of steel, used for longitudinal and horizontal reinforcement, the amount of reinforcement should be kept down to a minimum consistent with safety by increasing the proportion of the load carried by the concrete.

Although it might be found to be false economy to cut down the steel to the point making the columns of such unusual dimensions as seriously to encroach on the available floor space in a building, yet for ordinary buildings of four or five stories, with floor loads of about 200 pounds per square foot, columns with less steel can readily be used without making them unnecessarily large.

In a word, it can be said that, in view of the results of numerous tests on concrete columns and present conditions, it is cheaper to use a richer concrete mixture with higher unit strength and less reinforcing steel than heretofore. Accepted practice in the design of reinforced concrete, spirally hooped columns, is that the amount of spiral be limited to 1 per cent of the enclosed area or core, and this amount should be used regardless of the mixture of the concrete. The saving in steel is made on the vertical steel alone by using a 1:1½:3 or 1:1:2 mixture of concrete, instead of the usual 1:2:4 mixture. These richer mixtures give an increased percentage over the usual 1:2:4 mix and a smaller column with less reinforcing steel is the result of such design.

In the design of floors economy can be effected by the use of flat slab floors in multiple story buildings, while for roofs and floors subjected to loads of less than 100 pounds per square foot and with comparatively short spans, a slab and joist construction will be found economical.—*Engineering and Cement World.*

A Unique Church to be Transformed Into Museum for Historic Relics

"David's Temple," a church built early last century in York County, Ontario, Canada, has been purchased by the York Pioneer and Historical Society to be used as a museum for historic relics.

The old church, erected by the late David Wilson, head of a religious sect known as the "Davidites," took six years to build, is entirely of wood, and today is in a remarkable state of preservation. The lasting qualities of wood were never better exemplified than in this structure. White pine was used in the main.

Many years ago remarkable religious ceremonies were celebrated in the Temple by the "Children of Peace," but for a long period the building has been neglected. Work on the church was started in 1825. It is three stories high. The church contains nearly 3000 panes of glass in the windows and spires, and has a symbolic meaning attached to all its parts. An altar that took 365 days to build stands on twelve gilded pillars representing the twelve Apostles, and is emblematical of the religion of Christ.

The building was intended to be used fifteen times during the year; never at any time for Sunday worship. Services were held on the last Saturday of each month, when the members made contributions for charitable purposes. The first service was held October 29, 1831.

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The Aloofness of Architects

THE editor of *The Architects' and Builders' Journal* of London, having commented in a previous issue on "the exclusion of the architect," suggested that if such exclusion occurred it was in a large measure "the fault of the architect himself." This statement moved Mr. Thomas Foster, who is president of the Northwestern Federation of Building Trade Employers, to write an answer to the editors, in which he bluntly states the point of view of the English builder.

The conditions in England as set forth in Mr. Foster's letter may also be found, in a greater or less degree, in this country, and here, as in England, architects have none but themselves to blame for their existence.

Mr. Foster writes to the editors as follows:

> I read with great interest your note on the Building Trades Parliament. I quite agree with your contention that to be complete any organization representing the whole craft of building should include the architect. At some future time this consummation may be reached.
>
> Your implications open up some rather pertinent questions. If Hamlet is out of the play, is it not his own fault? While many architects are personally most estimable gentlemen, how many members of the "profession" regard the builder as in any sense their equal? Have architects through their organizations ever done anything to put forward such an idea as co-operation between architects and builders for any common cause whatever? From your remarks one infers that the blame in some way rests with the builder for the estrangement that undoubtedly exists. While the builder may not be entirely free from blame, I submit that by far the greater responsibility rests with the architect. Until he shows some disposition to come down from his pedestal of professional aloofness and interests himself in the point of view of the builder and the workman, you cannot expect the latter to intrude where all past experience has told them they were not wanted.
>
> The day may come when there will be a National Guild, whose function will be to provide all the building service required by the community. In such an organization architects would, of course, be included, for everyone connected with the process of building, from design to the last step in execution, are in reality builders. Long before that stage of industrial evolution is reached, the architect may find a place in a Building Parliament. If he shows any real desire to co-operate in the process of betterment now beginning he will, no doubt, be admitted to full membership. But if he persists in considering himself a superior person he may only get a ticket for the Strangers' Gallery if he will deign to take it.
>
> These are plain words, but I rather think you wanted someone to say them.

Commenting on this letter, the editor of *The Architects' and Builders' Journal* states:

> Does the architect consider himself a "Superior Person"? He does not, if he is a typical architect. Mr. Foster departs from his usual marked urbanity in throwing out that imputation. We were in two minds about deleting this injurious phrase from an otherwise irreproachable letter, but decided to retain the passage for what it may be worth as an indication of what the architect's aloofness costs him. If he is misunderstood to this extent by so acute an observer and so genial a critic of men and affairs as Mr. Foster, what chance has the coy architect with the average contractor? Until this distrust is removed, and unless the bland guild spirit is abundantly revived, the general aspiration for unity must remain sterile. It is not at all necessary to assume that the architect stands coldly aloof because he "considers himself a Superior Person." He has more substantial reasons. It is not merely a question of social standing, or class prejudice, or what, to follow Mr. Foster's example of using plain words, one may set down as simple snobbery. What has caused the unnatural estrangement and perpetuates it is the peculiar position of the architect as the buffer between owner and contractor. That is the fault of the prevalent system of competitive tendering for contracts. In accepting the lowest tender, the owner, dimly conscious of the innate immorality of the system, naturally assumes that the lowest tenderer must be closely watched, and he expects the architect to do the watching. That is where the "aloofness" arises. If the architect and the competitive tenderer were observed to be friendly, the average owner would suspect that they were conspiring to rob him.
>
> This is the chief reason why the architect does not associate more freely with the builder, and it is deplorable upon many grounds.
>
> An obvious disadvantage of the present position of the architect is that it invests him with the character of a detective rather than with that of an artist.

That the aloofness of the architect creates a false impression among those with whom he comes in contact in building operations has often been shown conclusively. That this aloofness has a tendency to impair the general spirit of co-operation which should exist, and reacts unfavorably on the successful carrying forward of operations, is known.

The instance may be cited of the meeting recently called by the American Institute of Architects, to which were invited the builders and all those allied

to the building industry, and its subsequent abandonment, largely due, many believe, to failure on the part of the various building interests to display a proper spirit of co-operation.

Other causes than this lack of co-operation were stated as reasons for abandoning this meeting. No one, however, will doubt that if a warmer spirit of co-operation had been shown, the conference called by the architects would have been held, and there would have been no occasion for the holding of meetings dominated solely by manufacturers and builders, and held subsequently in New York and Atlantic City. As matters now stand, the organization being formed to represent the whole craft of building does not include as an integral part any architectural representation.

Regardless of where the blame for this condition lies, it is one which demands correction.

"Carry On"

CARRY ON is the name of a new monthly publication, edited by the office of the Surgeon General of the United States Army and published for the Surgeon General by the American Red Cross. The first issue, June, has been received.

It is with much satisfaction we note the publication of a journal to be devoted entirely to the rehabilitation of our heroic soldiers and sailors, who by reason of wounds received in service are prevented from further pursuance of their usual occupations. In a statement over the signature of General Gorgas, Surgeon General, it is declared:

"The Medical Department of the Army will 'carry on' in the medical and training treatment of the disabled soldier until he is cured or as nearly cured as his disabilities permit. We shall try to do our part in his restoration to health efficiently, with the belief that the wounded and sick soldier shall have the opportunity to return to civil life capable of pursuing a career of usefulness. This will enable him to enjoy the freedom and happiness afforded by world-wide democracy for which he has given his all."

In this statement the Surgeon General has, in a few words, set forth the high purpose of the Government in a matter that is of great importance; in the assimilation into our working population of the disabled men, whose care should be the nation's first consideration. The re-education of the adult under such competent direction will be complete and thorough. The men whose sacrifices have earned them all of a nation's gratitude will feel that they are receiving every care to which they are entitled, and our people will not need to experience the regrets that result from a failure to perform a solemn duty.

As the publishers find it necessary to confine the circulation of *Carry On* to those who are interested in the reconstruction of our disabled soldiers and sailors, it will be sent only to those who specifically request it. The magazine is circulated gratuitously.

Many men and women who have sought during the war to find an opportunity for useful service have presented here a chance to forward the great work undertaken to fit our crippled defenders for self-sustaining occupations that will enable them to retain their self-respect to the last degree.

Brooklyn Museum Exhibition

ON another page in this issue there is printed a brief description of the important collection of large photographs—from negatives personally made by Prof. Wm. H. Goodyear—of the cathedrals in Northern France that are now on exhibition at the Brooklyn Museum.

The questions, as bearing on the repairs, restoration or rebuilding of the cathedrals in the war zone in Northern France are likely to be very seriously debated at the conclusion of the war. A knowledge of the discoveries represented by these photographs must increase very materially the public appreciation of the loss to humanity and to civilization occasioned by the mutilations, and in some instances complete destruction, of French cathedrals and churches.

The observations in question involve the inevitable conclusion that no restoration or repairs should even be attempted without a thorough knowledge of the existence and character of the mediæval architectual refinements, a knowledge which is limited at present to a very small number.

It appears probable, whenever the demonstrated facts relating to architectural deflections having purposes of optical interest are understood, that the conclusion will be that restorations are practically impossible in the case of cathedral buildings with refinements, and that the efforts of architects will necessarily be confined to keeping the ruins in such condition as to prevent further decay without attempting other rebuilding. It will further appear that the rebuilding of wholly destroyed monuments which will reproduce the original is absolutely impossible. The loss in such cases is as irreparable as it is deplorable.

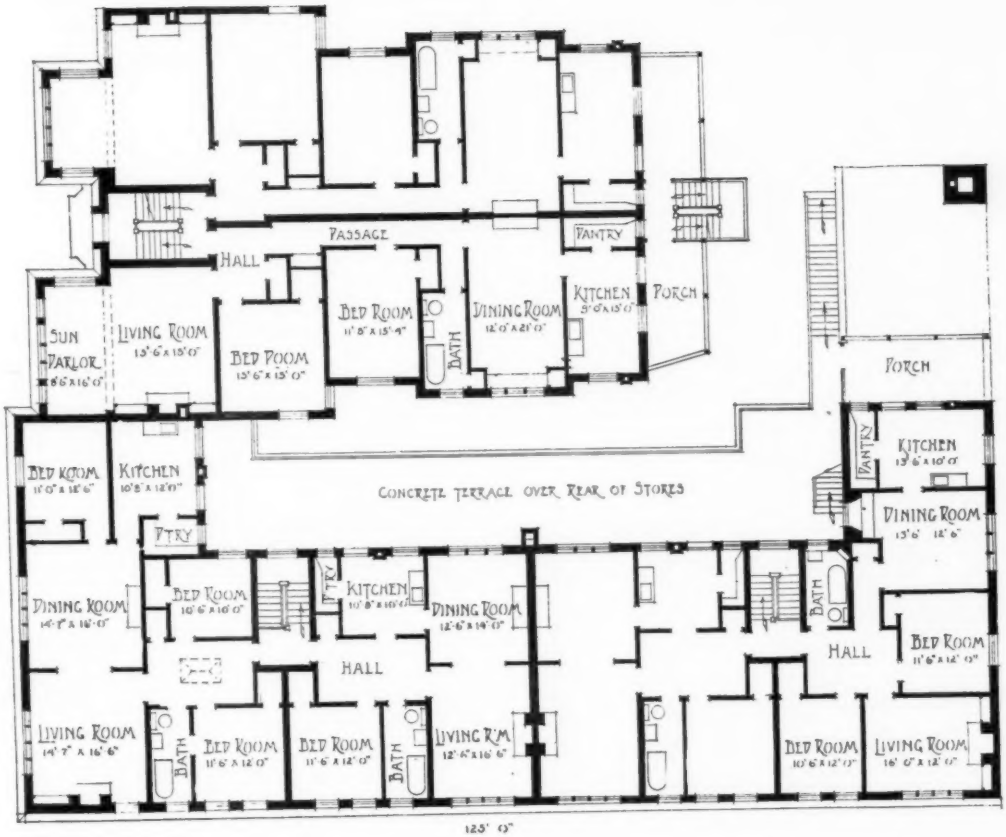


PLATE 34

APARTMENT AND STORE BUILDING, CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

PLATE 35

DETAIL, APARTMENT AND STORE BUILDING, CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

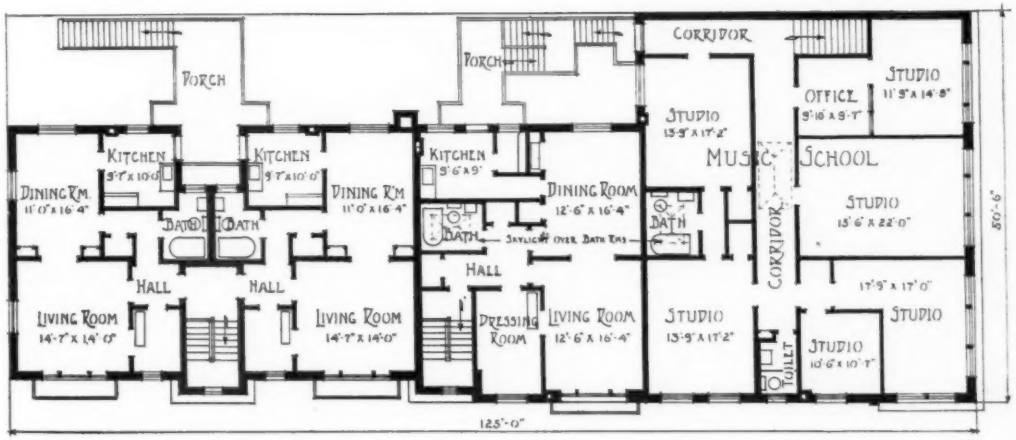


PLATE 36

MUSIC STUDIO, APARTMENTS AND STORES, CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

PLATE 37

DETAIL OF MUSIC STUDIO, APARTMENT AND STORE BUILDING, CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

PLATE 38

SMELTING AND REFINING LABORATORY OF GOLDSMITH BROS., CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

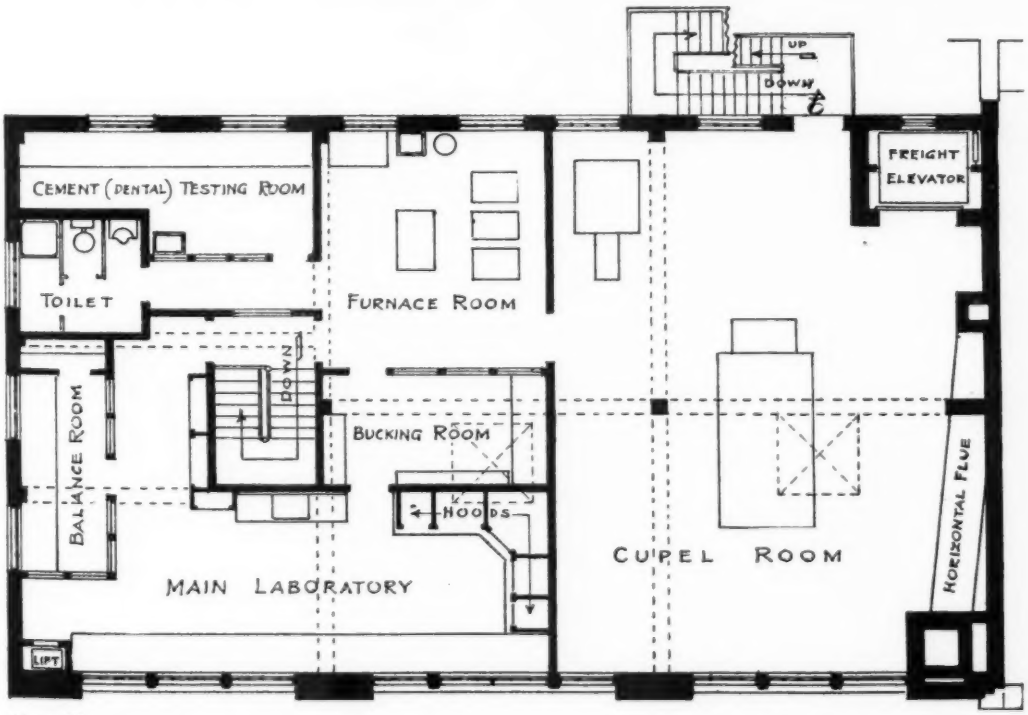


PLATE 39

INTERIOR VIEW, LABORATORY OF GOLDSMITH BROS., CHICAGO, ILL.

ARTHUR WOLTERSDORF, *ARCHITECT*

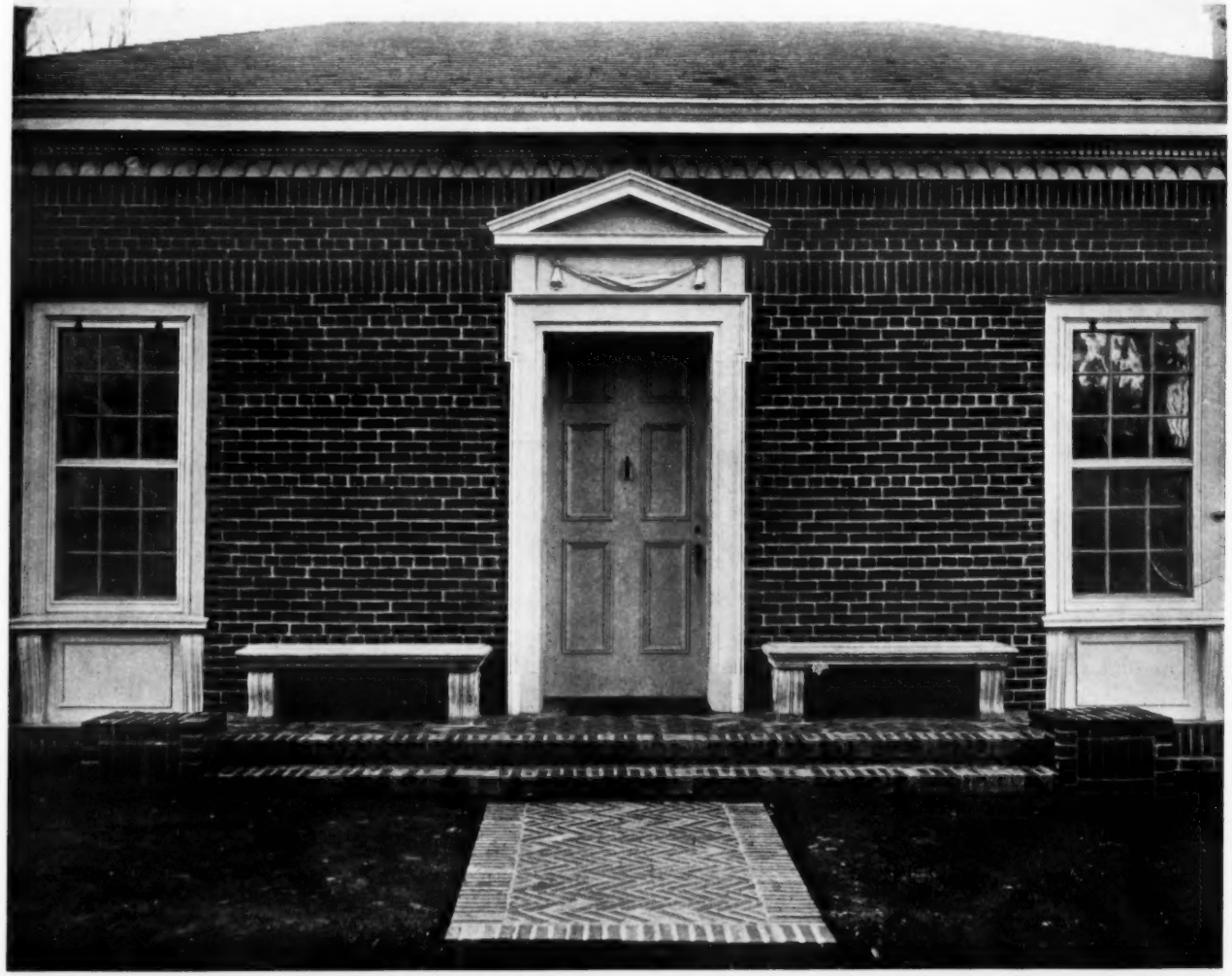


PLATE 40

OFFICE AND REST ROOM, RIVERVIEW CEMETERY, PORTLAND, ORE.

LAWRENCE & HOLFORD, *ARCHITECTS*

PLATE 41

RIVERSIDE CHAPEL, MINNEAPOLIS, MINN.

HEWITT & BROWN, *ARCHITECTS*

The Brooklyn Museum Exhibition of French Cathedral Photographs

AN exhibition of extraordinary and timely interest is being held by the Brooklyn Museum, Brooklyn, N. Y. It consists of enlarged photographic views of the cathedrals of northern France. Public interest in these churches has been greatly excited by the tragic fate which has overwhelmed some of them, and which still threatens others. The Cathedral of Amiens has been exposed to artillery fire, and even the Cathedral of Paris is open to destruction by long-range bombardment, as well as from bombing by aeroplane. Thus the remarkable architectural photographs, especially made some years ago for the Brooklyn Museum are now of unique interest and value. The exhibition includes sixty-eight exteriors and interiors of Notre Dame at Paris, and others from Soissons, Laon, Noyon and Beauvais. It is proposed to follow this with a second exhibition of views of Rheims, Amiens, Chalôns and St. Quentin. The inside dimensions of the enlarged photographs of the first exhibition include four approximately 40 x 56 in., fifty-five approximately 25 x 35 in. inside measure, and twenty-eight approximately 18 x 20 in. The sixty-six enlargements from Notre Dame include forty-two 25 x 35, and twenty-four 18 x 20. Architects and other experts will be aware that the photographing of any individual cathedral in such variety of detail and from such numerous points of view is wholly unknown outside of the given collection in the Brooklyn Museum. It may also be noted that there is no other extant collection of enlarged cathedral photographs in the world. The number of extant cathedral views approaching the larger dimensions of those made for the Brooklyn Museum is not over four or five in total in the whole world. It is not very widely realized that the ordinary negative is not available for enlargement. The negatives made for enlargement must be made with a lens stopped down to such a small opening that it requires four times the usual exposure. Thus, for interiors an exposure of one, two or even three hours is generally demanded for the photographs in question. The limit of a glass plate used by a professional photographer will rarely be larger than 11 x 14 in., and the best negatives made by professional photographers are not available for enlargement unless the lens has been stopped down. For this reason the photographs of the cathedrals in the war zone which have been damaged or destroyed must always be a unique possession of the Brooklyn Museum. As to the number of pictures from individual cathedrals, which, in the instance of Amiens Cathedral, reach the enormous total of 130, there are no extant cathedral photographs, not even those of the Commission des Monuments Historique, which will exceed four or five interiors for an individual church. The value of these enlarged photographs has been recognized enthusiastically by experts, some of whose expressions about them are included here. Prof. William R. Ware, deceased in 1915, long director of the Columbia School of Architecture, and on the whole the leading architectural expert and critic of the United States, wrote concerning these pictures in 1904, "They constitute the finest exposition of Gothic architecture ever made except by the buildings themselves." Prof. H. Langford Warren, head of the Department of Architecture in Harvard University, expressed his opinion in writing at about the same date to the effect that "they are certainly the most interesting photographs of French Gothic architecture I have ever seen." M. Auguste Choisy, the most famous architectural engineer of his time and country, was shown some of these pictures in Paris in 1907. He took pains to have them exhibited to the French *Académie des Inscription et Belles Lettres,* and expressed the opinion at that time that the photographs were far superior to those of the Commission des Monuments Historique, and also said that selections from them ought to be shown in all of the principal museums of Europe. In 1905, when an exhibition of some of these photographs was held in Edinburgh, the committee of the Architectural Association had printed a poster in advance of the exhibition which said that it was probably the most important architectural exhibition ever shown. After the installation had been looked over by the committee a new poster was printed from which the word "probably" was omitted. Other instances of expert appreciation can be mentioned.

It may be mentioned finally that the photographs in question are the only ones of modern time which have been devoted to the subject of mediæval architectural refinements. With few exceptions all the photographs include illustrations of the remarkable deflections from symmetry, and from rectilinear, horizontal and perpendicular alignment, which are now beginning to be recognized as the most astounding features of the mediæval cathedrals. The special interest of the selections now made will naturally be due in the first instance to the present great popular interest in the northern French cathedrals of the war zone, and to the unique importance of those which relate to cathedrals which have been destroyed or seriously damaged, or which are still in danger of mutilation or destruction.

The long-range bombardment of Paris is likely, at any time, to do serious injury to the Cathedral of Notre Dame, and recent photographs published in

this country show that the façade has already suffered to a slight extent, although no information on the subject has apparently been published. If repairs or restorations of this cathedral should be called for later on, as they undoubtedly will be in many other instances, the difficulty or impossibility of a reconstruction which is to reproduce the purposed horizontal and purposed perpendicular deflections which were intended to give optical interest to the buildings, ought to be carefully considered.

For this reason, and because Notre Dame is the most remarkable monument of northern Europe as regards these deflections, it ought to be studied at the present time, and the existence of these deflections ought to be widely known. There is no monument of northern Europe in which they are so numerous and so obviously illustrated by photography. Thus, Notre Dame becomes a lesson for object study which also relates to other cathedrals in which the optical refinements employed are less numerous, but in other senses equally important. The only publications related to this subject are those which have been made on behalf of the Brooklyn Museum. The only complete record in the world on the subject of these deflections at present is to be found in the photographs themselves.

No exhibitions of these photographs have been made in Brooklyn since 1911. The present exhibition in the Print Galleries of the Museum will continue through the month of August.

The Conservation of Domestic Supplies

The New York *Times*, discussing in a recent issue the importance of keeping supplies of building materials to a safe level, points out the dangers that may arise from any action by the Government to hinder our manufacturers' efforts to be ready when the war is over.

The article states in part:

General conferences between Government officials and basic building material manufacturers have developed two facts of primary importance: First, that it is the belief of manufacturers and economists alike that wholesale curtailment of building materials is going to operate disadvantageously to the program of winning the war, and that it will actually militate against the speedy reconstruction of France and Belgium.

It was brought out that ever since Belgium was prostrated the Germans have been raiding the industrial plants of machinery, and in many cases have actually taken parts of the structure themselves where they have had fabricated steel frames. This has been equally true of Northern France.

It was the contention of the building material interests that the only way to offset this advantage that Germany has taken to itself in the matter of looting machine shops of mechanical devices is to supply these countries with greatly improved labor-saving machinery, first, to permit these countries to offset loss of man power, and, secondly, to permit them to manufacture textiles and other articles of trade at a cost much lower than Germany despite her pauperized labor market.

This is the only country producing building materials suitable for modern construction in the world to-day. England has classed as non-essentials steam and hot water apparatus for domestic use and machinery for the trades for the manufacture of this apparatus, manufacture of venetian blinds, wood molding, stone, marble, granite, and slate quarrying and machinery for performing this work; brick and tile other than firebrick, glass beveling, embossing and silvering, stained glass, manufacture of china and earthenware, building, house painting and decorating, wall paper and linoleum, manufacture of gas and electric lighting fixtures. In the metals department all steel, iron and sheet metal for use in building construction is barred. No mention is made, however, of cement, but it is known that production in England of this commodity is proportionately far below that allowed to be manufactured here.

Consul Harry A. McBride of London makes an appeal to American building material producers to get in touch with the "Comptoir National pour la Reprise de l'Activite Economique en Belgique," 110 Cannon Street, London, E. C. 4, to supply materials for the reconstruction of Belgium, among the list of articles being "materials for construction of buildings, farming implements, woodworking machines, electrical material, refractory materials and labor-saving machinery."

An organization has recently been perfected here in this country by an eminent architect and capitalist for the industrial expansion and housing development of Norway by the use of American materials and machinery, and there is now every likelihood that at the end of the war a tremendous credit will be placed at the disposal of French industrial and other interests for the purchase in this country of American building materials and labor-saving machinery to offset its loss of man power, and to give it an economical supremacy over its late enemies. Similar credit probably will be given to Italy.

It was apparent at these conferences that the

Government is willing for the building material industry to suffer as little curtailment as possible during the war, but it is primarily a question of fuel supply. There is, therefore, a complete spirit of co-operation between the building industries of the country and the War Industries Board and other departments at Washington, as evidenced by the expressions of the federated building industries at Atlantic City, July 15-16.

Germans Hard Pressed for Copper

After expropriating door handles, window latches, pots and pans and copper and brass utensils for munition purposes the German military authorities now have turned their attention to public buildings with copper roofs. Among the scores of places being stripped are the famous Brandenburg Gate, Prince Albrecht's palace, a dozen churches and synagogues and several museums. Some of the best known hotels, restaurants and department stores and also private mansions are being forced to give up their copper roofs.

Old Stone Barns

In many localities, at one time the theater wherein was acted the struggle for American independence, there are to be found old stone barns, so well constructed that after a period of more than one hundred and fifty years they stand, fulfilling their original purposes. In places near to our large cities, particularly Philadelphia, Boston and New York, some one with an eye well trained to the picturesque has turned these old utilitarian structures into the most delightful of houses. With veneration for age and with a proper artistic appreciation these old barns have been made so thoroughly home-like in their aspect as to mask their original purpose entirely and have become, to the casual observer, old houses that are landmarks of the days of the American Revolution. A writer in the *Christian Science Monitor* has been traveling through rural England, and in common with other close observers has noted the many old stone barns that so picturesquely contribute to the landscape. This article states, in part:

The great old stone barns of England, dating, many of them, from the fourteenth century, are, comparatively speaking, little known to the general public.

The beautiful architecture to be found in the English village churches has received its full meed of appreciation, and so, though possibly in a slightly less degree, have the fine old manor houses which dot the countryside and provide a most interesting study in the local variations which occur in the generally prevailing style at any given period. The barns, however, have been rather neglected, and literature on the subject is practically non-existent.

Yet the barn is intimately bound up with the history of the neighborhood in which it stands, and where, for possibly nearly 500 years, it has been fulfilling practically the same eminently important functions, with little change, for the benefit of the folk in its neighborhood.

The methods of the farmer may vary, but the general routine of the countryside goes on much the same century after century, and the great barns still stand ready to house the people's food as they have done, summer and winter, for so many hundred years.

These old Gothic barns are very dignified and very beautiful buildings, comparable in some ways to the village churches, whose contemporaries they are, and if they are less ornate they are, in their simplicity, hardly less imposing. Indeed, some people would give the balance in favor of the barns in this matter.

It is by no means always an easy matter to tell the precise date of these barns at first sight, but sometimes there is a little carving, a bit of tracery or a finial which will supply the clew, or possibly the form of a buttress may afford an indication. But, fortunately, there are generally local records to which access may be had containing details of the origin and foundation of the barns.

Among the famous fourteenth century barns of England are those at Glastonbury, Wells and Pilton in Somersetshire, Great Coxwell in Berkshire and Abbotsbury in Dorsetshire. These are all what may be described as barns of the first magnitude; great cruciform buildings which may well vie in size and dignity with many churches.

Of the barn at Great Coxwell, William Morris said that it was "unapproachable in its dignity, as beautiful as a cathedral, yet with no ostentation of the builder's art," and he always declared that it was one of the finest buildings in England or anywhere else.

Building Conditions in the Smaller Towns

There is unquestionably relatively more building in small towns and rural communities than in the larger cities, says *The Improvement Bulletin*. The reason is not far to seek. The farmer of to-day is prosperous. He is assured a good price for his produce. True, he always is confronted with the old element of chance, based on weather conditions, but up to this time it looks as though the acres of

the Northwest would produce bumper crops. When the farmer is prosperous he builds new barns and granaries and new houses. The simple farm house of ten years ago, with none of the conveniences of life, is yielding to farm houses which vie with the best city dwellings in lighting, water service, and in plumbing. It is quite true that the cost of construction has risen, but not in proportion to the price that the farmer is getting for his produce. So the farmer is building.

The Architect in Industry

So seldom is it that the services of the architect are understood or their value appreciated by writers in the daily press that an editorial printed in a recent issue of the Seattle *Bulletin* is worthy of special notice. We read:

Two shipyards on Puget Sound have employed architects to prepare the plans for their buildings, instead of delegating their ship draftsmen to the task. The heads of these plants have demonstrated the fact by such action that they are broad enough business men to realize that an architect knows more about designing the buildings in a shipbuilding plant than they do, or the men who design ships. They realized they would not effect a saving by turning this task over to anyone but a competent building architect.

It is significant, too, that both plants are the largest in the North Pacific, one perhaps the largest now operating in the country, that both plants are internationally known for their efficient methods and the speed with which they do business, and both are landing more contracts, launching more ships and making more money than any other two yards in the country.

One of the big things about men in big business who are big is the realization that the advice of experts is worth something, and successful men do not hesitate to buy it.

Charles M. Schwab uses locomotives in his steel mills, but if he wanted one made he would probably call in the expert of the Baldwin Locomotive Works, and there is a great deal of other equipment made of steel which he uses but would have specialists in that line both design and build for him. Architects have designed his buildings and contractors have built them. Years ago he was called one of the greatest salesmen in the world. But one of the Eastern schools for salesmanship makes capital out of the fact that Mr. Schwab, within recent years, completed their course of study.

The more a man knows about his own business the less he knows about his neighbor's. Let an owner once erect a building without the services of an architect and he is very apt to appreciate that expert's business when it becomes painfully evident that he (the owner) doesn't know the other's. The man who profits by another's experience is both a wise and a rich man, for he saves what the other man spends.

It is a mistaken idea that architects are only supposed to be employed where an artistic building is desired. There is no structure more hideous than a retaining wall, but a competent architect can make it a thing of beauty. But the architect is seldom if ever employed for his artistic ability alone. As well employ a physician only when one is on his deathbed, but attempt to cure oneself of pneumonia, typhoid and other ailments as to employ an architect to design only libraries and structures which are to be ornate, but attempt to design your own factory building or your own warehouse.

A competent architect is qualified to design any building more efficiently, whether residence, office building, warehouse, factory or other structure, than any other. His course of study has fitted him to determine what class of structure will best suit your needs, giving you the greatest light, maximum of space, with least obstructions, cheapest in cost and most efficient. Whether for a medium-priced factory building or for a monumental structure, employ an architect.

American Federation of Labor Opposes Temporary Housing

Opposition to the plan to house shipbuilders and munition workers in temporary barracks has been expressed by the American Federation of Labor. J. F. Steven, Boston Central Labor Union, has presented a resolution stating that there was a marked shortage of wholesome dwellings for the laboring people before the outbreak of the war and that this shortage had been greatly increased by the building of ships, manufacture of munitions and other war activities. This discrepancy is particularly critical in parts of Massachusetts. The federation was asked to oppose the plan for temporary housing facilities "which deprive men of home life." It will advocate the construction of wholesome habitations of permanent value.

Find Pharaoh's Tomb

Word has been received at the University of Pennsylvania from Dr. Clarence S. Fisher, head of the Eckley B. Cox expedition to Egypt, that excellent success has resulted from winter explorations at Denderah, the ancient capital of Egypt, up the Nile. He returned to Memphis, Egypt, in April,

and continued his work of uncovering the palace of Merenptah, who is identified by many Biblical scholars as the Pharaoh of the Oppression, whose stubbornness brought on the ten plagues. If this is correct, the great hall and throne room of the palace, which has been completely uncovered, was the scene of the appearance of Moses and Aaron before Pharaoh, and where the signs and wonders were performed. The throne is said to be in good condition, but Egypt will not permit of its removal to this country.

States Requiring Registration of Architects

Following is a list of States in which registration laws as affecting the practice of architecture have been passed, together with the names of the president and secretary in the respective boards of registration:

California—*President*, E. A. Mathews, 251 Post Street; San Francisco; *Secretary*, Fred L. Roehrig, Los Angeles.

Colorado—*President*, Thomas F. Walsh, Denver; *Secretary*, Park M. French, Denver.

Florida—*President*, Murry S. King, Orlando; *Secretary*, E. A. Ehmann, 135 E. Bay Street, Jacksonville.

Idaho—*President*, C. F. Hummel, Boise; *Secretary*, Burton E. Morse, Twin Falls.

Illinois—President, N. Clifford Ricker, Urbana; *Secretary*, Leonard F. W. Stuebe, Danville.

Louisiana—*President*, Sam Stone, Jr., New Orleans; *Secretary*, Charles A. Favrot New Orleans.

Michigan—*President*, George D. Mason, 80 Griswold Street, Detroit; *Secretary*, S. Eugene Osgood, Grand Rapids.

New Jersey—*President*, Charles P. Baldwin, 45 Clinton Street, Newark; *Secretary*, William A. Klemann, First National Bank Building, Trenton.

New York—*President*, D. Everett Waid, 1 Madison Avenue, New York; *Secretary*, William P. Bannister, 69 Wall Street, New York.

North Carolina—*President*, Hill C. Linthicum, Durham; *Secretary*, C. E. Hartge, Raleigh.

North Dakota—*President*, George Hancock, Fargo; *Secretary*, A. Van Horn, Fargo.

South Carolina—*President*, C. C. Wilson, Columbia; *Secretary*, George E. Lafaye, Columbia.

Utah—*President*, W. E. Ware, Salt Lake City; *Secretary*, W. H. Lepper, Salt Lake City.

Wisconsin—*Chairman*, Alexander C. Eschweiler, Milwaukee; *Secretary*, Arthur Peabody (State Architect), Madison.

Industry Will Be Organized for War Production

The War Industries Board, which has recently been raised by the President to the rank of an independent Government agency, has announced a plan for dividing the country into districts within which industry and material will be organized for the production of war supplies.

For this purpose twenty districts have been created, from the Atlantic to the Pacific.

While the details of organization have not yet been fully worked out, it is intended first to ascertain the resources of each district, such as the number and character of its industrial plants, its stocks of raw materials, its labor supply and its transportation facilities, and then to bring the representatives of the several lines of industry together and to put them in touch with representatives of the War and the Navy departments in order that Government supplies may be procured as economically and as rapidly as possible.

It is expected that the various industries will work together and will supplement each other in a common endeavor against the common enemy. While the purpose of this organization will be to direct the energies of the country more fully toward winning the war, it follows in a general way the purposes for which commercial organizations exist; it enables individual units to work together for ends which all of them desire to accomplish.

Baruch Demands Saving in Building

The exercise of extreme economy in the use of materials, such as steel, stone, lumber and cement, in building and other operations, both by the municipality and by individuals, in order to help win the war, is emphasized in a communication to Mayor Smith of Philadelphia from Bernard M. Baruch, chairman of the War Industries Board.

In his communication Mr. Baruch said:

"The demands upon the country's resources in man-power, transportation and materials have been great and will increase with the continuance of the war. May I ask that you will use your best endeavors to curtail the uses of these in the interests of winning the war and that you will do all you can to discourage new buildings and new operations and the improvement of old ones to this end? Your own good judgment will guide you if you ask yourself whether any contemplated project will aid in the winning of the war.

"After my conversation with you I feel we will get from you and from your fellow citizens that

whole-hearted co-operation which is not alone inspiring to those who are charged with responsibilities but will help to hasten victory.

"As you know, we are conducting a war against selfish interests in the interest of all mankind."

Navy Department to Handle Ship Camouflage Painting

All camouflaging of ships built for the Shipping Board is hereafter to be prescribed and supervised by the Navy Department. A decision to this effect has been reached at a conference held between representatives of the Navy Department and the Shipping Board. It was mutually agreed that camouflaging the ships for war service constituted a military requirement, and therefore the navy should say how it is to be done. The agreement provides as follows:

"The Navy Department will prepare the types and designs of camouflage painting for general use, and, where practicable, design of camouflage painting applicable to particular ships.

"These designs will be furnished the district camoufleurs through the camouflage section, division of steel ship construction of the Emergency Fleet Corporation. The district camoufleur will use the design most applicable to the form and type of ship to be camouflage painted.

"The district camoufleur shall not change the principle of the design furnished by the Navy Department, but may adopt such design to suit the particular ship which is being camouflage painted."

Brick Products for War Use Will Curtail Other Deliveries

The War Industries Board authorizes the following:

Representatives of approximately fifteen of the eighteen zones into which the 7000 manufacturers of the fire brick, paving brick, and common brick have divided in the United States, met with the Priorities Commissioner and other representatives of the War Industries Board and outlined the following industrial conditions and agreements:

(1) That, with the exception of the zones in the district north of the Potomac River and east of the Allegheny Mountains, including New England and the zone which includes the Birmingham district, the shortages in coal and disturbances in deliveries have not been sufficiently serious, generally speaking, to disturb manufacturing.

(2) In the greater number of the zones manufactured output was materially less in 1917 than in 1916, and materially less during the first six months of 1918 than during the first six months of 1916. This result was attributed in part to diminishing demand for general peace-time uses and in part to labor shortage in many zones.

(3) The necessity of curtailing all uses which could be deferred without interference with the war program or are vitally essential for the civilian welfare was unanimously recognized as being unavoidable. The manufacturers present pledged themselves to exercise such oversight of the uses to which their products were to be put as to guard against its being consumed in any deferable uses.

(4) The priorities commissioner undertook to give applications of individual brick manufacturers for places on the preference list favorable consideration, upon condition that such individuals and the industry would devote their output to vital war needs, direct and indirect, and to indispensable and non-deferable uses.

Lightless Nights Again in Effect

As a measure of coal conservation, and to prevent as far as possible a recurrence of the coal shortage of last winter, the Fuel Administrator has issued an order, effective July 24, restricting the use of fuel for out-of-doors illumination.

Street illumination in all cities is restricted to the hours between sunset and sunrise, and the amount of public lighting in any city reduced to that necessary for safety. The order charges local Fuel Administration officials with the duty of arranging with the proper municipal authorities for the regulation of public lighting, in accordance with the provisions of the order.

The use of light for illumination or display in shop windows, store windows or in signs in show windows, is to be discontinued from sunrise to sunset and discontinued entirely on the lightless nights designated by the order.

For an Illinois State Building

Chicago daily papers have announced the intention to erect at Springfield, Ill., a State building, to cost at least $10,000,000. The scheme for this building has, it is stated, been projected by Edwin D. Martin, State Supervising Architect, and now awaits acceptance by the Illinois Department of Public Works and Buildings.

While there is no immediate intention of actual building at this time, the State, with a fine appreciation of the value of planning now for future activities, is giving all the details of this pretentious building the fullest and most careful consideration.

Department of Interior Seeks Technically Trained Help in Patent Office Work

There is at this time a considerable need for technically trained persons for the examining corps of the Patent Office in Washington, D. C.

Men or women are desired who have a scientific education, particularly in higher mathematics, chemistry, physics and French or German, and who are not subject to the draft for military service. Engineering or teaching experience in addition to the above is valued. The entrance salary is $1,500.

Examinations for the position of assistant examiner are held frequently by the Civil Service Commission at many points in the United States. One is announced for August 21 and 22, 1918. Details of the examination, places of holding the same, etc., may be had upon application to the Civil Service Commission, Washington, D. C.

Should the necessity therefor arise, temporary appointments of qualified persons may be made pending their taking the Civil Service examination. Application for such appointment should be made to the Department of the Interior, United States Patent Office.

Textile Competition

The third annual prize competition for textile designs has been announced by the Art Alliance of America. This competition, which closes October 1, 1918, offers a total of $1,900 in prizes as follows:

For Printed Silks, $250, $150, $100, ten of $25, and ten of $10; for Woven Silks, $100 and $50; Silks for Interior Decoration, $100 and $50; for Cretonnes, $100 and $50; for Printed Cottons, $100 and $50; for Ribbons, $100 and $50; for Special Awards, a fund of $300.

Further information should be obtained from the Art Alliance of America, 10 East 47th Street, New York City.

Steel Output Large

It has been announced that the ingot production of the United States Steel Corporation is now at the rate of 96 per cent of capacity. These figures represent the extraordinary efforts being made to get production of steel to the highest possible level.

Light-weight Concrete

Certain aggregates, notably a volcanic scoria readily available in the Southwest and Mexico, have been found, on laboratory tests, to give concrete weighing about 120 lb. per cubic foot, and with a compressive test of above 4000 lb. per square inch.

Such material would have marked and obvious advantages for concrete shipbuilding.

Excellent Plan of Lincoln Highway Beautification Advanced in Iowa

Suggested in connection with the plans for material improvement of the Lincoln Highway in Iowa, the idea has been advanced to beautify the route across the State by the planting of black walnut trees. Walnut logs are much in demand by the Government for the making of gun stocks, and the idea combines both practical and utilitarian purposes. It has been widely taken up and is receiving the strongest endorsement in the State.

The suggestion of Lincoln Highway beautification across each of the States traversed by the route has been made frequently, and the plan has been vigorously pushed, particularly by the General Federation of Women's Clubs. Numerous State Lincoln Highway Committees have been organized, and as a result of their endeavors many trees have been planted along the route.

It is thought that the Lincoln Highway Committee of the American Society of Landscape Architects will be asked to submit expert advice relative to the location, spacing, etc., of the trees to be planted in Iowa.

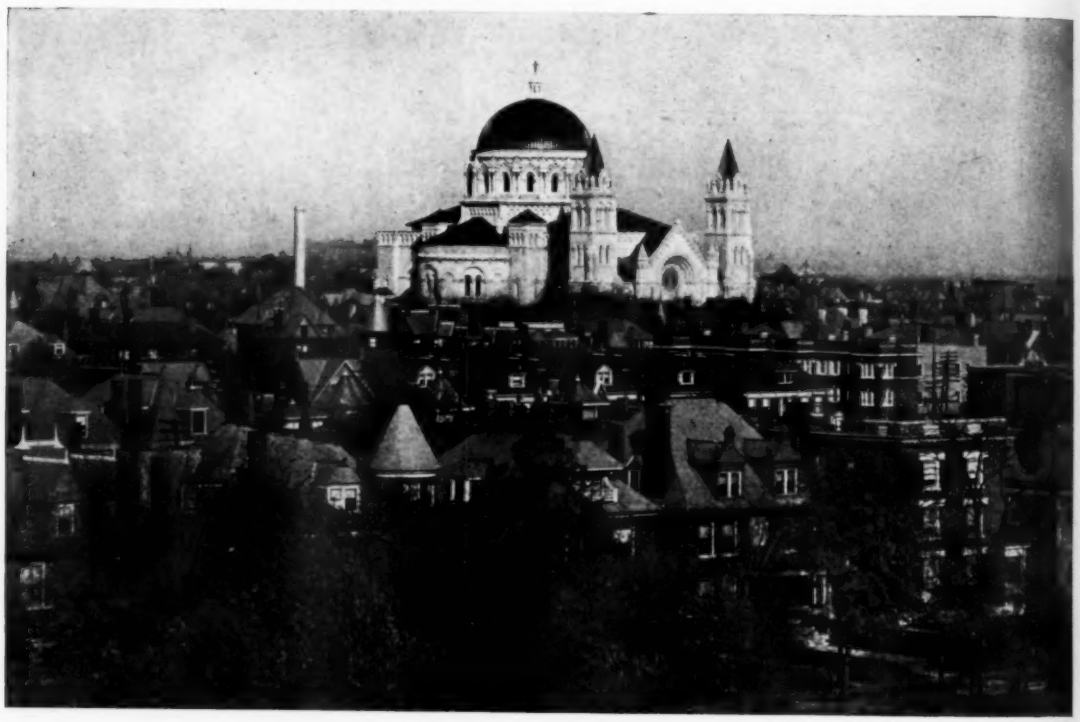
School of Architecture, University of Oregon

Bulletin No. 4, Volume XV, issued by the University of Oregon, is the annual report of the School of Architecture. There are outlined the general sources for the four years' work, and facts presented that would be of interest to students seeking admission. There is also included a series of illustrations of student work during the past year. This is interesting, as it shows the development of the various phases of architectural instruction pursued at this school.

Albert F. D'Oench Dead

Albert F. D'Oench, architect, died at his country home in Manhasset, Long Island, on July 20, after a long illness. He was 65 years old, and had practised his profession in New York since 1876. His wife, a daughter of the late Mayor William R. Grace, and a son survive him.

Department of Architectural Engineering



VIEW OF THE CATHEDRAL SHOWING ITS RELATION TO THE CITY

The Cathedral of Saint Louis

BARNETT, HAYNES AND BARNETT, *Architects* BRUSSEL AND VITERBO, *Engineers*

THE great cathedrals built in the past were erected at a time when one church was universal among the civilized peoples, and their construction was the result of the undivided efforts of the entire social organization. This condition made it possible for each governmental district to erect great cathedrals in keeping with its wealth and population. The civil and military governments being temporal, their palaces and civil buildings were far less imposing and elaborate than those erected by the church, and it is for this reason that the cathedral churches are the largest and most prominent buildings wherever they exist. The pagan temples seem to have been the most important buildings of their era, as very little other contemporary construction remains to-day.

The primary use of the cathedral is to furnish a proper place for the rendition of a liturgy, and this function was formerly surrounded with a magnificence in accord with the wealth of the population. Aside from this specific use, such buildings became an identifying feature of a city, and a panoramic

view of Constantinople is easily recognized by the domes of Saint Sophia, and the same can be said of Florence, Rome, Paris and London. In America

Constructing the main dome

cathedral churches are not the dominating feature of the landscape. This is not only due to the newness of the country, but to the fact that, while the religious sentiment of the early settlers was not lacking in intensity, they were confronted with the necessity of existing in a wilderness far from an established base of supplies. Thus their energies were devoted to other purposes than constructing great buildings. The construction of great commercial and residential buildings in our cities has in many cases subordinated our cathedrals so that they are not outstanding features of the landscape. In the great Mississippi Valley there are three very prominent cathedral churches. The old Saint Louis Cathedral, facing Jackson Square, in New Orleans, has a setting worthy of its importance. At the other extreme the new cathedral at Saint Paul is an imposing feature of the landscape. It is, however, in the very heart of this vast inland empire that the Cathedral of Saint Louis, by virtue of its great dimensions and the stateliness of its outlines, equals in grandeur and magnificence the cathedrals of the Old World. Opportunities to execute such great undertakings can be but few in number, and the happy fulfillment of this undertaking is not only an honor for the architects but a worthy addition to the world's great cathedral churches.

From any vantage ground this great white granite hulk, with its imposing dome covered with green glazed tile and surmounted with a beautiful white granite lantern and golden cross, all brilliant in the bright sunlight, is the focus of the vista. It fulfills all of the requirements and traditions of a great cathedral church.

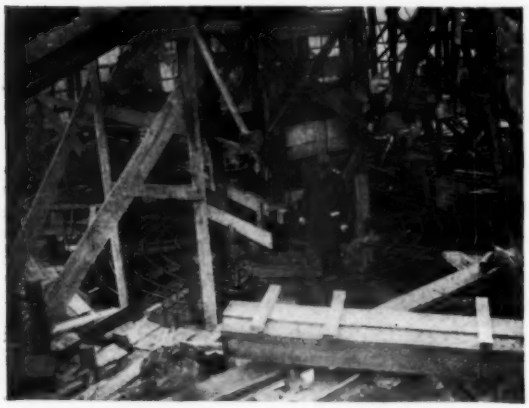
The building is cruciform in plan, with a main hemispherical dome 80 feet in diameter over the intersection with a subsidiary hemispherical dome over both the nave and the sanctuary, each having a diameter of 48 feet. Quarter spherical domes of the same size form the ceiling of the transepts. An ambulatory at the clerestory level encircles the entire structure without entering or crossing the nave, transepts, sanctuary or chapels.

The purpose of this article is to describe the plan and construction of the main dome. These structural parts are made of reinforced concrete. The kind and arrangement of the reinforcing steel is

View toward the sanctuary from the gallery, showing the side galleries of the nave, the domed ceiling over the nave, the intersection and the sanctuary.

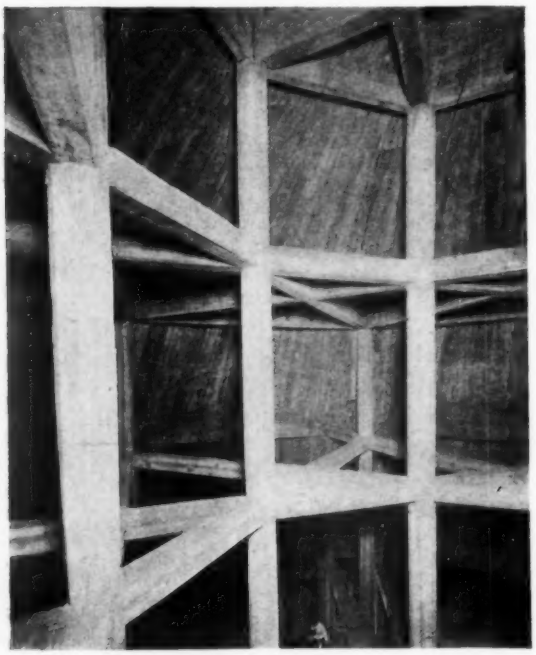
not shown, as that is purely a mechanical detail, but the arrangement of the parts and their relation to each other are shown.

The four main piers at the intersection are built



Compression ring at the crown of the main inner dome.

up of masonry as indicated in Fig. 1 and are capped at the spring of the major arches with a reinforced concrete coverplate, shown in Fig. 2, which is 2 feet thick, and serves as a bearing plate for the arch ribs. The two inner arch ribs shown at *B*, Fig. 1,



Windbracing and supporting frame of the main outer dome.

in Fig. 2 and indicated in Fig. 3, support the main dome. A third arch rib, at *P*, Fig. 1, supports the subsidiary domes over the sanctuary, nave and transepts. These ribs are designed as simple beams and anchored to the cover plate by rods. These major arches are built in pairs with a connecting slab at top and bottom. This was done to reduce the enormous dead weight of a solid arch of the requisite width.

On the major arches is built a construction which is octagonal in plan on the exterior and circular in

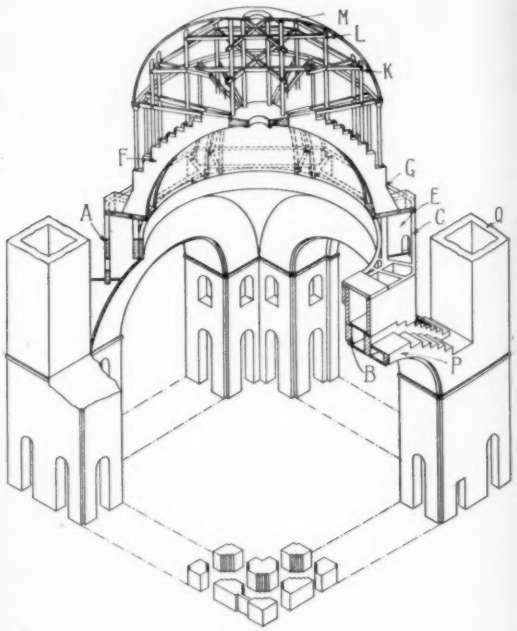


Fig. 1. Isometric key drawing.
For section at A see Fig. 4.
For section at B see Fig. 5.
For section at B see Fig. 2.
For plan at C see Fig. 3.
For plan at E see Fig. 6.
For section at F see Fig. 7.
For plan at G see Fig. 8.
For plan at K and L see Fig. 10.
For sections K, L and M see Fig. 10.

plan on the interior. This construction consists of walls, diaphragms and diagonal girders, shown in plan in Fig. 3. Figs. 4, 5 and 6 show vertical sections through this transition construction, all of which is capped as indicated in these sections by a reinforced concrete cover plate. This cover plate serves as a base for the ribs of the main inner dome. As these ribs are designed according to the elastic theory of arches the total horizontal thrust is taken up both at the top and bottom by a circular ring.

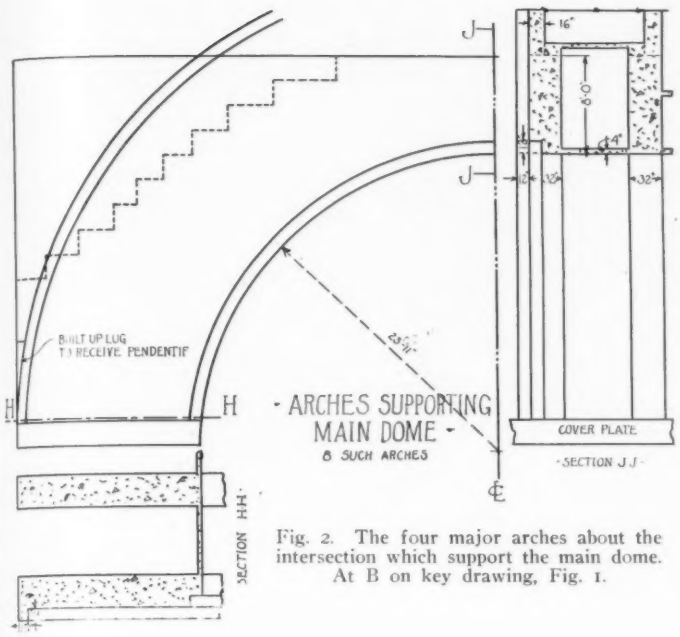


Fig. 2. The four major arches about the intersection which support the main dome. At B on key drawing, Fig. 1.

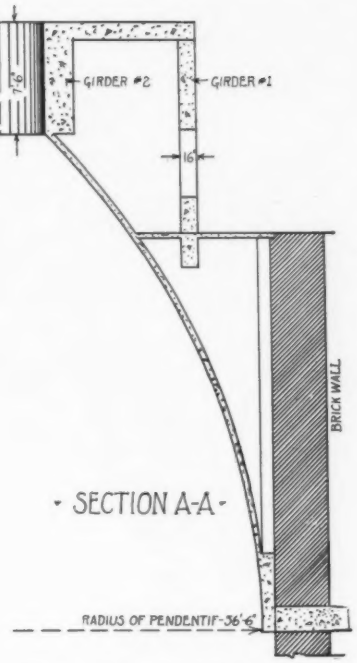


Fig. 4. Section through the pendentive of the main dome on line AA, Fig. 3. At A on key drawing, Fig. 1.

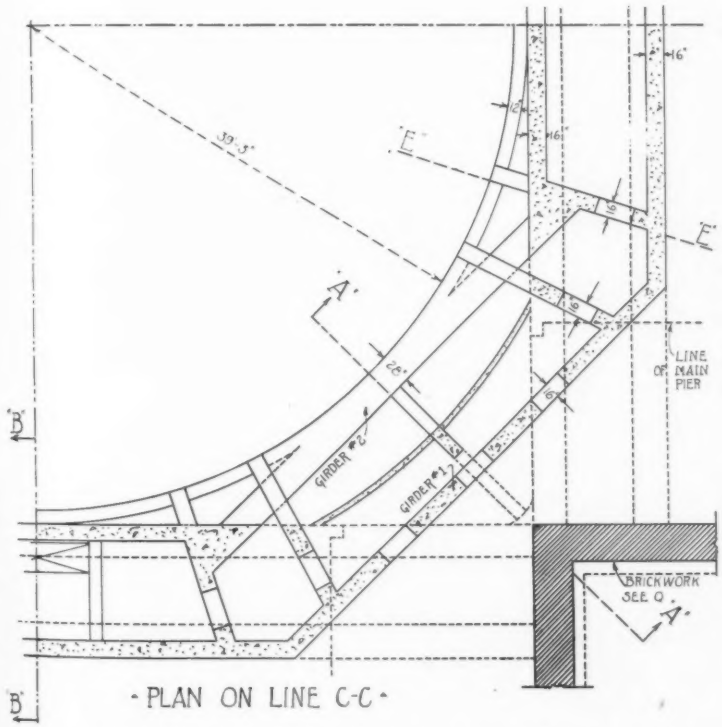


Fig. 3. Plan at the top of the four major arches about the intersection, showing the transition from the square to the octagonal and circular plans of the main dome. At C on the key drawing, Fig. 1.

The cover plate at the base of the main dome ribs is 18 inches thick and reinforced to resist this horizontal thrust.

The location of the ribs supporting the main dome are shown in plan Fig. 8. These ribs are 16 inches thick, 2 feet deep at the top and 10 feet deep where they rest on the cover plate, as shown in Fig. 7. The compression ring is 2 feet deep and 8 feet 6 inches wide and reinforced as indicated in the illustration. In the plane of the intrados of the ribs is constructed a 4-in. reinforced concrete slab which is attached to and supported by the arch ribs. This slab forms the inner shell of the dome, and its surface is hemispherical in form. This shell is penetrated by thirty-two windows, which serve to light the intersection. The shell is reinforced in two directions

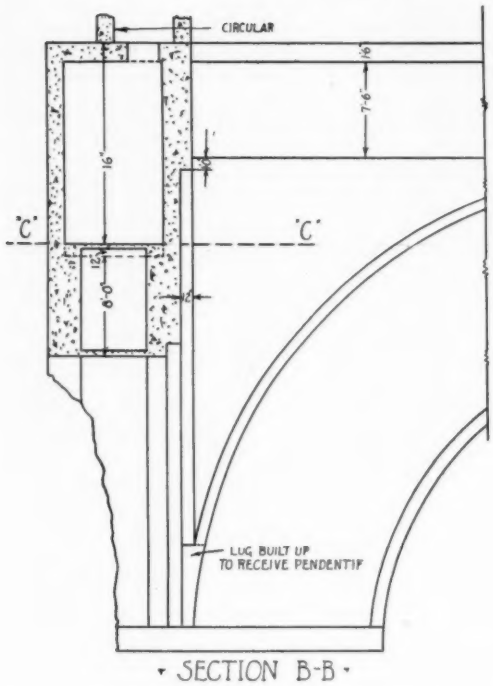


Fig. 5. Section through the center of the major arches on line BB, Fig. 3, showing these arches in partial elevation, the pendentives and the construction above the arches forming and supporting the transition from the square to the octagonal and circular plans of the main dome. At B on the key drawing, Fig. 1.

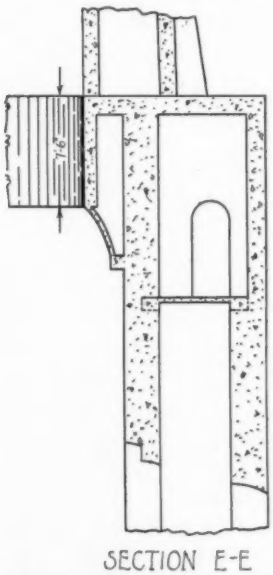


Fig. 6. Section on line EE, Fig. 3. At E on key drawing, Fig. 1.

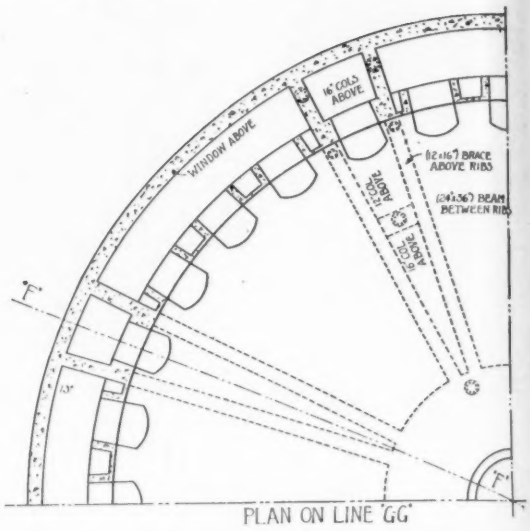


Fig. 8. Plan on line GG shown in Fig. 7, showing the location of the arches or ribs of the main dome, the columns supporting the outer dome and the windows. At G on key drawing, Fig. 1.

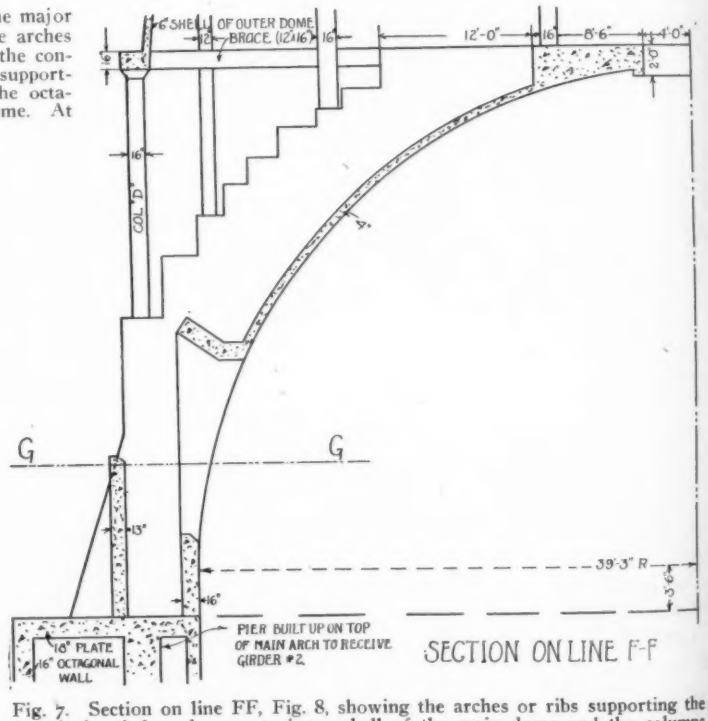


Fig. 7. Section on line FF, Fig. 8, showing the arches or ribs supporting the four-inch reinforced concrete inner shell of the main dome and the columns which support the outer dome. These ribs rest on the 18-inch reinforced concrete plate shown at the top of sections shown in Figs. 4, 5 and 6. At F on key drawing, Fig. 1.

and takes bearing on the arched ribs and the upper and lower rings.

The extrados of the rings is stepped and on them rest the columns which support the outer dome, which is 86 feet in diameter. The outer row of columns are 16 inches in diameter and support a curved girder 28 x 16 inches in section and circular

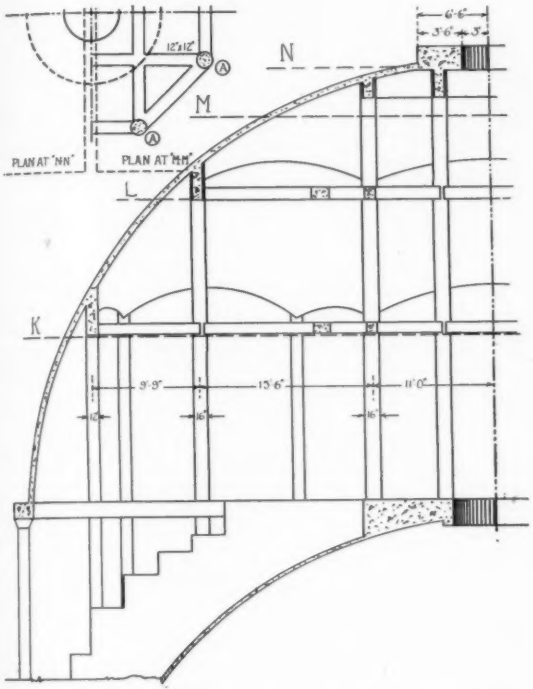


Fig. 10. Section through the outer dome showing the frame work supporting it and plans at levels M and N. See Fig. 9 for plans at levels K and L. At M on key drawing, Fig. 1.

in plan. With this girder engages the base of the outer shell of the dome, as shown in Figs. 7 and 10. This outer shell is 6 inches thick and of reinforced concrete, reinforced in both directions similar to the inner shell. The weight of the outer shell is transferred to the arch ribs of the inner dome by means of columns. The outer shell is supported by curved girders as shown in Figs. 9 and 10. These beams and the shell slabs, though curved in shape, are figured as ordinary straight beams and slabs in order to reduce the thrust to a minimum.

Horizontal lateral bracing girders are introduced at several levels, which connect the curved beams supporting the outer shell with the system of supporting columns as shown in Figs. 9 and 10. The purpose of this system of bracing is to stiffen the structure to resist the wind loads which occur on the outer shell of the dome. This system of bracing and supporting is also shown in the illustration. The granite lantern and cross is supported by and attached to the ring at the top of the outer dome.

The domed ceilings of the sanctuary and nave are constructed along similar lines, although the outer shell is not dome shaped. The ceiling of the tran-

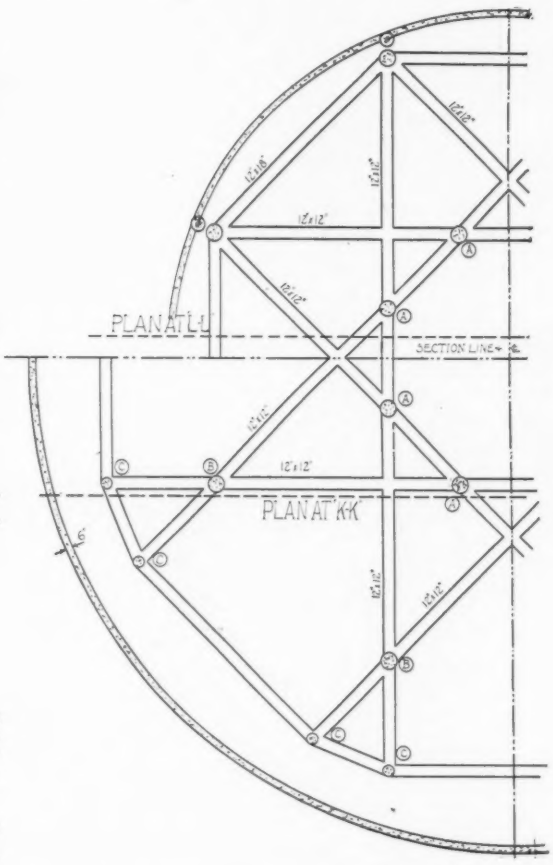
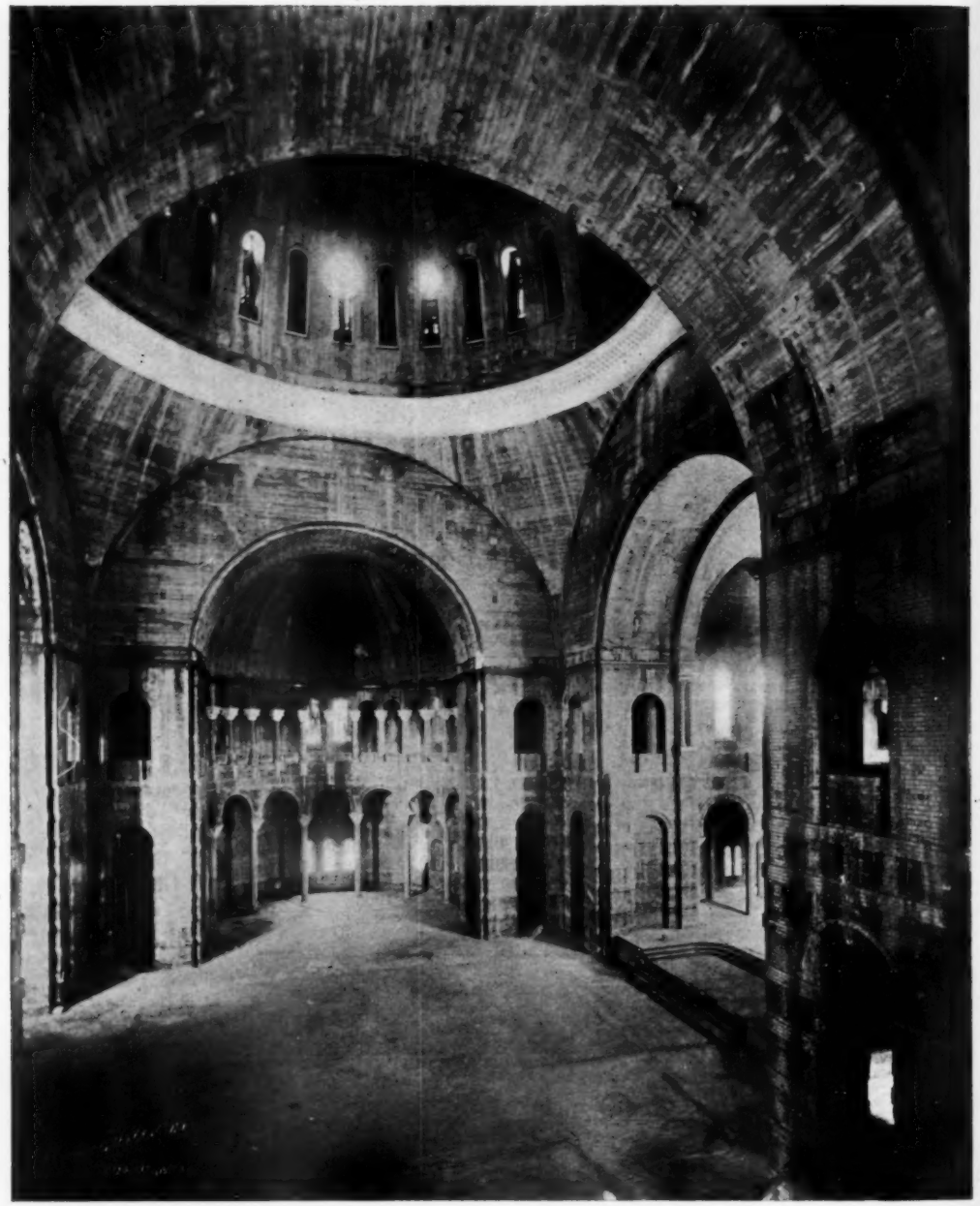


Fig. 9. Plans showing the frame work which supports the outer dome at the levels indicated on Fig. 10. The supports of the columns are shown on Fig. 8. At K and L on key drawing, Fig. 1.

septs with the outer conical roof is a like piece of construction.

There are numerous ways of constructing domes which naturally vary with the materials of construction that are employed. These can be grouped into the original masonry domes, those of steel construction and the later method of reinforced concrete construction. For monumental buildings where both permanency and economy of construction are desired the latter form of construction is undoubt-



View through the intersection toward the transept, showing the major arch pendentives, the main inner dome and the steps to the sanctuary to the right.

edly the most logical to use. The flexibility of the material and the simplicity of the designing methods are all in its favor.

In this case all are indebted to the engineers for such a simple, logical and economical solution of a very important problem.

The partially completed sanctuary, showing the high altar with its baldachin.

Industrial Information

The Sylphon Air Valve

The Fulton Company, Knoxville, Tenn., manufactures the "Sylphon" air valve, in which is incorporated the Sylphon thermostat. In a folder discussing this air valve the importance of the thermostatic unit in the correct operation of an air valve is discussed. The company states:

"We employ in this valve the well-known Sylphon thermostat, which we have been supplying for many years for heating boilers and water heaters, and also to many of the leading automobile manufacturers for regulating the temperature of the motor. It is positive in its action, will not buckle or distort, will never lose its efficiency, has ample movement, thus insuring the tight closing of the valve."

Four stock sizes of the Sylphon air valve are available: ⅛" angle, ⅛" straight, ¼" angle, and ¼" straight—with and without drain.

Transformers for Street Lighting Service

The General Electric Company, Schenectady, New York, has issued a technical bulletin descriptive of their series of transformers for street lighting service. The advantages, characteristics and construction of these transformers are discussed; sectional drawings making clear all the details of operation, as well as construction, are given; and the subjects of protection and regulation are dealt with in a simple and direct manner.

Silica-Graphite Paint

The Silica-Graphite paint manufactured by the Joseph Dixon Crucible Company, Jersey City, N. J., is described in a circular sent out by that company. It is stated that silica and graphite, both manufactured in the same mine, are of flake formation, and that the flakes of silica adhere very firmly to the graphite. This silica-graphite, when reduced to a fine condition, is still of flake formation, and no matter how finely ground, the flake formation can still be seen under the microscope. The finely-divided silica-graphite is eventually ground with oil, after which it is thinned to the proper consistency, and so evenly divided are the pigment and oil, to which no other vehicle has been added, that the ready mixed paint will stand for a long time without settling.

It is further stated that the silica is to the graphite what copper alloy is to gold in a gold chain. No gold chain twenty-four carats fine would resist ordinary wear—nor would an all-graphite paint. Silica-Graphite paint is especially recommended for painting metal surfaces and for long service purposes. The pigment, it is claimed, is practically unaffected by acids or alkalies.

The Electrical Safety Magazine

A "safety-first" publication, in the form of the *Electrical Safety Magazine,* is being published by Frederick C. Mathews in Detroit. It is issued every other month, and is "A periodical of safeguards," with particular attention to electrical devices. The evils of the open knife switch are discussed in a series of articles recording actual experiences in the June-July issue, together with some of the other factors which constitute a menace to safety in electrical work.

"The Illuminator" for July

In its house organ, *The Illuminator,* for July, the Phoenix Glass Company, 230 Fifth Avenue, New York, takes up the subject of portable fixtures. An article on Colors for Glass Decoration is very readable, as is the discussion of the "Palouser, or The Greatest Little Light in the World." The rest of the issue is devoted to description and illustration of the company's various types of portable lamps. There are varied effects in color and design—some landscape designs on the shades, others in conventionalized patterns. Various types of bases, and a number of differently shaped shades are shown.