

WITH AND FOR OUR READERS

IN presenting this, the third, issue of PENCIL POINTS to our readers we wish to tell them of the arrangements we have already made for articles to be published in the near future and also to suggest definite lines of co-operation which will prove useful in bringing our journal speedily to the point where it will serve its readers even more fully than it does to-day.

In addition to the series on "Perspective Drawing" by Mr. Paul Valenti, the third installment of which appears in this issue and which will continue for many months to come, showing the application of the fundamental principles now being presented, we will publish, also, in serial form, twelve articles with full-page illustrations, prepared expressly for PENCIL POINTS by Mr. Arthur L. Guptill on the subject of "Sketching and Rendering in Pencil." Mr. Guptill has had wide experience in teaching this subject, and is an instructor in architectural design and interior decoration at Pratt Institute; he is also an architect and a member of the firm of Bearse and Guptill, architectural illustrators. The articles by Mr. Francis S. Swales on "Presentation Drawings" are a valuable contribution on this always interesting subject. Further material along this line by Mr. Otto R. Eggers and others will be presented. The following subjects will also be covered: "The Use of Clay Models for Architectural Detail," by Mr. Frederick C. Hiron; "The Chief Draftsman, His Training and Qualifications," by Charles S. May; and helpful suggestions relating to "Specification Writing," by Mr. Holske, of the office of McKim, Mead and White.

The Specification Desk, which first appeared in July, offers an opportunity for the publication of hints, suggestions, questions and criticisms dealing with the subject of specifications. Let us have in this department a frank discussion of all the matters involved.

Send along items of personal interest for our news columns. If you are moving from one office to another or if someone else is, let us know. If you hear of a change in an architectural firm, either in location or personnel, send the item along. If you have in mind subjects which you would like to see treated in articles, either by yourself or some one else, your suggestions will receive prompt and careful consideration. As we stated in our first

issue, we are going to edit PENCIL POINTS *with* our readers as well as *for* them.

PENCIL POINTS is serving an enthusiastic, eager, and at the same time, highly sensitive and critical group of men. The publishers will not be satisfied with anything less than a splendid, well-rounded paper to meet the needs of its readers fully. To achieve this we must have the viewpoint of San Francisco, New Orleans and Minneapolis and all points in between as well as of New York City.

The readers of PENCIL POINTS are located in every city and large town in the country, and in many of the smaller places. We want just as much to hear from the man who is one or two or three thousand miles from our office and to be in as close touch with him as with the man who is in the neighborhood of 42nd Street and Fifth Avenue.

PENCIL POINTS has to-day a representative subscription list, from all parts of the United States. We want every draftsman, specification writer, as well as every architect, to become a regular reader. If you like PENCIL POINTS and the idea underlying it, suggest to your friends, who may not have subscribed yet, that they send in their dollar bill for that yearly subscription which can still begin with the first issue. If you wish we will, on your request, send sample copies to people who, in your opinion, should become "Pencil Pointers."

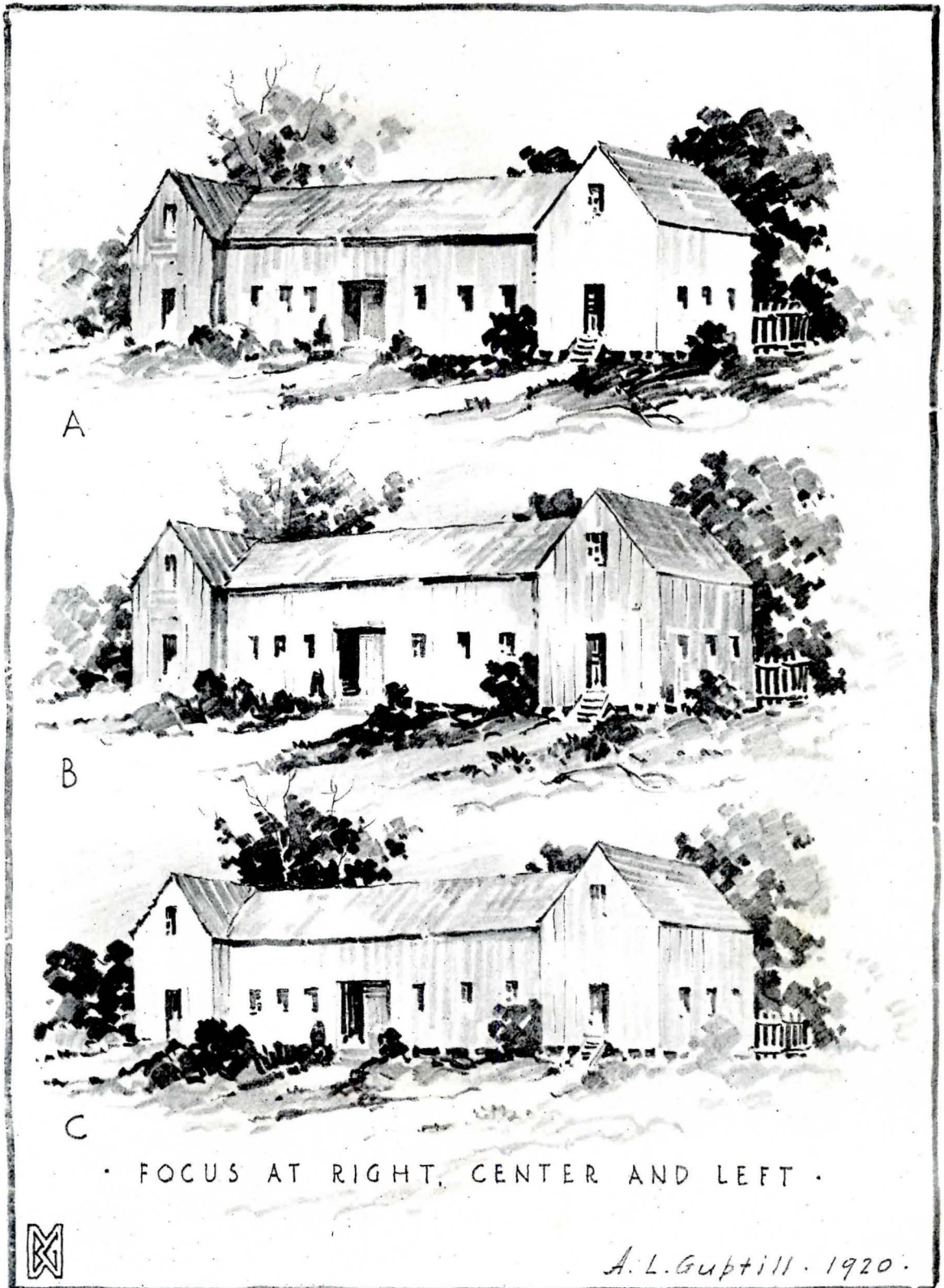
We have grown so rapidly since our first announcement was made that we are anxious to achieve our maximum subscription list as soon as possible so that we may still further add to the size of the paper, as well as build up the advertising section, which will make the journal of added interest to you and still further increase the amount of matter we can present in each issue.

One more thing we want, and this holds true not only for the present but for just so long as PENCIL POINTS shall be published. We want criticism.

The publishers of PENCIL POINTS are thoroughly alive to the great possibilities inherent in a journal for the drafting room. We are desirous of reaching that point of highest efficiency with the utmost speed and we, therefore, ask every reader not only for the approval of the work we have undertaken, which has come to us in such generous measure, but also for that direct and active co-operation along the lines suggested above, which will immediately benefit everyone concerned.

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Sketching and Rendering in Pencil. Figure 1, illustrating method of accenting different parts of a building.

SKETCHING AND RENDERING IN PENCIL, PART I

BY ARTHUR L. GUPTILL

These illustrated articles on the technique of pencil sketching and rendering offer to the architectural draftsman and student 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. Many of the suggestions here offered have proven especially helpful to the author in his own professional practice as an architectural illustrator. The exercises lead the student gradually from the simplest beginning to the point where, if he has conscientiously followed the instructions, he should be able to not only make sketches from nature or photographs, but also to draw from memory or the imagination. The illustrations are not merely copy plates but each one is drawn to illustrate some principle of composition or some suggestion for technique given in the text. The plates include drawings of exteriors and interiors of buildings, street scenes and the like, with especial attention to methods of indicating and representing all kinds of architectural details such as doors, windows, stonework, brickwork, shingle, thatch, etc., as well as such accessories as foliage, water and clouds. By including examples of fine line, broad line and mass shading, the greatest possible variety of work is shown. Although these plates are intended primarily to assist the student in freehand work they will prove helpful as well to those making pencil renderings of subjects prepared instrumentally.—Ed.

Introduction

THERE are millions of people in this country using pencils every day, and in the architectural profession alone thousands of men work from morning till night throughout the year with the pencil as their principal tool, yet even among these architectural workers a comparatively small number ever attempt to make anything but the crudest sort of freehand pencil sketch and among those who do seriously try to make finished pencil drawings a still smaller number have the perseverance to reach any real degree of success.

Still there is no way in which the architectural student or draftsman can advance more rapidly in his profession than by becoming proficient in pencil sketching. The pencil, being inexpensive and adaptable to any type of work, from the roughest outline sketch to the most carefully finished drawing, is the medium most commonly used for all architectural purposes, and its popularity is added to by the fact that the drawings themselves are easily corrected and changed at any time during their making. It is very natural, then, that the man who becomes proficient in the use of this versatile instrument is certain of advancement. He is not only often able to bring new work to the office by means of clever preliminary studies or perspective renderings but he can make the necessary freehand drawings of ornament and other such work which the purely instrumental draftsmen are unable to do.

Even though a man may never reach a point where he stands out among his fellows because of his pencil sketches he can gain much benefit in many ways by practising sketching during his spare moments. Drawing from photographs or buildings always increases a student's knowledge of architecture, but it does far more than this. It improves his powers of observation and retention, for he is forced to observe in order to draw at all and in drawing he unconsciously assimilates not only knowledge of the buildings drawn, but also a sense of relative proportions and shapes applicable to original problems in design. The more such draw-

ings are made, too, the greater will be his power to visualize the appearance of a proposed building long before a single study on paper has been made. The ability to thus form in the mind an image of the completed structure is most desirable, but the average draftsman gives so much time to working in elevation or plan only that he is likely to lose sight of the fact that the building is to be finally judged by its appearance in three dimensions and not by the drawings from which it is built. The draftsman who has the power to visualize does not forget this fact and so makes all his drawings with greater intelligence.

There are some men, on the other hand, who are able to see in their minds a building exactly as they wish to erect it, yet they are unable to freely express their ideas on paper. To such men a knowledge of freehand drawing would be of the greatest benefit. In fact, a man who can sketch well is able not only to express his own thoughts on paper but can draw from a description given him by others.

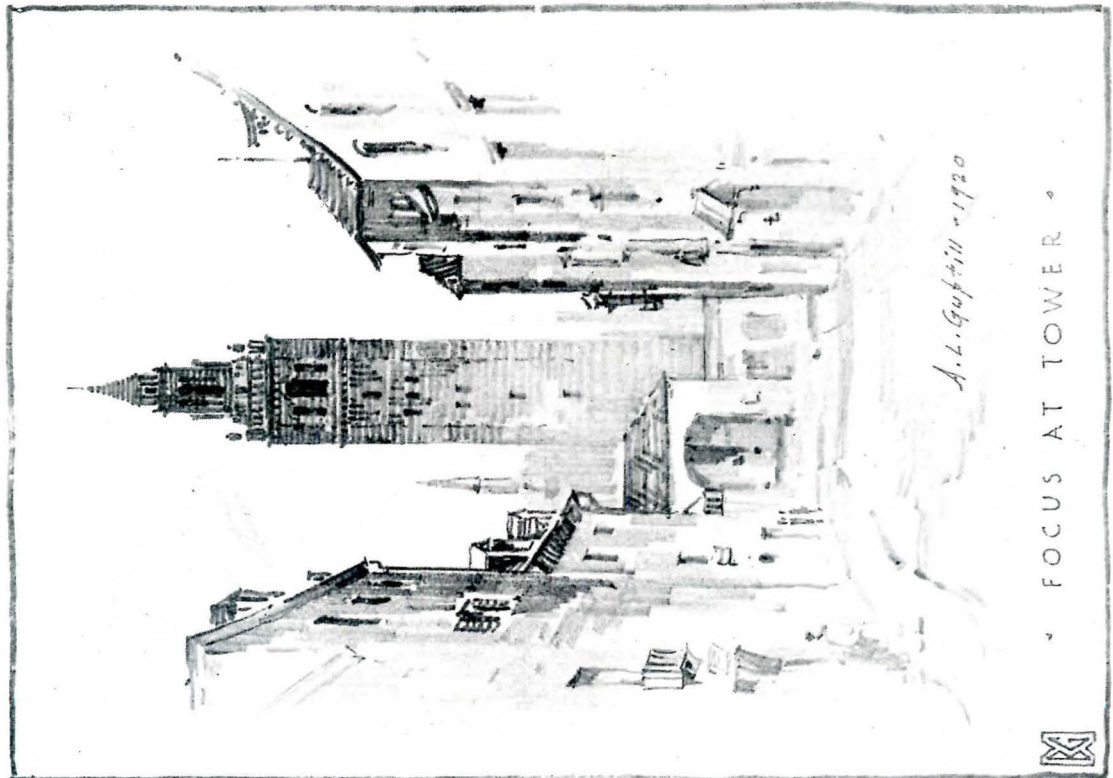
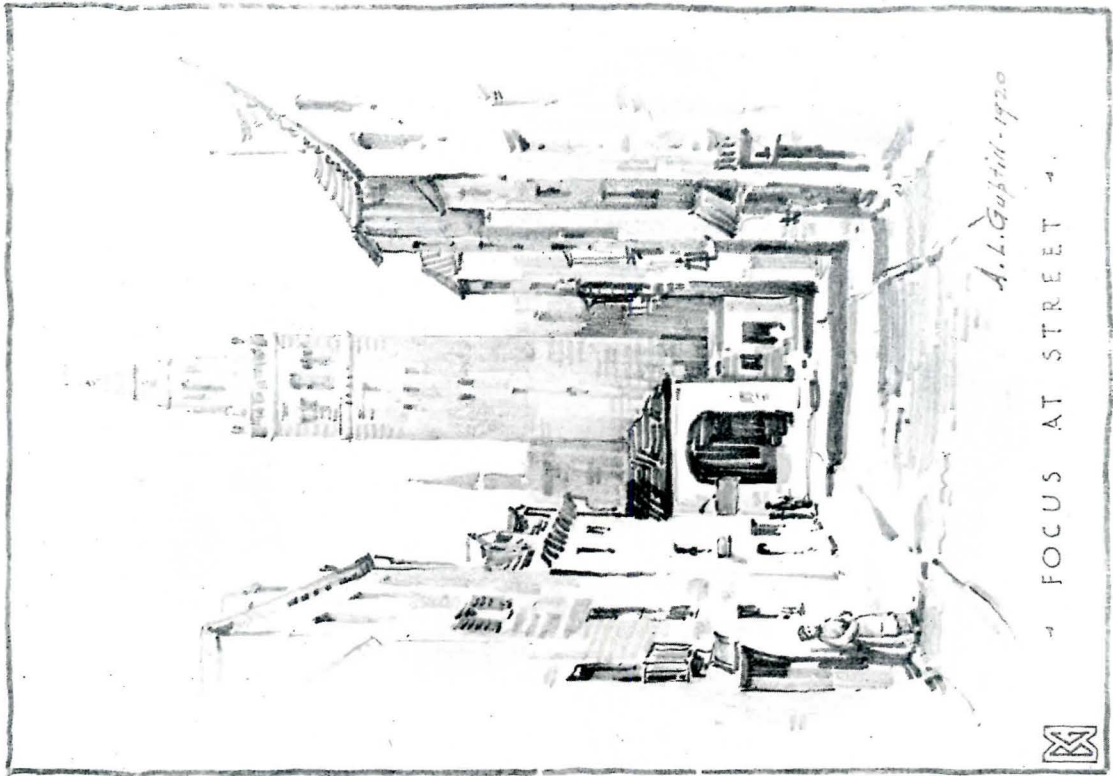
Even the construction man or engineer gains much through a knowledge of sketching, for he can often explain to others or make clear in his own mind some obscure point in construction by means of a quick sketch.

Taken all in all, then, there is much of a practical nature to be gained through freehand work, and in addition to this a great deal of pleasure can be obtained,—in fact, the satisfaction of being able to draw well is worth in itself the time spent in acquiring the necessary knowledge.

Materials

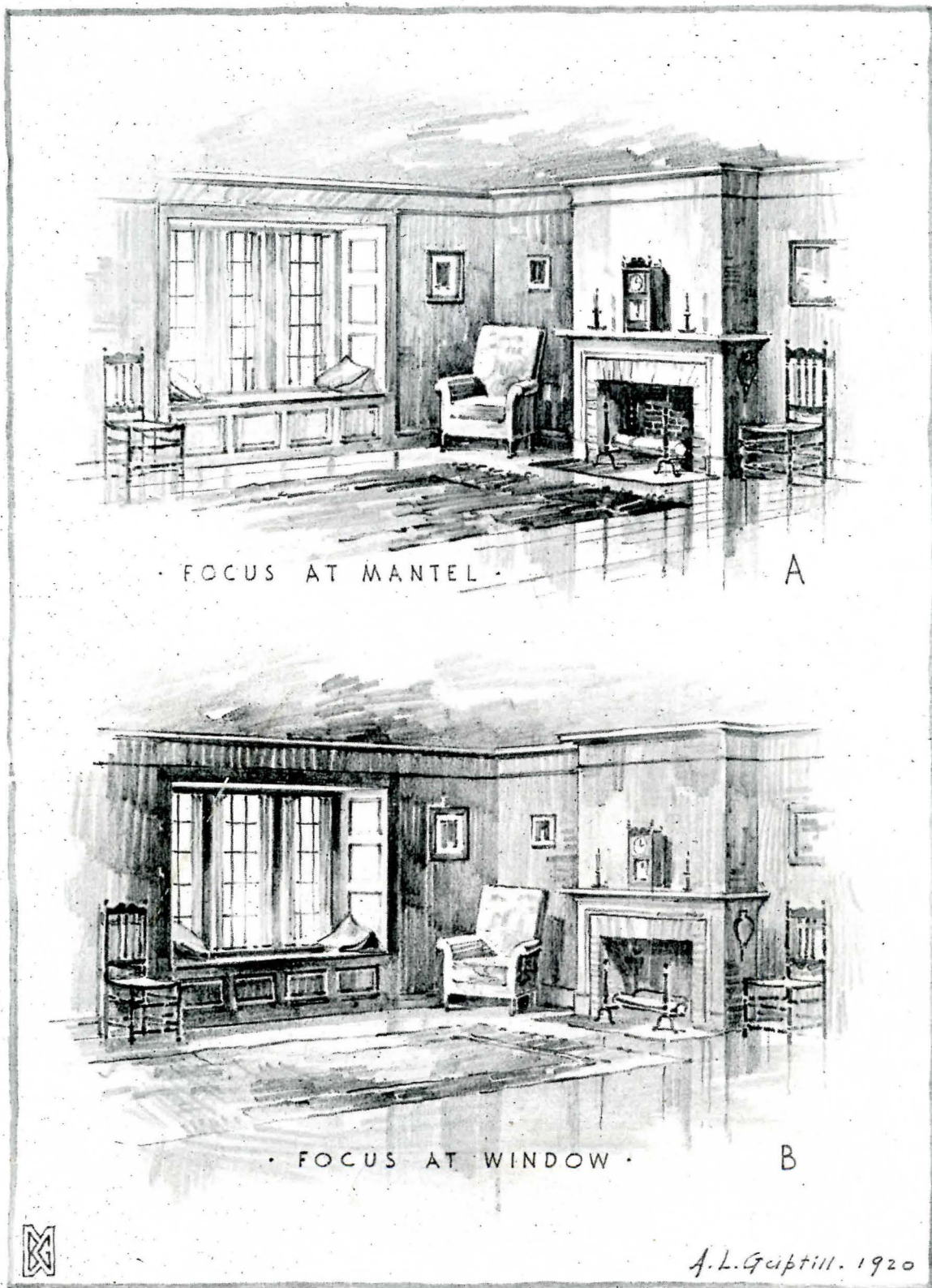
Pencils—Drawing pencils are usually graded from 6B, the softest and blackest, to 9H, the hardest and firmest, with fifteen grades between, or seventeen in all, arranged as follows:—6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 9H. Of these the soft pencils are best suited to freehand work, though some papers demand much harder pencils than others. In fact, the choice of pencils depends almost entirely on the character of paper to be used, a smooth, glossy

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Sketching and Rendering in Pencil. Figure 2, illustrating method of focusing attention on different parts of a scene.

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Sketching and Rendering in Pencil. Figure 3, illustrating method of subordinating parts of a room.

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paper demanding a much softer pencil than is needed for work on rough paper which has considerable "tooth." For quick sketches, one soft pencil, perhaps a 2B or B or HB, will sometimes do for the whole drawing, but a carefully finished sketch showing considerable detail often needs as many as seven or eight pencils grading all the way from 3B or 2B to 4H or 5H. In such a drawing most of the work would be done with the softer pencils, the harder ones being used for the light, transparent tones and fine detail. A little experimenting will usually show what pencils are best suited to the paper to be used and to the subject to be drawn. The fact that the weather makes a great difference in the pencils required is not usually recognized, but it is true that pencils that are just right on a dry day will prove too hard when the air is damp and the paper filled with moisture. Pencils of different manufacture vary in their grading so it is generally best to use pencils of one make on a drawing. Cheap pencils seldom prove satisfactory as the lead is variable and often so gritty as to scratch the paper.

Paper—Almost any drawing paper will do, but the choice depends mainly on the size and character of the drawing to be made. For small sketches it is best, as a rule, to use smoother paper than for large work, in fact, it is almost impossible to draw fine detail on extremely rough paper. A glazed paper, however, is seldom desirable as the shiny surface is dulled in an objectionable manner if the eraser is used. Sometimes, however, very crisp, snappy sketches are made on glazed paper, but a soft pencil is required for such work. Extremely rough paper is occasionally satisfactory for a large drawing, but a medium-rough surface is best for general work. Some tracing papers are very good and have the advantage that the sketch can be first blocked out on one sheet and then rendered on a second sheet placed over the first. The drawings illustrating this text were made for the most part on "kid finish" Bristol Board, which has the advantage of being stiff and durable, with a firm surface.

It is often well to have several standard sizes for sketch sheets, one small enough to slip into the pocket, and one or two larger sizes. Drawing paper of the Imperial size of 22 in. x 30 in. can be cut without waste to several convenient sizes, such as 15 in. x 22 in., 11 in. x 15 in. and 7½ in. x 11 in. Some draftsmen prefer to have punched sheets to be used in a standard notebook cover, 8 in. x 10½ in., being a satisfactory size. The sketch books and pads for sale in all art stores are good for small work.

Erasers—As a rule it is best to avoid the use of erasers so far as possible, as erasing often injures the paper surface, but art gum or a soft white eraser is necessary for removing construction lines and for cleaning the sheet. A fairly hard red or green eraser may be needed sometimes for correcting errors, and a soft "kneaded" rubber is very

useful in lifting superfluous tone from a portion of a drawing. An erasing shield is an essential if changes are to be made.

Brush—A soft brush is needed for keeping the drawing free from dust as tiny specks often cause spots and streaks as the pencil passes over them. The paper should always be dusted with care after erasing is done.

Boards—It is usually well to fasten the drawing to a board of convenient size with thumb tacks. Be sure that the board is very smooth, for unless it is so or the paper very thick, the grain of the wood may show in the final drawing. When using medium-weight drawing paper it is well to put an extra sheet or two under the drawing to insure a good surface.

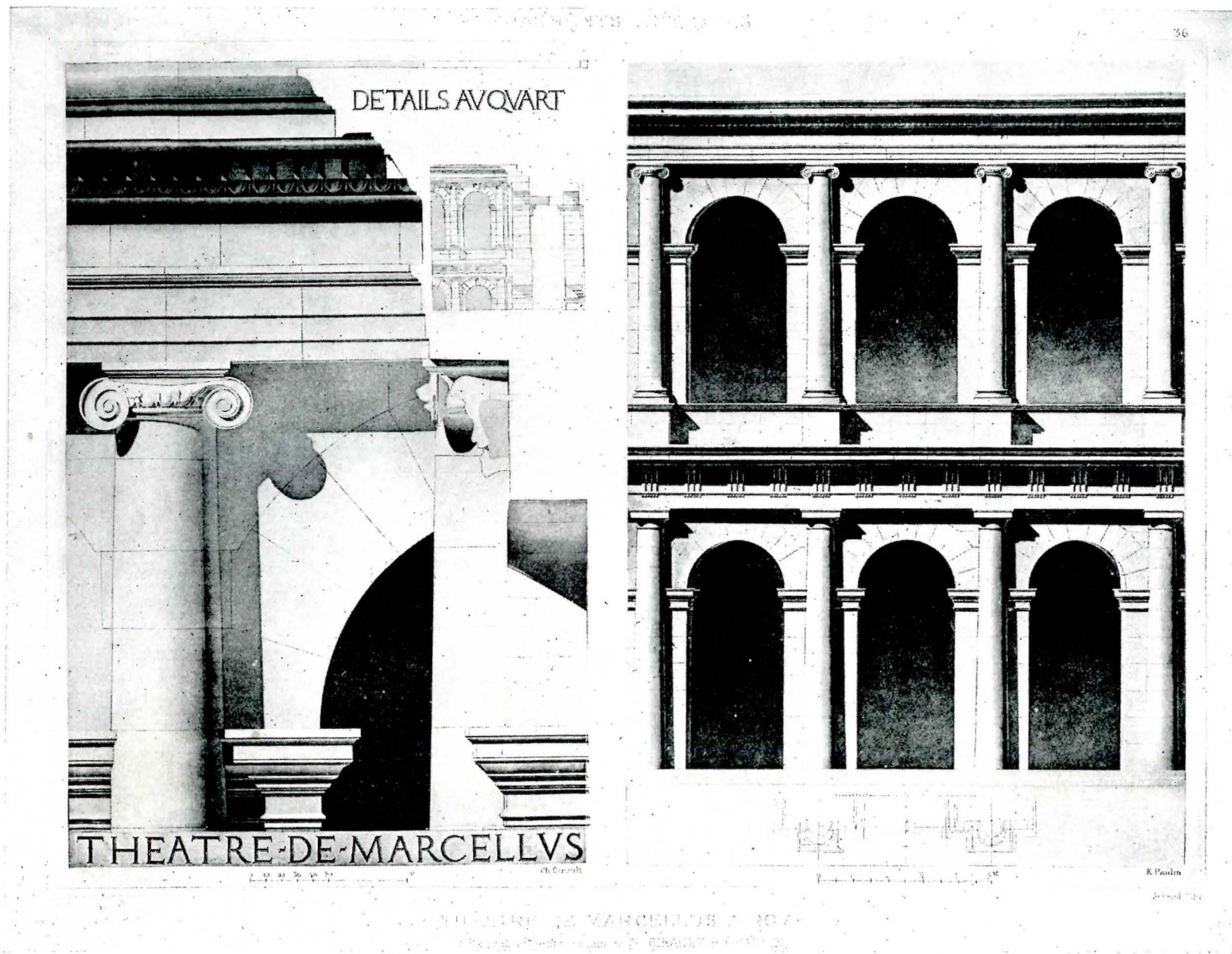
Fixatif—Sketches done with soft pencils rub and soil so easily after they are completed that it is customary to spray or "fix" them. An atomizer and bottle of fixatif can be obtained in any art store but the fixatif usually sold tends to turn the drawing slightly yellow and also causes a gloss or shine if too much is applied. A French fixatif made for spraying pastels has the advantage of being more transparent and of causing less shine, but is quite expensive.

Selecting the Subject. Some First Considerations. *Starting to Draw.*

When the student has his materials ready for drawing, he is often too impatient to begin and does not spend sufficient time in selecting a suitable subject for his sketch. Now the architectural draftsman or student wishes to learn architecture as well as how to draw, so it is usually best for him to choose some architectural object of merit. The drawing may be made directly from some interesting portion of a building, if the student feels capable of attempting this, or from a photograph. In either case it is well not to attempt too much at one time.

When the subject has been chosen it is necessary next to decide exactly how much of the object is to be drawn. If one works from the photograph this is comparatively easy, for by using strips of paper or cardboard as a frame suitable compositions can be found. One has more difficulty, however, when drawing directly from a building for it is then necessary to determine the point from which the best view can be obtained. If you were to photograph such an object as you have selected to draw, the view-finder of the camera would help you to determine the best point at which to stand and would frame for you any number of interesting views from which you might select the best. The same idea may be carried out by the student of sketching, either by using a camera view-finder or, what is more commonly done, by making a view-finder by cutting a rectangular opening about 1½ in. x 2 in. through a sheet of stiff paper or cardboard, which, when held near the eye, will

(Continued on page 26)

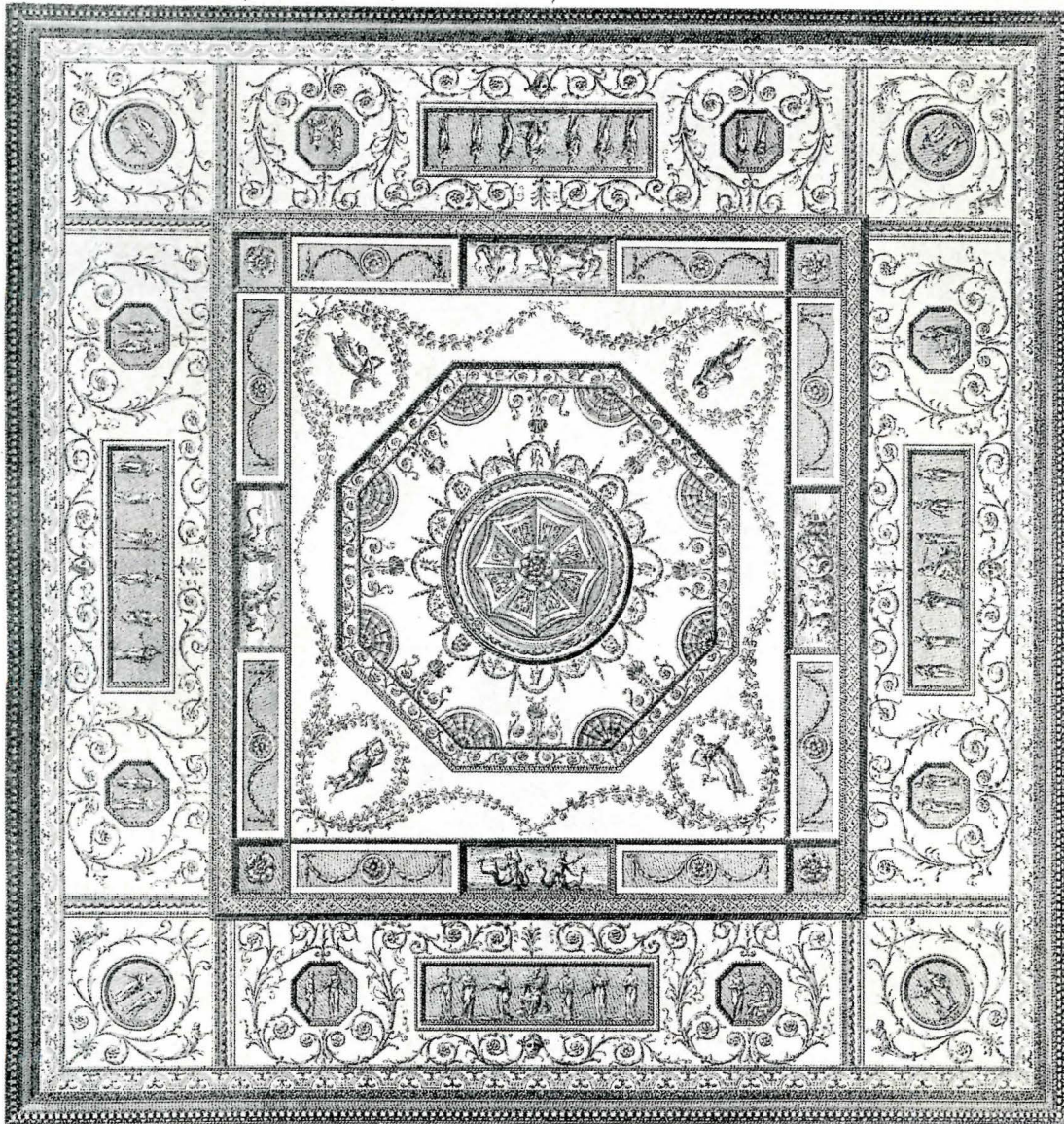


THEATRE OF MARCELLUS

RESTORATION BY P. ANDRÉ AND H. D'ESPOUY. REPRODUCTION OF A PLATE FROM THE "FRAGMENTS D'ARCHITECTURE ANTIQUE"

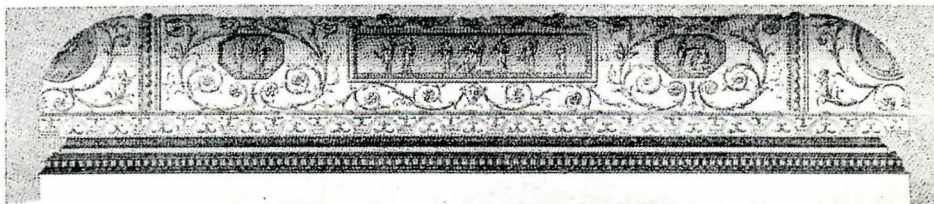
On the opposite side of this sheet is a restoration of the Theatre of Marcellus at Rome, the ensemble after Paulin and the detail after Girault. This building was begun by Caesar. Augustus completed it together with many other works begun by his foster father. He dedicated this theatre to Marcellus, son of his sister, Octavia, and opened it in the Roman year 741, or 13 B. C. The building, constructed of travertine, had three stories, treated with orders, the first Doric, the second Ionic, and the third Corinthian. Alexander Severus restored this building. Its ruins are buried several metres deep and lie between the capitol and the Tiber.

*Un coupe d'un plafond peint, exécuté en 1775, en l'honneur de la République, dans la Salle de la Convention.
 Un coupe d'un plafond peint, exécuté en 1775, en l'honneur de la République, dans la Salle de la Convention.*



Section which shows the west part of the ceiling.

Coupe qui fait voir la partie à l'ouest du Plafond



Section which shows the west part of the ceiling.

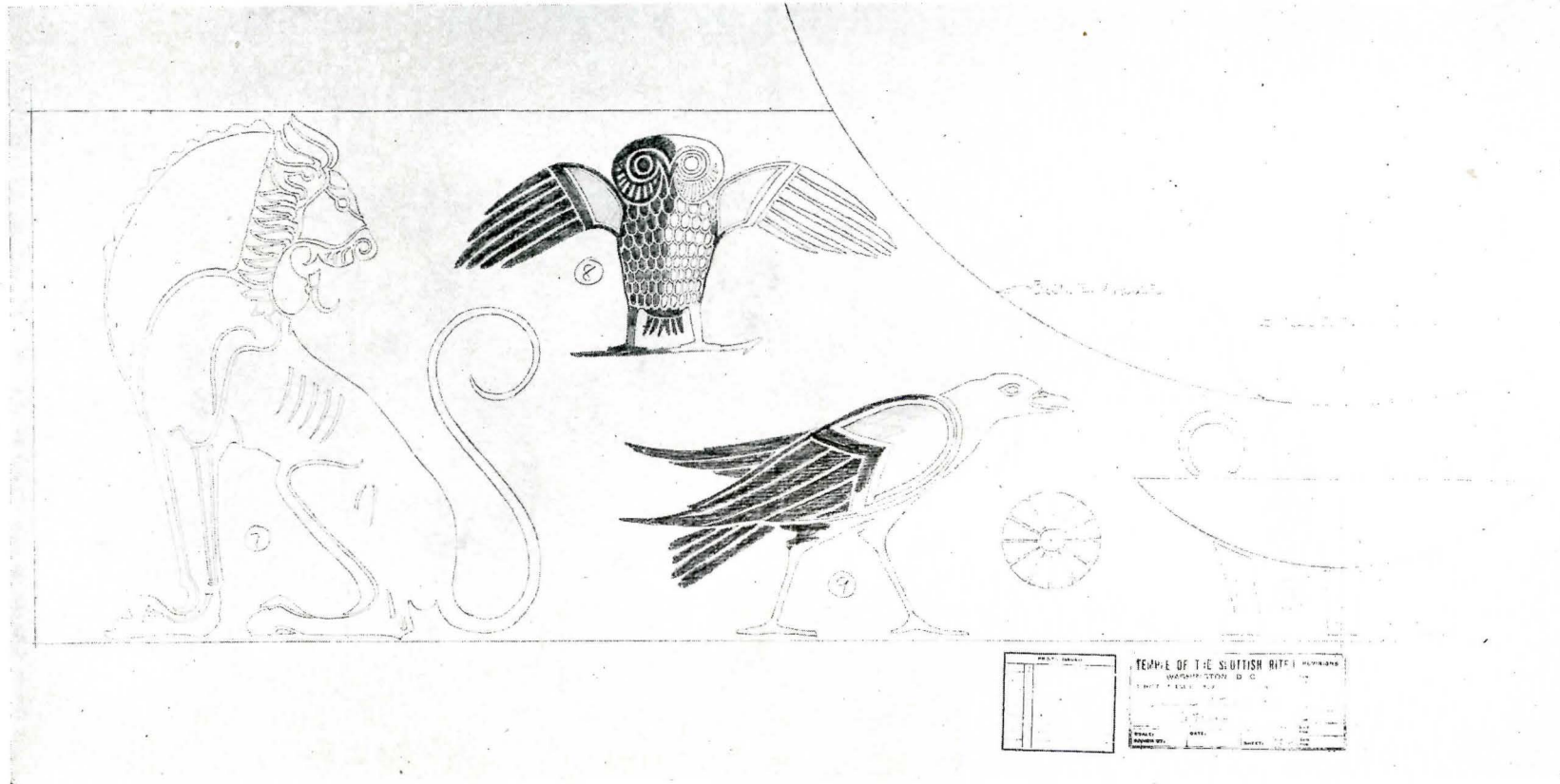
Reproduced as the artist's design.

Reproduced as the artist's design.

PAINTED CEILING BY ROBERT ADAM

ORIGINALLY PUBLISHED IN 1775 IN "THE WORKS IN ARCHITECTURE" OF R. & J. ADAM AND
 REPRINTED IN "THE DECORATIVE WORK OF R. & J. ADAM"

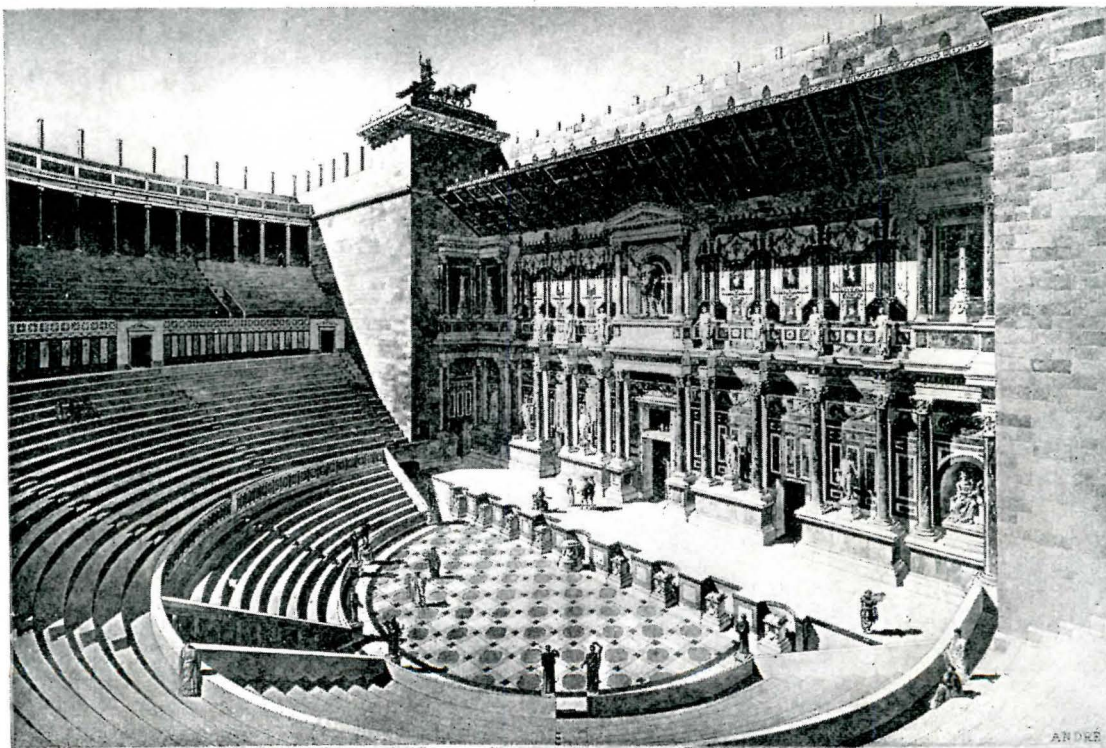
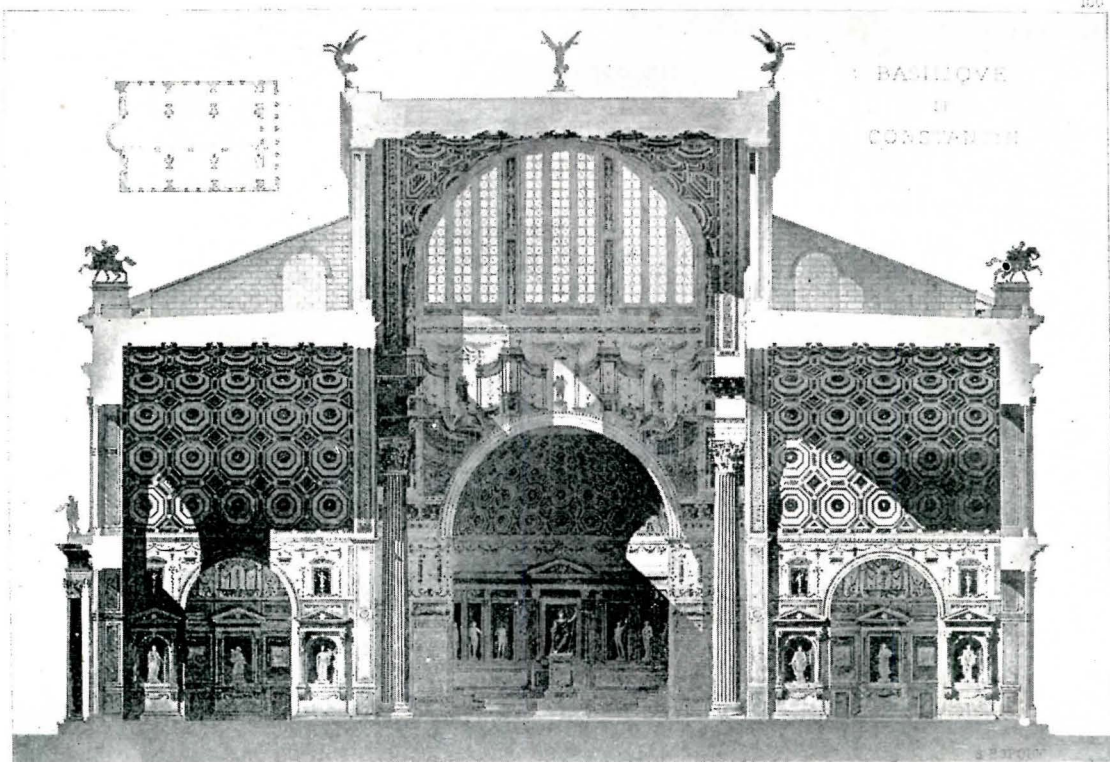
The ceiling represented by the plate illustration on the opposite side of this sheet was designed by Robert Adam, for the room known as the "Japanned Room" in the Queen's House.



ANIMAL STENCILS FOR ATRIUM OF THE TEMPLE OF THE SCOTTISH RITE
WASHINGTON, D. C.

JOHN RUSSELL POPE, ARCHITECT

The detail reproduced on the opposite side of this sheet is from the design for the painted frieze in the Greek manner, in the Atrium of the Temple of the Scottish Rite, Washington, D. C., of which John Russell Pope was the architect. The design of this frieze was inspired by existing Greek mural painting and by the decorations found on ancient Greek vases.



THEATRE OF OSTIA AND BASILICA OF CONSTANTINE IN ROME

RESTORATION BY P. ANDRÉ AND H. D'ESPOUY. REPRODUCTION OF A PLATE FROM THE
"FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the opposite side of this sheet is shown a section of the restoration of the Basilica of Constantine after H. D'Espouy. This building was constructed by Maxentius and finished by Constantine about 312 B. C. This basilica was formed in a rectangle one hundred metres long and seventy-six metres wide. At a later date the orientation was changed and a new door was opened and a new apse was built.

The Theatre of Ostia at Rome, which is the subject of one of the restorations reproduced over the page, was built in the Early Imperial Period. It was restored by Septimius Severus in 196-197 A. D. It was also restored in the Fourth or Fifth Century A. D. The remains of this building are on the southeast side of the old forum of Ostia, a village on the left bank of the Tiber at its mouth.

PRESENTATION DRAWINGS, PART I

BY FRANCIS S. SWALES

THE ambiguity of the adjective in the above title may touch upon a sensitive place in many an architect's memory. Therefore it will be stated at once that it is intended to refer only to the methods of making the drawings which in the ordinary case are shown to the client, and in the special case of a competition are submitted to an expert jury.

It has been alleged that H. H. Richardson once stated the three principal considerations in the practice of architecture to be: First, get the job; Second, *Get the Job*; Third, *GET THE JOB*. The fulfillment of these "considerations" is the end towards which presentation drawings are among the principal means.

In the special case of approved competitions, the method of presentation is usually limited—so far at least as words can limit imagination and prevent inventions to circumvent the limitations—by the "Conditions of Competition." The wisdom and logic of such limitation of expression of ideas, to a standard medium is doubtful. Its object is, of course, to prevent the brilliant draftsman from using his skill to deceive the jury into believing that the design is better than it really is. But, that the professional expert should be regarded as so gullible as to require protection of his judgment of design from the tricks of the crafty draftsman, while it is not deemed professionally improper to resort to everything that clever presentation can accomplish when submitting designs direct to the client, seems ethically indefensible. But the rule exists, and presentation must be kept within the

letter of the condition, under these circumstances.

Among conditions frequently made are, that the drawings shall be made "in India ink and no other color"; "The walls and solid supports are to be blacked in solid"; "No floor or ceiling patterns and no arrangement of furniture are to be shown on the plans"; "Dimensions and areas in square feet are to be shown in each room"; "The perspective to be in line only," etc.

Among problems discovered as regards presentation are those of interpretation of the meaning of

such terms as "India ink." English interpretation is full strength prepared ink; diluted ink is regarded as "gray." English competition drawings are usually restricted to "black lines on white paper," and openings in the elevations are often required "to be blacked in solid." Such presentation has called forth many technical evasions of the intent of the conditions. One of these is to employ very wide lines generally, and exaggerate the silhouette and the edges which cast shadows. The use of black lines varying from

approximately one-thirty-second of an inch to fully one-eighth inch wide is frequent. Sash bars, if scaled, would measure three or four inches wide. The heavy rendering thus obtained causes a wholly false impression as to the appearance the building will have in execution; but it tends to diminish the violence of the blacked-in openings and give some suggestion of relief to projecting parts. (See Figure 1.) Another scheme is to use very heavy lines around projecting features or those in the foreground. (See Figure 2.) Such "stunts" are apt

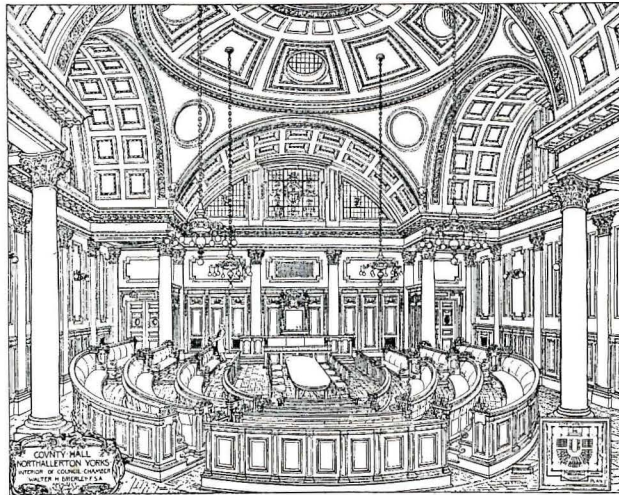


Figure 2. An English Presentation Drawing, showing the use of heavy lines for relief. From *Academy Architecture*, London

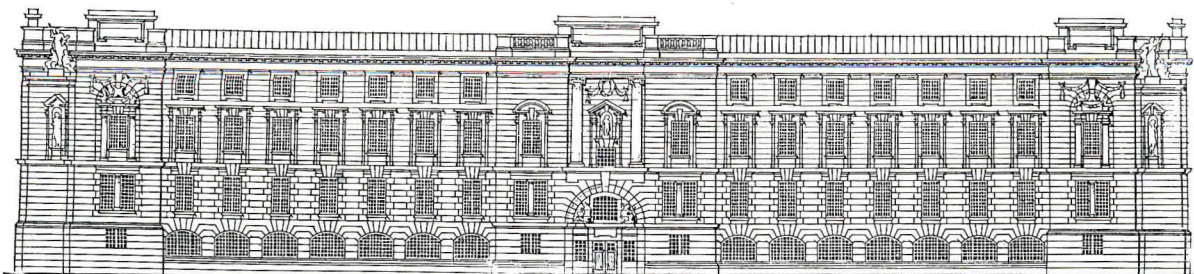


Figure 1. An English Competition Drawing, Illustrating the Use of Very Wide Lines Generally and the Exaggeration of the Silhouette and of Edges Which Cast Shadows. From *British Competitions*

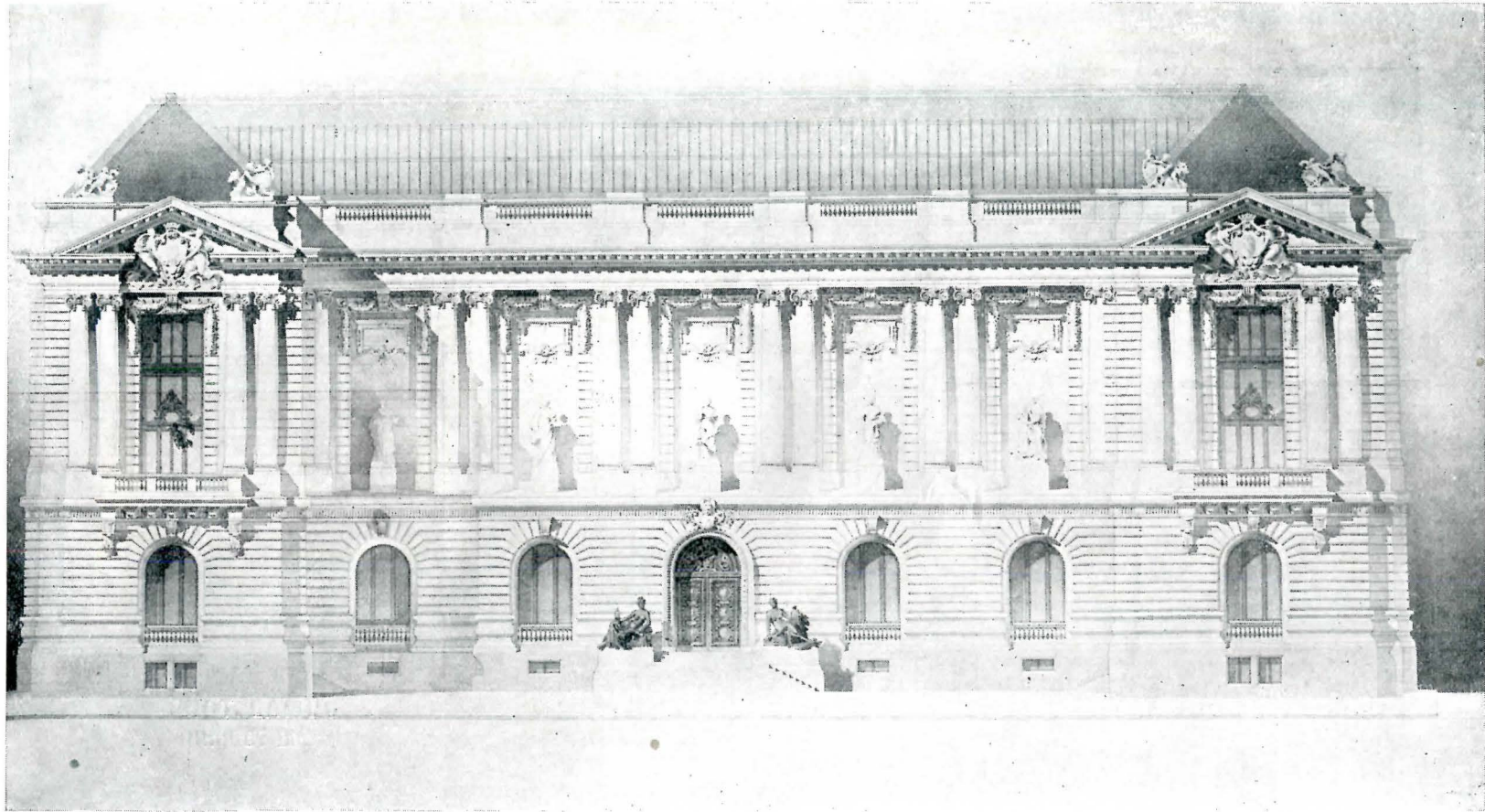


Figure 3. A Typical French Presentation Drawing. Made With Fine Lines in Rather Light Diluted Ink. The Washes Are So Nearly the Same Tone That the Lines, in Effect, Disappear. Clear and As True to the Ultimate Result as Possible

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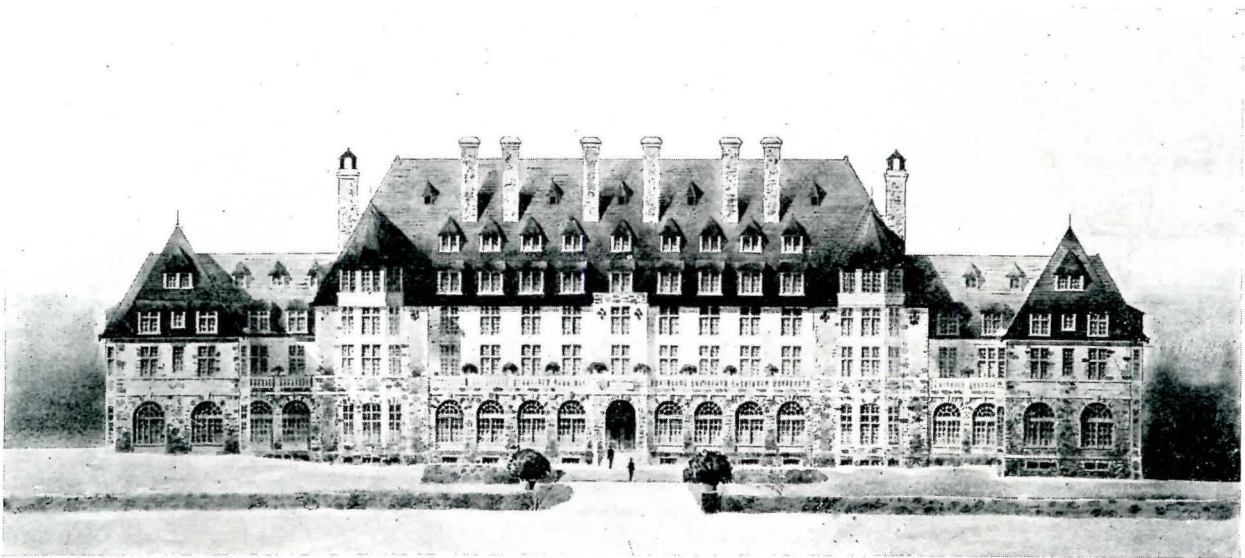


Figure 4. Elevation Rendered in Pencil and Wash. One of Two Alternatives Submitted to the Client. This is the Approved Design for the Canadian Pacific Railroad Hotel Glacier, Glacier, B. C. Francis S. Swales, Architect

to make the drawing look like a pattern for leaded glass; but they meet with the approval of the average English "Assessor." (One judge only, instead of a jury, is customary in British competitions.)

The French interpretation of an India ink drawing is a drawing in line or wash made with a diluted tone of black ink or color; warming or cooling with some other color is not considered a departure from the conditions. French preference is for such rendering and drawing as is clear and as true to ultimate results as the draftsman can make it. (See Figure 3.) Whether the French architect's drawing is submitted to a jury or direct to his client, the idea of sending it, later on, to the *Salon* is, as a rule, in the back of his mind. He

seldom employs the full black line. His best drawings are made with fine lines in rather light, diluted ink. Washes are of so nearly the same tone that the lines, in effect, disappear. Shade-lines are seldom used, and, except in sections, a heavy outline is not approved. The washes are put on lightly and gone over several times. Perhaps a "trick" worth noting is the careful leaving of the high lights along the edge of the building towards the source of light, the upper edge of string and base courses, cornices and other projections. Of course the same trick can be done with Chinese white, after the drawing is finished as regarded the principal washes; but the depth and transparency of the true water-color gives way to the smear of *gouache*.

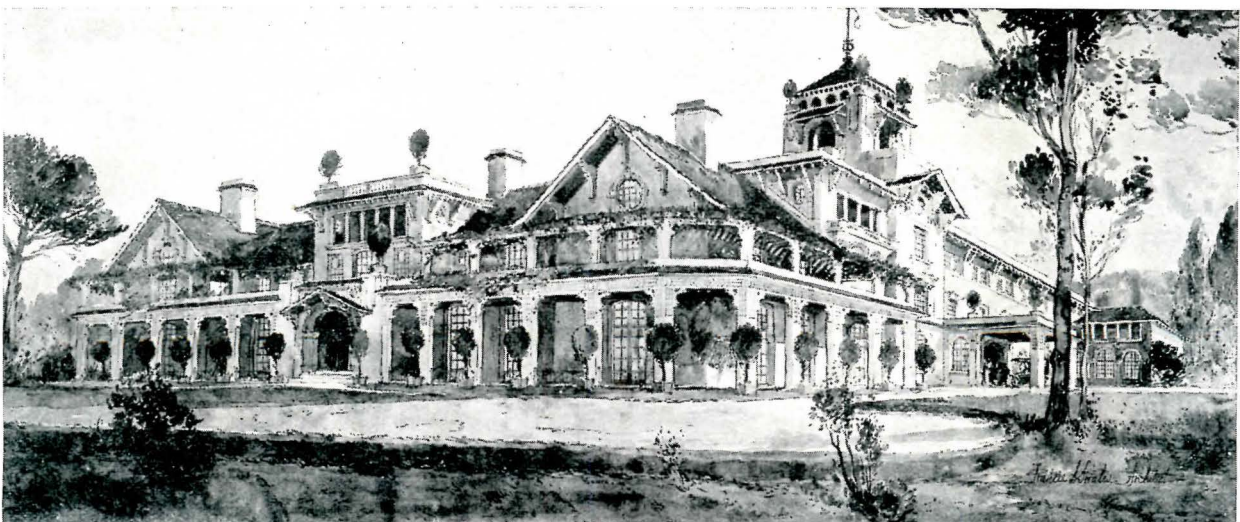


Figure 5. Free-hand Sketch Design. Rendered Almost Entirely With Brush. Made Before Any Elevations Were Prepared. Working Drawings Were Authorized From This Sketch. Château du Tonquet, Le Tonquet, Pas de Calais, France. Francis S. Swales, Architect

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The Frenchman, with the *Salon* in mind, will prefer to take the additional pains necessary to leave the high-lights.

From the business point of view both the English and French methods and technique possess advantages. The English drawing gives the impression of a vast amount of work—every line stands out like a sore thumb—and a lay member of a building committee is satisfied that a sufficient amount of hard labor has been exerted to

win the job. On the other hand, the French drawing displays more skill and is more effective with the attentive and interested client who has some true understanding of architecture. Fortunately for the architects in France, their clients know more of the actual work required to produce a good drawing than is the case with British or American clients. Almost any intelligent Frenchman takes an interest in an architectural drawing, and understands it. An average French business man takes personal pleasure in the possession of a well-made drawing, will preserve it carefully and show it with pride years after it has ceased to have any significance as a means to an end, but the American layman who takes more than a passing interest in such things is a very rare bird.

In general, there is not much call in American private practice, for the types of drawing required for public competition. In ordinary practice we are called upon to design one of two or three broad types of buildings: those built for pride or pleasure, and those built for profit and those partaking of each. To the class first mentioned belong churches, residences, monuments, club houses and the finer banking houses; to the latter, factories,

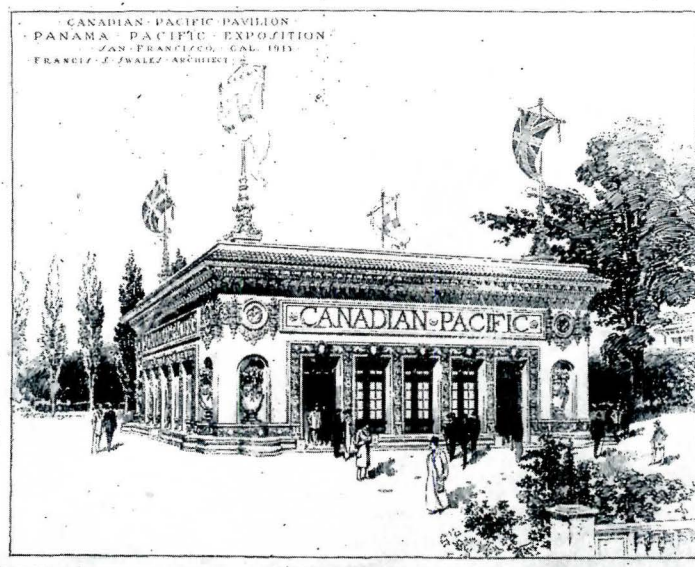


Figure 6. Preliminary, Pen-and-ink, Sketch for Advertising Pavilion at Panama Pacific Exposition, San Francisco, Cal., to Suggest Enrichment Conforming to the General Style of the Exposition

the time is short and the building large, strong lines and washes and unhesitating use of color offer the quickest route to the objective, which is to be on time with "the sketch." For quick, effective elevations for the consideration of company officials—more or less competently advised professionally—rendering in monotone wash, with little or no suggestion of trees or *entourage* (Figure 5), enables the design to be presented fully without too much commitment to detail, or raising the question of color. In the case of the drawing made for purposes of securing funds—promotion drawings—the less drawing of detail the better. The points to be considered are not suitability to a Paris *Salon*, nor whether it creates the impression of a lot of faithful work done; and its appeal to the hard-headed business man is of secondary importance to producing an effect that will enjoy popularity. I do not mean popularity among archi-

commercial, and collective - residential buildings; while somewhere between the two fall hotels, theatres and the better class of apartment houses. The type of client and type of building will both count in the decision as to the type of drawings to be presented; but the size of the building and the time available are the essential considerations in the practical politics upon which all but the most exclusively artistic architectural practices depend; therefore, if

the popularity that leads to the sale of a great many reproductions of the drawing in the form of picture post-cards, and "incidentally," to the sale of stock in the enterprise. Two things are of prime importance in connection with such work: *speed*, to secure instructions to proceed with working

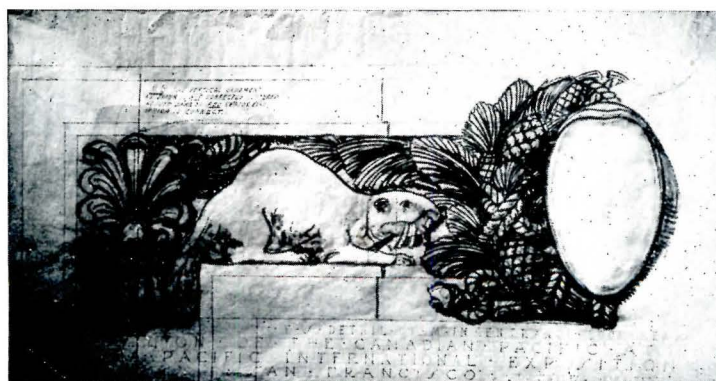


Figure 7. Detail of Ornament Over Windows and Doors of Exposition Pavilion for the Canadian Pacific Railroad. From full-size Charcoal Drawing.

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drawings and make secure the "architect's contract" before the great mass of fly-architects learn of the scheme and swarm to the sugar barrel with their "clients who are prepared to take stock provided—" Well, of course, that they are given the architectural work! The second matter of importance is to give the drawing the advertising power of a good poster: *color* is essential which, in addition to arresting attention, must also be sufficiently attractive to engage it. Whenever the subject permits the use of trees or water in the setting, the most should be made of them in the picture. While artist-painters often paint their studies with a water-color brush, very few architects seem to be able to sketch their ideas in perspective without first setting up elevations, then going through the tedious process of projecting their perspective to points.

It is particularly strange, because in any clear conception of a designer he must be able to visualize it from any point of view. To draw his idea in a broad medium, such as charcoal or water-color is a much more natural means than to first go through the mechanical resistance of laying it out with T-square and triangles in plan and elevation. With one exception, I know of no architect in this country who appears to use his brush for direct sketching of his designs; but it is a method capable of extensive use, particularly for the indication of buildings set among trees.

It often happens that certain presentation drawings are made for purposes apart from job getting. In the instance of the perspective drawing for the little exposition pavilion (Figure 6), the

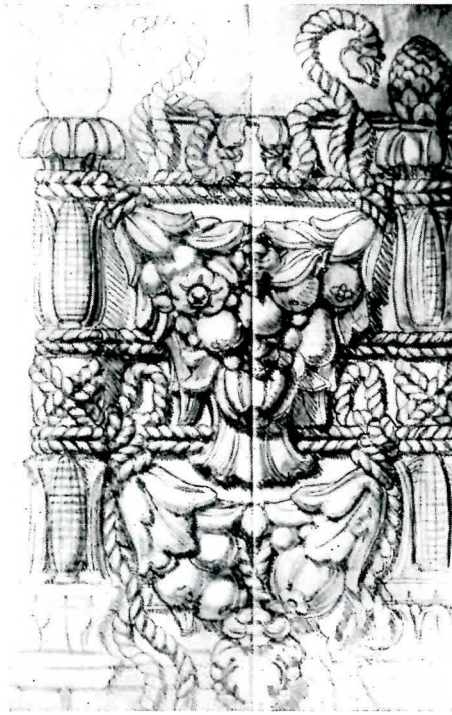


Figure 8. Detail at Corner of Canadian Pacific Railroad Pavilion. From Charcoal Drawing

"sign" to that of an "inscription," in consideration of being permitted to increase the height of the walls by adding a parapet (Figure 9), thus gaining dominance of the group of three buildings and an improvement in the color scheme. Pen-and-ink avoided the color issue and emphasized the points regarding enrichment of detail. This medium is most attractive for representing buildings

of light tones against dark foliage—which it seems well to introduce into the drawing, even when there may be none near the actual building.

Note.—In the next installment of his article on "Presentation Drawings," which will appear in the September issue, Mr. Swales will point out the types of indication best suited to different circumstances and different kinds of buildings. The illustrations will be from examples of rendering that have been used successfully in actual practice.—Ed.

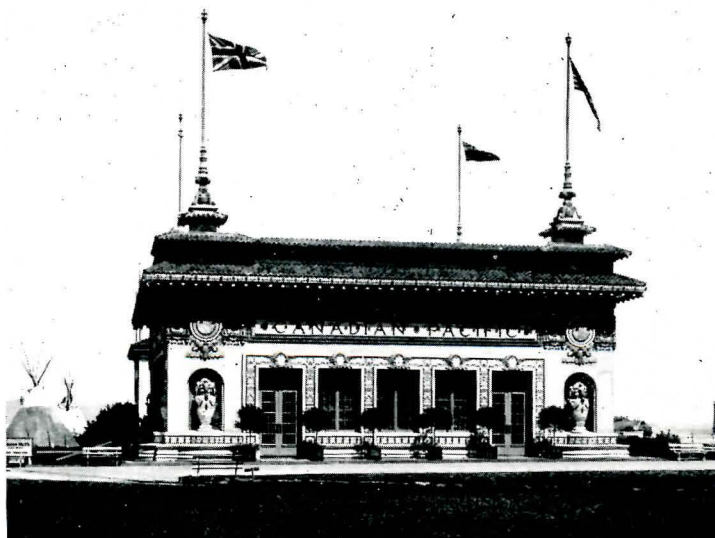


Figure 9. Photograph of Exposition Pavilion Shown in Preliminary Sketch

Figure 6. Francis S. Swales, Architect

PENCIL POINTS

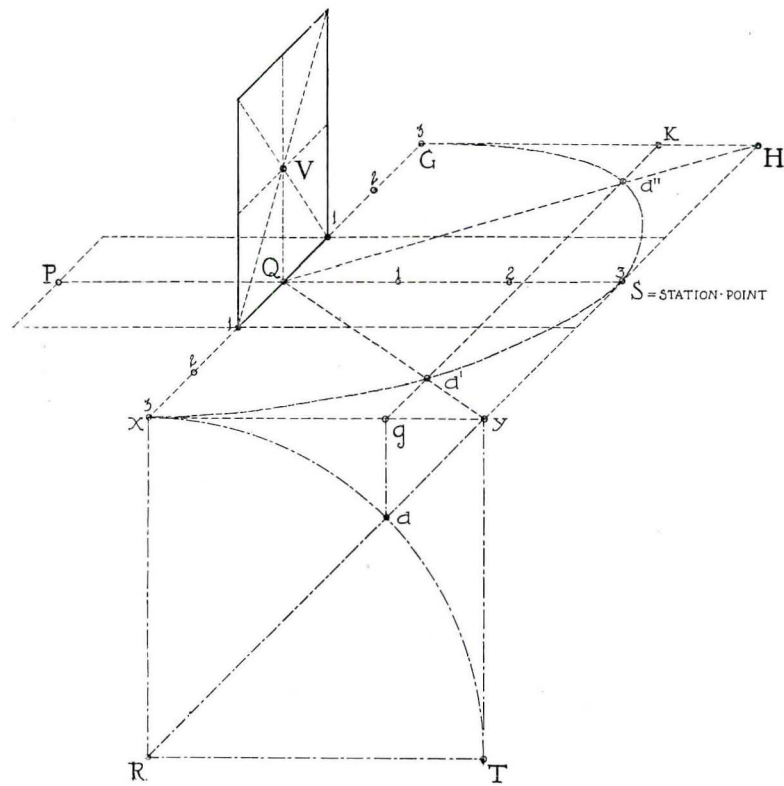


FIGURE 11

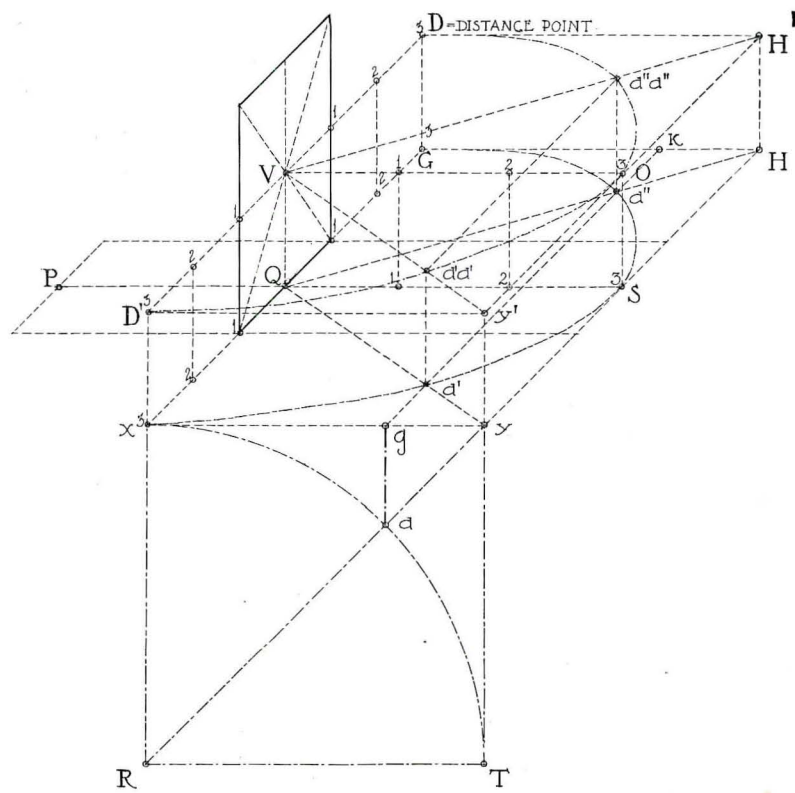


FIGURE 12

PERSPECTIVE DRAWING, PART III

BY PAUL VALENTI

PROCEEDING with our problem we learn that we can also reduce the geometric plane to the plane of our drawing by rotating this geometric plane on the axis CF (See Figure 10), from its original horizontal position beyond the picture plane to a vertical position on the same plane as the picture plane or $mnCF$ —original horizontal position, $m'n'CF$ —new vertical position. Returning to our former condition of D , or distance $= 1\frac{1}{2}$ the height or width of picture plane, we will proceed to construct in parallel perspective (See Figure 11) the three planes under consideration, i.e.—The plane containing the observer, the transparent or picture plane, and the geometric plane; and then reduce these three planes to the one of the picture plane which, it has been observed, is the only one at our disposal. Example (See Figure 11): Proceed as in Figure VI, Part I, and construct the three planes establishing S —station point $1\frac{1}{2}$ times the height of picture plane distant from the plane (See Figure 11). On the ground line mark off 3 spacings equal to $\frac{1}{2}$ width of picture plane both to the right and to the left, to points X and G respectively.

Construct plane $XGYH$ by uniting same with straight lines, thereby forming two squares in parallel perspective, $XYSQ$ and $HGQS$. Draw diagonals YQ and HQ . On line XY construct a perfect square $XYTR$ and draw diagonal RY . Centering in point R describe one-quarter of a circle TX . At the intersection of this arc TX and the diagonal RY at point a raise a perpendicular to line XY to point g , thence at an angle of 45 degrees to line GH to point K . We will find that this will intersect the diagonals YQ and HQ at points a' and a'' respectively. Starting from point X and passing through points $a'Sa''$ to point G we will have described a half circle in parallel perspective and we will observe that $QS=QG$, as they are of equal length; G being the same distance from Q as is point S . The same applies to point X with relation to point S , both of which are the same distance from point Q . This is to show that we

can center in point Q and rotate point S either way, and bring it to a position on the ground line, either in point X or in point G which are equidistant from point Q . Advancing a step (See Figure 12), at points $XGHS$ and Y on the ground plane we will raise perpendiculars equal to QV (or distance from ground line to horizon line) to points $D'DH'O$ and Y' respectively. Also from points a' and aa'' in the ground plane to $a'a'$ and $a''a''$, repeating the operation as below, forming two squares in parallel perspective $D'Y'VO$ and $DH'VO$, construct the diagonals $Y'V$ and $H'V$. Starting at point D' and passing through points $a'a' - O - a''a''$ to point D we will have described another half circle in the plane of the horizon corresponding exactly to the one drawn below in the ground plane. This again will enable us to see that by centering in point V we can rotate point O either to the right or to the left, bringing it from its original position outside the picture plane to a new position either in point D' or D on the horizon line; and what is most important in the latter two cases, these points are in the same plane containing the picture plane. • See Figure 12.

OWING to the fact that there have been no meetings of any of the organizations represented on the joint committee of architects and draftsmen which drew up the recommendations looking to an improvement of the conditions incident to the relations of the architect and the draftsman, a summary of which was published in our last issue, there is to date nothing further to report. But when these organizations resume their meetings at the end of the summer season this report undoubtedly will be made the basis of a definite plan of action.

There is every reason to believe that this plan will be carried forward vigorously, for the interest in the subject has been growing rapidly during the past few months and that its importance was widely appreciated as was indicated by the serious and open-minded discussion of the matter at the annual convention of the American Institute of Architects.

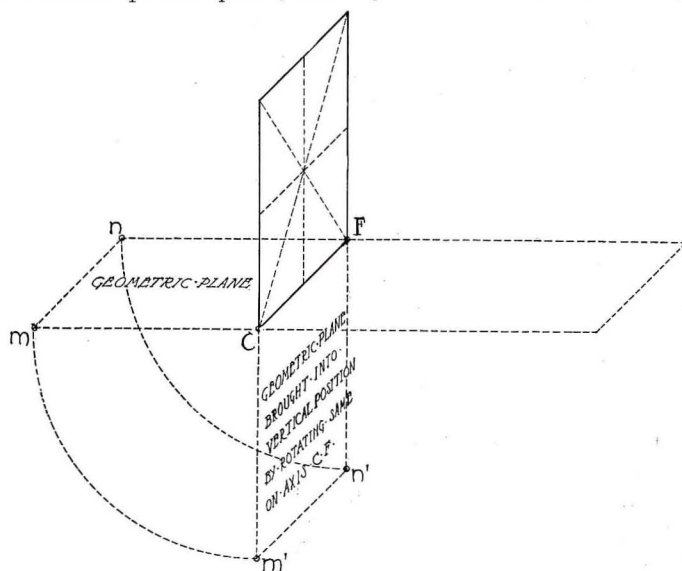
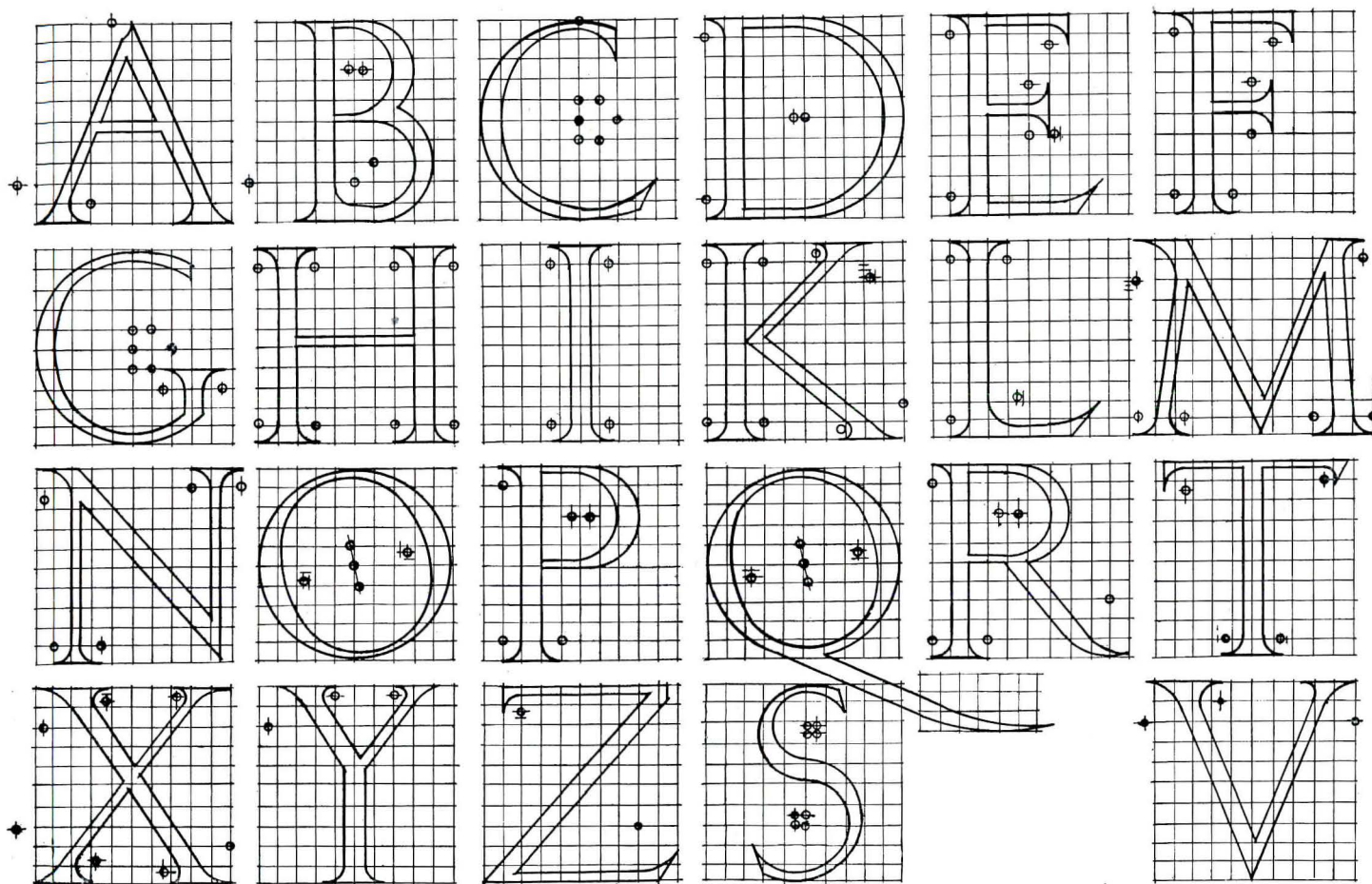


FIGURE 10



ALPHABET BY GEOFFROY TORY, (1480-1533), CALIGRAPHER TO FRANCIS I.

The alphabet redrawn above from the old book of Prunaire, "*Les Plus Beaux Types de Lettres*," differs, as will be noted, from the alphabet attributed to Leonardo da Vinci, reproduced in the June issue of this magazine, in that the letters are more slender, the widest strokes being one-tenth the height of the letter instead of one-ninth. There are also decided differences in the forms of the letters. Geoffroy Tory edited the *Champ-fleury* treatise on letters, the purpose of which was to standardize and improve the forms of French letters.

PENCIL POINTS

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MODEL MAKING IN THE STUDY OF ARCHITECTURE AT COLUMBIA.

NEW methods of teaching, designed to remove "the malicious influence" which pure paper has upon the imagination of the student and to avoid mistakes in the design of buildings which would stand as glaring faults through many generations, are now being employed in the School of Architecture at Columbia University.

The student is no longer restricted to architecture portrayed wholly on flat paper, but is required to construct models which bring into play the same skill and perspective demanded in the actual practice of the architectural profession. Model making as a means for instruction in architecture is a long step in advance and is in accord with the most advanced practice in the profession.

"It has long been appreciated that the student of architecture is trained largely in a feeling for architecture presented entirely upon paper, and in the form of a plain elevation drawing," H. Vandervoort Walsh of the Columbia teaching staff said, in describing the system of model making now used to train Columbia architectural students.

"The student never has the opportunity which the practicing architect finds of observing his design completed in all three dimensions. This privilege only belongs to the architect who has secured his commission, and has had his building erected at the expense of his client. Many architects have been astonished and surprised at mistakes in their design, due to the inability of drawings to fully represent the truth as it would appear in three dimensions. When the building is completed he has no opportunity of changing the form, and his mistake must stand as a glaring fault through many generations.

"The student of Architecture who has the opportunity of designing a building or a group of buildings first on paper, and then completing the same in the form of a model, has an opportunity to observe the mistakes of his design without the cost of erecting the building. Moreover, he has removed the malicious influence which pure paper design has upon his imagination.

"Many a designer who has unusual skill in drawing and rendering, and who is blessed with an extremely fertile imagination is often able to mislead himself with his pictures and comes to regard the thing he has erected on paper as beautiful architecture, while if it were con-

structed in three dimensions, in the form of a model, it would appear entirely absurd and ridiculous.

"The manner in which model making is carried on in the School of Architecture of Columbia University is extremely simple. A squad of students is given a problem as say 'A Club Colony in Florida.' Each member of the squad then tries to solve this problem on paper according to his own ideas. These sketches are then judged by a jury consisting of the critics in design, and the best design is selected for the model. The students are then assigned to various parts of the model, some to making the landscape, others this building, and others that building of the group.

"The models of the buildings are constructed entirely of heavy illustration board. All elevations are drawn upon it, and minor projections, mouldings, windows, doors and ornamental features of this type are rendered not in the usual architectural manner, but with a very hard, contrasting technique, so that these features will stand out strongly and realistically in the completed model. Large projecting members like cornices, columns, chimneys and dormers, etc., are made from anything that the student may be clever enough to use.

"In fact, the ingenuity displayed in the construction of a model is one of the fascinating features of the work. As for landscape gardening, grass made from stained saw dust, trees made from sponges, colonnades made from tooth picks, water falls and fountains made from glass are a few suggestive ideas of the possibilities in these models."

THE DALLAS ARCHITECTURAL CLUB

The Dallas Architectural Club was organized June 2, 1920. The purpose of the organization is, primarily, the bringing together of individuals interested in Architecture and its allied arts, in and about Dallas, for the general good of the profession in the community.

The active membership is limited to architectural draftsmen. The practicing architects of Dallas have been invited into membership as "patrons" of the club, while contractors, material men and others indirectly interested in the profession may obtain membership as associate members.

It is the intention of the club to maintain an atelier beginning in the fall and, by means of exhibitions and talks on things architectural, to stimulate the public as well as the professional interest in Architecture.

Club quarters have been obtained in conjunction with The Arts Club of Dallas at 108 North Poydras Street, where meetings are held on the first and third Mondays of each month. Mr. John A. Williamson is secretary.

The post-war construction activity in the southwest has drawn to this section from all over the country, men of ability—draftsmen and practicing architects—to augment the forces previously here. This fact, together with the lack heretofore of strong architectural clubs in this locality, makes the Dallas organization feel that it is filling a want. There is now as great activity and progress in architectural lines as in any other line here in this expanding southwestern country, and it is the hope of the Dallas Architectural Club that, with Dallas as its home, its work as outlined may prove to be of some service to the profession in this locality.

There is quite a bit of interest in PENCIL POINTS among the members of the club, a number of whom have begun as subscribers with the first issue. We all feel that, if that first issue is an indication of what is to come, a good deal may be expected of this new publication, especially as regards its work as a journal of the country's architectural clubs.

Beginning with the cooler months of Fall, the Dallas club has a strenuous campaign mapped out, and we welcome the opportunity, which PENCIL POINTS extends to us, of telling similar clubs the country over, about our work and progress.

RALPH BRYAN,

Chairman of Publicity Committee.

PENCIL POINTS

SKETCHING AND RENDERING IN PENCIL

(Continued from page 8)

help you to decide the point from which the drawing can best be made. Once the subject has been chosen and the point from which it is to be drawn decided upon, we are ready to block in the proportions of the sketch.

At this point it is as well to remind the student that it is more difficult to learn what to leave out of a drawing than what to put in. As we minutely examine any object in nature we see an overwhelming mass of small detail. Even as we sit in our rooms and glance around we find, if we search, thousands of spots of light or shade or color. These tiny spots are the many lines of the delicate graining of the wood, the hundreds of partly-visible threads from which the hangings and upholstery materials are woven, the myriad indentations and projections of the masonry and plaster.

It is hardly necessary to say that it would be impossible to correctly indicate each of these spots on a small sheet of paper, even if it were desirable to do so. Instead we must try to represent the effect of the mass as a whole, the effect that we get not when we hunt for such details, but when we enter a room and look around in the usual way. Even if we do look directly at some object such as a chair in a room corner we see very little detail with the exception of that in the chair itself and in those objects adjacent to it. Even in these objects we are not conscious of each tiny spot, but instead notice only the broad general tone and effect. The chair, being directly in the range of vision, is the center of interest and the other objects become more and more indistinct and blurred the farther they are from this center. It really is a surprising thing what a small area we are able to see plainly when looking in one direction only. We are so accustomed to shifting our eyes constantly from one object to another that we fail to notice this limitation. Stand within ten feet of a door and gaze intently at the knob. Without shifting the eyes, are you able to see the top of the door distinctly? If you raise the eyes and look at the top of the door, do you see the bottom plainly? Go to the window and look at some building across the street. Fix your attention on an upper window or chimney or some part of the roof. Are not the lower portions of the building blurred and indistinct unless you shift your gaze to them? When you look at the foundation you do not see the roof distinctly.

Now in making a drawing it is assumed that the artist is looking in some one fixed direction. He gazes at some interesting object or, if the entire object is too large to come within his range of vision, he selects some prominent feature which then becomes the center of interest or focal point. In making the drawing more detail is shown near this center of interest than in the other parts, which are allowed to become more and more indistinct towards the edges of the picture, just as they appear in nature. Every drawing should have this center of interest or focal point and all else should be subordinated to it.

Now turn to the illustration, Figure 1. Cover the lower two drawings and study the upper drawing "A." In this sketch the spectator was looking towards that part of the old farm buildings nearest to him, so this becomes the center of interest or focal point; all else is subordinated.

Look at sketch "B," first covering up sketches "A" and "C." Here the spectator's eye has turned towards the center of the building and interest centers in the

large doorway and adjacent walls—here the details show most plainly and here are the strongest accents of light and shade. The two ends of the building become rather blurred and indistinct; they are subordinated.

Now uncover "C" and cover "B." In "C" the spectator is looking still farther to the left and, even though that portion of the building is some distance from the eye, it is the portion on which the eye is focused, hence the strongest contrasts and accents are there and the rest of the building is subordinate.

Turn to Figure 2, the street scene. In the drawing at the left the spectator is looking at the upper part of the tower; that becomes the subject of the sketch, the focal point or center of interest. The street is blurred, the detail is softened. In the second drawing the spectator is looking down the street; the archway becomes the center of interest and the tower is almost lost against the sky. Now in drawing such a subject as this street scene from nature the student is likely to get into difficulty. He looks first, perhaps, at the tower and draws that. If he stops there all well and good; the tower becomes the subject of the sketch. But if he lowers his gaze to the street and adds the archway to his drawing it is quite possible that this will form a second focal point which will compete with the tower. Then the drawing will be a failure for the eye will jump back and forth between the tower and the archway and the unity will be destroyed. In such a composition as this, where there are two possible centers of interest, be sure that one is subordinated to the other.

Now turn to Figure 3, the little interior. Where is the center of interest represented in the drawing at the top of the sheet? Where does the eye see the most detail and the strongest contrasts of light and dark? The window with its seat is outside the focus and it is only when the eye turns towards it as it does in the lower picture that it becomes the center of vision or focal point. In this latter case the mantel is out of focus and might be omitted from the drawing; in fact, this room could be made the subject of two interesting sketches, one of the fireplace and one of the window and seat. In such a room as this we can well imagine that in the evening the fireplace with the family drawn up enjoying a cheerful blaze would be in all ways the center of interest in the room, while in the daytime the window with its seat would doubtless gain greater attention.

Let it be plain, then, that in starting a drawing it is important to first of all select something of interest to draw; next, it is necessary to find the best point from which the drawing can be made; then we must analyze our subject to determine the center of interest or focal point, and having done this we must use every care to subordinate all those parts which have little or nothing to do with our subject, and which might detract from the center of interest.

THE AMERICAN ACADEMY IN ROME

BY DR. FRANK CRANE

THE American Academy in Rome is an organization formed for the purpose of cultivating American genius.

It is based on the theory, which one hesitates to put forward these days, that a nation needs Beauty as well as Utility, Taste as much as Money, and Artists as well as Bricklayers.

Advance in culture comes by folding modernity back upon the antique. The past is not a huge mistake, it is the greatest of teachers. Each generation mounts higher by standing upon the shoulders of the preceding generation.

In all the world there is no teacher like Rome. It contains the wrecks of three civilizations. It is a museum of dead ideas. It is the mother of civilization.

The American Academy in Rome, now celebrating its twenty-fifth anniversary, is well established and is backed by Americans of distinction.

Note.—The next lesson will discuss pencil handling, and will explain certain methods of obtaining contrasts for the purpose of holding interest at the focal point. In the meanwhile, the student is urged to prepare a number of simple sketches in outline, in order to have them ready to render next month.

PENCIL POINTS

It is trying to raise a million-dollar fund. This will be invested in youth, in genius, and in ability, which are better than banks and oil wells.

Those who have money and are inclined to encourage art would much better put their money into the red blood of aspiring youth than into the grey stones of museums.

The Academy does not propose to help all students, as we commonly understand the meaning of the word. It helps those who have already acquired a preliminary education and technique; to these it offers the opportunity to become masters.

In other words, it is to help those who have helped themselves; to encourage those who have already demonstrated their powers; and this is the best charity.

No country in the world needs genius more than the United States, and none neglects it more.

We should make things easy for the artist. It is good doubtless for the merchant to struggle with privation and fight his way through poverty to success; but it is liable to extinguish the spark in the artist. He should be removed from physical hardships and given favorable environment.

This the Academy aims to do. It sends young artists of promise, who have demonstrated their caliber, to Rome, the best of all artistic atmospheres.

OLD-TIME NEW ENGLAND.

Under the title *Old-Time New England*, the Society for the Preservation of New England Antiquities issues a quarterly magazine that is devoted to ancient buildings, household furnishings and other subjects of an historical character relating to the people of New England. It is published by the Society at 2 Lynde Street, Boston, Mass.

The current number, dated July, contains an interesting illustrated article "A Seventeenth Century New England House," by Donald Millar, author of "Measured Drawings of Some Colonial and Georgian Houses." The building referred to is The Parson Capen House at Topsfield, Mass., which is not far from Salem. It is spoken of as one of the best-preserved houses of the earlier Colonial Period in New England.

The same issue contains, among other interesting matter, photographs of the Representatives Chamber and of the Senate Chamber in the Old State House at Hartford, Conn., both designed by Charles Bulfinch. The progress in the restoration of the Abraham Brown, Jr., House at Watertown, Mass., is also shown by photographs.

Interesting pictures are shown of the Governor Christopher Gore House, at Watertown, Mass., and of other historic buildings.

Among the reports on old buildings of historic or architectural interest are found mentions of the following buildings: The Choate House, Essex, Mass.; The Webb House, Wethersfield, Conn.; Old Meeting House, South Wellfleet, Mass.; Purcell Langdon-Lord House, Portsmouth, N. H.; Fort Western, Augusta, Me.; The Shirley-Eustis House, Roxbury, Mass.; The Balch House, Beverly, Mass.; First Parish Church, Roxbury, Mass.; The Putnam-Clark House, Danvers, Mass.; The George Jaffrey House, Portsmouth, N. H.; Bos'n Allen House, Newcastle, N. H.; Cutler-Bartlett House, Newburyport, Mass.; Richard Hazen House, Haverhill, Mass.; Lindall-Barnard-Andrews House, Essex Street, Salem, Mass.; Gore House, Waltham, Mass.; Davis-Freeman House, Gloucester, Mass.; and Miss Short's House, Bridge Street, Salem, Mass.

These reports on old houses, some of which are being restored and preserved, form an interesting guide to anyone interested in the early architecture of New England and desiring to visit some of these buildings for the purpose of study.

Old-Time New England contains many illustrations from photographs and from old prints that are of interest from the standpoint of a student of colonial architecture.

PERSONALS

H. R. DIAMOND, formerly of the office of Donn Barber, is now with York & Sawyer.

A. S. MIDDLEHURST who has been in Indiana for some time is returning to New York City.

BEVERLY S. KING and SHIRAS CAMPBELL have removed their offices from 103 Park Avenue to 36 West 40th St., New York City.

STORK & KNAPPE, Architects, specializing in school work, have removed their offices from Palisades, N. J., to King Street, Ardsley, N. Y.

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

ROSSEL EDWARD MITCHELL & COMPANY, Ltd., Norfolk, Va., have moved their main office to 817 Fourteenth Street, N. W., Washington, D. C.

PETER J. BITTERMAN, JR., formerly of the office of J. H. Phillips, Architect, is now with John D. Emack Company, 17 East 49th Street, New York City.

GUY A. CARPENTER has opened an office for the general practice of architecture in the Leggett Building, Fairfield, Iowa.

WARREN W. DAY and CLARK WESLEY BULLARD have formed a co-partnership. A general practice of architecture will be conducted under the firm name of Day & Bullard, at Champaign, Illinois.

JOSEPH A. HICKEY will continue under his own name, the business of Marshak & Hickey, architects, who have dissolved partnership, at 310 Strand Building, Providence, R. I.

COFFIN & COFFIN, Architects, have removed their office to 522 Fifth Avenue, New York City.

ROBERT J. HOTCHKISS AND MARK H. WHITMEYER have formed a partnership for the general practice of architecture and town planning, under the firm name of Hotchkiss & Whitmeyer, with offices in the Central National Bank Building, Peoria, Illinois.

Classified Advertisements

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

DRAFTSMAN WANTED.—Write Hill, Mock & Griffin, 229 Perkins Bldg., Tacoma, Wash., stating qualifications, experience, and wages desired.

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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.—We have under consideration, a school for the deaf and dumb, and would appreciate any information, or magazines that we can obtain pertaining to the requirements for schools of this character. L. J. M. Phoenix, Ariz. **Answer.**—The "Volta Bureau" at Washington has printed a series of bulletins. There is also a current Volta Review with information about the deaf and dumb. Information regarding schools, built in the United States for the uses of the deaf and dumb, can be supplied by this bureau.

Question.—I am very anxious to improve my knowledge and training in water-color and sketching. From the fact that I am now located in a small community I am handicapped and my opportunities for instruction and criticism are limited. The only chance I seem to have for the present would have to reach me through correspondence. Do you know of any such good system now in practice? A. M. R., Bozeman, Montana. **Answer.**—Several correspondence schools offer instruction in sketching and water color. Regular sketching excursions, drawing from nature, outdoors, are among the best ways to improve drawing and water-color painting and rendering. As to the technical handling of either pencil or water-color, that is best acquired by practice under the instruction of men who are able, and one must keep in touch with reproductions of drawings and water-colors in the better art journals. You should keep a good sketch book, and a portfolio of good clippings and pictures from the better art journals. Draw and sketch as often as opportunity affords. Get acquainted with the work of the best men and study their work by imitating, analyzing the drawing yourself for composition, and handling of the medium used. Drawing from photographs is a substitute for outdoor sketching of the subjects of the photographs, and gives you an opportunity to study more closely the detail and become familiar with a wide variety of subjects. But outdoor drawing and still life drawing are not to be neglected. There are books with good reproductions of the work of masters in drawing, and current architectural journals with their plates and photographs of drawings offer good subjects for study. Current journals also offer color plates, which can be used for models for drawing in color, and there are some books printed on the technical handling of the materials for color work.

Question.—I am hoping to build a small house for myself next spring, and desire information of books available. I am particularly interested in the Colonial farm-house type, like the Secor farm cottage at Toledo, Ohio, by Mr. Alfred Hopkins, and the house in the farm group by J. W. O'Connor for J. P. Grace at Manhasset, Long Island, illustrated in recent issues of THE ARCHITECTURAL REVIEW? **Answer.**—Good books on farms are: "Modern Farm Buildings," by Alfred Hopkins, Architect, price \$4.00, publishers, Robert McBride Co.; "Early Rhode Island Houses," Mason; "The Colonial Architecture of Maryland"; "Colonial Architecture in Massachusetts"; "Colonial Architecture in Salem," by Frank Cousins; "Examples of Domestic Colonial Architec-

ture in Maryland and Virginia," Cower (J. N.) & Soderholtz (E. E.); Crane (Edward A.) & Soderholz, Charleston, S. C. and Savannah, Ga.; "Stately Homes in America from Colonial Times to the Present Day," Desmond, Harry William; "Our Colonial Homes," Drake; "The Architecture of Colonial America," Eberlein; "The Colonial Architecture of New York," Richard Upjohn; "White Pine Series, Architectural Monographs on Colonial Houses," Russel F. Whitehead.

Question.—Will you give me names of any books or articles describing and illustrating California houses, bungalows, etc.? H. W. B., Norwood, Mass. **Answer.**—Among the California houses published in THE ARCHITECTURAL REVIEW are the following: J. W. Gillespie house at Monteceto, Cal., June, 1917; the Adams house, Piedmont, Cal., August, 1917. The Western Architect has published many photographic reproductions of small buildings in California. Their business office is at 215 South Market St., Chicago, Ill. Some good books on this subject are: "Individuality in Western Architecture," Gant; "Country House Architecture on the Pacific Coast," Howard; "Domestic Architecture in California," Kent; "Country House Architecture on the Pacific Coast," Muellgardt.

Question.—We are making sketches for a power plant. Can you give us sources of information regarding the construction and equipment of such a building. L. and M., Lincoln, Neb. **Answer.**—Specific questions regarding your problem of equipment might be addressed to the McGraw Hill Publishing Co., who publish "Power," "The Electrical World" and "The Engineering News Record," to the Gage Publishing Co., who publish the "Electrical World." For the architectural requirements see THE ARCHITECTURAL REVIEW of October, 1915, for the power house at Nela Park, Cal. "American Architect," July 14th, 1909, June 14th, 1911, and April 14th, 1909.

Question.—Please describe a method for getting the entasis of a column. **Answer.**—One of the convenient methods for arriving at the entasis of a column is described by Vignola. The entasis may begin one-third up from the base of the shaft of the column after capital and base have been marked off. Measure off one-third of the height of the shaft of the column. Draw one-half plan of the lower diameter of the column upon this line, with its center upon the axis of the column. Project the width of the necking of the column down upon this one-half plan. This leaves a part of the circumference of the plan of the column, in which the entasis is to be considered. Divide this portion into five equal parts, this gives five equidistant points on the curve. Divide the height of the shaft above the one-third mark into five equal parts. Project the points of the curve just found upward, intersecting the horizontal divisions in rotation, the first point from the outer edge of the curve, intersecting the first line, the second point intersecting the second line, etc. The points so found lie in the entasis curve of the shafts of the column. Connect these points with the use of a ship's curve.

ARCHITECTURAL ACOUSTICS

CHAPTER I

NOTE.—The general subject of acoustics as affecting buildings, and especially important recent developments, is so little understood that it seems to us desirable to publish, for the further information of architects and draftsmen, a series of chapters in which the various problems will be considered in detail. This material has been prepared by an experienced acoustical engineer from reliable data, which has been accumulated as a result of careful and painstaking investigation. The preliminary chapters will deal with the fundamental principles of sound transmission and absorption, leading later on to the application of Akoustolith sound absorbing stone which has been developed and perfected by this company.

BY architectural acoustics is meant the science of sound as applied to the design and construction of auditoriums and other buildings. There are two distinct divisions of the subject; one the transmission of sound from one room to another through floors, walls or other partitions, and the other dealing with the conditions of hearing within any given room or auditorium arising from sound generated within that room. The two problems are entirely distinct, both in their scientific nature and in methods of correction, and should not be confused with each other, as is frequently done.

Owing to practical necessities in building construction, the question of preventing transmission of sound through any structure is very complex. As yet little accurate research work has been done on the subject, and the amount of data is small.

On the other hand, the proper adjustment of what may be called the internal acoustics of an auditorium has been the subject of extended scientific investigation during the past quarter of a century. The work of the late Professor Wallace C. Sabine of Harvard University in this direction is well known to

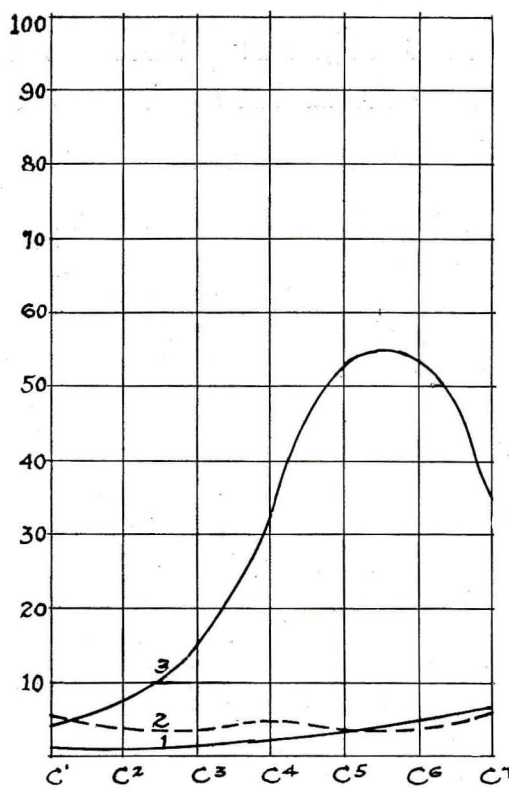


FIGURE 1

In the above graph the figures at the left show the absorption of sound from no absorption to total absorption. The symbols C¹ to C⁷ indicate musical pitch, C³ being middle C. Line 1 shows sound absorption of ordinary finished tile or brick surfaces at different pitches. Line 2 indicates absorption by plaster on lath. Line 3 shows absorption by Akoustolith sound absorbing stone. It will be noted that the absorbing power of Akoustolith is fully five times greater than that of plaster.

architects and scientists the world over, and stands as the authoritative solution of the problems involved, amply borne out by practical demonstration.

As a result of these researches, antiquated and empirical ideas of correction have been rejected. The stringing of wires has been demonstrated to be entirely useless, and the sounding-board has been relegated to its proper place, not as a cure for reverberation, but as a device of limited use in directing sound or maintaining its intensity. Most important of all, it has been shown that simple ratios of length, breadth and height do not form a sufficient criterion for acoustical design, but that size and material play essential roles.

It will be our aim in succeeding numbers of this magazine to discuss the various types of problems encountered in the field of architectural acoustics and to show how they may be successfully solved.

The second chapter of this series, which will appear in the September number, will take up briefly the transmission of sound and begin the subject of auditorium acoustics.

R. Guastavino Co.,

Boston New York

THE SPECIFICATION DESK

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

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

THE SPECIFICATION WRITER AND THE MANUFACTURERS' LITERATURE

BY LOUIS R. HOLSKE

THE question raised in the July issue of PENCIL POINTS, namely, "In what form would the specification writers in architects' offices prefer to have on file data from manufacturers regarding materials and equipment?" is one that is important to every architect and specification writer, as well as to every manufacturer of building material and equipment. That it has not been satisfactorily answered is strange in view of its importance.

At present, though specification writers endeavor to keep files of information issued by manufacturers, these files fall far short of being what they should be, for they are incomplete, inconvenient to refer to, and are very often lacking in the kind of data needed in preparing specifications.

It would seem desirable that all such printed matter should be of a size to permit its being placed in a letter file of standard size, that is, not larger than 8½ in. x 11 in. It should not be unduly bulky or inconvenient to handle.

Brochures, portfolios, and other elaborately gotten up pieces of printed matter on heavy paper with excessively wide margins, large type and showy illustrations occupy more space and are more difficult to keep in order than the information they contain usually warrants. This elaborate presentation may be right to put into the hands of the layman, it may make a selling appeal to the prospective home owner, but it is not what the specification writer wants to put into his files.

Much of the matter issued by manufacturers contains too much "selling talk." Pictures of buildings in which the materials or equipment have been used, photographs of the plant and of members of the organization may not be without interest, but they should have no place in a catalogue intended for filing by the specification writer. They encumber his files and the catalogue is likely to be discarded. The data needed should be compactly presented, the catalogue or leaflet should not only be of such size that it will go into the file, but it should take as little space as possible. The matter it contains should be so arranged that the information wanted can be found quickly.

Specifications issued by manufacturers are seldom usable to any considerable extent because they are, as a rule, written very closely about the manufacturer's product—if broader in character and better written they

might be helpful. Picking out a bit of information here and there from a mass of useless material consumes a great deal of time and it would be much better if the needed data were concisely stated and well tabulated or indexed.

Aside from the faults in shape, size and makeup of much of the printed matter and in the arrangement of the data in it, there is an even more serious fault in the majority of cases, namely, the lack of much of the data needed. In addition to the dimensions required in providing space for an article of equipment, for instance, there should be measurements that will locate the article in connection with other work.

Full and complete data regarding the manufacturer's product should be given and it would be very helpful in many cases if there were brief notes on the correct practice in installing, or applying or employing the equipment or material, as the case may be, in relation to the building itself or other equipment. For instance, the catalogue of a manufacturer of green houses might well state the usual height of the brick walls of such structures above the finished floor in addition to showing sections of the bars and giving the other details which are now usually included.

The ways in which the printed matter issued by manufacturers in general falls short of meeting the needs of the specification writer have been outlined above, and in future issues of PENCIL POINTS an effort will be made to indicate just what information the specification writer should have at hand regarding each class of building material and equipment—taking up one class after another from month to month.

If manufacturers, who naturally wish to have data on their products in the hands of the men who write specifications, and architects and specification writers can be brought together in a discussion of this subject, much can be done to clear up this matter.

It is hoped that architects, specification writers and manufacturers will help in this discussion by writing to PENCIL POINTS, giving any suggestions or thoughts they may believe will be helpful—the invitation is general, as will be the benefit from this discussion.

NOTE.—Mr. Holske, who is in charge of the preparation of specifications in the organization of McKim, Mead & White, will lead the discussion of this subject in the coming months.—ED.