

## WHAT ARE YOU INTERESTED IN?

**W**HAT do you want to see in PENCIL POINTS? We are trying to make this journal as interesting and helpful as possible and if the way the letters of commendation are coming in is any indication, we are on the right track, but we can do much better if you will tell us what *you* are interested in.

Believing that most draftsmen and architects appreciate the value of an ability to sketch and render well in pencil, we secured Mr. Guptill of Pratt Institute to write a series of articles which when finished will constitute a complete work on "Sketching and Rendering in Pencil." The third installment of this article appears in this issue. It is designed to teach pencil sketching and the plates are made to carry out this purpose, not as beautiful examples to be copied, but as illustrations to make clear the points brought out in the text and to enforce these points. To round out the treatment of this subject we are publishing reproductions of the work of several masters of pencil sketching,—for instance the sketches by Mr. Otto R. Eggers in the last issue and in the present issue.

Mr. Francis S. Swales was chosen to write on "Presentation Drawings" because of his recognized ability to make the right kind of drawing to put over the idea in each case and land the job. His illustrations also are chosen to illustrate the points made in the text not as examples of the finest kind of finished renderings—often a rough sketch made in the presence of the client is the right thing. Mr. Swales's wide and varied experience as an architect and as a draftsman has given him an unusual fund of practical, first-hand knowledge, which he is putting at the disposal of readers of PENCIL POINTS.

Mr. Paul Valenti is proceeding step by step to explain perspective so that the reader may grasp the "why" as well as the "how" of the perspective-plan method as taught at the Academy of Fine Arts of Brera in Milan, Italy. To get the benefit of this series the student should follow Mr. Valenti's development of the subject by constructing the diagrams for himself at a conveniently large scale from month to month. This study of theory is necessary to an understanding of the more interesting and more obviously practical lessons to follow.

Practical methods of overcoming a difficulty commonly met with in drawing large perspectives are described by Professor Clarence A. Martin in

this issue under the title "Practical Ways of Handling the Distant Vanishing Point." Though these methods are more or less known to most draftsmen they are very frequently misapplied with more or less unsatisfactory results. Professor Martin tells the right way, without a word of theoretical discussion.

We are so fortunate as to be able to present in the plate pages of this issue a reproduction of one of the figure studies for the mural decorations by Mr. Jules Guérin in the Lincoln Memorial at Washington, D. C. This will be followed by other drawings in this series from month to month. These plates are reproduced directly from Mr. Guérin's studies.

These are all things that have to do with the draftsman's aspirations, they are things that will help him to get on; these are subjects he is keenly interested in. However, the things that will help in the everyday work must not be overlooked if PENCIL POINTS is to be the well rounded journal we intend to make it, so we are arranging to present details of construction, and much other matter of immediate usefulness. It is along the line of everyday work that we particularly want suggestions.

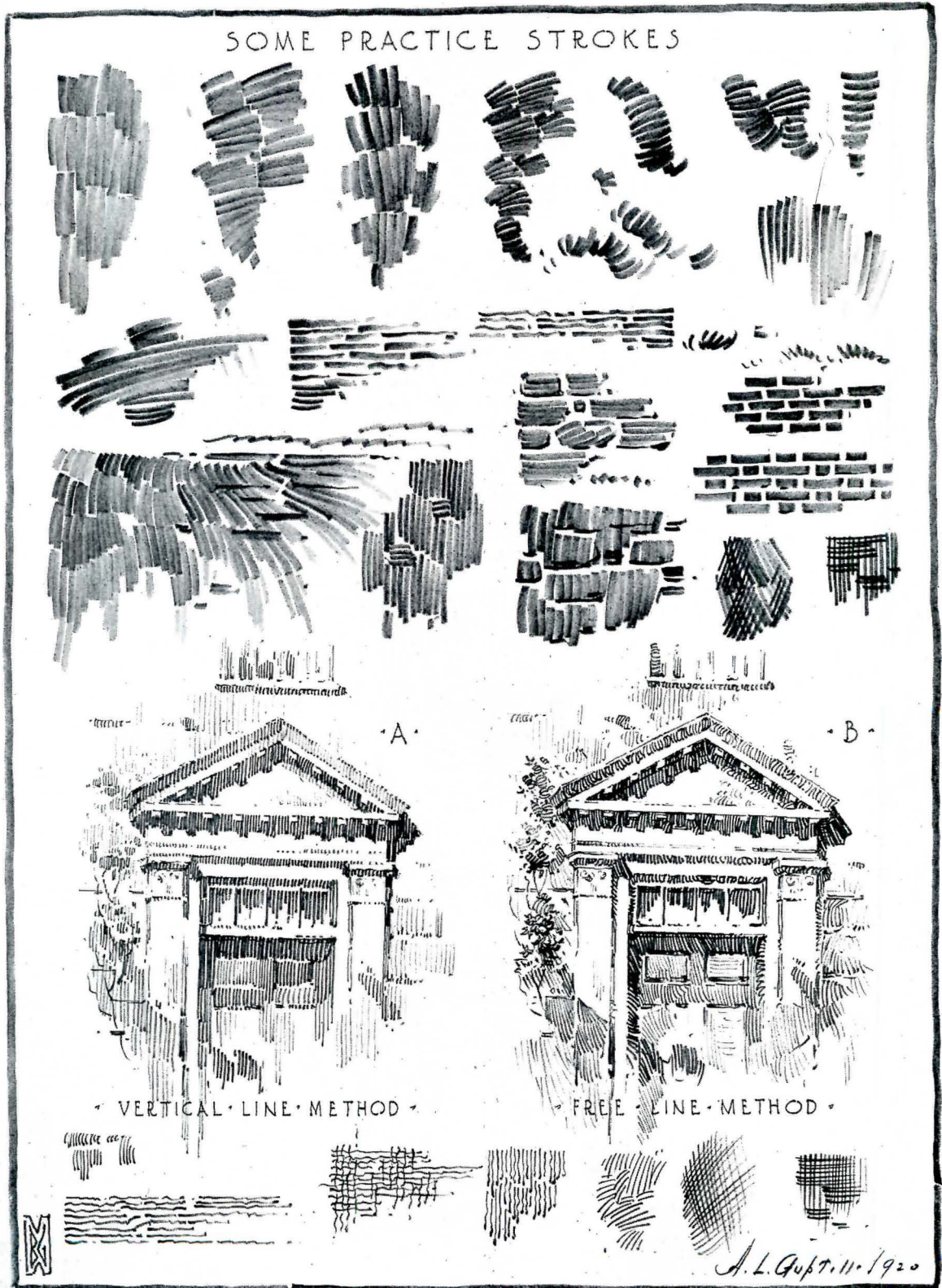
Mr. Frederic C. Hirons is preparing an article on "The Use of Models for Architectural Detail" in which he will cover the process from the making of the first studies and scale drawings right through the work in the modeler's studio and illustrate the various steps with drawings and photographs.

The designing end is not being lost sight of either. New art springs from old art and the designer whose mind is well stored with a knowledge of the best old work is the best equipped to do original designing. We have therefore arranged to make the art treasures of that wonderful storehouse of design, the Metropolitan Museum of Art, more available to the readers of PENCIL POINTS. Mr. Richard F. Bach, Associate in Industrial Art at the Museum, will write on "Historic Sources of Design Inspiration," and Mr. William M. Ivins, Curator of Prints at the Museum, will write on the books, plates and old documents from which design ideas can be obtained.

Now, you have seen what we are doing and we have told you something of our plans—tell us, won't you, what you would like to see in PENCIL POINTS?



# PENCIL POINTS



Sketching and Rendering in Pencil. Figure 7, illustrating method of building up tones by grouping lines close together.



# SKETCHING AND RENDERING IN PENCIL, PART III

BY ARTHUR L. GUPTILL

*In this series of illustrated articles, the first of which appeared in the August issue of this journal, the technique of pencil sketching and rendering is being taken up step by step, carrying the architectural draftsman or student through a systematic course of study which has been gradually developed and put into practice by Mr. Guptill in his classes at Pratt Institute, Brooklyn, New York City. The illustrations are not merely copy plates, but each is drawn to illustrate some principle of composition or some suggestion for technique given in the text. Although these plates are primarily intended to assist the student in freehand work, they will prove helpful as well to those making pencil renderings of subjects prepared instrumentally.—Ed.*

## *Individual Style and Methods*

**S**TUDENTS of drawing often foolishly handicap themselves right at the start by attempting to produce sketches that show marked originality or individuality. Such students seem to be of the erroneous opinion that unless their work is so unusual in presentation as to appear almost freakish, it is not good. They therefore sacrifice truth in order to create drawings with a technique so peculiar and predominant as to detract from the subject of the sketch itself. In some types of decorative drawing a conspicuous method of technique is not wholly bad, but for architectural purposes anything that lessens the interest in the architecture itself is unsatisfactory.

It is not to be understood by this that work should not show a certain individuality; it should and will, for it is impossible for one to practice drawing for any length of time without developing certain original mannerisms. This is most desirable, for it would be unfortunate indeed if all pencil artists were to draw in exactly the same way, producing work of monotonous similarity. But there is no danger of this. Just as most of us acquire a certain characteristic style of penmanship which our friends are able to distinguish as ours at a glance, we are also sure to attain a style of drawing having a character exclusively its own.

To be sure many draftsmen do draw in very much the same way and this is perfectly natural and proper, for we are all influenced by the work which we see others do, and we all share, also, the definite limitations which our medium imposes upon us. It will be found, however, that drawings which seem very similar in technique at first glance, reveal individual differences on closer inspection, even though done by men with similar training and experience. Have no fear then of losing your own individuality, even though you frequently study or copy the work of master draftsmen.

In order to profit to the greatest extent by the experience of others, collect as many reproductions of excellent pencil drawings as possible. By carefully analyzing and comparing these, studying the composition, the values of light and dark, the methods of technique, the representation of details and the like, you will obtain many ideas applicable to your own work. Do not, however, attempt to imitate the style of any one man, as this will deaden your initiative and be unfair to him as well. Select,

instead, from the drawings of many individuals the suggestions that appeal to you personally, and apply these, with any changes that may suggest themselves, to your own work.

It is surprising what a variety of ideas such an analysis and comparison of many drawings will reveal. If we consider the width of line used we shall find that some drawings are entirely made up of very fine lines, others of broad lines, and still others of solid mass shading. In some, two or more of these types of lines will be found combined. If we look at the kinds of lines we shall learn that some sketches consist wholly of sharp, crisp strokes; others of soft "woolly" lines; some show strokes almost mechanically perfect in contrast with others having lines made with the greatest freedom. If we consider the values of light and dark, we shall see that certain drawings are left almost white, others rather gray, and some quite black. Most drawings, however, combine the white, gray and black, as all of these are usually necessary to properly represent the values existing in the object to be drawn.

Considering the great variety of work to be found, it is no small wonder that the student should be in doubt often as to the best way of treating a given subject. In such an emergency our good friend Common Sense is perhaps the best teacher. Decide first of all just what the purpose of the drawing is to be. Some drawings best meet the requirements if left in outline only. Others demand careful shading of every part. For a quick sketch the roughest sort of line is often just the thing, whereas a fully rendered drawing sometimes requires that every stroke be painstakingly made. For most architectural purposes firm, sharp strokes are better than rough, "woolly" ones, for firm strokes seem to best represent solid or smooth materials. Soft, yielding materials might perhaps be better suggested by rough, soft lines or tones.

Architectural pencil sketches are often shown to the client in conjunction with the instrumentally drawn plans and naturally harmonize better with these plans if sharp and clean-cut. The student should not take this to mean that such sketches should appear too mechanical, for the fact is that the average draftsman uses far too little freedom in his freehand work. It is sometimes difficult for him to remember that he should not draw every brick and stone, every modillion and dentil, but that he should learn rather to suggest and in-



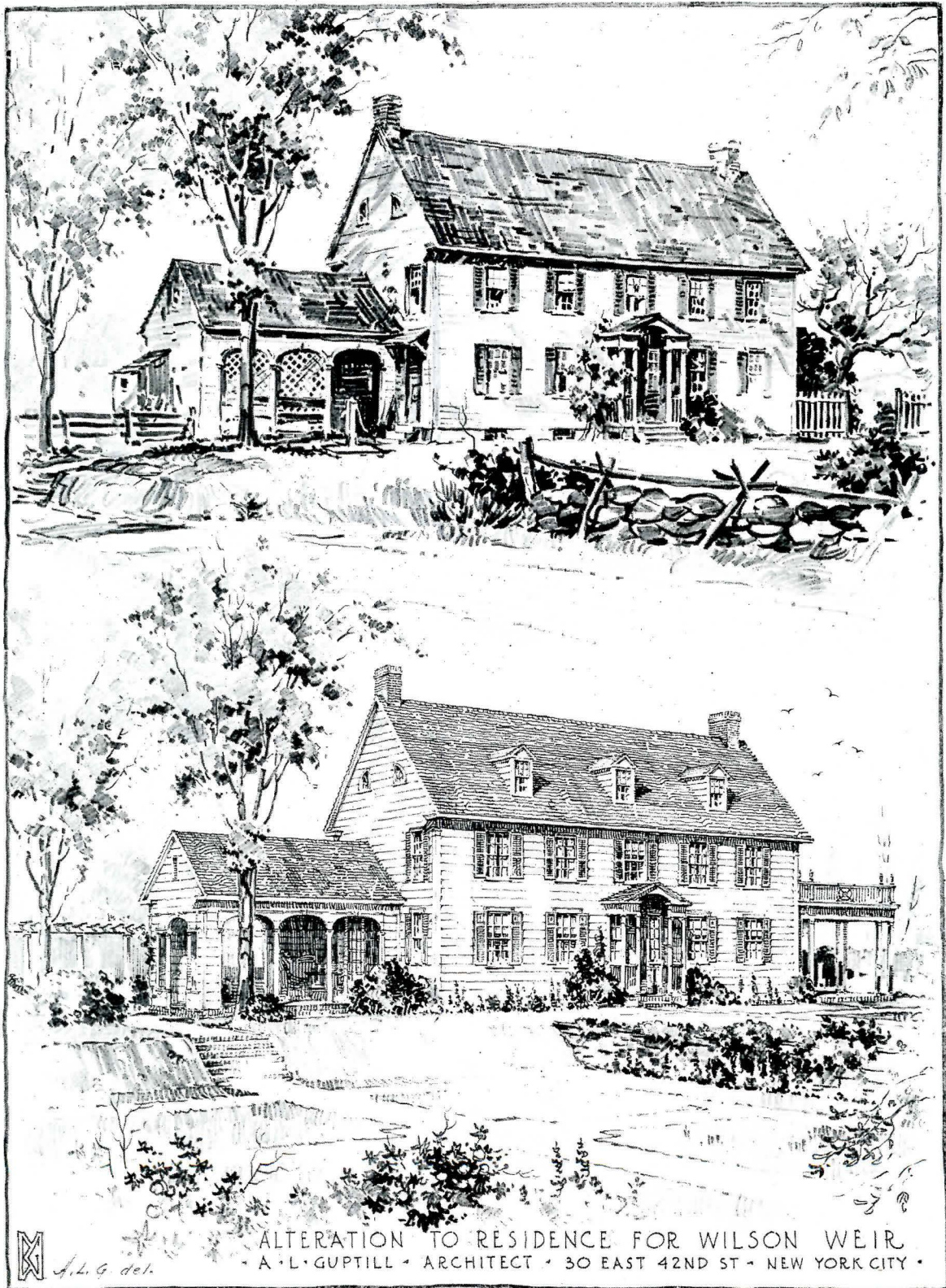
## PENCIL POINTS



*Sketching and Rendering in Pencil. Figure 8, illustrating quick sketching, a means by which much knowledge of architecture can be obtained.*



# PENCIL POINTS



*Sketching and Rendering in Pencil. Figure 9. The same subject drawn with broad lines and with fine lines. A type of sketch to be submitted to client.*



## PENCIL POINTS

dicating these things in a clear, "snappy" way.

It is in learning how to thus suggest detail that perhaps the greatest benefit can be gained through the study of good pencil reproductions. It should be remembered, however, that such reproductions have as a rule been reduced in size considerably from the original drawings, and the student should take this into account. Many reproductions show drawings apparently made with very fine lines, while in reality the lines were several times as large as the reproductions suggest. Needless to say it is a foolish waste of time to attempt to cover large areas of paper with fine lines when broad ones answer as well, yet many draftsmen get the habit, possibly because they are accustomed to working with a sharp point, of making more tiny lines than are necessary. Partly for this reason it is unwise for the student to devote too much time to copy work from plates. When working from nature or the photograph there is far less tendency to fall into finicky ways. On the other hand, some students make drawings so sketchily and carelessly that they fail to meet the usual architectural requirements.

Warning should be given that there is a vast difference between the rough, scratchy sketches of beginners and the apparently carelessly made drawings by well known men. Some students feel, evidently, that the road to success lies through imitating this extremely sketchy sort of work. They fail to realize, perhaps, that these men have learned accurate drawing in the past, and that it is equally necessary for them to acquire the ability to do careful work before they can make rough sketches intelligently. An art student, visiting a collection of lithographs by Mr. Joseph Pennell, was heard to remark that he could "take a chunk o' charcoal and do as well." Doubtless this student was ignorant of the fact that during a period of many years Mr. Pennell made hundreds of illustrations of architecture, almost photographically accurate in their drawing and wonderfully delicate in their rendering. These years of training make it possible for Mr. Pennell to produce his lithographs in a very broad, bold way, with remarkable directness and freedom, but his earlier work offers more of assistance to the beginner.

This brings us to another fact: that a man's style of rendering usually changes with the years, as the best of men are constantly striving to improve, with the result that they gradually alter their manner of work. This fact should help to make clear the folly of the beginner attempting to at once arbitrarily make a "style" of his own. If he is content, instead, to do his work as well as he knows how, searching for truth in drawing and an honest interpretation of nature's values, studying all the while other drawings in order to benefit by the experience gained by other men, and seeking always for the best way to meet the requirements of the problem at hand, he will unconsciously develop a method or style expressive of his own individual self.

It is impossible to over-emphasize the need for constant practice if one is to acquire more than ordinary skill in drawing. Many students with considerable innate ability fail to make the best use of it because of their lack of interest or perseverance, whereas others, who show at first far less natural talent, but who are endowed with an aspiration to achieve dexterity and with a willingness to work for it, often gain such skill as to far outshine those students with greater inborn aptitude. It is deplorable that so many persons fail to make the most of their natural abilities, but it is, on the other hand, most gratifying to find others who force themselves to the front through their persistency and commendable effort.

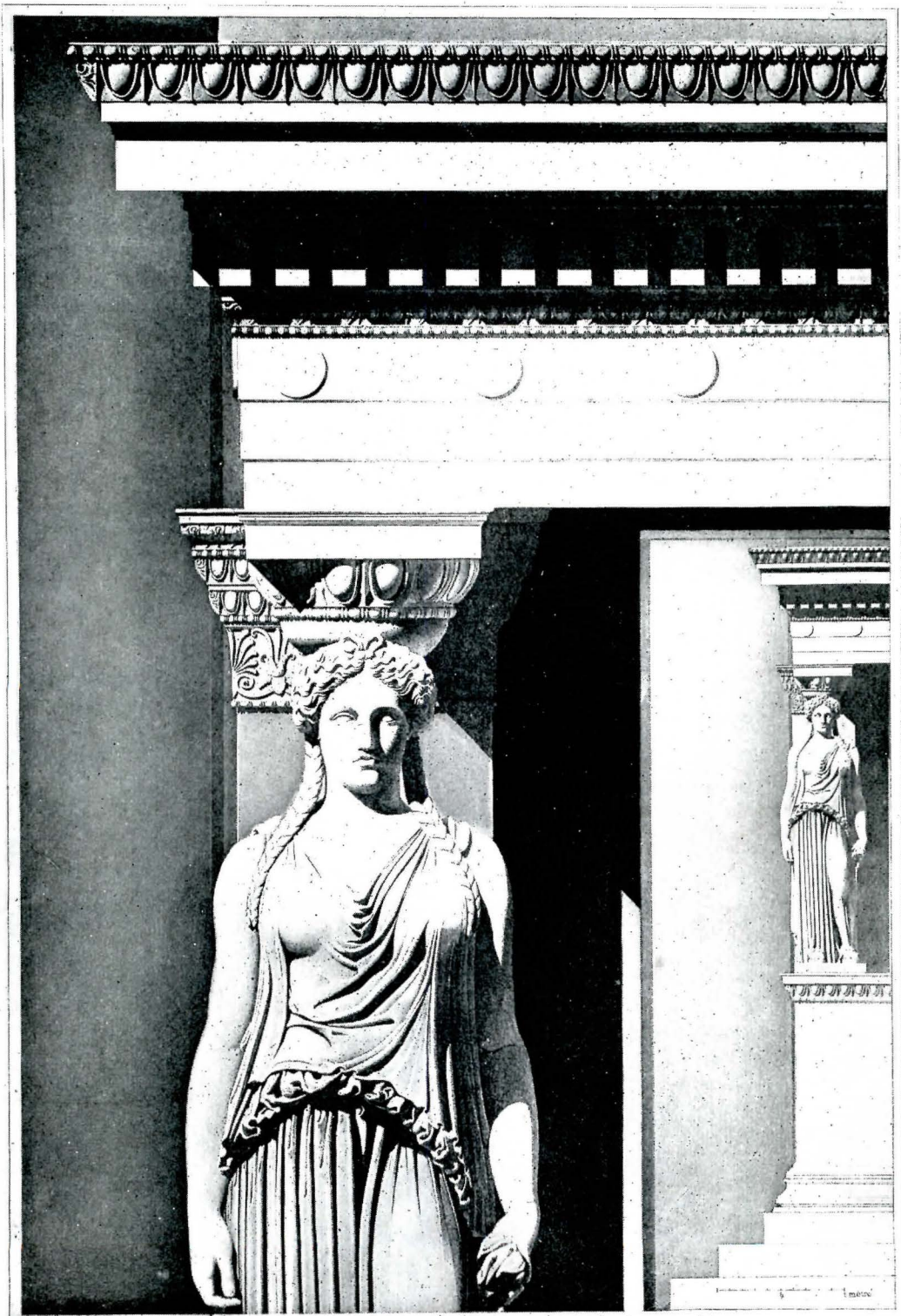
*Individual Lines.*—Though we have already several times mentioned the value of good individual lines, too much cannot be said concerning their importance. The ambitious beginner can do nothing of greater benefit than to draw many individual lines, for, as we have said before, it is only by combining beautiful single lines that a pleasing whole can be obtained. Seize every opportunity to draw lines of all kinds, and in all directions; some straight and others curved; some uniform in tone from end to end and others grading from light to dark or from dark to light. Allow some to fade out so gradually that the ends are lost in the tones of the paper and accent others by using extra pressure as the pencil touches or leaves the drawing surface. Keep some straight and sharp, drawing them very quickly with much freedom and form others rather slowly, allowing them to quaver or tremble. Make lines with both broad and fine points, with various grades of pencils, and on all sorts of papers, until you feel a certain confidence in your knowledge of your mediums.

*Tone Building.*—When this feeling of assurance is acquired attempt building up tones, as has been previously suggested, by grouping lines close together. Figure 7 shows a number of practice strokes and tones done partly with a broad and partly with a fine point. There are no definite rules regarding tone building but perhaps the simplest method is to draw parallel straight or slightly curved lines just touching one another or with slight spaces between. Sometimes these lines are horizontal but more often vertical. Occasionally entire drawings are made by using tones composed of vertical strokes only. The drawing of the doorway "A" at the bottom of Figure 7 is done by this method. There is danger, however, of such lines becoming too rigid or mechanical, or in some cases too conspicuous, so the method shown at "B," in which the lines are allowed to go in any and all directions, is a much more popular one, and one adaptable to all types of subjects. This method is sometimes referred to as the "Free Line Method."

In building tones there are several points concerning which the beginner should be cautioned. First, beware the use of too many small lines. If twenty lines will do, it is ordinarily folly to use

(Continued on page 32)





DETAIL OF THE "PORCH OF THE MAIDENS" OF THE ERECHTHEUM, ATHENS

RESTORATION BY L. GINAIN  
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"



*The details on the other side of this sheet represent the beautiful "Porch of the Maidens" on the south front of the Erechtheum, on the Acropolis at Athens. The beauty of the caryatids, the maidens from which the porch takes its name, is well conveyed in this drawing.*





*Chapel Window: Cluny Museum.*

DETAIL OF CLUNY MUSEUM, PENCIL SKETCH

BY OTTO R. EGGERS

REPRODUCED AT EXACT SIZE FROM MR. EGGERS' SKETCH BOOK



*The pencil sketch reproduced at exact size on the opposite side of this sheet is from a sketch book carried by Mr. Otto R. Eggers while he was traveling abroad as the first holder of the Le Brun Scholarship, in 1912.*

*Drawn by H. E. Reynolds*

## TERRA COTTA DETAILS

HOUSE FOR ISAAC GUGGENHEIM, ESQ., AT PORT WASHINGTON, L. I.

H. VAN BUREN MAGONIGLE, ARCHITECT



*On the opposite side of this page are shown a number of interesting architectural details for terra cotta. These designs were drawn to shrinkage scale, so that they might be transferred directly to the material.*





"MUSIC"

STUDY BY JULES GUERIN FOR ONE OF THE SYMBOLIC FIGURES IN ONE OF THE MURAL DECORATIONS  
IN THE LINCOLN MEMORIAL AT WASHINGTON, D. C., HENRY BACON, ARCHITECT



*The drawing by Mr. Jules Guerin reproduced on the other side of this sheet is the artist's study for one of the figures in the great mural decorations recently put in place in the new Lincoln Memorial at Washington, D. C. This building, which is one of the noblest memorials ever built, has not as yet been dedicated and opened to the public. Mr. Henry Bacon was the architect. This study, like the many others used, was drawn from life.*

## PRESENTATION DRAWINGS, PART III

BY FRANCIS S. SWALES

A FREQUENT use of presentation drawings is to show how the building will appear if some wing or part is added or omitted. This is illustrated, in another actual case, by drawings made for the Hotel Vancouver. The design had been authorized, based on a sketch made on a post card, and a brief description in which brick was mentioned as the intended material for facing. Working drawings for a portion of the scheme, and preliminary drawings for the ultimate group, were authorized and ordered rushed.

Officials interested in the operation of the hotel, expressed the fear that a brick building would be "too plain." A large perspective was made to show all the detail, even the brick courses of the ultimate design, but as most of the decoration was concentrated upon the top story of the four-story superstructure, which it was not proposed to build until a later date, an extra sky was rendered to fit to the outline of that part of the group which it was the purpose to complete first. The drawing was shown to the company's executive with the paper sky covering the proposed superstructure. (Fig. 18.) After discussing the temporary cornices, pent houses, etc., the "sky" was raised—to show the permanent cornice of the future superstructure (Fig. 19) and the appropriation was also raised to provide for the complete structure.

Although a more brilliant effect could have been produced by means of pen-and-ink, the color of the brick and terra-cotta and the full showing of all ornamental detail (see Fig. 20, photograph of executed work for comparison with drawings) without exaggerating its effect was desired. The three planes of the main masses were drawn in pencil of a different grade of hardness for each. The color was applied in several pale washes and finally touched up with colored crayons to restore crispness.

The ordinary problems, of residences, schools,

churches, etc., which constitute the bulk of the work in most architects' offices have developed so many interesting methods of presentation—of course, the rendered perspective in particular—that little needs be said in the face of so many examples which have been published. Of designs of such structures nearly all are based upon a few well known models which have passed through the acid test of the judgment of many generations and have come down to us as types that will continue to survive the

periods of which they have been, are, and will be again the vernacular. How best to present such types in a simple way and yet avoid hackneyed expression of an admittedly ordinary, conventional variation of a more or less "standardized" idea, taxes the ingenuity of many a draftsman every day. To find some particularly appropriate and individual method of showing one or another type of design is not difficult; but with varying styles of design drawn from several "periods"



Figure 20. Photograph of finished building shown in drawings on page 18. The Hotel Vancouver, Vancouver, B. C. Francis S. Swales, Architect

and different countries, no given or individual method seems suited to all. Thus, the beautiful, broad, color renderings of Jules Guérin are more in sympathy with a design which depends upon mass, silhouette and color than one in which refined detail is an important consideration and color is hardly of any account. The same observation applies to the charming style of Wilson Eyre. On the other hand, the brilliant finished style of Alexandre Marcel, whether in wash or line as the medium, is of little account applied to picturesque and minor work; though superb for the presentation of such monumental subjects as his designs for the railway station at Bucharest and the Peace Palace at the Hague. (Fig. 21.) The drawings of Italian palaces by Maxfield Parrish provide models of presentation that it seems impossible to surpass for Renaissance design. It may be noted, however, that most of the best models are sketches or drawings that are made from actual buildings.



## PENCIL POINTS



Figure 18. Drawing of The Hotel Vancouver showing part of group intended to be built first, the proposed later additions covered by a "paper-sky"



Figure 19. Entire Drawing for The Hotel Vancouver, with extra "paper-sky" removed to show proposed additions. A large perspective made to show all details



## PENCIL POINTS

The draftsman who has become addicted to concealing all the weak points of a design with "a few flat trees shot full of holes" may learn something from the style of Hopkinson Smith, whose formula was pointed out in a quatrain by A. B. Frost, thus,

"You can bet your bottom dollar  
We're on to the Venice caper,  
Little work and little color  
And lots of empty paper."

Drawings made from photographs have the same fault of "one-eyed" perspective as the mechanical perspectives made in the drafting room, and are almost sure to include too much detail which the normal human eye neglects in observing the actual building. It should be observed that the trained eye of the draftsman actually sees more than the untrained eye of the layman. It also sees far more detail and less color than that of the trained painter, for the latter trains his eye to see objects "out of focus" in order to more readily detect relative forms and colors. The draftsman's eye may be compared to the very

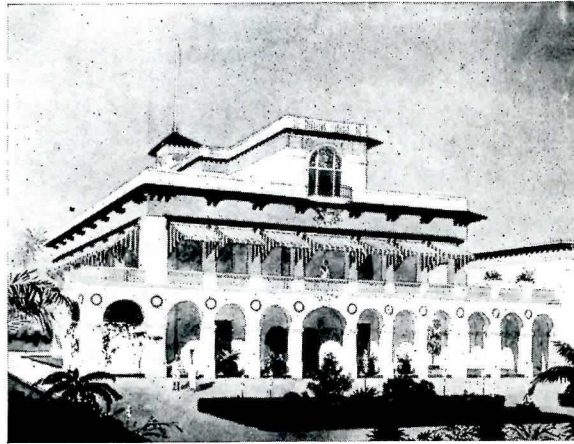


Figure 24. Drawing made to convey a sense of newness to altered building. Winter residence for the late Sir Wm. Van Horne, at Camaguey, Cuba. Francis S. Swales, Architect

rapid lens and ordinary plate of photography and that of the painter to the slow lens and orthochromatic plate combination. The eye of the layman, if wholly untrained to drawing and painting sees neither the amount of detail observed by the draftsman nor the color observed by the painter. Consequently we often hear the layman's criticism of a very good painting that the color is "unnatural" and of an excellent architectural drawing that it is "nothing like the building." Such criticism is probably usually sincere, but proves that

the layman's eye is relatively defective. Therefore, it is the exceptional case, as regards the individual client, that may call for more than a simple rendered study.

The value of finished rendered drawings and serious attempts in water-colors is all in enabling the draftsman and young designer to more perfectly visualize the design—especially the third dimension.

As the proper visualization of the orthographic  
(Continued on page 32)



Figure 23. A scale study of an elevation on tracing paper, rendered in lead pencil, for discussion with client. Residence for W. H. Workman, Esq., London, England, Francis S. Swales, Architect



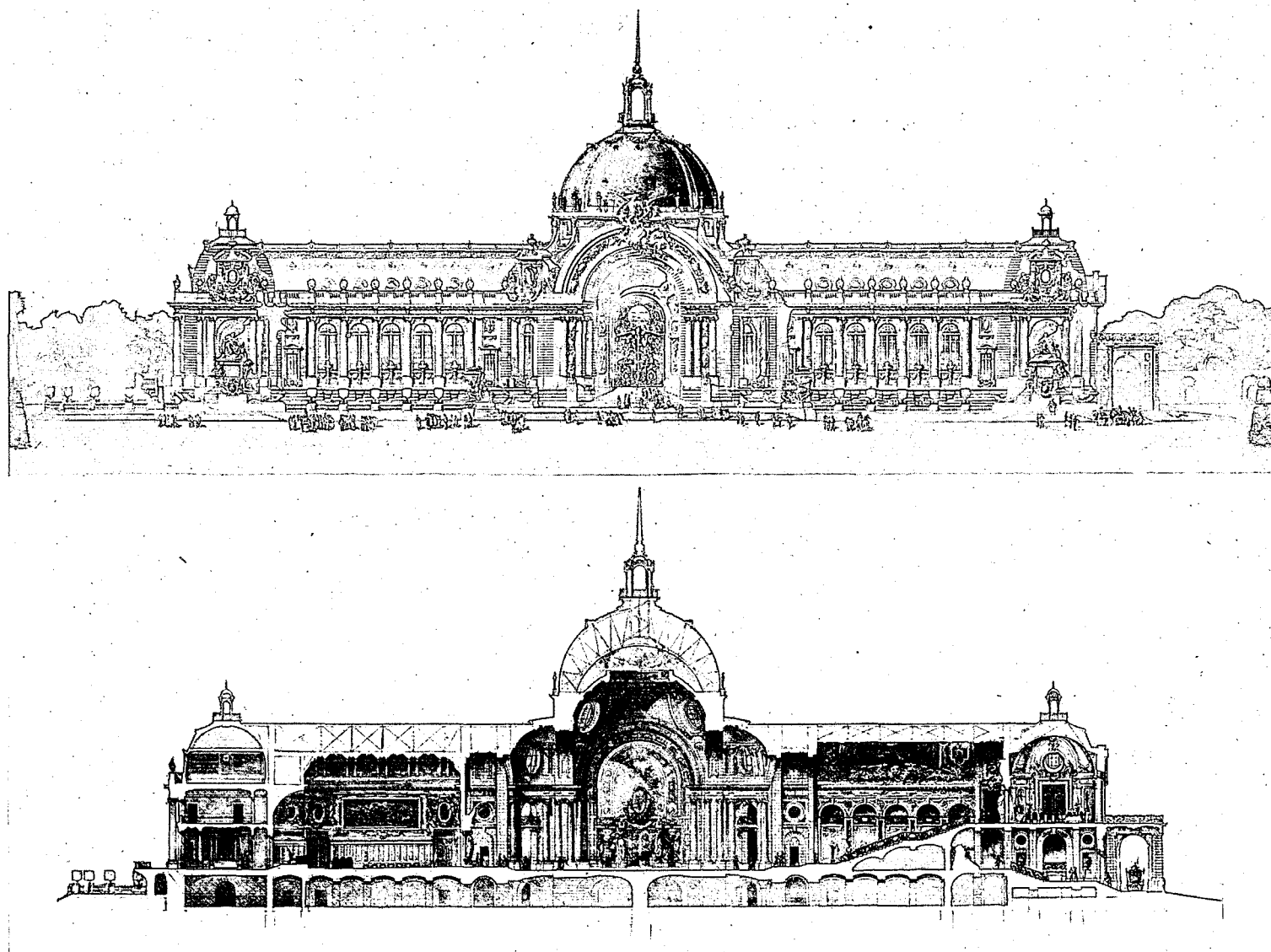


Figure 21. Design for the Peace Palace at the Hague, A. Marcel, Architect. An example of brilliant, finished style suitable for presentation of monumental buildings but not adapted to picturesque or minor work

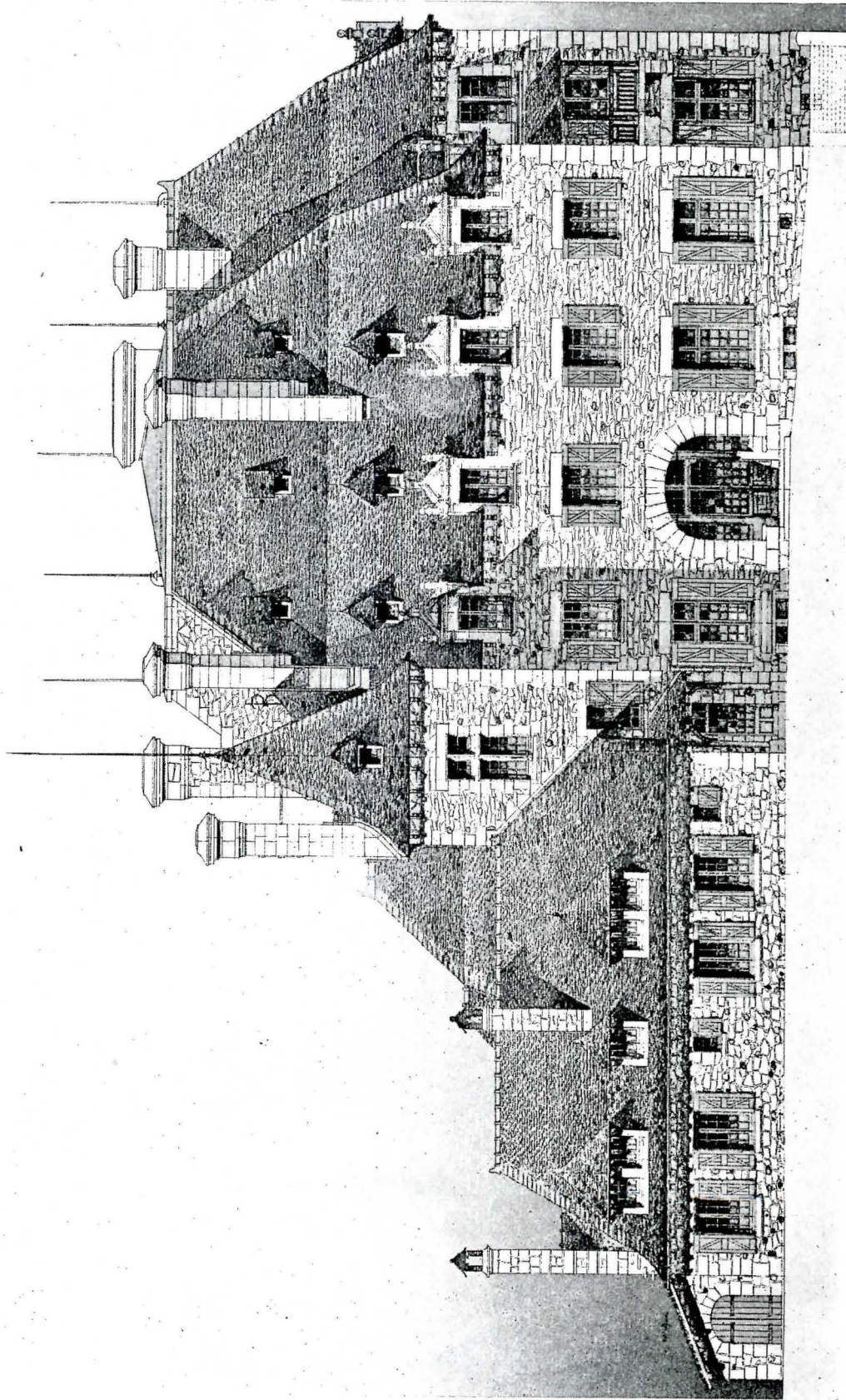


Figure 22. A French rendered Elevation, more valuable for study than a photograph or a perspective. Design for a château by J. L. Pascal, Architect



## PENCIL POINTS

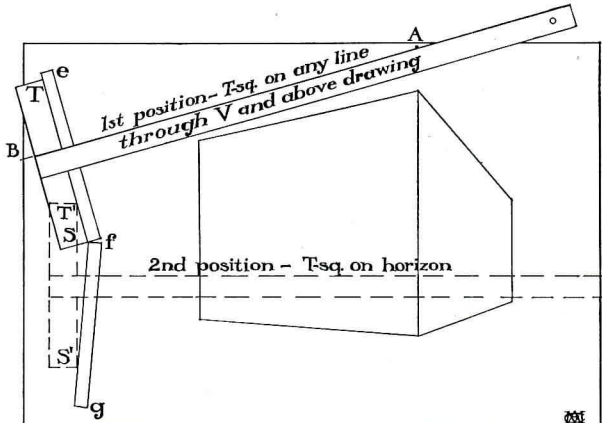


Figure 1

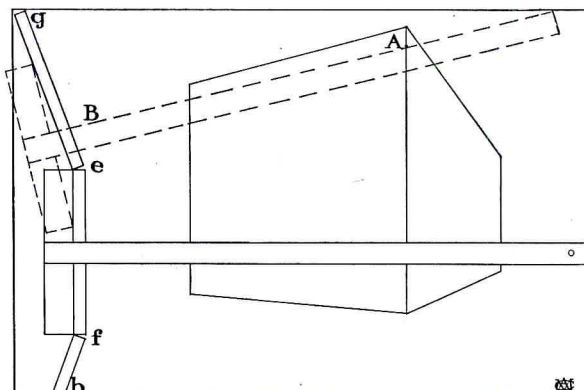


Figure 2

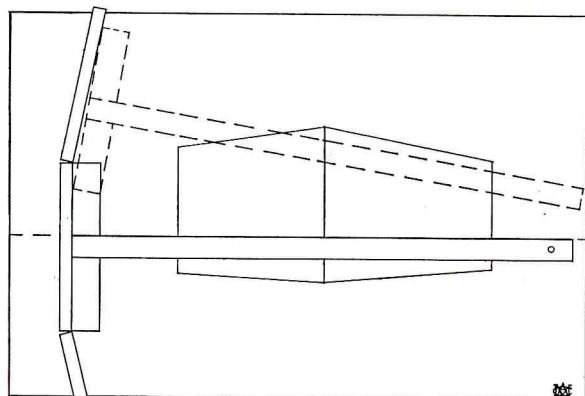


Figure 3

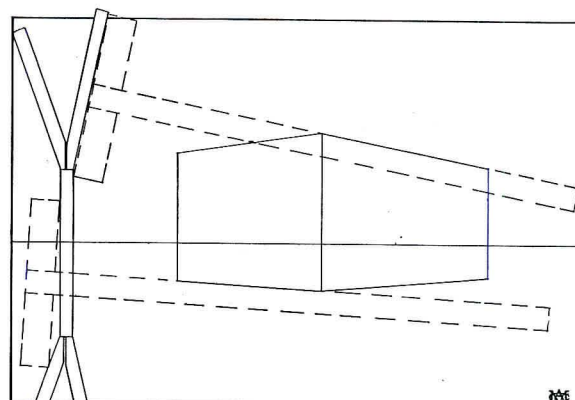


Figure 4

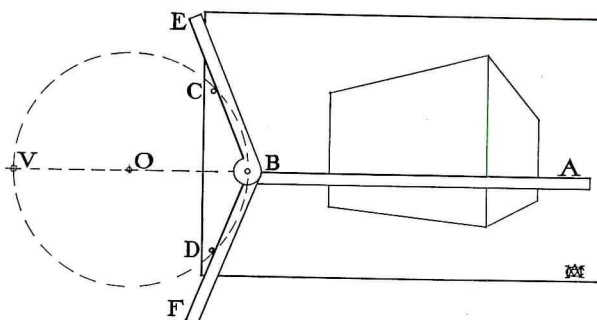


Figure 5

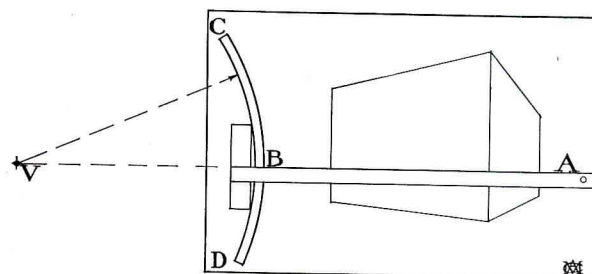


Figure 6

## PRACTICAL WAYS OF HANDLING THE DISTANT VANISHING POINT

(See text on the opposite page)

# PRACTICAL WAYS OF HANDLING THE DISTANT VANISHING POINT

BY CLARENCE A. MARTIN

*In this article Professor Martin describes the use of a practical method which he developed more than twenty years ago and teaches his students in the College of Architecture at Cornell University—the method of using straight sticks as chords of a circle. He also describes the correct methods of using the centrolinead and the curve cut to the arc of a circle.—ED.*

THE simplest method of handling a vanishing point that falls outside the limits of the drafting board consists in tacking straight sticks to the board as shown in Figures 1, 2, 3 and 4. Other methods are shown in Figures 5 and 6 and described. Though these methods are known to many draftsmen the writer believes that a description of the correct procedure in each case will be helpful, omitting all reference to the theories upon which the methods are based.

Some of the advantages of the method shown in Figures 1, 2, 3 and 4, using straight sticks as chords of a circle, are the following: The materials are simple and readily obtainable anywhere, thus strips of wood, celluloid or even cardboard may be used. The set-up is easily and quickly made. A single ordinary T-square serves the purpose sufficiently. This method offers the further advantage of making it possible to use the same sticks repeatedly for any distance of  $V$  merely by changing the angle between the sticks, and any T-square, regardless of whether the working edge of the blade is at the middle of the head or not, the method of setting the sticks automatically making adjustment to the particular T-square used. It naturally follows, however, that the set-up is correct only for the T-square used in making it.

In working by this method, lay out the perspective diagram in the usual way and let it be assumed that  $V$  is a vanishing point falling at some distance off the board. (See Figure 1.) Measure up on the board, say at the nearest corner of the building, a height  $A$  that will be anywhere above the highest line required in the perspective drawing.

Through  $A$  draw a line  $AB$  toward  $V$ . This may be done by temporarily locating  $V$ , but the draftsman skilled in the art of perspective drawing will locate the point  $B$ , or another point in the line, with other known vanishing points on the board and draw  $AB$  without bothering to make actual location of the point  $V$ ; or it may be done by drawing the perspective diagram to a small scale and transferring  $AB$  from the smaller to the larger drawing by proportional measurements. Take the T-square which is to be used for the drawing, and place the working edge of the blade on  $AB$  with the head  $TS$  resting on the board; then tack a thin strip of wood, or other material, to the board against the T-square head so that the end  $f$  will coincide with the point  $S$  of the T-square and the point  $e$  will fall at  $T$  or beyond.

Next, move the T-square down so that the blade lines with the horizon (second position in Figure 1) with the point  $T$  against the stick  $ef$  at  $T'$ ; then tack a second stick  $fg$  to the board with the upper end at  $f$  and the line of the stick bearing against the T-square head at  $S'$ . This stick should be as long as the T-square head or at least long enough so that the point  $S'$  will not go beyond the end of the stick in drawing the lower lines of the perspective.

For an ordinary drawing this completes the set-up, but if it should be found necessary to draw lines that will bring the T-square head either wholly above or wholly below  $f$ , a short additional stick may be set at  $e$  or  $g$ , as the case may require, making the new angle equal to the angle  $efg$ . Of course the stick  $ef$  or  $fg$  must be cut to the exact length of the T-square head when the extension angle is added, otherwise there will be an interval of parallel lines in the drawing.

If the point  $A$  taken as above directed should prove to be so high that the T-square when moved down to the horizon fails to connect with  $ef$ , then  $A$  may be taken at a lower point and a third stick added from the point  $e$  as above described.

Another set-up involving the use of three sticks as a minimum is shown in Figure 2. In this case the first stick  $ef$  is set with the T-square on the horizon, and is cut to the exact length of the T-square head. The line  $AB$  is drawn through  $V$  at any convenient distance above the horizon, the T-square placed on  $AB$  and against  $ef$ , and the stick  $eg$  set with its lower end at  $e$  and the line of the stick bearing against the upper end of the T-square head. The lower stick  $fh$  is set so that the angle  $efh$  equals the angle  $gef$ . The lower stick in this set-up may be quite short usually, since the ordinary perspective drawing does not require much extension below the horizon. This, however, will depend upon the particular case under consideration.

If the distant vanishing point is at the right instead of the left side of the drawing, any of the above methods may be applied at the right hand as may be shown by holding the illustration before a mirror. If, however, it is desired to keep all of the machinery under the left hand at the head of the T-square in its normal position, a method of doing this is shown in Figure 3. The method of setting the sticks is exactly the same as in Figure 2,

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# PENCIL POINTS

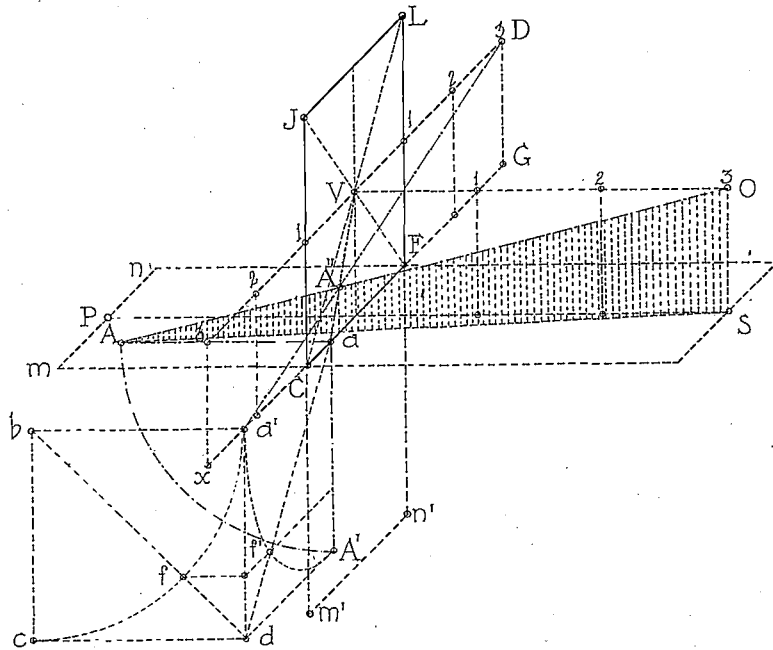


Figure 15

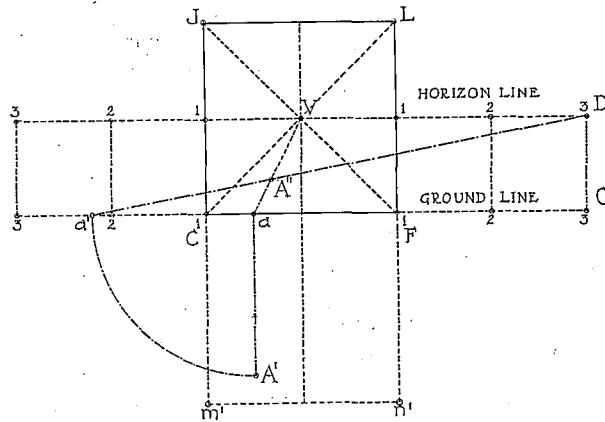


Figure 16

# PERSPECTIVE DRAWING, PART V

BY PAUL VALENTI

**I**LLUSTRATING the case when the object or point  $A$  has been arbitrarily placed in a position off of the line  $PS$ , Figure 15 is similar to Figure 13 (and corresponds to the examples shown in Figure VIII). Rotate point  $A$  from its original position in the horizontal geometric plane to its new position in the vertical geometric plane by centering in point  $a$  on the ground line with the radius  $aA$  describe a half circle  $AA'$ . Then rotate  $A'$  again (in the opposite direction from point  $D$ ) to point  $a'$  on the ground line by constructing a perfect square  $a'bcd$  at point  $a'$ .  $a'b = aA$ . Draw diagonal  $bd$  and centering in point  $b$  with radius  $ba'$  describe a quarter circle  $a'c$ . Unite  $a'dAa$  forming a square in parallel perspective corresponding exactly to the geometric square  $a'bcd$ . From the intersection  $f$  raise a perpendicular to line  $a'd$ , thence a line at 45 degrees to line  $aA'$  and at the intersection of this line and diagonal  $ad$  find point  $f'$  which corresponds to point  $f$  in the geometric square. Starting at point  $a'$  and passing through point  $f'$  to  $A'$  we will have described a quarter circle  $a'f'A'$  in parallel perspective corresponding exactly to the quarter circle  $a'fc$  in the geometric square. Having established point  $D$  as in Figure 13, we have reduced all our points to one plane, the plane containing our picture. Proceeding as before, first raising a perpendicular from the object  $A'$  to the ground line  $CF$  to point  $a$ , thence from the foot of this perpendicular conduct line  $aV$ . Second, conduct line  $a'd$  and at the intersection  $A''$  we will find as before the perspective of  $A'$  or point  $A$  originally located in the horizontal geometric plane.

Again, (Figure 16) is the direct elevation of this operation; that is—first raise a perpendicular from point  $A'$  to the ground line  $CF$  to point  $a$ , thence a line from  $a$  to the vision point  $V$ . Centering in point  $a$  with a radius  $aA'$  rotating point  $A'$  in the opposite direction from point  $D$ , describe a quarter circle to point  $a'$  on the ground line. Unite  $a'D$ . At the intersection of these two lines  $aV$  and  $a'D$  we will find, as in all preceding cases, the perspective of point  $A'$ . Having reduced all our operations to the one plane, henceforth we shall construct our perspectives in this form, with all points on the one plane at our disposal, i.e., the plane containing our picture.

## PRACTICAL WAYS OF HANDLING THE DISTANT VANISHING POINT

(Continued from page 23)

except that the back of the T-square head is used against the side of the stick toward the vanishing point. The difficulties with this particular application are that the angle within which the perspective may be drawn is much reduced and T-squares are not usually made with straight lines at the back of the head. The latter difficulty may be overcome in an emergency by tacking a straight strip of wood to the under side of the T-square head.

Figure 4 goes a bit farther and shows a combination with both vanishing points at a distance and with all

of the machinery under the left hand where the T-square normally is used.

As to the kind of sticks to be used, it has been found that soft wood sticks about  $\frac{1}{8}'' \times \frac{7}{8}'' \times 16''$  long are very satisfactory, and half-inch or five-eighth-inch flat-head wire nails work well and do not mar the boards any more than ordinary thumb-tacks.

This method is accurate for practical purposes, though there is a theoretical error which does not appear in the methods shown in Figures 5 and 6. This error is infinitesimal and, under proper working conditions, is less than the errors due to imperfections in even the best of drawing paraphernalia and is entirely negligible.

Perhaps the most ingenious instrument so far invented for drawing radial lines from an inaccessible point is the centrolinead brought out by Peter Nicholson about 1814. This is a simple apparatus consisting of three arms with straight edges radiating from a common center with pin and set screw at this center, so that the arms may be set and held at any desired angle with each other. The details of this instrument may vary considerably but the principle is the same in all and is illustrated in Figure 5.

A convenient way to set the centrolinead is to choose a point  $B$  on the horizon and on the board somewhere between the proposed drawing and the vanishing point  $V$ . Taken a center  $O$  midway between  $B$  and  $V$  and with  $OV$  as a radius strike the arc  $CBD$ .  $C$  and  $D$  are points in the arc so chosen that the entire drawing will lie within the angle formed by lines drawn through  $VC$  and  $VD$ . It is probably easier to set the instrument accurately if  $C$  and  $D$  are equidistant from  $B$ , but this is not necessary.

It may be noted also that theoretically any other line through  $V$  will do as well for locating  $B$  on the horizon, the essential things being to keep the angle  $CVD$  large enough to embrace the entire drawing and to keep the point  $B$  between  $C$  and  $D$ . Practically, however, the horizon is the most convenient line to use.

Having determined the points  $B$ ,  $C$ , and  $D$ , place the long arm of the centrolinead on the line  $VBA$  (in this case the horizon) with the point of the instrument at the point  $B$  in the arc  $CBD$ ; adjust the arms  $BE$  and  $BF$  to bear against pins set firmly at the points  $C$  and  $D$ ; then as the working arm  $AB$  is moved about on the board with  $BE$  and  $BF$  held against the pins at  $C$  and  $D$  the point  $B$  will follow the arc  $CBD$  and the arm  $AB$  will always give a line passing through  $V$ .

This method is geometrically exact, but it is little used and is somewhat cumbersome because it involves frequent changing back and forth between centrolinead and T-square as the work proceeds. Moreover the sprawling arms of the centrolinead are more or less in the way and in consequence are more than likely to be knocked out of adjustment.

Probably the best known and most used device for bringing the work within the limits of the drafting board is the arc of a circle cut from a thin strip of wood and used with the T-square as indicated in Figure 6. In this method the arc is struck from  $V$  as a center and may lie on the board anywhere between the picture and  $B$ .

For mathematical accuracy with this method it is necessary to use a special T-square having the upper or working edge of the blade at the middle of the head. If such a T-square is not available the arc may be set with its center as much below the horizon as the edge of the T-square blade is above the center of the head. This compromise gives an adjustment that is not strictly accurate, since it will give a slightly varying vanishing point, but the variation is so slight as to be of no consequence within the limits of ordinary draftsmanship.

If strips sawed out of wood are used—and this is the common practice—a considerable collection of curves must be kept on hand and these are likely to warp and become very inaccurate in a short time.



# PENCIL POINTS

Published Monthly by

THE ARCHITECTURAL REVIEW, Inc.

Publication Office—Stamford, Conn.

Editorial and Advertising Offices—One Madison Ave., New York

RALPH REINHOLD, President  
F. W. ROBINSON, Treasurer

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702 Security Building, Chicago, Ill.

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Subscription rates per annum, payable in advance; United States of America and U. S. Possessions, Cuba and Mexico \$1.00, Single copies 10 cents; Canada \$1.25 all other countries \$1.50.

PENCIL POINTS is on sale at the following book shops: New York, Brentano's; Chicago, McClurg's; Boston, The Old Corner Book Store; Washington, Brentano's. Wholesale Distributors, The American News Company, New York

## THE CHICAGO ARCHITECTURAL CLUB

THE Chicago Architectural Club wishes to express its appreciation of the opportunity of sending a few items for publication. We are interested in the plans and prospects of the various Architectural Clubs throughout the country which appear in PENCIL POINTS from time to time. Would it not be a good idea if all clubs would send in the educational programs or reports of any special events that have proven successful. It might be very helpful to some other clubs. PENCIL POINTS, it seems to me, is just the necessary medium through which a closer co-operation of clubs can be brought about.

The first week in October will see the opening for real work in the atelier, when the new program for the winter will begin. With the additional space in our new quarters, we expect to take care of a much larger atelier. Mr. Parsons will not hesitate—in fact he would much rather see a bigger atelier, for he realizes the opportunities there are in it.

The Saturday afternoon sketch classes have not been so well attended this summer. There will be several Saturday afternoons yet for the classes and they will continue as long as the weather permits. We have been fortunate in getting a competent instructor to accompany each class and this has helped very much. An exhibit of the best sketches will be held in the Club Rooms later.

Mr. Pierre Blouke, the winner of the 1920 Travelling Scholarship, is sailing about October 1st. His plan is to go to England, then through France, down into Italy to Rome, which will be his headquarters. He expects to spend the major part of his time in Italy, entering the Academy there for nine months or a year of study.

The first monthly business meeting of this year will be held on October 7, 1920. The winter program will be discussed and, with a little entertainment and refreshments, we expect to have a good time. We can't have all work and no play. The piano will come into its own now and get its premiere at this meeting.

GET A GREEN CARD.—Adv.

NEW YORK, JULY 31, 1920.

EDITOR "PENCIL POINTS."

Sir: Though there is no disgrace to being a draftsman, for it takes a degree of skill and intelligence that few possess, yet there is no dodging the fact that the architectural profession has made a distinction between

being a draftsman and an architect that carries with it a difference that is not to the credit of the draftsman.

We all know why many men of great ability find it necessary to remain in the offices of others instead of having one of their own. We also know that in these days of complex business that the number of men able to be "architects," that is, running their own offices, is becoming less and less.

I feel that the time has come when the name of "draftsman" should be discontinued, especially when applied to men of experience.

If I had an office of my own I would dignify it and the men in it by calling them "Architects."

I would let my clients know that I had surrounded myself with the best men that I could obtain, men of skill and training, every man a specialist in his line, and that they were not a lot of draftsmen, but ARCHITECTS.

I believe it would pay. It would pay by making the client think that his work was being done by a staff of well seasoned men. It would pay by making the men feel that they were respected by the man they worked for and by the client. The old idea that all the knowledge in an office is bottled up in the head of the employer is wrong and out of date. It is not the way things are done in other professions. It is not the way things are done in the business world, and the practice of architecture is a *business* and growing more so every day.

Let the experienced men be architects, the beginners, if any, students.

Yours truly,

EDWIN SPENCER BARNES.

GET A GREEN CARD.—Adv.

## PROGRAM OF THE T-SQUARE CLUB, PHILADELPHIA

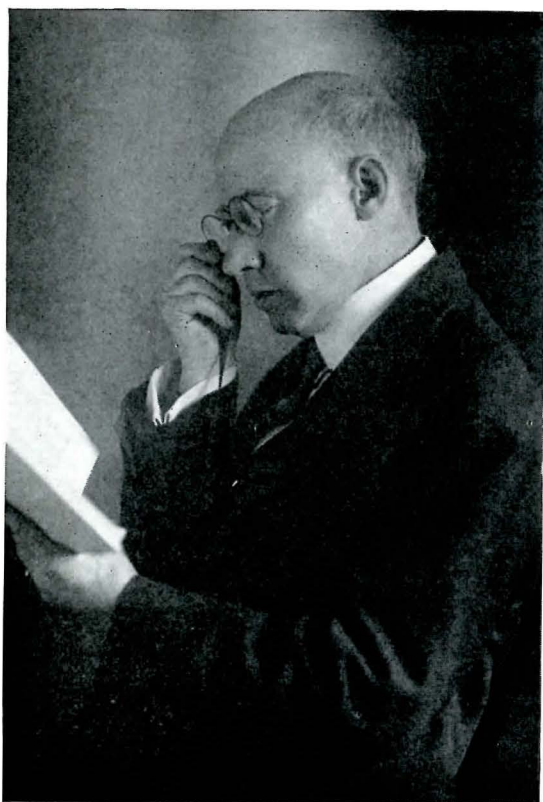
THE following outline of the proposed Club Program for the coming year has been prepared: *Rendering*—An illustrated talk by one who has made his lifework architectural rendering; *The Chancel and Its Furnishings*, by an architect who has attained noteworthy success in this delicate field of design; *Battlefields of France*, by an artist whose talent and experience at the Front make him preëminent; *Color Decoration*—This will be a scholarly talk by one known to the architectural profession throughout the United States as a mural painter of distinction; *Stage Setting*—Illustrated talks on the present day art of the stage, and architectural accessories in moving picture production; *City Planning*—One evening will be devoted to this subject by an eminent person who has been actively interested in this branch of development all over the country; *Architectural Sculpture*—A sculptor of national reputation will talk to us on his art as related to architectural design; *Ship Models*, by one who has taken up, in a very serious way, the art of ship model making. Examples will be on exhibition, such as Spanish galleons and others of early times; *Tapestry*—A man who has been interested for many years in making very fine tapestries will talk to us on their history and their place in the decoration of houses; *Bolshevich Architecture*—An unusual but timely subject; to be talked on by an architect who stands high in his profession; *Planting and Landscape Gardening*, by one well qualified to address us on all subjects related to horticultural design; *The New Movement in Art* has made itself conspicuous; as most of us are unable to understand this movement we are to have a speaker describe it whose interests and work are along that line, followed by a general discussion; *Door and Window Hangings* will be given one evening at the club.

## THE ODOR HAS DEPARTED.

YOU know what we mean, if you received a copy of the September issue. An expert from the paper mill is investigating the cause. We don't envy him his job, do you? Anyhow we have secured a new shipment of paper and the present issue of PENCIL POINTS can be read without the aid of a gas-mask.



## PENCIL POINTS



JULES GUERIN

WHEN Jules Guerin, as Director of Color for the San Francisco Exposition in 1914, made that exposition an object lesson in the use of color, he awakened an appreciation of an element in architecture and in the other surroundings of our life that had been seriously neglected in this country up to that time. The results of the impetus given to the use of color by this exposition are to be seen in the exterior coloring of houses all along the Pacific coast and this influence has, in a modified way, extended throughout the country.

Mr. Guerin's work has become known to the general public through the familiar Guerin prints, reproductions of his paintings, and through the reproductions in the Century Magazine of his paintings of scenes in Egypt, Damascus and other picturesque localities, and of the Chateaux of France.

Among the most interesting of his works are the six decorative panels, each twenty-five feet high by seventy feet long, in the immense main room of the Pennsylvania Railroad Station in New York. Each of these panels represents a section of the country traversed by some portion of the Pennsylvania system. One, for instance, represents "Lines West of Pittsburgh" and another "The Lines on Long Island." These decorations are maps drawn in perspective but done in such a masterly way that one senses the character of the country from point to point as one's eye follows the line of the road through valleys, across streams and in and out of wooded areas. Mr. Guerin has, in fact, accomplished the seemingly impossible feat of putting romance into a map and he has made decorations that are eminently suitable and that keep their place in the scheme of this great room.

Among Mr. Guerin's most important works are the two large mural paintings that are features of the Lincoln Memorial at Washington, D. C., not yet dedicated. These paintings are twelve feet high and sixty feet long. The figures are from eight and a half to nine feet in height. The design in each case consists of groups of figures symbolic of the great principles exemplified in the life of Abraham Lincoln, as: Justice and the Law, Free-

dom, Immortality, Unity, Charity. Each of these groups is made up of a number of symbolic figures. Mr. Guerin's original study for one of these figures, that of "Music," is reproduced in the plate pages of this issue.

Mr. Guerin was born in St. Louis, Mo., and is of French extraction, his grandfather having come from France. He began his career as a scene painter's assistant at the age of fifteen or sixteen years, and he worked for a number of years as a scene painter. Wishing to prepare himself for a field of activity that he believed would afford him better opportunities, he went abroad to study and upon his return to this country began work as an illustrator and painter. Some years ago when "Antony and Cleopatra" was produced at the New Theatre, now the Century Theatre, Mr. Guerin created the setting. He went to Egypt especially to study the collections in the museum in Cairo in securing a historic basis for this work.

### PERSONALS

C. H. SHERWOOD, formerly of the staff of Francis Y. Joannes, is now with Arnold Brunner.

BENJAMIN HOWELL LACKEY has opened offices at 509 Federal Street, Camden, N. J., for the practice of architecture.

A. FRANK WICKES, architect, formerly located at 506 Gary Theatre Building, has moved to larger quarters in Suite 206, Harries Building, Gary, Ind.

### Classified Advertisements

*Advertisements in this column Five cents a word, none less than \$1.00. Remittance must accompany order.*

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In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to, PENCIL POINTS, (Attention of E. M. Urband), Metropolitan Tower, New York City.

*Question.*—May German Architectural Magazines be translated into English? S. O. A. *Answer.*—Your question evidently refers to the publication of a translation. If that is so, inquiry must be made as to copyright in this country, and permission must be obtained from the publishers holding the copyright. If the work is not protected by copyright in United States, translation may be made and published, and copyright may be secured, on the translation.

*Question.*—Will you publish in your "Queries" department the main figures of St. Peter's, Rome, and St. Paul's, London? Are there any churches in America to be compared with these in size? H. H., Shawinigan Falls, Quebec, Canada. *Answer.*—The main over all dimensions of St. Peter's are: Length, from apse to portico, 708 ft.; width at transept, 508 ft.; width below transept, 347 ft.; width across façade, 384 ft.; width across interior of dome, 138 ft.; width of principal nave, 82 ft.; width of side aisles, 33 ft.; height of exterior columns, 95 ft.; height of main interior pilasters, 82 ft.; height of main vault over nave, 147 ft.; height from floor level to inside of dome, 336 ft.; height of cross from main floor level is 443 ft.; area of plan is 162,000 sq. ft. Reference.—Le Vatican et la Basilique de Saint-Pierre de Rome par Latarouilly. The main over all dimensions of St. Paul's Cathedral in London are: Length from apse to portico, 586 ft.; width across transept, 290 ft.; width across façade, 125 ft.; width of dome interior is 180 ft.; width of nave is 104 ft.; side aisles are 41 ft. and 19 ft. wide; diameter of dome is 100 ft.; vault over nave is 86 ft. high; tower from the ground is 285 ft. high; top of the cross from floor level is 352 ft.; the area of plan is 84,150 sq. ft. References.—"English and Welsh Cathedrals" by A. T. Atkinson; "History of Architecture" by Prof. Banister Fletcher. The nearest approach in sizes of churches in America will be St. John the Divine in New York City, which is only partly built. Dimensions from plans and description published show approximate dimensions as follows: Length, 520 ft.; columns, 100 ft. in clear; 300 ft. in width across transepts; central square at crossing 100 ft. on a side.

*Question.*—Will you kindly inform me how a parabolic curve or rise is established in an orchestra floor in a theatre. B. F. K., Toledo, Ohio. *Answer.*—The purpose of the theatre must first be established. The presentation of opera or pageants, in which large numbers of people will be on the stage, affect the stage layout so that it in turn will affect the sight lines from the orchestra. If merely the requirements for the theatre in which drama is to be presented is meant, it is necessary for the stage to offer a twenty-five foot square on the floor of the stage and a twenty-five foot square area vertically on the back drop, plainly visible from every seat in the orchestra. For practical purposes, the eye-level of a man seated in a chair in a theatre is four feet two inches from the floor level. Then place the first seat so that the eye-level of the spectator allows him to see on a twenty-five foot front back of the footlight trough. Then establish

the vertical line of the next spectator in the row behind him; place his eye-level three inches above the first one. The line drawn through the eye-level of the second row and produced until it intersects the vertical line set up at the back of the third row, and from that point again measure up three inches. This will give the eye-level of the third row, each eye-point to allow, without obstruction, a clear view of a twenty-five foot cube on the stage. The floor level is determined by dropping a four foot two inch line from each eye-point. The spacing between seats should be about thirty inches, at least, back to back, up to thirty-six inches, as is possible. Each stepping, therefore, can now be obtained by forming the nosing of the steps tangent to it. Steps are not usually placed close to the stage but it may be necessary to place steppings farther back where the rise in the curve becomes steep.

*Question.*—I wish to attend some good school of architecture. Can you give me a list of the more important schools. *Answer.*—University of California, Berkeley, Cal.; Georgia School of Technology, Atlanta, Ga.; University of Illinois, Urbana, Ill.; University of Notre Dame, Indiana; Massachusetts Institute of Technology, Cambridge, Mass.; School of Fine Arts, Yale College, New Haven, Conn.; College of Architecture, Ann Arbor, Mich.; School of Fine Arts, Princeton University, Princeton, N. J.; Cornell University, Ithaca, N. Y.; Columbia University, New York City; Pratt Institute, Brooklyn, N. Y.; Ohio Mechanics Institute, Cincinnati, O.; University of Pennsylvania, Philadelphia, Pa.; Carnegie Institute of Technology, Pittsburgh, Pa. This list is not presented as complete.

## STUNTS

*Contributions by readers, explaining pet tricks and methods that save time and get results in their work.*

When measuring between walls with a steel tape lay a pencil along tape and slide pencil till end is against wall, hold pencil and tape together firmly, remove from wall and straighten tape; the end of pencil will indicate measurement. This avoids bending tape too much and is quick.—P. G. M.

When blue print copies of typewriting are wanted for specifications, place a sheet of paper as thin as tissue paper in typewriter with sheet of carbon paper placed with its carbon side towards back of tissue paper. Write and letters will appear on both sides of thin paper, from which good blue prints can be made.—Oliver Clarry, Cincinnati, O.

HAVING included additional reading matter in this issue we have been compelled to omit the instalment of the "Classified Catalogue of Available Previous Issues of The Architectural Review." The publication of this catalogue will be resumed in the next issue.—Ed.

# ARCHITECTURAL ACOUSTICS

## CHAPTER III

**I**N our last chapter we pointed out some of the complexities pertaining to problems of sound transmission and the lack of accurate scientific knowledge concerning them. A sharp contrast is offered by problems of auditorium correction. In this field, careful and accurate research has been carried out by the late Professor Wallace C. Sabine in his laboratories at Harvard University. The results of this work are well known to physicists and architects the world over, and are accepted as definite and authoritative solutions of problems which formerly seemed hopelessly confused. Through these researches, it is now possible by expert advice not only to correct faulty conditions in auditoriums already built, but also to determine in advance of construction the effect of any given design with relation to the structural materials to be used.

The principal difficulties encountered in auditorium acoustics are classed under the heads of reverberation, echo, interference and resonance. Of these, the most frequent and serious sources of trouble are reverberation and echo. These two words are often used synonymously in the popular mind, but technically they should be applied to two distinct phenomena bearing much the same relation to each other as diffuse and specular reflection in the case of light.

By reverberation is meant

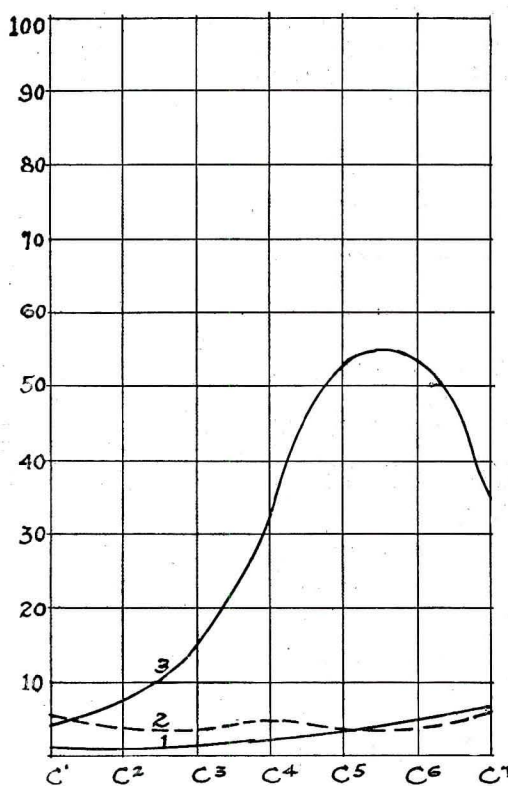


FIGURE 1

The above graph shows the variation of absorbing power for reflected sound with the musical pitch. Curve 1 shows the absorption of unpainted brick surfaces. Curve 2 shows the absorption of soft plaster on wood lath. Curve 3 shows the absorption of Akoustolith sound-absorbing stone. The figures at the left show the percentage of absorption, while the letters at the bottom indicate octave intervals of pitch, C³ being "middle C." Most of the audible energy of the voice, as well as other sounds, lies in overtones above C⁴. It will be noted that in this region the absorbing power of AKOUSTOLITH\* is from seven to sixteen times greater than the most favorable of other types of construction. The advantage over glazed tile, concrete or hard plaster on metal lath is even greater.

\*Akoustolith is an artificial stone and can be cast in the form of tile, wall blocks or in ornamental forms.

the confusion and magnification caused by prolongation and overlapping of sounds in a room with little absorbing power. It is analogous to the dazzling effect produced in a brilliantly illuminated room by perfectly white interior surfaces. Echo, on the other hand, signifies the regular reflection of sound from comparatively smooth surfaces having a geometric contour such that the sound is focussed in some definite region so as to produce a sound "image," as in the action of mirrors upon light.

The factors controlling these phenomena are the size and the shape of the room and the absorbing power of the materials composing the interior finish. Under the latter head must be classed not only structural materials but also the furnishings and the audience. By a proper adjustment of all these factors with relation to one another, the acoustics of an auditorium can be made correct for any desired condition of use. The requirements are somewhat different as between speech and music so that in an auditorium used for both, a compromise must be effected, but in all cases the result can be predetermined with accuracy.

In our next chapter, we shall discuss these problems in more detail.

R. Guastavino Co.,

Boston

New York



## THE SPECIFICATION DESK

*It is the purpose of this department to cover all matters having to do with specifications. The Specification Desk is to be an open forum to which manufacturers as well as architects, draftsmen and specification writers are invited to contribute. Nothing of an advertising nature will be permitted but it seems to the publishers wholly desirable that those who prepare specifications and those desirous of having their goods specified shall meet on common ground in this department of PENCIL POINTS. It is not the idea that the merits of materials shall be discussed in these pages but rather those broad questions which come up in connection with every building operation for which the specifications prepared in the architect's office form the basis not only for the builder's estimates, but also for the determination of the materials and equipment to be used.*

*The readers of PENCIL POINTS are invited to submit material for this department, either in the form of questions or suggestions calculated to improve any phase of specification work.*

## THE SPECIFICATION WRITER AND THE MANUFACTURERS' LITERATURE, PART III

BY LOUIS R. HOLSKE

PERHAPS if the manufacturer in preparing his catalogue matter would place himself in the position of the architect who is planning a building and endeavor to follow the architect's line of thought, catalogues that would be more useful would result. In arriving at his decision that a certain article is desirable in the building which he is planning the architect must first obtain as full an understanding of the article as possible, and it is the purpose of the catalogue, presumably, to supply him with the data he needs in judging the results obtainable by the use of the article in question, in gauging the expenditure involved, and the limitations of the article and other matters that govern his decision.

The first question the architect wants answered is usually in regard to the space required to accommodate an article under consideration. This is important for often a great deal of ingenuity is required in assigning space for all the articles of equipment needed. The space requirements include, of course, the necessary clearance space on all sides.

Next, the requirements of the article in its relation to all other work must be considered. Does it require foundations, steam, water or gas or electric connections? How and where are such connections made, and many other points which vary with different articles.

While the characteristics of basic mason's material such as Portland cement, lime, concrete aggregates and common brick are familiar to architects, a few remarks on the information needed by the architect may be helpful.

**Portland Cement**—Although producers generally manufacture to meet with standard requirements of the American Society for Testing Materials, the architect is interested in knowing whether the particular cement under consideration is slow or quick setting and also its fineness.

**Hydrated Lime**—The architect would be interested in knowing whether it is a high calcium or magnesium lime.

**Concrete Aggregates**—The crushing strength, the nature of the stone, and if a limestone, some assurances backed by authorities that it will not disintegrate.

**Common Brick**—This is a material with which the architect is familiar and its examination for quality is a matter of routine of superintendence.

There are other materials classed as mason's materials, namely, concrete binders, mortar colors, nailing compounds, face, enamel and paving brick, hollow tile, terra cotta wall copings, and flashing blocks, flue linings,

spot grounds, each of which may be considered in its relation to what the architect wants to know.

**Concrete Binders**—The nature of the ingredients composing the binder, authentic tests of its strength per square inch, at various periods up to two years.

**Mortar Colors**—Nature of the material in each case, its permanence or non-fading qualities and the safe maximum quantity permissible to use without injury to the mortar.

**Nailing Compounds**—The nature of the ingredients of the mixture and assurance of freedom from saw-dust or wood flour. An authentic test of its holding power with wire and with cut nails, to what materials it will bond, the minimum thickness usable. What is its condition at the lapse of two years. Can an old floor be removed and a new one laid without replacement of the compound?

**Face Brick**—Quality, size, surface or texture, colors.

**Enameled Brick**—Size, colors, what special shapes are made.

**Paving Brick**—Quality, size, colors, vitrified or hard-burned.

**Hollow Tile**—A complete list of sizes and shapes with illustrations. In what grades of material are they manufactured, hard-burned, semi-porous or porous.

**Terra Cotta Wall Copings**—A list of sizes manufactured. Quality, whether salt glazed or hard-burned.

**Flashing Blocks**—Illustrations of shapes manufactured properly figured—quality.

**Flue Linings**—A list of sizes manufactured.

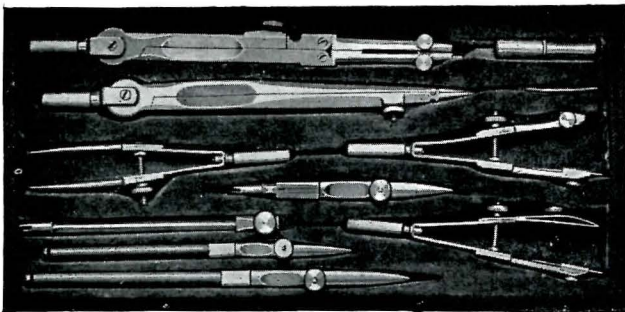
**Spot Grounds**—Size, necessary spacing for light and heavy duty, developed by tests. Mortar mixture for setting.

### PUBLICATIONS OF INTEREST TO SPECIFICATION WRITERS.

**Handbook of Hollow Building Tile Construction.** Standard shapes and sizes, specifications. Computations and sections for floor, spandrel and roof construction. 8½x11 in. 110 pp. The Hollow Building Tile Association, Conway Building, Chicago, Ill.

**A Manual of Face Brick Construction.** History of brick making, types, details, bonds. Small brick houses, tables. Size: 8¼x11 in. 116 pp. American Face Brick Association, 110 South Dearborn Street, Chicago, Ill.

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## PENCIL POINTS

### SKETCHING AND RENDERING IN PENCIL

(Continued from page 8)

forty. There is danger especially in the use of many short, broken lines, as they often produce a spotty effect,—the more so if the white spaces between the ends of the lines are too conspicuous. Long, unbroken lines, on the other hand, sometimes appear too mechanical. It is best as a rule to so vary the length of lines as to produce an interesting variety, avoiding too many lines of equal length and similar direction. Tones are occasionally built up by "cross hatching" but it is usually best to avoid this expedient. Figure 7 shows, however, several examples of cross hatching, and sometimes such tones are highly desirable, especially for shadows and background purposes. Frequently in drawing shadows, especially under cornices, the lines forming the shadow tones are so slanted as to suggest the direction of the light. A sparkling, sunny effect is obtained, too, if the shadow tone is sharpened or darkened along the lower edge, thus forming a strong contrast against the light surfaces below.

Needless to say, it is most important to so vary the lines and tones as to express the textures of the materials represented by the sketch. Observation and practice will teach the student the best way to indicate wood, masonry, glass, metal, cloth, water, and the like.

*Small Drawings and Quick Sketches.*—When the student has practiced tone building for some time he is ready to try simple drawings. Often more benefit can be gained from making a number of small sketches than from attempting one large rendering. As has been before suggested, the architectural student will be wise if, when selecting subjects for his sketches, he chooses objects of architectural value and interest. The sheet of sketches, Figure 8, is shown for two reasons. First, it illustrates a quick method of sketching, the drawings being very freely and rapidly made; and second, it suggests to the student a means by which much knowledge of architecture can be obtained. One cannot fail, when making such sketches, to learn a great deal of value concerning the objects which he represents. Figure 9 is also published here for two reasons. First, it shows in a comparative manner two types of line, the broad and the fine, used side by side for representing the same building; and second, it is a typical presentation drawing such as is submitted to a client as a means of securing a commission. This sort of drawing often brings new work into the office, and is, for that reason, of the greatest value to the architect. This particular drawing was laid out instrumentally. The original sheet measures about  $10\frac{1}{2}" \times 14\frac{1}{2}"$  to the margin lines. Figures 7 and 8 were originally drawn about  $9" \times 12\frac{1}{2}"$ , so the student should allow for this reduction when studying these sheets.

It may seem that so much repetition of instructions regarding practice lines and tones is unnecessary, but too much importance cannot be attached to the value of constant practice such as has been suggested here. It is only by such practice that one can hope to do work of real merit.

*Note.*—The next article will discuss certain conditions of light and their effect on representative drawing.—Ed.

GET A GREEN CARD.—Adv.

### PRESENTATION DRAWINGS

(Continued from page 19)

projections of the design (which must necessarily be thought out in perspective, in its originally imagined form, and translated to the workmen by means of plans and elevations) is an important step leading to their execution, rendered elevations are far more valuable for purposes of study than perspectives—in fact, the latter are a mere waste of time, unless the "design" is a case of larceny, the "designer" but a copyist of other people's plans, who cannot imagine the design in execution, and is, therefore, obliged to resort to perspective to discover for himself how it will appear in execution.

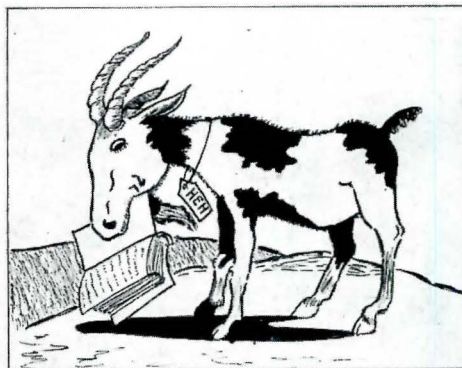
The French rendered elevation is always a far more

valuable architectural document for the purpose of study than a photograph or perspective drawing ever can be (Figure 22). Its American version has been attractively and more simply shown in the several recently published studies by Alfred Hopkins.

In the writer's experience a perspective drawing for a residence has seldom been called for by a client. But scale studies of elevations may well be made on tracing paper and rendered in lead pencil or colored crayons (Figure 23) for purposes of discussion.

An amusing instance of the purpose of a presentation drawing occurred in connection with the alteration of an old factory at Camaguey, Cuba, into a winter residence for the late Sir William Van Horne. This drawing was requested after the plans were finished and the building started. Asked what kind of a drawing he desired and for what purpose, Sir William replied, "An architectural perspective, with mechanical shadows, colored by a draftsman who has never seen Cuba or even a photograph of anything there. I want to show it to some of my friends and I don't want them to know it isn't all brand new." Then he added, with a chuckle, "When they see the building they will think I have made it purposely to look like an antique." So an architectural perspective (Figure 24) was made as desired and completed about the same time as the building itself. At times it appears that the principal point in making satisfactory presentation drawings is to be a good mind-reader.

A BOOK of which several editions have already been brought out, attesting to its usefulness, is the work on architectural drawing by C. Franklin Edminster, supervisor of the Department of Architecture at Pratt Institute. The subjects treated include: Notes on Materials; Geometrical Problems; Simple Projection, introducing the principles of working drawings; Intersection of Solids and Development of Surfaces; Projection of Shadows; Instrumental Perspective; Orders of Architecture; Frame House; Masonry Construction; Stair Construction. This work is fully illustrated with diagrams and reproductions of drawings. It is orderly in arrangement and suitable for use in home study. The student can form a course to suit his needs.



#### A TESTIMONIAL.

Mr Eugene Glait (EDITOR)  
Pencil Points Magazine.

N.Y. Sept. 20<sup>th</sup> 1920.

Dear Sir:-

I devour every page of your Magazine with great relish, and find it great for my mental indigestion.

The hardest job I have is waiting for the next meal.

Sincerely,

H. E. Hall.

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