

TAKING HOLD

EVERYWHERE men are taking hold as never before—taking hold of their work, of business problems, and of life's problems with a new self reliance. Everything is being subjected to the acid test of actual worth, out-worn traditions are going into the discard and perfunctory work is more and more often failing to get by.

This is true in the practice of architecture, in drafting-room work and in the schools and ateliers, as well as elsewhere. New standards of excellence are being set, the men who are taking hold are going ahead and the others are slipping.

Up on Fifth Avenue they are building a big hospital on an X-shaped plan, not according to tradition, but because that plan means effective central control, better communication, and the most light and air in the rooms; moreover it has been so skillfully designed that it is good architecture.

All over the city tall buildings are being put up with the upper stories set back so that the streets will not become sunless cracks in a mass of masonry, like some of the down-town streets, and from this limitation is being developed attractiveness of appearance and a very interesting sky-line.

Architects who are called upon to design industrial buildings get right down to brass tacks and find out what the buildings are for, then they go ahead and provide the right accommodations for machinery and men and track lay outs, ramps and other means of getting materials into, through and out of the plants.

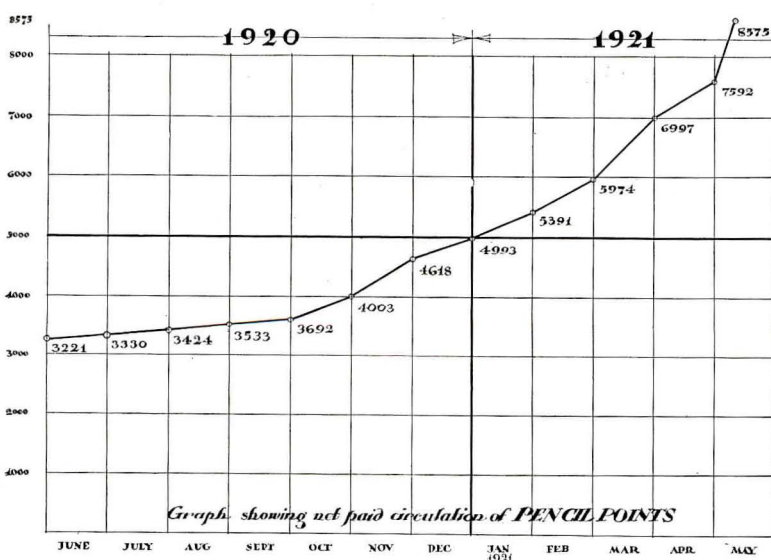
The aesthetic side of life and of architecture is not being neglected, but is being taken hold of

with the same earnestness. It is safe to say that historic sources of inspiration are used no less, but much more intelligently and with much greater appreciation of the spirit of the old work than ever before. Study of the best examples of the art works of the past is being made to yield a more clear understanding of the basic principles of good design. We seem to have just about passed through the stage in our development in which we were often content to display a superficial scholarliness. Impatient with pretence, we are studying and working harder to acquire real mastery, with the result that the architecture and the other arts of this country are assuming an importance and acquiring a dignity and an individuality they never before possessed.

In this work the schools and the ateliers throughout the country are playing a highly important part. The standards of excellence are being raised, but the opportunities for education are keeping pace, and they are available to all. Educators are taking hold, the best men are more intent on developing the students under their instruction. Leading teachers are arousing a new appreciation of the im-

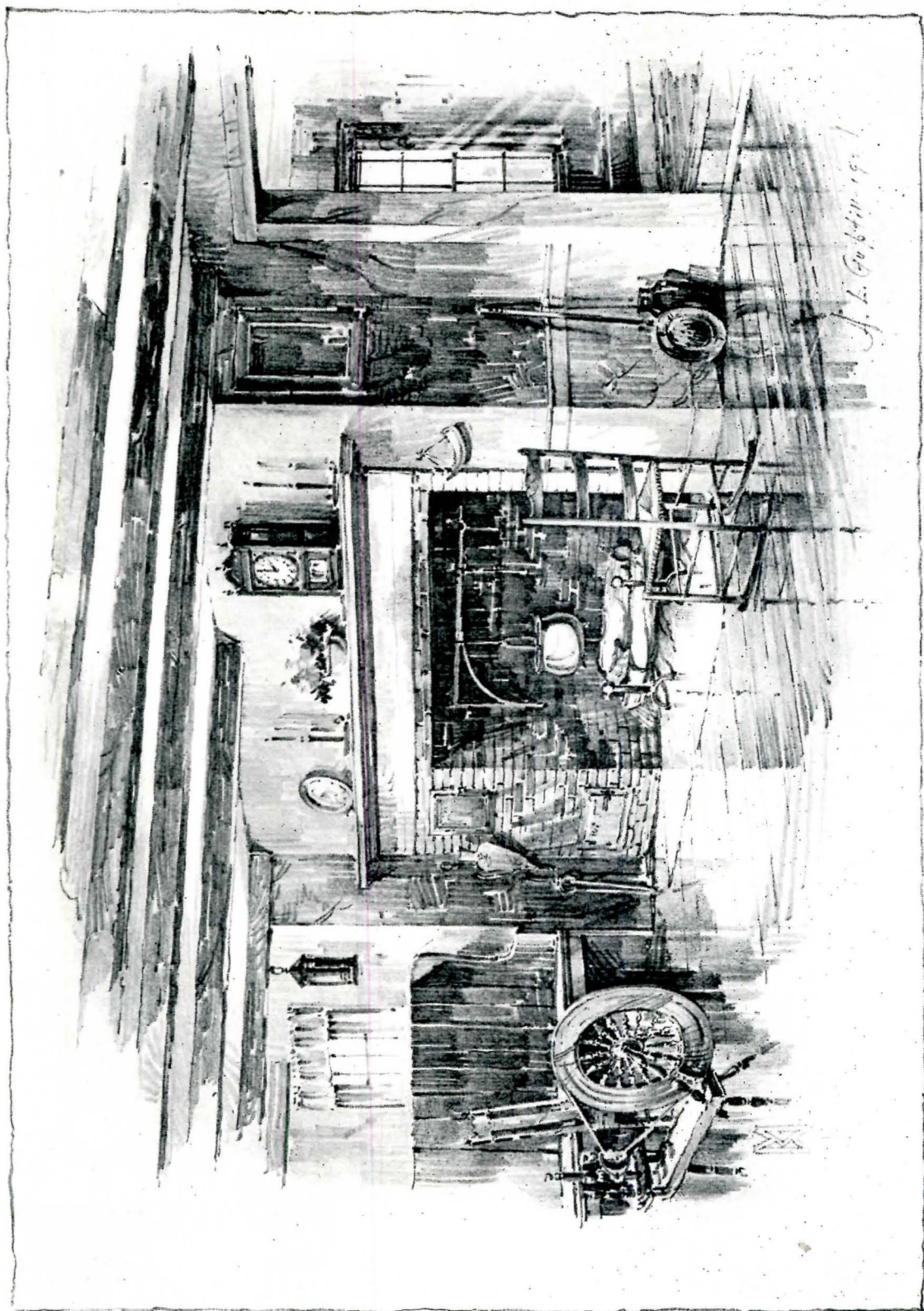
portance of making the student feel that the work is *his* work, and of developing in him the initiative and self-reliance which are necessary to better enable him to take hold.

This new spirit extends from top to bottom of our life and in all directions; it is found not only in high places but all along the line, each man contributing his share to modern progress by earnestly and intelligently taking hold.



This diagram shows the growth of the paid circulation of PENCIL POINTS from June 1, 1920, to May 10, 1921.

PENCIL POINTS



Sketching and Rendering in Pencil. Figure 28.

SKETCHING AND RENDERING IN PENCIL, PART XI

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.

Interiors and Furniture.

THOUGH a large percentage of all perspectives and renderings made for architectural purposes show exteriors of buildings, the draftsman is, nevertheless, sometimes called upon to make drawings of interiors, including such accessories as furniture and draperies, and, as interiors offer certain problems not usually encountered in exterior work, special practice and study are necessary to insure their satisfactory solution. Then, too, there are some draftsmen and designers, particularly those employed by decorators, or in furniture or upholstery houses, who devote the greater portion of their time to rendering interior subjects, and these men, even more than those doing the usual form of architectural work, need a knowledge of how interiors actually appear and how this appearance can be best represented.

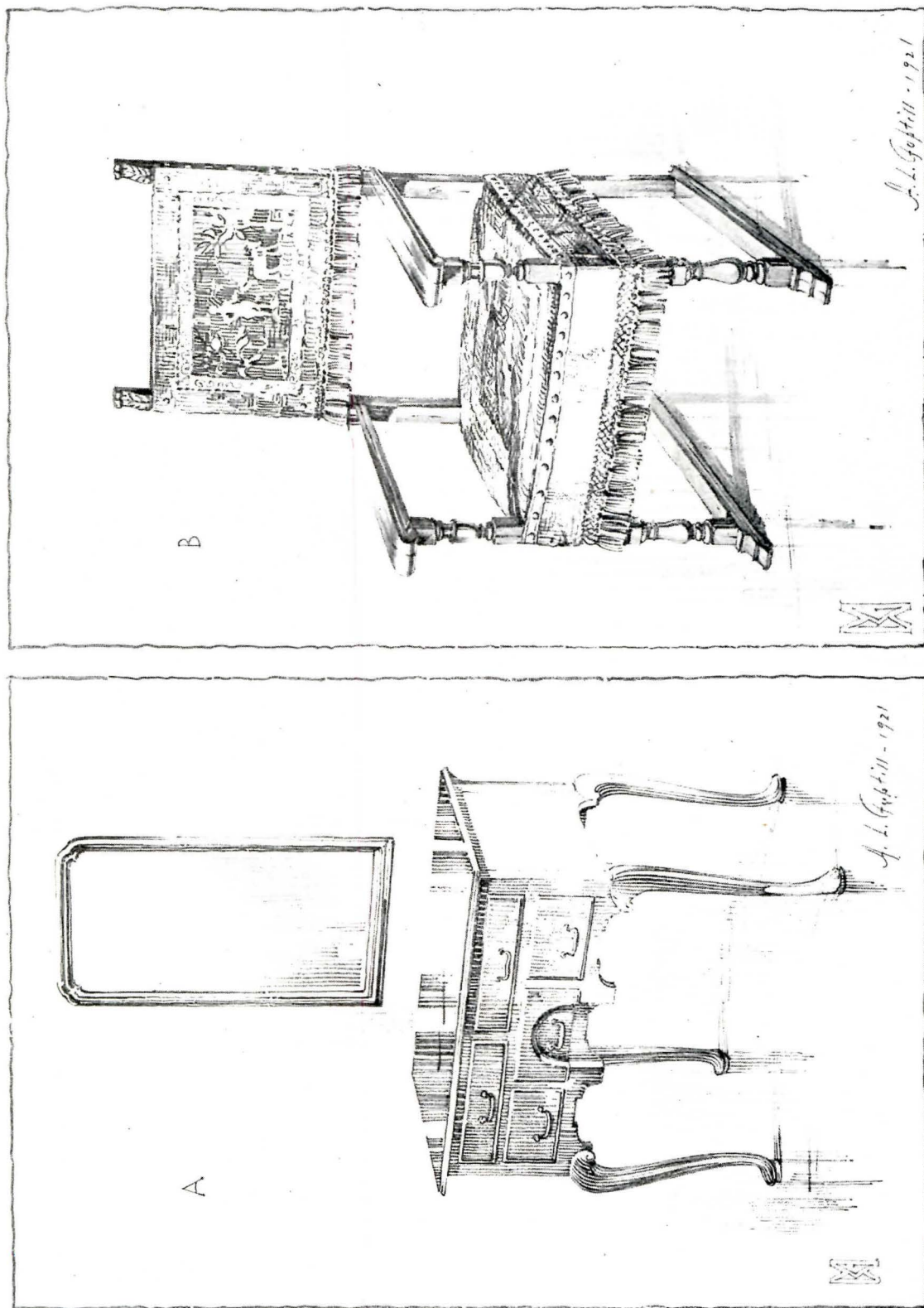
Our space does not permit a lengthy discussion of this interesting subject, but many of the suggestions already offered in previous articles of this series relate to interior as well as to exterior work, and, therefore, as some special comments have also been made which refer to interiors only, it is our present purpose merely to add a few ideas, bearing especially on methods of representing some of the many objects and materials which seldom appear in exteriors, such as the furniture and draperies mentioned above. Before doing so, however, it will perhaps be well to first call attention to a few of the essential differences in the appearance of interiors and exteriors, for a comparison of these differences, and of their effect on the manner of indication should prove of value to the student.

First of all, interiors are considered by many artists to be more difficult to draw than exteriors, and for a number of reasons. To begin with, the actual mechanical process of laying out an interior, preparatory to the work in rendering is usually more laborious than for an exterior. Exteriors are, to be sure, often far from simple, but when doing an office building or a hotel or some structure of similar general form, the mass of the whole is seldom complicated, so it is usually easy, once the main construction lines are instrumentally laid out, to project the various measurements of the windows and the like along the wall surfaces to the desired position. Interiors, however, though often as simple in mass, are only begun when the architectural shell of ceiling and floor and walls (with their accompanying doors and windows) is completed, for there remain such details as furniture and lighting fixtures, and these require considerable time, for it is, as a rule, rather a lengthy proc-

ess to accurately obtain all of the different measurements in perspective, as many of these objects stand away from the walls, which adds to the difficulty of projection; and once the correct placing and general dimensions are obtained, it is frequently the case that the objects themselves are so irregular in form as to necessitate considerable labor, for often many curved or slanted lines are required;—in fact, such pieces as rocking chairs sometimes consist entirely of curved lines and lines sloping at various angles. Then, too, it is not uncommon to find furniture so turned that nearly every piece requires vanishing points of its own. It is, therefore, mainly because of such accessories that the mechanical layout of the typical interior proves laborious to make, though there are certain types of buildings where the block form itself is difficult. One of the hardest kinds of interiors to draw accurately is the theatre, where the bowled floor, the disposition of the seats in curved rows with radiating aisles, the rounded and sloping balconies, the tiers of boxes, the proscenium arch and the vaulted or domed ceiling, all offer labor enough to tax the patience of the most persevering.

In addition to this difficulty of instrumental construction, the draftsman of interiors is sometimes handicapped a bit by his inability to introduce accessories just where he wishes to have them for the purpose of obtaining the best composition. In drawing exteriors the artist can often make an otherwise ordinary composition interesting by arranging his trees and vines and clouds and automobiles,—in fact, all such accessories,—about where he wishes, and many of these can be made, also, of almost any desirable size and shape. Interiors sometimes permit the use of potted plants and vases of leaves or flowers to serve a like purpose, and of course in conservatories we find much of this sort of thing, but on the whole there is less opportunity for such freedom of arrangement, though the furniture and pictures and hangings do offer a similar means of relieving the bareness of the architectural background, so that this of course offsets to some extent the handicap just mentioned.

Another difference in appearance between interiors and exteriors is found in the effect of the light and shade, for in exteriors the sun usually affords a single direct means of illumination, so that the shadows can be laid out by an accurate mechanical method, if one knows the science of doing so, and the division between the light and the dark is generally clearly marked. Interiors, however, are usually far more complex in their lighting, the rays of light coming frequently from several sources, thereby causing complicated values, the shadows



Sketching and Rendering in Pencil. Figure 29.

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Sketching and Rendering in Pencil. Figure 30.

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often falling in a number of directions, at the same time, and the tones of these various shadows differing greatly, some being light and others dark, with certain edges sharply defined and with others indistinct. A chair leg, for example, often casts several shadows on the floor at once and a lighting fixture as many more on the wall or ceiling. This complication is further augmented by the numerous reflections, concerning which we will say more in a moment, but notwithstanding all this, the mere fact that such a complex condition does exist, though often very confusing to the beginner, frequently works to the advantage of the more experienced man, for, as we are accustomed to this complexity of tone, the skilled artist is able to arrange his values almost as he chooses and we are unaware that any liberties have been taken so long as the natural effect has not been sacrificed.

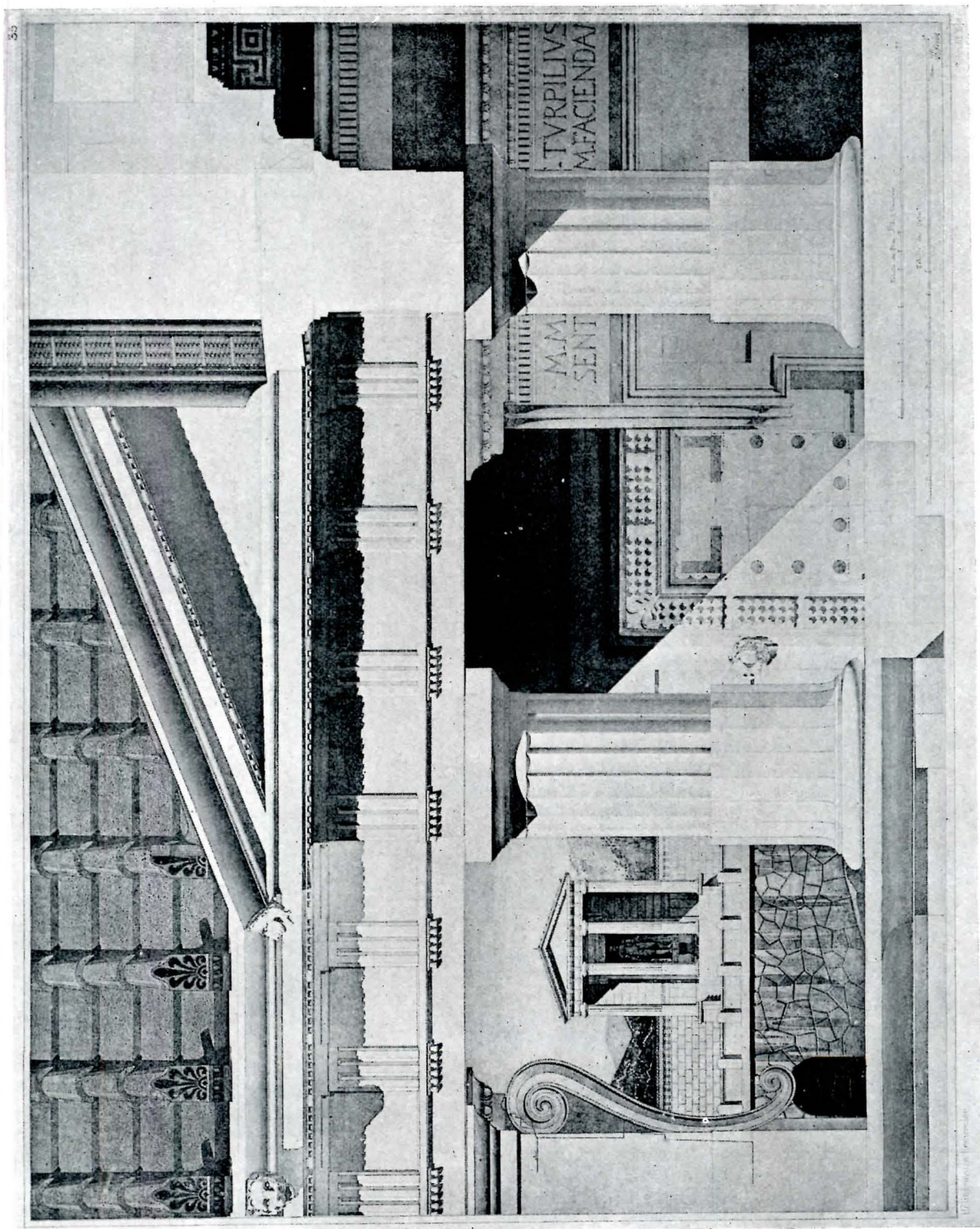
As a rule it is best for the beginner not to draw every little change of tone that is seen, but he should, instead, simplify the whole, working for the general effect in a broad, direct manner, for when one enters a room he is not conscious of all this detail,—therefore it should not be forced on the attention in the drawing. There is another point worth remembering and this is that because much of the illumination of interiors is indirect and the light rays therefore diffused, the general effect is usually softer than is the case where we have an exterior in direct light,—the tones blending or merging into one another and the division between the light and shade being less clearly defined. This indefinite effect, though often desirable in certain types of drawing, can be easily carried to extremes, and the artist who strives for it sometimes obtains a result which, even though satisfying in one sense, may be displeasing in another, for such a rendering is often so gray and lacking in contrast as to prove hardly suitable for architectural purposes, where a drawing with clean-cut edges and sharp definition of tone is preferred as a rule to a soft and vague interpretation. The artist who is working for a crisp result will find a certain fact to his advantage, and this is that many objects found in interiors, being well polished and smooth, offer strong reflections and highlights which, if judiciously used, serve as a pleasing break in the grayness of the general effect. Out-of-doors we seldom find such shiny surfaces as we do inside, with the exception of a few like those of smooth water and glass. The building materials used outside are usually rather dull in finish, and even if polished when first put in place soon lose their gloss because of the action of the weather. Materials found in interiors, on the other hand, often exhibit the contrary characteristics. Floors are of highly polished wood or marble; the trim is frequently varnished or given some enamel finish, and glazed tiles or similar objects are sometimes introduced, particularly around mantels, but it is especially in the furniture and in such accessories as the lighting fixtures, vases, etc., that we find many surfaces of high reflective value. Table tops, for example, frequently act almost like mirrors, while the glass in

the framed pictures on the walls has similar characteristics. Chair arms, door knobs, clocks, dishes, etc., all add little highlights, often of extreme brilliancy in relation to the surroundings, and the student is wise who learns to employ these sharply contrasting accents to give life to his work, especially in drawings of an architectural nature. Many otherwise "dead" drawings receive most of their character from just such accents as these.

So much of a general nature by way of comparing exteriors and interiors. The main points to be remembered are that interiors are usually more difficult to lay out,—that it is not, as a rule, so easy to arrange the accessories to assist the composition,—that the values are more complex, with the shadows made difficult because of light from various sources, and, last of all, that the general effect is sometimes rather vague and soft, but that highlights and accents are frequently to be found on the polished surfaces, which, if properly interpreted by the artist, will give a clean-cut character to his work.

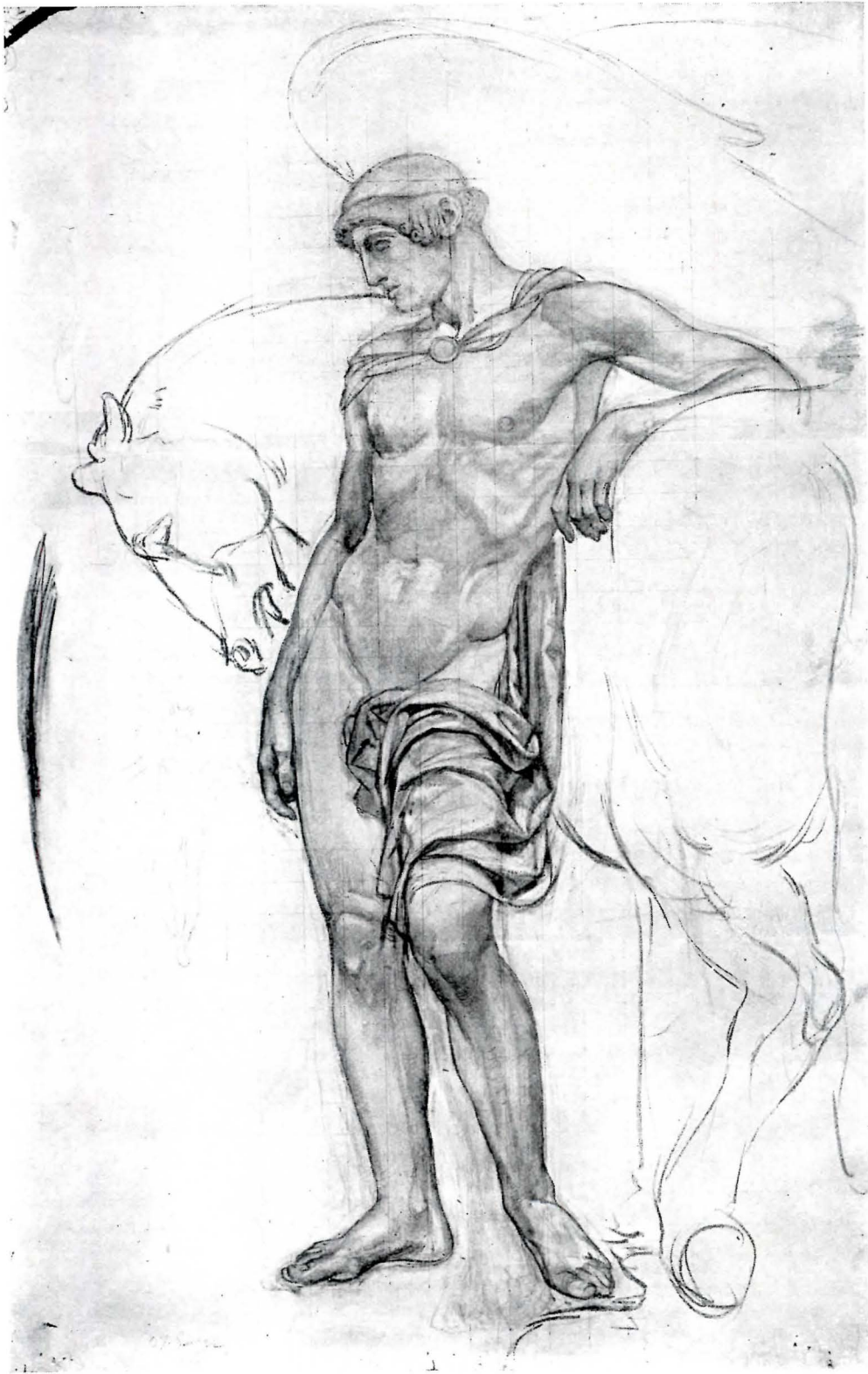
Now, as we proceed to our discussion of methods of representing various objects and materials common to interiors, it is necessary to repeat the statement which we have already made a number of times, and this is that few definite rules exist to tell us how to do such work. Each student must learn to see and to interpret the things that he sees in his own way, and books and instructors can merely offer a few suggestions by way of assistance. Learning to draw is, in fact, so much a matter of learning to see, that it is impossible to overemphasize the importance of cultivating the ability to observe things intelligently. In order to draw draperies, for example, or upholstery materials, it is necessary to first of all carefully observe the various fabrics employed for such purposes, studying each one with care, looking at it close at hand and in the distance, in bright and in subdued light, laid out smoothly and draped in folds, searching always for its special characteristics under all such conditions, and endeavoring also to retain mental impressions of these peculiarities for future use. Then compare one fabric with another, or drape several in such a way that they can be easily seen at one time. It is surprising what differences can be discovered by an inspection and analysis of this sort. A piece of satin and a piece of cotton cloth of similar color and tone will vary greatly in appearance, and even a light piece of cotton and a dark piece of the same material will show marked dissimilarity of effect in addition to the contrast in color. It is impossible to describe such differences within our limited space, but there are one or two suggestions worth offering: first of all, light colored cloth usually shows more contrast in its values than does darker material of a similar kind, as the dark color seems to absorb many of the lighter values of shade and shadow. A smooth material with a sheen will not look at all like some dull fabric of similar tone, as it will have many highlights and reflections, and certain fabrics such

(Continued on page 42)



CORI, TEMPLE OF HERCULES, FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is shown a restoration by V. Blavette of the so-called Cori Temple of Hercules. This monument marks a transition between the Greek and Roman styles. The columns, which are of porous travertine, were covered with stucco. An inscription over the door of the cella contains the names of the duumvirs, Marcus Manlius and Lucius Turpilius, who erected the temple. It may be assumed from the character of the inscription that this temple was built at the time of Sylla, when the whole city of Cori was reconstructed. Only the columns of the portico, the pediment, and the anterior wall of the cella, which contains a doorway, remain. A seated statue of Minerva was discovered in the ruins in the Sixteenth Century and now ornaments the fountain in the square in front of the capitol. The discovery of this statue leads to the belief that the temple may have been dedicated to Minerva instead of Hercules.



STUDY BY EUGENE F. SAVAGE FOR HIS DECORATIVE PAINTING "IDEALISM"

The drawing reproduced on the other side of this sheet is a study for one of the figures in Eugene F. Savage's decorative painting, "Idealism," in the Polytechnic Preparatory School, Brooklyn, New York. This drawing is the one from which this figure was drawn into the picture. Previously a number of studies of this figure had been made from the model. A formal character was given to it to fit it for incorporation in the picture, and though the model was used, this drawing has not the naturalistic character of a life drawing. The horse was first drawn in from the full-size cartoon, then the figure was drawn. This work was done while Mr. Savage was in Rome, as a Fellow of the American Academy in Rome. Mr. Savage was awarded the Medal of Honor in Painting at the recent Exhibition of the Architectural League of New York.



PENCIL SKETCH BY ROBERT VON EZDORF FOR A PROPOSED BANK BUILDING, NEW YORK CITY

CROSS & CROSS, ARCHITECTS

In the course of every-day office practice it often becomes necessary to submit plans and a perspective of a proposed building in a limited time. A type of perspective drawing that often serves this purpose as well as a carefully rendered drawing is shown on the other side of this sheet. It is a rapid pencil drawing made on tracing paper, over a carefully studied perspective, and mounted, and is typical of a kind of drawing in the making of which Mr. von Ezdorf has acquired great facility.



CHARCOAL DRAWING BY SCHELL LEWIS, DETAIL OF A CITY RESIDENCE

CHARLES A. PLATT, ARCHITECT

On the other side of this sheet is shown one of the charcoal drawings made in the office of Mr. Charles A. Platt as a means of studying a design. In this drawing the mouldings around the windows were re-studied and a rectangle of paper showing the new treatment has been pasted in, also the band of ornament at the level of the second floor has been re-studied as shown by the simple panel at the left which replaces the original swag to be seen at the right of the door.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE OF DESIGN

THE "ANALYTIQUE" OR ORDER PROBLEM. PART V.

Composing the Sheet

BY JOHN F. HARBESON

In this series of articles, which began in the January issue, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. This series is designed to cover matters of method and leave the time of the instructor and of the student free for the individual problem. It is not intended as a substitute for personal instruction and criticism.

THE analytique program requires, in addition to plan, section and elevation drawings, details of the architecture, especially of the order, when an order is called for, at a scale enough larger to require a study and careful drawing of profile and ornament. It is conceivable that these might be presented as so many separate drawings, neatly arranged on a sheet, in the manner of some of the plates in books on architecture, and as indicated in Figure 41. As the drawings require cast shadows and rendering, however, and as some sort of tone in the background is usually necessary to show silhouette, the presentation generally takes the form of a composition of the required drawings in the manner of a "frontispiece."

In studying this composition the published work of the Beaux Arts Institute is very useful, showing a number of successful examples, some of which are remarkably good. As the problem requirements are never exactly the same, a certain amount of originality is usually necessary, but to keep the work from being a constant repetition of the same

ideas with only slight variations, it is well to look further afield for inspiration if one wishes to do really good work in composing these fragments.

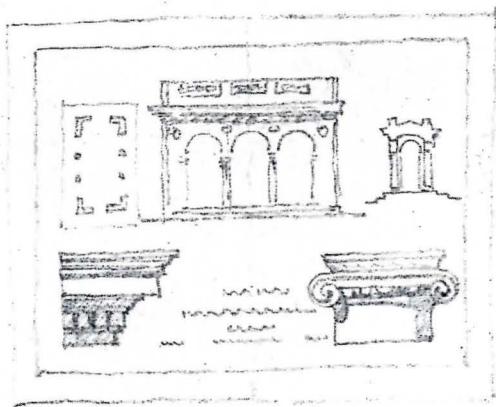


Figure 41.

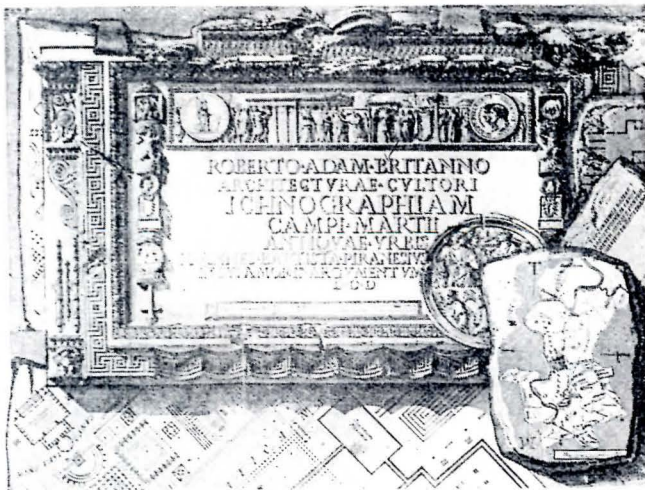


Figure 42.

The frontispiece projects at the Ecole — published in the "Medailles d'Ecole" and "Concours Rougevin et Godeboeuf" are also school work; but there are many documents that may be made use of, for at the beginning of the last century such compositions were much in favor. But still earlier than that Piranesi, having made numerous researches among the ruins of Rome, published the many volumes of his etchings, among which are a number of brilliant compositions of architectural detail. Fig. 42 is one of the best known of these, and it is full of inspiration as to ornament as well as composition. It was dedicated to his friend Robert Adam, who worked in Rome with Piranesi for a while before he returned to England to do that work which caused his name to be attached to a style. Figs. 43 and 44 are two vertical compositions by Piranesi, freer in treatment but like-



Figure 43.

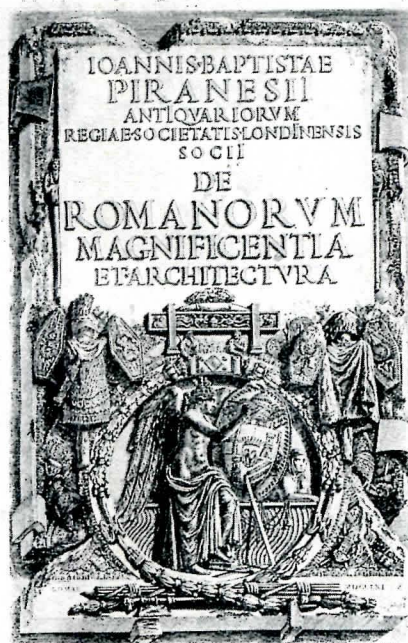


Figure 44.

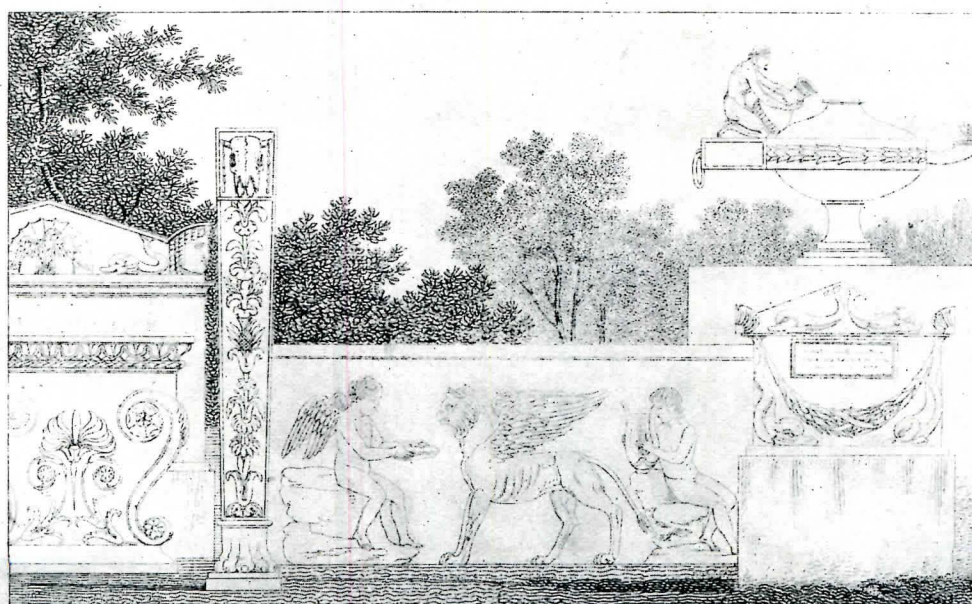


Figure 47.

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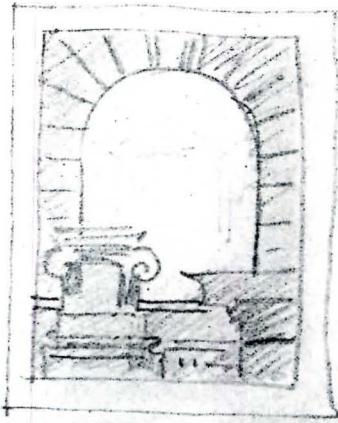


Figure 48.

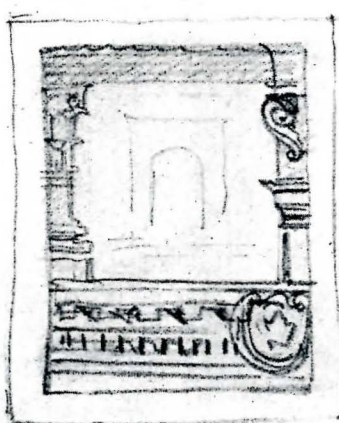


Figure 49.

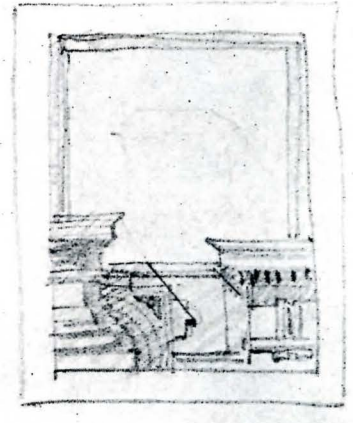


Figure 50.

wise composed of architectural fragments. They also are frontispieces: The portion used for the lettering would in the analytique become the principle small scale drawing of the problem—usually the elevation.

Of those who used this type of presentation in the last century perhaps the most interesting are Percier and Fontaine, masters in the Empire Style, whose book "Palais et Maisons de Rome" was published in 1798. Fig. 45 is one of the title pages from this book. Fig. 46, from "Architecture Tosane" by Grandjean de Montigny et a Famin, is very much like an analytique, except that the fragments shown have probably no connection with the small-scale drawing in the center. Fig. 47 from a book published in 1840 by an architect in Nantes named Scheult—is a very good example of a

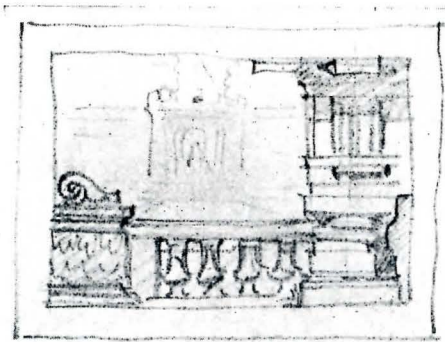


Figure 51.

composition in which the large-scale details are used at the bottom only instead of forming a complete frame, as was the case in Fig. 46.

Many more examples might be shown from works of this period and may be found in the art libraries in the large cities by those who wish to get fresh inspiration for this part of their training in design, for this composing of the sheet in the analytique is a study in pure design:

instead of working with columns, cornices, balustrades, etc., as in architectural composition, you now compose with drawings of varying size and at different scales, and the most successful way to attack this part of the problem is to start with this in mind, as we shall see in a few moments. In D'Espouy's "Fragments d'Architecture" are several good examples, one of which was pub-

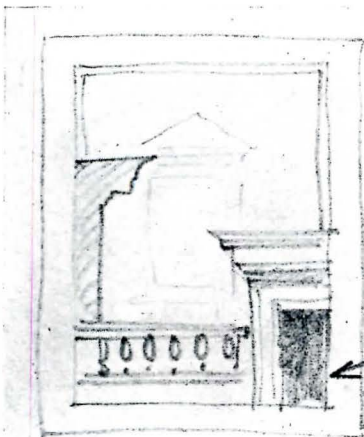


Figure 53.

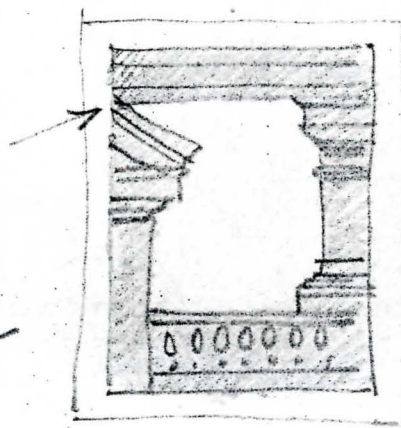


Figure 54.

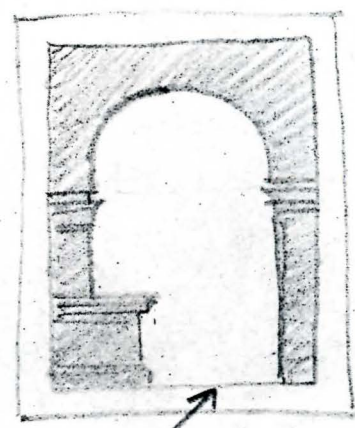
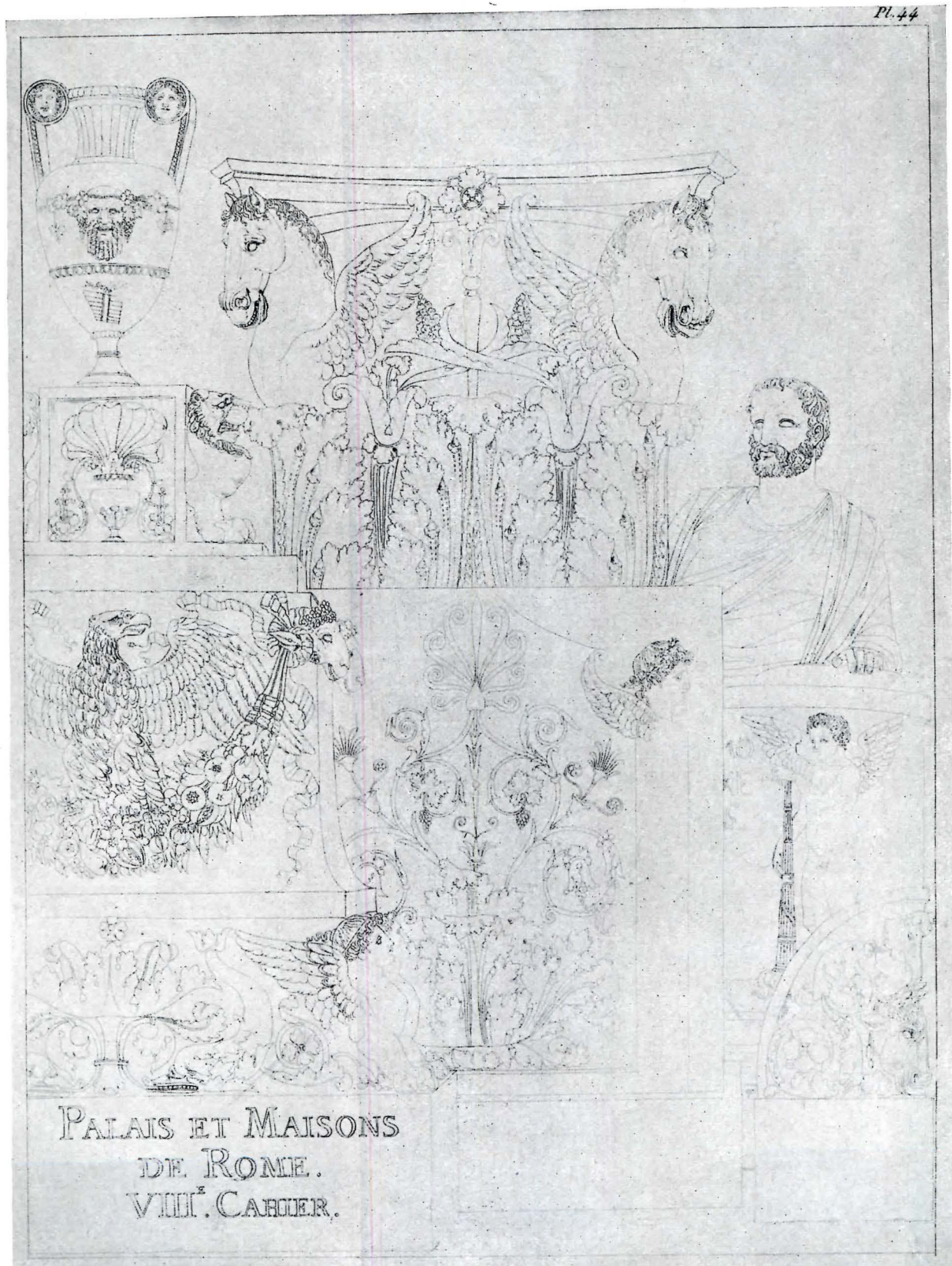


Figure 55.



Courtesy of Mr. Frank Bender

Figure 45. A Title Page from "Palais et Maisons de Rome," Percier and Fontaine, 1798.

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lished in "Pencil Points" in March, Plate IX, and another is shown as Plate XXI in this issue.

A study of published analytiques of the Beaux Arts Institute will show that there are several well-known types of compositions. Perhaps the simplest is where the principle drawing at smaller scale is completely framed by an arrangement of the details at larger scale, and in this frame are frequently incorporated panels containing the small scale plan or section. Frequently use is made of some architectural element of the problem — an arch, or part of a door or window head, either of the lintel or arch type — to make an enclosing feature at the top. The frame is completed by an arrangement of portions of the cornice and the column cap and base of the order, and sometimes a well drawn vase or cartouche is used to give the added interest of sculptural forms. Fig. 48 illustrates this type: Fig. 3 (February) and Fig. 9 (March) are examples of particularly well drawn and presented analytiques of this order.

Very similar to this is the scheme in which the upper portion is treated like the lower, i. e., with individual architectural fragments composed to form a complete frame, as in Fig. 49 — or the details may be grouped at the bottom, extending part way up each side, and a band of ornament or a moulding used on the upper portion of the sides and the top to complete the frame, Fig. 50. In all of these cases,

the top, as shown in Fig. 52. Fig. 4 (February Article) is of this type. When the section

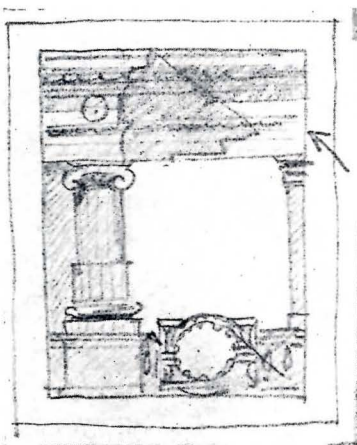


Figure 57.



Figure 60.

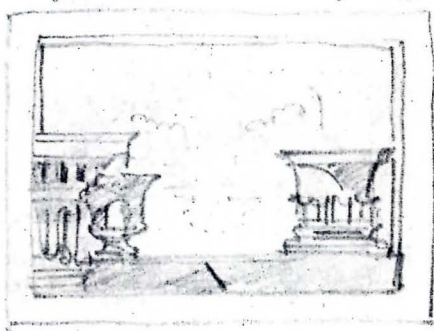


Figure 52.

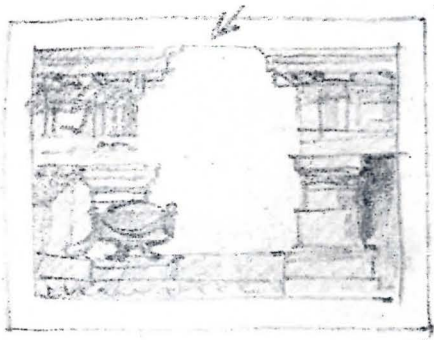


Figure 56.

the outer edge, of the composition being a simple rectangle, the inner line of this composed frame should be studied with care; this study comes under the general principles which may be found in any book on composition. For instance, Fig. 50, would not look as well if the wall behind the cap and cornice were raised to the top line of the cornice; also, the cap and the cornice both extending above this wall, being of different mass, would not look well if they extended the same distance above the wall. The shadow cast by the cap carries the eye around at the base, instead of letting it run off down the edge of the column base and out of the picture: in the same way in Fig. 3 (February article) the lines of the arch at either side running down, the eye is turned around at the bottom, instead of being carried out of the picture, by the vase and cornice at the right and the bush and capital at the left.

Another usual type, shown in Fig. 51, is where the details form a frame on two sides only, one of these being the bottom: on one side an architectural detail is carried to the top, and on the other there is usually a small accent to raise the line of the composition, to carry the eye around. Similar to this is another composition frequently used, with detail on one side only — the bottom — and details on either side at different heights, but not reaching

the top, as shown in Fig. 52. Fig. 4 (February Article) is of this type. When the section

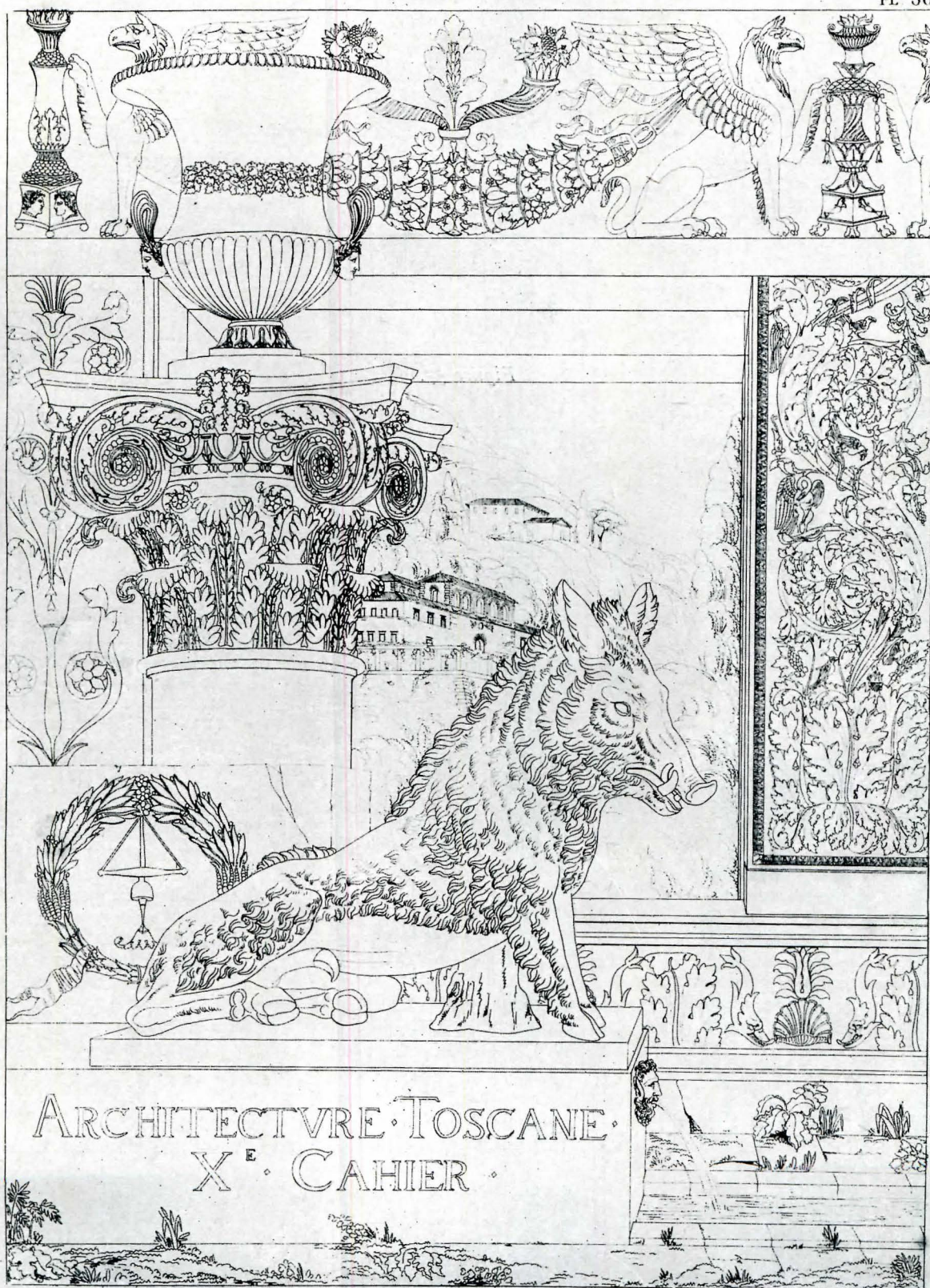


Figure 46. A Page from "Architecture Toscane," Grandjean de Montigny and A. Famin, 1875.

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required is at the same scale as the elevation it is sometimes made a part of the small scale picture, either joined to it as in Fig. 1 (February Article) or placed at one side as in Fig. 4. At other times it and the plan are treated as part of the frame, being enclosed in panels or placed on forms that can be composed with the large-scale fragments.

At other times plan and section are treated as incidental, explanatory, diagrams only and placed on the sky or foreground of the enclosed drawing (Figs. 1, 3 and 4 Feb.) or superposed on the large-scale details as in Fig. 2 (Feb.) In this case they must be drawn neatly, with section line indicated, but should not be further rendered as they would destroy the composition.

To learn to make compositions of this sort well requires real study, but a few suggestions as to what should not be done may be of assistance, all the examples being taken from work submitted in the competitions of the Beaux Arts Institute.

It is not good to place a strong "black" in the corner of the picture, as in Fig. 53, as the eye is continually being drawn there. Where a composition of this sort has been made the rendering should be lightened at such a place. Again, in composing a frame, care should be taken to see that lines do not form an acute angle leading out of the picture very close to the edge as at Fig. 54. Figs. 55 and 56 are ex-

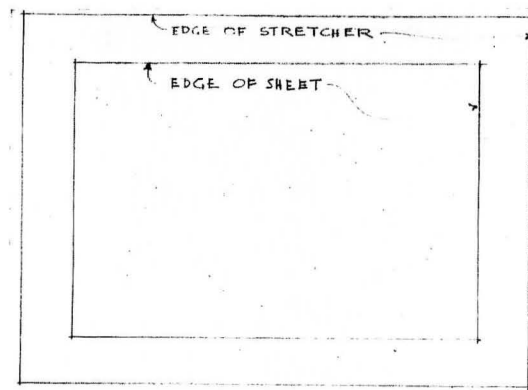


Figure 58.

ample in which the frame seems top heavy, there being a much greater mass of the details above than below a line through the middle, and this effect is increased by the slenderness of the member at the right.

It is almost unnecessary to say that the clever man learns how to transgress all rules, and still do a good piece of work, because he recognizes

the dangers and takes steps to meet them in some other way; for instance Fig. 43, from Piranesi, though like Fig. 57 would make a good composition, the small scale elevation in the space now occupied by lettering, provided this panel is still kept as a "white," the elevation very lightly rendered—kept almost as a diagram.

There are some special arrangements required from time to time that tax the ingenuity of the designer, but these should be studied in the same way. Thus a double study of a colonnade may be asked for, one or two stories high, one three stories. Fig. 1 (Feb.) is (Con. on p. 40)

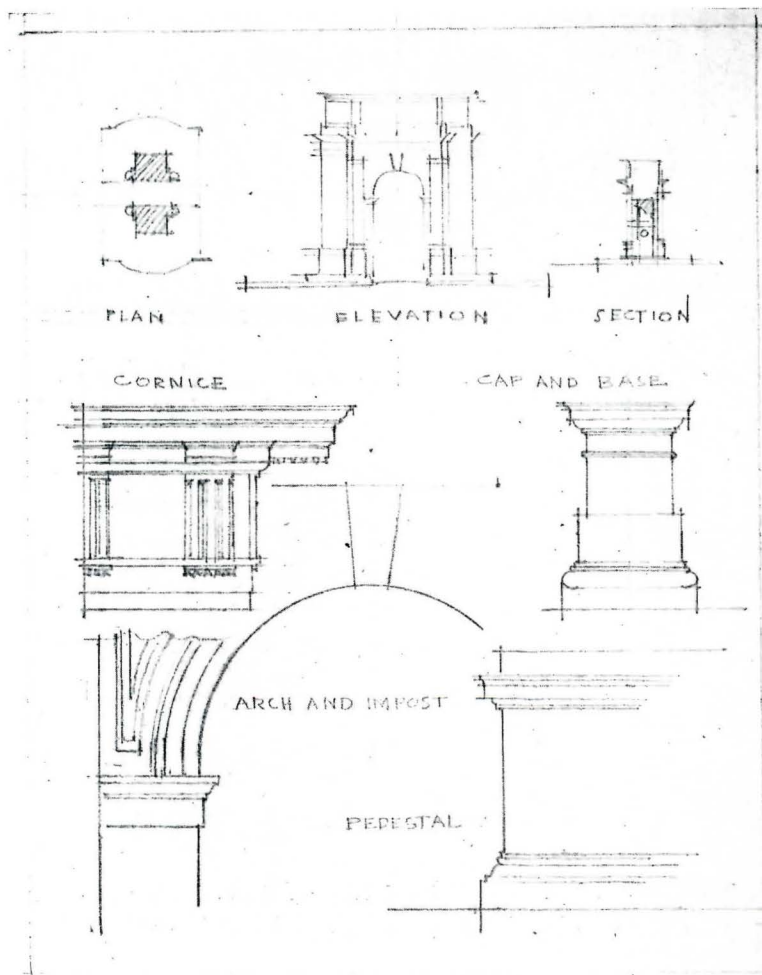
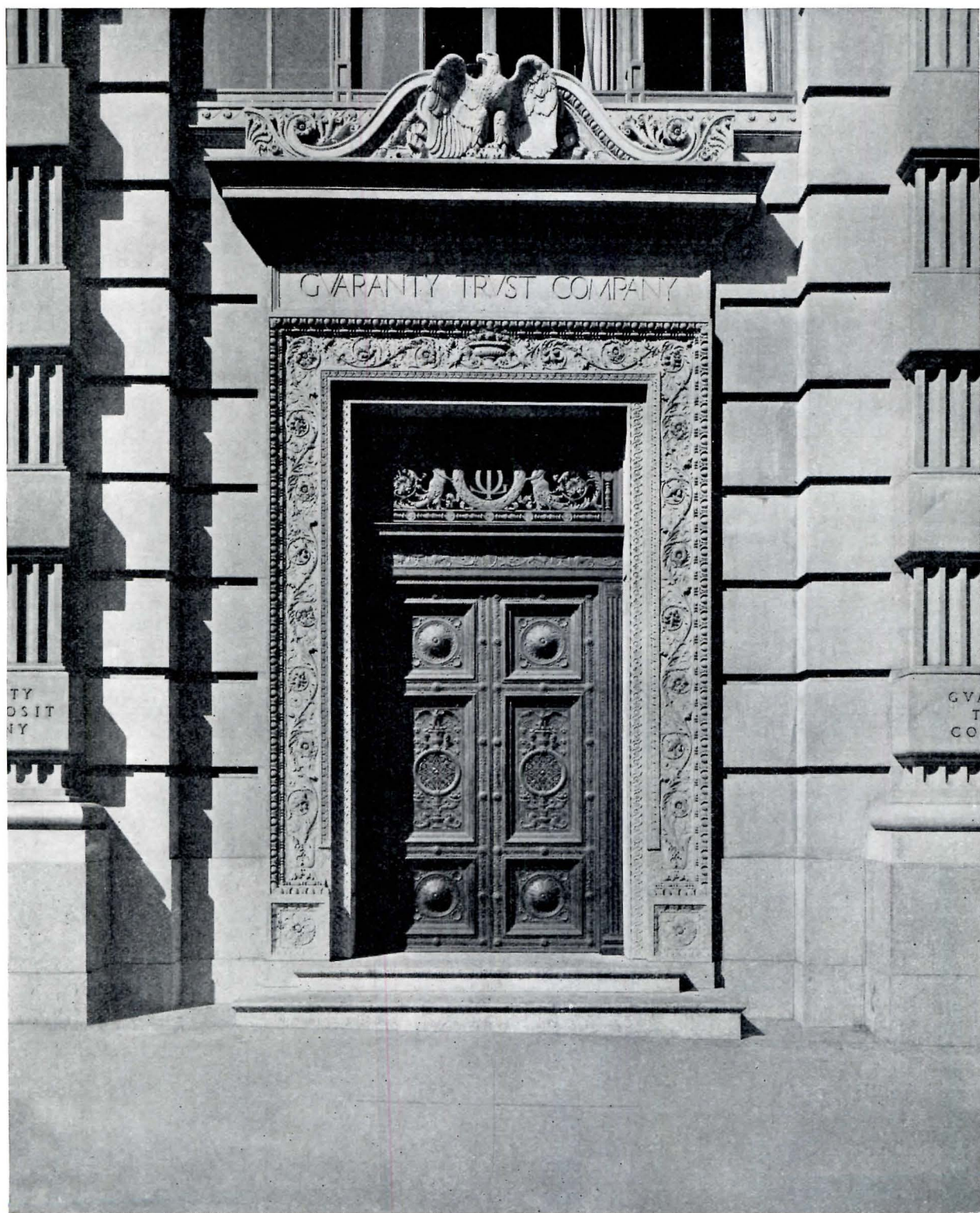


Figure 59.

PENCIL POINTS



Photograph by Wurts Bros.

DETAIL OF FIFTH AVENUE ENTRANCE, BUILDING FOR THE GUARANTY TRUST COMPANY,
OF NEW YORK, AT 522 FIFTH AVENUE, NEW YORK CITY

CROSS & CROSS, ARCHITECTS

ARCHITECTURAL DETAIL, PART II

BY JOHN VREDENBURGH VAN PELT

This is the second instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

THE production of beautiful detail is subject to the laws of composition that govern any other expression of visual art. As in last month's discussion, we are drawn into consideration of a broader field than that of detail alone. First we should determine what we mean by the word "Art." Clive Bell* restricts it to that which moves the observer aesthetically, that to which he reacts emotionally.

This is not comprehensive enough for our present purpose, although I willingly grant that to rouse aesthetic emotion in the observer is the characteristic of the greatest type of art.

The first definition of Art given by the dictionary is "Skill in performance, acquired by experience, study or observation." To concoct a tasty sauce is art entirely without the scope of Clive Bell's intention; yet I am fond enough of the table to greatly approve that form.

Agreeable correlation of lines and colors may exist in a Renaissance panel or Louis XV cartouche that awakes no emotion other than a sense of pleasure in its contrasts and harmonies. It takes art to do this. If one human activity is more excellent than another, it may not be the highest expression of art; but unquestionably the contemplation of pure beauty has brought joy to millions in succeeding generations. Only an ascetic or a crank could find that bad.

If one stops to think, it is evident that all artistic work produces its effect through the psychological reaction of the observer. These reactions may be pleasurable or painful; naturally the former is the goal of the artist. They may also be simple or very complex. Unpleasant episodes are sometimes sought by the sufferer because of the joy of self-pity. The saints scourged themselves for the exaltation of conscious righteousness, the modern reader delights in the depressing endings of the novels she selects because

they are so "artistic," the real reason, perhaps.

More usual channels through which pleasurable aesthetic excitement is obtained are those of the continuing exercise of one or more sense or faculty with increasing degrees short of fatigue, the recall of a previous impression or repetition of a previous activity (habit), change

from one form of activity or current of thought to another and the awakening of an emotion. This being true, what tommyrot are systems of composition that rely on set forms. I recall one that was reared on the isosceles triangle; another discovers the beauties of Greek art, vase and temple alike, to be controlled by a mathematical formula; the drama of France for two centuries was circumscribed by the "three unities."

The rules or laws of composition are much more matters of common sense. A design must not shock our conception of what is reasonable and appropriate. The interest must be concentrated. When they do not lead from one to the other, lines, masses and forms must afford the interest of contrast. The introduction of elements recalling previous impressions, known mannerisms, styles, characteristics, figures or ideas will afford pleasure.

In our research of what constitutes good detail we cannot do better than pause here to review these laws or rules.† Although a piece of detail, one part of a whole, cannot usually have the concentrated interest of an independent design, it can and must respond to all of the other requirements of a satisfying composition.

The matter of concentration or intensity of interest is a very important one. More buildings are damned by too much ornament than by too little. In Clive Bell's "Art," stands the pungent phrase, "Detail is the heart

*Art by Clive Bell, Chatto and Windus, London, 1920.

†For those who wish a fuller exposition of the subject see "La Composition Décorative" by Henri Matisse, Librairie Imprimeries Réunies, Paris, or "Essentials of Composition," John V. Van Pelt, Macmillan, New York.

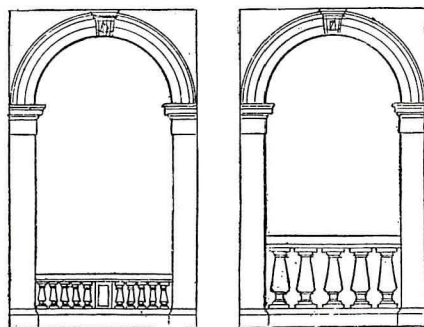


Figure 1.

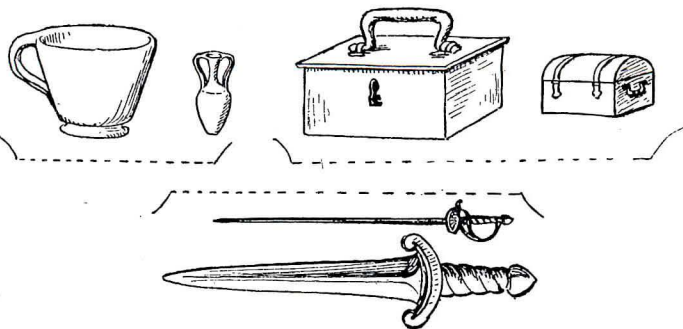


Figure 2.

PENCIL POINTS

of realism and the fatty degeneration of Art." Then, while he admits the possibility of the value of detail introduced for a practical purpose, he accuses the Renaissance of "irrelevancies of technical swagger." He hopes much of the post impressionists and futurists when he says "Nothing is to be left in a work of art which merely shows that the draftsman knew how to put it there."

But there are many minor parts of a design sufficiently units in themselves to permit of an individual focal point. At times these may be symmetrical, though it is easier then to fail in making the sub-motive relate to the main focal point of the major composition. No bit of detail is admissible that does not contribute to the strength of the whole.

If a piece of detail has its own focal point, its lines and elements must draw the attention to that point. If the lines contrast they should cut each other in definite, preferably ninety degree angles. If there are different spaces or masses, unless they are exactly alike, they should be markedly different in size. Short divisions should succeed long ones. Curves should alternate with straight lines.

The detail of all parts of the main composition must exhibit the same character. Of course everyone knows this; but many fail to apply the knowledge. Only the other day a well-known and able modeller working for me, made one of the brackets upholding some Romanesque Sculpture into a Louis XIII cartouche. So much for style; but I have also seen in the work of excellent architects, husky and heavy band mouldings surrounding a fireplace opening in a room where all the other profiles

were ultra delicate and refined, even effeminate.

So we come to the important subject "Scale," vital in any composition, particularly so in that of detail. Scale is the quality of a design that gives a correct impression of the actual size of the executed work. In this sense the word has nothing to do with relative measurements in feet or metres.

A drawing that appears to be at 1/2 inch to the foot when it is actually at 1/4 inch is "large in scale," the opposite, "small in scale." A building or executed detail is "large in scale" when it appears to have been constructed for cyclops; but more often such types of architecture or decoration "have no scale," viz: it is impossible to gauge their size. An executed design that is large in scale tends to appear smaller in size than it really is. St. Peters does not give a correct impression of its full size. An executed design that is small in scale may appear to cover more ground than it does, but it always lacks dignity and impressiveness.

To have good scale or to be good in scale, a design must not violate any of the four following requirements of scale:

1—Many objects have a distinct relation to human needs. The height of steps, balustrades, tables, chairs, bookcases, the spacing of bars in a grille, are all fixed within well defined limits that must be punctiliously

observed. In the accompanying diagram, Fig. 1, two arches of like design are evidently vastly unlike in size, while to the objects in Fig. 2, an impression of size is given by the handles which must fit the human hand. (Figures 1 through 8 are from Mayeux's "La Composition Decorative.")

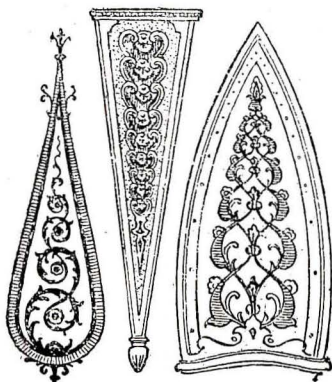


Figure 7.



Figure 3.

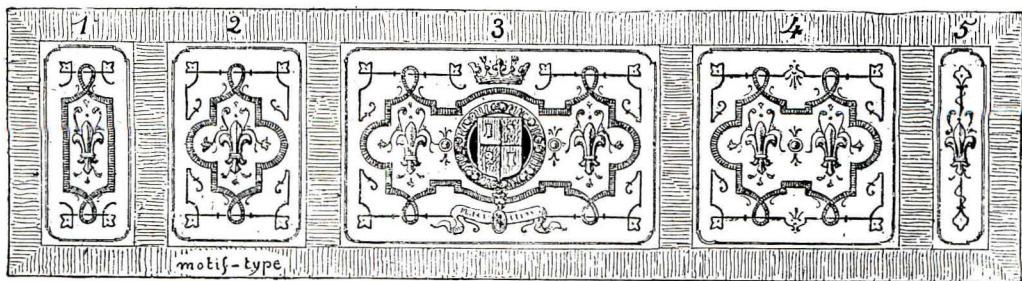


Figure 4.

PENCIL POINTS

2—The limits of the sizes of building materials often define the sizes of the designs or elements of the design into which they enter. Brick, to a certain extent stone courses, tile, shingles, the reasonable widths of boards in panels, are examples. But the structural characteristics of materials also define sizes. A steel lintel should have a wider span than one of stone, a truss would be longer than a masonry arch. That is why the stone veneered

or imitation stone arches supported by long steel girders, but with no abutments, make some of the New York office buildings seem so absurd. Another common transgression is the square headed door or window, wider than an arched one in the same façade. A round arch logically spans a larger space than a flat one or lintel. But a very wide arch cannot afford the excessive height that a semi circle or two centered ogive would require. Hence habit makes us associate the heavy flat segment with great size and inversely the segmental arch and the low semi-circle give scale to an elevation.

3—We now touch a requirement that is of peculiar interest to the student of detail, that of natural relative proportion.

The fundamental rule is that in one unit of design, indeed throughout a whole design, figures, natural accessories including plants, fruits and flowers, instruments, such as the harp, lyre, arms of war or the chase must be shown at their natural relative sizes. Furthermore unless the design is evidently a picturing of the objects, the basic size should be that of nature.

Exceptions to this may be successfully carried out provided any of the four following conditions are observed:

(a) The elements are in separate compartments of the design or are on parts of the structure that differ in essence. The statue in a niche may be of a different relative size from the cupids in the spandrels of the arch, the scene of a tapestry from that of the border, the sculpture on the supporting portions of a piece of furniture,

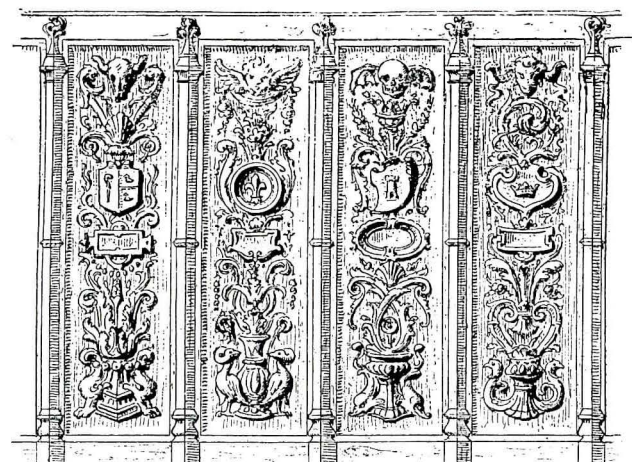


Figure 5.

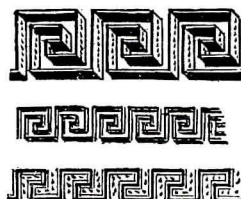
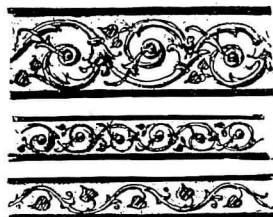


Figure 6.

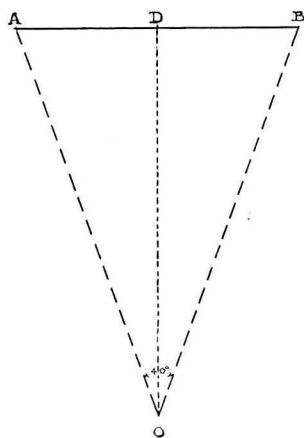


Figure 8.

from that of the panels. Fig. 3 shows this clearly.

(b) The manner in which one element is depicted differs from that of another. One may be in the round or in full relief, another in bas-relief, one modelled, another painted or in mosaic, one in monochrome, the other in color.

(c) The elements are of different materials. The beautiful detail of the bronze doors of the Guaranty Trust Company, shown on

page 30, is not of the same relative size as the decoration that frames them.

(d) One of the elements may be conventionalized, another portrayed in a natural manner.

In taking advantage of these exceptions a very important condition must be met—as the relative size diminishes, the detail must be simplified. This is fundamental and in a measure comes back to saying that the relation of the size at which the element is portrayed to the actual size of the natural

object, must always be suggested. If figures are enlarged above that of nature, sub-details, perhaps the decoration of the border of a robe, should be introduced, or at all events some distinct designation of the size found.

In view of the above a thoughtful decorator will avoid the simultaneous use of the same motive at different sizes. If he has to continue the decoration in spaces of varying dimensions, he will make each element of like size, but omit some of them in the smaller spaces. Thus in Fig. 4 (2) is the typical motive, (1) a reduction, (3) and (4) extensions, while (5), too small for the border, is only decorated with fleur-de-lis and a suggestion of the

foliated corner element. Fig. 5 shows a series of panels containing entirely different elements, unity of scale being retained by masks, volutes, leaf forms, and the sub-motives themselves of like dimensions. The second line of Fig. 6 is a faulty reproductive reduction of the original at the top, the lowest line an appropriate simplification

(Continued on page 40)

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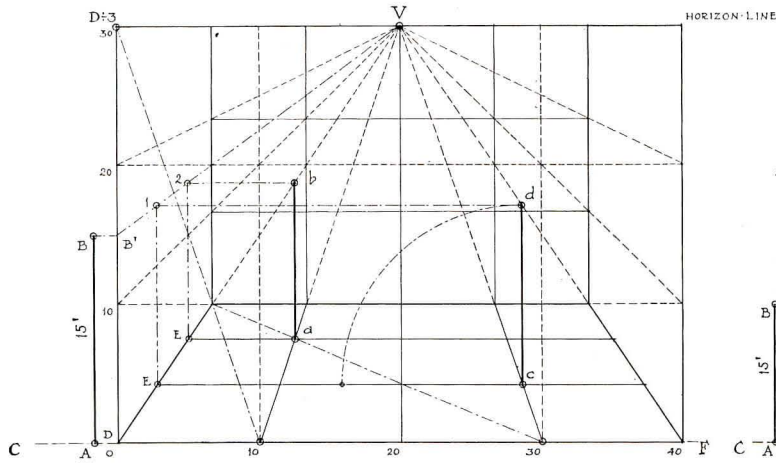


Figure 33.

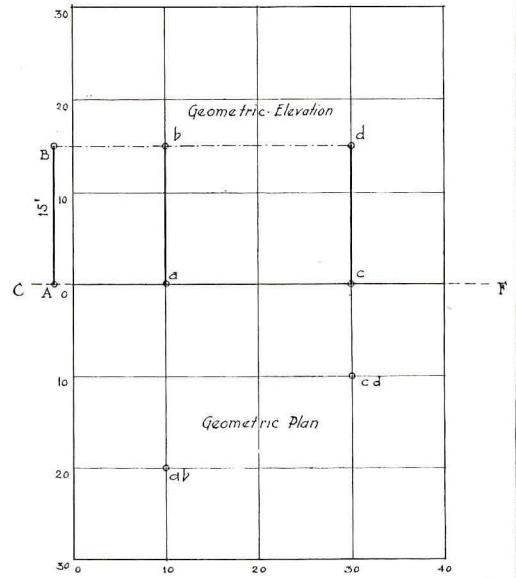


Figure 34.

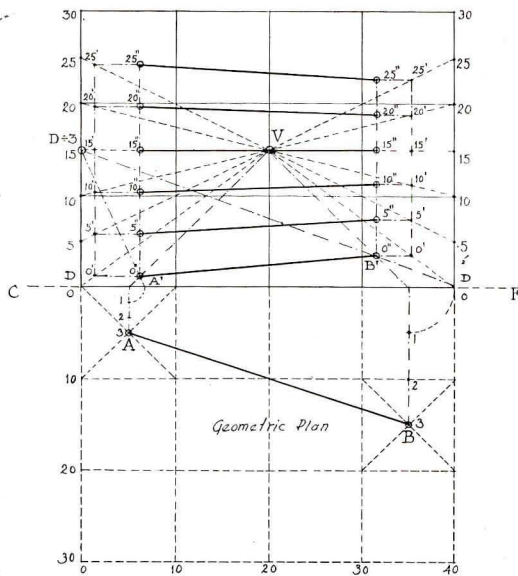


Figure 35.

Perspective Drawing. (See text on the opposite page.)

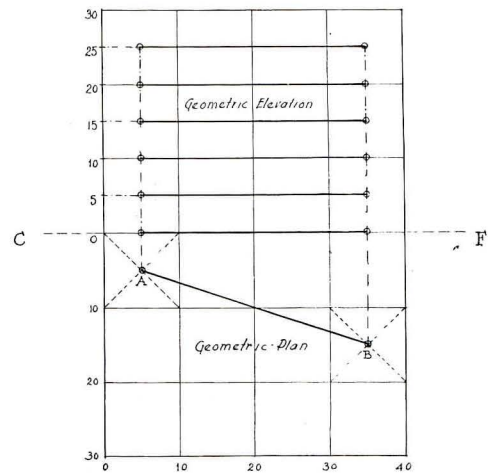


Figure 36.

PERSPECTIVE DRAWING, PART XIII

BY PAUL VALENTI

IN the study of the diagram, Figure 33, we shall consider how to locate a unit within the picture, as specified by the conditions established in *plan* and *elevation* indicated in Figure 34. Considering each square as being $10' \times 10'$, we will find that point *ab* in plan (Figure 34), which in turn is the plan of line *ab* in the elevation, is $20'$ from the ground-line *CF*, and $10'$ to the right, from the left-hand margin of our picture. In similar manner it will be found that point *cd* (also in plan Figure 34 being the plan of the line *cd* in the elevation) is $10'$ from the ground line *CF* and $30'$ to the right from the left-hand margin of the picture. A glance at Figure 33 (May issue) will show us that the foot of line *ab* is correctly located $20'$ deep from the ground line *CF*, and $10'$ to the right from the left-hand margin of the picture, as indicated by the requirements in the geometric plan of Figure 34. The same applies relatively to the foot of line *cd* in Figure 33. Constructing the picture plane Figure 33, in the same way and under the conditions established in Figure 30 (April issue), we will proceed to locate the two units represented by lines *ab* and *cd* in the picture, Figure 33. To the left and outside of the picture plane, we may raise a perpendicular from the ground line, extending to a height, for example, of $15'$, this representing the total height of the units we are to represent in perspective. It will be readily observed that both these units rest on the ground, consequently we shall find them to be contained in the ground plane. Having already found their respective location in the perspective plan, as indicated by points *a* and *c* in Figure 33, it will be very easy to determine their respective height in perspective. First refer the total height of $15'$ of line *AB* on left-hand side of picture, to the margin of picture, to point *B'*, thence conduct a line to central or vision point *V*. Raising a perpendicular, from the intersection *EE* of the horizontals respectively (on which points *a* and *c* are found in the ground plane) and line *DV*, to this line *B'V*, we shall find intersections 1 and 2. Conducting again horizontal respectively from these points 1 and 2 to the verticals respectively raised from the points *a* and *c* in the ground plane; at intersections *b* and *d* respectively we shall find the total height of $15'$ of each unit. It is needless to point out that this operation may be multiplied *ad infinitum*, establishing any number of units in a complex problem.

Here, Figure 35, we shall go a step further and find in perspective a series of units in a horizontal position and placed at a specified angle as indicated in the geometric plan and elevation in Figure 36. It will be noticed that both the plan and elevation are formed as in preceding Figure 34 by 12 (twelve) squares, let us say again of $10' \times 10'$ each. Locating a line *AB* in the ground plane at an angle as indicated in Figures 35 and 36 (an operation very easily discerned), also a series of lines directly over one another at intervals of $5'$ each, for ex-

ample, as shown in the geometric elevation (Figure 36), we are called upon to picture in perspective these units established by these specified conditions. By the usual process indicated in previous lessons and using *reduced* distance point $D \div 3$ find on the ground plane the perspective of line *AB* in the geometric plane (Figure 35) in line *A'B'* in the perspective plane. This, it will be recalled, is done simply by first conducting a straight line from the foot of a perpendicular, raised from points *A* and *B* respectively in the geometric plane, to the ground line *CF*, thence a straight line to the central or vision point *V*. Centering at the intersections of this perpendicular and the ground line *CF* with radius equal to $1/3$ of distance of points *A* and *B* respectively from ground line *CF* and rotating this arc in the *opposite* direction to reduced distance point $D \div 3$, unite the intersection of this arc and the ground line *CF* with reduced distance point $D \div 3$ and once more, at intersection of these lines and the other two conducted from the foot of the perpendiculars raised respectively from points *A* and *B* on line *CF* to the vision point *V*, we shall find the perspective of points *A* and *B* in points *A'* and *B'* respectively. Uniting these two points we shall obtain the perspective of line *AB* in the geometric plane, in line *A'B'* in the perspective plane.

Now we shall locate the remaining five units situated at the same angle and one directly over the other as indicated in plan, and at an equal distance of $5'$, for example, as shown in the geometric elevation Figure 36. Constructing the geometric plane and the picture plane as we did in Figures 33 and 34, each consisting of 12 squares as $10' \times 10'$, for example, we will consider the horizon line this time in the center of our picture as indicated at point *V*, Figure 35. On both the left and right hand margins of the picture plane, mark off 6 equal spacings designated with the numbers 5, 10, 15, 20, 25, 30, as shown in Figure 35. From points 5, 10, 15, 20 and 25 on either side, representing the location of the remaining 5 units in elevation, conduct straight lines respectively to vision point *V*. Raise a perpendicular respectively from points *A'* and *B'* in the perspective plane, and also conduct from these points horizontals until these intersect lines *DV* on either side. Raising also a perpendicular respectively from these intersections. These perpendiculars will intersect in turn lines *5V*, *10V*, *15V*, *20V*, *25V*, respectively on either side. From these points conduct horizontals until they intersect the two perpendiculars raised respectively from points *A'* and *B'* in the ground plane of our picture. It is very plain that by uniting the intersections last found, that is $5''$, $10''$, $15''$, $20''$, and $25''$ (Figure 35), we shall obtain in perspective a series of units $5'$ apart, directly over each other and at an angle and relative distance from the transparent or picture plane
(Continued on page 40)

PENCIL POINTS

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PRIZES AWARDED IN COMPETITION UNDER AUSPICES OF THE ALUMNI OF AMERICAN ACADEMY IN ROME.

PRIZES have been awarded in a competition under the auspices of The Association of the Alumni of The American Academy in Rome for a small church. We quote the following from the program:

"It is proposed to erect near the shore of one of the larger lakes of New England, whose banks contain numerous small cottages for summer visitors, a Church large enough to seat three hundred people. Access to the Church would be not only by road but by boat from various localities more or less distant. The Church is to be of masonry and will contain, besides the main auditorium, only such minor chambers as a retiring room for the clergyman and one for the choir: no Sunday School room is contemplated.

"The landing for the accommodation of those arriving by launches or small boats is to be shown in the design, as well as a covered shelter for twenty carriages or automobiles. The contour plan of the site accompanies this program and shows a bay in the lake, and back of it, a road which follows approximately the shore of the lake. Back of this road on the main axis of the bay, it is proposed to place the Church. Wooded hills rise abruptly behind the Church."

The judges were Mr. Charles A. Platt and Mr. Louis Ayres. The prizes were awarded as follows: First Prize, \$150, to C. H. Sherwood; Second Prize, \$75, to Rosamond Wolcott; Third Prize, \$50, to Benjamin Braunstein.

PRIZE AWARDED BY THE MUNICIPAL ARTS SOCIETY OF NEW YORK.

THE prize of one hundred dollars offered by the Municipal Arts Society of New York for the best project of city planning submitted by any architectural student in an American college or university was awarded to Harry T. Aspinwall, of Pittsburgh, a senior in the School of Architecture of the Carnegie Institute of Technology. Harvard, Yale, Columbia, the University of Pennsylvania, the University of St. Louis, the Georgia Institute of Technology, and Cornell were also represented in the competition.

The projects submitted were judged by a body of representative architects and the award was made through the Beaux-Arts Institute of Design of New York. The winning project was a practical plan for the beautifica-

tion of the plaza of the Queensborough Bridge in New York.

SCHOOL OF ARCHITECTURE, WASHINGTON UNIVERSITY.

NO greater expansion was witnessed, probably, by any of the universities of the country than by Washington University, through its Department of Architecture. Having maintained an average roll of 27, it increased to 73 full time students, and including the extension department to 115, in the last two years. This growth witnessed an addition to the faculty in the person of Mr. Paul Valenti, contributor to "Pencil Points." He has assumed his duties as instructor in design and ornament. His reputation is based upon his accomplished studies in Europe.

The spirit of rivalry in scholarship and design among the individuals has well been enhanced by this growth. Participation in national competitions, such as the Rome prize and the Paris prize, has always been greatly stimulated by the faculty. Local competitions by business firms are occasionally announced. Such a one has just been placed before the school by a prominent St. Louis brick concern. In addition, the St. Louis Architectural Club, which is taking an active interest in the department, occasionally awards a cash prize for the successful solution of some problem in design.

The newly developed practice of designing models for the study of architecture has been adopted in the last year. At the end of each semester time is allotted for the modelling of the successful designs of those problems carried out in that semester. Expansion in other courses has also followed this great development. There is a force behind all this; it can be found in the personality of Prof. Gabriel Ferrand, Professor in Charge of the Department of Architecture.

The true "atelier spirit," that is so vitally important in the progress of such a school, has not diminished through this growth. That common desire for mutual aid through assistance and criticism has been instilled even into the newest student. This is brought about partly through social functions, such as smokers, dances, and banquets. Such a banquet was held at the end of the first semester. Talks by the faculty as well as by the students helped to bring about the closest feeling between the members of the whole school. As part of the festivities, an entertainment followed, in which students as well as members of the faculty were caricatured on the screen. Such activities are carried out from time to time throughout the year.

ENGINEERS' AND ARCHITECTS' CLUB OF LOUISVILLE, KY.

THE regular monthly meeting of the Engineers' and Architects' Club of Louisville was held Tuesday, May 17th, in their Club Rooms, Nos. 1410-1412 Starks Building, Louisville, Ky. An address was given by Dr. C. L. Mees, Ph.D., President Emeritus Rose Polytechnic Institute, on the subject of "The Einstein Theory of Relativity," which proved to be of great interest to the members. A brief talk was also given by Mr. Flavie C. Adams, President of the Louisville Advertising Club, on the subject of "Louisville's Advancement." The meeting was well attended.

The numerous inquiries we receive from our readers for books on rendering indicate the interest that exists in this subject and we are glad to learn that a book on "Architectural Rendering" by Mr. H. Van Buren Magonigle is now on the press and will be issued in the fall. It will be especially valuable, coming from a man of Mr. Magonigle's distinction.

We can not supply any back issues of PENCIL POINTS.

PENCIL POINTS



ROBERT VON EZDORF

ROBERT VON EZDORF, one of whose rapid pencil studies is reproduced in this issue, has developed great facility in making simple, straight-forward sketches of this kind for the purpose of showing an idea to the client. This sketch was made in pencil on tracing paper over a carefully studied perspective. These sketches serve the purpose as well in many cases as would carefully rendered perspectives and they are especially useful in the course of the regular work of an architectural office when it is necessary to get out a set of plans and a perspective in a short space of time.

Mr. von Ezdorf is chief draftsman with Cross & Cross, New York, with whom he has been six years, and he now acts as associate architect on some work. He was born in Philadelphia, Pa. He studied for a musical career until he was sixteen years old. In 1906 he entered the school of Architecture, George Washington University. Since that time he has followed architecture excepting for the period of the war, when he was Commanding Officer of the 31st Aero Squadron in France.

Mr. von Ezdorf studied under Nathan C. Wyeth and in the Corcoran Art Galleries at Washington, D. C. This sketch, of course, represents but one side of his work, an especially interesting side, however.

GET A GREEN CARD.—*Adv.*

DALLAS ARCHITECTURAL CLUB, DALLAS, TEX.

THE Dallas Architectural Club presented its final entertainment of the year on the evening of April 25th in the form of an architectural burlesque entitled "Loved by 2" or "Love Will Find a Way" or "Clara Bares Her Shame." The performance was a proper finale to the Club's entertainment program for the year and was presented to the evident satisfaction of a gathering of 150 fellow craftsmen. The "draftpony ballet" made up of Ruby Eraser, Rose Madder, Violet LeDuc and HB Venus, lived up to the press agent's claims as "America's worst chorus."

On the evening of April 11th, Mr. H. B. Thompson

and Mr. D. F. Coburn, practicing architects of Dallas and patrons of the Club, gave talks on "The Business of Practicing Architecture" and "Office Management" respectively.

The Club will complete the first year of its existence with the election of officers and the annual banquet early in June.

COURSE IN CITY PLANNING AND CIVIC ART.

ACOURSE available for those who are engaged in office work without encroaching upon office hours has been arranged in City Planning and Civic Art as part of the University extension work of Columbia University, New York City, for the season of 1921-1922.

The course will comprise: lecture 5:10 to 6 P. M.; criticism, 8 P. M., Wednesday, Room 403 Avery; field work week ends, drafting room work. The fee will be \$50. The instructor will be Mr. George Herbert Gray, A. B., A. I. A., Director, Department of City Planning

PERSONALS

HENRY D. DAGIT, HENRY D. DAGIT, JR., ALBERT F. DAGIT AND FRED D. DAGIT have formed a partnership under the title of Henry D. Dagit, Sons and Co., Architects and Engineers, and have opened offices in the Middle City Building, Philadelphia, Pa. The new firm will continue and expand the practice started by Henry D. Dagit in 1888. The three new members of the firm have had many years' experience with some of the best architects in the east on big projects, trained at the University of Pennsylvania, and two are former Service men.

JOHN NOYES, Member of the American Society of Landscape Architects and Landscape Designer to the Missouri Botanical Garden, has opened an office for the general practice of landscape architecture and engineering at 119 North Seventh Street, St. Louis, Mo.

THOMAS NASH, Architect, has removed his office to 15 East 40th Street, New York City.

BOWDOIN & WEBSTER, Architects, have removed their offices to 70 East 45th Street, New York City.

EDEN SMITH & SON, Registered Architects, have removed their offices to 73 King Street West, Toronto, Ontario.

DUBIN & EISENBERG, Architects and Engineers, have removed their offices to Suite 720 Browning Building, 14 West Washington Street, Chicago, Ill.

WILLIAM C. PRESTO, Architect, has removed his office to Room 310, 179 West Washington Street, Chicago, Ill.

CHARLES B. MEYERS, Architect, has removed his offices to 31 Union Square, West, New York City.

GREISLER-ARRAMSON Co., Architects and Engineers, have removed their offices to 1035 Walnut Street, Philadelphia, Pa.

ALFRED C. CLAS announces that he has entered into partnership with John L. Shepherd and Rubens F. Clas, Architects, under the name of Clas, Shepherd & Clas, at 202-206 Colby-Abbot Building, Milwaukee, Wis.

ELMER E. NIEMAN of Colorado Springs, Colo., has recently taken out a license to practice architecture.

MONACO & WRIGHT, Architects, have removed their offices to 721 North Michigan Ave., Chicago, Ill.

CHARLES WELLFORD LEAVITT, Civil and Landscape Engineer, New York City, has removed his offices to 18 East 41st street.

MICHAEL A. CARDO, Architect, has removed his offices to 61 Bible House, Astor Place, New York City.

GEORGE A. BAGGE & SONS, Architects, have opened an office at 299 Madison Ave. New York City.

QUERIES

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—Can you furnish me with a booklet of plans for houses similar to those submitted in The White Pine Competition, containing at least five masters' bedrooms, four servants' bedrooms, and three or four convenient bathrooms to be built in the country rather than the suburbs, and made out of brick? R. F. B., New York City.
Answer—In our classified catalog of available early issues of "The Architectural Review," under the headings "American Residences, City and Country," and "English Country Houses," you may find plans of houses that will be helpful to you; also see current architectural journals: "The Architectural Forum"; "The Architectural Record"; "The American Architect"; "Architecture."

Question—I would like to get some information on a modern six-room house to be erected in a small town for \$5,000. What do you know about the Gates Prize Bungalow? R. M. S., Kenney, Ill.
Answer—See the "Architectural Review" for 1918. We regret to say that we cannot find any information concerning the Gates Prize Bungalow. A good book on bungalows is one by W. P. Comstock, called "Bungalows, Camps and Mountain Houses," published by the W. P. Comstock Company, 1915.

Question—Can you refer me to books or literature containing floor plans and photographs of small country churches? R. V., Quincy, Ill.
Answer—"American Churches," 2 Vols. published by the "American Architect," 1915; "Churches and Chapels" by E. E. Kidder, published by W. T. Comstock, 1906; "Old New England Churches and Their Children," published by Doubleday, Page & Co., 1906; "The Colonial Churches of America," Art World, New York, p. 286-289, 1917; "Church Planning in the United States," "Architectural Record," N. Y., 1916, Vol. 40, p. 15-29, 145-162, 223-243, 455-477; "The New Country Church Building" by E. de Schweinitz Brunner, Library of Christian Progress.

Question—Can you refer to me a book of plans of bungalows, containing efficient specifications for any one to go ahead and build? H. E. A., N. Y. C.
Answer—Curtis Companies' "Beautiful Homes," Vols. 6 and 7 can be had upon request of the Curtis Service Bureau, Clinton, Iowa. The books published by the United States Housing Corporation in 1919 and its reports will be found helpful, and a subscription to the Builders' Journal, published by the Rogers & Manson Company, 142 Berkeley Street, Boston, Mass., will be found useful. The issues of the Builders' Journal contain information for building this type of building.

Question—Can you refer me to a good Engineering magazine on construction and design of railroad equipment, cars, locomotion, etc.? J. F. R., Davenport, Iowa.
Answer—"Railway Age Gazette," Woolworth Bldg., N. Y.; "Railway Review," 537 S. Dearborn Street, Chicago, Ill.; "Railway World," 612 Chestnut St., Philadelphia, Pa.

Question—I would like to have some information or references to small country clubs, or country clubs for small towns. M. E., Dallas, Texas.
Answer—"Piping Rock Club," Locust Valley, Long Island, the "American Architect," 1912; George C. Nimmons' article on "Special Requirements and Planning of Golf Club Houses," "Architectural Review," 1917, Vol. 5, p. 49-52; "Club House Buildings," "Architecture and Building," New York, 1915, Vol. 47, p. 425-455; Riverdale Country Club by Michael A. Mikkelsen, "The Architectural Record," 1920, Vol. 48, p. 433-440; "Community Houses for Towns and Small Cities" by Charles Over Cornelius, Vol. 46 of "The Architectural Record," p. 535-555; Vol. 47, p. 38-57; 118-131.

SHADES AND SHADOWS

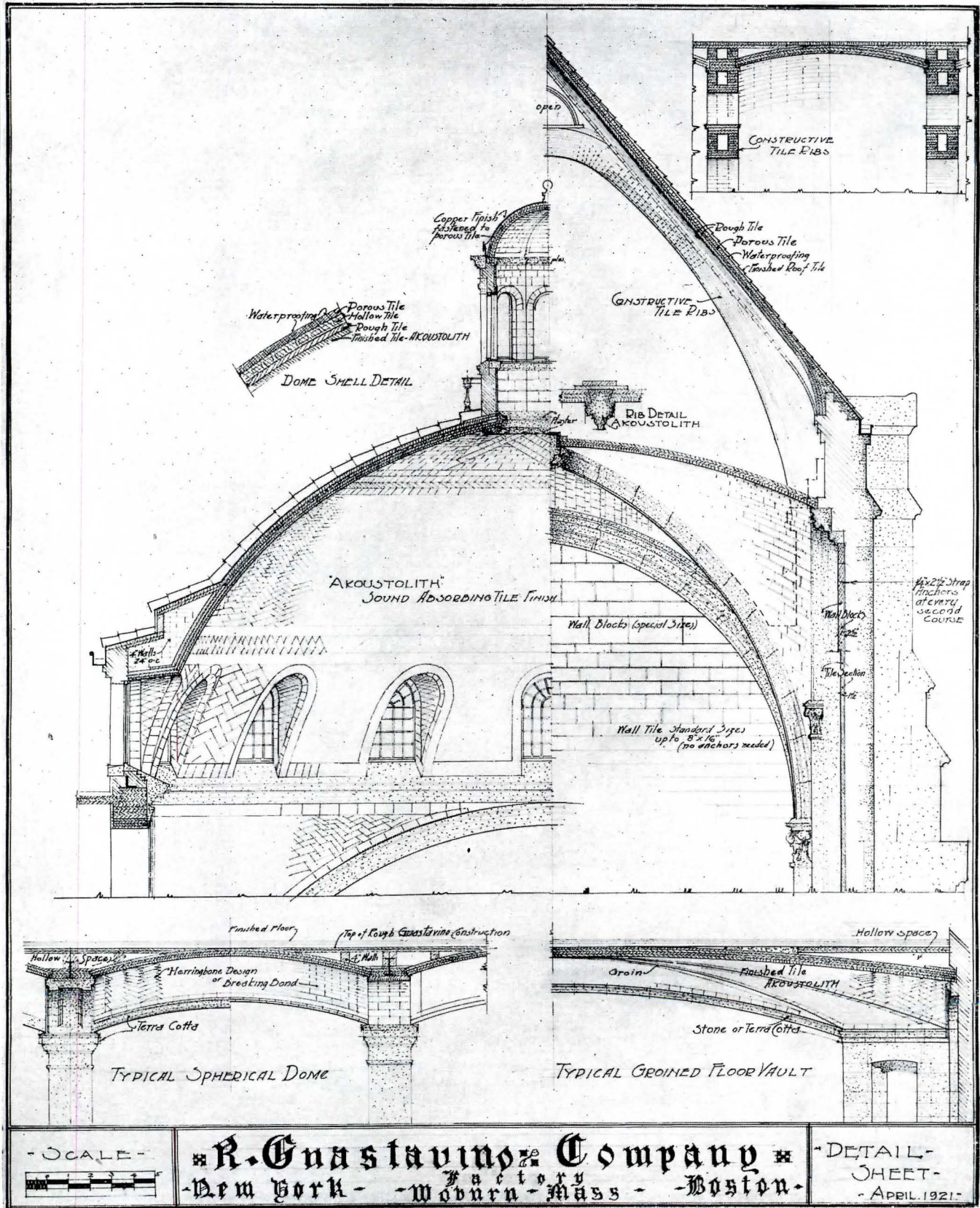
Shades and Shadows, by David C. Lange, M. S., Instructor of Architecture in Washington State College, is published by John Wiley & Sons. It logically combines the two studies "Descriptive Geometry" and "Shades and Shadows," often separated into two text books. The descriptive geometry text carries the student through the projections of points, lines, planes, intersection of solids with planes, through to the intersection of solids. The general principles of shades and shadows are given from the shadows of points, lines, planes, solids, to outlined methods of finding shadows for forms, and notes on wash rendering are given to conclude the book. "Shades and Shadows" has 134 pages, its size is 5½x8½ inches and it is illustrated with plates and figures. The price is \$2.50 postpaid.

ART IN THE HOME TOWN

WHAT has been accomplished by the Art Extension Committee of The Better Community Conference of The University of Illinois as a result of the response to the call for co-operation sent out last September is shown by a report just issued, and it is a highly creditable beginning consisting of traveling exhibits and of lectures.

The Committee now has three exhibits in circulation. The exhibit of paintings consisting of twelve small canvases by some of Illinois' leading painters. Small paintings are suitable for hanging on the walls of the average home and are therefore better suited to the purpose of such an exhibition. The exhibition of sculpture consists of photographs of the work of Illinois sculptors and of monuments in Illinois. It is made up of fifty-seven selected prints donated by Mr. Lorado Taft. The exhibition of landscape plans consists of twenty-three drawings covering a great variety of subjects.

The lectures available consist of a series of three lectures on "The Figure in Greek Sculpture," prepared by Miss Katherine Morris Lester.



THE SPECIFICATION DESK

A Department for Specification Writers

WHAT THE SPECIFICATION WRITER WANTS TO KNOW.

By LOUIS R. HOLSKE

Timber—In considering timber of any kind, the architect will want to know something of its general characteristics—its weight, shrinkage and resistance to moisture and, also, something of its seasoning. For his calculations, he will want to know its ultimate tensile strength, its crushing strength, with and across the grain, its shearing strength, with and across the grain, and its modulus of rupture, all in pounds per square inch. Formerly he would have required any timber to be free of knots, but in the East, since the armistice, knots if firm and tight and not too large will very likely be overlooked, except in the case of a timber carrying a concentrated load. Knot-free stuff may still be obtained in woods coming to this market from a distance, such as long leaf pine from the South, and Oregon pine, fir and redwood from the West coast, but such woods are too expensive to be used for general framing. The architect must exercise good judgment, though, regarding knotty timber, as a knot is a weakness. He should note its position and decide just how weakening it is and should it be a very large knot, say over two inches in diameter, he should reject the timber.

Framing—In considering any scheme of framing, one should first satisfy oneself by calculations as to its structural sufficiency. In the case of beams and girders, one may readily obtain the load carried by determining the area of floor carried and multiplying by a unit per square foot made up of the live or applied load plus the dead load or weight of the construction. Should the loadings be involved or trusses be required, the architect will usually employ an engineer to make such calculations. After satisfying oneself as to the strength of the members, one will look into some of the details of the framing. Are the beams properly framed around chimneys, stairs, shafts and other work? Are the beams doubled for trimmer beams in such framing and the header beam increased one inch in width? Will bridle irons or joist hangers be used for such framing (the better method) or will mortise and tenon be used? Will the beams bearing on masonry have their ends cut to a bevel to prevent the leverage a square end beam would give in falling in case of fire? Will every fifth beam be anchored to the wall and will an air space be maintained around the ends of beams bearing on the walls? Will the beams be anchored to the walls parallel to them? Will the beams be set with their crowning edge up? How often are they bridged in each span? In frame construction for residence work, the question will come up whether the old style "braced frame" is to be used or the modern "balloon frame" or a modification of the latter. In the case of the former, the main posts should be connected to sills and plates, and interties to posts by mortise and tenon fixed by oak treenails and angle brace members or struts should be used at such connections. The studs used in filling the panels between posts one may permit to be merely spiked to sills, intertie and plate. In considering the balloon frame, one should inquire as to the size and spacing of studding, size of girt or ribbon board, sill, plate, etc. It is necessary to require all to be thoroughly spiked together, the girt let into and flush with the studding and that similar sized members be applied at the corner, set diagonally and let into and flush with studding and sill. In this type of construction it is well to insist that the sheathing be applied diagonally to the studding and be carried down to the bottom of the sill. Also, that the beams of each tier be spiked to the studding as often as practicable. In any framing scheme, in view of the fact that wood shrinks most across the grain, it is well to avoid the placing of one member on top of another so far as possible to prevent cracking of plaster.

Finishing Wood—In considering any wood for finishing purposes, either exterior or interior, something must be known of its characteristics. For exterior work, one must know if the wood is hard or soft, open or close grain, its shrinkage, its resistance to moisture, and its capacity to receive paint. For interior use, the architect will want to know if the wood is hard or soft, open or close grain, and would require to see its figure or grain, also, something of its workability under the knife, its shrinkage and if distortion is likely to occur in shrinking. One will have to determine whether the wood will require filling, staining, varnishing, or staining and waxing only, to bring out its beauty of grain, or if it would be better painted.

Exterior Finish—This classification will naturally include cornices and moulded work, window frames and sash, door frames and doors, and any other woodwork exposed on the exterior of the building.

Moulded Work—For any exterior work, moulded or plain, all members must have substance enough to resist the warping action of the sun. Thin, delicate mouldings and slight sinkages, while very refined, are not very enduring under the sun's rays. They curl slightly, water gets in and they go quickly to ruin. All moulded work, such as cornices, band courses, etc., must have their top members pitched for drainage and flashed with metal, the various members properly lapped to shed water, and the joints in the various members broken or staggered. Columns and pilasters must be made of material sufficiently thick, all joints splined and glued, and pilasters blocked on the inside in the corners. Where composition ornament is used, it must be an outside mixture, i.e., a composition of whiting, red lead, linseed oil, rosin and glue. The mixture for interior use will not endure on outside work.

Window Frames and Sash—For use in window frames and sash, the requirements should be for clear wood, either white pine or cypress, that the members forming the frame be sufficiently thick and that for frame construction the sill be in two parts, a sill and sub-sill, the former $1\frac{3}{8}$ " thick, the latter $1\frac{3}{4}$ " thick, and the sill properly lapped. Also, that the sill is rabbeted under the sash to shed water. In masonry construction the sill should be rabbeted under the sash and the stone sill rabbeted $\frac{1}{4}$ " and about $\frac{3}{8}$ " under the wood sill. The contact between stone and wood should be on one line only and the wood and stone not in continuous contact to avoid dry rot due to alternate wetting and drying from the capillary attraction of the stone. Sash will be required to be framed together by mortise and tenon set in white lead and the tenon pinned through the stile by wood pins, but it will not be permitted to carry the tenon through the stile. The sash must be sufficiently thick to resist warping, which binds it in the runways, making operation difficult, if not impossible. The frames and sash should be primed at the mill with a white lead primer, including the sash rabbets.

Door Frames and Doors—These should be built out of the solid and not veneered work, which is extremely difficult to hold together in exterior work. Moisture will enter with the consequence that the stiles and rails part and the veneering loosens. The frame, of course, will always be rabbeted with the stop and an integral part of it and not applied. Doors and frames will be required to be primed or painted one coat at the mill.

Prevention of Rot—The architect will keep in mind that wood requires air, that, sealed in with moisture present, dry rot soon begins. He will require, therefore, that wood such as sleepers in cinder concrete under wood floors, and grounds in a mortar coat under sheet metal or roofing, should be given two coats of one of the heavy oils distilled from coal tar, such as creosote or carbolinum avenarius. As alternate wetting and drying of wood also

PENCIL POINTS

induces rot, he will require that porch floors be laid with the joints set in white lead.

Interior Finish—Having selected the woods for interior finish, one will consider the form of the trim. Whether it be a single member or built up of several, one should require the back to be cut out or recessed to prevent warping and a small back moulding to be furnished to take up any inequalities in the plaster work. Preferably, all trim should be mitred, splined and glued in the mill. For windows, there should be stop beads sufficiently wide (not less than $1\frac{1}{2}$ "') to receive the shade. All bases to be carried to the rough floor. Door frames to be rabbeted, the applied stop, unless let into the frame and glued, should be permitted only the cheapest work. Doors, whether built out of the solid or veneered, will be required to be framed together by mortise and tenon. Veneers should be sawed rather than rotary cut, unless the door is to be painted, the rotary cutting produces such an extravagant figure. Behind wainscots it is well to require always lathing and the scratch coat of plaster to prevent the wood being subjected to cold air on one side, warm on the other, a condition that induces warping. All finish should be primed on the back with a substantial paint coat and not permitted to be brought to the building until the plaster is thoroughly dry.

Flooring—For rough or under flooring the architect will require tongued and grooved stuff laid diagonally. In frame construction he will require it to be carried out between the studding to the back of the sheathing, allowing some room for expansion. With masonry walls he will require it to be carried out to the walls, allowing room for expansion. Finished flooring he will require to be tongued and grooved and cut out on the backs. Also, that it be blind nailed at not over ten inch intervals, using cut nails. For the veneered floors he will require a wearing surface not less than one-quarter inch thick glued to a frame-work three-quarters inch thick and tongued and grooved. All floors will require scraping and planing before finishing.

ADDRESSES WANTED

THE following is a list of those from whom we have received subscriptions for PENCIL POINTS and whose names were either improperly recorded here in the office or who have changed their address and neglected to notify us. In any case, they have failed to get some or all of their copies of the magazine.

If your name is included, or if you recognize the name of anyone whose present address is known to you, please communicate with our circulation department:

James J. Bevans, Portchester, N. Y.; Alvin C. Bicher, Houston, Texas; R. B. Bloomgarten, Kansas City, Mo.; W. Earle Bort, Detroit, Mich.; E. D. Cassell, San Diego, Cal.; John Russell Colean, Omaha, Neb.; L. A. Crocker, Milwaukee, Wis.; Schuyler Cousins, New York City; Wm. B. Ditmas, New Orleans, La.; E. R. Dunlap, Detroit, Mich.; Carl J. Ebert, Baltimore, Md.; Arthur L. Fitzgibbons, Washington, D. C.; W. T. S. Garnjort, Detroit, Mich.; Richard B. Gergendahl, San Antonio, Texas; L. E. Gowen, New York City; Julius R. Greenberg, Fort Douglas, Utah; Edward Held, Allenhurst, N. J.; C. V. Hendrickson, Middletown, Ohio; C. V. Hetrick, Lansing, Mich.; Harry H. Heybeck, Pittsburgh, Pa.; J. P. Kefalos, Pittsburgh, Pa.; Ignatius H. Lanzarone, Brooklyn, N. Y.; C. H. McCrohen, New York City; Edward J. Manning, Cambridge, Mass.; Carl F. Minion, Cincinnati, Ohio; J. P. Moore, Jr., St. Paul, Minn.; John W. Ochman, Washington, D. C.; Ferdinand Peipers, St. Louis, Mo.; S. J. Pielstick, Omaha, Neb.; A. W. Pickett, Chicago, Ill.; H. C. Peters, Chicago, Ill.; G. T. Rose, Washington, D. C.; Eugene Rosenweign, Pittsburgh, Pa.; Cedric A. Shantz, Chicago, Ill.; J. Clifford Shawde, Philadelphia, Pa.; Maud Spear, Washington, D. C.; Raymond Stimson, Chicago, Ill.; L. Solberg, Wenatchee, Wash.; Frank L. Tindall, Jersey City, N. J.; H. P. A. Verdich, Baltimore, Md.; W. H. Voelker, Chicago, Ill.; John Berkeley Wells, Bethlehem, Pa.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITERS

Any publication mentioned under this heading will be sent free, upon request, to readers of PENCIL POINTS by the firm issuing the publication.

Water Supply Systems—Information concerning the water supply, dependent on individual requirement, is the subject of this booklet. Illustrated with section and plan drawings of equipment in place, and illustrations as well as tabulated data of dimensions, capacities, horsepower, flow, pressures, etc., for working use of the specification writer, and the man on the job. Regulators and valves for equipment with sizes and list prices are given. This booklet is published by Ralph B. Carter Company, 152 Chambers Street, New York, contains 64 pages and measures $6\frac{1}{2} \times 9$ inches.

The Right Angle—The School House Number, April, 1921. A monthly issue devoted to the fireproofing of school construction, containing tables and specification data for construction and water proofing, tables of weights for different spans of steel lumber and steel tile floor construction are given and diagrams of construction are shown by illustration and scale drawing. The booklet contains 16 pages, and measures $8\frac{1}{2} \times 11$ inches, and is published by The General Fireproofing Company, Youngstown, O.

Wilson Rolling Partitions and Hygienic Wardrobes. This booklet illustrates types of rolling partitions for schools and churches. Horizontal and vertical rolling partitions are explained, sections illustrating the constructions, with instructions for erection. Details are given and dimensioned. Published by The J. G. Wilson Corporation, 8 West 40th Street, New York, is 6×9 inches in size and contains 32 pages.

Wilson Folding Partitions—As explained by the foreword, the booklet endeavors to meet the need for providing a varied use of the same space by moving a solid partition into and out of position. This booklet, size $8\frac{1}{2} \times 11$ inches, containing 16 pages, shows by drawing and text the details of construction and typical types of folding partitions in use in churches, hotels, schools, where adaptability to particular conditions and environment was necessary. Published by The J. G. Wilson Corporation, 8 West 40th Street, New York.

Self Cooled Motor Propeller Fans—The use of propeller fans in kitchens, lunch-rooms, and restaurants and their placing; the use of fans for the ventilation of laundries, dry cleaning plants, bleaching mills, where the chief problem is the dissipation of heat, steam and moisture; fans for theatres and for garages; various sizes, installation, and dimensions of fans and their appurtenances, are given in a booklet published by the Ilg Ventilating Company, 2850 N. Crawford Avenue, Chicago, Ill. The size of the booklet is $3\frac{3}{8} \times 6$ inches and contains 16 pages.

Universal Blowers—Dimensions, prices, typical installations, industrial applications of these blowers are given in a 16 page booklet, $3\frac{3}{8} \times 6$ inches, published by the Ilg Ventilating Company, 2850 N. Crawford Avenue, Chicago, Ill.

Brascolite, Architectural Series, Number One, Hospital—Good lighting in hospitals, special lighting for particular phases of hospital work are given in a $7\frac{3}{4} \times 10\frac{1}{2}$ inch, illustrated booklet, containing 30 pages. It is published by the Luminous Unit Company, St. Louis, U. S. A. A method for computing wattage upon foot candle intensities for various classes of service is given.

Capitol Boilers—Smokeless Type—The principles involved in the operation of the new type of low pressure heating boiler burning soft coal, without smoke, are explained in an $8\frac{1}{2} \times 11$ inch booklet, containing 12 pages, issued by The United States Radiator Corporation, Dime Bank Building, Detroit, Mich. The text is assisted by diagrammatic illustrations that show parts and flow of fire. The measurements of parts are indicated on diagrams, dimensions and sizes obtainable are tabulated with list prices and ratings. For files of heating engineer and specification writers, and for clients.

PENCIL POINTS

THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 27)

is a frank and successful treatment of such a requirement. Another problem, an End Bay, required two drawings at small scale the end bay and the entire façade, but at different scales. Fig. 10 (March) shows how this was solved by one competitor by making a double frame.

It is best to study this composition first by means of small thumb sketches, and then, one of these having been selected, to go at once to final scale, using charcoal, and getting the big effects as rapidly as possible. A good way to make the small sketches is to lay out the size of the final stretcher—31-in. by 40-in.—at the scale of one eighth inch equals one inch. (Figure 58) If the drawings called for are large in size the entire sheet may be needed; usually it is possible to have a border of 3 or 4 inches all around, and the drawings look much better when the sheet is small enough to allow this amount of the stretcher to act as a mat. Of course the space so left should be equal all around, or a half inch or so larger at the bottom. We may draw such a border on the diagram—Fig. 58. Then if we make at the same scale diagrams of the elevation, section, plan, and of the details, we shall have everything ready to study the composition. If the elevation called for, say at half inch scale, measures at that scale ten actual inches by eight, and the plan at its final scale measures three actual inches by four, and the section three inches by six, these should be laid off in diagram at the scale of one-eighth inch equals one inch, as in Fig. 59. Likewise the details are laid off; if the cornice at the required final scale measures eight inches in height, we make a diagram at our scale the length being indeterminate; cap and base are also drawn in the same way, and the shaft may be lengthened or shortened as needed by the composition, just as we may use more or less of the cornice for the same reason.

We now put tracing paper over our diagram sketch, Fig. 58, and trace the limit of the drawing; then we put it over our diagrams of drawings, Fig. 59, moving it around as we try different arrangements of these drawings, tracing freehand a detail when it seems to fit into the composition. Fig. 60. In this way a number of compositions may be tried very quickly on tracing paper, some being vertical, some horizontal, and when one is chosen as the best it may be studied a little further in the same way, roughing in the shadows, and such accessories as trees or shrubs on the principal drawing, as they are frequently of great assistance in making a pleasing composition, and as we find that the dark tones must always be reckoned with.

When this is done a layout at full size may be made in charcoal to determine the position of the different drawings on the final sheet. This drawing may be made in just the same way as the small one, on tracing paper, the actual drawings at final scale taking the place of the diagrams at the one eighth inch equals one inch scale. If this done a more careful drawing of the entire composition at final scale, with T-Square and triangle will not be necessary.

ARCHITECTURAL DETAIL, PART II.

(Continued from page 33)

tion to meet the requirements of the narrower band. The only exception to this is in graduated decoration such as the leaves or scales on the bottom of a vase, the decoration of the divisions of a niche or those of a scabbard or shield, Fig. 7.

4—The fourth requirement is perhaps no less interesting from the point of view of detail than the third. It is that of visual distance. This visual distance should

be governed by the ensemble, provided the observer is free to select the point of observation; it must sometimes be governed by the requirements of the problem, as when an observer is forced to view the cornice of a thirty story tower from the street. If, in Fig. 8, AB is to be seen as a whole, the observer must not be forced to shift his point of view O to grasp the design. The visual angle AOB, (Not over 40 degrees or at most 45 degrees) will define the distance OD. The detail must then be such that it will "carry" to that distance. Out of doors, figures must be made more than life size. Exterior detail is always much larger than that of an interior.

If the observer is forced to keep a greater distance than OD, a chief difficulty is to give scale to the design. The elements tend to be too large for it. A theatre interior of large dimensions should have a broader scale than the drawing room or boudoir of a private house. How heavy and lacking in scale are most of our decorated theatres. On the other hand, I am not yet convinced by anything I have seen that "Adam's," charming though it may be for interiors, is applicable to the exterior of a hotel or bank in the streets of New York. Visual distance explains the difficulty. The problem reaches its most complicated exposition when the observer is at times close to and again far from the composition. Then the smaller units, complete in themselves so as to satisfy upon close inspection, must lose their personality and merge into the whole, that they may not detract from the dignity of the greater design. Texture of stone finish supplies interesting contrasts in vibrating half tones; so, at a distance, the smaller bits of ornamentation should become a glorified texture.

The mastery of such problems is difficult; but the sincere student of detail need not be dismayed. Although rules can never make an artist, they may help to keep him from pitfalls and so many of our brilliant designers have shown such lamentable lack of comprehension of the requirements of scale, that it would seem these rules have not been too often set forth. No one who has seen the Gare d'Orleans in Paris will gainsay this.

Providing there are no faults to eliminate, greater scale may be given to a design: 1—by introducing elements that correspond to human needs; 2—by making more evident the true structural elements; 3—by introducing natural figures or objects whose real size is apparent; 4—by adding sub-motives as parts of the larger ones; 5—by a general reduction of the size of the details.

PERSPECTIVE DRAWING

(Continued from page 33)

as is clearly indicated in the geometric plan and elevation shown in Figure 36.

These examples, while elementary, are not merely to illustrate the means of finding the specified units given by the diagrams shown, nor are they limited to elementary problems. On the contrary, the basic fundamentals here shown can be, by a process of multiplication of operations, adapted to almost any problem simple or complicated, of interior or exterior, of one unit as well as many units. This will be shown in the more advanced problems which will follow.

A NOTABLE RECORD.

A YOUNG woman who has made an unusual record recently is Miss Elizabeth Evans, a junior in the Department of Architecture at the University of Kansas. She has made a "First Mention Placed," a "First Mention" and a "Mention," in three successive Class B Project problems in the Beaux-Arts Institute of Design competitions, thus securing six points with three successive designs.