

# PENCIL POINTS

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## THE RELATIONSHIP BETWEEN THE ARCHITECT AND THE DRAFTSMAN

*By R. Clipston Sturgis*

AS THE SUCCESS OF an Architect who has passed the early stage of doing most of the work with his own hand depends very largely on the ability, faithfulness and intelligence of his draftsmen, his relations with them are of prime importance.

One may put these relations under six heads. In the office:

- (1) Teaching the fundamentals of plan and of design.
- (2) Teaching the fundamentals of construction.
- (3) Teaching the fundamentals of the drawings as the guide for work in the field.
- (4) In all this establishing a spirit of friendly co-operation.

Outside the office:

- (5) Encouraging and aiding reading, study and a love of the arts.

These five subjects will be taken in more detail.

(1) The fundamentals of plan and design. However thorough the training of a student in the schools, actual office practice is a new field and must be learned. The plan is no longer a school problem, but is to become the definite material which will enable estimators to understand clearly what construction, material and workmanship is called for, and which will enable mechanics to know with certainty just what the Architect desires, and requires, and what the Owner has agreed to pay for. This needs clear thinking on the part of the draftsman. He must for the time completely subordinate

draftsmanship as an art to draftsmanship as a business proposition. The result is to be, not a poetical effusion, nor a burst of oratory, but a legal document which will stand the test of use. The Archi-

tect can be of great use to the draftsman here in teaching him to look at the drawing from the point of view of the estimator, the contractor and the mechanic. There should be no unnecessary lines added, and there should be no essential lines omitted. Detail, once drawn carefully and completely, should not again be drawn where it is repeated; the time which would be spent in this is better spent in drawing the one example as completely and perfectly as the scale permits. The places where it is repeated should be so clearly marked as to be unmistakable. This one thing is used as an example. It is typical of many others marking the workmanlike, businesslike character of what are properly called "working" drawings. The Architect's own drawings should illustrate this, for the draftsman.



R. CLIPSTON STURGIS

Under this first heading comes design and here the Architect can help the draftsman best by encouraging him to develop sketches in the spirit of the design and giving him time for study in the library, with books and photographs.

(2) The fundamentals of construction. The plan for a modern building is a complicated balancing and reconciling of a great many factors, and those major trades which influence the construction should be embodied in the original drawings, and



must never be lost sight of as the drawings are developed. Masonry, steel work, carpentry, roofing, plumbing, heating and power, all require consideration in planning the structure. Here again the student will have acquired but little to help him in the schools, and must depend on the architect to learn to handle all these intelligently.

His drawing must be of the head as well as of the hand, and he must remember, points of support, spans, the bearings for loads, the spaces necessary for plumbing and heating pipes, shafts for various purposes, and never lose sight of these as he works from small scale to large, and from large to full size. The architect who has been through the mill, and made for himself all the usual mistakes, can help the draftsman to avoid some, and should not be over-harsh with the draftsman for the mistakes he inevitably makes. It is one of the most amazing things in the profession that just when you and your trained draftsman have got to the point when you do not make the common mistakes, new draftsmen come in and the old mistakes again creep into the working drawings. Some architects have devised elaborate systems to help their draftsmen to avoid the most obvious and common ones, but with no great success. The architect must teach the draftsman to think.

(3) Teaching the fundamental of the drawings as the guide for work in the field. The architect can help the draftsman most by giving him the opportunity so see work in the field and understand the significance of lines and figures, and their interpretation. Under our conditions it is not easy to do this. To take a draftsman from his board where he is earning his salary and send him to the job, not to inspect, but to study and learn, is obviously something that cannot be done except at someone's expense. A young draftsman, earnest and eager to learn would need only encouragement from the archi-

tect to make such visits in his own time, or to get time off with out pay for the purpose. It is a valuable and indeed almost necessary experience and the architect owes it to his draftsmen to see that they get it.

(5) Outside the Office. The architect may well guide and encourage the draftsman's study and reading and above all free-hand drawing. The latter is a very valuable asset and one which everybody can acquire, as easily as he learns how to write. Facility in free-hand drawing is much more common than it was forty years ago, but even now the value of rapid and accurate draftsmanship is not valued as highly as it should be and the architect can do much in helping his draftsmen to obtain that.

One cannot do more than suggest, in a broad way, what the relations should be between architect and draftsman and one has not so far touched on the reverse side, the draftsman's obligations toward the architect. This is partly because draftsmen as I have known them have shown a very high standard of appreciation of their work, and of the obligations of service. The draftsman generally has a whole souled interest in his work, and his failures are largely those which are the result of inexperience, or of failure to remember that he is working for the eyes and head of a mechanic and not for those of a school professor.

What has been said, however, will apply very differently in practice in offices of different sizes, but the end that every architect has in view is to have a drafting room that will turn out drawings as well or better than he could himself, as fast or faster, and without any of the mistakes which even he makes at times. The hardest architect to work under is the man who never draws, therefore never makes mistakes, and the best is the one who draws, works with and among his men, and is in constant touch with the drawing-boards. Example and encouragement are better stimulants than abuse.

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*The subject of the relationship between the architect and the draftsman is one which directly concerns the readers of PENCIL POINTS. We have arranged for a series of discussions of this subject by a number of America's leading architects and will present a paper in each issue until further notice. Contributions to the discussion will appear by the following:—J. Monroe Hewlett of New York, Walter W. Judell of Milwaukee, Albert Kahn of Detroit, Edwin H. Hewitt of Minneapolis, H. Van Buren Magonigle of New York, F. R. Walker of Cleveland, Charles D. Maginnis of Boston, Myron Hunt of Los Angeles, Leon C. Weiss of New Orleans, William A. Boring of New York, William Leslie Welton of Birmingham, William Emerson of Boston, and Irving K. Pond of Chicago.*



# THE DESIGN AND CONSTRUCTION OF STAINED GLASS WINDOWS

By Alfred E. Floegel

EDITOR'S NOTE: *The author of this article was a Fellow in Painting of The American Academy in Rome during 1922-1925, and while in Europe made a special study of Stained Glass, Mosaic, and Fresco. He is, therefore, well qualified to write on this subject. In future issues of Pencil Points he will take up Fresco and Mosaic Decoration with special reference to the importance of Co-operation between the Architect and the Painter.*

MANY BOOKS HAVE BEEN written on the subject of stained or painted glass, in which the history of its development as an art and the technical aspects of its manufacture have been covered very thoroughly. The subject is a vast one and it is obviously not within the province of this short article to attempt to cover the whole field. There are, however, some features relating to the design and construction of stained glass windows which may be advantageously described in brief for the benefit of architectural draftsmen. It is the author's modest hope that the information here set down may be of assistance to them when they are faced with this special architectural problem which is likely to occur in any architect's life.

When we think of stained glass we are prone to conceive of it as altogether ecclesiastical in its uses. True, it was developed by the mediaeval church builders to solve a part of their particular problem of decoration, and was brought by them to a glory of perfection exemplified in the great cathedrals of Europe. Though the greater number and the most beautiful windows, however, belong to the church, there is no logical reason why we should confine the application of this highly decorative art entirely to churches today. Indeed we do not, for we find stained glass, more or less excellent, used increasingly in public buildings, libraries, schools, and even residences.

Although it is popularly supposed that the secrets of the mediaeval stained glass workers are lost to us, the fact is that the craft is at present flourishing, in this and other countries, maintained by an appreciable number of shops working under the direction of master craftsmen and artists who are endowed with the true love of their art. They can turn out glass, moreover, which has all the quality of the old glass. If our

modern windows are inferior to the mediaeval product it is not the fault of the glass makers or craftsmen but that of the artists, who are trained mostly to work in other media and who have, except in isolated instances, paid little attention to stained

glass as a means of artistic expression. Public taste has also played its part in holding down the art, but happily conditions in that respect are improving.

It may be asked, "Where are stained glass windows to be appropriately used?" History and tradition find a place for them in churches but as I have stated above, there is no real reason why they may not be used in many other types of buildings. The art is an exceedingly decorative one, very closely allied with that of mural painting. It has individual decorative characteristics, which can be used to enhance the beauties of architecture or conversely abused to produce incongruity and ugliness. Wherever we have a room in which it is considered desirable to introduce color decoration and where at the same time we can afford to allow a more or less subdued light, stained glass may be used as the color feature. It must not, however, be allowed to clash with other color which may be in the room. Color wall decoration, juxtaposed to a stained glass window should be broadly treated so that it will not compete with the glass for attention.

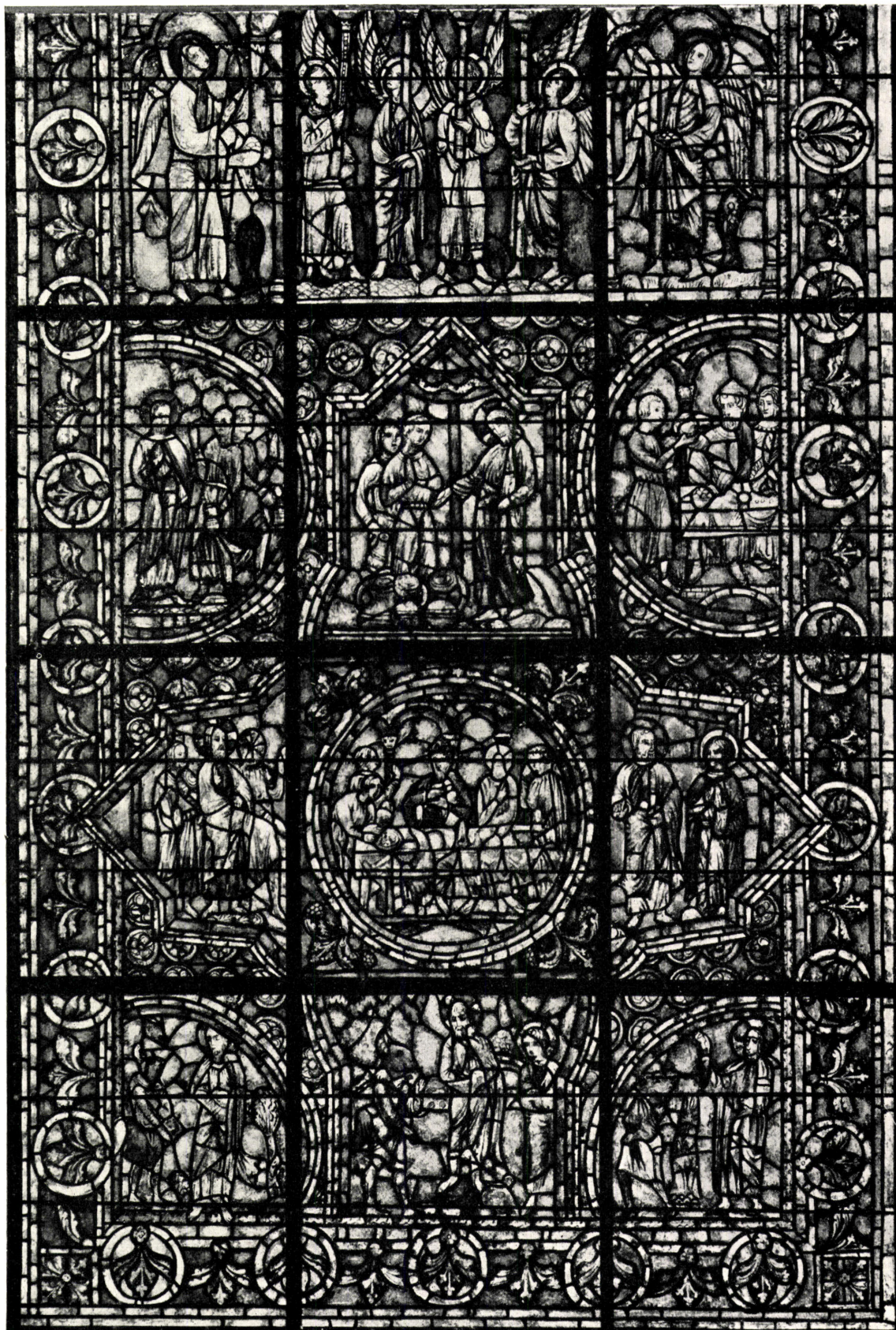
Several principal factors influence the design of any particular window. First and most important is the surrounding architecture, which sets the period and determines the shape of the win-

dow. Gothic, Romanesque, and Renaissance windows are familiar and obviously should be used where the architecture is of like character. There are, however, possibilities in "modern" architecture for the development of "modern" design in stained glass, just as such men as Edgar Brandt have de-



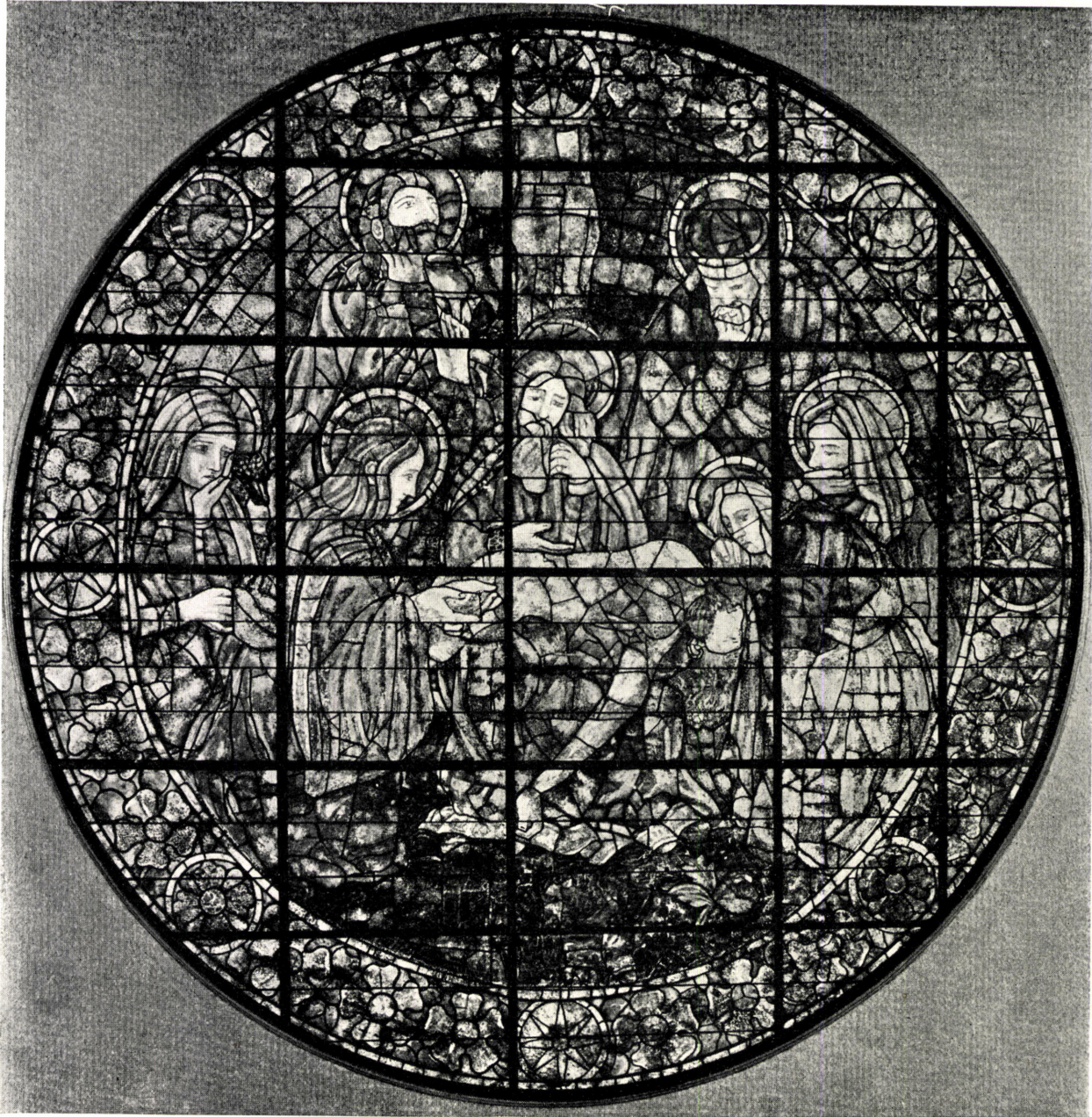
DETAIL FROM LE MANS





CHARTRES, PORTION OF THE MADONNA WINDOW  
FROM THE COLOR RENDERING BY ALFRED E. FLOEGEL





DUOMO, FLORENCE, WINDOW BY GHIBERTI  
FROM THE COLOR RENDERING BY ALFRED E. FLOEGEL

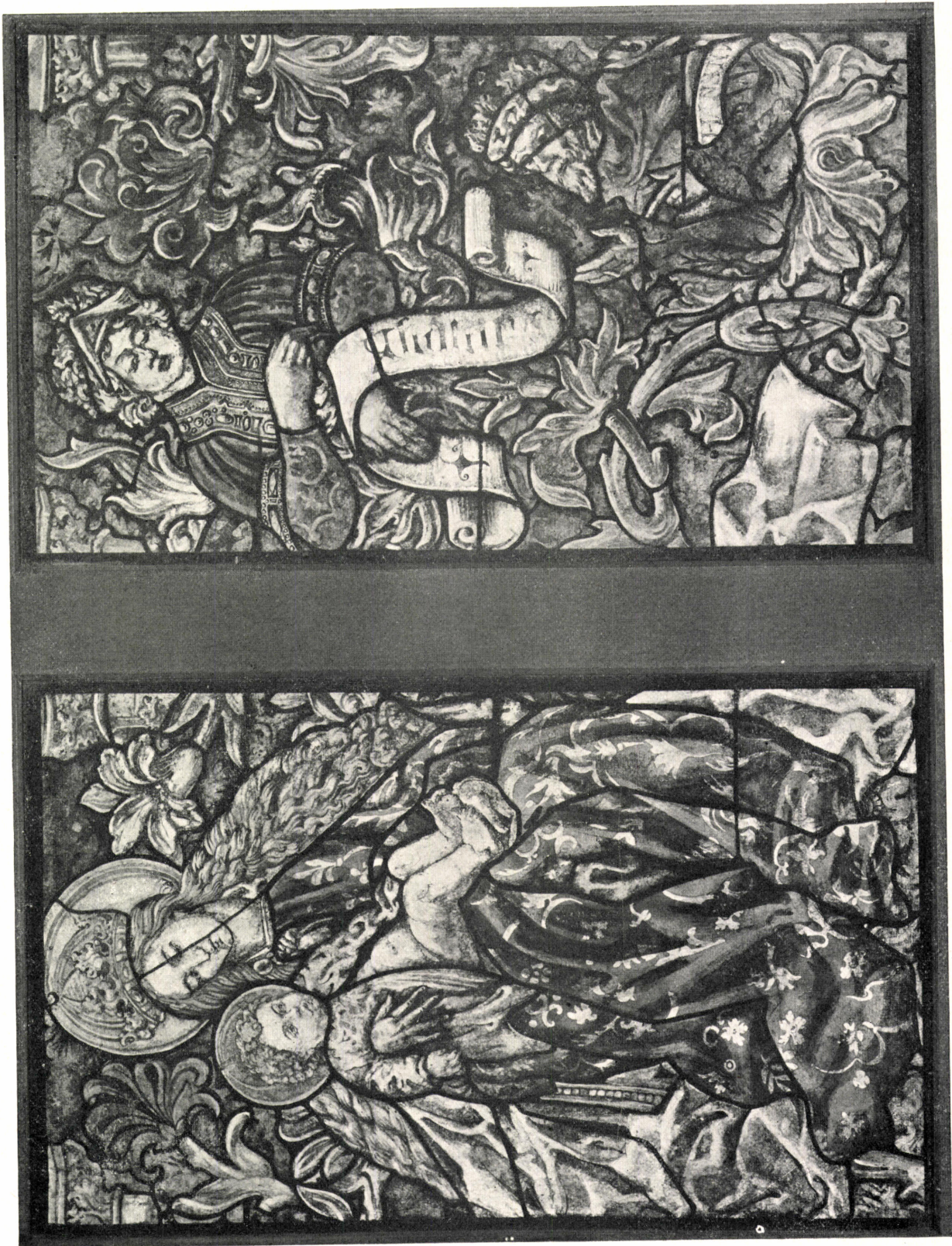
veloped the modern spirit in decorative wrought iron. The excellence of the result depends of course upon the genius of the individual designer.

The second factor, partly dependent on the first, is the position of the window both in respect to the strength and direction of light and to the direction and distance from which the glass is to be viewed. In a church, where the desirable effect is one of dimness and mystery, the light transmitted by the glass will be comparatively low in intensity and colored glass will predominate. In a library, on the contrary, the window will very likely be made up largely of light glass. Again, the design will be in-

fluenced by the question of whether the glass will be seen closely or at a distance, at the eye level of the observer or well above him.

The third consideration is one of architectural or artistic judgment; that is, whether the color design or the pictorial subject is to predominate. In memorial windows it is usually necessary to stress the subject; the color, while it is present, is secondary. Some of the most beautiful windows in existence, however, depend for their beauty almost entirely on the vibrant loveliness of their color. Their subject matter is divided up into small panels at small scale so that in order to concentrate on the





GERMAN GOTHIC GLASS AT ULM, PART OF MAIN WINDOW OF SANCTUARY  
FROM THE COLOR RENDERING BY ALFRED E. FLOEGEL



pictures it is necessary to approach closely enough to get away from the magic fascination exerted by the color harmony of the whole.

The first step to be taken after it is determined to install a window is for the architect to consult with the painter or stained glass man who is to carry out the work and inform him of the conditions. After talking over the suggested ideas for the subject, intensity of light, color scheme and so on, the painter makes several studies at small scale in color. In further consultation with the architect it is decided which of the studies is to be developed. The painter then makes a careful finished drawing in color, showing glass, lead lines, and "arming" or iron framework. In doing this he exercises his talents as an artist, making the line and color composition as beautiful as his ability permits.

It may be well to point out here the influence of the lead lines upon the design as a whole. The lead lines are used, of course, primarily to hold the different colored pieces of glass in position. Their "raison d'être" is therefore utilitarian but they do contribute a great deal to the effect produced by the window. In the first place they must be regarded from the standpoint of line and space composition. They must not be obtrusive or clash with the composition of the subject. Considered without the glass they must form a pleasing design in which variety, rhythm, and line harmony are present. They are partially determined by the outlines of the subject but there are many areas of a single color which must be broken up pleasantly into pieces small enough to be in scale with the rest. Secondly, the lead lines affect the color of each piece of glass in the window. Two pieces of different colored glass held side by side do not give the same effect as they do when the black line of the leading is interposed between them. The dark lead intensifies the color value of each piece very materially and this fact has to be borne in mind all during the process of making the window.

When the color rendering is finally acceptable to the painter and to the architect, a full size black and white drawing of the entire window, (on several sheets if it is large) known as the "cartoon", is made. This cartoon is generally made on detail paper with charcoal or crayon, and shows the actual shape and size of every piece of glass in the window. It may be "squared up"

from the color drawing or may be enlarged by photostating. In fig. 1 a cartoon may be seen on the wall behind the artist.

When the work has been carried to this point the process becomes for a while mechanical. The cartoon is turned over to a workman who makes from it two carbon copies by tracing over all the lead lines. By reference to the color sketch each space representing a piece of glass on one of the resulting picture puzzle diagrams is lettered with the initial letter of its color. Each space on both diagrams is also given a number to make assembling of the glass easy. The diagram marked for color is then cut up into its individual pieces either by means of a pair of double bladed scissors or with a double bladed knife (see fig. 5). The space between the blades of both of these implements is equal to the thickness of the cross bar of the H shaped section of the leads. In this way the patterns are made so as to allow the proper space for the leads between the pieces of glass when they are assembled. The other diagram is retained and is used later on when putting the window together.

We now come to the question of selecting the glass to be cut up to fit each individual piece of the pattern, and this makes advisable a short discussion of the different varieties used. Until this time I have referred to the material we are considering as stained glass. Properly speaking there is a great difference between *stained* and *painted* glass, though the word "stained" has by popular usage long been accepted as a term to include both. *Stained* glass or *grisaille* is either white or colored glass which has been treated with a stain, made up usually of silver salts, and then fired. The result of this staining process is to produce some shade of yellow or orange which may be either evenly distributed or graded. If stain is applied to colored glass the resultant effect is to produce the hue which would be obtained by combining the original color of the glass with yellow. Blue glass, for example, when stained becomes green. *Painted* glass is either white or colored glass which has been painted with metallic pigments and fired. Both sorts of glass are usually,

though not necessarily, present in most so-called "stained" windows.

Glass which is of one color throughout as it comes from the makers is known as *pot-metal* glass. Some



FROM THE CATHEDRAL,  
AUGSBURG, GERMANY



colors such as red or "ruby" are too dense to be used solid and are hence made up of white glass coated, or flashed, with a thin layer of colored glass. This is called *flushed* glass. By flashing one color on glass of another color it is possible to produce many agreeable effects. *Plated* glass, a third but less common variety, is made up of two sheets of pot-metal glass, of different colors, closely united together. Doing this produces a tint different from that which would be obtained by fusing the two colors together in the melting pot.

Stain penetrates the glass to a measurable depth and is as transparent as the glass itself. The paint, however, only adheres to the surface and is always more or less opaque.

In selecting glass for the elements of the window, the artist, with full knowledge of the effect he wishes to produce, picks out pieces which will give him the color and texture he wants. To fill any certain space he may decide to use colored pot-metal glass, or a piece of white glass upon which he can paint, or a piece of flashed glass which may be etched where white lines or areas are necessary. Every piece is selected with great care and always considered in reference to the adjoining pieces. This matter is of the greatest importance and requires all the skill and judgment the artist is able to give it.

The glass once selected, the proper pattern is laid upon each piece and the workman cuts it to shape with a diamond or glass-cutting tool. When all the pieces are cut, they are assembled on a large sheet of plain white glass set in a frame, under which the aforementioned numbered diagram of the whole design is placed for reference. Each piece is then fastened in position on this glass "easel", with melted wax composed of beeswax and resin. Figure 3 shows this process, together with an assembled cinquefoil already on an easel, where the dots of wax and the spaces between the pieces to allow for the lead lines are clearly evident. Of course, only a comparatively small window or a panel of a window can be assembled in this way at once. The assembled design is now placed against the light and the artist

inspects it critically. If any pieces of glass are of the wrong color or value, new pieces are cut and put in their places. When all the glass is satisfactory it is placed upon the cartoon, either piece by piece or several pieces together, and the outlines of the design are traced with mineral color which can be fixed in place by firing in the kiln. This color is usually mixed in oil and is ordinarily brown.

Those pieces which require further painting to produce modelling of the forms are then painted over with a flat wash of water color paint mixed with a little gum arabic. This does not in any way affect or disturb the oil paint outlines previously

applied. The modelling is done by stippling with old blunt brushes held at right angles to the surface. Each dab of the brush removes some of the paint and gathers what remains into numerous little dots. By a dexterous use of the brush, portions of color of different degrees of thickness are removed according as shadows, halftones, or lights are required. Wherever the glass is left bare by a complete removal of the color, we get the lights; the places which the brush has spared give the shadows. Partial removal of the color gives the halftones. The operation is what the French very aptly call "*peinture par enlevage*". In figure 4 this process is shown under way on two circular panels mounted on an easel. For a larger composition the



Courtesy of A. L. Brink

FIG. 1, WORKING ON THE COLOR STUDY

stippling would necessarily be done on one or a few related pieces at a time.

When the stippling is all done the glass is ready for firing. It is laid, painted side up, on a large sheet-iron tray upon which there is a layer of whiting or plaster of Paris to protect the glass from danger of fusing to the metal. The tray is then slid into the gas furnace or kiln which is run up to a temperature of about 1200° Fahrenheit. The operator watches the condition of the glass through a small aperture and when the colors reach the fusing temperature the gas is shut off and the glass is allowed to cool. When cooled it is ready for assembling and the paint is permanently set so that it cannot be rubbed off. If it were necessary or de-





WINDOW AT CERTOSA, ITALY, ATTRIBUTED TO RAPHAEL

FROM THE COLOR RENDERING BY ALFRED E. FLOEGEL





MARGRAFEN WINDOW, ST. SEBALDUS, NUREMBURG, GERMANY

FROM THE COLOR RENDERING BY ALFRED E. FLOEGEL

sirable to do additional painting on any piece, the process could be repeated several times without harming the glass.

The glass is finally assembled with the leads on the diagram as shown in figure 3, one piece at a time. A piece of glass is placed on its proper space and surrounded with a strip of lead, which is H shaped in section as shown in figure 5. The lead is held in place temporarily by several long thin nails driven into the table top, until the next piece is

fitted alongside and surrounded with lead. This procedure is followed until the entire panel is built up. Around the outside there is generally placed a wider lead to give greater stiffness to the whole. All the joints are soldered on both sides of the window. The joints are made weather-tight by scrubbing a sort of putty over both sides with an ordinary scrubbing brush until all crevices are filled. The surplus putty is then wiped off leaving the glass clean.





FIG. 2, ASSEMBLING GLASS ON EASEL FOR INSPECTION



FIG. 3, CUTTING THE GLASS AND ASSEMBLING WITH THE LEAD





FIG. 4, STIPPLING OR "PEINTURE PAR ENLEVAGE," GLASS ASSEMBLED ON EASEL WITHOUT LEADS



# THE DESIGN AND CONSTRUCTION OF STAINED GLASS WINDOWS

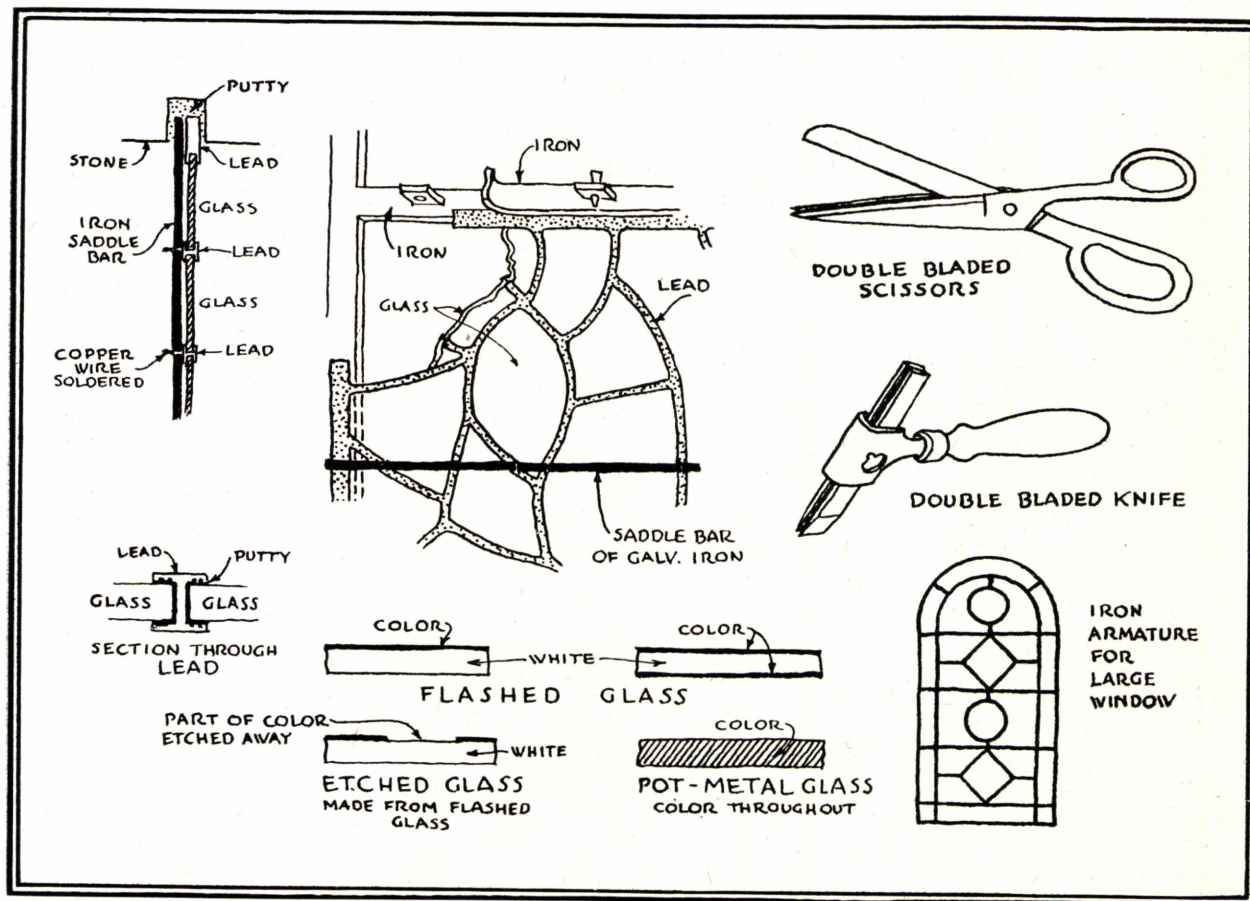


FIG. 5, DETAILS AND TOOLS

For a large window, an armature is built of galvanized iron, using pieces about 1" x  $\frac{1}{4}$ ", though these dimensions vary. The main thing is to have the structure strong enough to sustain the window and give it stiffness. The divisions of this armature are, of course, determined early in the game when the design is being made. The glass for each panel is assembled as a unit. These panels are held in place as shown in the sketch in figure 5 or by some similar method which has proven satisfactory. If the panels are too large to be sufficiently rigid, saddle bars of about quarter inch round iron are fastened across the leads at about one foot intervals by wiring with copper wire and soldering.

Examination of the illustrations of windows given here will bring out the arrangement of the armatures and saddle-bars and will show how they count as a part of the design and yet are so placed as to be as inconspicuous as possible.

The monk, Theophilus, who lived in the tenth or eleventh century, has left us a very complete account of the mediaeval methods of making glass and building stained glass windows. I think it will be interesting to compare the old ways with present day practice as outlined above and am therefore taking the liberty of quoting here, in conclusion, parts of his description "Of the Making of Windows". The process, it will be seen, is the same in its essentials as our modern method, differing only in details.

"When you desire to construct glass windows, first make yourself a smooth wooden board of such length and breadth that you can work on it two panels (partes) of each window. Then take chalk, and scraping it with a knife over the whole table, sprinkle water thereon in every part, and rub the table entirely over with a cloth. When it is dry, take measure of the length and breadth of one panel (unius partis) of the window, describe it on the table by rule and compass, with lead, or tin. If you wish to have a border in it, draw it of such a breadth as pleases you, and with such workmanship as you wish. This done, draw as many figures as you like, first with lead, or tin, then in the same manner with a red, or black colour, making all the strokes carefully, because it will be necessary when you shall have painted the glass to join the shadows and lights (on the different pieces of glass) according to (the plan of) the board. Then arrange the various draperies, and mark down the colour of each in its place, and whatever else you wish to paint; mark the colour by a letter. After this take a small leaden vessel, and put in it chalk pounded with water; make yourself two or three hair pencils, vis., of the tail of a martin, or ermine, or squirrel, or cat, or of an ass's mane. Take a piece of glass of whatever kind you please, which must be every way larger than the place it is to occupy, and lay it flat on this place. When you have seen the strokes on the board



## PENCIL POINTS

through the glass, draw with chalk upon the glass the outer strokes only, and if the glass should be so dense that you cannot see the strokes on the board through it, take a piece of white glass and draw on that, and when it is dry lay the opaque glass upon the white, raise it against the light, and draw on it what you see through it. In the same manner you will mark all kinds of glass, whether for the face, or the drapery, hands, feet, or border, or wherever you wish to place colours.....

"These things having been thus completed, take pure tin and mix with it a fifth part of lead, and cast as many rods of it as you want; with which you will solder your work. You should have also forty nails, one finger long, which should be at one end slender and round, and at the other square and perfectly curved, so that an opening may appear in the middle. Then take the glass which has been painted and burnt, and place it according to its order, on the other part of the board on which there is no drawing. After this take the head of one figure, and surrounding it with lead, put it back carefully in its

place, and fix round it three nails with a hammer adapted to this purpose. Join to it the breast, and arms, and the rest of the drapery; and whatever part you join, fix it on the outside with nails that it may not be moved from its place. You should then have a soldering iron, which ought to be long and thin, but at the end thick and round, and at the extreme end of the roundness, tapering and thin, filed smooth, and tinned. Place this in the fire. In the mean while take the pewter rods which you have cast, cover them with wax on all sides, and scrape the surface of the lead in all those places which are to be soldered. Having taken the hot iron, apply the pewter to it wherever two pieces of lead come together; and rub with the iron until they adhere to each other. The figures having been fastened, arrange in like manner the grounds of whatever colour you wish, and thus piece by piece put the window together. The window having been completed and soldered on one side, turn it over on the other, and in the same manner by scraping and soldering, make it firm throughout."



*Courtesy of A. L. Brink*

FINISHED GLASS PANEL IN THE MEDIAEVAL MANNER

ADAPTED FROM WINDOW AT LE MANS



# PEN DRAWING, CHAPTER I

*By Arthur L. Guphill*

PEN DRAWING, AS A SEPARATE and complete form of pictorial representation, is a thing of comparatively recent date, its greatest development having taken place since the beginning of the last quarter of the 19th century.

This of course does not mean that pen drawing was unknown prior to that time, for such is far from the case. One has but to recall the illuminated manuscripts of the Middle Ages to realize with what skill pen lettering and certain types of decorative design were then done, but in this work the drawing was subordinated in nearly every instance to the lettering itself, or the pen lines in the illuminations were merely outlines or framework for the colored embellishments.

Again, if one brings to mind the many pen sketches and studies made centuries ago by some of the most famous of our old masters it will be realized that the pen was turned to with great frequency even in their day. Analysis of their pen drawings makes plain, however, that this early work was usually in the form of preliminary studies for paintings or parts of paintings, or was much in the nature of a sort of pictorial shorthand by means of which facts of interest were vigorously and sometimes, it must be admitted, rather crudely recorded. Apparently no attempt was then made to develop pen drawing as an art by itself, and it is only during the last few decades, as we have stated above, that this has been done. Today pen drawings are made not simply as adjuncts of another art or as means to certain ends, but as finished and complete things.

Undoubtedly the invention and gradual improvement of the various processes of photo-mechanical reproduction, which have provided comparatively cheap and faithful methods for the reproducing of pen work, have afforded a great impetus to this development, for publishers have not been slow to take advantage of these processes and have thus created a demand for drawings in this medium, which artists in turn have hastened to meet.

Pen drawing has received encouragement, too, through the gradual perfection and standardization of the materials used,—pens, inks and papers,—of all of which an infinite variety may now be easily obtained at reasonable cost, permitting selections suitable for any purpose.

Even with these encouragements it is doubtful if pen drawing as an art would have so soon advanced to the enviable position it at present occupies had it not been for a realization on the part of the artists who contributed most to its development, that the pen, because of its peculiar qualities, was a medium demanding a far different treatment from that accorded any other.

It may be well to pause here for a moment for a consideration of certain fundamental principles which bear on all art work,—principles with which these artists were undoubtedly familiar,—and to see in what way they are applicable to pen drawing.

First, the reader should be reminded that each of the fine arts has certain restrictions as a result of which characteristic conventions have been developed. This thought will be amplified in a moment.

Secondly, unless one bows to these restrictions, and accepts along with them such conventions as have been found to naturally accompany them, he is usually loading on to himself a heavy handicap so far as artistic accomplishment is concerned.

To illustrate this first thought, the sculptor, using plastic materials, is able to correctly copy many of the forms of nature, but is forced by his medium to largely disregard their color. The painter, on the other hand, can show their color, but contrary to the worker in plastic materials he is limited by his canvas to the delineation of only two dimensions, being forced to resort to conventionalities for the representation of the third. The worker in brush and wash of gray is forced to still further employment of convention, for he must interpret color in terms of various tones of gray ranging from light to very dark. Such mediums as charcoal and crayon are frequently used in much the same way as wash, adopting similar conventions, yet these mediums may be employed in a linear manner, too, in which case new conventions come into play, particularly the use of outline and the suggestion of color and light and dark by means of various combinations of openly spaced lines. The pencil, though capable of being handled much like wash or charcoal or crayon, has also certain distinctive characteristics, notably its ability to hold a sharp point; these demand equally distinctive conventionalized treatments.

And now we come to the pen and its own limitations and conventionalities. Of both there are many, perhaps more than for any other medium. It might seem that this would put the pen at a distinct disadvantage, yet the ever-increasing popularity of pen work seems to indicate that the contrary is true. The pen is a linear tool, but unlike the crayon or charcoal or pencil it gives off no color or tone itself. Instead it serves as a vehicle of transmission of ink from bottle to paper, acting in this sense much like the brush. Unlike the brush, however, it has a rather fine and stiff point, capable of holding only a very limited amount of ink, a limitation which makes it an impractical instrument for covering large areas of paper surface. This limitation acts in two direct ways. It tends to keep pen drawings somewhat small in size, and makes the use of a large variation of value in tone as well as big areas of it extremely difficult. It should be borne in mind that every line made with a pen is absolutely black (colored inks being a rare exception) against a background of paper which is usually white. This means that color must necessarily be disregarded altogether or suggested by the white of the paper or by various combinations of jet black lines. Tones of light and dark, too, must be ignored or suggested in similar manner. In order to build a value of gray



it is necessary to dot the surface with stippling,—a little used treatment,—or to lay individual black lines side by side, or crossed in series. If one wishes to subsequently darken a tone obtained in one of these ways he must painstakingly enlarge each existing line or dot or must put more lines or dots into the area. (Compare this with wash, by means of which it is possible to produce quickly and easily almost any given value, or to wash over and still further darken one.) To lighten a tone and still keep it in good character is practically impossible; if it is too dark there is nothing to do but erase (and in pen work this is far from easy) or put a patch on the paper and begin again.

It is because of these various technical difficulties of working with a fine point in black ink on white paper that it is so extremely hard to build up values corresponding with all those in nature; it is for this reason that the less positive ones are disregarded, and the others simplified or merely suggested.

If color or tone is disregarded we must substitute something for it unless the forms are to be lost; it is here that we resort to the conventionality of using outline, particularly where we wish one light object to stand out against another. The pen is an especially fine instrument for this outline work,—not only is it unexcelled for the sharp delineation of shape and for precision of draftsmanship, but its lines, even though jet black, may be made very expressive of all sorts of irregularities of form and texture.

This use of outline, together with the method of tone building by means of lines (or dots) as touched upon above, are two of the most distinctive characteristics of pen drawing. There are many minor conventions in use, to be sure, to which we are so accustomed that we hardly think of them at all; methods of suggesting shadow tones, for instance, and trees and clouds and the textures of building materials, and so on throughout a long list.

So these are the important restrictions and limitations and the resulting conventionalities of pen drawing,—the facts which were recognized by those artists who made the art what it is, and which must still be recognized by those who would emulate them. If one tries to make a pen drawing larger than the instrument warrants, or attempts to carry gray tones all over his paper, or in any way disregards the peculiar properties of his medium, he will be forcing it to do that which it is not best adapted to do;—whatever success results from such methods is almost sure to be technical rather than truly artistic.

This does not mean that one is so bound down that individuality is impossible; quite the contrary is the case, for it is often true that the more conventional the art the greater the opportunities for originality. We might go so far as to say that there is perhaps no medium offering one a better chance for the development of a personal technique, for pen drawing is akin to handwriting and just as no two people write alike, so no two people draw alike.

We have already mentioned the popularity of pen work. Part of this is undoubtedly due to the methods of reproduction to which we have previously referred. Part of it, as we have said, is due to the ease and cheapness with which the necessary

materials may be secured. Yet aside from all such causes pen drawing has made a lasting place for itself among the fine and applied arts through its intrinsic merits alone. Pen drawings, in their simple black against white, have a crispness and directness that is appealing; they are full of life and light. Many of them are only suggestive, leaving much to the imagination, and we take pleasure in this. A few lines here, and a few touches there, and sometimes that is all, yet there is a power to this suggestion which often makes photographs, telling everything, seem stupid by comparison.

This virtue of line drawing over photography is realized even by "cold blooded" business men, or by the advertising experts representing them, as is evidenced by the great use of pen work for advertisements, even in a day when commercial photographers are existing on every hand.

Perhaps this popularity of pen work for advertising purposes has come about partly because reproductions of pen work harmonize so beautifully with the type matter of the printed page, due largely to their scale, their linear quality and to the fact that they are printed on the same paper with the same ink. And this harmonious quality is undoubtedly one of the main reasons why pen illustrations for books and magazines and all sorts of similar press work are in such great demand.

It might seem that the strong contrasts of black and white in pen work would prevent such subtleties of representation as many subjects require, yet there is ample evidence in the form of drawings that this is not the case. In fact there is a delicacy to much pen work which is lacking in the work of other mediums.

Another point in the favor of drawings done with pen and ink, and one which should not be forgotten, is their cleanliness. Many mediums rub or soil easily, but pen drawings not only keep clean themselves, but do not soil other drawings with which they come in contact. And neither do they fade.

Here, then, are some of the leading characteristics of pen drawing, some of the principles on which it is based, a hint as to its history and to certain uses to which it is put. It is enough to show the importance of the subject, to suggest with what seriousness it should be regarded. If, however, that which has been written here makes the subject seem too deep and complex, we can offer a word of encouragement to the student. This is that pen technique itself, being so highly conventional, is more or less a matter of tricks. Just as some learn to write well with ease, so some, already grounded in a knowledge of drawing, (for as we have previously said there are no easy tricks about that), learn these tricks of technique and thereby get the knack of pen work almost without trying. This is of course exceptional. It must be admitted that others need much practice to gain the same results; while some with the best of effort never do acquire more than an ordinary technique. Even famous workers in other mediums have sometimes failed miserably with the pen, much to their own discouragement, undoubtedly, but to the encouragement of lesser artists who have also found the road a difficult one.



# SHOP DRAWINGS

## THE BUILDER'S DRAFTSMAN AND MILLWORK DETAILS

By W. E. Schlimgen

EDITOR'S NOTE:—In addition to the detail drawings which should be made by the architect to fully elucidate or amplify the contract drawings, the builder and manufacturer must make shop drawings which constitute a transposition of the architectural drawings into terms and indications of shop practice. Contractors' and subcontractors' shop drawings constitute the intended interpretation of the requirements of the architectural drawings and of the specifications and should agree with the specifications as to material and with the architect's drawings as to design and arrangement and the indicated space conditions. In this and subsequent issues will be shown selections from the shop drawings which have been prepared by the draftsmen in the builder's, subcontractor's and building material manufacturer's drafting rooms. It will be noted that oftentimes the architectural drawings only indicate a typical condition which is to be amplified or arranged to suit varying conditions or locations. The shop details in these cases often constitute additional architectural drawings even if prepared by the building contractor, millwork factory, marble, stone, architectural terra cotta, steel, or cabinet work draftsmen.

IN COLONIAL DAYS many architects in this country were also builders and most of our domestic architecture was both designed and constructed by them. One of the best known of these architects was Asher Benjamin, who published a number of works on architecture and building problems and who styled himself "Architect and Carpenter."

In modern practice it is customary to employ a builder for the execution of the architect's designs and his work is usually done under the architect's direction and supervision. To obtain the best results it is highly desirable that the builder work in harmony with the architect and in some measure be allied to the architect's organization during the progress of the work. The architect prepares and furnishes the plans, specifications, and details which cover the design. There are many other drawings required however, so a draftsman is an important member of a builder's organization. In the practice of the writer the builder's drawings are termed "Shop Drawings" to distinguish them from the architect's drawings.

The services of a draftsman are undoubtedly more necessary to the builder of country houses than to most other builders. This draftsman should have some architectural training, preferably as a draftsman in an architect's office, so that he will know how to interpret the architect's design correctly. His duties consist largely of the preparation of details and lists of millwork and other materials. He should have a knowledge of good construction, be able to make framing plans, and compute simple stresses for both steel and timber. Advanced engineering knowledge is not required, since structural steel, in the sense that it is used in large fireproof buildings, is seldom used in country houses.

Country houses usually are at some distance from the builder's office and are, therefore, not visited as frequently as if they were more easily reached, so the superintendent on the job must be furnished with more information in documentary form than would otherwise be necessary. This information should, as far as possible, answer any questions

which might arise in connection with the construction, and should also clear up all points which might be somewhat vague on the architect's drawings. In order to permit the superintendent to attend to other pressing and important matters he should be relieved from the necessity of solving problems of construction and so on. These can be solved in the builder's office where a record can be kept and the architect consulted if necessary.

Architect's details should, and usually do, give enough information such as profiles and so on to illustrate the design, but they are not always in such shape that they can be used by the mechanic either in the shop or at the building without further elucidation by additions and modifications. An architect's drawing may, for example, be a detail of a porch made on a comparatively small sheet to conserve paper. A profile would be given through the cornice at one point; the balustrade above the cornice might appear on another part of the sheet; the columns, railings, fascia, connection to the house, etc., would be shown on still other parts of the sheet; but none of them would be connected in such a manner as to be intelligible to the average mechanic. The builder's draftsman, in this case, redraws the porch detail showing the several members in their proper relation to each other. In cases where the architect's detail can be used, the construction, dimensions, and so on, are usually placed on the architect's drawing.

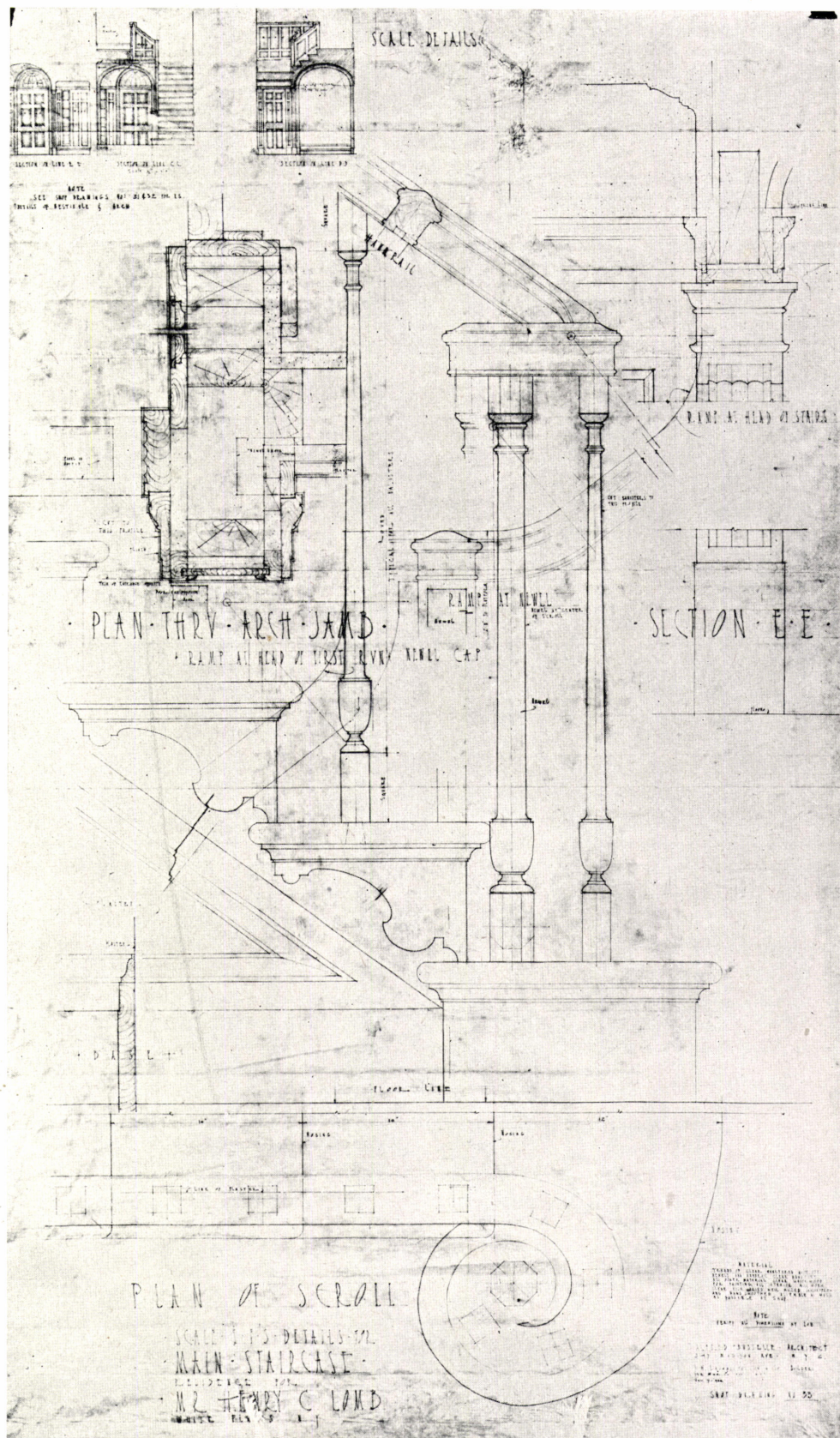
It is neither necessary nor desirable that the architect's details show construction, the building up of moulded parts, etc., unless there be a special reason for doing this, but all outlines and profiles should be given.

The preparation of drawings for millwork is the most important part of the draftsman's work for the country house builder. The accompanying illustrations are details made in connection with a country house of wood frame construction built near White Plains, N. Y. These drawings were selected at random as being typical of the work done.

Shop Drawing No. 15 is a Full Size Detail of a



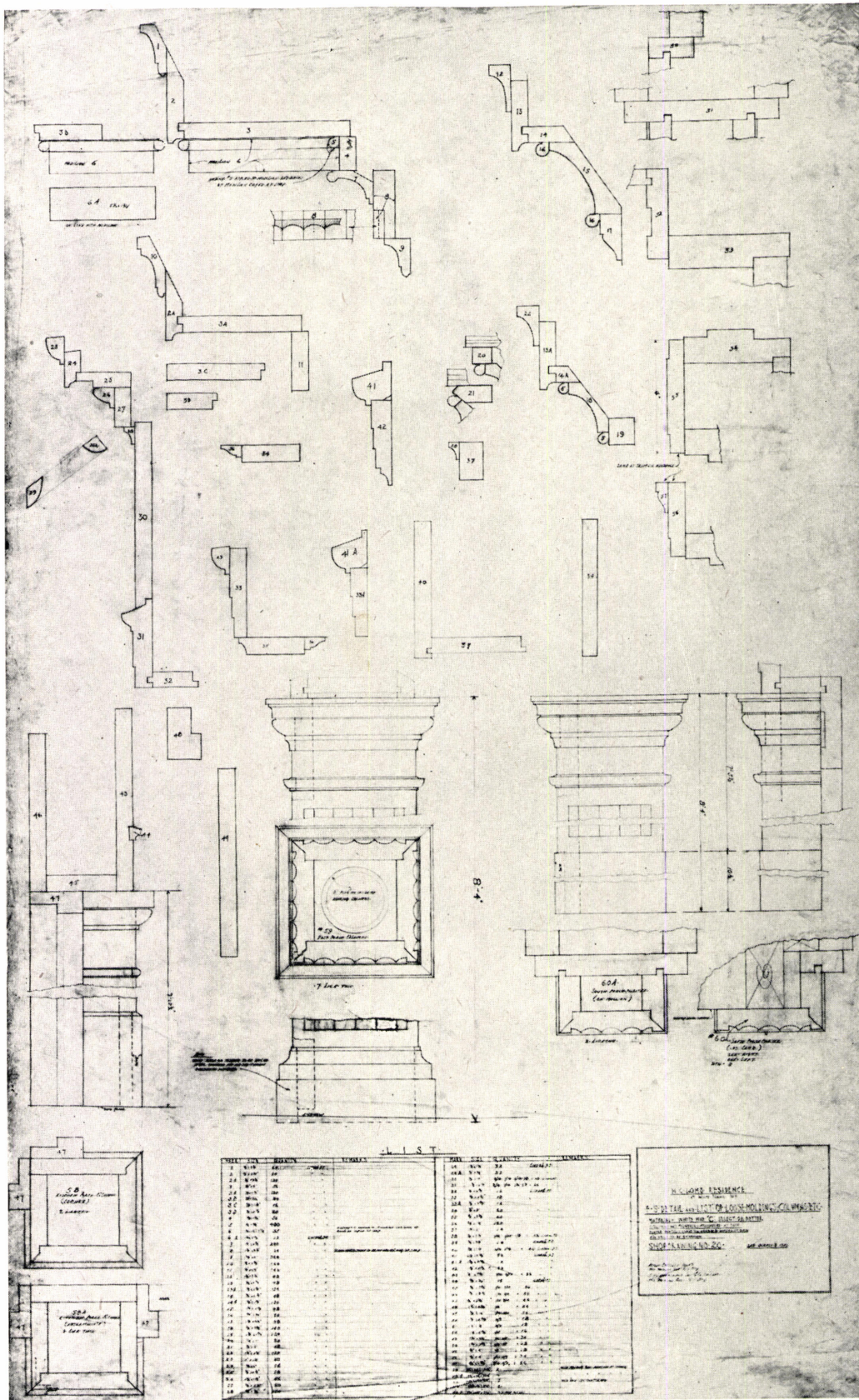
# PENCIL POINTS



SHOP DRAWING NO. 33, STAIRCASE DETAILS  
 Residence of Henry C. Lomb, Alfred Busselle, Architect



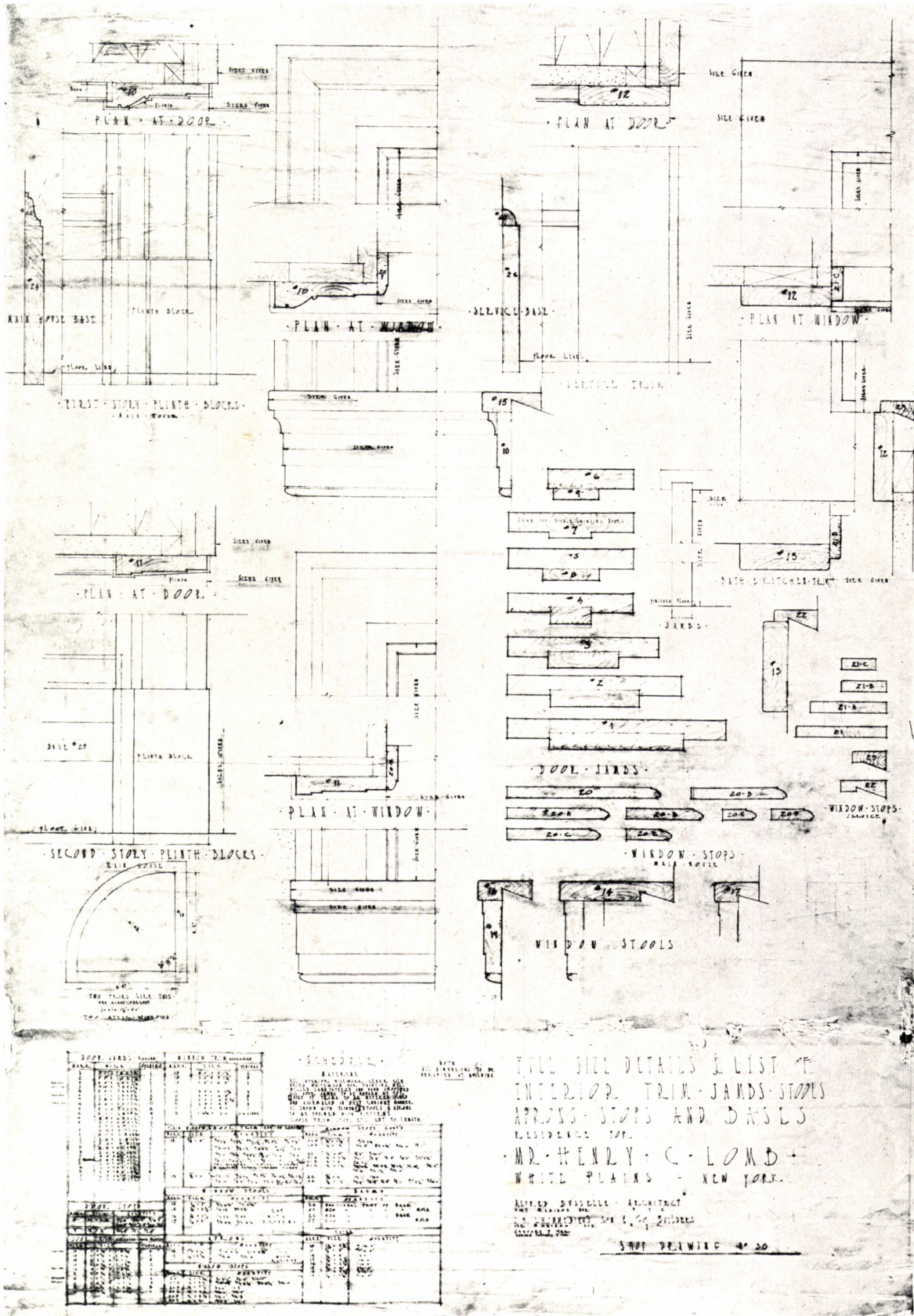
# SHOP DRAWINGS



SHOP DRAWING NO. 20, TRIM AND COLUMN DETAILS  
Residence of Henry C. Lomb, Alfred Busselle, Architect



# PENCIL POINTS



SHOP DRAWING NO. 38, INTERIOR TRIM DETAILS AND LIST OF MATERIAL  
 Residence of Henry C. Lomb, Alfred Busselle, Architect



## SHOP DRAWINGS

porch over which is a sleeping porch. This drawing was made for use at the job and similar drawings were made in the mouldings and other members correspond to these numbers on Shop Drawing No. 20, which is a detail and list of exterior millwork as ordered from the mill.

Shop Drawing No. 33 is a detail of the main staircase, which was made and installed by a stair builder including all panel work surrounding it.

Shop Drawing No. 36 is a detail of kitchen and pantry dressers, used for constructing the work at the mill as well as for erection at the job.

Shop Drawings No. 38 and No. 44 were used for ordering interior trim and doors respectively.

Shop Drawing No. 39 is a detail of the dining room interior panel work which was manufactured and erected by a cabinet maker.

Copies of all shop drawings as well as architect's drawings are kept on file at the job so the superintendent may know what materials are ordered, where they are to be placed, and how to prepare the building properly to receive them.

The practice of making shop drawings and lists in the office of the builder is to be preferred to the sending of the architect's plans and details to the mill and permitting the millworker to prepare such shop drawings. By the former method the builder determines in advance what the detail and construction shall be and can proceed with his work without waiting for information from the mill.

The builder, in addition to getting just what he wants, can usually purchase his millwork at a closer price because the millman's estimate will be

based on fixed quantities. He also saves much of the cost of preparing shop drawings and mill lists.

While on this subject of millwork it might be well to call attention to the recent changes made in the thickness of all classes of soft wood lumber, establishing a new standard known as the "American Lumber Standard".

These standards are acceptable under the provisions of 91% of the building codes and are endorsed by the American Institute of Architects, American Railway Engineering Association; American Society for Testing Materials; Associated General Contractors; Association of Purchasing Agents; Natural Retail Lumber Dealers Association; National American Wholesale Lumber Association, and all the principal associations of lumber manufacturers.

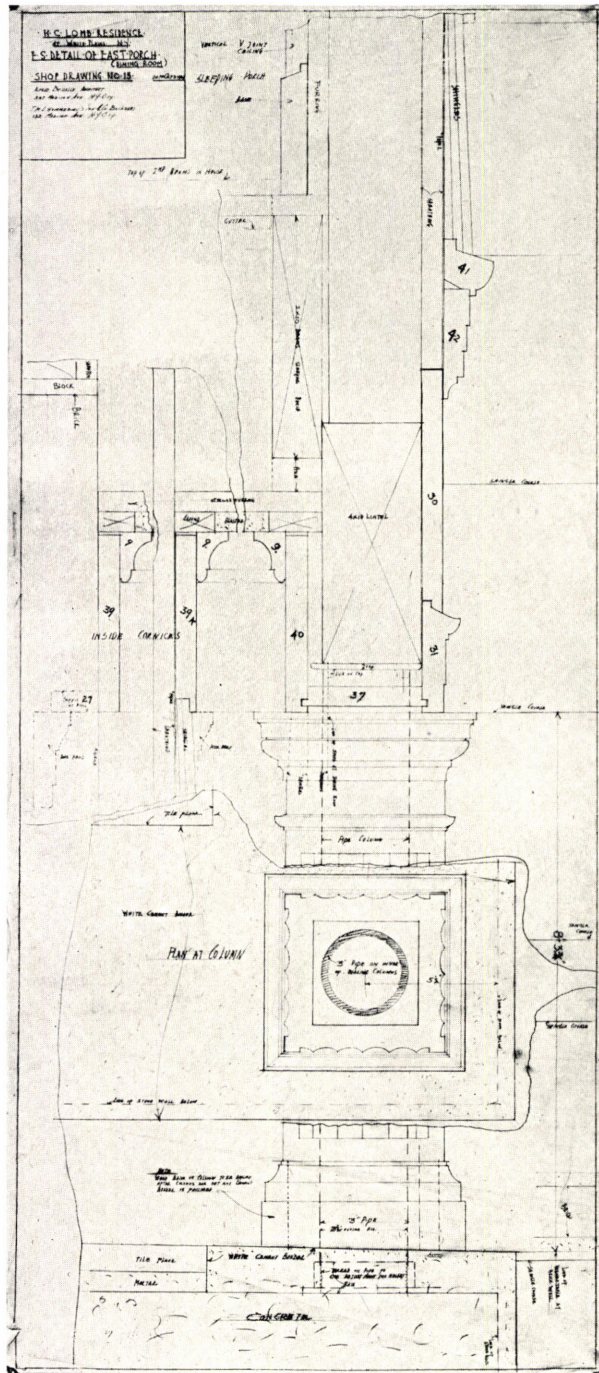
### EXAMPLES:

A nominal one inch board which formerly became  $\frac{7}{8}$ " thick when dressed is now only  $\frac{25}{32}$ " thick.

In framing lumber a nominal 2" x 4" becomes  $1\frac{5}{8}$ " x  $3\frac{5}{8}$ " when dressed.

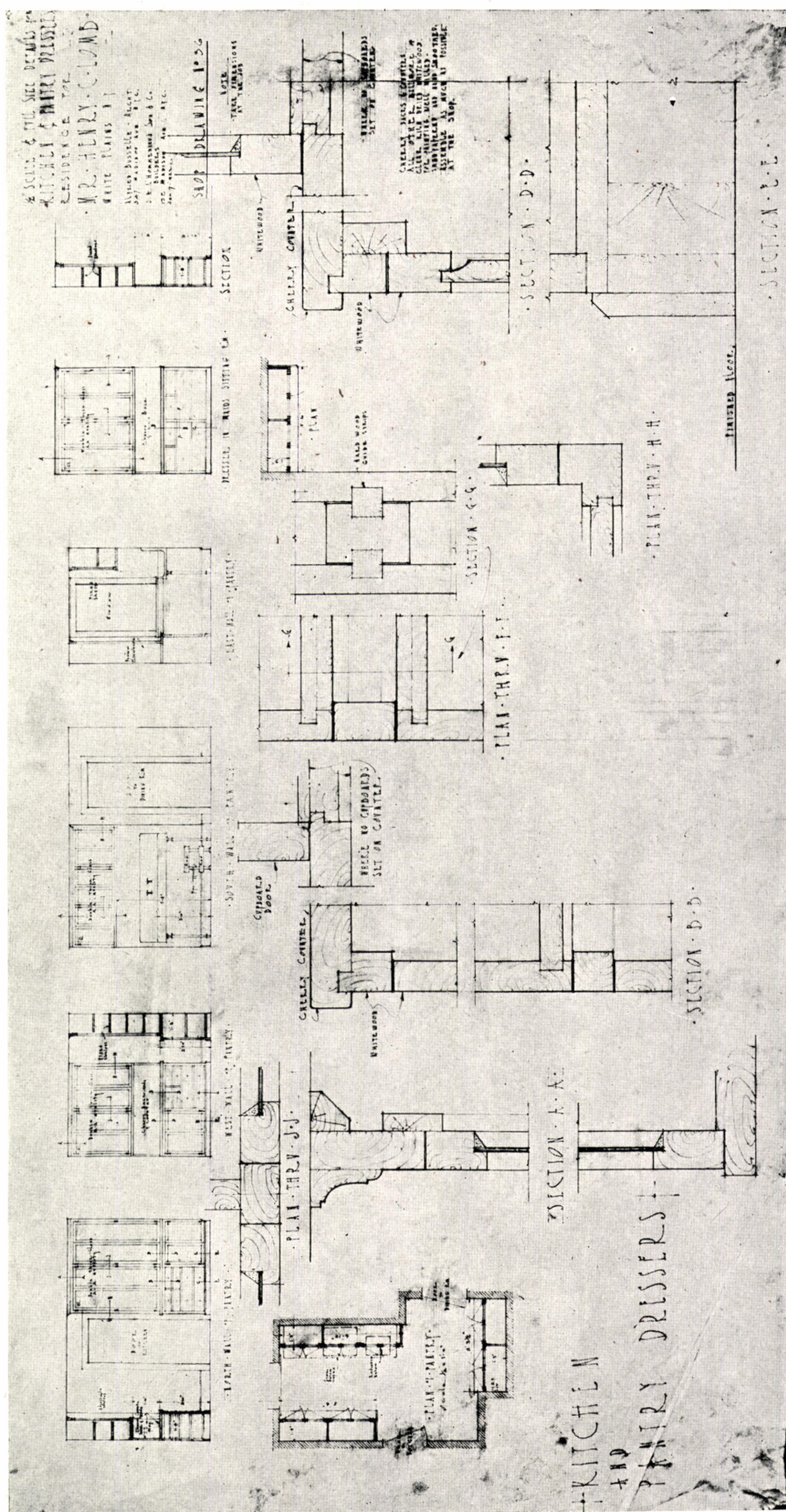
Much of our lumber stock comes from the Pacific Coast and the Inland Empire, and nearly all of it is dressed before shipment. This fact should be taken into consideration by draftsmen in architects' offices as well as in builders' offices when preparing details for millwork. Information as to the various dimensions of dressed soft wood lumber, including structural

timbers and factory lumber, can be obtained from any of the lumber trade publications or any of the associations of lumber manufacturers, and draftsmen not thoroughly familiar with the new "American Lumber Standard" should verify all sizes.



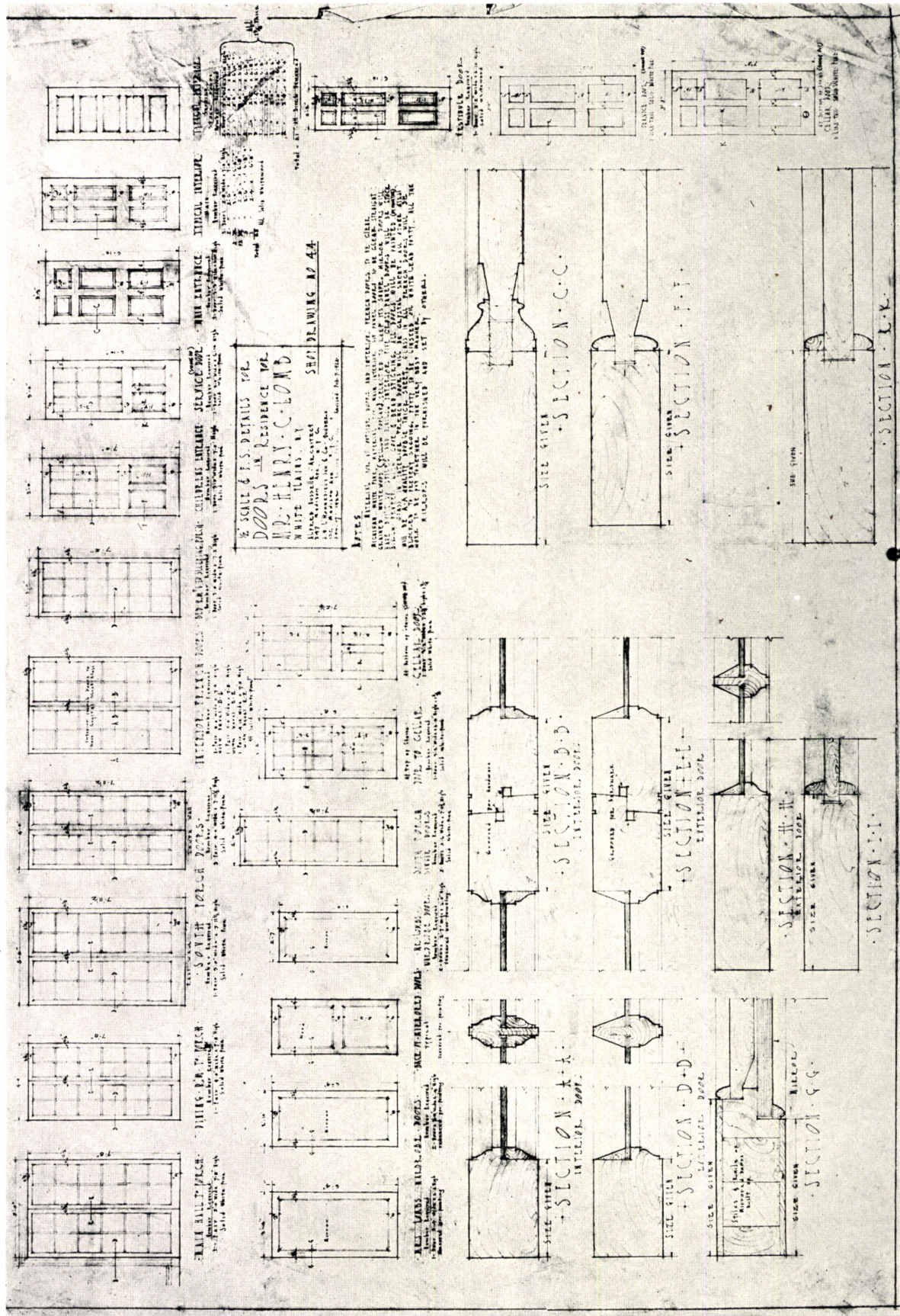
SHOP DRAWING NO. 15, PORCH DETAIL





SHOP DRAWING NO. 36, DETAILS OF KITCHEN AND PANTRY DRESSERS  
*Residence of Henry C. Lomb, Alfred Busselle, Architect*





SHOP DRAWING NO. 44, DOOR DETAILS AT FULL SIZE AND HALF INCH SCALE

Residence of Henry C. Lomb, Alfred Busselle, Architect



[illegible]

[ 480 ]



[illegible]

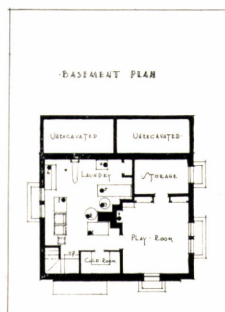
*American Gas Association Small House Competition*



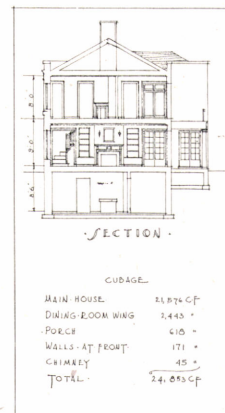
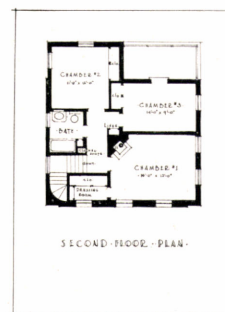
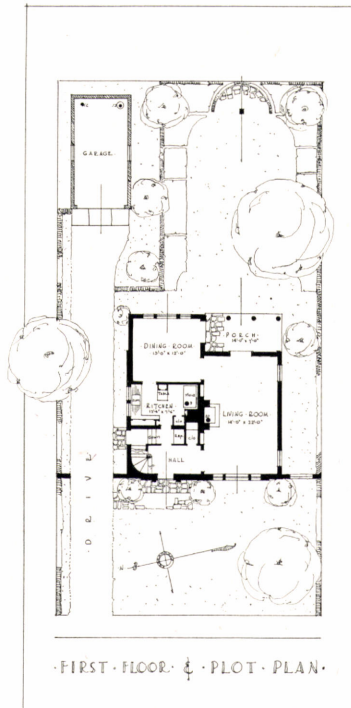
# PENCIL POINTS



PERSPECTIVE VIEW



- GAS FIXTURES
- |                    |            |
|--------------------|------------|
| 1 BOILER           | BASMENT    |
| 2 GARAGE DESTROYER | "          |
| 3 WATER HEATER     | "          |
| 4 LAUNDRY STOVE    | "          |
| 5 CLOTHES DRYER    | "          |
| 6 IRONER           | "          |
| 7 WASHING MACHINE  | "          |
| 8 FIRE PLACE       | "          |
| 9 STOVE            | KITCHEN    |
| 10 FIRE PLACE      | LIVING RM. |
| 11 FIRE PLACE      | BED RM.    |
| 12 HEATER          | GARAGE     |
| 13 WATER HEATER    | GARAGE     |



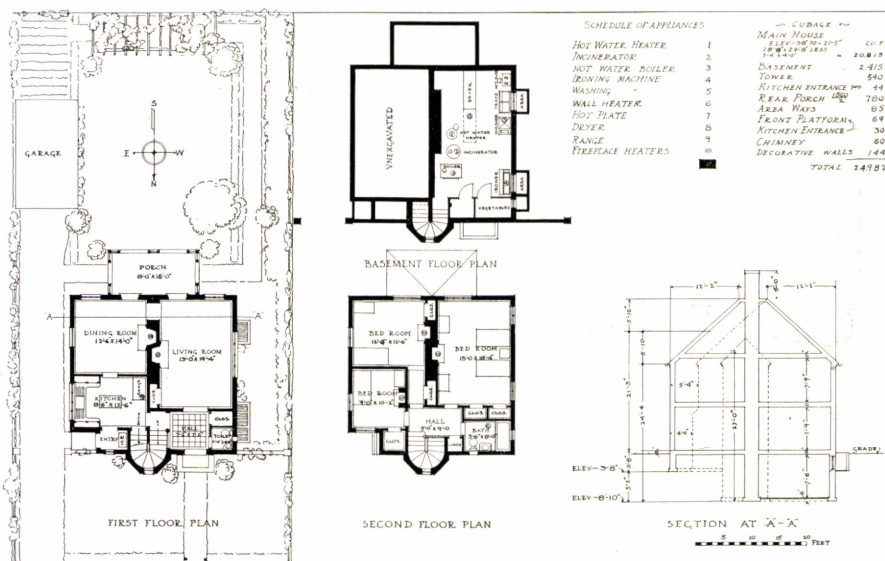
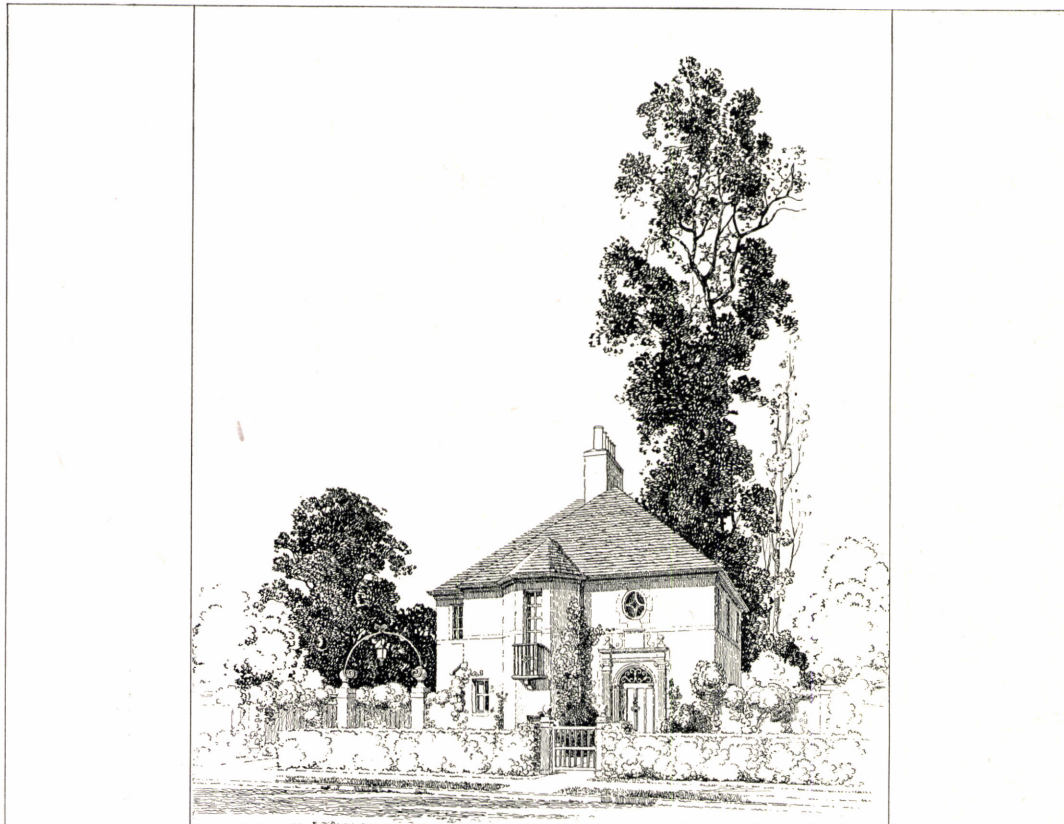
CUBAGE

MAIN HOUSE	31,874 CF
DINING ROOM WING	3,445 "
PORCH	610 "
WALLS AT FRONT	171 "
CRIMERY	45 "
TOTAL	24,095 CF

SECOND PRIZE DESIGN, F. S. HOPKINS AND P. C. BOHANON, CLEVELAND, OHIO  
*American Gas Association Small House Competition*



# SMALL HOUSE COMPETITION



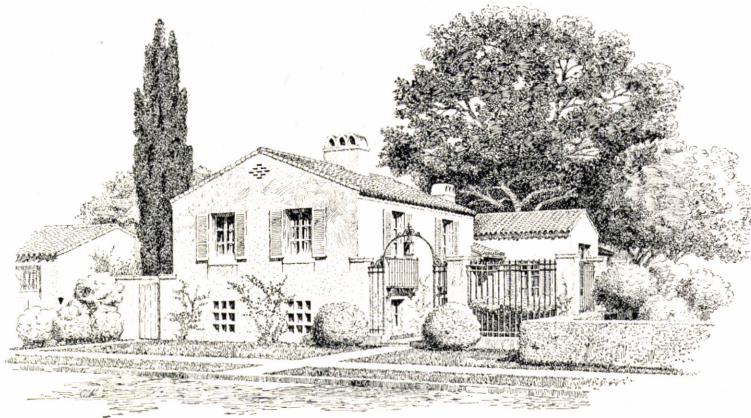
## AMERICAN GAS ASSOCIATION SMALL HOUSE COMPETITION

THIRD PRIZE DESIGN, ANTONIO DI NARDO, CLEVELAND, OHIO

*American Gas Association Small House Competition*

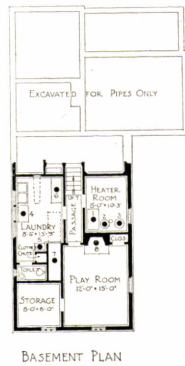


# PENCIL POINTS



THE HOUSE SHOULD FACE  
THE WEST OR THE NORTHWEST

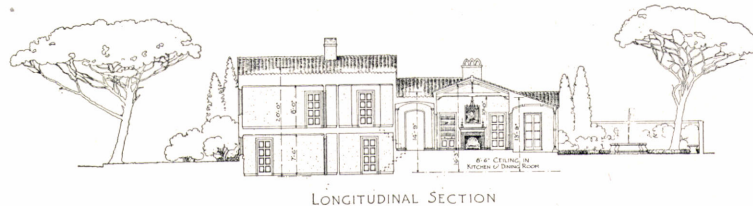
SCALE OF FEET  
FOR PLANS AND SECTION



- GAS APPLIANCES**  
NUMBERS REFER TO LOCATION  
ON PLANS
1. HOUSE HEATER
  2. AUTOMATIC STORAGE  
WATER HEATER
  3. GARBAGE INCINERATOR
  4. WASHING MACHINE
  5. LAUNDRY STOVE
  6. IRONING MACHINE
  7. CLOTHES DRIER
  8. FIREPLACE HEATER
  9. FIREPLACE HEATER
  10. KITCHEN RANGE

**CALCULATION OF  
CUBAGE**

A	215	29	20	12,620
B	215	7	14.75	2,250
C	13.35	23.5	13.75	43.10
D	16.75	15	16.25	45.00
E	17.5	18.5	13.75	10.50
F	10	10	0.5	.50
TOTAL				24,860



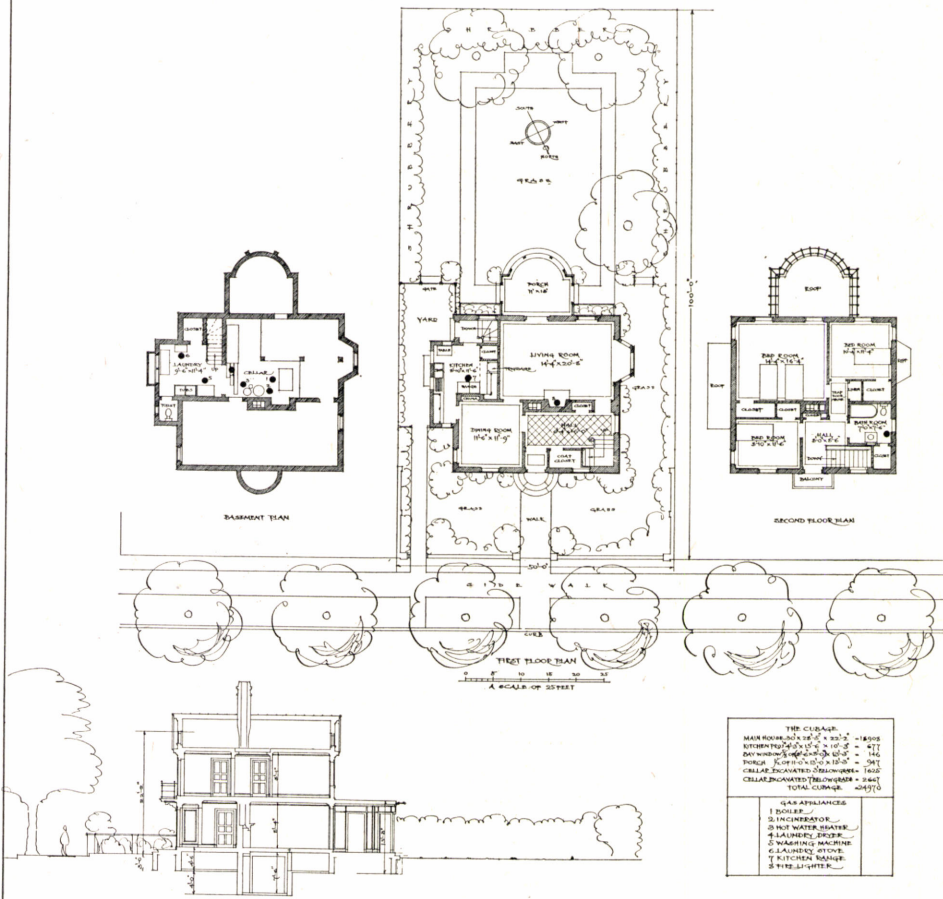
AMERICAN GAS ASSOCIATION SMALL HOUSE COMPETITION

FOURTH PRIZE DESIGN, HAROLD A. RICH, AUBURNDALE, MASS.

*American Gas Association Small House Competition*



# SMALL HOUSE COMPETITION



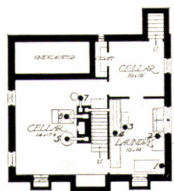
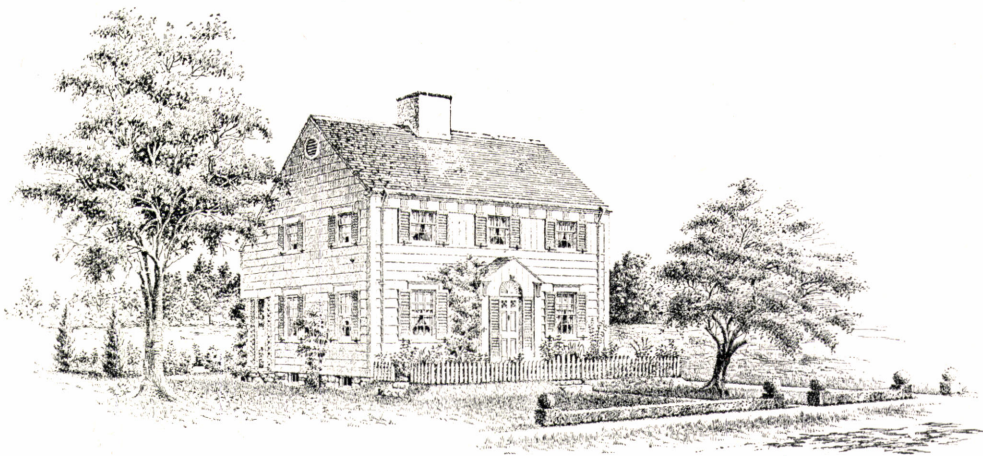
## AMERICAN GAS ASSOCIATION SMALL HOUSE COMPETITION

FIFTH PRIZE DESIGN, ALFRED COOKMAN CASS, NEW YORK CITY

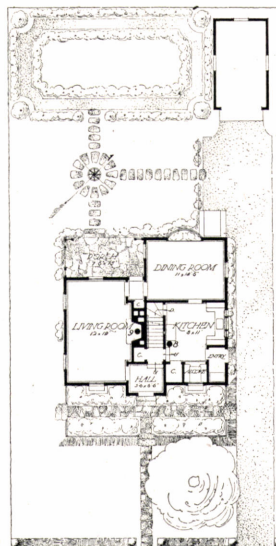
*American Gas Association Small House Competition*



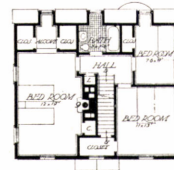
# PENCIL POINTS



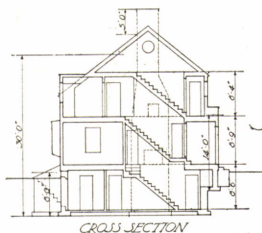
BASEMENT FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



CROSS SECTION

## A DESIGN SUBMITTED FOR THE SMALL HOUSE COMPETITION

CONDUCTED BY



CUBAGE	
ROOM OF HOUSE	27,301.30' - 34,000 C.F.
ENTRANCE HALL	3.75 x 14' = 210 "
REAR PORCH	3.75 x 14' = 300 "
REAR WINDOW	15.4 x 35.2' = 43 "
REAR WINDOW	6.5 x 15.6' = 38 "
ENTRANCE PORCH	3.75 x 14' = 43 "
CHIMNEY TOP	4.4 x 5' = 60 "
TOTAL	28,952 "
KEY TO GAS APPLIANCE	
NO. 1 IRONING MACHINE	
2	HEATING
3	LAUNDRY TUBS
4	STOVE
5	GAS RANGE
6	HEATING BOILER
7	WATER HEATER
8	COOKING RANGE
9	FIREPLACE HEATER

SIXTH PRIZE DESIGN, GEORGE C. CROCKETT, PELHAM, N. Y.  
American Gas Association Small House Competition



PLATE XXVI

VOLUME VII

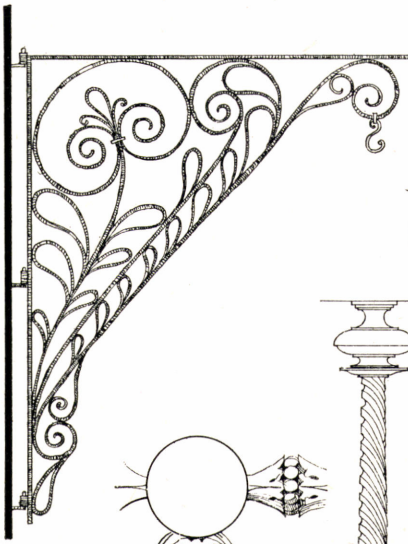
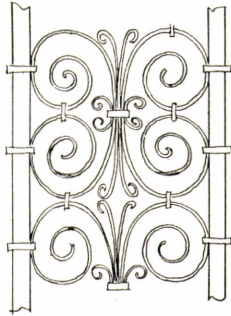
NUMBER 8

*Details of ironwork from a screen in the Cathedral of Cuenca and some brass turned work from the Cathedral of Zaragoza.*



CUENCA AND  
ZARAGOZA

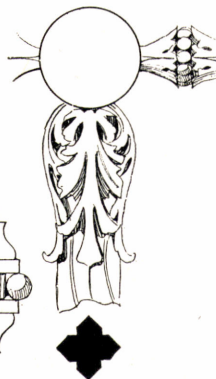
DETAILS OF IRON  
AND BRASS WORK



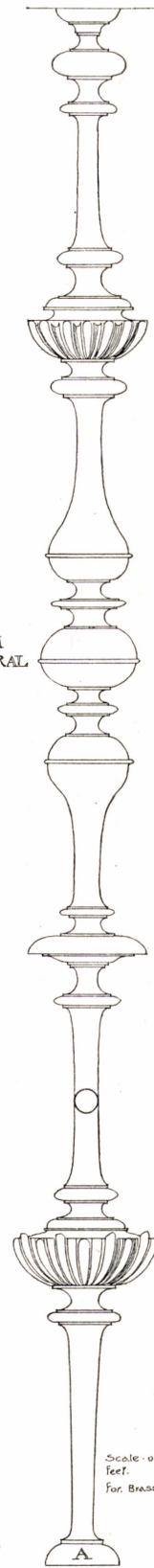
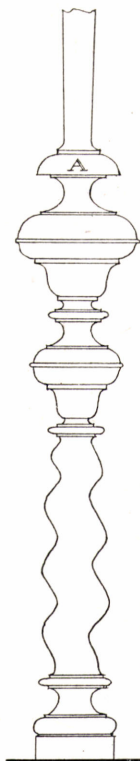
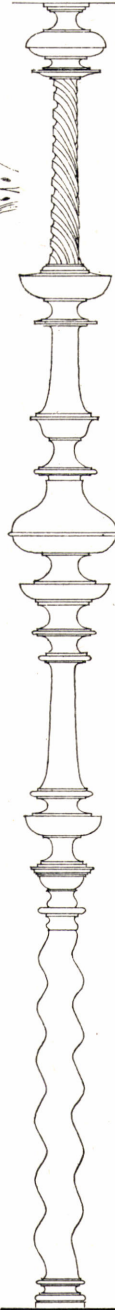
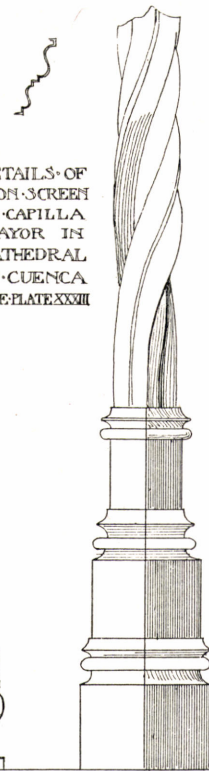
WROUGHT-IRON LAMP  
BRACKETS FROM PALMA



DETAILS OF  
IRON SCREEN  
TO CAPILLA  
MAYOR IN  
CATHEDRAL  
OF CUENCA  
SEE PLATE XXXIII



DETAILS OF BRASS  
TURNED WORK FROM  
SCREENS IN CATHEDRAL  
OF ZARAGOZA



Scale of 1 2 3 4 5 6 7 8 9 10 Inches

Scale of  
Feet.  
12  
For Brass Work

"RENAISSANCE ARCHITECTURE AND ORNAMENT IN SPAIN"

A PLATE FROM THE WORK BY ANDREW N. PRENTICE



PLATE XXVII

VOLUME VII

NUMBER 8

*This plate shows one of a series of drawings made by Mr. Price of the Miami-Biltmore, completed during the past winter at Coral Gables, Miami, Florida.*





DRAWING BY CHESTER B. PRICE

DINING ROOM IN COUNTRY CLUB, THE MIAMI-BILTMORE, SCHULTZE & WEAVER, ARCHITECTS



PENCIL POINTS  
SERIES  
*of*  
RENDERINGS  
IN  
COLOR





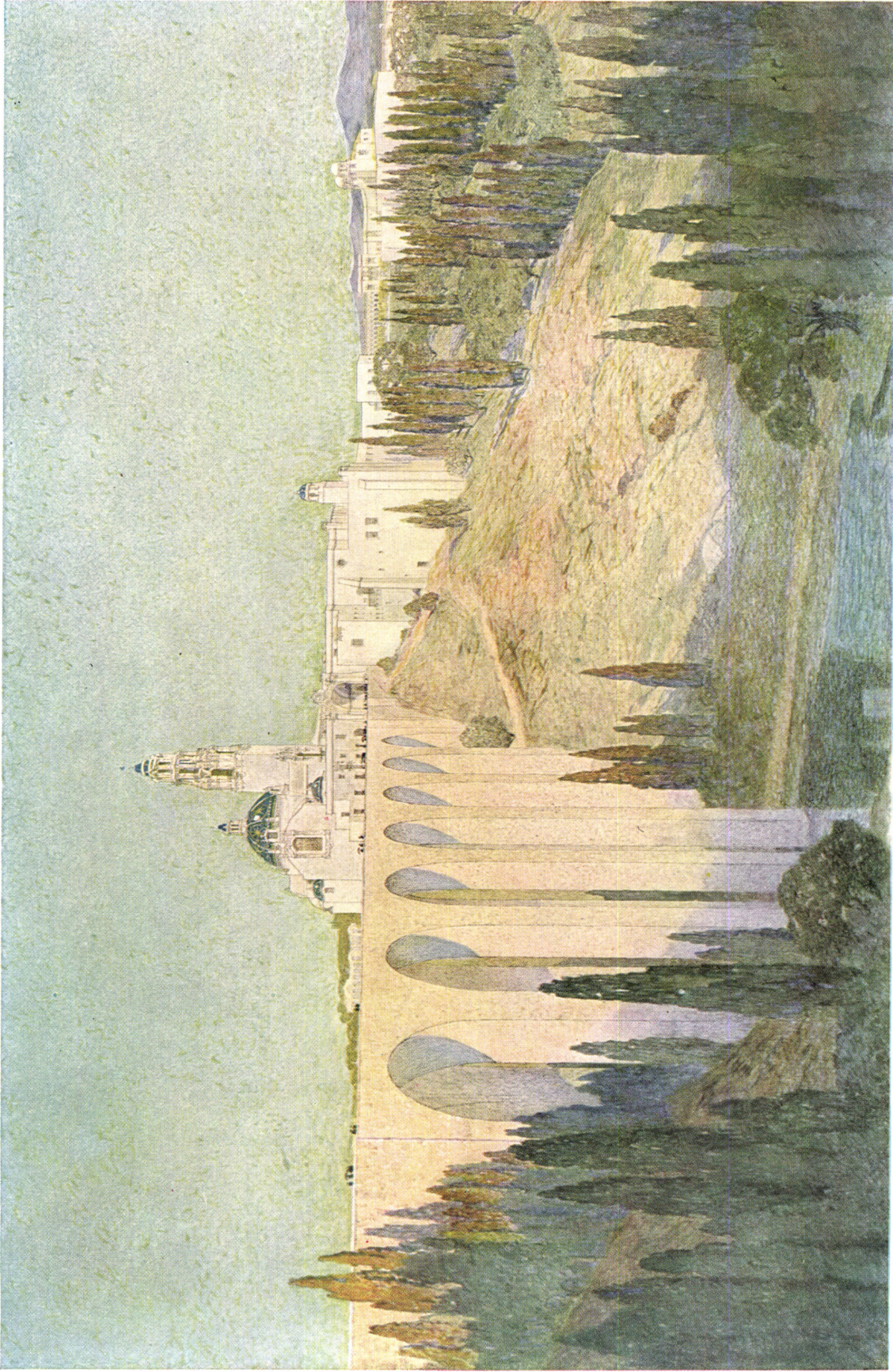
RENDERING IN WATER COLOR AND COLORED PENCIL BY OTTO R. EGGERS

Size of Original 28½" x 11"

University Baptist Church, Baltimore, Maryland

John Russell Pope, Architect





RENDERING BY BIRCH BURDETTE LONG OF THE PANAMA CALIFORNIA EXPOSITION, SAN DIEGO, CAL.  
Size of Original 83" x 47 3/8"

Cram, Goodhue & Ferguson, Architects. Bertram G. Goodhue, Advisor & Consulting Architect.  
The Bridge Designed by Frank P. Allen, Jr.



PENCIL POINTS  
SERIES  
*of*  
RENDERINGS  
IN  
COLOR





VIELLE MAISON  
RUE ST. ETIENNE DU MONT PARIS  
1929

PENCIL SKETCH BY SAMUEL V. CHAMBERLAIN  
VIELLE MAISON, RUE ST. ETIENNE DU MONT, PARIS



PLATE XXVIII

VOLUME VII

NUMBER 8

*This lithograph by Samuel V. Chamberlain is one of a set of twenty views of Old Paris. The artist has here chosen to depict an old house next to the church of St. Etienne du Mont. It is interesting to note that he worked from almost the same spot where F. Hopkinson Smith made the charcoal sketch reproduced on Plate XXI of the June issue of Pencil Points. Size of original 11" x 17".*





GRANADA  
Street on the Darro.

*A. Thornton Bishop.*

PENCIL SKETCH BY A. THORNTON BISHOP  
STREET ON THE DARRO, GRANADA



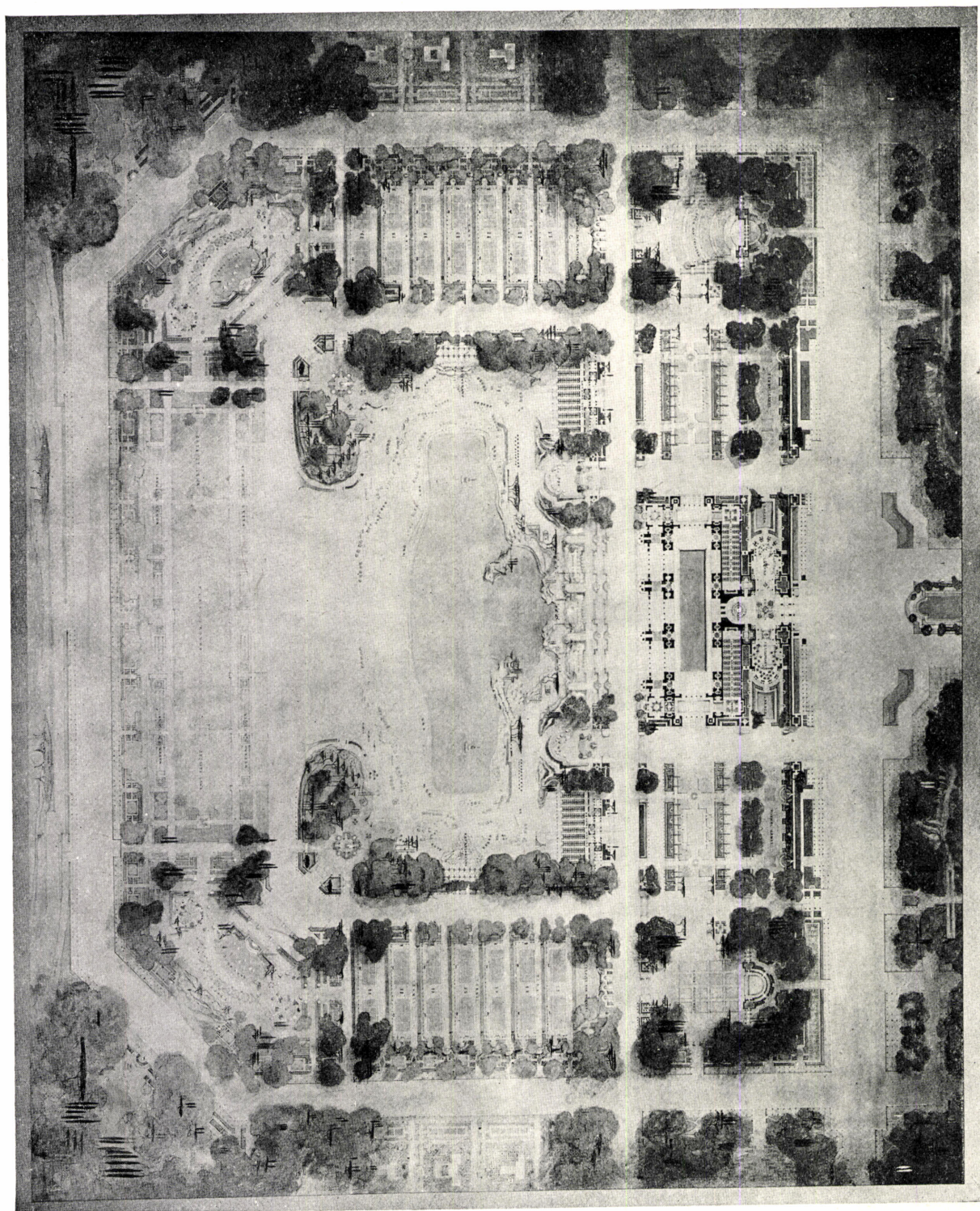
PLATE XXIX

VOLUME VII

NUMBER 8

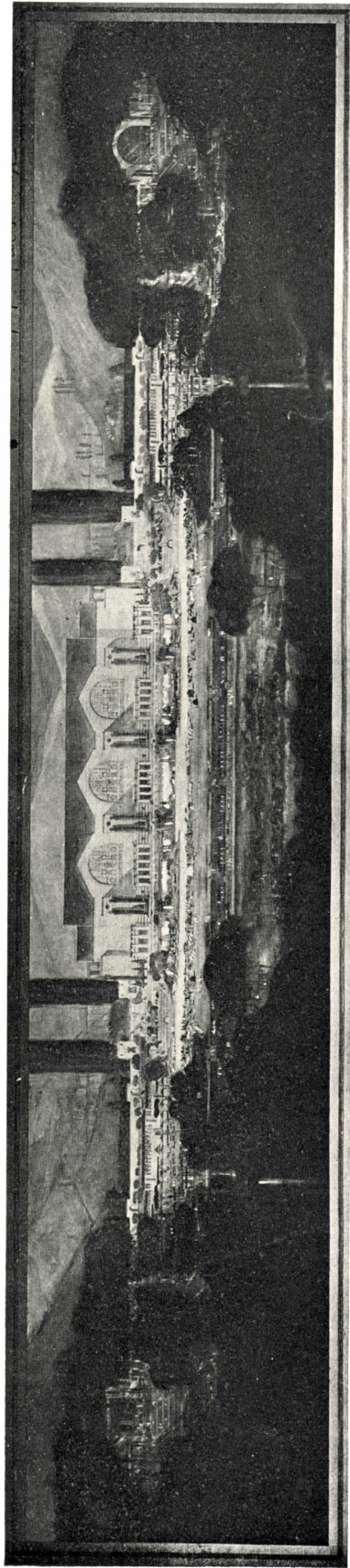
*A. Thornton Bishop, samples of whose excellent work in pencil are shown in the sketch reproduced here and in this month's cover drawing is a commercial artist and renderer. His architectural training is clearly apparent in his method of handling such subjects as that of this plate.*



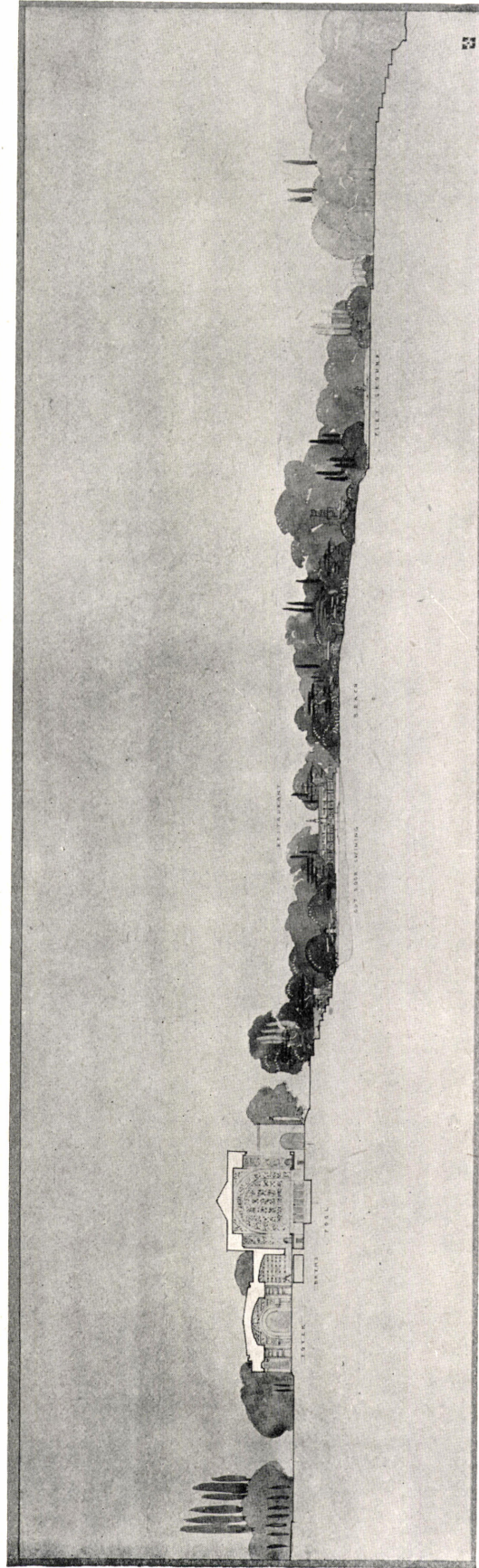


PLAN OF WINNING DESIGN FOR A NATATORIUM BY CARL E. LANDEFELD  
COMPETITION FOR THE NINETEENTH PARIS PRIZE





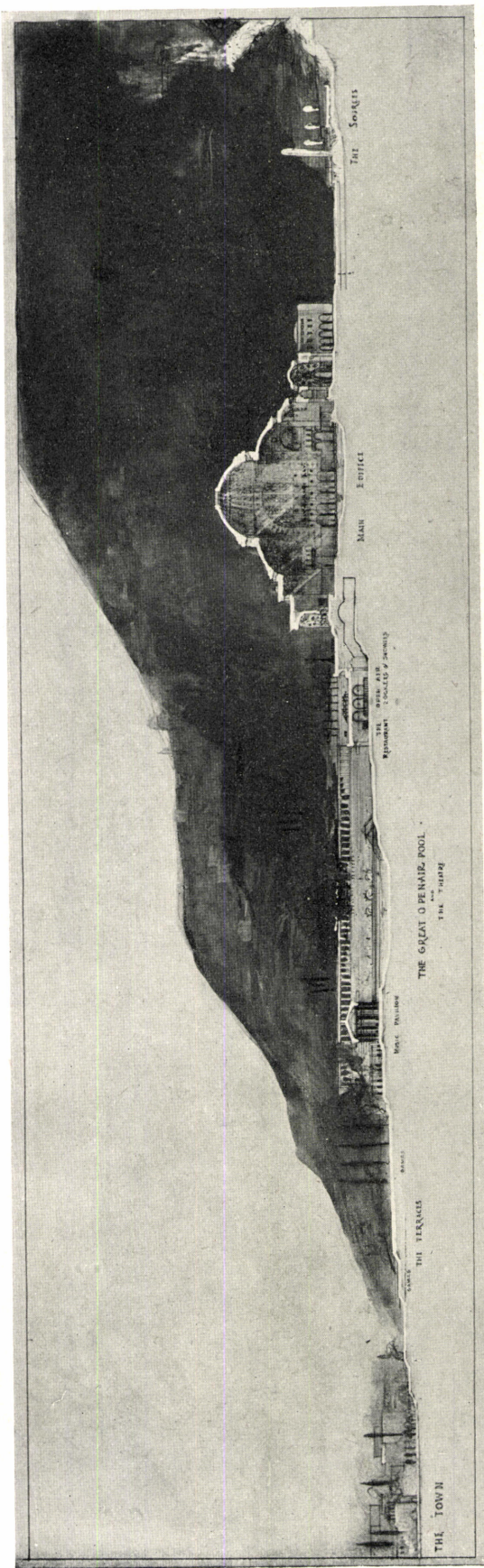
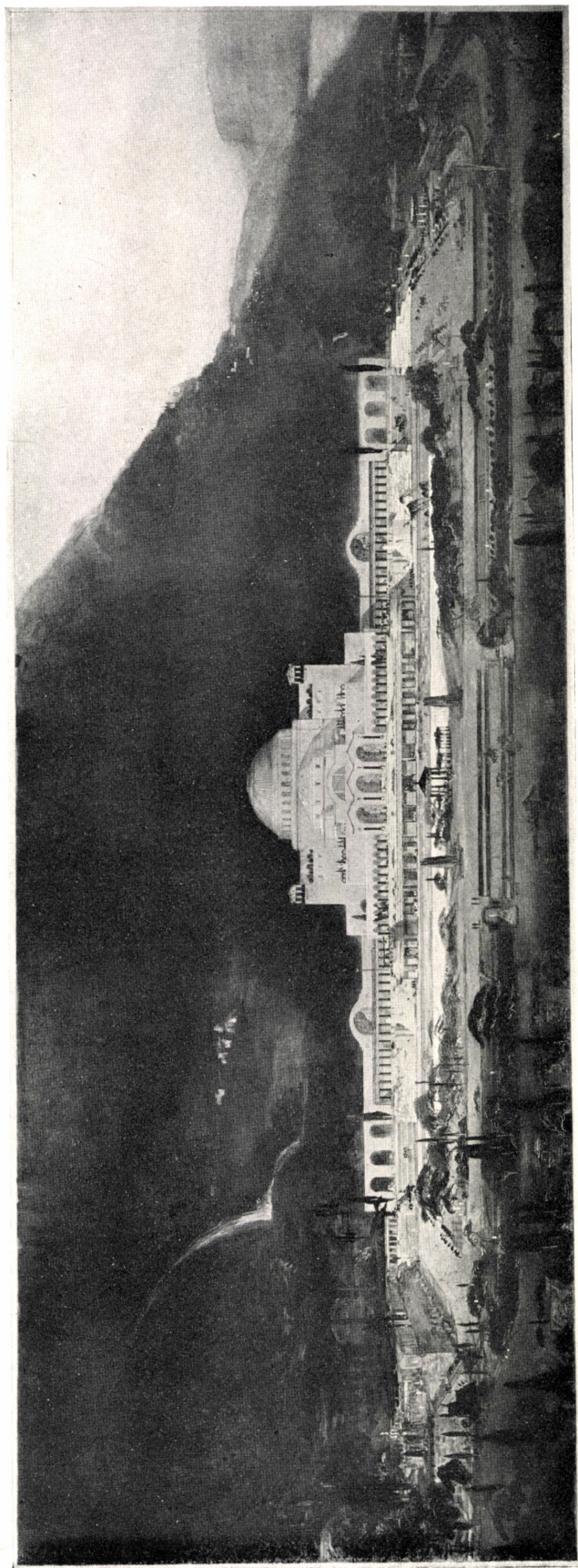
ELEVATION



SECTION

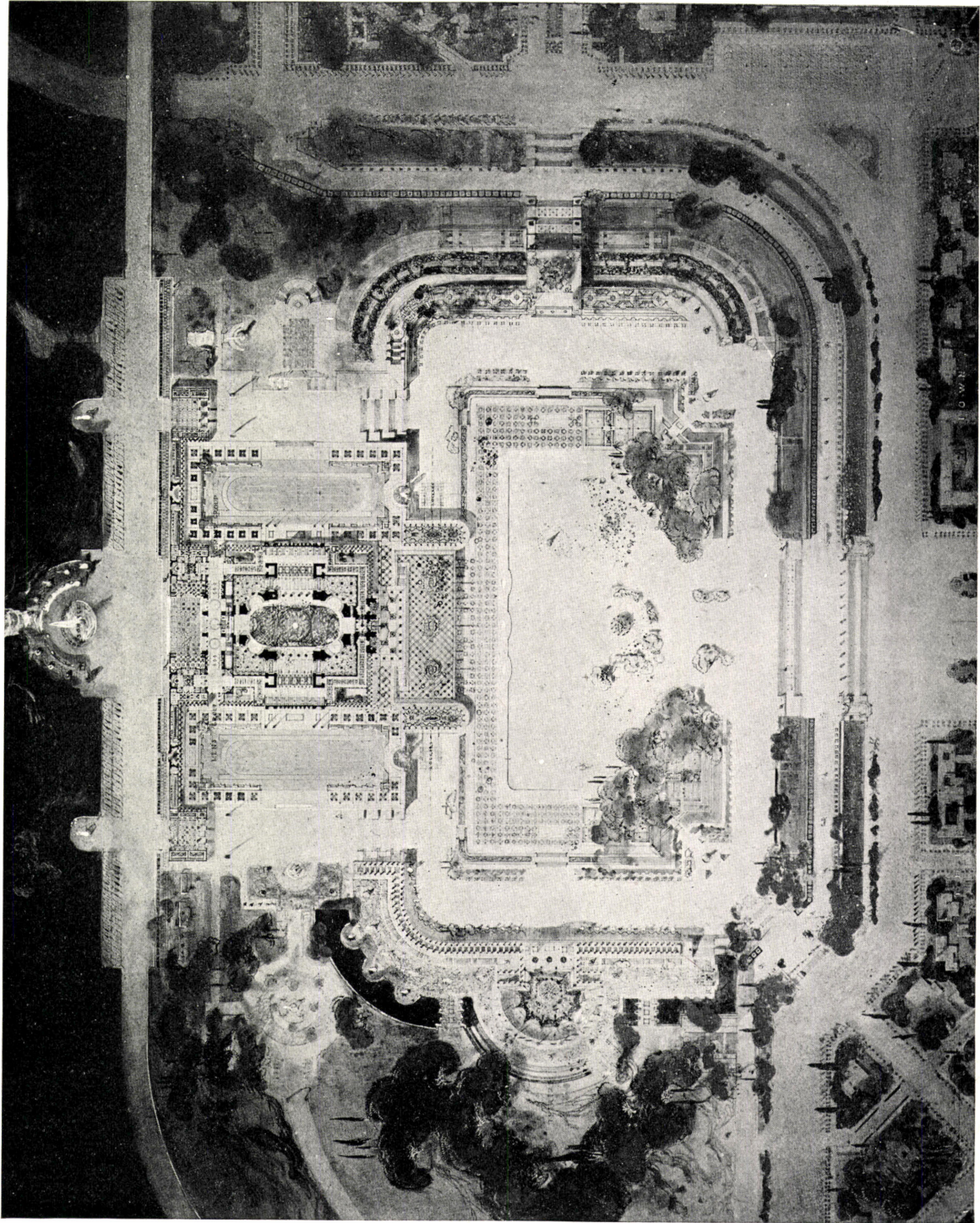
WINNING DESIGN FOR A NATATORIUM BY CARL E. LANDEFELD, COMPETITION FOR THE 19TH PARIS PRIZE





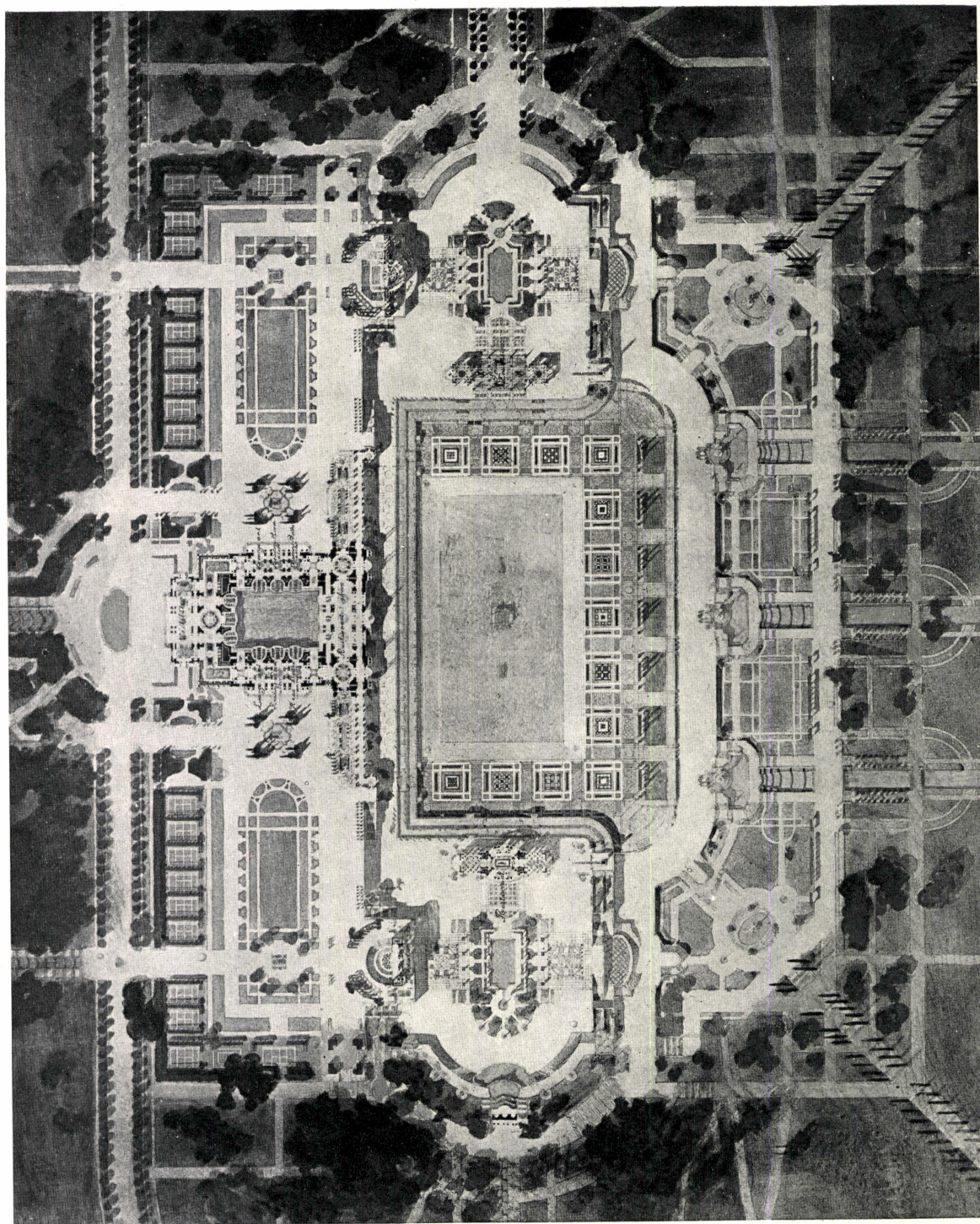
DESIGN FOR A NATATORIUM BY DONALD S. NELSON, PLACED SECOND, COMPETITION FOR THE 19TH PARIS PRIZE





PLAN OF DESIGN FOR A NATATORIUM BY D. S. NELSON, PLACED SECOND,  
COMPETITION FOR THE NINETEENTH PARIS PRIZE



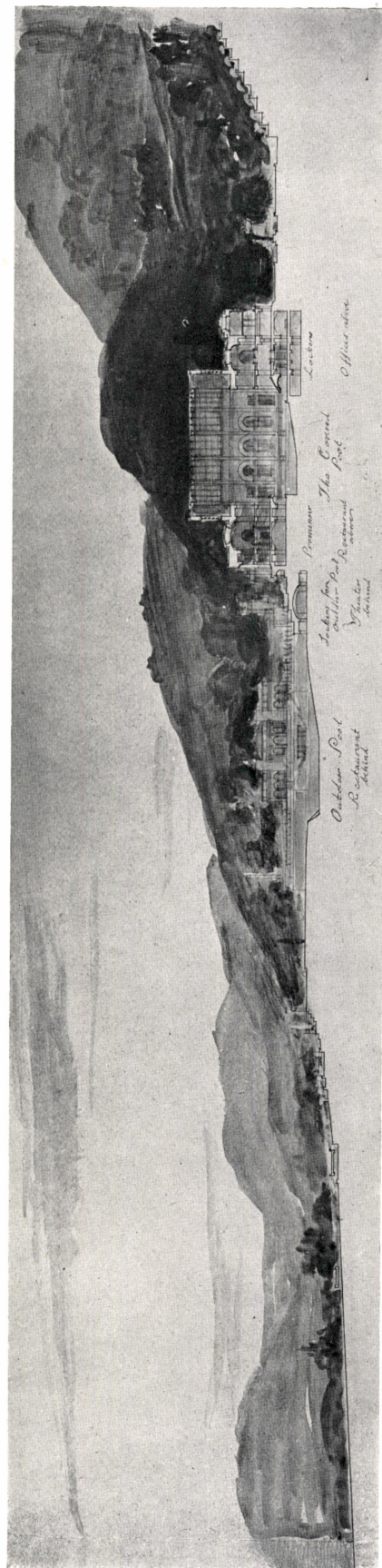


PLAN OF DESIGN FOR A NATATORIUM BY I. W. SILVERMAN, PLACED THIRD  
COMPETITION FOR THE NINETEENTH PARIS PRIZE





ELEVATION



SECTION

DESIGN FOR A NATATORIUM BY I. W. SILVERMAN, PLACED THIRD, COMPETITION FOR THE 19TH PARIS PRIZE





# W H I T T L I N G S

## PRIZES AWARDED IN SMALL HOUSE COMPETITION

THE AMERICAN GAS ASSOCIATION has announced the winners in its \$2,500 prize competition for a six room suburban house. The first three prizes were awarded to architects of Cleveland, Ohio, as follows: 1st prize, \$1,000, Russell S. Simpson; 2nd prize, \$500, F. S. Hopkins and P. C. Bohanon; 3rd prize, \$250, Antonio di Nardo. The 4th prize, \$250, was awarded to Harold A. Rich of Auburndale, Mass. The 5th to the 9th prizes inclusive, consisting of \$100 each, were awarded to Alfred Cookman Cass, New York; George C. Crockett, Pelham, New York; Walter J. Thies, Carl H. Martin, and Erskine A. Hart, Dayton, Ohio; Otho McCrackin, Hutchinson, Kansas; Charles W. Cleary and James N. Holden, Boston, Mass.

Honorable mention was awarded the following: Carl C. Tallman, Auburn, N. Y.; Russell E. Yates, Detroit, Michigan; R. Schofield Morris, Hamilton, Ontario; Ernest Irving Freese, Los Angeles, Cal.; Frank C. Burke, Watertown, N. Y.

The competition was open to all architects, draftsmen, and students in architectural schools in the United States and Canada. Judges of the competition were Aymar Embury II, and Dwight James Baum, of the American Institute of Architects, and Alexander Forward, secretary-manager of the American Gas Association. William Adams Delano was the architectural advisor.

The first six prize winning designs are published on pages 481 through 486 of this issue.

## NEW YORK SKETCH CLUB REVIVED

THERE MAY BE FEW WHO remember the Sketch Club of New York of thirty years ago, how vital it was to both the designer and draftsman. Its exhibits gave evidence of the fraternal, jolly companionship; the spirited studies exhaled the enthusiasm of those playing while they worked and working while they played. In reopening the Sketch Club, the opportunity of instruction in "pencil painting" is offered to all draftsmen, designers, renderers and students of architecture.

The lead pencil is perhaps the one most important tool of the architect, and in making studies, sketches and rapid memoranda it is his invariable resort and constant companion. An architect who cannot use his pencil with facility and decision is at great disadvantage. It is the invaluable process of representing a building as a work of art by means of another work of art.

Mr. Ernest W. Watson, for many years an instructor at Pratt Institute and recognized as one of the leading exponents of the art of pencil sketching, will conduct the atelier of the Sketch Club in the Club rooms at the Art Centre, 65 East 56th Street, one evening a week. The class will open late in September and continue through the winter and spring. There are very few architectural draftsmen and renderers who cannot study to advantage the artistic stenography, the power and simplicity that lies dormant in their most common instrument, their pencil.

The Sketch Club and Atelier are conducted under the auspices of the Pratt Art Alumni: the proceeds of the class maintain an annual European Scholarship. At the close of the season an exhibit of the class work will be held in the Club rooms at the Art Centre. Messrs. D. Everett Waid, Thomas B. Hastings, and Otto R. Eggers are members of the Advisory Council.

So great has been the interest in this opportunity to acquire the technic of expressing with one's own individuality the studies of the great masters, the artistic qualities of their own designs as they want their clients to see them that many have applied before any announcement of the class could be made. The facilities for personal instruction are limited and all who desire to attend the Club and Atelier for the coming season are urged to correspond immediately with A. Thornton Bishop, president of the Pratt Art Alumni, 105 West 40th Street, New York City.

## SAN FRANCISCO ARCHITECTURAL CLUB

THE SAN FRANCISCO ARCHITECTURAL CLUB wishes to announce the huge success of the Thursday luncheons which are held weekly in the club's banquet room.

Some 45 members have been present at each of the four luncheons held to date and all attest to the excellence of the cuisine. These noon gatherings are tremendously popular with the boys and each Thursday is looked forward to with eager anticipation.

The success of the mid-day meal must be attributed to the endeavors of C. Trudell, "our Secretary," and his assistants. Also to his good judgment in securing the services of a dietitian of international repute—a former chef of Monte Carlo. The generosity of Ed Counter of Dietrich-Post Co. has also been a mighty influence towards making the dinners the good time that they are. Ed conducts a free raffle at each luncheon which culminates in the distribution of valuable drawing instruments.

Geo. Travis is with us again, having completed his studies at Harvard. He is once more "over the boards" at Bakewell & Brown's, back with his old gang.

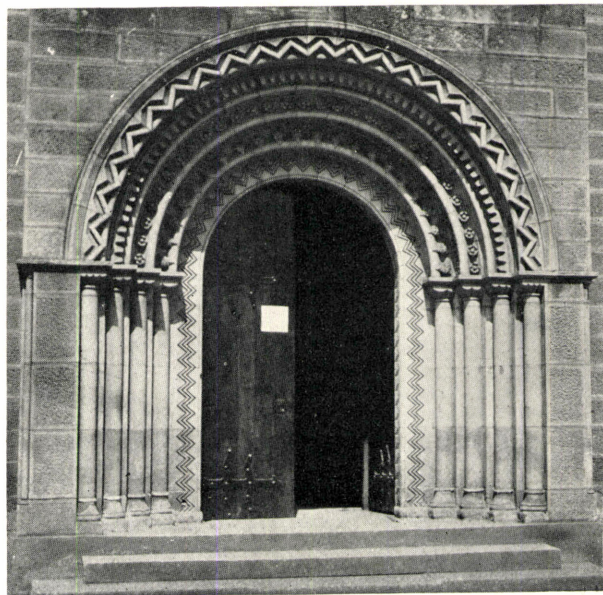
The club as a whole regrets the absence of Stanton Willard, who has ascended to new heights in Los Angeles, where he is managing the office of Walker & Eisen. Good luck Tubby!

The membership drive is still "driving" draftsmen and members of the profession into this organization.

Massier H. Anderson has plans under way for a grand gathering of the Atelier. An elaborate dinner and entertainment par excellence will mark the occasion.

The semi-annual election at the July meeting resulted in the selection of J. H. Devitt for treasurer, Harry Langly and Ira Springer for Directors. James Magee was appointed chairman of the Minstrel Show Committee with Ira Springer and C. J. Sly as his aides. The Minstrel Show will be held in October to commemorate the Club's 25th year of existence.

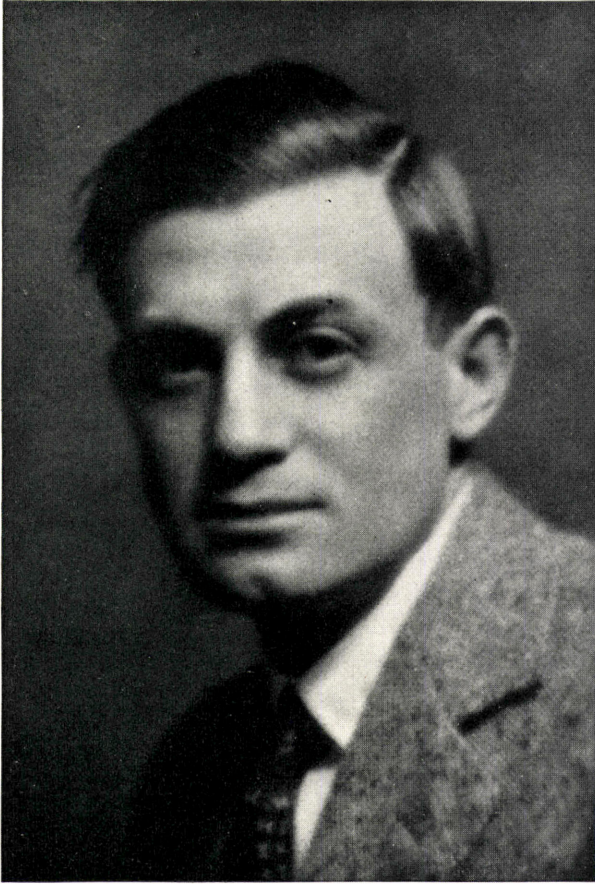
J. H. DEVITT,  
*Publicity Manager.*



OLD CHURCH DOOR OF CHAPEL,  
"THE KING'S SCHOOL", PARRAMATTA, AUSTRALIA  
*Reproduced From a Snapshot by Louis Brackenreg.*



## PENCIL POINTS



FRANK SCHWARZ

FRANK SCHWARZ HAS BEEN awarded one of the John Simon Guggenheim Memorial Fellowships for 1926-27 and has sailed to study methods in painting and in decoration in mediæval times, the 13th, 14th and 15th centuries and some things in the work of the modern artists. Mr. Schwarz was formerly a fellow at the American Academy in Rome and has done some very fine paintings. One of his most interesting works, a screen, was published in the April, 1925, issue of PENCIL POINTS. He will do some creative work in mural decoration while he is in Europe.

The Fellowship provides a stipend of \$2,500 for a year of twelve months abroad.

### TWO COMPETITIONS IN DESIGN FOR TRAFFIC SIGNAL TOWERS AND OTHER STREET FIXTURES

TWO COMPETITIONS IN DESIGN based on the widely recognized need for better design in street fixtures are announced.

The first competition calls for designs for traffic signal towers and standards and street lighting standards. The second competition is for filling station designs.

In neither case is the electrical or mechanical equipment of the structure a part of the competition.

These competitions are being conducted by the Biscayne Boulevard Association, Miami, Florida. The Association has appointed Messrs. Bennett, Parsons and Frost, Consulting Architects, Chicago, to serve as professional advisers for the competitions.

The purpose is both to secure designs appropriate for Biscayne Boulevard and to stimulate interest in the designing of better structures for these purposes than the un-studied devices now in general use.

The street for which the designs are desired is a level 100 foot street extending from the center of Miami for three and one-half miles to Northeast 55th Street, where it becomes the Federal Highway which, combined with the Dixie Highway, extends 360 miles to Jacksonville and beyond to the Northern States.

The first mile of the street was formerly Bay Shore Drive, recently widened and improved. The remaining 2½ miles is a new street involving cutting through fourteen improved city blocks and widening a narrow street (formerly Northeast Third Avenue) through nineteen improved blocks.

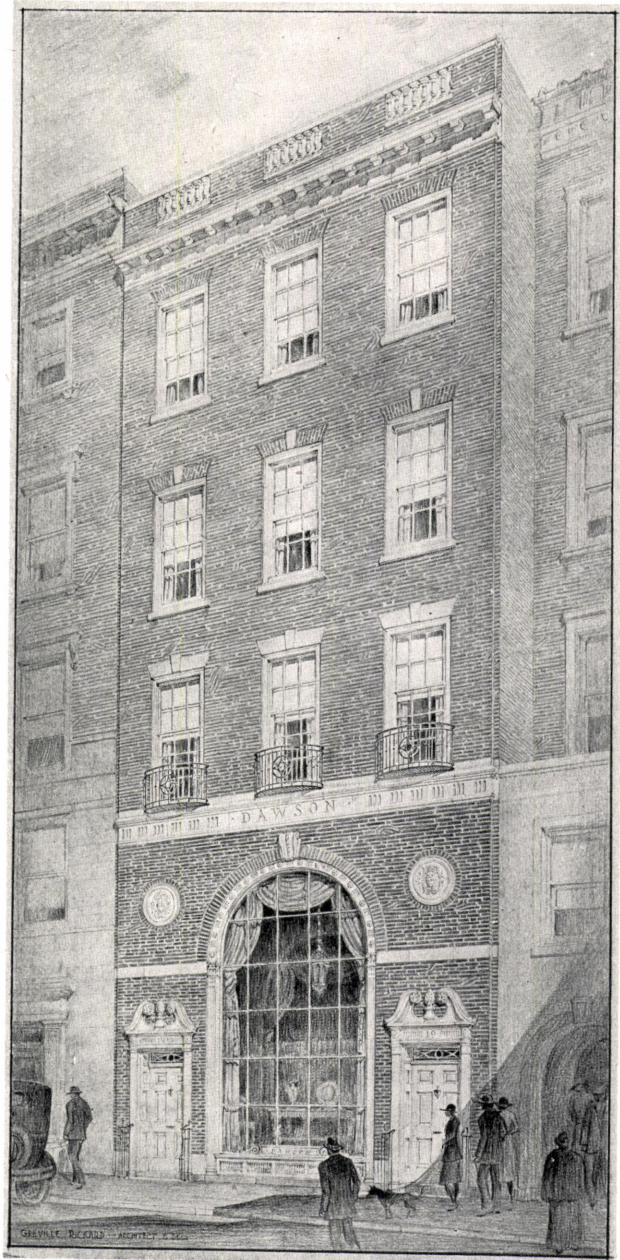
This new section will be open to traffic about December 1st, 1926. The competitions close October 1st.

The Biscayne Boulevard Association agrees to award to the winners within 5 days after the judgment of the jury \$4,650.00 in prizes as follows:

Competition No. 1—1st Prize \$1,000.00; 2nd Prize \$500.00; 3rd Prize \$400.00; 4th Prize \$200.00; 6 Mentions, each \$75.00.

Competition No. 2—1st Prize \$750.00; 2nd Prize \$400.00; 3rd Prize \$250.00; 4th Prize \$150.00; 6 Mentions, each \$75.00.

Program of the Competitions may be obtained by addressing Harry T. Frost, in care of Biscayne Boulevard Association, Columbus Hotel, Biscayne Boulevard, Miami, Florida. Or—*American Architect*, 239 West 39th Street, New York. Or—Bennett, Parsons and Frost, 80 East Jackson Boulevard, Chicago.



PENCIL RENDERING BY GREVILLE RICKARD  
*Altered Front for Antique Shop*



## PENCIL POINTS



CARL E. LANDEFELD

CARL E. LANDEFELD, the winner of the 19th Paris Prize, was born at Erie, Pennsylvania, where he received his early education. He entered Carnegie Institute of Technology in 1919 and was graduated from there in 1923.

He was logist in the Paris Prize last year and after completing the project was employed in the office of Raymond M. Hood.

Mr. Landefeld feels that he owes a great deal to the men under whom he studied, including, Professor Camille Grapin, Henry Hornbostle and Harry Sternfeld at Carnegie Tech and later, in New York, Lloyd Morgan and Otto Faelton of Yale University, his patron for the final project.

Mr. Landefeld will take up his studies abroad early in September.

### AMERICAN ACADEMY IN ROME

FROM A LETTER RECENTLY received by C. Grant La Farge, Secretary, from Gorham P. Stevens, Director, we quote the following:

"At this moment only seven Fellows are in residence—Meyer and Hancock in sculpture, Finley in painting, Elwell in music, Fraser in architecture, and the two women classicists; all the others are traveling. Meyer is hard at work upon his third year's group. Hancock has his first year's figure well under way. Finley has returned from Florence with his Penturricchio copy under his arm. Fraser is finishing his first year's classical restoration, and the classicists are working on their theses. Deam, third-year Fellow in architecture, has finished entirely and is now in Germany, which he finds interesting in many ways. Bradford's eyes have been troubling him, and he is now taking a rest; his big composition is well advanced.

Newton has completed the general plan of his third year's work, the Villa Magliana near Rome, and is now in Siena for the Pallio. Mr. W. S. Richardson was of especial assistance to Newton in the designing of the entire layout. Newton left with us about 600 films, all taken by himself, of Italian villas for printing for our collection of landscape photographs.

"Of the staff, Professor Fairbanks has returned on private business to America for a few weeks. The Moreys and Ullmans are in residence. The Lamonds, Van Burens and Mr. W. S. Richardson are off for the summer. It may interest you to learn that Mr. Richardson bought a number of old Roman inscriptions to decorate his villa and that Prof. Van

Buren found four unpublished ones among them, which he will shortly make known to the world.

"The President and the Vice President of the Academy spent a number of days in studying conditions at the Academy, but both have now gone north.

"Professor Showerman is due today, and his Summer School of seventy-four opens next Monday. Professor Shepherd Stevens, of the Yale School of Architecture, has registered in the Summer School and with the permission of the Trustees is now in residence at the Main Building.

"Czechoslovakia, Bulgaria and Egypt are planning Academies in Rome, to be located in the valley Giulia, near the present British School and the big modern art gallery. The city of Rome rents lots of land to all these countries for one lire a year, and does not tax them, which are big inducements for establishing Academies in Rome."

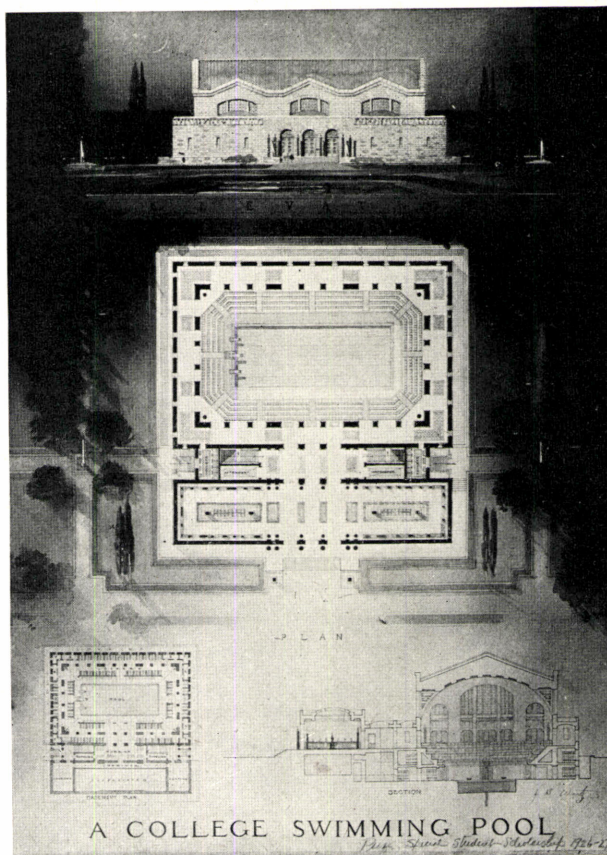
### CORRECTIONS

THE RENDERING ON the cover of the July issue of PENCIL POINTS was made by Sydney Jelinek and not Herbert Pullinger to whom we credited the drawing. John Molitor is the architect of the "Palace of Agriculture", the subject of Mr. Jelinek's rendering.

We regret that in the advertisement of the Cold Spring Granite Company appearing in this issue of PENCIL POINTS the name of the contractor is misspelled. The name should be Charles Skooglun.

### M. I. T. SPECIAL STUDENT SCHOLARSHIPS AWARDED

J. B. WERTZ, OF THE OFFICE of Pelton, Allen & Collens, New York, was placed first in the competition for special student scholarships, Department of Architecture, Massachusetts Institute of Technology. T. H. Dreih was placed second. The subject of the competition was "A College Swimming Pool". Mr. Wertz's design is reproduced below. Each of the winners is given a year's tuition at the Institute, amounting to \$300.00.



DESIGN BY J. B. WERTZ, PLACED FIRST  
M. I. T. Special Student Scholarship Competition





LOUIS SKIDMORE

LOUIS SKIDMORE, winner of the Rotch Traveling Fellowship for 1926, was born in 1897 at Lawrenceburg, Indiana. He attended public and high school at Peoria, Illinois, and later at the Bradley Institute in that city. During the War he was in the United States Air Service and later was an instructor in mechanical drawing for two years at the Pullman Technical School, Chicago, Ill.

In 1921 he entered the Massachusetts Institute of Technology for the third, fourth and fifth years of architectural training. He was awarded the Rotch Prize for the best general average for third and fourth year work.

For two years Mr. Skidmore was in the office of Maginnis & Walsh, Architects, of Boston, and he feels greatly indebted to Mr. Maginnis and to Charles R. Strong, Architect, of Cincinnati, Ohio; also Professor Emerson and Professor Fenan of M. I. T.

#### WITH AND FOR OUR ADVERTISERS

(Continued from Page 110 of the Advertising Section.)

*The American Architect* has just published the Second Edition of "Advertising and Selling to Architects", a book which should be read by all manufacturers interested in advertising to members of the architectural profession. Copies may be secured by addressing *The American Architect*, 239 West 39th Street, New York City.

The United States Gypsum Company announces that Sabinite Acoustical Plaster, developed at Riverbank Laboratories, Geneva, Illinois, by Dr. Paul E. Sabine, is to be manufactured and marketed by the Gypsum Company under an exclusive license.

This material comes to the job already sanded and requires only the addition of water. It is porous in composition and instead of reflecting virtually all the sound that strikes it, as does ordinary plaster, it absorbs a great proportion of the sound, which it transforms by friction into heat-energy. Its covering capacity is greater than ordinary plaster and its application involves no greater problems than the application of ordinary plaster.

While this material was perfected over five years ago, it has been withheld from the market by Riverbank Laboratories until actual job experience should substantiate or disprove the results obtained in laboratory tests. To obtain this job experience two rooms at Riverbank Laboratories, one room of the Geneva, Illinois, High School and auditoriums and radio broadcasting rooms at various points in

the United States were plastered with it. According to Dr. Sabine these test jobs all are in perfect condition and the material has performed identically on the job as it did in the laboratory.

Tests and researches into the physics of sound, according to Dr. Sabine, have demonstrated that through the use of this material a maximum of acoustical efficiency can be obtained in any theater, church, auditorium, school or other room.

Riverbank Laboratories, where Sabinite was developed, is a scientific organization that was founded and is maintained by Colonel George Fabyan. The researches into the physics of sound conducted there by Dr. Sabine are a continuation of the work begun by his late cousin, Professor Wallace C. Sabine of Harvard University.

The Mills Company, manufacturers of Metal Partitions and specialists in Steel Sash glazing and erecting, announce the acquisition of a new plant giving them over 50,000 additional square feet of manufacturing space.

#### PERSONALS

BATES AND HOW, ARCHITECTS, have removed their offices to 145 East 57th Street, New York.

PETER E. CAMBURAS, ARCHITECT, has been elected as 2nd vice-president of the firm of Hall, Lawrence, Rippel & Ratcliffe, Inc., Architects, 123 W. Madison St., Chicago, Ill.

FRANK E. FOWLER AND H. GILBERT KARGES have formed a partnership under the firm name of Fowler & Karges, Architects & Engineers, with offices at 707 Furniture Building, Evansville, Indiana, as successors to the office of H. Gilbert Karges and the office of Shopbell, Fowler & Thole, Inc.

ROBERT PISO is now associated with the organization of Lincoln Norcott Hall, Architect, 7 West Madison St., Chicago, Ill.

EVERETT H. MERRILL, ARCHITECT, has removed his offices to 4475 Santa Monica Blvd., Los Angeles, Calif.

FORREST S. RUSK, ARCHITECT, has removed his offices to 35 East Main Street, Columbus, Ohio.

EDWARD JAMES is now associated with Lee Burns, Architect, 4205 Washington Boulevard, Indianapolis, Ind.

W. NEWTON DIEHL, ARCHITECT, has moved his offices to 904 Jefferson Building, Greensboro, N. C.

R. H. SHREVE, of Shreve & Lamb, Architects, was elected president of the New York Building Congress at their annual meeting.

ELMER A. STUCK has opened an office for the practice of architecture at Jonesboro, Arkansas, and would like to receive manufacturers' catalogues.

SAMUEL S. BENT has opened an office for the practice of architecture and engineering at 35 Bush Avenue, Port Chester, N. Y.

CHARLES W. TUFTS, ARCHITECT, has become consulting architect for the Jones & Laughlin Steel Corporation, 311 Ross Street, Pittsburgh, Pa.

We have moved

from to

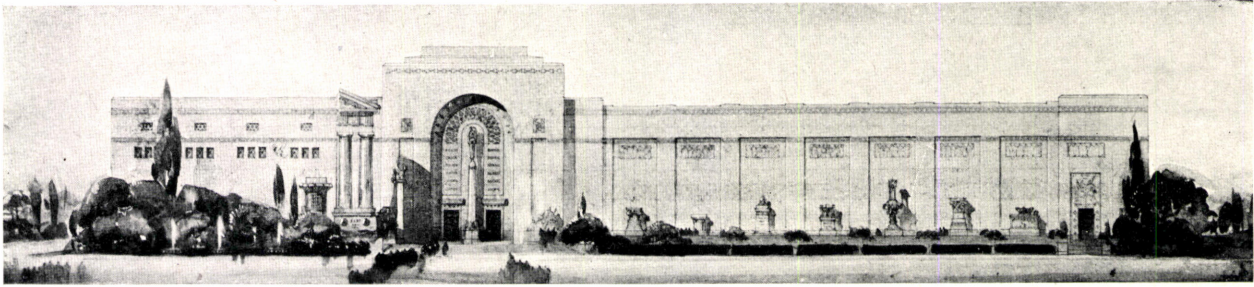
3035 Whitney Avenue    13502 Monte Vista Avenue

Detroit, Michigan

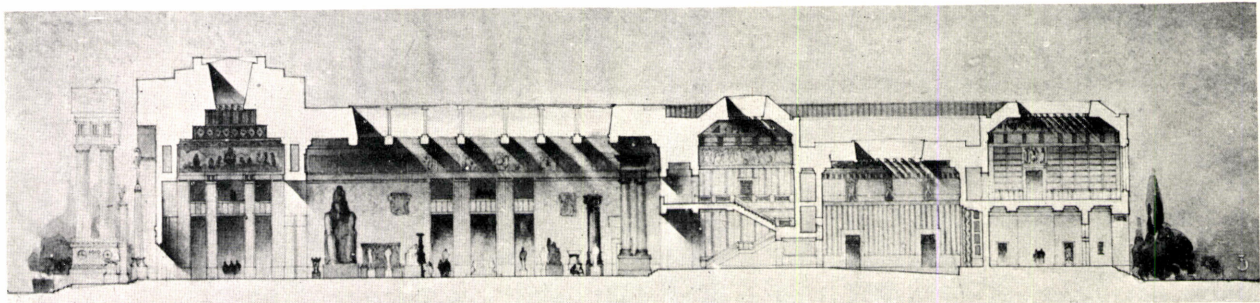
Mr. & Mrs. Lester S. Manning



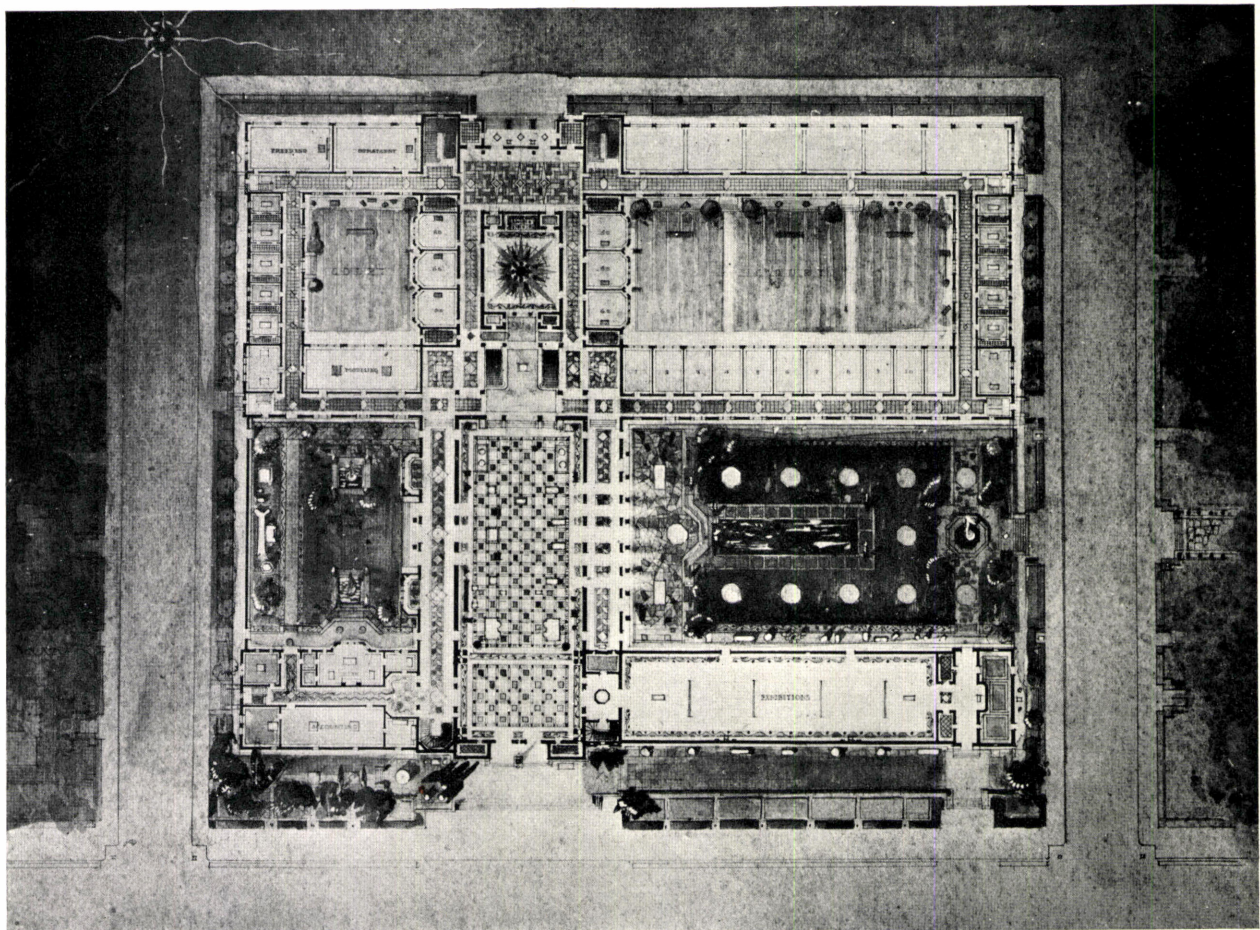
PENCIL POINTS



ELEVATION

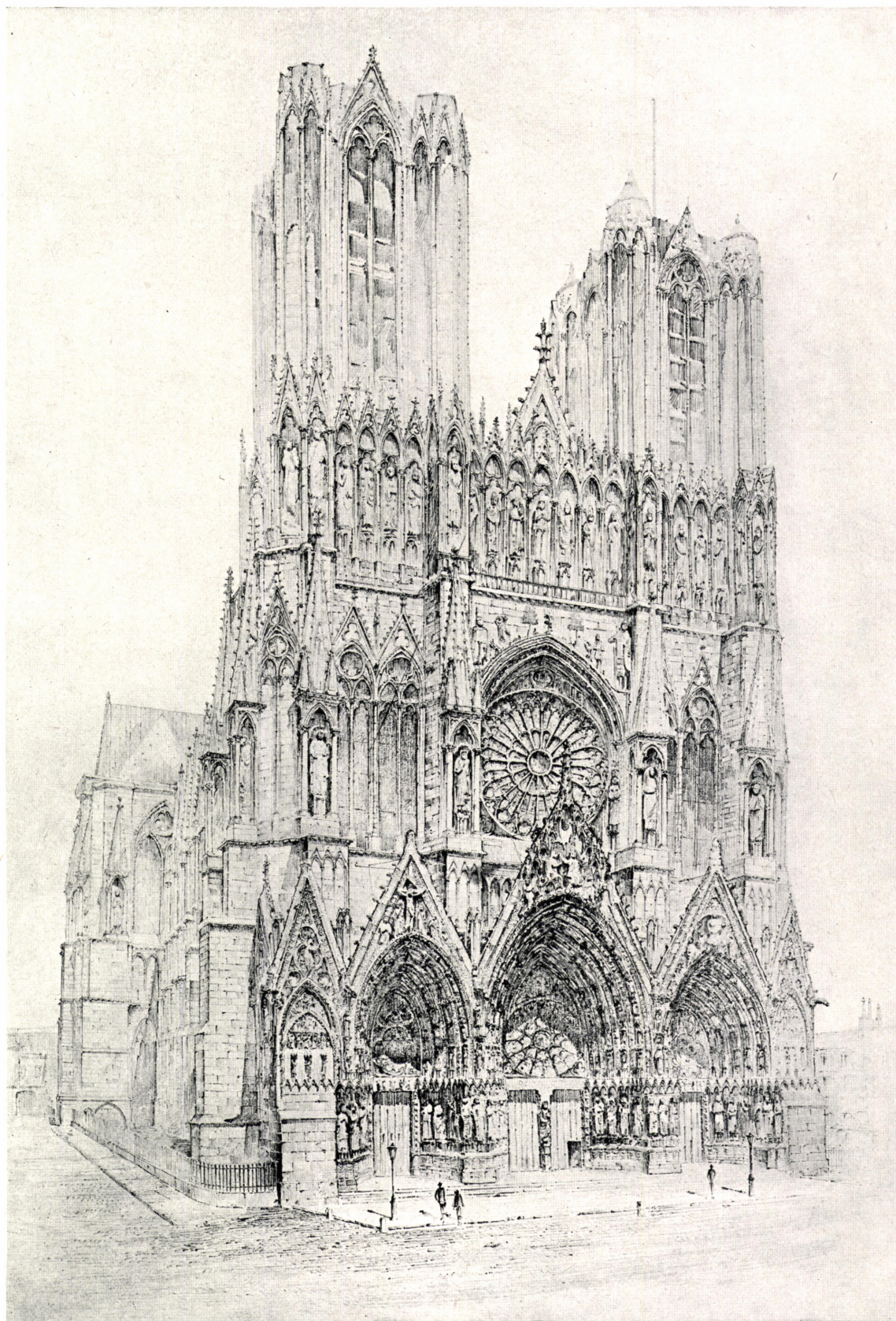


SECTION



WINNING DESIGN FOR "A SCHOOL OF ARCHITECTURE," BY LOUIS SKIDMORE  
ROTCH TRAVELING FELLOWSHIP FOR 1926

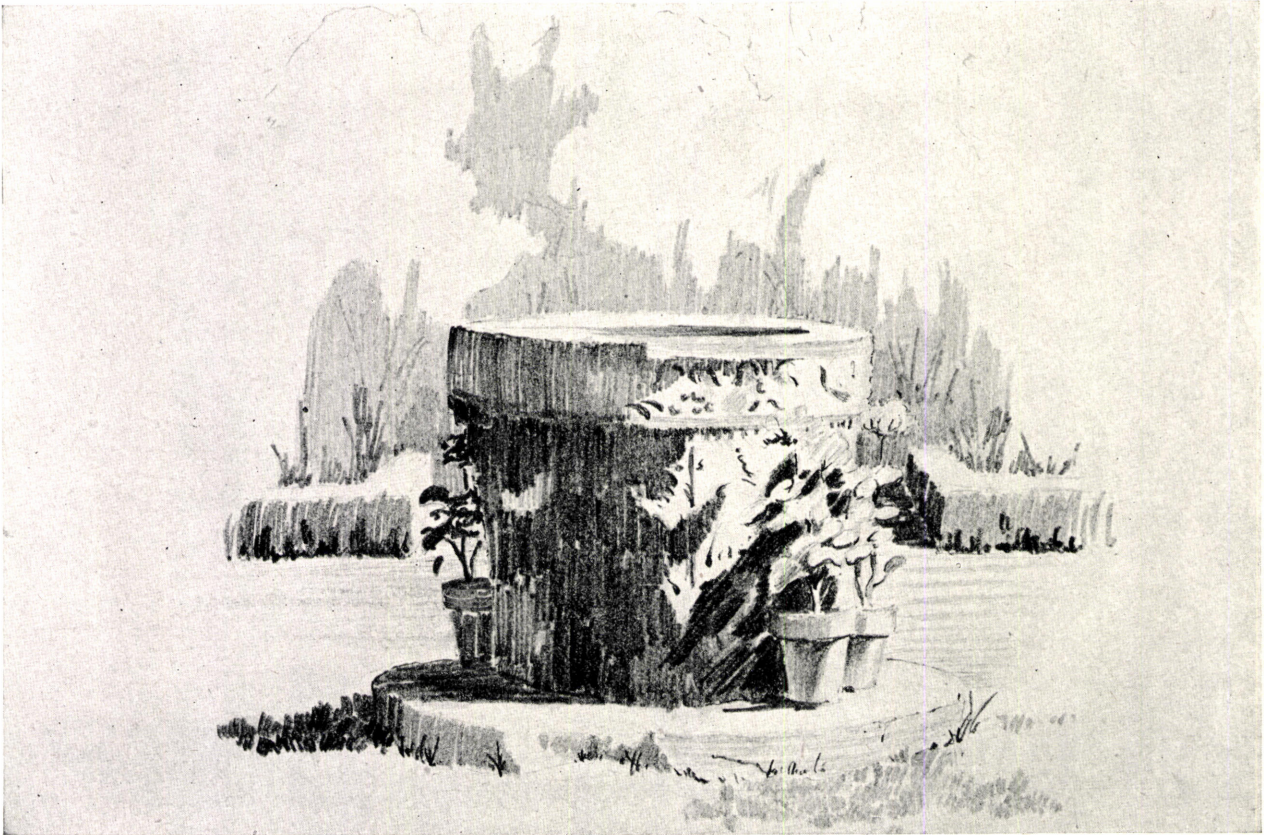




PENCIL SKETCH BY GEORGE W. SIEFKEN

RHEIMS CATHEDRAL AS IT WILL APPEAR WHEN THE WORK OF RESTORATION IS COMPLETED





*Pencil Sketch by J. R. Peterson*

## SCHOLARSHIPS TO TEACH COLLABORATION

A NEW SCHOOL has been founded in the Middle West,—The Post Graduate Institute of Architecture and Landscape Architecture,—in which one of the primary purposes is to bring together during their period of study members of different professions who will necessarily do some of their best work in later practice by collaboration. A group of sixteen men and women have been awarded scholarships for three months of study in the field under a certain amount of guidance with all expenses paid and are now working in the vicinity of Chicago, carrying out the scheme of collaboration which has been conceived, living together, travelling together, working together and carrying out projects of identical nature.

The scheme was thought of by Mr. Ferruccio Vitale, Fellow of the American Society of Landscape Architects, and much of the planning of arrangements was done by him, no doubt based on wide experience he has had in connection with the work of the American Academy in Rome

great fund of inspiration provided by the city of Chicago.

From time to time eminent practitioners in various professions are invited in to look over the work which is being done and give the students the benefit of their personal criticism. Lectures are attended now and then at the Chicago Art Institute and other places and many excursions are planned to take in places of unusual interest to students of the Fine Arts.

Much of the work of the first part of the summer consists of making sketches, measured drawings, water colors, etc., and the work of the last part of the summer will be one large competitive problem, the winners of which will be given an additional scholarship to take them abroad for a year's travel. This competition will be done by teams of students representing both professions so that the winners will consist of one architect and one landscape architect.

The students are selected for the summer's work by the various schools which have been chosen to send candidates:

the University of Michigan, the Ohio State University, the University of Illinois and Iowa State College. Each school sends two architects and two landscape architects. The number of students is limited so that only graduates of high standing in scholarship will be enrolled for the work. It is hoped that the institute will be a great force toward the development of the arts in the Middle West.

The sketches reproduced on this page were made by students during the first week of this year's session.



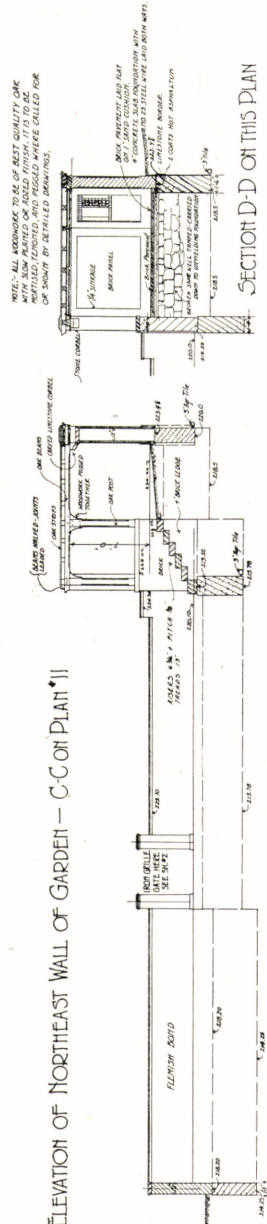
*Sketch of Detail by F. G. Scott*



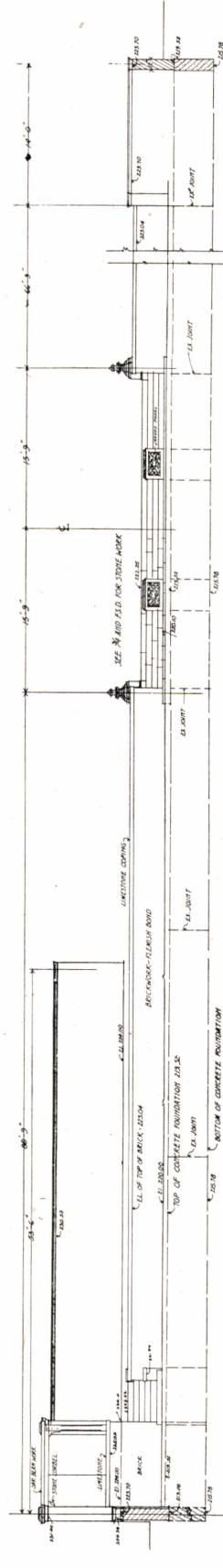
*Sketch of Detail by F. G. Scott*



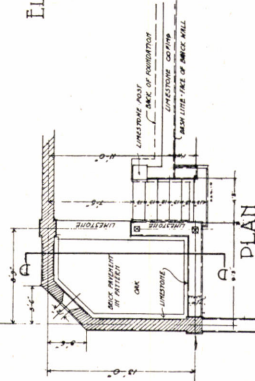
# GARDEN ELEVATION OF NORTHEAST WALL OF GARDEN - C-C ON PLAN 'II'



SECTION D-D ON THIS PLAN



ELEVATION OF SOUTHEAST WALL OF GARDEN



PLAN

Mr. HENRY G. LAPHAM  
BROOKLINE - MASS.  
CONSTRUCTION DETAILS FOR GARDEN  
SCALE 3/4" = 1'-0"  
BROOKLINE - MASS. LANDSCAPE ARCHT.  
FILE NO. 100-100-100  
SHEET NO. 3  
REVISED APRIL 13, 1917

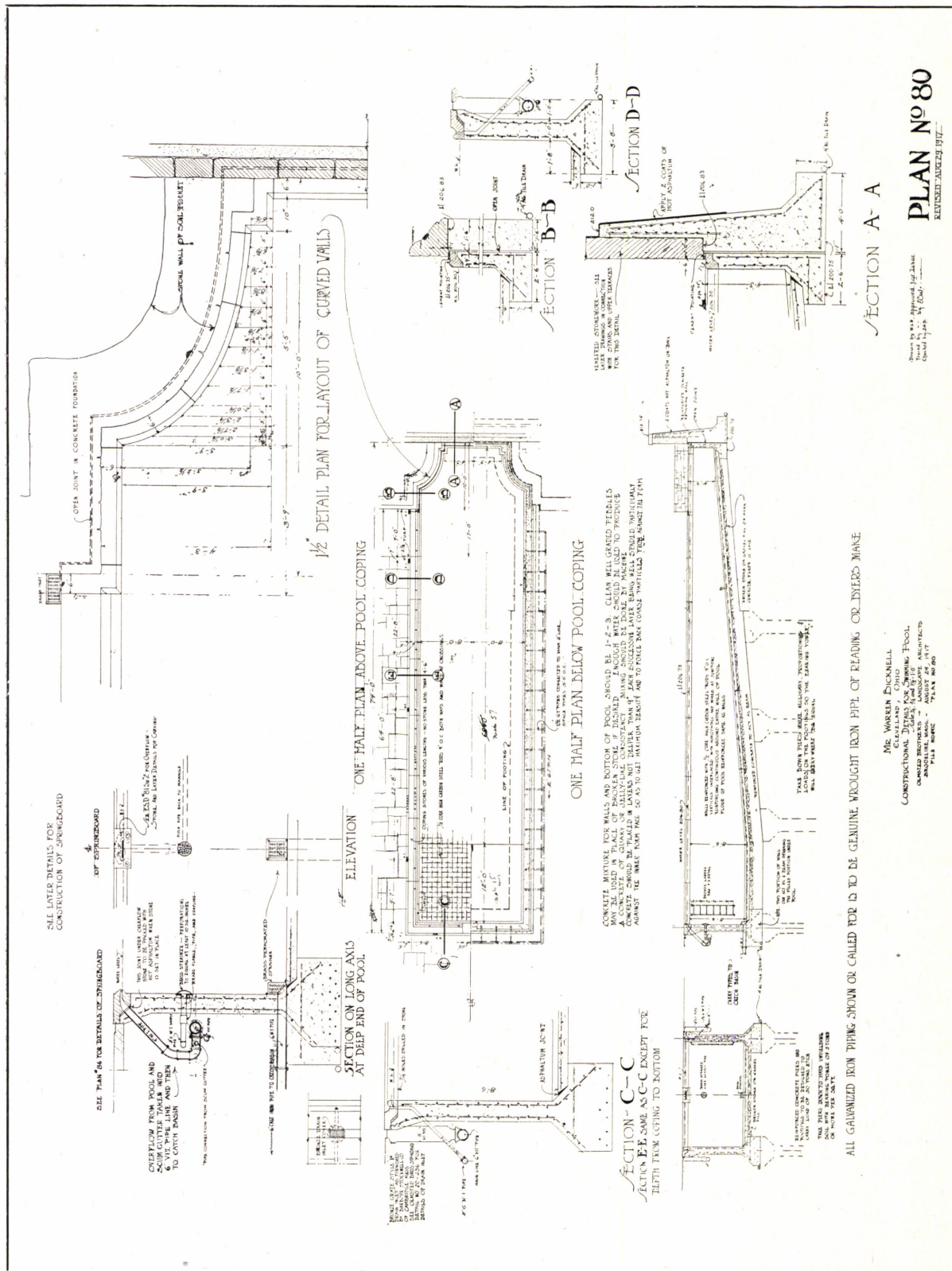
ONE HALF PLAN OF CONCRETE FOUNDATION

ONE HALF PLAN OF LIMESTONE STEPS

PLAN '17 SHEET 3

DETAILS OF CONSTRUCTION, GARDEN FOR MR. HENRY G. LAPHAM, BROOKLINE, MASS.  
OLMSTED BROTHERS, LANDSCAPE ARCHITECTS





DETAILS OF CONSTRUCTION, SWIMMING POOL FOR MR. WARREN BICKNELL, CLEVELAND, OHIO

OLMSTED BROTHERS, LANDSCAPE ARCHITECTS



# HERE AND THERE AND THIS AND THAT

CONDUCTED BY RWR

THE PERIOD OF SUMMER DULLNESS seems to be in our midst at the present writing. Contributions are not so plentiful this month, many of our staunch contributors apparently having gone on a vacation or something. We are going on a vacation ourselves one of these days and are going to leave this department flat, to be edited by some of the other folks around here who think they know a lot more than we do, and who are probably right. Maybe when we get back we will find things running along so smoothly that we will turn right around again and go off on another vacation.—And maybe not!—

The prizes this month are awarded as follows:

Class 1 David Horn

Class 2 Oong Gow

Class 3 New Zealander (Anonymous)

Class 4 Walter A. de Sager

Glad to see some of our readers from remote parts of the world sending in contributions now and then. A Scotchman won a ten dollar prize last month and this month a New Zealander walks off with one of them, so the boys and girls here in the States will have to get busy if they want to keep the money in the country. I suppose it is only fair if Bobby Jones goes over to England and wins the open golf championship, as we are told he did, for some of the PENCIL POINTERS from other lands to invade our shores with their pens and pencils and try to even things up!

Now come on you Scotchmen and New Zealanders, also all the rest of you located beyond the borders of the United States, and let's have plenty of friendly rivalry every month.

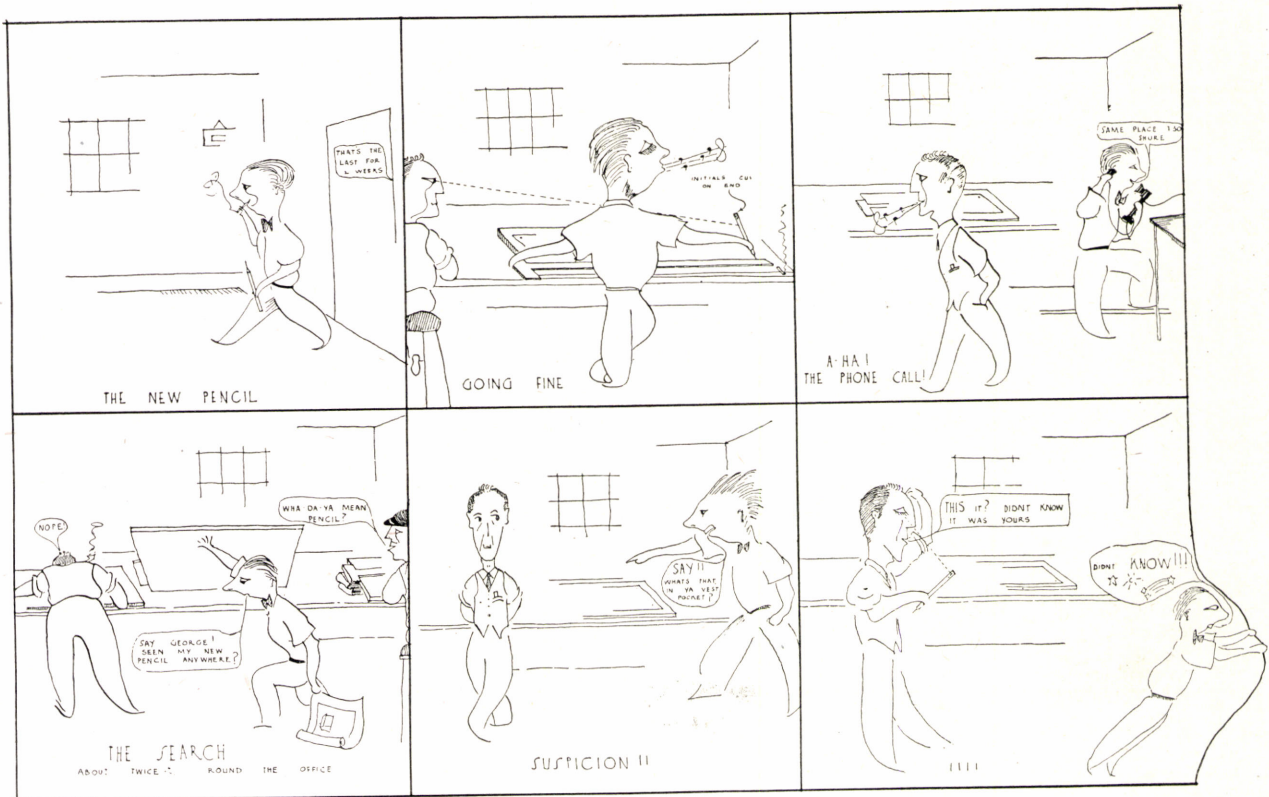
We are proud to have you all on our subscription list and to give your contributions equal consideration with the domestic product.



"OFFICE VIGNETTES," BY ROYAL BARRY WILLS, BOSTON, MASS.



# HERE AND THERE AND THIS AND THAT



CARTOON BY "A NEW ZEALANDER"  
(PRIZE—Class Three—July Competition)

Which reminds us this prize-winning New Zealander has not as yet disclosed his identity to us so we have been unable to send him the prize awarded to him in May. So if he will just tell us who and where he is we will forward the prizes and print his name in the paper.

## OUR OWN TRAVELOGUES (PRIZE—Class Two—July Competition)

Santa Barbara earthquake wrecks  
Are now displaced in Spanish and Mex.  
Some that's good and some that's bannered  
By architects, immodest mannered.

Oong Gow.

M. R. Thayer, instructor in architectural drawing, at the Anaheim Union High School, Anaheim, California, has the right idea. He has organized an Architectural Club among his students called the T-Square Club which recently held a competition on the small house problem. One of the prizes offered was a year's subscription for PENCIL POINTS, won by Mr. Clyde Martin. Congratulations, Clyde!

## THE POOR BUILDER

Submitted by John A. Downs, Washington, D. C.

THE BUILDING LAWS promulgated by King Hammurabi, twenty-two hundred years before the birth of Christ, were brief but pointed. They were seldom evaded, because the penalty was severe and certain.

A translation reads:

"If a builder build a house for a man and do not make its construction firm and the house which he has built collapse and cause the death of the owner of the house—that builder shall be put to death.

"If he cause the death of the son of the owner of the house—they shall put to death a son of the builder of the house.

"If it cause the death of a slave of the owner of the house—he shall give to the owner of the house a slave of equal value.

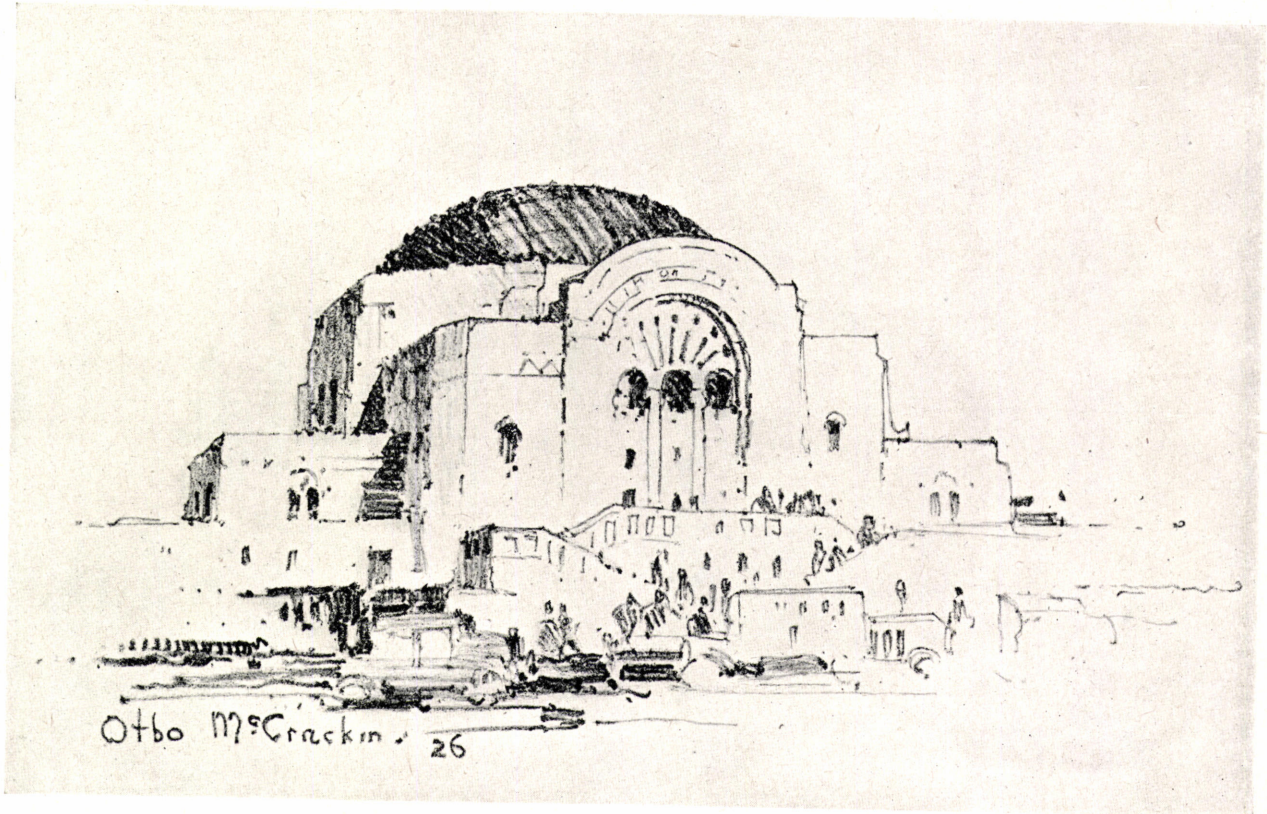
"If a builder build a house for a man and do not make its construction meet the requirements and a wall fall in, that builder shall strengthen the wall at his own expense."



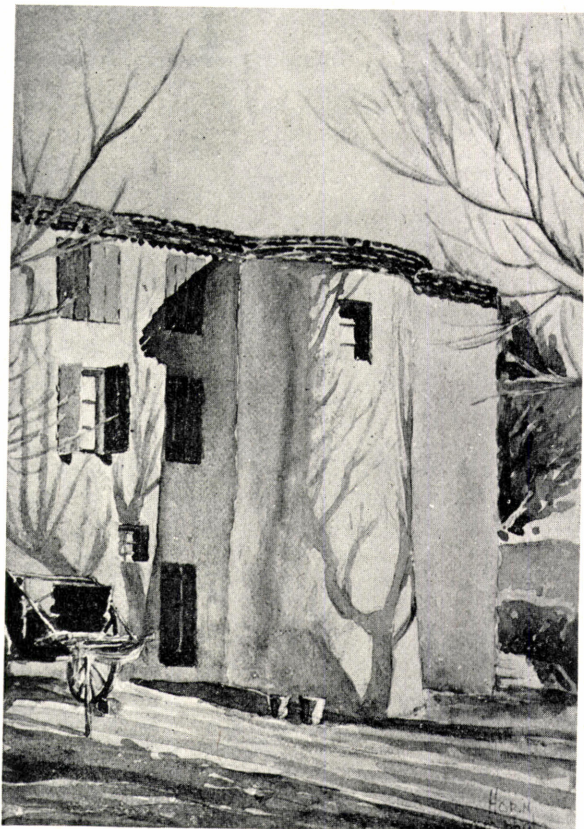
CARTOON BY ARTHUR HERRINGTON, BOZEMAN, MONTANA



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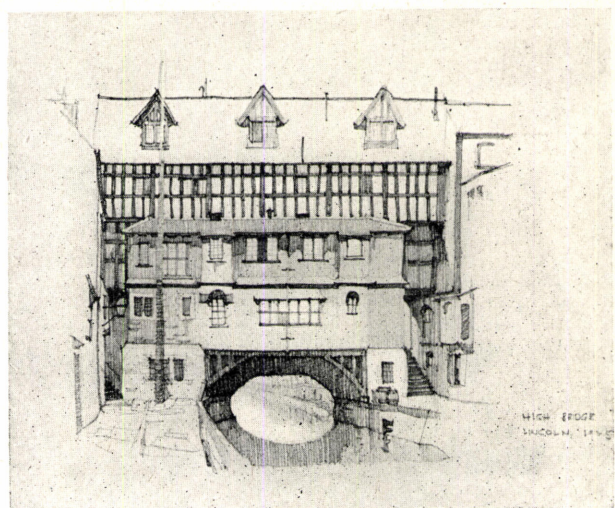
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SKETCH BY THOMAS MITCHELL, BRODY FERRY, SCOTLAND  
"High Bridge, Lincoln"



# THE SPECIFICATION DESK

## A Department for the Specification Writer

### WHO WRITES THE SPECS.?

LESTER N. SANGER

*In the office of John Russell Pope, Lester N. Sanger produces the specification documents, and here is a little article in which Mr. Sanger tells us all how he feels about it. And just by way of introduction to all those who may be interested in the subject of specifications here is a picture of Mr. Sanger.*

*This is the first of a series of articles to be contributed by different specification writers for the purpose of bringing about an interchange of ideas and of stimulating discussion. In the third paragraph of Mr. Sanger's contribution there is a wide open invitation addressed especially to contractors to say what they have to say on the subject of architects' specifications. We hope that some one will take Mr. Sanger at his word and handle the subject straight from the shoulder, and without any ifs, ands or buts. And this same invitation goes not only for contractors but for everyone else who has anything really vital and constructive to offer. Remember the door is more than ajar—it is wide open, the latch string is out and there is a pile of white paper at the print shop just waiting to be used in printing articles on any phase of the specification problem.—EDITOR.*

CONCERNING SPECIFICATION writing, a great deal could be written on the subject. However, the old saying holds true in this case as in many others, "It is easier to preach than to practice"; and I might add, much easier to criticize than to execute.

It is not my intention, therefore, to attempt to tell somebody else how a specification should be written, but I will merely state some of my feelings on the subject to be read for what they may be worth.

Before proceeding any further let me state that to my mind the best critics of specifications are the contractors, but very often, for obvious reasons, such criticism is withheld. It might be well worth while to have some of the reputable contractors frankly express their views on the subject. The writer has found that valuable information can be obtained from contractors, manufacturers and workmen.

Possibly no two specification writers work alike, and if a man is qualified he can no doubt accomplish the results desired with less effort by proceeding in his own way than by following the procedure of another.

The specification writer should of necessity possess more than a theoretical knowledge. He must have a thorough, practical knowledge of materials, erection, and the building industry in general.

To obtain some of the necessary qualifications, in my opinion, the student of specification writing should acquire his foundation or training not only from the inside of an architect's office, but from actual experience out on the job, and if possible, in the organization of a general contractor. After experience in the office of a general contractor one will realize that the Construction Department in estimating purchasing, as well as in field work, depends more intimately on the specification than is commonly recognized.

As to the writing of a specification: one of the first and important points is to visualize the building. This is



LESTER N. SANGER

*Mr. Sanger is a member of the Architectural League of New York and of the Construction Club of that city. He received his training at Columbia University and among the firms that he has been associated with are Carrère & Hastings, Delano & Aldrich, Dennison & Hiron, Marc Eidlitz & Sons, and Hoggson Brothers.*

important as one cannot produce a clear specification if conception of the building is vague. It is essential (especially in offices producing the higher grade of work) that the specification writer should have sympathy for the design and architecture, to enable him to properly interpret the intention of the designer.

Specifications should be arranged as much as possible to facilitate estimating and subletting of the work and written in sections covering the various branches of the work as nearly as possible in the proper sequence of building construction. This arrangement demands some knowledge of jurisdictional awards in the Building Industry. Although the specifications are arranged with a view to convenience for letting the necessary sub-contracts, all reference to sub-contractor for any of the work should be avoided.

A good Index is a convenience and time-saver.

General Conditions should be in accordance with the office practice—checked to suit the job and in no way conflict with the articles of Agreement used.

A definite correlation should exist between drawings and specifications but duplication of information should be avoided. The practice of specifying or describing certain work (such as ornamentation, or special conditions of flashing, waterproofing, etc.) which should be shown on the drawings, thus leaving to the contractor to interpret what is wanted, should be avoided.

To my mind, the drawings and schedules should cover as far as possible the locations and extent of the various materials and finishes. The specification should give only a brief descriptive list of the work included but should include in detail the definite kind and quality of materials used and requirements of workmanship. Our office has found it good practice to formulate schedules accompanying the drawings, which give locations and finish materials of the various spaces, window and door openings, stairs, etc.



The specification refers to the schedules thus eliminating long lists of locations, numbered openings, etc., which would not be obtainable until the drawings are completely lettered and numbered as to spaces and openings. It is seldom, in most offices, that the ideal arrangement of writing from a completed set of drawings prevails. Reference to schedules will reduce the possibility of discrepancies between drawings and specifications as to the scope of the various items.

Results desired are essentially a specification requirement. However, the method in obtaining the results can and should be, in most cases, left to the contractor who may use his own method, probably just as satisfactorily and with less expense. If responsibility for the results to be obtained is placed upon the contractor, it is reasonable to feel that he should not be dictated to in regard to the method of construction obtaining the result desired. Legally the contractor, no doubt, would be relieved from responsibility as to results if he followed a definitely specified method for doing the work.

Each specification should be treated as a separate problem. A specification writer should try to systematize, but not necessarily standardize, his work. In reference to a systematic method of writing specifications, it is necessary to bear in mind that the type of work and practice in the different architectural offices varies and, therefore, the method of writing specifications will vary.

In any and all methods of writing specifications however, facts should be considered rather than opinions, and fairness to all parties constantly kept in mind.

## SPECIFICATIONS

By W. W. Beach

### ELECTRICAL WORK

(Continued from Page 452, July Issue)

(D) PLUG RECEPTACLES shall be "—" No.— or "—" No.—, capable of carrying 100 W each. Where so indicated, 2-plug receptacles shall be installed in single gang of 200W capacity.

(E) FLOOR-PLUG BOXES shall be of approved type and make, similar to "—" No.—, with cast iron box, porcelain receptacle, composition plug, waterproof brass plate etc., all as catalogued.

(F) WALL SWITCHES, except where otherwise specified, shall be wall-type, tumbler switches of approved make, similar to "—" No.—, single or in gangs, as indicated. All switch-plates shall be  $\frac{1}{8}$ " brass, finished to match hardware of room in which located, properly secured, without binding the switch. Plates for gang switches shall be in single piece. In unplastered rooms, wall switches shall be approved snap-switches.

#### ARTICLE 5. Wiring and Equipment.

(A) WIRE AND CABLE. All wire and cable shall be "—" or "—" or "—" highest-quality tinned copper of 98% conductivity, conforming to the latest requirements of the National Electric Code. All wire shall be rubber-covered and double-braided, with colored woven threads in braid to identify; each coil to bear Underwriters' tag with Maker's name, date and maximum voltage noted thereon. Where not specifically stated, all branch wires shall be No. 12, except for single outlets and for runs shorter than 75', carrying less than 100 W, for which No. 14 may be used for any light or power circuit. Wire, No. 6 and larger, shall be stranded, as required by Code. Special approved weatherproof wire shall be used for all extensions to outside outlets. Wire for clock and buzzer circuits shall be approved No. 18 covered wire, standard for such work, run as directed, not in conduit.

(B) SWITCH-BOARDS AND CABINETS. Service-box at point where mains enter through wall shall be an approved cast iron or steel box containing 500-Amp knife switch and cartridge-fuse, mounted on slate base. There shall also be installed, at points shown, one main switch-board and five secondary panel-boards, one in each story and one on stage. Panel-boards shall be  $\frac{7}{8}$ " slate, polished and oiled, with wiring-troughs of  $\frac{1}{2}$ " slate, all mounted in standard steel boxes, fitted with hinged steel doors with approved flat-key locks with all keys alike. Each panel-board shall be of proper size to accommodate the switches and fuses in orderly arrangement in accordance with Contractor's detail drawings, which shall be submitted for approval, as specified in General Conditions. Main switch-board shall be located in machinery room in basement, about where shown, shall

be of  $1\frac{1}{4}$ " slate, mounted on a rigid frame of  $2"x2"x\frac{1}{4}"$  steel angles securely anchored to floor and wall. All slate shall be of selected quality, free from mineral veins or other defects which might impair its strength, appearance or insulating qualities. All exposed surfaces shall be smooth-polished, with beveled edges and rubbed-oil finish. Steel for panel boxes shall be of No. 10 gage in single piece, bent to form, with corners riveted and fronts fitted with steel angles tapped to receive trim, and with proper supports for slate work. Doors and trim shall be No. 8 gage, with flush surfaces. Doors shall be fitted inside with glass panels in steel frames to contain approved wiring diagrams and outlet indices.

(C) MAIN AND CIRCUIT SWITCHES. All main, branch and power switches shall be triple-pole, single-throw, of heavy construction, of cold-rolled copper, of approved make and design, for 220 volts. All connection studs shall be of copper of ample size, fitted with approved copper lock-nuts. Cross-bar handles shall be of approved, smooth-polished, black composition. Dimmer to control auditorium lights from stage panel board shall be — Co.'s No.— or similar, approved by Architect.

(D) BUS-BARS shall be of cold-rolled copper of 98% conductivity and of ample carrying size, no bars less than  $\frac{1}{8}"x1"$  and none less than switch capacity. Bars shall be smooth-polished and have all connection surfaces machined and thoroughly cleaned. All connections shall be perfect in design and construction.

(E) FUSES shall be "—" or other approved enclosed cartridge-fuses, of required amperage and proper copper knife-blade connections.

(F) FUSE-PLUGS shall be "—" or other approved make and of required amperage, with sockets neatly mounted on slate boards in approved manner.

(G) LIGHTING FIXTURES, except those of special design, are from the catalog of — Fixture Co. and shall be complete as therein stipulated, with glassware and all metal parts and wiring. All exposed metal work shall be polished natural bronze finish, without lacquer, except for exterior work, which shall be rustless black iron, and for work in basement, shops, kitchen and store rooms, which shall be ordinary lacquered brass, and for that in nurse's room and in toilet rooms above basement, which shall be heavy white baked enameling.

(H) SOCKETS shall be "—" or other approved make of standard screw socket, with keys, except where chain-pulls are indicated by "C" on plan or in schedule.

(I) CORD DROPS shall consist of best approved braided cotton cord and key-sockets.

(J) ALL LAMPS in gymnasiums and shops and on cord drops shall be protected with approved tinned wire guards similar to "—" for ceiling fixtures and "—" for individual lamps, the latter to have key lock, securing both guard and lamp, with duplicate keys to be delivered to the Superintendent.

(K) LAMPS shall be "—" or other approved make, of wattage indicated. Outlets marked "E" shall have 10-W ruby lamps. All lamps shall be tested and certified new and perfect.

#### ARTICLE 6. Miscellaneous Work.

(A) CLOCKS shall consist of an electric-winding program clock and secondary clocks, of — Clock Co.'s or other approved make, in finished oak cases, Roman dial numerals, and completely equipped to operate with transformer from the electric lighting current through storage battery and rectifier, with panel-board at convenient point near master-clock, all as shown on Maker's diagrams, which shall be submitted for approval. Clocks in gyms shall be protected by approved metal grilles. House bells shall be 6", dust-proof, and the outside gongs shall be 10". All shall be completely equipped, with provision for ready operation of the system by hand for emergency or alarm.

(B) BUZZERS shall be "—" No.— or other approved pattern in iron boxes, operating on 6 volts, supplied through transformer from electric lighting current. Push-buttons shall be neatly mounted on an oak panel-board convenient to principal's desk, each button provided with clearly legible label. Panel board shall be similar to No.— in catalog of — Co.

### WORKMANSHIP

#### ARTICLE 7. Conduit Work.

(A) INSTALLATION OF CONDUIT shall be in accordance with best approved methods, all joints having sharp-cut threads of good length to afford tight connections with couplings; with all joints made up butt to butt, with white-lead compound on male threads only. Both ends of all pipe shall



be reamed after cutting threads, to remove all obstructions. All conduit, unless otherwise specified shall be run concealed in walls, partitions, floor construction or furred ceilings. No sharp bends or offsets will be permitted. Conduit in floor fill shall be laid close to arches and securely tied. Conduit in concrete slabs shall not be closer than 1" to bottom of same and shall be well secured in such manner as not to interfere with reinforcing members. Conduit in floor construction shall not cross over steam or water pipes and, where crossing other conduit (or in any case), shall not be allowed to come closer than 1½" to finished plane of floor. Conduit in furred ceilings and walls shall be securely wired. The entire conduit system shall be fished and thoroughly cleaned out before wires or cables are inserted. During construction, all open ends of conduit shall be kept plugged or capped and no sand or dirt allowed to enter same during storage or construction. Vertical runs of conduit shall be supported, once in each 15', with approved clamp-hangers.

(B) CONDUIT FITTINGS shall be of same quality and installed with same care as specified for conduit. All shall be smooth, inside and out; free from kinks, buckles and dents. All elbows shall be machine-bent to long radius and all openings smoothly reamed. Pull-boxes shall be installed, in approved locations, not over 150' apart in all straight runs of feeder conduit; not over 100' apart in runs with single right-angle bend; and not over 75' apart in runs with two right-angle bends.

(C) ALL OUTLET LOCATIONS shall be in general as shown on plans but may be more exactly determined by the Architect in the field, or by detail drawings. In no case shall the Contractor locate any outlet other than by specific directions. Power outlets, intended to serve the installations of other Contractors, shall be as directed by them. In general ceiling outlets shall be in centers of rooms or panels; bracket outlets shall be 6'0" above floor; switch outlets shall center 4'6" above floor; plug receptacles shall center 15" above floor. Drawings shall be consulted for exceptions to all the foregoing locations. No switch shall be placed back of doors, but shall, unless otherwise provided, be located convenient to door opening and about 6" from back of casing.

#### ARTICLE 8. *Wiring.*

(A) MAINS will be brought into building by local Service Co., as stated in Par. F of Art. 8, at which point the Contractor shall provide inlet conduits for two No. 00 and one No. 2 (neutral) wires. On side wall, just inside of building, in approved location, there shall be installed a 500-Amp. main-line knife-switch and cartridge-fuse, mounted in cast iron or steel box. From this service-box, the two No. 00 and one No. 2 wires shall be extended to main switch-board in machinery room and there connected through meter to a second 500-Amp knife-switch. From this switch-board, there shall be run 5 branches of No. 4 wire, one to panel-board in each story and one on stage, each branch controlled by a 100-Amp knife-switch. There shall also be located on main switch-board a control knife-switch of proper size for each basement power outlet. Each of these branch and power outlets shall be protected by a cartridge-fuse of proper size. Power circuits shall be 3-wire for 220 volts and lighting circuits 2-wire for 110 volts.

(B) BRANCH WIRING. The branches of No. 4 wire shall be connected, in each case, to a second 100-Amp knife switch, mounted on panel-board, which shall also accommodate a 15-Amp plug-fuse and socket to control each circuit.

(C) IN GENERAL. Circuits and feeder wires shall be continuous. Splices in other wires shall preferably be made nearest to further end and none shall be made between boxes. All joints shall be mechanically perfect, soldered, compounded, rubber-taped, friction-taped and again compounded. Loops at least 6" long shall be left at all outlets for connections.

#### ARTICLE 9. *Panel-Boards.*

(A) MAIN SWITCH-BOARD shall be as specified in Arts. 5 and 8, located as directed, 3'0" from wall in machinery room and rigidly anchored to both wall and floor. It shall be of proper size to accommodate the meter, main switch, 5 branch-switches and switches for the several power lines called for; also the cartridge-fuse to protect each switch.

(B) PANEL-BOARDS for branch circuits shall be located as shown, in each story, 6" above head casing of steel lockers. All shall be recessed, to have steel casings finish flush with plaster surfaces. Each panel-board shall accommodate the branch-switch and plug-fuse-socket for each circuit. Similar panel-board shall be located in recess in wall on

stage, adjoining proscenium opening, at proper height for easy operation. In addition to main-branch-switch and plug-fuse sockets, this board shall also have dimmer mounted thereon, controlling all outlets in auditorium, including those lighting proscenium.

(C) IN GENERAL. Each panel-board, other than main switch-board, shall be mounted in steel cabinet, as specified in Art. 5. Each panel-board shall be of slate, as therein specified, with all fittings symmetrically arranged and properly connected. Drawing shall be submitted showing arrangement of fittings and wiring for each board, none of which will be accepted, unless in accordance with approved drawing. Circuit controls shall be in numerical order, with the circuit numbers stamped on copper bars.

#### ARTICLE 10. *Switches.*

(A) SWITCHES ON PANEL-BOARDS shall be as specified in Arts. 5 and 9.

(B) WALL SWITCHES shall be as specified in Art. 4, single or in gangs, as indicated. Each light outlet shall be controlled, either by wall-switch or chain-pull, except that cord-drops shall operate only by socket-key.

(C) SCHEDULE REFERENCES to switches are as follows:—

"A" indicates switch on side-wall of room to control ceiling-lights. "B" indicates 3-way switch on wall near stairs to control lights above or below.

"C" indicates chain-pull sockets.

"D" indicates switches with ruby pilot-lights on switch-plates to control lights in roof-space and vault.

"E" indicates switch to operate with flat-key, all keys alike.

#### ARTICLE 11. *Outlets and Fixtures.*

(A) SCHEDULE.

(Note: Upper figures at electric outlets on plans indicate circuit numbers and lower figures indicate wattage of outlet.)

(Here is given a complete schedule of all electric outlets, room in which located, number and kind of fixture (pendant, bracket, receptacle or what not), catalog page and plate number, number of lights, wattage, switch reference and circuit number. Giving this in detail here would serve no purpose.)

(B) CIRCUITS. Circuits 1 to 8 inclusive, 17, 35, 36, 37 and 38 are on basement corridor panel; 9 to 16 inclusive are on stage panel; 18 to 24 inclusive are on first story panel; 25 to 34 inclusive are on second story panel; and 39 to 48 inclusive are on third story panel. Circuits 49 and 50 are No. 8 wire for 220-V circuits to motors in fan rooms. Circuits 51 to 54 inclusive are spares for future 220-V circuits to motors in manual training room.

(C) LIGHTING FIXTURES shall be installed (as specified and catalogued) by expert fixture hangers, all pendants plumb and in perfect alignment, and all brackets exactly normal to the planes supporting same. Each fixture shall be properly fitted with glassware specified or indicated in catalog, with lamps of specified wattage, all in good condition when work is accepted. 50 lamps each, of 40, 100 and 200 watts, shall be provided, tested in presence of Superintendent and stored where directed. Approved factory-sealed packages need not be tested. Shop drawings, in accordance with Architect's details, shall be submitted for outside wrought iron brackets.

#### ARTICLE 12. *Low-Voltage Work.*

(A) PROGRAM CLOCKS. Master-clock shall be installed as directed in Principal's office, and 28 secondary clocks in various other rooms, as indicated, all in accordance with standard directions of the Maker, with necessary modifications, as approved by Architect, to suit this particular work. All wiring shall be concealed in approved manner and necessary connection made with lighting current through transformer. Panel-board shall be located near master-clock, and all bells and outside gongs properly mounted in approved locations and properly connected. All parts shall be in perfect condition when subjected to final tests, both by hand and electrical operation.

(B) BUZZER SYSTEM shall be installed as specified in Par. N of Art. 3 and Par. B of Art. 6, with all wiring concealed in approved manner. Panel-board shall be mounted on or near Principal's desk and all buzzers in various rooms as directed. All shall be tested and shall be in good working order when accepted. Wiring shall be with No. 18 bell wiring for 6-volt current supplied through transformer off of lighting current.

(C) TELEPHONE CONDUIT will be left as approved, ready for insertion of Telephone Co's wires.



# PUBLICATIONS

## OF INTEREST TO THE SPECIFICATION WRITER

*Publications mentioned here will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm using them. When writing for these items please mention PENCIL POINTS.*

**Laundry Machinery.**—A. I. A. File No. 35 D. Looseleaf data portfolio showing typical layouts at large size and other valuable information for those contemplating the installation of modern laundry equipment. Standard filing size. 8½ x 11. American Laundry Machinery Co., Cincinnati, Ohio.

**Wall Paper.**—Monthly publication of interest to those concerned in wall decoration. The issue for July contains five beautiful color plates in addition to other attractive illustrations and suggestions for wall treatments. Wall Paper Manufacturers Association, 461 8th Ave., New York.

**Cool, Fresh, Invigorating Air.**—Leaflet on the subject of ventilating fans. Cross sections, dimensions and tables of sizes. B. F. Sturtevant Co., Hyde Park, Boston, Mass.

**Doorways.**—The July issue shows an attractive picture of a doorway 83 years old and contains much practical information as well. Richards-Wilcox Mfg. Co., Aurora, Ill.

**Iron, Bronze and Wire Works News.**—Monthly publication of interest to architects published by the National Association of Ornamental Iron & Bronze Mfrs., 614 Race St., Cincinnati, Ohio.

**Atlantic Terra Cotta.**—Monthly magazine for architects and draftsmen. Vol. 8 No. 9 is devoted to the activities of the Southern Branch of the Atlantic Terra Cotta Co. and shows many notable examples of buildings throughout the South in which Atlantic Terra Cotta figures prominently. Atlantic Terra Cotta Co., 19 West 44th St., New York City.

**Crittall Standardized Casements.**—Architects Catalog No. 1-26 is a complete handbook on casement windows for residential use. Profusely illustrated, containing suggestions for screening, details, sections, specifications. A. I. A. File No. 16-e-1. 31 pp. 8½ x 11. Crittall Casement Window Co., Detroit, Mich.

**Bridgeport-Keating Flush Valves.**—Instruction and data book describing and illustrating various models of this type. Also contains installation instructions. 16 pp. 4 x 9. Bridgeport Brass Co., Bridgeport, Conn.

**Massachusetts Modified Squirrel Cage Fans.**—Bulletin No. 53 illustrates and describes this type of fan. Contains information and tables specially compiled for the use of architects and engineers, performance charts and specifications, details, cross sections. A. I. A. File No. 30 D-1. 26 pp. 9½ x 12. Massachusetts Blower Division of The Bishop & Babcock Sales Co., 4901 Hamilton Ave. N. E., Cleveland, Ohio.

**Indiana Limestone Details.**—Service publication No. 13, series D-4. Another interesting number in this series containing detail drawings of Indiana Limestone cornices applied to reinforced concrete construction. Details of cornices in the Roman Doric and the Roman Ionic orders. Standard filing size. 8½ x 11. Indiana Limestone Quarriesmen's Association, Bedford, Indiana.

**Waterproofing and Dampproofing.**—A. I. A. Classification 7a and 7b. Specification and data portfolio covering data and specifications on waterproofings and dampproofings, and allied products. Carefully indexed and logically arranged to conserve the time of those having use for such a document. Complete specifications in convenient form for ready use. Standard filing size. Master Builders Co., Cleveland, Ohio.

**MacArthur Piles.**—Folder illustrating and describing the Compressed Concrete Pedestal Type of Pile. 8½ x 11. MacArthur Concrete Pile and Foundation Co., 15 John St., New York City.

*Published by the same firm, Composite Type of Piles, Compressed Straight Shaft Type and The Influence of Shape on the Supporting Capacity of Precast Concrete Piles.*

**Ferrox Drill and Torch Resistant Vault Plates.**—Leaflet illustrating and describing this type of Vault Plates. Contains typical detail of Ferroxx Plates and list of installations. 8½ x 11. American Abrasive Metals Co., 50 Church St., New York.

**40-40-20.**—Treatise on a tested first grade paint. Interesting information together with illustrations, formulas. New Jersey Zinc Co., 160 Front St., New York City.

*Published by the same firm, When White is White (paint facts) and Once In a Lifetime.*

**Data Sheets, A. I. A. Classification 12e1.**—Interesting data sheets and specifications on Roofing Tile illustrating the Georgian, and Mission style, details and plans. Standard Filing size. The Heinz Roofing Tile Co., Denver, Colo.

**Norton Floors.**—Folder illustrating and describing the Norton Floor for Heavy Duty. Specifications. 8½ x 11. Norton Co., Worcester, Mass.

**Stopping Fire Due to Chimneys and Flues.**—Booklet containing reprint from an address by D. Knickerbacker Eoyd, reprinted from Quarterly, April 1926, of the National Fire Protection Association. Much interesting material. National Fire Protection Assn., 40 Central St., Boston, Mass.

**Durable Douglas Fir.**—Handsome booklet illustrating and describing the uses of Douglas Fir. 32 pp. 7 x 11. The West Coast Lumber Trade Extension Bureau, Seattle, Wash.

**Truscon Roofs of Security.**—A. I. A. File No. 12 a 32. Contains a presentation of the two types of steeldeck roofs—"FERRODECK" and "I-PLATES". 8½ x 11. Truscon Steel Co., Youngstown, Ohio.

**The Bonded Floors Co., Inc.**, 1421 Chestnut St. Philadelphia, Pa., offer a series of booklets, with full color inserts showing standard colors and designs. Each booklet describes a resilient floor material as follows: "**Battleship Linoleum**," explains the advantages and uses of this durable, economical material; "**Marble-ized Cork Composition Tile**" contains complete information on cork-composition marble-ized tile and the many artistic effects obtainable with it. "**Treadlite Tile**," shows a variety of colors and patterns of this adaptable cork composition flooring. "**Natural Cork Tile**" contains description and color plates of this super-quiet, resilient floor. Practical working specifications for installing battleship linoleum cork composition tile and cork tile.

**Natco Tex-Tile.**—Bulletin Number 177 treats of the various types of Natco Double Shell Tile and is a complete text book for the guidance of architects, contractors and builders. Profusely illustrated in color and contains details of shapes and sizes of Natco Double Shell Face Tile, cross sections, suggestions for Pilaster Construction, Bay Windows, Chimneys, etc., tables for determining height and length of wall, compression tests. 8½ x 11. National Fire Proofing Co., Fulton Bldg., Pittsburgh, Pa.

**"R. I. W." Toxement.**—Architect's specification and descriptive Bulletin covering the use of "R. I. W." Toxement Integral Waterproofing Compound. This booklet gives complete and thorough data covering Toxement Compound for integrally waterproofing mass concrete or cement mortar construction. A. I. A. File No. 7 a 2. 9½ x 11½. Toch Brothers, 443 Fourth Ave., New York.

*Published by the same firm, Steel Preservative Paints, Specification Bulletin covering R. I. W. Protective Paints. A. I. A. File No. 13 e.*

**The Dutch Boy Painter.**—A magazine devoted to the interests of good painting. July is the Sesqui-Centennial number. Very interesting little magazine, containing among other things an article on the "Decoration of Early American Interiors," also Decorative Painting in Colonial Times, and the "American Spirit in Colonial Architecture". Published by the National Lead Co., 111 Broadway, New York.

**Alpha Aids.**—No. 46 of this series presents among other things retaining walls. Cross sections and details are shown. Alpha Portland Cement Co., Easton, Pa.

**The Book of Decoration.**—Brochure, profusely illustrated, covering typical rooms in the various period styles, together with their finishing accessories. Notes on wood finishing. 50 pp. 8½ x 11. Murphy Varnish Co., Newark, N. J.

**Mueller Tile.**—Illustrated brochure showing architectural faience, polychrome, panels, Flemish hand-made tile, Norman, Flash Mosaic and other ceramic products. 48 pp. Mueller Mosaic Co., Trenton, N. J.

**Membrane Waterproofing.**—A. I. A. Classification 7-a-1. Document covering subject with drawings, photographs, specifications, tables of test values, etc. Standard filing size. 8½ x 11. 26 pp. Minwax Co., Inc., 270 Madison Ave., New York City—327 La Salle St. Chicago, Ill.

**Marbleloid—the Universal Flooring.**—Illustrated booklet covering subject of modern flooring in various types of buildings and for many uses. Industrial plants, restaurants, schools, hospitals, sales rooms, churches, theatres are covered. 24 pp. 8½ x 11. The Marbleloid Co., 461 8th Ave., New York City.

**Major Flood Light Unit.**—Bulletin No. 5 describes the construction and adaptability of the Major Unit for efficient flood lighting in theatres, show windows, mills, etc. List prices and dimensions. Major Equipment Co., Inc., 360 N. Michigan Blvd., Chicago, Ill.

**The Roof Beautiful.**—Brochure illustrated in color on the subject of roof treatment. 8 x 11. 32 pp. Ludowici Celadon Co., Monroe Bldg., Chicago, Ill.

**Greenhouse Studies.**—Series of renderings which include plans, elevations, sections and structural features of all types of glass enclosures, solar bathing rooms, glass enclosed swimming pools, aviaries and children's glassed-over play houses, as well as green houses of various types. A suitable binder will be furnished with first mailing. Lord & Burnham Co., 30 E. 42nd St., New York City.

**Water Mixing Valves.**—Illustrated handbook showing thermostatic water mixing valves for showers and a variety of other uses. Diagrams and complete specification data. 32 pp. 7½ x 10½. Leonard Rooke Co., Providence, R. I.

**The Kernerator.**—Covers disposal of rubbish and other waste in the residence and apartment building. 40 pp. 6 x 9. Kerner Incinerator Co., 1003 Chestnut St., Milwaukee, Wis.

**Store Front Construction.**—Full size details showing Kawneer construction. 16 x 20. Kawneer Mfg. Co., Niles, Mich.



# Competitions in Design

1—Competition for street traffic signal tower and traffic signal standard designs, and street lighting standard designs, including street name signs.

2—Competition for filling station designs.

for

## BISCAYNE BOULEVARD Miami, Florida

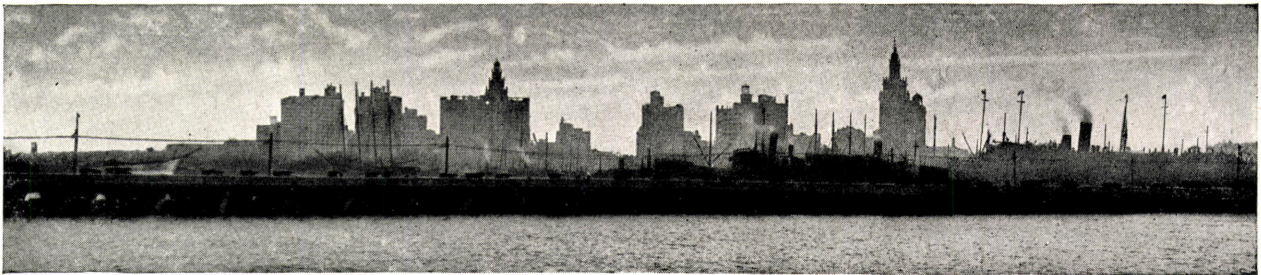
Conducted by BISCAYNE BOULEVARD ASSOCIATION

BENNETT, PARSONS and FROST, *Professional Advisers*

These competitions are approved by the American Institute of Architects.

[ *Note:* The electrical and mechanical equipment of the  
above structures is not a part of these competitions. ]

COMPETITIONS CLOSE 6 P.M. OCTOBER 1, 1926



Miami Harbor and Skyline of the lower portion of Biscayne Boulevard, taken from the new Causeway (Venetian Way) to Miami Beach and showing the Thirteenth Street Causeway in the foreground.

These competitions are open to all who desire to offer designs of merit for the above named structures. The purpose of these competitions is, [1] to obtain designs for traffic signal towers and standards and street lighting standards to be erected on Biscayne Boulevard, Miami, Florida. [2] to develop ideas for more pleasing filling station designs and [3] to stimulate general interest in the designing of better structures pertaining to public street improvement.

Biscayne Boulevard is a 100 foot street which extends from the center of Miami northward to Northeast 55th Street [three and one-half miles]. It runs along Biscayne Bay for one mile, and about one block from the Bay for the rest of its course through a high class residential section of Miami. The south end [formerly Bay Shore Drive] is an old street recently widened and improved. The north two and one-half miles is a new street opened by cutting through fourteen improved city blocks, widening a narrow street [formerly Northeast Third Avenue] through nineteen improved blocks, and extending the street thus created through the recently divided estate of Charles Deering, into Bay Shore, a suburb of fine homes. Biscayne Boulevard here becomes the Federal Highway, which combined with the Dixie Highway, extends 360 miles to Jacksonville, Florida, and beyond to the Northern States.

Buildings are now being demolished along the new portion of Biscayne Boulevard and this section will be opened about December 1, 1926. Already dwellings are giving way to buildings for showrooms, theatres, offices, restaurants and first class shops.

Being a main artery of through traffic, a system of traffic signals will be required, lighting will be made a feature, and the demand for filling stations along the northern section of the Boulevard must be taken into consideration.

The Biscayne Boulevard Association is anxious that such structures shall be well designed so as to add to the beauty of the Boulevard. The Association, representing more than 80 per cent of the property, is desirous to control in a measure the architecture and the uses of the street. With the cooperation of the City of Miami and the City Planning Board, Royal Palms will be planted the entire length of Biscayne Boulevard.

Any competitor may submit designs for one or both competitions. The awards will be made separately.

The Biscayne Boulevard Association agrees to award to the winners within 5 days after the judgment of the jury, \$4,650.00 in prizes as itemized below.

Competition No. 1		LIST OF PRIZES	Competition No. 2	
1st. Prize . . . . .	\$1,000.00		1st. Prize . . . . .	\$750.00
2nd. " . . . . .	600.00		2nd. " . . . . .	400.00
3rd. " . . . . .	400.00		3rd. " . . . . .	250.00
4th. " . . . . .	200.00		4th. " . . . . .	150.00
6 Mentions, each . .	75.00		6 Mentions, each . .	75.00

Program of the Competitions may be obtained by addressing Harry T. Frost, in care of:  
—Biscayne Boulevard Association, Columbus Hotel, Biscayne Boulevard, Miami, Florida.  
or—American Architect, 239 West 39th Street, New York  
or—Bennett, Parsons and Frost, 80 East Jackson Boulevard, Chicago.



# PENCIL POINTS

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## Editorial Correspondence

THE LETTERS addressed to the editor of PENCIL POINTS are varied in character, but those of general interest may be divided into two categories; letters asking for information, and those offering suggestions or criticisms. Some of the former flatter us with the assumption that we have a fund of information which could only be acquired by the immortals. Answering them gives pain, for it is necessary to admit that the writer's knowledge has limits and that he is not a prophet.

We are asked to recommend a window fastening which would not cost more than a dollar and by using which burglary would be made impossible, while at the same time the window could be left fully open from top to bottom. We have had letters, with diagrams attached, asking us how a smoky chimney which had defied the corrective efforts of three architects and two contractors could be completely cured.

Then there is the letter from an anxious mother giving a sketch of the character of her only son, accompanied by a photograph, asking us whether we considered him likely to make a great success as an architect or as a clergyman. She merely wanted to know what income we could guarantee he would be able to command at the end of five years. Another case was that of the inventor of a new style of architecture which he was anxious to introduce to a waiting world, who

wanted our advice as to how to go about it.

We receive letters, and we may add we are always glad to receive them, containing criticisms of the contents of our issues and suggestions as to their improvement. The reader of antiquarian tastes will suggest that we give too little space to representations of the architecture of the past, while the typically commercial man finds little to interest him in a dissertation on the architectural value of Greek sculpture. Many would have our pages little else than a collection of architectural features and details which might be useful subject matter for the melting pot of modern design. Unfortunately,

belief in a cause or school frequently begets intolerance towards the exponents of other beliefs. If our illustrations or articles sometimes serve to induce men to see matters from a point of view with which they are not altogether in sympathy, we have not worked in vain, for it is by acquiring a broader and more catholic outlook that the architectural profession will gain possession of a valuable means of bringing itself into touch with the general public, from which it obtains the opportunity of exercising its calling.

We hope that our friends will always give us their criticisms, which we promise will receive unbiased consideration. By so doing they are not only helping us, but are doing useful work for the calling whose needs they have at heart.

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ARCH OF TITUS, FROM THE PEN-AND-INK DRAWING BY RICHARD M. POWERS

*Original 7½" x 12"*