

## KEEPING THE PACE

CONSIDERING the splendid support PENCIL POINTS is receiving—both in the way of subscriptions and of co-operation on the part of men who can help by writing articles or permitting the publication of their work—the publishers and the editors of this journal are bound to use their best efforts to keep the pace—besides it is more fun. The good things in preparation make us enthusiastic about the coming issues and they make us wonder a little at our good fortune.

For instance, in the May issue a serial article on "Architectural Details," accompanied by reproductions of detail drawings from some of the best architectural offices, will begin. The article will be written by Mr. John Vredenburg Van Pelt, formerly Professor in Charge in the College of Architecture, Cornell University, Architecte Diplomé par le Gouvernement Français, and author of "A Discussion of Composition Especially as Applied to Architecture."

In the same issue, in addition to the other details, will be shown a detail sheet from the office of Mr. Charles A. Platt, drawn in charcoal by Mr. Schell Lewis, representing an especially effective method of studying the detail of an architectural design in the office.

There will be a reproduction of one of Mr. Frank Vincent Du Mond's pencil studies for his mural painting typifying "California," a group of figures rendered with great spirit and technical skill.

Also there will be shown one of the figure studies by Mr. Barry Faulkner for one of the mural paintings he is

doing for the big Cunard Building, New York City. It is a splendid example of technique in pencil drawing from life.

In early issues Mr. Otto R. Eggers will tell about practical methods in rendering and about design character in working drawings. The first mentioned of Mr. Eggers' articles will be illustrated with reproductions of the complete set of studies for one of his renderings, showing the progress of the work step-by-step to the finished drawing. Mr. Eggers' other article will be illustrated with examples of drawing by the ablest draftsmen of the old times and will show how to adapt the style of drawing to the character of the design as an aid to the study of the design and to its proper presentation.

Soon we shall also begin the publication of short biographical sketches of some of the great draftsmen of the past centuries, with examples of their work and, when possible, portraits of the men.

In an early issue we shall publish an article on details of construction, and it will be fully illustrated.

The articles by Mr. Guptill, Mr. Valenti and Mr. Harbeson, now appearing, will continue for many months, growing even more interesting, as these men naturally progress to the treatment of the more advanced phases of their respective subjects.

Other things that are not in shape to tell about are on the way. Thanks to the spirit of helpfulness and the sense of fellowship that brings to PENCIL POINTS the best from all sides—we are keeping the pace.

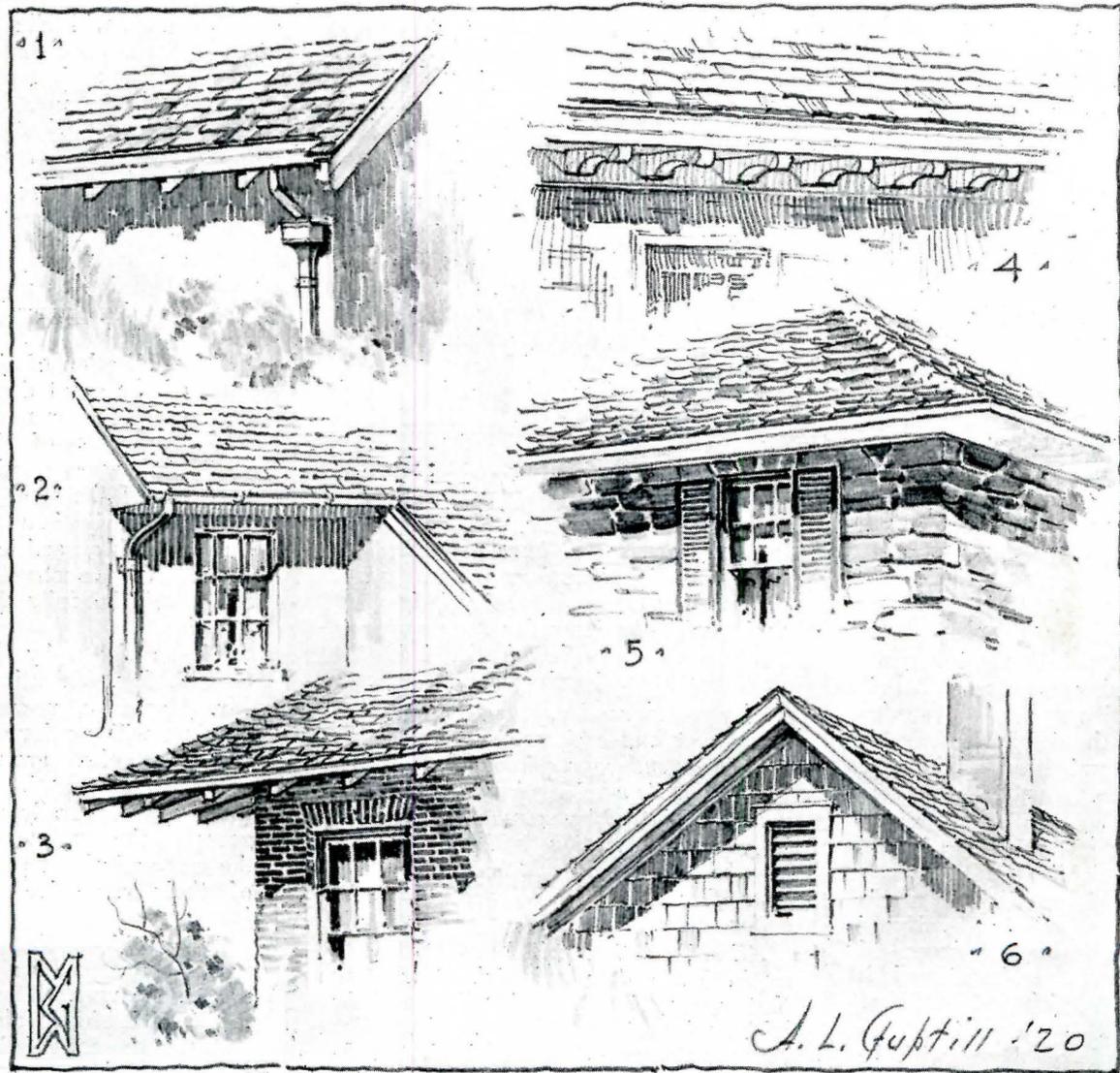
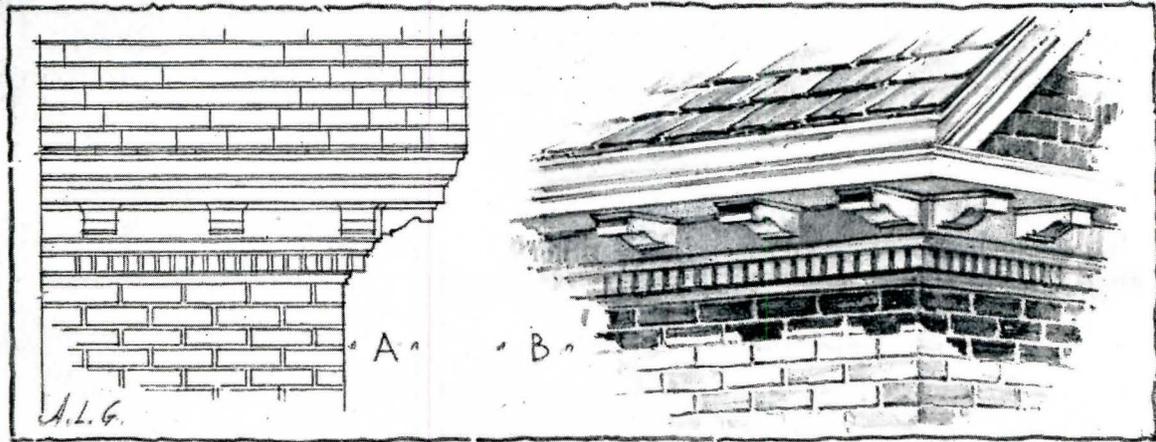
### SPECIAL NOTICE

*With the next issue, that for May, PENCIL POINTS will have completed its first year of publication. If you are a charter subscriber your subscription will expire with the issue for May and you will find the date of expiration indicated on the wrapper by the marking "5/21."*

*If you will send us your dollar (with your name and address written plainly) we will extend your subscription for one year from date of expiration and send you a receipt. If you renew now, even if your subscription still has several months to run, you will be sure to keep your files unbroken. Better send the dollar today.*

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PENCIL POINTS



Sketching and Rendering in Pencil. Figure 22.

## SKETCHING AND RENDERING IN PENCIL, PART IX

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.*

### *The Representation of Details.*

**W**E have now reached a point in our discussion of sketching and rendering where it seems advisable for us to give additional attention to methods of indicating brickwork, stonework, clapboarded and shingled walls, slate and tile roofs, etc., and such details as chimneys, dormers, cornices and doorways, for it is plain that unless the student learns to nicely suggest these various component parts he cannot hope to make an excellent drawing of a building as a whole, any more than a portrait painter can obtain a satisfactory likeness of a person without a knowledge of how to draw the ear and the eye and the mouth. These representations of chimneys and dormers and the like, are, in other words, the draftsman's alphabet,—the A B C's that he should learn before attempting difficult compositions.

In previous articles of this series a few instructions of a general nature for the drawing of such portions of buildings have already been given, so the present text with its accompanying illustrations is mainly an amplification of these earlier suggestions. If repetition is found it is because certain points seem worth repeating, for the importance of the subject is such that it deserves elaboration.

Unfortunately for the beginner there are few definite rules to help him in such sketching, for each artist develops methods of his own which he varies from time to time as he feels inclined, choosing always the one which seems appropriate to his particular problem. Naturally his manner of working differs, too, according to the size at which the details are to be drawn, for it is obvious that a window, for example, shown at one-quarter inch to the foot, requires treatment decidedly different from that demanded by the same object presented at a much larger scale.

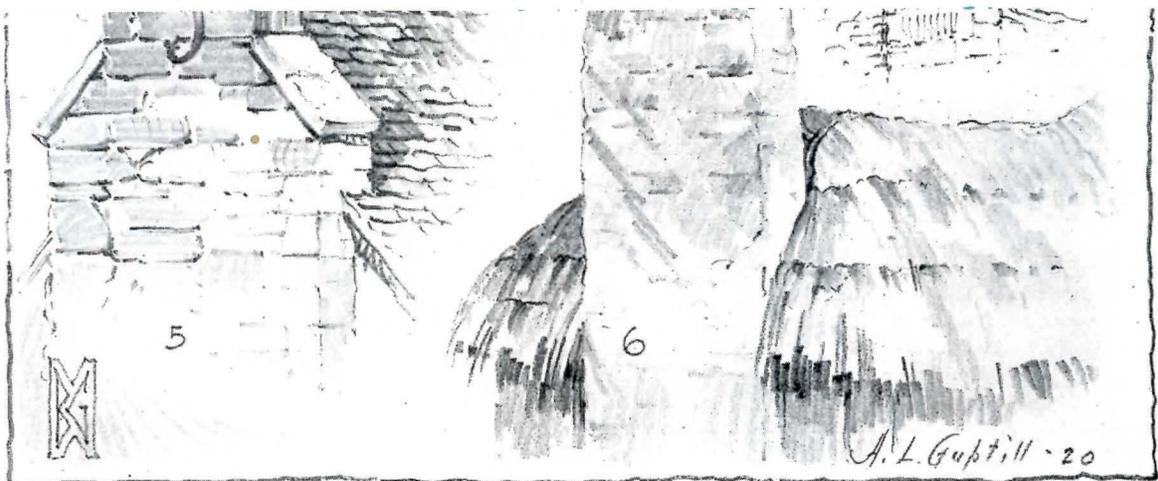
Because there are so many methods of indication in common use it is not strange that students feel uncertainty as to just how to approach a problem of this nature. Of course in theory it is best to turn to actual buildings and to landscape for inspiration and practice, observing and sketching the desired details directly from the buildings and their surroundings. The average student finds it rather difficult, however, to work in this way without considerable preliminary preparation, and though, valuable as such practice undeniably is, the beginner can

perhaps learn more at first (as we have explained in a previous article) by studying good drawings, copying portions of them over and over again, later applying the ideas thus acquired to similar original problems.

The plates which accompany this text show certain methods of indicating such details as we mention and it might be well to make copies of some of these, not, however, blindly imitating the manner of handling. Give, instead, serious thought as to why they were done in this way, for each line and tone should be made with a definite purpose. As these sketches offer only a few of many possible methods do not rest content, with copying parts of them, but study other similar drawings and copy some of them, too, in order to learn additional tricks of indication. In all of this work if you feel that you can obtain equally good results by a slightly different process, do so, for it is by no means necessary to reproduce the original from which you are drawing line for line, so long as the same general effect is gained. If you supplement this copy work with sketching from the photograph and from nature, using both broad and fine lines, on all sorts of paper and with pencils of various kinds and grades, your efforts will surely bring increased skill and a natural individual style will be gradually acquired.

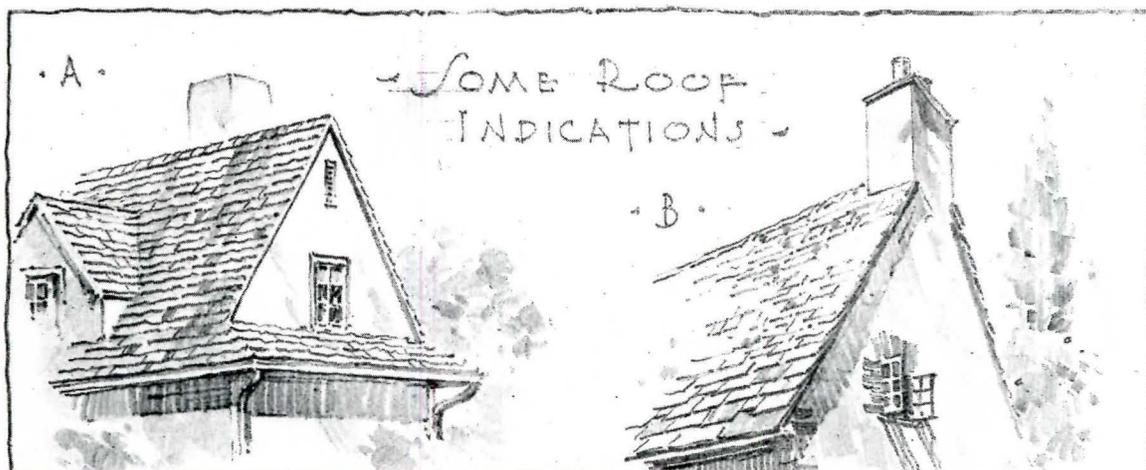
It is usually best to adopt some standard size sketching paper, the notebook proportion of 8" by 10½" being convenient for the smaller sketches. A cover for preserving sheets of this size can be secured easily. It seems advisable to retain all such sketches or at least the best of them, for this gives you the opportunity to note your progress from time to time, and the drawings themselves may prove of great help when making finished renderings. Group a number of sketches of similar subjects on one sheet, so arranged that they permit easy comparison,—have, for instance, sketches of chimneys drawn with a fine line on one, others done with a broad line on another, dormer windows on a third, details of stonework on a fourth, and so on.

Before proceeding with our discussion of the plates it may perhaps be well to once more warn the student, especially the architectural draftsman, never to attempt to draw every tiny detail that he knows to exist. It is not strange that one so familiar as he is with all the variety of small units which go to make up a building finds it difficult to remain free from the desire to



*Sketching and Rendering in Pencil. Figure 24.*

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overemphasize the importance of some of them. The mere fact that one has been trained to accurately draw each detail, whether large or small, when making an instrumental elevation of a portion of a building, acts as a hindrance when it comes to pictorial representation, where we are striving to gain the effect of the whole in a broad, direct manner in a comparatively short space of time. As an illustration of the fact that an accurate instrumental elevation gives less of the true appearance than does a sketch of the right sort with the nonessential lines omitted or subordinated we have made two drawings at A and B, Figure 22, of a typical cornice such as we might find at the eaves of a Colonial residence. The one at A is done instrumentally at the scale of  $\frac{1}{2}''=1'-0''$  and is a copy of an actual working drawing. Such a mechanical representation as this offers, of course, an accurate statement of certain facts of form, but it stops there. It gives us a wrong sense of the values, for the numerous lines necessary to bound the various members form a dark mass on parts which in the executed work might appear rather light, and there is nothing to show the difference in tone between the brick and wood. In a sketch or rendering, on the other hand, we usually work for an effect of reality, and even though certain details are of necessity slighted, by means of a free handling we are able to suggest in addition to facts of form, the light and the shade and the tone and texture of the materials. In the sketch at B we have attempted such an indication of the cornice shown at A, striving to gain approximately the same relative values as might be found in nature. The brickwork is shown darker in the shadow than in the light, as is the white woodwork, too, while the shingles are given a tone which quite accurately suggests the color that they might appear in the direct rays of the sun. As this particular sketch is at a fairly large scale it has been possible to retain most of the fine detail shown at A, but if a smaller rendered drawing of the same cornice were to be made it would probably prove necessary to further simplify the subject.

This one illustration is doubtless sufficient to show that the draftsman must work for a wholly different result in a sketch from that required in an elevation, forgetting or merely suggesting many of the tiny members, in obtaining the broad effect. As a further example we might add that in drawing a window he must not allow his knowledge of the blind-stop, the pulley-style and the parting-strip to interfere with the simplicity of the result;—in fact whatever the detail may be, the same care should be taken not to overemphasize relatively unimportant portions of the subject.

Let us return for a moment to our discussion of cornices, for they contribute so much to the effect of a building that extreme care must always be used in their representation. First of

all do not overdarken the projecting portions, for it is the contrast of the light corona against the shadow below which gives the desired sense of projection. We might also speak again of the advantage which may sometimes be gained by using a graded shadow below a cornice, allowing the tone to gradually darken towards the bottom, thus giving transparency at the top and a clean-cut contrast at the lower edge. (See text in February number and illustration 4 at the top of Figure 17.) Remember, too, that the cornice shadow is usually made darkest at the corner of the building nearest the spectator, lightening gradually as the walls recede, thus adding to the effect of distance. There is sometimes a question as to how much detail should be shown in a cornice shadow, and the answer to this is not easy, for all depends on the size and purpose of the drawing. If it is large and made as a means of studying the proportions and detail it may prove necessary to draw every modillion and dentil, but if it is small or made simply to give the general effect, the less important parts can be omitted. Sometimes mutules or brackets or rafter ends or any details with considerable projection are left white or nearly so, for if the sketch is small and such parts are drawn in their true values they may be lost in the darkness of the shadow. This point is illustrated by Sketch 1, Figure 22, in which the rafter ends are shown lighter than they would probably be in the executed work. In some drawings such details are made quite distinct in a few places, especially in those parts of the building nearest the eye, and then made less definite or omitted in others. If well done this treatment gives an excellent impression with a minimum expenditure of time and effort.

Of the various ways of building up a shadow there are three which are in general use. The first is illustrated at "B," Figure 22, where the lines composing the shadow are so merged together as to make it difficult to tell their direction,—in fact in a shadow where the lines themselves are so indefinite this direction is unimportant and the tone may be formed in the most convenient way. In the second method, illustrated at "1" and "2," Figure 22, the shadow value is "built up" by a succession of adjacent strokes, either touching or nearly so, the strokes being often drawn in a vertical position, as our illustrations show, but sometimes taking the same general slope as the rays of light which cause the shadow. This method is frequently employed when the sketch is made at small scale. If a drawing is of such a size or character as to demand much detail, however, a still different method is popular. In place of the mass shading of the first and the parallel strokes of the second, the lines run in the direction of directions which best suggest the bricks or the clapboards or whatever the materials in shadow

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## FINDING OUT WHAT THE CLIENT WANTS

BY FRANCIS S. SWALES

WHEN the client is without any clear conception of that which he or she desires, the process of discovering what it is, may prove costly beyond reason to the architect if he attacks the problem by means of finished pictures. With such clients the architect's business acumen must come to the rescue.

One way to handle this trouble is to explain that perspectives are not included in the ordinary fee charged, and to refer the client to a professional artist with whom he can make his own arrangements as to cost for as many pictures as he desires.

Another way, which, however, smacks of autocracy is to give him that which you know to be "good for him," rather than pursue the more troublesome plan of democracy, under which everybody—or everybody who can buy it—gets what he wants, if the architect can find out what that is by trying. The democratic plan is out of the question in the case of a committee, unless completely dominated by one mind, and more particularly so if the committee is a mixed one of men and women.

One of the best business-getters the writer has ever known was an old architect who believed in making no drawings until he had found out how much his client had travelled and what he had seen. If the client had lived most of his life in one locality the architect always decided upon a style similar to the best buildings in that locality. If on the other hand he had travelled to some old country—England, France, Germany, Italy, etc.—he would learn which building in that country, if any, had attracted the client's interest, and would decide upon a similar style. If he were dealing with a committee he would insist upon giving them "the latest" style—or "rage" as he called it—Italian Renaissance," "Beaux-Arts," "Colonial" or "English." (Today it might be "Adam," "Lutyens," "Gothic" or "Housing Bureau.")

During the first interview with the client

facility in making intelligible free-hand sketches in perspective often assists materially in landing the job. Such facility in making sketches is soon acquired by the designer who will take the trouble to make street sketches of existing buildings until he finds that he can place any desired subject almost automatically on his sheet of paper exactly where he wants it. The average client will watch with keen interest the production of a mere sketch made under his own eyes, while he may be indifferent to a well-made "picture produced in the office" and shown him at a subsequent meeting.

From such experience, it will be found too, that it is easier to make perspective drawings by sketching them, free-hand in pencil, then locating the vanishing points about where they seem to belong and after putting in a few guide lines with T-square and triangle to complete the drawing, freehand, in ink lines or with brush and color. For sketches such as are made during a first discussion to serve as memoranda of decisions which have been reached it is a good plan to draw them in ink. A brown drawing ink can be had which will flow readily in the largest size fountain pens, and there is prepared India ink that can also be used without clogging the pen if it is cleaned out within a few days of filling. By making such sketches on tracing paper, brown line prints can be supplied quickly to each committee member.

Politics, we are told, is the art of overcoming human resistance. Insofar as any claim to artistic merit may be made for the quick sketch as a presentation drawing it is rather in such realm than in that of pictorial art. The client who has witnessed its production takes to himself a certain sense of prestige. He feels that he has by virtue of his personal presence contributed something to its production and has therefore a certain responsibility to become the champion of its author; for he is able to say "I know that so-and-so designed this for *I* saw him make it."



*Pen-and-Ink Sketch of Design for Golf Club, Sandwich, England.  
Francis S. Swales, Architect.*

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### SKETCHING AND RENDERING IN PENCIL.

(Continued from page 14)

may be. Sketches "3," "5" and "6" illustrate this third method and it is not difficult to tell, even by the shadow tone, which sketch represents brick, which one stone, and which shingle. In using this method the student must be careful not to get too "spotty" a character to the value for it is essential to preserve a restful breadth of effect throughout the tone.

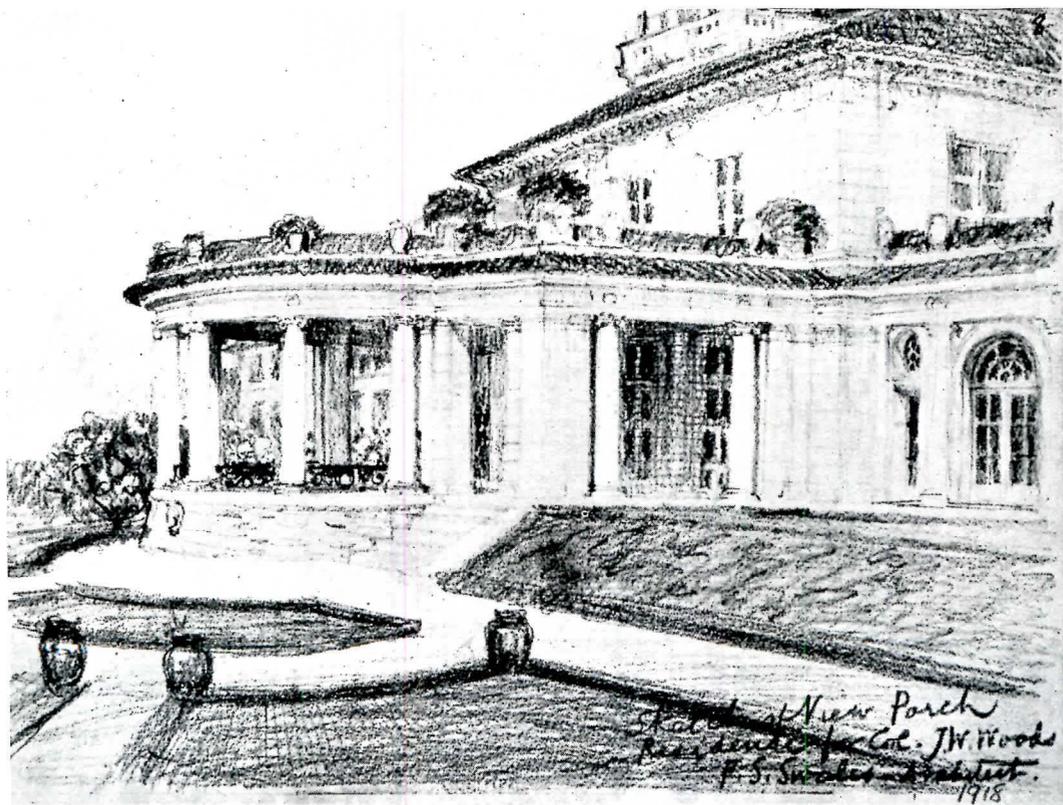
We should not leave the subject of cornices without some reference to reflected light and reversed shadows. It is frequently the case that bright light is reflected from some brilliant object into dark tones such as those beneath a cornice. This not only means that the shadow value itself is neutralized and so made lighter, but a reflection of this sort is often the cause, also, of what are termed "reversed shadows," which really are shadows within a shadow, caused by modillions or any such projections which prevent the reflected light from penetrating some of the darker corners. These reversed shadows are of especial value in rendering elevations in wash such as that shown in Plate XIII. In this sort of drawing where the shadows are cast in the conventional 45-degree method, the reversed tones are usually reflected in just the opposite way, as is the case in the rendering to which we have just referred. (Note the reversed shadows cast by the dentils particularly.) In na-

ture, however, the location and the form of the reversed shadows will of course depend on the direction of the rays of reflected light, and this direction may vary from hour to hour as the sun or other source of direct illumination changes in position. So far as cornices are concerned, however, it is true that reflected light often causes the soffit to appear quite brilliant, so in many drawings the soffit value is represented no darker than in Sketch "5," Figure 22, and in tiny drawings such horizontal planes as this are sometimes left actually white.

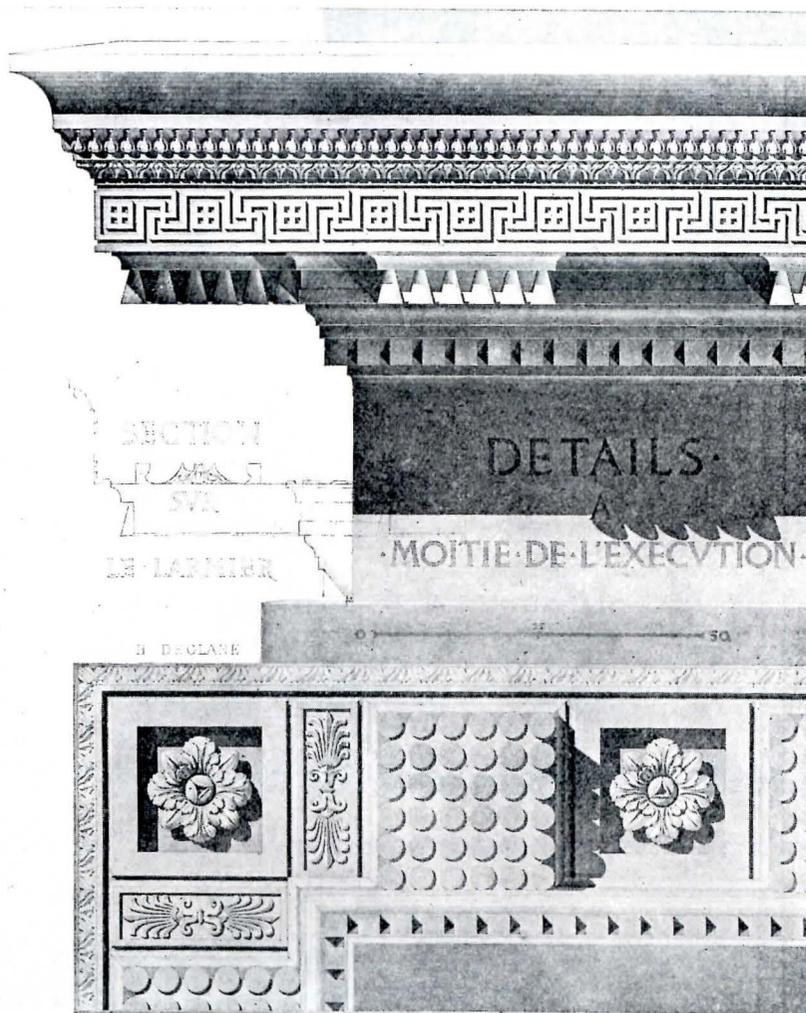
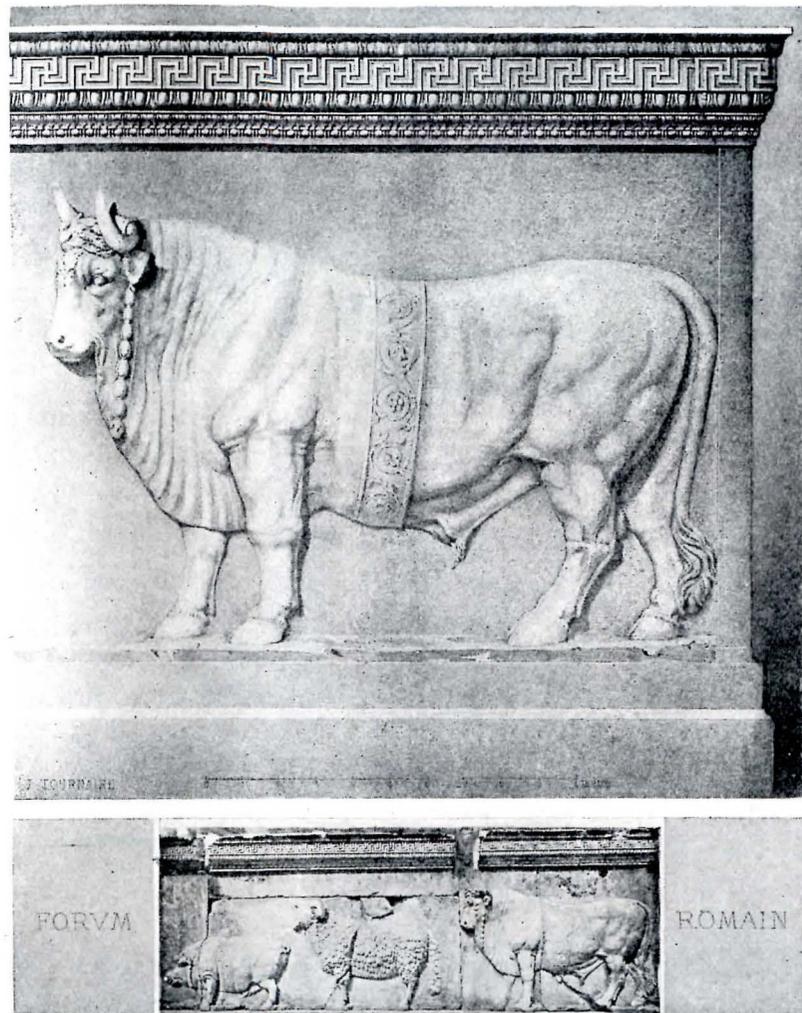
Though we have so far spoken of reflected light mainly as it influences cornice tones, it should not be supposed that it has no effect on other values, for it has, though as a rule the horizontal planes seem to catch more such light than do the vertical. A window soffit, for instance, is often quite brilliant as is the intrados of an arch, while even as large a surface as a porch ceiling is often visibly brightened.

Before we drop our discussion of Figure 22, attention is called to the variety of methods of suggesting roof shingles which it shows. Too much care cannot be given to such representations for in a drawing of the average residence so large an area is taken up by the roof planes that unless they are well handled the effect of the whole drawing may be ruined. First of all the values of the different parts of the roof must be decided upon, as some

(Continued on page 36)



Rapid Pencil Sketch to Show to Client. New Porch for Residence of Col. J. W. Woods.  
Francis S. Swales, Architect.



FRAGMENTS FROM THE ROMAN FORUM

RESTORATIONS BY H. DEGLANE AND J. TOURNAIRE, FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

*The Greek influence is very much in evidence in the fragments of Roman architecture represented on the opposite side of this sheet. It is seen in the mouldings and in the ornament. The modelling is strong and at the same time delicately expressive and clean-cut.*



SKETCH BY OTTO R. EGGERS OF A PROPOSED TREATMENT FOR A LIVING ROOM

*The sketch of an interior shown on the other side of this sheet and the one shown in Plate XV, were made to show the client how the rooms of his house, as designed, could be made to look, how the comparatively low ceiling and the simple window design would produce a simple but dignified and home-like effect if the rooms were furnished in a suitable manner. The design is for a house of moderate size but thoroughly good in design and construction.*



SKETCH BY OTTO R. EGGERS OF A PROPOSED TREATMENT FOR A DINING ROOM

*The interior on the other side of this sheet and the one shown in Plate XIV were sketched lightly in pencil without being laid out instrumentally. The washes of water color were then applied roughly and when the washes were dry the drawing was done in lithographic pencil. This procedure was necessary because water color cannot be applied successfully over lithographic pencil work. These sketches were rapidly made, and are broad in treatment, but they create very agreeable impressions of the rooms and they are most interesting as examples of a kind of drawing well suited to this purpose.*



*Courtesy of Kennedy & Co.*

PENCIL STUDY BY TROY KINNEY FOR HIS ETCHING OF VERA FOKINA  
IN HER DANCE OF SALOME

*A figure study of unusual power is shown on the other side of this sheet. It is one of the many rapid sketches Mr. Troy Kinney makes in studying the movements of a dancer as a preliminary to the making of one of his notable etchings of the dance. By means of these studies Mr. Kinney makes definite many impressions of movements of the dance preceding and following the movement which he chooses to represent in his etching. In this way he fixes his impressions of the character of a momentary action and this undoubtedly helps him to embody in his etchings the sense of life that is one of their most admirable qualities.*

# THE STUDY OF ARCHITECTURAL DESIGN

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

## THE "ANALYTIQUE" OR ORDER PROBLEM. PART III.

### *Studying the Problem*

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.*

THAT portion of the development of the problem which we call "studying" it—everything between the taking of the esquisse and the "rendu," or final presentation—not being done "under pressure," as are those two ends of the problem, consequently does not have the same glamor about it; but on this working-up process depends in large measure the advancement of the student in real knowledge. He should not forget that he is pitting his ability against others and that failure cannot be tolerated if he has chosen Architecture for his career. He is his own master, and must take whatever blame is attached to lack of success, if he has not made use of his time, of his critic's assistance, of available books and other documents. The critic is a sort of older brother who, with his larger experience, will help the student to develop his ideas, who will point out interesting and pertinent examples in history, cheer him in time of discouragement, show him how to better his draughtsmanship, and how to enlarge his vocabulary of architectural forms. The student's progress depends mainly however, on himself—on his application to his work, his intelligence in studying documents, his willingness to make the most of his critic's criticism.

In the first place the student must understand what architectural drawing is: It is geometrical drawing, and must therefore be exact.

The means for the logical study

of a problem are the several "projections"—plans, sections, elevations; and this is the logical order for their consideration. These projections, typifying as they do different aspects of the same object, make of geometrical drawing a work of intelligence as well as an exercise of eye and hand.

The drawings are made at an established "scale." Studies should be made at a scale that has some relation to the scale of the final drawings, so that the progress from start to finish of a problem can easily be made by doubling measurements in going from one scale to the next larger, or, if necessary, by multiplying measurements by three or by four.

A great aid to rapid and accurate architectural drawing is the practice of laying down an axis through every symmetrical form and working to these axes as the basis of the drawing. All architectural drawing should be done "by the axes." Guadet, in his "Éléments et Théorie de l'Architecture," a publication of the lectures formerly given by him at the Ecole des Beaux-Arts in Paris, held this to be of the greatest importance, and we may well refer to his treatment of the subject.

In geometry the axis is the line that separates a plane symmetrical figure into two equal parts; or the line of the poles in a surface of revolution such as a cone or cylinder. In architectural drawing the idea of the axis is larger—it is extended to mean the whole of a vertical plane separating two halves

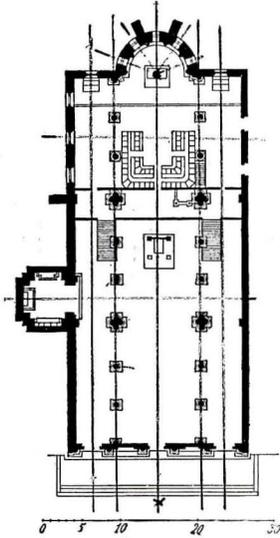


Figure 20. Plan.

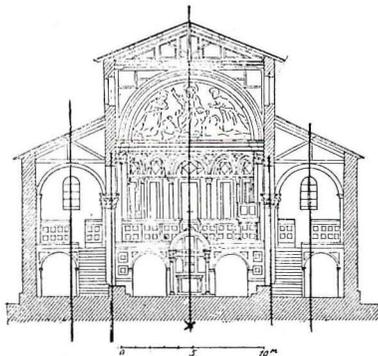


Figure 22. Transverse Section.

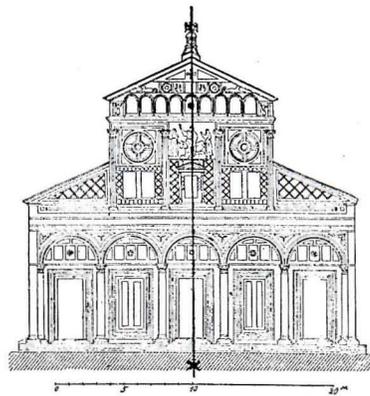


Figure 21. Façade.

Church of San Miniato, Florence.

From Guadet's "Éléments et Théorie de l'Architecture."

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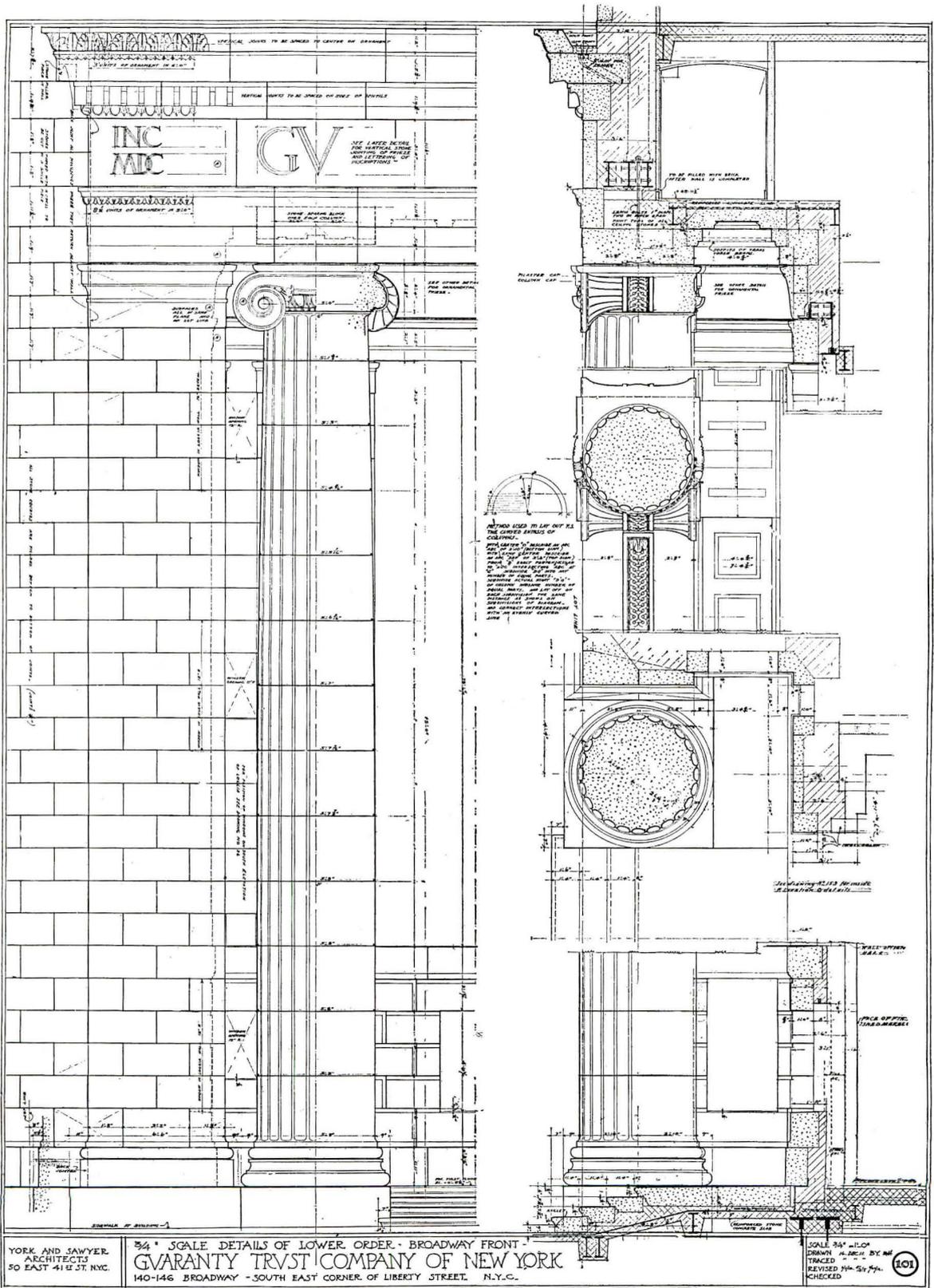


Figure 32. Details of Lower Order, Broadway Front, Building for The Guaranty Trust Company, at 140 Broadway, New York City, York & Sawyer, Architects.

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of a symmetrical structure, and though drawn as a simple straight line, this line is really the *front edge of a plane*. He takes, for example, a church; when you draw the plan, Figure 20, the straight line dividing this plan in two is the projection of the vertical plane cutting the church in two—the axis of the building; and one could say that the kingposts in the roof-trusses, the cross over the altar, the eagle on the pediment of the façade and the center of the window at the back of the apse are “in the axis” of the church, and if you

draw the elevation, or the rear elevation, or the transverse section, the axis in each case is but the trace in each drawing, of the same vertical plane—the “principal axis.” See Figures 21, 22.

In addition there are other axes: parallel to this one at either side are the axes of the side aisles, and between these and the principal axis, the axes of the lines of piers. And cutting across these are the axes of the transept, those of each bay, the radiating axes of the chapels, etc. If you are to draw such a plan, it is by first laying down these axes with precision that you will succeed in *constructing* your plan. A church is a large problem: the principle is just as true for a problem of any size; you must in an architectural drawing proceed by the axes.

Guadet gives as further examples the indication of the manner in which the plan and two sections of the Hôtel des Monnaies, Paris, should be drawn, numbering the axes in the order in which they should be put down. Figures 23, 24, 25. In the

case of the plan there are two sets of figures, the axes at right angles to each other being considered separately. Note that the axes 7, fixing the rows of columns, are laid off on either side of the axes 3. In the transverse section the letters refer to the

placing of the heights of the principal divisions, the line of pavement being drawn first, A-A, then the line of the tops of the columns, B-B, then the centers of the vaults, C-D. After these main divisions are thus marked the detail is measured within them.

In taking a drawing “up in scale,” i.e., for instance, enlarging from  $\frac{1}{16}'' = 1'-0''$  to  $\frac{1}{8}'' = 1'-0''$ , the same procedure is followed, the axes always being the first lines drawn.

The study of design, however, is something more than architectural drawing. It is, like painting and sculpture, a study of composition. To compose one must have things to compose with. Painters and sculptors use primarily the human figure, but use other elements also, such as trees, animals, architectural forms: architects compose entirely

with architectural forms—the “elements” of architecture—walls, doors and windows, base courses, band courses and cornices, columns and entablatures, vaults, ceilings and stairs; the study of architectural design is made by means of definite problems in these elements, later by problems in groups of the elements.

The progress of the study of a problem is simple in idea. The proportions of the big masses are studied at small scale; these proportions are fixed while the drawings are at small scale, as they can

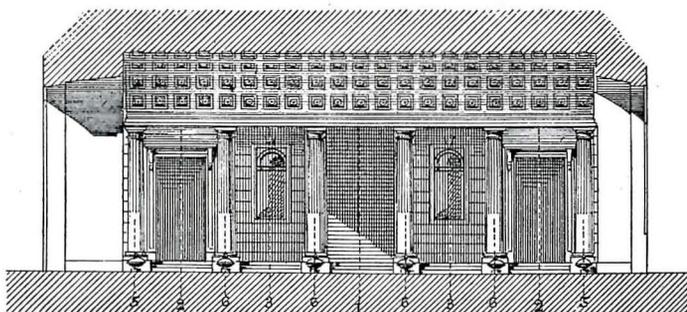


Figure 25. Longitudinal Section.

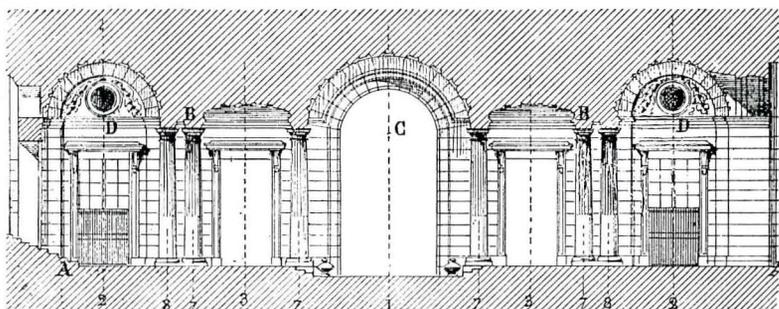


Figure 24. Transverse Section.

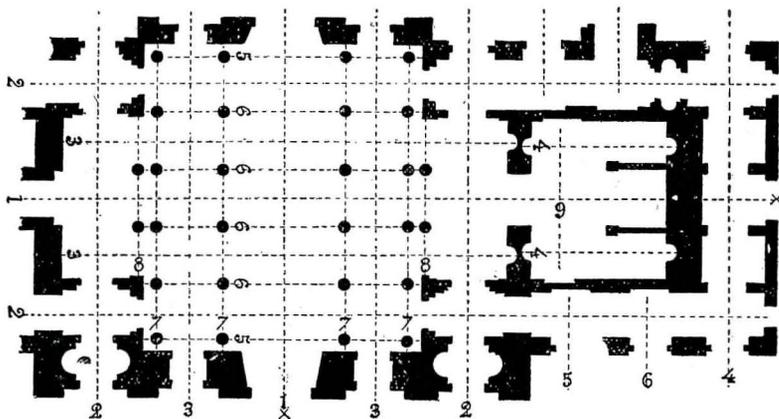
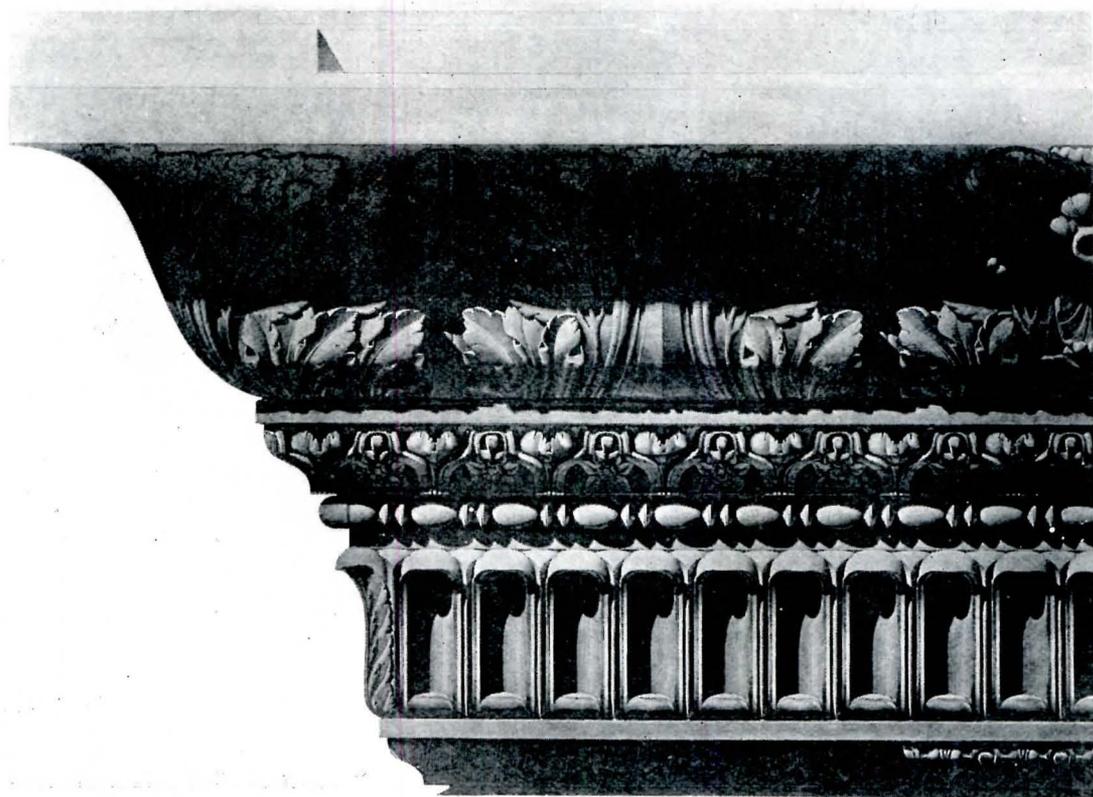


Figure 23. Plan of Vestibule.

Hôtel des Monnaies, Paris.

From Guadet's "Éléments et Théorie de l'Architecture."

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From H. D'Espouy's "Fragments d'Architecture Antique"

Figure 28. Detail from the Temple of Concord, Rome.



From H. D'Espouy's "Fragments d'Architecture Antique"

Figure 27. Capital of an Order in the Interior of the Sacred Enclosure, Epidaurus.



Figure 29. Detail of Frieze, Temple of the Sun, Rome.  
Restoration by P. Esquié.

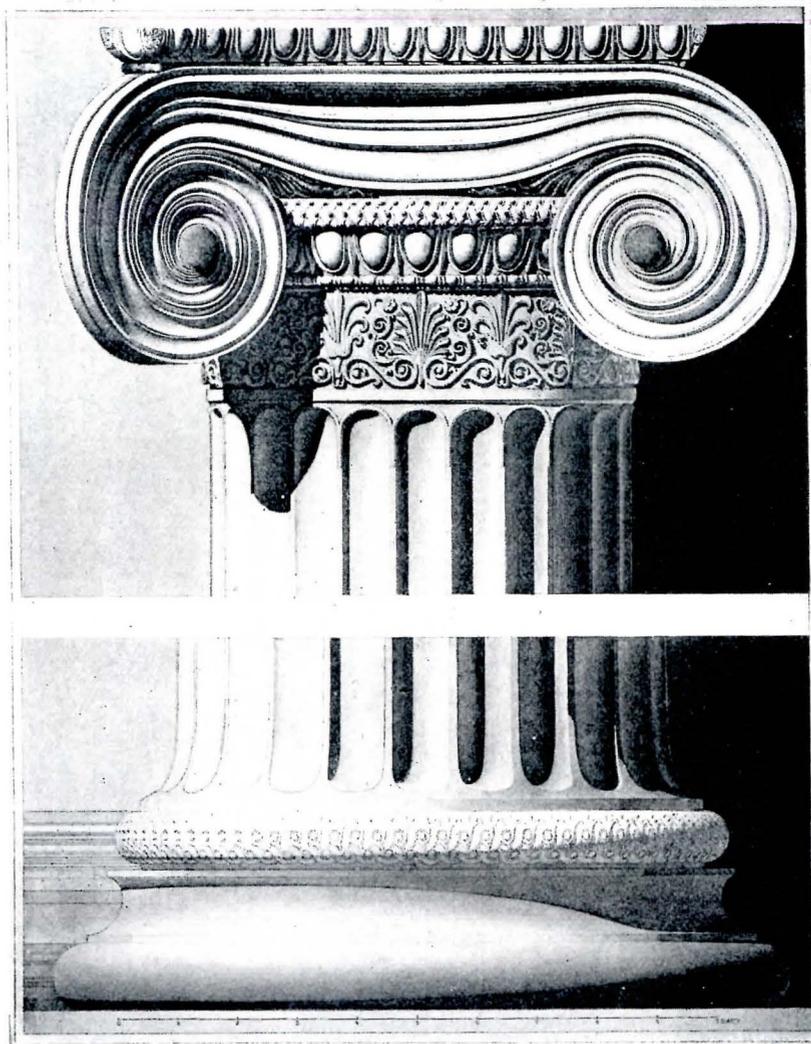


Figure 26. Ionic Capital, Erechtheion, Athens.  
Restoration by L. Ginain.

From D'Espouy's "Fragments d'Architecture Antique."

PENCIL POINTS

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then readily be judged. They should not later be changed without being tried again at small scale. As the drawings are enlarged from scale to scale the proportions of smaller parts are studied, the arrangement and disposition of ornament, until finally the details are considered—the profile of mouldings, the detail of ornament, the arrangement of the drawings on the sheet, and the presentation, the actual drawing

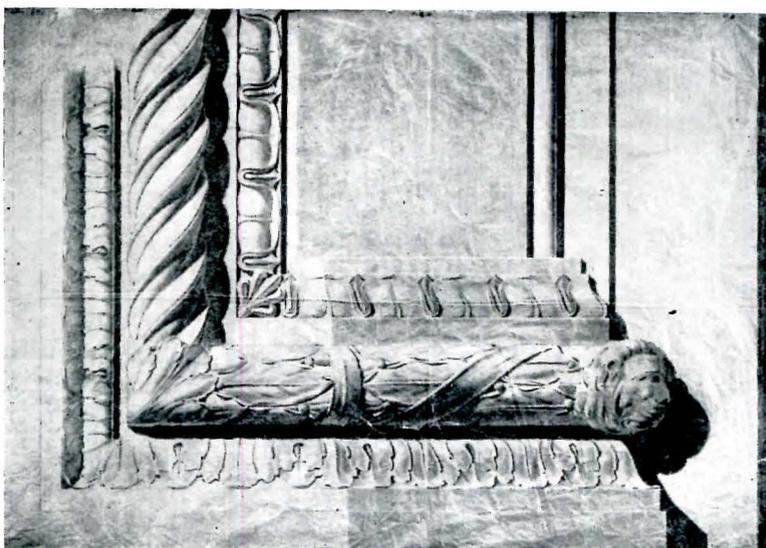


Figure 30. Detail of Entrance Door Architrave, Leader Building, Cleveland, O., Charles A. Platt, Architect.

and rendering of the problem. The analytique is the only problem in which one can make a study of profiles, as it is the only problem presented at sufficiently large scale to allow such a study. Make the most of the opportunity. Do not look upon the analytique as a bore, to be rushed through with as soon as possible. Those who win the Grand Prix de Rome at the Ecole des Beaux Arts in Paris—perhaps the highest honor that can be obtained by an architectural student—start as soon as they reach Rome, just such a study of profiles of elements. The plates of the “Fragments d’Architecture Antique” are reproductions of rendering by these men of elementary architectural forms. Figures 26, 27, 28, 29 are given to show the care used in faithfully rendering the details of form of these fragments. They are also very good documents for use in studying analytique problems, and for drawing and rendering the large scale details usually required.

Once you have left the analytique, the opportunity has gone for making any real study in the atelier, under criticism, of moulding profiles, of architectural ornament; and yet those who lead the profession today are those who are known for the quality of this very part of their work. Figures 30 and 31 give examples of carefully studied detail from well known offices. When you reach Class A—even Class B plan—you

should know how to compose a door or a window; there will be no time then to do it, it will all be occupied in composing *with* doors and windows, etc.

This brings us to another point that we shall consider next month. All the details must be taken from good documents or from good examples, if that is possible. Later on there will be opportunity for originality, individuality, fantasy, caprice. They are

entirely out of place until they can be founded on a knowledge based on studies of the “Classics.”

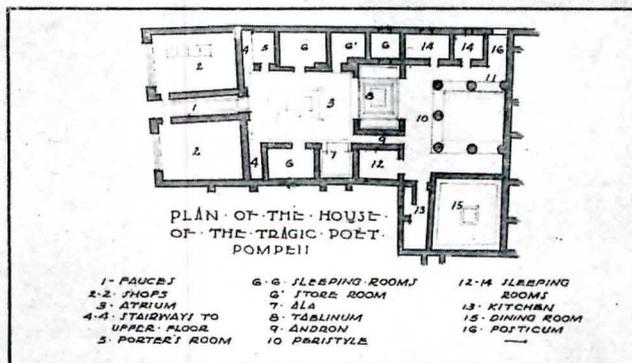
Several reproductions from H. D’Espouy’s “Fragments d’Architecture Antique” have appeared in previous issues of PENCIL POINTS, and others will appear from month to month. They will be found valuable for reference.

Note—For the sake of greater clearness, the axes have been drawn in on Figures 20, 21 and 22 from Guadet.—Ed.

### POST-CARD-SIZE DRAWINGS BY STUDENTS OF ARCHITECTURE.

THE post-card-size drawings reproduced on this page and the opposite page at reduced size have been selected as representative of several of the different types of subject matter drawn and preserved for reference in this manner by the students in the classes of Professor Albert C. Phelps, of the College of Architecture, Cornell University. Upon request, Professor Phelps called upon his students for the loan of cards of this kind to this journal, and the ready response showed a spirit of willingness to help. All the cards sent in are interesting and highly creditable to the students who made them.

Drawings of this kind are valuable aids in the study of architecture, and are convenient for reference.



Post-card-size Drawing by E. A. Hort, Cornell University. See text on this page.

# PENCIL POINTS



NO. 5.  
RIDER.



CHIPPENDALE ~ N° 12.  
RIDER.



Post Card Size Drawings by Students in the Classes of Professor Albert C. Phelps, in the College of Architecture, Cornell University. Uniform in size,  $3\frac{1}{2}$  in. x  $5\frac{1}{2}$  in., and convenient for filing. The two drawings at the left are by J. B. Rider, the one in the upper right hand corner by R. Seymour and that in the lower right hand corner by Elliott B. Mason. See text on the opposite page.



# PERSPECTIVE DRAWING, PART XI

BY PAUL VALENTI

THE diagram Figure 30 serves to indicate how a certain depth or depths in our picture may be obtained by using the *reduced* distance point of  $D \div 3$ , thus avoiding the necessity and often the inconvenience of using this point so far removed from the area of our operations. Considering for the moment all our operations as taking place *below* the horizon line, draw ground line  $CF$  and mark off four equal spacings numbering them 10, 20, 30 and 40 representing so many feet. Raise perpendiculars from these points, mark off three vertical spacings in the same scale, draw horizontals across, extending the top line indefinitely representing the horizon line. Thus we have found twelve squares (indicated by the dotted lines) below the horizon line, on what we know to be the transparent or picture plane. Below line  $CF$  (being the ground line) we know is the geometric plane in

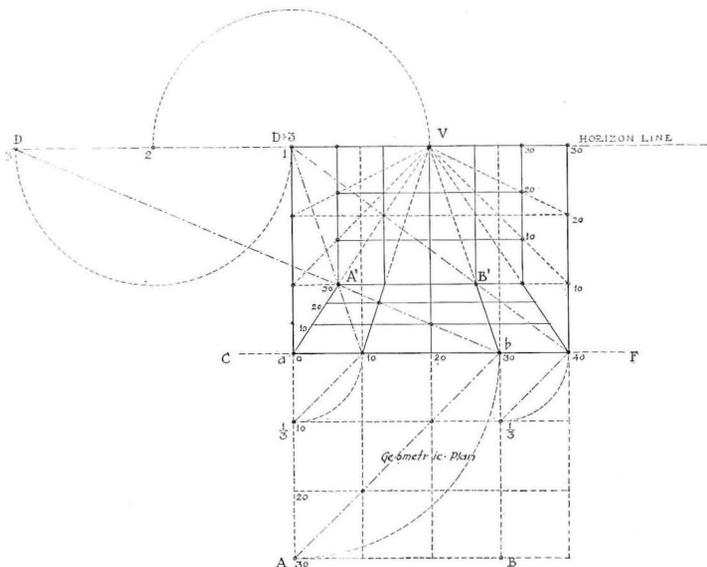


Figure 30

which all measurements are used in the scale of our drawing. (See Figure 10, which is reprinted here from the August issue for convenient reference.) Wishing to establish a depth, for instance, of 30 feet, and to illustrate here fully the process (much of which will be eliminated in the future) construct below the ground line  $CF$  nine squares as indicated in Figure 30, representing 30 feet (in the scale of our drawing) from line  $CF$  to points  $A$  and  $B$  in the geometric plane. This also it will be noticed, forms a square  $30' \times 30'$ . From points 0, 10, 20, 30 and 40 on the ground line  $CF$  conduct straight lines to vision point  $V$ . In order to find line  $A'B'$ , which is the perspective of line  $AB$  in the geometric plane, both being the same distance from line  $CF$  (the latter geometrically and the former perspectively) using the full distance point first; we will proceed as before (see Figure 16, reprinted here from the October issue) by raising a perpendicular (which we already have) from point  $A$  to the ground line  $CF$  to point  $a$ , thence a straight line to vision point  $V$  (which we also already have). Centering in point  $a$  with radius  $aA$ , rotate point  $A$  to the right, to point  $b$  on the ground line  $CF$ . On the horizon line and to the left of vision point  $V$  mark off three spacings each equal to one-half the width of our picture (see Figure 16)

and mark this point  $D$  as indicated in Figure 30. Conduct a straight line from point  $b$  to this distance point  $D$  and at the intersection of this line and line  $aV$  we will find at point  $A'$  the perspective of point  $A$ . Using the *reduced* distance point  $D \div 3$  proceed as follows: Center in point  $a$  with radius equal to one-third of  $aA$  and rotating this arc in the *opposite direction* from distance point  $D$ , (or in this case to the *right*) intersect the ground line, and from this intersection at point 10 conduct a straight line to point  $D \div 3$ . At the intersection of this line and line  $aV$  we will again find at point  $A'$  the perspective of point  $A$ , which, as will be observed, occurs in exactly the same place as it did before. This obviously eliminates the necessity of using the full distance point outside our picture. To illustrate this point further, proceed to find the perspective of point  $B$  in exactly the same way as

was employed in finding the perspective of point  $A$  by using the *reduced* distance point  $D \div 3$ . Complete this diagram as shown in Figure 30, study it carefully, and you will notice that you have a back wall 30 feet away from line  $CF$  containing exactly twelve squares each  $10' \times 10'$  at a reduced scale, which is the perspective of the twelve squares on the transparent plane; and a floor also containing twelve squares each  $10' \times 10'$  (in perspective diminishing in size as they recede from the picture plane)  $30'$  deep and  $40'$  wide. This diagram consequently may serve as a key to solve any problem of this nature.

The opening and private view of a Loan Exhibition of Old Prints, under the auspices of the American Institute of Graphic Arts, in the galleries of The National Arts Club, is scheduled for April 6. The exhibition will embrace masterpieces of engraving from the beginning of the art in the Fifteenth Century up to the present.

The 1920 Review of Georgia School of Technology published by the Architectural Society, Atlanta, Ga., just printed shows a variety of problems that the students there have done from 1916 to 1920 in design, rendering, freehand drawing, pen-and-ink.

# PENCIL POINTS

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## THE AMERICAN ACADEMY IN ROME.

FROM a letter written by Mr. Gorham P. Stevens, Director of the American Academy in Rome, to Mr. C. Grant La Farge, Secretary of the Academy, we quote the following items of news about the activities at the Academy and personal items about men identified with its work:

"The most important event of the month has been the arrival of Mr. Fairbanks and family. Mr. Fairbanks is a former Fellow in Painting of the American Academy, and he now holds the position of Annual Professor in the School of Fine Arts. As he and his family were boarding the boat in New York, his little son of seven had his leg broken by an accident, but I am glad to report that the plaster cast has already been removed and that the boy is getting on famously. We sent Mr. Davico to Naples to help the Fairbanks family land and come to Rome. I am delighted to have the valuable assistance of Mr. Fairbanks. One of his activities is that he has charge of our newly created office of propaganda. Mrs. Stevens gave a reception for Mr. and Mrs. Fairbanks last Thursday, at which the American Ambassador and his wife were present, Mr. Besnard and his wife, of the French Academy, and many others.

"The Collaborative Problem, 'A Memorial Park,' was handed in on the 6th of February. Mr. Lascari, however, was ill for two weeks during the competition, and his portion of the work has not yet been completely finished; he is to have extra time for the days he lost. The results of the competition are extremely interesting. Landscape architects took part in the competition for the first time.

"By members of the School of Fine Arts the following buildings in Rome were measured last month; the Villa Lante on the Gianicolo and the Cathedral of Civita Castellana, just outside of Rome. Rubbings of many old Roman inscriptions have also been made by the men.

"Architects Chillman and Smith, and Sculptor Jones are making their plans to go to Greece this Spring with Professor Magoffin's party. Two important excursions were made, the first to the Villa Madama and the second to the Villa Albani. Students from the French Academy and the English School went with us to the Villa Albani; the party numbered over 80; it was a beautiful day and the Villa consequently looked at its best; it is one of the finest villas in all Italy.

"Two new men have arrived in the School of Fine Arts, namely, Mr. Hendrick, holder of a Fellowship in Architecture from Harvard, and Mr. Moise, a graduate of the School of Architecture of Harvard. Two men have left, namely, Mr. Orr of the Yale School of Architecture, and Mr. Alexander, landscape architect from the Harvard School of Landscape Architecture.

"We have recently formed a Library Committee for the purchase of books. Professor Magoffin has had great experience in Libraries, both at Ann Arbor and at Johns Hopkins, and I am sure that the valuable proposal, which he has made in this connection, will be of the greatest assistance to the Academy. Mr. Richardson, the Librarian of Princeton University, has likewise given us many valuable hints in regard to Library organization.

"Professor McDaniel, the Annual Professor in the Classical School, delivered a delightful lecture on "Pliny the Younger" last Friday. About one hundred people attended the lecture, and Professor McDaniel deserved the hearty applause which was accorded him at the end of his lecture.

"Mr. Wilkins as usual has been extremely active. Through his efforts the following sums have been contributed to the Academy: Lire 800 for repairing the piano, Lire 900 for a new cloth on the billiard table, Lire 2,700 for a new tennis net and posts; Lire 32,764 through Mrs. George B. McClellan for the purchase of art books; total, Lire 37,164.

"The Massachusetts Institute of Technology has agreed, during the last month, to become an annual contributor to the support of the Academy.

"I am sorry to report that a new villa has been staked out on the lot between the Graziadei and Stolberg villas. I consider this lot and the other lots between us and the city of Rome as of greater importance to the Academy than the lot between us and the walls of Rome on the other side of the Academy.

"Our students received a challenge from the British School for a series of tennis matches; the challenge was accepted and a team sent over captained by Professor Magoffin. I am glad to report that America won every match.

"It may interest you to know that at present there are as many as twenty-five artists in residence at the Villa Medici. This is more than they ever had before; the condition is due to several fellowships deferred on account of war conditions."

## THE ST. LOUIS ARCHITECTURAL CLUB

REPORTS of the meetings held during the past month or so by the St. Louis Architectural Club show that that organization is setting a lively pace in club work.

One of the interesting features of the meetings of this club is the practice of having a different chairman officiate at each meeting. This has brought out and developed much latent ability.

One of the meetings was conducted by Mr. Clemens Nicholas, graduate of Washington University, instructor of the Summer Sketch Class and winner of A. I. A. medal. The speaker at this meeting was Mr. Harland Bartholomew, Engineer of the City Plan Commission of St. Louis. Mr. Bartholomew gave an illustrated lecture on "Some of the General City-planning Problems of St. Louis," and handled his subject in a masterly manner.

Mr. Fred Kramer conducted another of the meetings, at which another member of the club, Mr. Paul Valenti, Instructor at Washington University, gave an interesting demonstration of etching processes.

At the thirteenth annual meeting of the Engineering Society of Wisconsin at Madison the convention went on record as favoring the establishment of a college or department of architecture at the state university. No institution in Wisconsin gives instruction in architecture.

## PENCIL POINTS



SCHELL LEWIS

### SCHELL LEWIS.

**T**HOUGH Mr. Schell Lewis has made many excellent perspective drawings and sketches he has not specialized in rendering. His architectural models in cardboard and his charcoal drawings of architectural detail are fully as interesting as his renderings.

The models show skill and ingenuity and a keen sense of the possibilities and limitations of this means for the study and presentation of architectural designs. He has developed the making of these models largely along lines of his own.

His charcoal drawings, made as a means of studying the designs in the office and not as presentation drawings, convey the character of the designs admirably and are done with great facility.

Mr. Lewis was born in Moline, Ill., but his family removed to New York when he was a youth. After acquiring the rudiments of drafting he entered an architect's office in New York. Then, after a few attempts, he secured a place in the office of Mr. Charles A. Platt, in whose organization he has been continuously excepting six months with the U. S. Shipping Board and six months with Trowbridge & Ackerman.

All of Mr. Lewis' work shows an appreciation of architectural character as well as a knowledge of architectural design.

### THE CINCINNATI ARCHITECTURAL SOCIETY.

**T**HE Cincinnati Architectural Society has aroused a general interest among the architectural draughtsmen, architects, and engineers of Cincinnati, and has since its recent reorganization been adding frequent new members to its roll. We are glad to have the co-operation of the Ohio Mechanics' Institute which has itself a well organized course in architecture, and many of whose students hold membership in the society. We are now taking the regular program of the Society of Beaux-Arts Architects, under the leadership of C. F. Gromme, who is *Massier* of our atelier. In addition, we hold regular classes in architectural construction, graded according to the degree of advancement of the students. We have a class in life drawing once a week.

At our last meeting we had an interesting illustrated lecture on the great French chateaux and estates, by Mr. Richard E. Grant, landscape architect, who had an opportunity to collect some valuable photographs in France. Three of our members—Mr. Clifford Woodward, Mr. Edward Kruckemeyer, and Mr. John Postler—are now traveling in Europe, and we expect when they return to have the benefit of their interesting visits in Spain, France and Italy.

R. C. ROUDEBUSH, *Publicity*.

### MANUFACTURERS' LITERATURE

A leaflet which explains in detail the *camera lucida* as an aid in drawing from nature has just been issued by Kolesch & Co., 138 Fulton Street, New York, who will send it free upon request.

An illustrated booklet has been issued by the Eberhard Faber Co., 37 Greenpoint Avenue, Brooklyn, N. Y., under the title "Eberhard Faber Pencils, How They Are Made."

### PERSONALS

ALEXANDER B. TROWBRIDGE AND FREDERICK LEE ACKERMAN have announced that the partnership of Trowbridge & Ackerman has been dissolved. Mr. Ackerman will complete the unfinished work of the firm and will continue the general practice of architecture at 25 West 44th Street under the name of Frederick Lee Ackerman, Architect. Mr. Trowbridge will continue his services as consulting architect to the Federal Reserve Board, Washington, D. C., and to the Federal Reserve Bank of New York, with offices at 120 Broadway, New York. At the expiration of this engagement he will open new offices for a specialized practice as consulting architect.

R. H. DANA, JR., AND J. DUNCAN FORSYTH have withdrawn from the firm of Murphy & Dana, architects, and the three remaining members of the firm will continue the practice of architecture under the name of Murphy, McGill & Hamlin, at 331 Madison Avenue, New York, and Union Building, Shanghai, China. C. Howard Crane, of Detroit, Mich., has opened a New York office at 562 Fifth Avenue. This office is under the direction of E. M. Mlinar, who was formerly with Thos. W. Lamb.

JOS. R. FALLON, Connersville, Ind., announces that he has opened an office with H. M. Griffin, architect.

FRANK H. QUINBY, architect, has removed to new offices at 110 William Street, New York City.

DUHRING & ZIEGLER, architects, formerly in the Bailey Building, Philadelphia, have removed their offices to the office building recently remodeled by them at 1309 Locust Street, Philadelphia.

GIBB & WALTZ, architects, Ithaca, N. Y., in association with Day & Klauder, architects, of Philadelphia, and Henry R. Kent & Co., consulting engineers, are working on the design for a \$1,500,000 Chemistry Building for Cornell University. They are also working on the \$150,000 Administration Building, the first of a \$2,500,000 group, on the cottage plan, for the Grand Lodge Home and Orphanage, I. O. O. F., to be built on the Trumansburg Road, overlooking Cayuga Lake. E. Gorton Davis is the landscape designer on the general group. Also they are doing alterations on The Jefferson, in Watkins, a church, a school, additions to a hospital, work for Wells College, Aurora, and other work. The office organization has much the spirit of a club.

CHESTER W. POMEROY, architectural engineer, who was for some time in Government Service in and near Washington, D. C., is now practising his profession at 7064 Pershing Avenue, St. Louis, Mo., having returned to that 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 refer me to any works on "Pisé" or rammed earth as a building material? H. S. B., Columbia, Mo. **Answer**—The only references we are able to find regarding this kind of construction are the following: A book in *The Country Life Library*, 1919, published in London, under the title "Cottage Buildings in Cob, Pisé, Chalk and Clay," by William Ellis Clough, and "Pisé—Farmhouses and Buildings," by the Weisbaden, Heimkultur-Verlaga-Gesellschaft, 1915.

**Question**—Could you please give me the name of the publishers of "Reinforced Concrete Engineers' Handbook," by Hool and Johnson, also its price. T. B. W., Grand Forks, N. Dak. **Answer**—The "Reinforced Concrete Engineers' Handbook" by George A. Hool and Nathan C. Johnson, is published by the McGraw-Hill Book Company, New York City, and is sold for \$5.00 per copy.

**Question**—Will you oblige me by sending a copy of your special Y. M. C. A. number, similar to your special Hotel number of April, 1913, to me? Also, can you favor me with the names of publications or books on Y. M. C. A. buildings that will give the best up-to-date information on that special subject? A. O. W., Austin, Tex. **Answer**—We regret to say that we have not published such a number, but can give you references to publications which contain material, that may be of use to you in your work; as follows: Young Women's Christian Association, Central Branch, *Architecture and Building, The American Architect*, Dec. 4, 1918; Feb. 26, 1913; Nov. 10, 1909; *The Architectural Review*, Vol. 16, No. 6; *Architecture*, April, 1908; *Inland Architect & News Record*, Jan., 1908. We are not able to find any references to books on Y. M. C. A. buildings.

**Question**—Kindly furnish me with the numbers of your journal, in which were printed the descriptions, plans, etc., of the club buildings for the Women's Athletic Clubs of New York, Chicago, and San Francisco, or give me information as to where I might obtain same. F. J. S., Los Angeles, Calif. **Answer**—After diligent search for descriptions, plans, etc., of club buildings for Women's Athletic Clubs of New York, Chicago, and San Francisco, we regret to say that we have been unable to find any material pertaining to them. We shall appreciate the co-operation of any of our readers who know of material that has been published giving the information which F. J. S. asks.

**Question**—Can you advise me regarding efficient methods for filing specifications, and a system by which the required articles and clauses are readily obtained. W. E. P., Manchester, N. H. **Answer**—Some methods for filing specifications and system for use are given in the following references: *Journal A. I. A.*, 1919, "Structural Service, Standard Construction Classification," p. 87; *The American Architect*, 1919, Vol. 115, p. 131, 373, 374, 570, 705; 1920, Vol. 117, p. 234, 303, 732; *Architecture*, Vol. 39-40, p. 32, 33, 84, 85, 136, 138, 140, 191, 198; Vol. 37-38,

p. 312, 317; *The Architectural Forum*, Vol. 31, p. 28; Vol. 32, p. 91.

## SKETCHING AND RENDERING IN PENCIL.

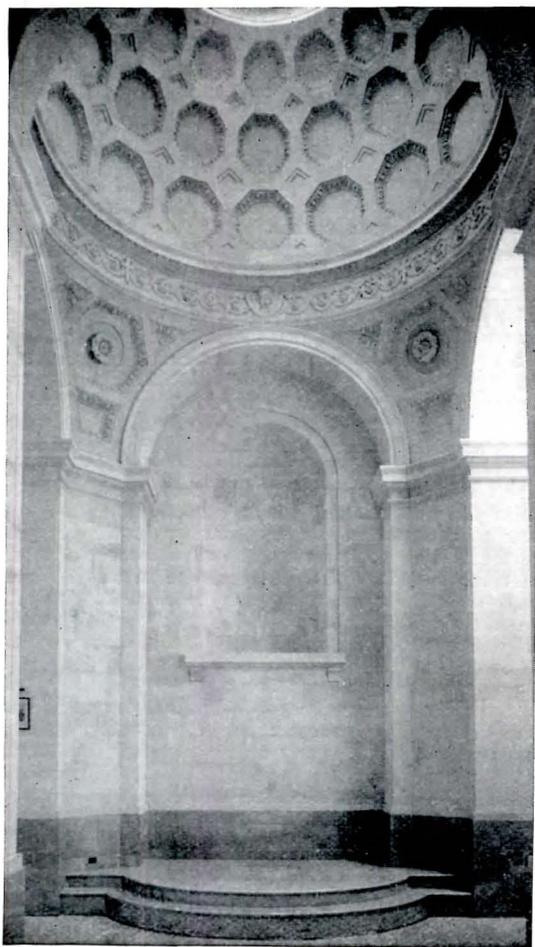
(Continued from page 16)

portions can perhaps be left white or nearly so while others will appear quite dark. Next, the method of indicating the roof material must be chosen, and it is here that the sketches on Figure 22 may prove useful, or, if the roof is of some other material, Figure 23 offers some suggestions. Sketch "A" on the latter plate represents shingles, flat tiles or slate—Sketch "B" indicates a rough textured slate in graduated courses—Sketch "C" shows shingle thatch, "D" straw thatch, "E" suggests tile, while "F" again shows slate, though a similar indication would answer for shingle. It may be well to mention here that good pen renderings are sometimes of great assistance when drawing roof or wall surfaces as they offer much in the way of material indication which can be adapted to pencil rendering.

There are several faults frequently found in representations of roof surfaces, concerning which the student should be warned. First of all, if a drawing is small in scale one should seldom attempt to show every course of slate or shingles, for if this is done the value is almost sure to become either too complex or too dark. It is better to space the lines separating the courses somewhat further apart than they would be in the actual building. In larger drawings this criticism does not hold unless the roof pitch is very low or the roof planes greatly foreshortened, in which case a small number of lines may prove sufficient to suggest many courses. When graduated courses of slate are shown as at "B" Figure 23, decreasing in size from the bottom to the top, an unpleasant effect of curvature of the roof sometimes appears. Such an effect, if conspicuous, can usually be overcome by throwing a shadow bounded by approximately straight lines onto the roof, as from a tree or some neighboring building. In fact the addition of any straight lines following the pitch of the roof will help to correct such distortion. Whatever material is used as a roof covering avoid breaking the tone into too many conspicuous spots, for one of the most common defects of the drawings of beginners is the spottiness of surfaces which in actual buildings would be either "flat" throughout or gradually graded.

Just as roofs deserve careful attention, wall surfaces also need to be represented with the greatest care. Here again it is seldom advisable to try to show every brick course or each stone but the materials should be so indicated as to leave no doubt as to their nature. Figures 22, 23 and 24 all give suggestions for the treatment of such surfaces, the larger drawings on Figure 24 being of sufficient size to show the detail very clearly.

(To Be Continued.)



**A**KOUSTOLITH, a masonry material, has a sound absorbing or acoustical value approximately ten times that of ordinary plaster (see graph) and comparable with felt treatment as usually applied. It can be made in a variety of textures, usually of a fine granular appearance imitating caen stone almost perfectly (see illustration of Chapel in Notre Dame Church, New York) and is made in a wide range of colors—ranging from gray white through various shades of buff, gray, and the stronger blues, etc., if desired.

AKOUSTOLITH can be manufactured in any size from the smaller tile dimensions 3" x 12", 4" x 8", 5" x 10", 6" x 12", 6" x 15", 8" x 16", 10" x 20", and approximately one inch thick to the larger ashlar forms up to 12" x 30" by 1½" thick, and can be moulded or carved in usual ornamental architectural forms. Owing to its light weight and facility of manufacture AKOUSTOLITH can be easily adapted to simple or elaborate architectural treatment. Its adaptability as an acoustical agent is unique and of a wide range starting with the more obvious purpose of insuring correct acoustics in

churches and auditoriums. It is also being used in banks and wherever a quiet and dignified atmosphere is desired.

AKOUSTOLITH used on ceilings has primarily been installed in connection with our regular Guastavino arch construction, using it as a soffit course of tile and backing up the same with two or more layers of rough tile. It is, however, being largely used applying it directly on the soffit of the concrete floor slabs, or wire lath and cement plaster ceiling.

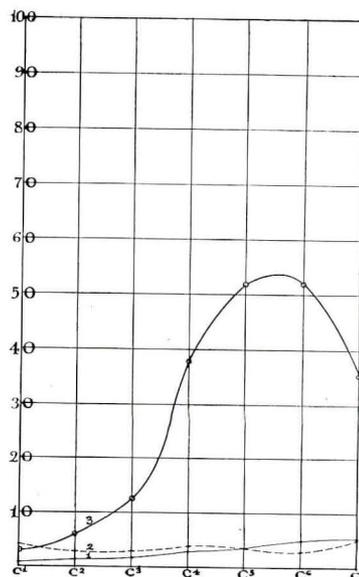
For side walls the installation can be made directly on any of the many masonry surfaces without scratch coat if surface is reasonably true, or applied on a wire lath backing as described for ceilings.

*We do work anywhere in the United States and Canada*

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NEW YORK



The above graph shows the variation of absorbing power for reflected sound within the musical pitch. Curve 1 shows the absorption of unpainted brick surfaces. Curve 2 shows the absorption of soft plaster and wood lath. Curve 3 shows the absorption of AKOUSTOLITH sound absorbing stone.

# THE SPECIFICATION DESK

## *A Department for Specification Writers*

### WHAT THE SPECIFICATION WRITER WANTS TO KNOW.

BY LOUIS R. HOLSKE.

Continuing the statement of the points of interest to the specification writer in regard to the various materials that enter into buildings, a series of articles that began in the August issue, we take up the discussion of hollow metal work at the point at which we left it last month.

*The Finish for Hollow Metal Work*—The specification writer must take under consideration many details of the finishing of the work, the quality of the materials used and the method of baking. Before finishing, it should be washed with benzine to remove oil and dirt, then sand-blasted to remove any rust, after which it should again be washed with benzine. All accessible parts of the work should next be given a rust preventive coat which should be baked on, followed by a high-class baked enamel finish consisting of a filler coat applied with a knife, baked on and sanded to a satisfactory surface, two coats of ground color of proper shade, each applied separately and each baked on, the last coat rubbed smooth with fine sand-paper and dusted clean. This should be followed by one graining coat, the graining to be done by hand and baked on, followed by two coats of finishing varnish, each baked on and the finish coat rubbed with pulverized pumice stone and oil to the desired finish. The finish for a solid color should not deviate essentially from the above treatment. The work should be free from varnish runs, and withstand both a knife test and chisel and hammer test without flaking. The work should be fully protected against damage in transit to the building, and combined bucks, jambs, and trim set in an early stage of the building, should be protected by paper pasted on their exposed surfaces.

*Hollow Metal Window Frames and Sash*—When hollow metal window frames are specified, it is always understood to mean the standard underwriter's window. They should be made of iron or steel and galvanized, the frame to be not lighter than No. 24 gauge and the sill No. 22 and, after being set, the sill should be grouted full with Portland cement grout. Suitable fins should be formed on the frame for building into the walls as anchors. A moulded hanging-stile should be formed in the frame on the outside, and on the inside, either a finishing moulding or rebate to receive the finished jambs. Pockets for access to the weights should be formed in the frame, and these must be accessible without removing the sash. The frame must be reinforced at the angles for stiffness, and all joints must be clinched and riveted and the whole frame be interlocked. All joints must be soldered and made water-tight. All chain to be underwriter's standard galvanized steel, and all pulleys to be of cast iron, galvanized or sherardized, and have roller-bearing axles, and the weights to be the sectional type of cast iron. To reduce friction the parting strips should be covered with zinc of substantial gauge. The finishing hardware should be of heavy cast iron, plated to match the other hardware in the building, and the sash should be reinforced to receive it. The sash should be glazed with wire glass of standard thickness ( $\frac{3}{4}$ -in.) and the rebates should be not less than  $\frac{5}{8}$ -in. deep, no light to be over 720 sq. in. in area and the longer dimensions of the glass in any case to be not over 48 in. The specification writer will want to know something about the shape of the muntins. Where openings exceed 5 ft. by 9 ft. a mullion or transom should be introduced to comply with the requirements of the National Board of Fire Underwriters. Such mullion or transom, when non-bearing must consist of a 5 in. beam encased in concrete of a minimum thickness of 2 in. beyond the flange and  $2\frac{1}{2}$  in. beyond the web. When bearing, mullions should be of

masonry of proper size or of steel protected by 2 in. of concrete. When transoms are required the sash, if movable, should be self-closing and equipped with fusible link and chain. Window frames and sash such as described above, will be required in any wall within thirty feet, horizontally, of another building, and within fifty feet, vertically of a lower roof. They will be required also for any opening directly on or within three feet, horizontally, of a fire escape. In these latter cases they must be self-closing and equipped with fusible link and chain. All such window frames and sash to be primed with a suitable paint before leaving the manufacturer's shop and to bear the "underwriter's" label, giving assurance that an exactly similar window made by the manufacturer, has been tested and approved by the Underwriter's Laboratories in Chicago, Ill., for use in similar cases.

There have appeared on the market in recent years, improved types of hollow metal window frames and sash, made of the No. 16 and No. 14 gauge steel. Although more expensive, they would seem to have a promising future. In considering them, the architect will examine carefully their general construction. He will note whether the sill is of steel or cast iron, and its stiffness; how the joints are made and the frames tied together. He will inquire how they are anchored in the masonry. He will examine carefully the construction of the pulley stile and the manner in which it engages the sash. He will assure himself that the junction of the last two is wind and waterproof, that the shape of the former is such as to permit of caulking the joint with the masonry jamb. He will look into the manner of balancing the sash and convince himself that the principle involved is mechanically correct. He would examine carefully the pulley and chain and expect to find a substantial roller-bearing cast iron pulley and heavy galvanized chain. He will look for a pocket giving access to the weight space in order to determine how readily a broken chain may be replaced. He will examine the construction of the sash, the muntins, meeting-rail, etc., to determine their weather-tightness. He will determine how readily the sash might be reglazed in case of breakage. It would seem that if a sash of this kind were made in which the muntins would be rolled and moulded steel members it should be especially desirable. Further, regarding the sash, their movement should be free and easy, and they should be equipped with locks, lifts and pulls all secured by machine screws. Lastly, the frame and sash should be primed with a substantial paint coat before leaving the factory, and a similar treatment be accorded inaccessible surfaces before the assembling of the parts.

*Metal Covered Work*—The expression "Kalameined" work originally a trade name for a newly discovered principle of construction, has a limited meaning today. Unless it is accompanied by a distinct requirement as to the kind and gauge of metal to be used, the manufacturer is likely to furnish work covered with galvanized sheet steel and of the lightest gauge possible to be drawn through the dies. It would seem that, inasmuch as the kind and gauge of metal must be mentioned in any event, the expression "metal covered work," would express this principle of construction much better. It is a type of construction that is being gradually replaced by hollow metal work, a process which may be expected to quicken as the cost of the latter lowers. In considering metal covered work, the architect must first determine the kind and gauge of metal he will use. Shall the work be done with standard galvanized steel sheets, No. 24 gauge for general work, No. 27 gauge for mouldings, or with the pure irons such as Toncan, Armco or Sempur Merus? (The last named brand which was very much used prior to 1914, seems to be unobtainable at present). Or shall

## PENCIL POINTS

it be cold-rolled copper, sixteen ounces for general work, fourteen ounces for mouldings, or bronze No. 20 gauge for general work, No. 22 gauge for mouldings?  
(To be continued)

### ANTI-SLIPPING TREADS.

**T**O reduce the serious hazard of slipping, the specification writer should give attention to making safe all tread surfaces, floor and stair treads, treads in boiler and engine room floors, corridors, fire-door saddles and threshold saddles, elevator door saddles and floor landings, ramps, trench covers, manhole and coal-hole frames and covers, vent and trench grates, cover plates for expansion joints on stairs and sidewalks. These latter require special attention.

The choice of materials for the treads depend upon the service conditions for which they are intended. If asphalt, rubber or cork is used for stair treads, a slippery metal strip along the nosing intended to act as a preventive of wear or as re-enforcement should not be used since it may cause slipping.

Treads may become a hazard by reason of: A. Material, B. Position, C. Coating, D. Traffic, E. Change of arrangement of plan.

**A. Material**—Treads should not be too smooth if material is hard. If the material is soft, careful provision for the wear on the nosing should be made by using materials that do not wear smooth. Heavy traffic must be considered here. Anti-slipping qualities can be given to granolithic or cement walking surfaces by using one and a half pounds to the square foot of No. 20 abrasive grit such as corundum in the mix for the finish coat, and using one and a half pounds over the surface before giving the rough float. Four-inch wide strips of anti-slip tread set ten inches on centers on cement at right angles to the line of travel and projecting less than one-eighth of an inch above the surface will prevent slipping. Metal nosings should be avoided, since they allow slipping on their smooth surfaces and often, by projecting above a worn tread, tend to cause falls by catching the heel.

**B. Position**—The inclination of treads or the proximity to openings or dangerous machinery must be considered in the selection of floor surfaces; this is especially important under conditions of heavy traffic, or near deep wells, such as elevator shafts and stair-wells.

**C. Coating**—The floors in engine rooms, shower rooms, corridors and ramps in large establishments, because of the possibility of their being coated with oil, soapy water or mud, should be provided against hazard of slipping into moving machinery sharp obstructions, vats of hot liquids, etc.

**D. Traffic**—The increase of traffic at various periods encountered in large buildings increases the slipping hazard. Provision should be made against slipping if collision in corridors is possible. Emergency exits and corridors leading to them should be provided against hazard of slipping in time of excitement, and of hurried exit.

**E. Re-arrangement of Plan**—Some passages and stairways may be required to bear larger traffic than originally planned, and it may be advisable to cover stairways that may be used for detour with anti-slip material to bear this larger traffic.

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Mr. Jay Hambidge will lecture on "Dynamic Symmetry in Design" at the Art Institute of Chicago, 4 P. M., April 5, 7, 12, 14, 19, 21. The lecture on April 19 will be on "Symmetry in Architecture, Sculpture and Painting."

The annual exhibition of work of students in the school of the Art Institute of Chicago will be held June 17—July 15.

Mr. Gari Melchers and Mr. E. H. Blashfield have been commissioned to execute mural paintings for the new Detroit Public Library.

### PUBLICATIONS OF INTEREST TO 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.

**Timbrel Vault Construction**—The distinction between the timbrel and the heavier voussoir arch method of arch and vault construction and the history of Guastavino construction, are given in this interesting booklet, published by the R. Guastavino Company, Fuller Bldg., New York. The method is outlined, showing its adaptability in construction to modern equipment, allowing the concealment of heating and ventilating ducts and for reinforced construction to take care of heavier loads. The acoustical value of "Rumford" tile, a new factor at the disposal of the architect, and its remarkable sound absorbing power are shown by a graph. The booklet measures 10½x13¼ inches, and numbers eight pages.

**Akoustolith**—The absorbing power of Akoustolith, which is a pure masonry material, puts it in a class by itself, and the laboratory findings in tests by the late Wallace C. Sabine of Harvard University are related in the new booklet just published by the R. Guastavino Co., Fuller Bldg., New York. The material had primarily been installed in connection with the regular Guastavino arch construction, but for its further use the specification notes can help the specification writer in his use of Akoustolith in ceiling and wall work. The size of the booklet is 10½x13¼ inches.

**The Complete Line**—Boilers, radiators and valves are shown by illustration and text in the booklet issued by The United States Radiator Company, Detroit, Mich. It contains tables with sizes and dimensions of various boiler and radiator types, capacities and radiation tables for proportioning radiation for heating installations. These are of interest to the specification writer, and for the practical man on the job. The booklet contains 258 pages, and measures 4¾x7¼ inches.

**Quality Pipe**—The Youngstown Sheet and Tube Company of Youngstown, Ohio, have published a booklet explaining the making of iron pipe. Its illustrations show graphically the processes from the initial dumping of the ore and the various hearth furnace processes to lap welding the pipe and shipment. The tables of pipe sizes and threads will prove of additional interest to the man on the job. Size 5½x7⅞ inches, and contains 44 pages.

**Enameled Plumbing Ware**—Shower and lavatory equipment including sinks and urinals, are shown by illustration in the booklet issued by the Kohler Co., of Kohler, Wis., for the use of the architect and his client in the selection of sanitary equipment. It describes operation and finish, and gives dimensions. The size of the booklet is 8¾x11 inches, and contains 36 pages.

**Theatre Dimmers**—The Cutler-Hammer Mfg. Co., of Milwaukee, Wis., are providing practical information concerning the mechanical equipment for lighting in theatres in their 20-page booklet. Photographs and text explain the apparently mysterious shifting of light and change in color and give working information for the architect, who is planning a theatre. Size 8½x11 inches.

**Kewanee on the Job** is the title of a booklet issued by the Kewanee Boiler Company, Kewanee, Ill. The importance of the boiler as the heart of a building for heat and ventilation is shown by illustration and text. Interiors and exteriors of many post-offices, theatres, schools, apartment houses and hotels are shown with a list of installations. The size of the booklet is 8½x11 inches, and it numbers 80 pages.

**The Incomparable Niedecken Mixer**—A forty-four page bulletin devoted to detailed description of the Niedecken Mixer control for shower-baths, shampoos, bath-tubs, surgical and special fixtures with detailed illustrations of parts. Size 2¾x6 inches. Published by The Hoffman & Billings Mfg. Co., Milwaukee, Wis.

## PENCIL POINTS

### LIST OF ATELIERS AND LOCAL CORRESPONDENTS OF THE BEAUX-ARTS INSTITUTE OF DESIGN.

*For the convenience of our readers we publish the list below. Information in regard to the organization of new ateliers and other information can be had by writing to R. M. Hood, Chairman of the Committee on Architecture, Beaux-Arts Institute of Design, 126 East 75th Street, New York, N. Y.—Ed.*

**ALABAMA.** *Auburn*—Atelier Auburn, Alabama Polytechnic Institute. *Birmingham*—Birmingham Society of Architects, 1607-11, Empire Building, E. H. Knight. *Montgomery*—E. Okel, Jr., Vandiver Building.

**ARIZONA.** *Douglas*—M. Eugene Durfee.

**CALIFORNIA.** *Berkeley*—University of California, Department of Architecture. *Los Angeles*—Los Angeles Architectural Club, Lyceum Theatre Building, 227 South Spring Street, University of Southern California, Department of Agriculture. Atelier Walter S. Davis, 6th Street at Vermont Avenue, care of The Garden City Company of Los Angeles, Los Angeles, Cal. *San Francisco*—San Francisco Architectural Club, 77 O'Farrell Street, Local Committee on Architecture, John Bakewell, Jr., President.

**CANADA.** *Edmonton, Alberta*—A. M. Jeffers, 212 McLeod Building. *Montreal*—W. S. Maxwell, 360 Beaver Hall Square. *Toronto*—University of Toronto, Department of Architecture.

**COLORADO.** *Denver*—Denver Atelier, 203 Boston Building, A. A. Fisher.

**CONNECTICUT.** *New Haven*—New Haven Architectural Club, 185 Church Street, Room 1023; A. W. Boylen, C. S. Palmer, 191 Church Street. Yale University, School of Fine Arts.

**DISTRICT OF COLUMBIA.** *Washington*—Catholic University, Department of Architecture. George Washington University, Department of Architecture.

**GEORGIA.** *Atlanta*—Georgia School of Technology, Department of Architecture.

**ILLINOIS.** *Chicago*—Chicago School of Architecture, Department of Architecture of the Armour Institute of Technology, Art Institute, Prof. E. S. Campbell. Parsons Atelier, Chicago Architectural Club, 40 S. Clark Street. *Peoria*—F. N. Emerson, 321 Main Street. *Urbana*—University of Illinois, Department of Architecture.

**INDIANA.** *Indianapolis*—R. F. Daggett, Lemcke Annex. *Terre Haute*—M. H. Johnson, Jr., 105 South 7th Street.

*Vincennes*—L. H. Osterhage, 2nd National Bank Building.

**IOWA.** *Clinton*—S. S. Cook, care of The Curtis Companies. *Des Moines*—N. T. Vorse, 911 S. & L. Building.

**KANSAS.** *Lawrence*—The University of Kansas, Department of Architecture.

**KENTUCKY.** *Louisville*—University of Louisville, Department of Architecture.

**LOUISIANA.** *New Orleans*—Favrot and Livaudais Atelier, Title Guarantee Building; Tulane University, Department of Architecture. N. C. Curtis, care of M. H. Goldstein, 706 Title Guarantee Building.

**MARYLAND.** *Baltimore*—L. H. Fowler, 347 N. Charles Street. Maryland Institute, Department of Architecture; T. W. Pietsch.

**MASSACHUSETTS.** *Boston*—Boston Architectural Club, 16 Somerset Street. Massachusetts Institute of Technology, 491 Boylston Street; Prof. William Emerson. *Cambridge*—Harvard University, Department of Architecture. *New Bedford*—Swain Free School of Design, Department of Architecture; Nat C. Smith.

**MICHIGAN.** *Detroit*—P. Kasurin, care of Van Leyen & Schilling, 1115-21 Union Trust Building; Thumb Tack Club, 83 Fort Street, W.

**MINNESOTA.** *Minneapolis*—University of Minnesota, Department of Architecture; Post and Lintel Club, 1200 Second Avenue, South, care of J. A. Hamilton. *St. Paul*—E. L. Masqueray, 596 Endicott Building.

**MISSOURI.** *Kansas City*—H. F. Hoit, 607 Reliance Building. *St. Louis*—St. Louis Architectural Club, 514 Culver Way. St. Louis Atelier, St. Louis Public Library (Map Room), 13th and Olive Streets. Washington University, Department of Architecture.

**MONTANA.** *Great Falls*—G. H. Shanley, 512 First National Bank Building. *Helena*—G. H. Carsley, Power Block.

**NEBRASKA.** *Lincoln*—Ellery L. Davis, 610-13 Security Mutual Life Building. University of Nebraska, Department of Architecture. *Omaha*—T. R. Kimball, 836 World-Herald Building; G. B. Prinz, Omaha National Bank Building.

**NEVADA.** *Reno*—F. M. Schadler, 445 South Virginia Street.

**NEW JERSEY.** *Asbury Park*—C. B. Cook. *Atlantic City*—H. A. Stout. *Newark*—E. H. Fougner, 800 Broad Street. *Palisade*—Ernest Sibley, Edgewood Lane and Bluff Road. *Princeton*—Princeton University, Graduate College. *Trenton*—W. A. Klemann, First National Bank Building.

**NEW YORK.** *Brooklyn*—Pratt Institute, Department of Architecture. *Buffalo*—J. J. W. Bradney, 19 West Huron Street. Buffalo Architectural Club, 808 Niagara Life Building; R. North. Albright Art Gallery, (Art School) Paul F. Mann. *Geneva*—I. Edgar Hill. *Ithaca*—Cornell University, College of Architecture. *New York City*—Columbia University School of Architecture, H. Vandervoort Walsh; Columbia University, Extension Course, H. Vandervoort Walsh; Corbett-Gugler Atelier, 345 East 33rd Street; Hiron Atelier, 487 West Broadway; Licht Atelier, 126 East 38th Street, care of Delano and Aldrich; Wynkoop Atelier, 129 Eighth Avenue. *Plattsburgh*—R. L. Signor, 28 Brinkerhoff Street. *Poughkeepsie*—E. C. Smith, 39 Market Street. *Rochester*—Claude Bragdon, 414 Cutler Building. *Syracuse*—Syracuse University, Department of Architecture.

**OHIO.** *Akron*—Akron Architectural Club, Nantucket Building, M. E. Harpster. *Cincinnati*—Ohio Mechanics Institute, Department of Architecture. Atelier C. F. Calarius, care of Harry Hake, 1100 Telephone Building. *Cleveland*—John Huntington Polytechnic Institute, Department of Architecture, 2307 Prospect Avenue (rear), E. W. Bail, 604 City Hall. *Columbus*—Columbus Architectural Club, Ohio State University, Prof. Chas. St. John Chubb. *Hamilton*—F. G. Mueller, 705 Rentschler Building. *Youngstown*—C. F. Owsley, 1301-5 Mahoning Bank Building.

**OKLAHOMA.** *Oklahoma City*—W. T. Schmitt, 823 Insurance Building.

**OREGON.** *Eugene*—University of Oregon, Department of Architecture. *Portland*—Portland Architectural Club, 1021-3 Chamber of Commerce Building, E. F. Lawrence.

**PENNSYLVANIA.** *Bethlehem*—R. E. Ochs, care of J. M. Green, Jr., 501 Bethlehem Trust Company Building. *Chester*—C. W. Brazer, Crozer Building. *Lancaster*—Lancaster Architecture Club, 9 East Orange Street, Melvern R. Evans. *Philadelphia*—"T" Square Club, 204 South Quince Street. University of Pennsylvania, Department of Architecture. *Pittsburgh*—Carnegie Institute of Technology, Department of Architecture. Pittsburgh Architectural Club, Chamber of Commerce Building, E. B. Lee. *Scranton*—G. M. D. Lewis, Union National Bank Building. *State College*—Pennsylvania State College, Department of Industrial and Fine Arts. *Wilkes Barre*—T. H. Atherton, Jr., 911 Coal Exchange Building.

**SOUTH CAROLINA.** *Clemson College*—Clemson Agricultural College, Department of Architecture.

**TENNESSEE.** *Memphis*—M. H. Furbringer, Porter Building. Bayard S. Cairns, 528 Scimitar Building.

**TEXAS.** *Austin*—University of Texas, Department of Architecture. College Station Agricultural and Mechanical College of Texas, Department of Architecture. *Dallas*—S. P. Brickey, 1313 Praetorian Building. Dallas Architectural Club, 108 North Poydras Street, F. T. Swaine, 1203 South Western Life Building. *San Antonio*—R. H. Cameron, 1115-16 Central Trust Building.

**UTAH.** *Salt Lake City*—A. O. Treganza, 610 Utah Savings and Trust Building.

**VIRGINIA.** *Charlottesville*—University of Virginia, School of Art and Architecture. *Petersburg*—R. A. Munden, 303 Mechanics' Building. *Richmond*—A. G. Lambert, Travelers Building.

**WASHINGTON.** *Seattle*—University of Washington, Department of Architecture.

**WISCONSIN.** *Madison*—H. C. Balch, 308 Commercial National Bank Building. *Milwaukee*—Milwaukee Architectural Club, 726 Caswell Block, G. De Gelleke.



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## THE DALLAS ARCHITECTURAL CLUB.

THE Dallas Architectural Club has just completed the first of its annual exhibitions of the work of students in the architectural schools of Texas. Very extensive and creditable displays were received from the University of Texas, the Texas Agricultural and Mechanical School and Rice Institute including several problems which had received awards from the Beaux-Arts Institute of Design. In addition to the architectural problems the schools represented each had interesting examples of freehand work in watercolor, pen and ink and charcoal.

The exhibit, which was on display at the club quarters from February 7th to February 21st, awakened considerable interest among the people of Dallas in the work being carried on by the state institutions and received much favorable comment from the press. Samuel E. Gideon, Professor of Architecture at the State University, addressed the club on the night of February 15th and for the benefit of the men in the Club's atelier gave a brief criticism of the work hung.

The second exhibition which is a part of the Club's annual program will be a display of recent architectural work in Texas and will take place during the month of May.

The increasing interest of the practicing architects of Dallas in the Architectural Club was evidenced by a dinner tendered by them to the active members of the Club on January 26th at which financial assistance in furthering the work of the atelier was offered the Club by the architects.

## EXHIBITION AT THE COLLEGE OF ARCHITECTURE, CORNELL UNIVERSITY.

AN interesting exhibition held in White Hall by the College of Architecture during the two weeks' period ending March 5, consisted of bronzes by well-known American sculptors and a set of architectural water color sketches by Mr. E. S. Campbell of Chicago.

The bronzes were mainly statuettes although there were several interesting animal groups and a few bas-reliefs and medallions.

Among the statuettes were a delicate, winged figure of Victory and an amusing figure of Young America both by Janet Scudder. Two boys called "Play Ball" was beautifully modelled by Albert Jaegers. Others which were much enjoyed were "The Peacock" by Louise Allen, "Honorably Discharged" by Gertrude V. Whitney, "Telesis," by Albert Henry Atkins, "Young Pan" by E. E. Potter and several sketches by Bessie Potter Vonnoh.

One of the most striking things in the exhibition was a spirited group of two goats by Hunt Diederich, interesting in composition and treated with a directness and sketchy character which is peculiarly appropriate to the subject and to the material in which it was executed. Other animal groups by C. C. Rumsey, Eli Harvey, Jane B. Clough and Anna Vaughan Hyatt were much admired.

The bas-reliefs and the medallions were by Victor D. Brenner and A. A. Weinman, both of whom are well known in this type of work. The portrait medallions and plaques by Mr. Weinman are characteristic of his art; they are full of human interest and individuality and delicately modelled. Some of his medals show the influence of St. Gaudens.

The water colors by Mr. E. S. Campbell take one to attractive places in Italy, Spain, France and New England. His subjects are always architectural and in selection and arrangement of composition reveal the trained eye and appreciation of the architect. His color is well chosen to portray the spirit of the subject, and the effect is obtained easily and cleverly. Although he has not always been careful in drawing, the beauty of water color as a medium is always felt in the freshness of the color and the directness of handling.

## THE SUMMER COURSES AT THE M. I. T.

THIS summer the Department of Architecture at the Massachusetts Institute of Technology will conduct courses in Shades and Shadows, Perspective, Office Practice, Elementary and Intermediate Design, Elementary and Advanced Constructive Design, and Structural Design at the Rogers Building in Boston. For full information application should be made to Professor William Emerson, 491 Boylston St., Boston, Mass.

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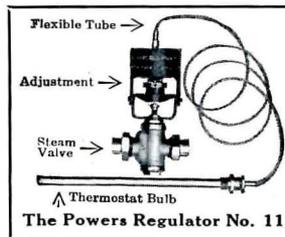
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*See Plate XIII in "Pencil Points."*



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