

## A COMPLETE BODY OF ARCHITECTURE

**W**HEN Isaac Ware chose the quaint title for his book "A Complete Body of Architecture" he gave currency to a phrase that stirs the imagination. How much it means! The expression of human life throughout the ages since the dawn of civilization, the satisfying of human needs, the facilitating of human progress through the art of building. A compound of Art and Science, the co-ordination of the psychic and the intellectual, from which spring creations of stone, cement, steel and burned clay that are infused with life. And each building is in the line of traditional descent, for "all life is from life" in art as it is in nature, despite the blind, self-deception of the occasional proponent of complete originality in design.

Conceived in the spirit of the architect, the design represents his reaction to the problem presented and it receives from him its heritage, a part of what he *is*—his mentality, culture, sensitiveness to beauty, and to the spiritual side of life. It partakes of his physical vigor and his courage. All these things are shown forth in the materialization of the design.

Should not the realization of this fact be the strongest incentive to self improvement on the part of every man who has chosen to participate in the creation of architectural work. His weaknesses and his lacks stand exposed in his work, to his shame, while his strong and good qualities are made evident to his honor.

Since the term "the architect" includes, in the case of every important building operation, the members of the organization as well as the architect himself, what has been said above applies to thousands of men who contribute to the creation of architecture as staff members—draftsmen, designers, specification writers. The quality of the men of the organization is reflected in the quality of the work of the office, what a man puts into his work is not lost, though the man in the street may not hear of him. First of all his "Boss" knows, and his associates in the office know. But most important of all *he* knows and he gains development through doing good work. The man who goes through exercises in an indifferent way never gains much in physical development, but the chap who throws himself with interest and vim into whatever he is doing, gains in strength. A man may well work for years unknown, his identity merged in that of his organization, if he is gaining in development. If a man is merely going through the motions, work-

ing perfunctorily, he is losing his time, and life is measured very sharply in terms of time. If he is working in such a way that he is developing, he will find that he is gradually being given command and that with his increased power is coming the opportunity to express himself through others who are associated with him. In due time he will be fit to head an organization *if* he has the right material in him.

"A Complete Body of Architecture" would cover infinitely more today than the same title covered in the time of Isaac Ware. Though the traditional and historical aspects of the subject are very much the same today as they were then, the practical requirements are much more numerous and complex; for example, the requirements of a great modern hospital, railway terminal, or hotel.

Also the materials of construction and methods of building show a wide departure from Isaac Ware's day. The modern steel frame building with its plumbing, heating and ventilating and elevator equipment is a striking example of the change that has taken place in this respect.

These changes in materials and methods have come about very largely through the necessity for meeting modern conditions and, as a result, the architect of today has at his command materials, methods and equipment that place him in a position that is highly favorable as compared with that of the earlier architects. These changes have also given the architect much more to learn and the continued development in the construction and equipment of buildings makes it necessary for him to keep himself informed of the progress that is constantly being made, and for this information he is dependent upon advertisements and literature prepared by the various manufacturers.

Since modern architectural work has become so complex on the practical side, the preparation of specifications has assumed a place of great importance, a fact that PENCIL POINTS has recognized in the publication of the "Specification Number" last January and in the publication of the monthly department, "The Specification Desk."

Present-day conditions have created other problems that will be discussed in our next issue, which will be a special number, devoted to the subject "Office and Drafting Room Practice."

A feature of the January Issue will be a symposium to which you are invited to contribute a letter expressing your views or describing some method of office management or drafting room practice.



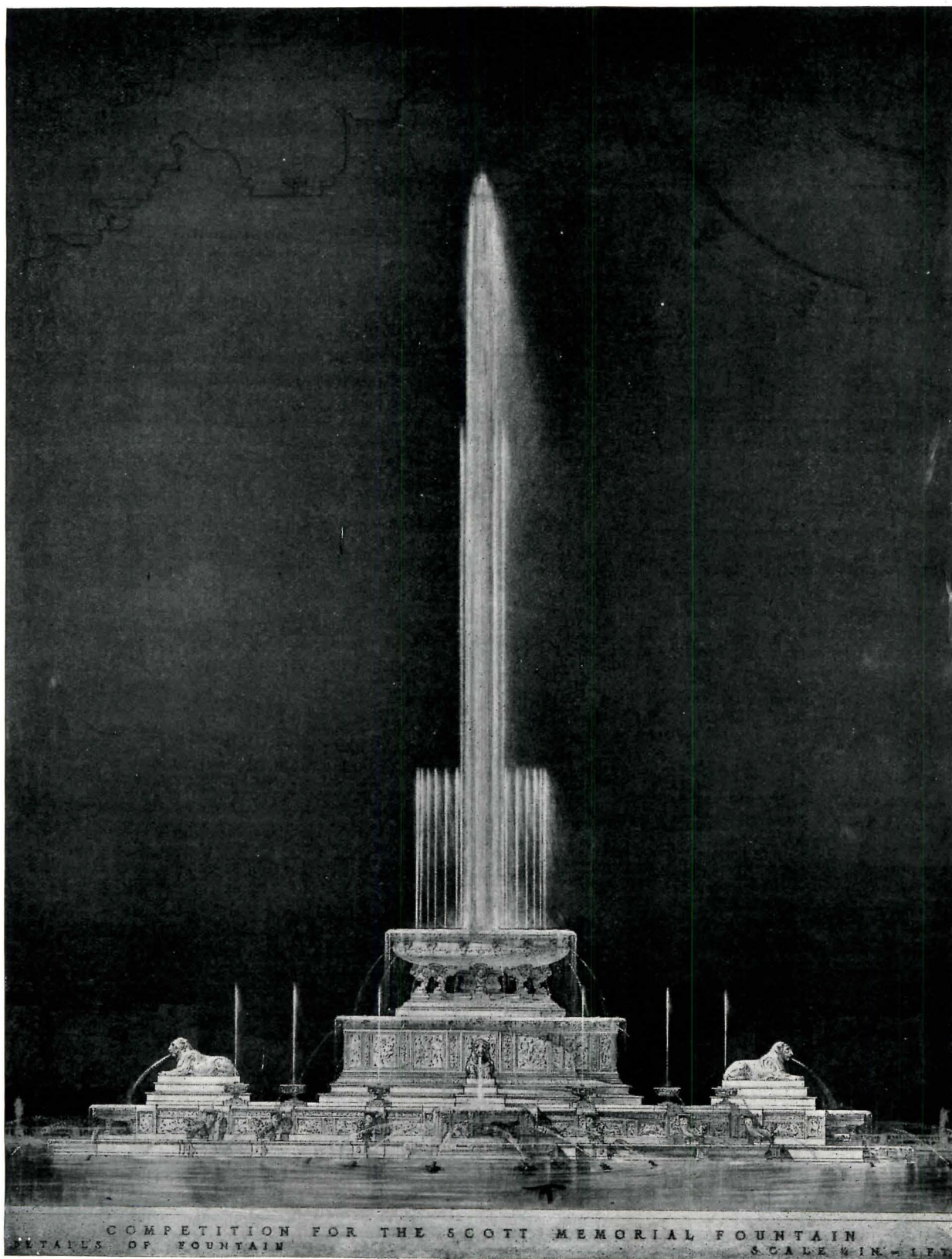


Figure 27. Competition Design for The Scott Memorial Fountain, Detroit, Mich.  
Cass Gilbert, Architect. Rendered by Thomas R. Johnson.



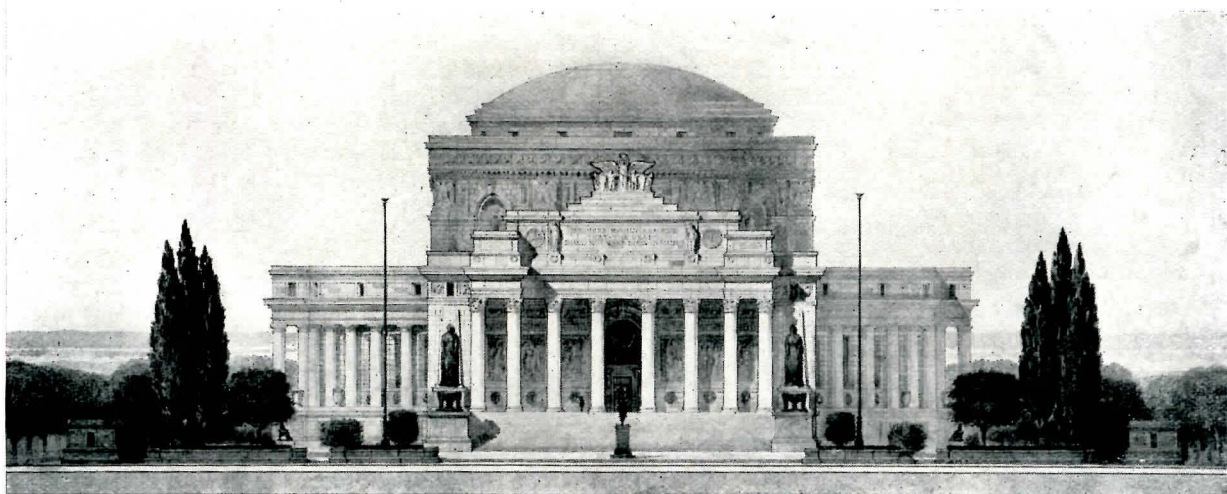


Figure 23. *Competition Design for World War Memorial. Francis S. Swales, Architect.*

## THE TECHNIQUE OF RENDERING, PART IV.

BY FRANCIS S. SWALES

A QUESTION which often presents itself when considering rendering is whether to ink in the line work, leave it in pencil, or to leave it in pencil generally, but ink in such lines as seem to require special emphasis or strengthening to make them perform their proper part.

It is not a certainty that a drawing will be bettered artistically, or technically, by inking in. The purposes of inking in are to make the drawing less liable to damage by being accidentally rubbed; to enable it to withstand many washes, and to define more firmly than with a pencil line the limits of dark washes. It also permits a dirty drawing to be cleaned with a soft eraser. Many draftsmen find the use of the ruling pen a handicap to expression—more often due to the difficulties of making watered ink flow on rag-papers, and maintaining the right tone of ink, than to lack of skill with the instrument.

When plenty of time is available the working advantages and permanency of the inked-in drawing are worth taking into account. This is especially true with the student, or beginner, who may find it necessary to correct several of his washes by sponging out. Under which conditions the ink line will hold its own while the pencil line will require restoring. The disadvantage of ink lines is the tendency to overemphasize detail and cause harshness of effect if the line is a trifle too dark. Another is flatness and weakness caused by a line which is too pale in tone. When time is short, as is nearly always the case with competitions, the advantage of being able to leave the line work in pencil is inestimable. To be able to do so requires habitual cleanliness, precision and decision in workmanship in order to maintain a consistent and firm quality of line. Carelessness of drawing or of using trial

lines means many small erasures. These will show as dark patches the moment the first wash is applied and will require restoration. Small erasures must be avoided with inked-in drawings too; but the inked-in drawing will stand a good general cleaning with a soft rubber which will take out trial, accidental lines, while the pencil drawing would be almost completely erased by the same treatment.

While it is customary to consider inked-in wash drawings rendered with the brush only, the aristocrat of methods—it being the most difficult, requiring the greatest amount of practice, patience and time—few of our present-day draftsmen are willing to forego easier and quicker ways of making clear the intent and modelling of the design. Everyone who has had the experience of making a rendered drawing of a domical building or round tower has learned the inadvisability of inking in the vertical or radiating stone joints without first determining upon a strong contrast between the circular mass and the background and whether the parts which are round in plan will be dark against a light background (Figures 23 and 24) or light against a dark background. (Compare Figures 20 and 21 in November issue.) It is always on the side of safety and expediency to adopt the former method when it is desired to show much detail upon, and also the general effect of, the curved surface to the elevation. Very slight variations of width of line will cause polygonal effect, or detracting from the surface of the mass. Lines which are too strong may cause the merging of the background with the shades or parts of the shadows, so that at a little distance the silhouette is destroyed and the curved surface lost in a maze of patches. Even though the remainder of the drawing be inked in it is best to leave all of the circular part in pencil until the wash



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rendering is finished and perform the retouching with a sharp pencil rather than with ink. A very strong line is needed to define the silhouette of a dome or cupola whenever it is shown light against a dark background, and of any features, especially such as pediment, statuary, or portico in front of it. The amount of strengthening such lines require is always surprising. Make it two or three times as strong as seems necessary, while looking at the drawing board, then stand it up and look at it from a distance of eight to ten feet—and you will probably strengthen it at least once more.

The small illustrations, Figures 20 and 23, serve to compare carrying quality—that which enables the design to be judged without “smelling” it. Figure 21 is reproduced from the same drawing as Figure 20 and Figure 24 is from the same drawing as Figure 23. The cuts showing the actual size of the drawing serve to compare the technique. Figure 21 is the perfectly drawn ink line—which takes much time. Figure 24 is a pencil line drawing with a few of the finer horizontal lines inked in, but with the vertical and silhouette lines put in with a carbon pencil—note how they disappear in the general effect of the small Figure 23. When considering carrying effect, or reproduction at a smaller scale, it will help the beginner in the study of his drawing to use a lens known as a “diminishing glass.”

The heavy outline is of especial importance to define a free standing colonnade, or portico, when much detail has to be shown of the wall behind (Figure 24). In such circumstances, to avoid eccentricities of effect in the columns themselves, flutings, if any, should be shown only in very fine hard lines and the columns be drawn thicker in proportion than they would be desired in actual execution of the design. The shade cast upon the columns requires to be very lightly indicated and when the representation of the column is three inches or less in height it is better to show them straight—that is, without entasis or taper. When the Corinthian Order is employed the capital is thus thickened sufficiently to allow a fair amount of drawing without becoming a black patch or merging into the background. It is inadvisable to ink in ornament upon drawings of less than one-eighth inch scale in any event, except outlines of free ornament, such as the capitals, statuary, etc. Certain of the lines such as those which cast the principal, and darkest, shadows may often be inked in with graded lines to intensify the grading of washes and add to the luminous effect or to hold the architectural lines firmly against shades and shadows which would otherwise break up important surfaces and destroy simplicity.

To assure simplicity and unity the silhouette cannot be too strongly insisted upon. It is probably due to the desire to emphasize such qualities that many draftsmen have resorted to the employment of dark backgrounds against which the building and entourage are shown rather as full-size representations of a small scale white model of the building than as a representation of the building itself. This type of representation (known as “the Acropolis

stunt”) is at its best when nothing but the architecture is shown; when, as with the Acropolis, the building is shown as though standing on a level rock—or the model upon a table—against a large expanse of sky, and without any softening introduction of foliage. This gives the “acid test” to the scale and composition of the architecture but is, therefore, suited only to judgment by experienced architects—actual designers.

The use of the dark background has called forth many clever technical tricks such as the imitation of the graded settling wash—which requires such infinite pains when spread with the brush—by the use of the air brush, and sparkling small mottlings of the large areas of background or foreground by use of the atomizer, or blower. Thus reducing the field of personal technique to the presentation of the building proper.

When one of these blowing instruments is to be employed the parts of the drawing to be reserved for brush work is covered by a template of paper and borders of tracing paper are “pinned” down (for fine drawings use needles) all around the sheet to preserve the white borders. Sometimes the principal shadows and the voids in the walls and any comparatively large space which requires a graded shading, are also put in with the air brush.

In the hands of a skillful operator the air brush can be made to produce wonderful luminous effects. An example of its use for the entourage in conjunction with very simple and beautifully graded washes for rendering the architecture is shown in Figures 25 and 26—Mr. Swartwout's design for the Wilmington Public Buildings, rendered by Mr. Otto Eggers. As a whole, considered simply as a drawing, and in point of showing technical skill and knowledge of how to execute each part, it is everything that could be asked. Certain facts of relative values of the designer's compositions are, however, overlooked. The few faults of the design are curiously exaggerated; and faults are made to appear which do not really exist in the design. Thus, the change of proportion of window voids in the projecting pavilions, from that of the main body of the building, are exaggerated by the sharp intensifying of the shadows and detail which cause them to appear narrow and deep, while the windows in the main body are so lightly rendered as to cause them to appear relatively wider, higher and of shallower reveal than is indicated by the lines of the drawing. It is difficult to discover, at a slight distance, much less to realize, the width of the projecting pavilions or the upper limit of their height at the plane of their projection. The two pyramidal roofs which in execution would be low points set back at the intersection of the masses of the building, serving to accentuate the change of direction, appear to project out to the face of the pavilions and cause a top-heavy effect. The hedge which so admirably sets off the balustrade and monumental ornaments, as well as adding brilliancy and a fine decorative line to the composition, as a drawing, reduces the



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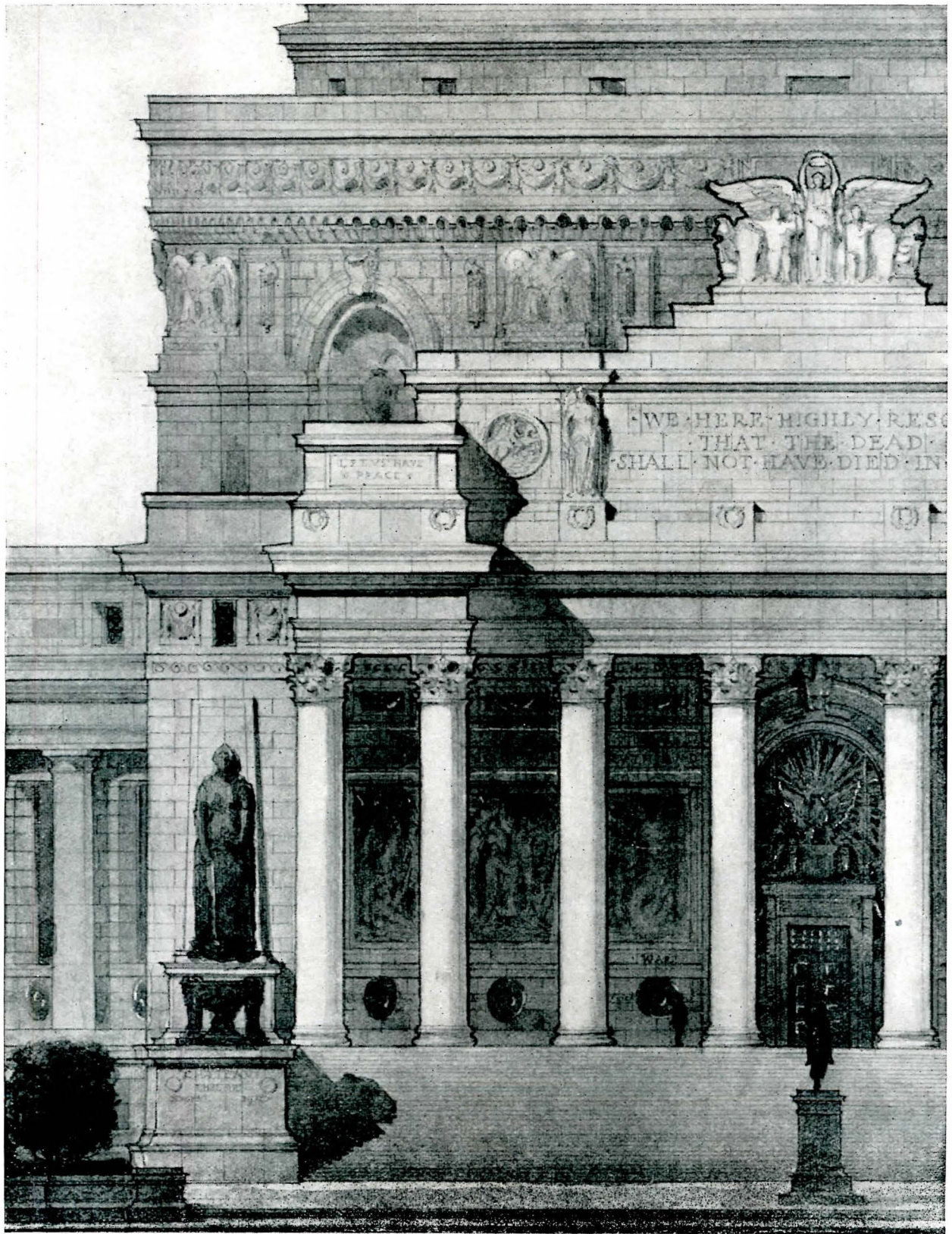
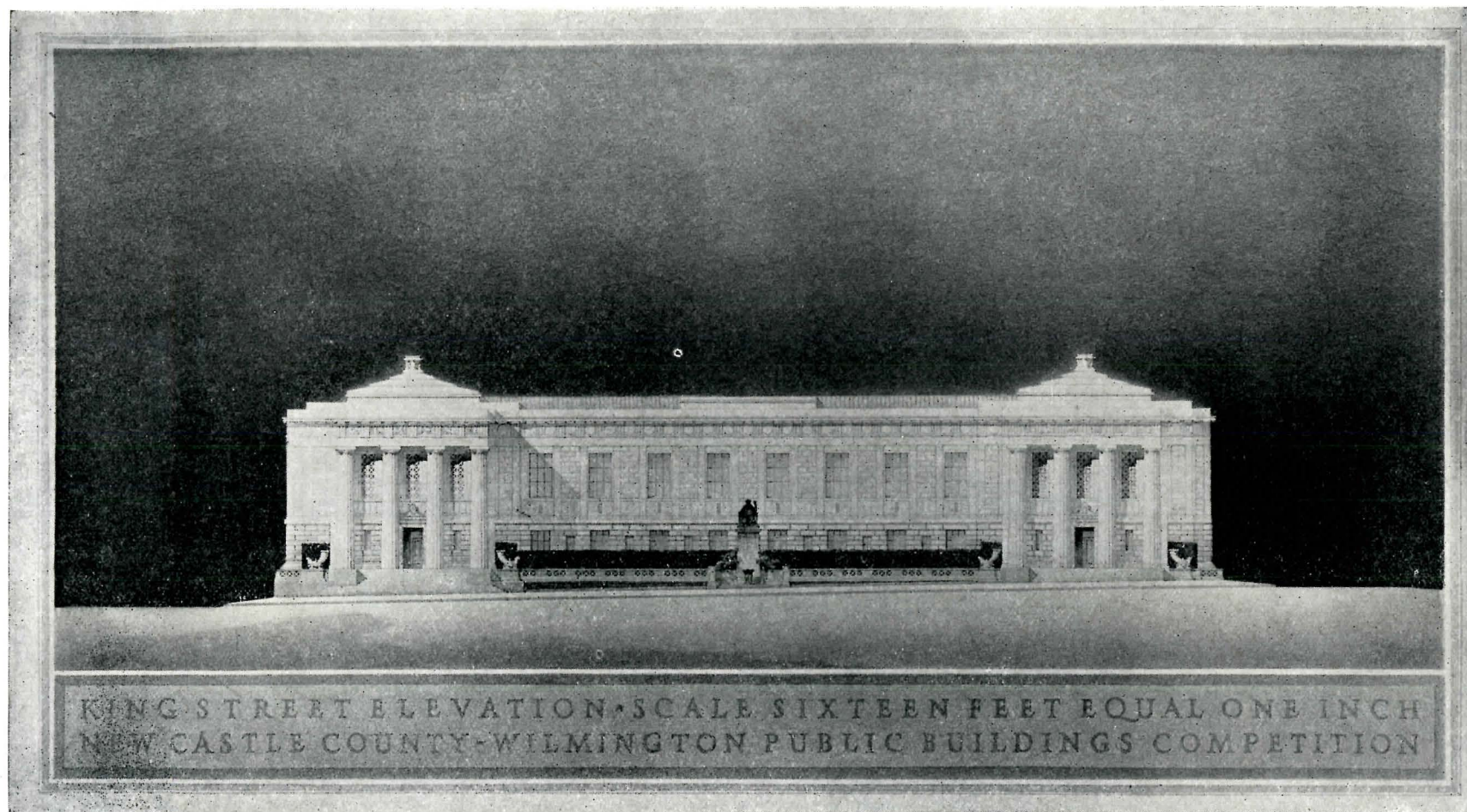


Figure 24. Competition Design World War Memorial. Detail of Figure 23 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft. Francis S. Swales, Architect.





KING STREET ELEVATION • SCALE SIXTEEN FEET EQUAL ONE INCH  
NEW CASTLE COUNTY-WILMINGTON PUBLIC BUILDINGS COMPETITION

*Figure 25. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects.  
Rendered by Otto R. Eggers.*



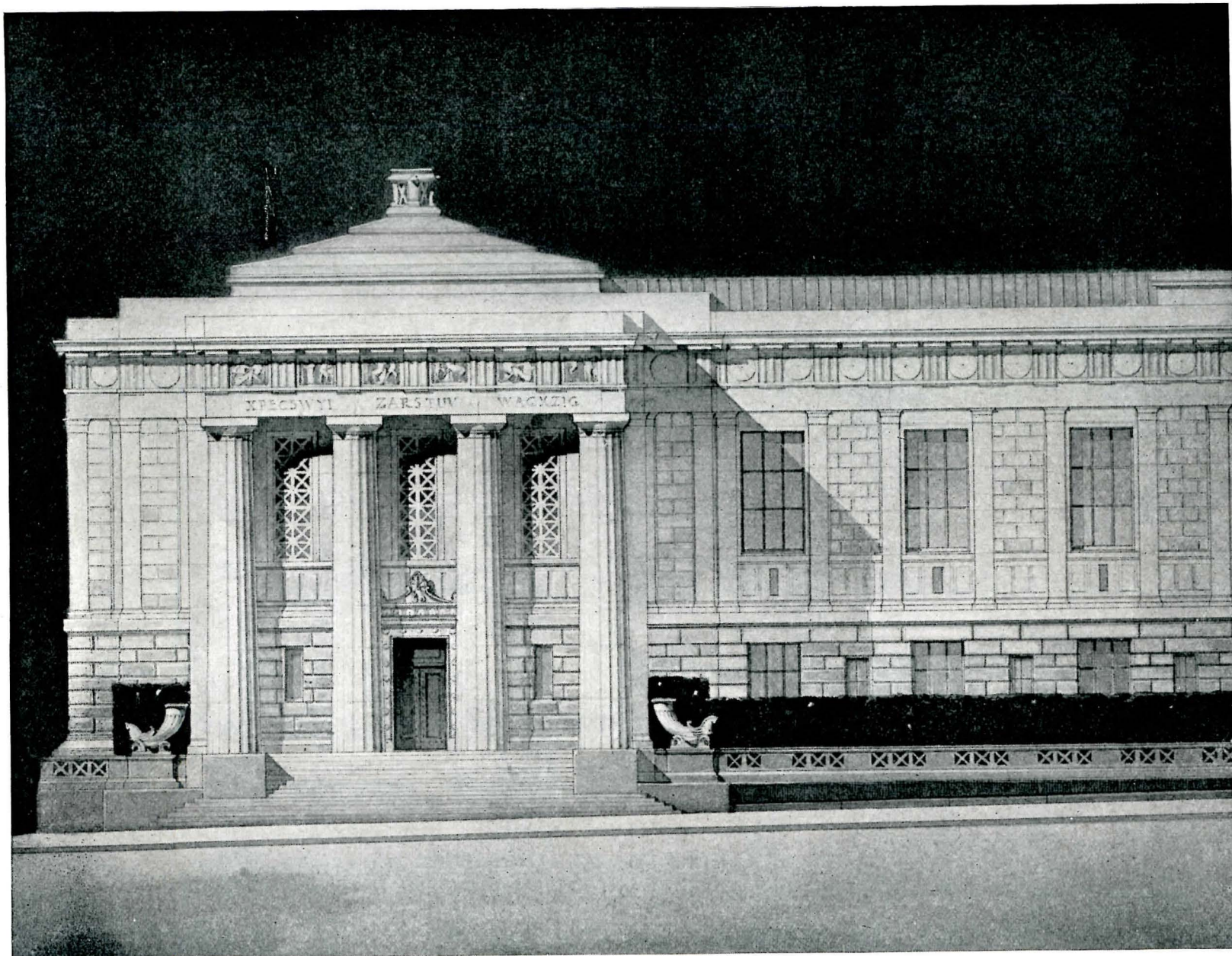


Figure 26. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects.  
 Rendered by Otto R. Eggers. Detail of Figure 25 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft.



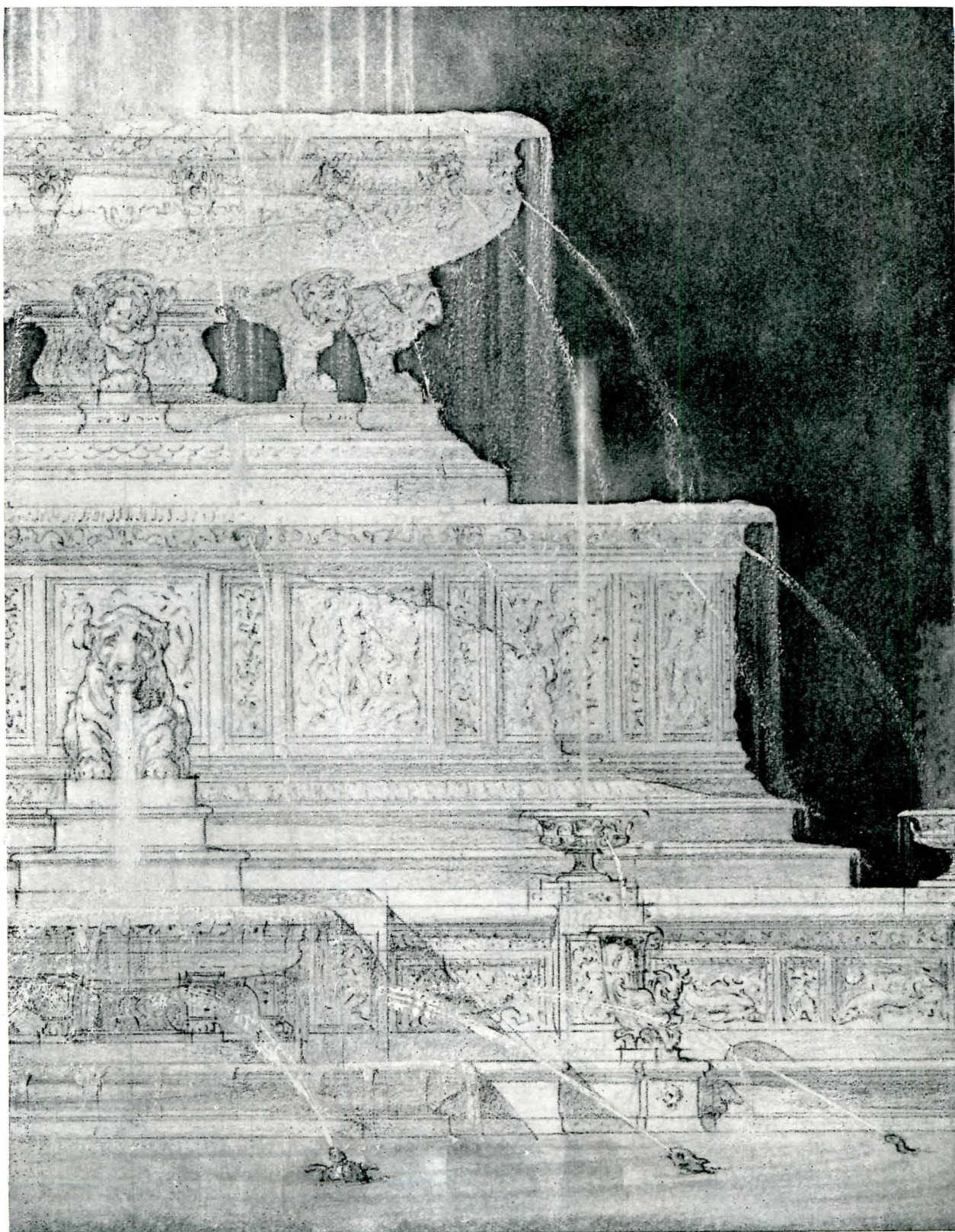


Figure 28. Detail of Figure 27 at Actual Size of Original Drawing. Scale  $\frac{1}{4}$  in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect.  
Rendered by Thomas R. Johnson.



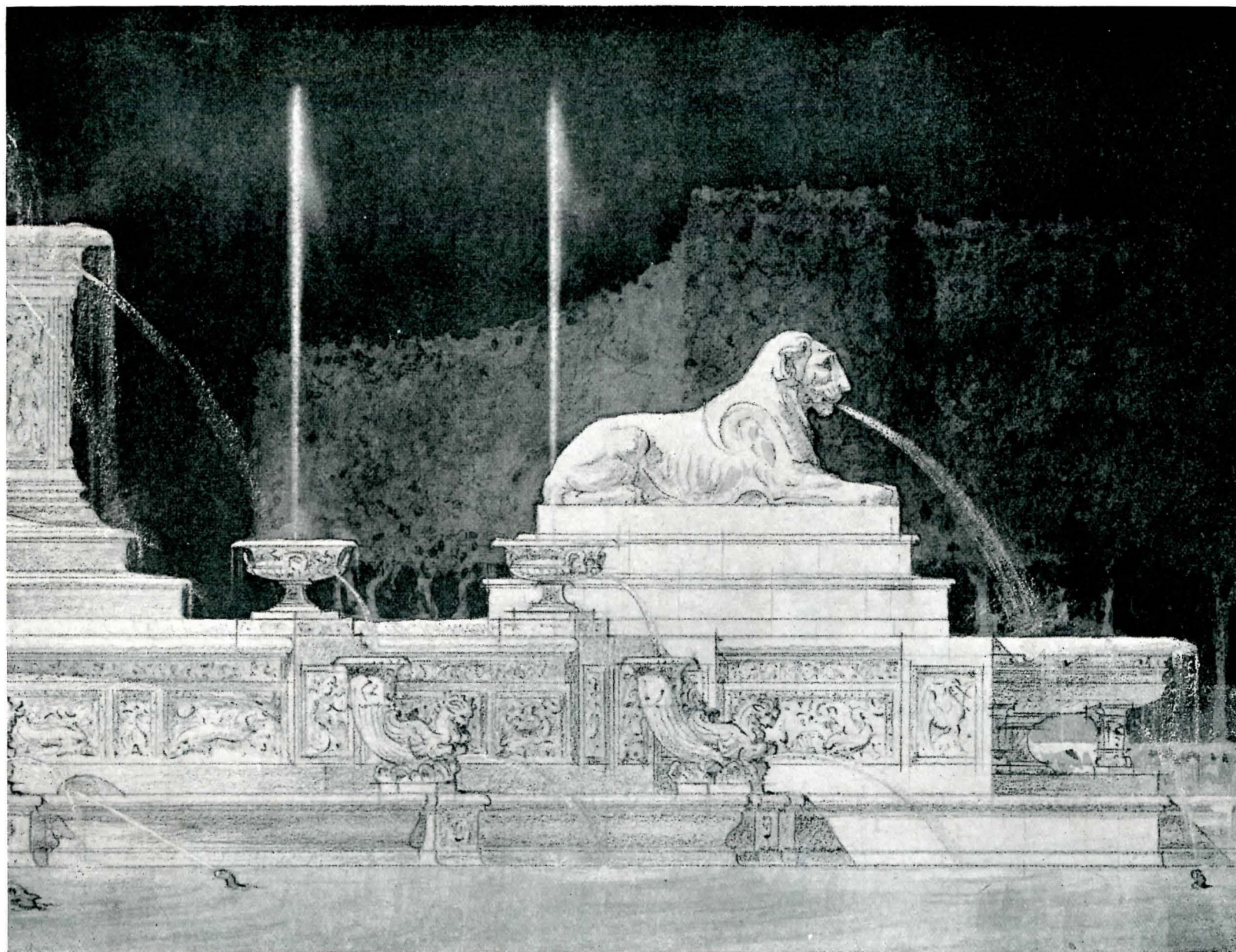


Figure 29. Detail of Figure 27. At Actual Size of Original Drawing. Scale  $\frac{1}{4}$  in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.



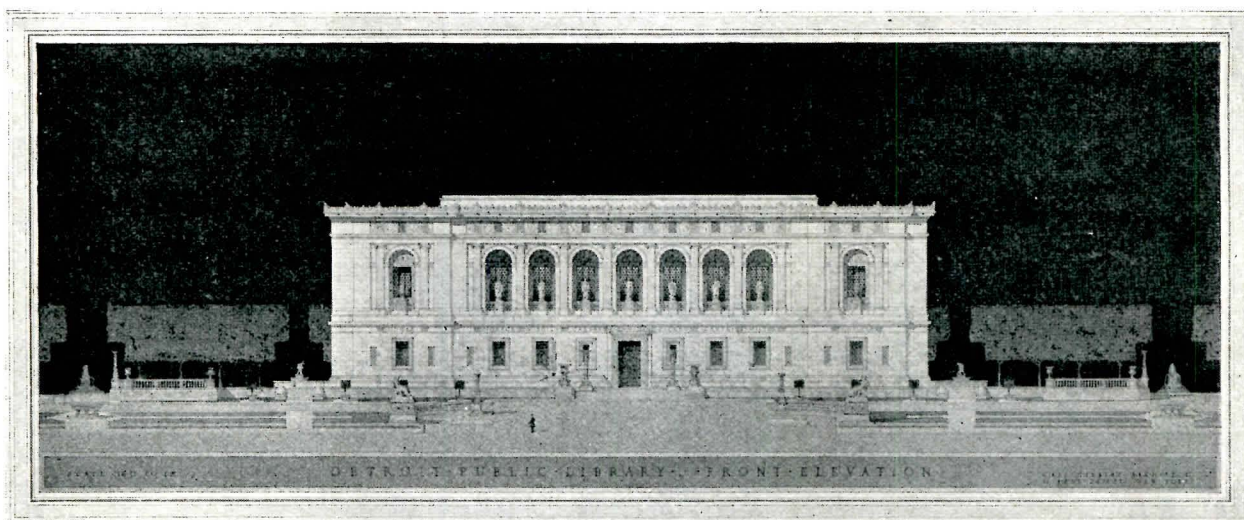


Figure 30. Competition Design for The Detroit Public Library. Cass Gilbert, Architect.  
Rendered by Thomas R. Johnson.

effect of height of the ground story which, due to contrast, increases that of the upper story until it competes with the pavilions. This causes the columns of the pavilions to give the queer effect of having jumped down half a story. A strong outline around the projecting pavilions and a wash or two, over the main body of the building, and darkening of the window openings and shadows to same, would have helped give true as well as technically correct effect to the architectural design.

While the discussion of design and composition is perhaps beyond the scope of the title of these articles, no fine distinction can be made as to where fine technique leaves off and fine art begins. How much is due to knowledge? And how much to imagination? How much to reasoning; how much to intuition? How much is experience—how much experiment? An architect is an artist-designer, a designer is a draftsman and renderer. Rendering is the finished, though usually tentative, expression of the artist's conception. When designer and renderer are not the same the technique of the latter is a matter of deep concern to the former. In order to show the designer's ideas with the utmost faithfulness and completeness of detail the draftsman will often employ the finest and most delicate technique of which his hand and eye are capable. Many designers study their conceptions to the minutest details of effect allowed by the limitation of time, and the more scholarly the designer, the more apt he is to study with a fine hair-like line and indicate far more fine detail than should have any purpose in a competition—the main object of which should be to discover the architect with the best ideas, conceptions and solution of the large problem and composition.

When the scale of the drawing or that of the design is large enough, a good medium for the line work, affording some of the advantages of both the soft lead pencil and diluted ink, is the carbon or

lithographer's pencil. It can be sharpened to, and will hold, a quite fine point and produce firm, strong lines that carry, or reproduce, as well as ink lines. Or the point may be dulled and be used like a soft lead pencil to indicate ornament and sculpture; and to shade flat washes into the effect of graded washes. An excellent example of such drawing is the elevation of Mr. Cass Gilbert's design for the Scott Memorial Fountain at Detroit (Figures 27, 28 and 29), drawn and rendered by Thomas R. Johnson. The drawing generally is conceived as the representation of a model; but the indication of water compels naturalistic presentation of that part of the design: the jets being complementary to the architecture in the conception of the whole.

A light toning wash of ivory black covers the whole of the rendered surface. The background is put in with three, dark, graded washes. The water jets are partly taken out with an ink eraser—used after the background had dried. The big central column of water is retouched with a thin wash of pale yellow tinted *gouache*. The small radiating jets are of Chinese white, rather thick, and put in with swift strokes of the brush which cause the white to break against the rough surface of the paper, giving much the same effect as the actual water jet breaking in the air. A very light tone of yellow is passed over the water in the foreground, and the ripples of the surface are made with long, swift brush strokes, retouched, very lightly, with carbon pencil. The principal shadows on the basins and over the panels of ornament are pale washes of ivory black with the merest suggestion of yellow in the tint. The shading, which is held darkest at the center and disappears towards the sides—thus leaving the parts against the background practically white—is done with carbon pencil, with a light, firm stroke which loses itself in the tone. The silhouettes of the principal mass of the fountain and of the free ornaments—the lions, vases, etc.—are retouched with a sharp, firm carbon pencil line.



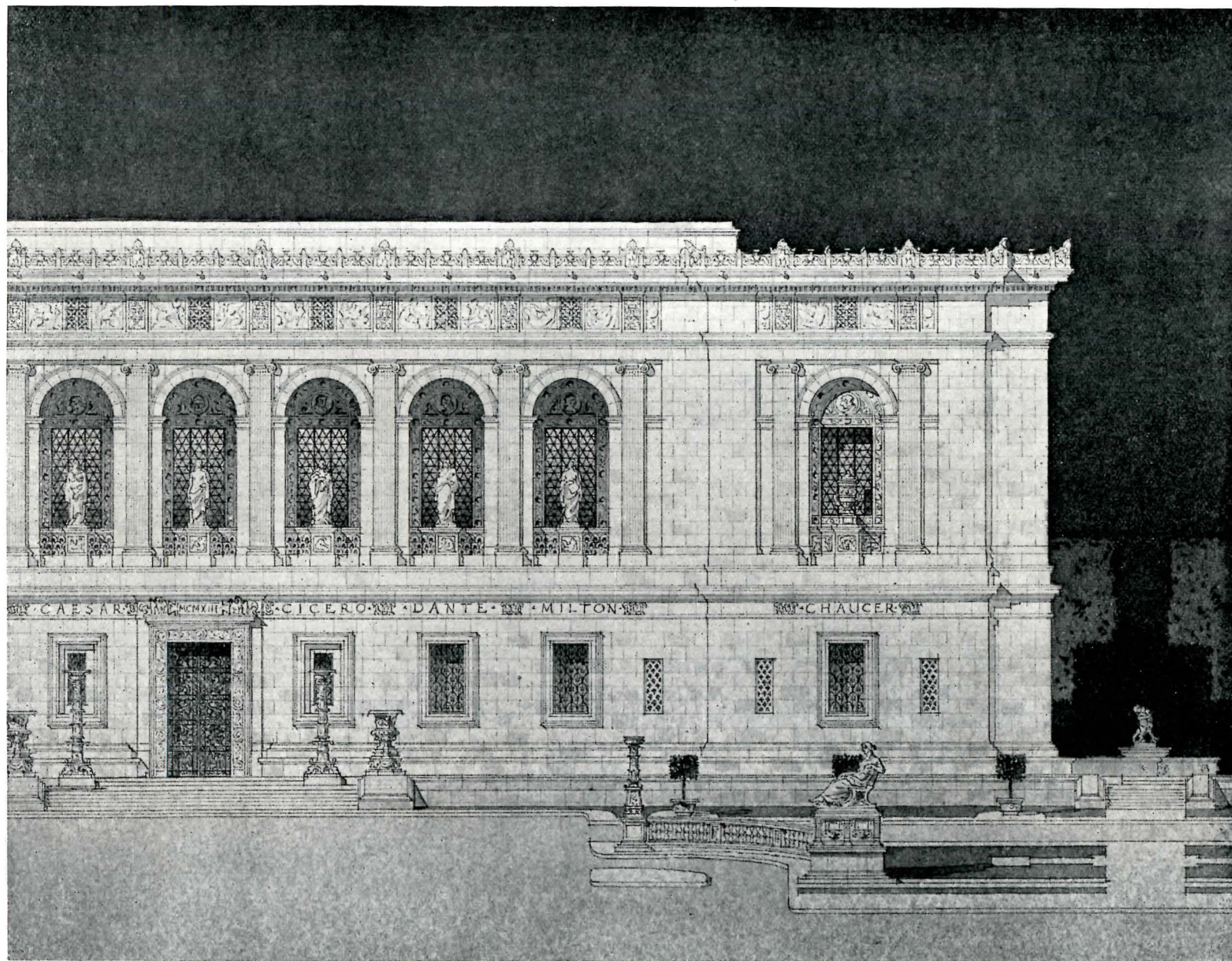
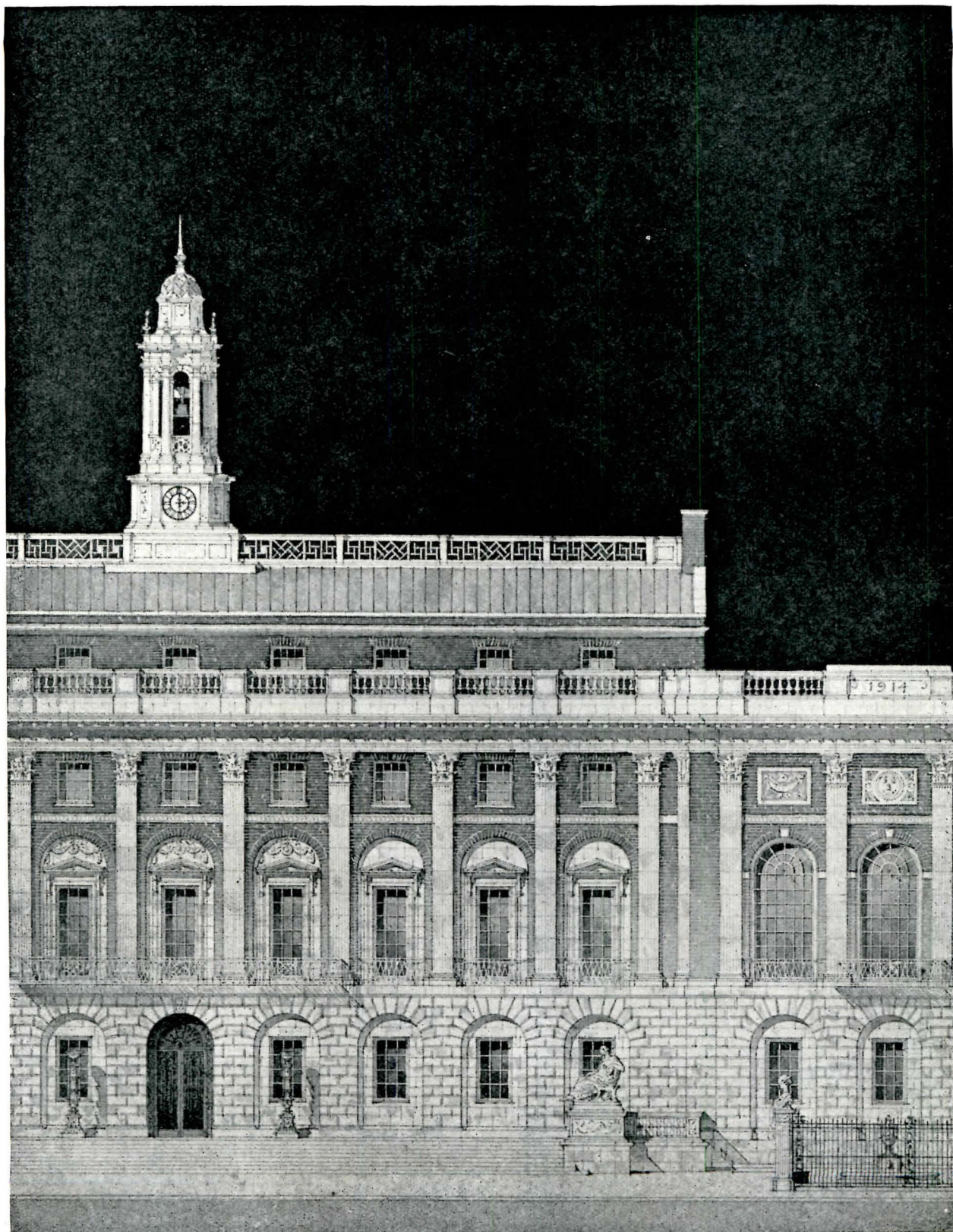


Figure 31. Detail of Figure 30. At Actual Size of Original Drawing. Scale  $1/16 = 1$  ft. Competition Design for the Detroit Public Library. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.



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*Figure 33. Detail of Figure 32 at Actual Size of the Original Drawing. Competition Design for The Waterbury City Hall, Cass Gilbert Architect. Rendered by Thomas R. Johnson.*



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The silhouette line of the upper edges of the bowl and upper stage of pedestal basins is made by the ragged edge formed by running two or more heavy washes up to the same line. Great artistic feeling is shown in the indication as well as in the rendering, both of which are in full sympathy with the character of design. Four very light grades of tone, becoming still lighter as they recede, are used to indicate the four steps, or stages, of the fountain.

For workmanship that seems to be an extension beyond the limit of human patience and skill in extreme fineness of technique are two other of Mr. Gilbert's designs, drawn and rendered by Mr. Johnson: the elevations of the winning designs in the competitions for the Detroit Public Library and Waterbury City Hall. The Detroit design, Figures 30 and 31, is a pure "India ink" drawing—every line is inked in perfectly and even to the flutes in the pilasters and the ornament on the wall under the arcade. The only toning is an almost invisible tint of pale yellow, quickly graded out from the base line upwards. The sense of atmospheric toning and "aerial perspective" are as perfectly felt as they are rendered. The decorative treatment of the drawing as a whole, the very subtle gradings of the washes (almost certain to be lost in reproduction with printer's ink and pulp-paper), the notable sense of color values all go to show technique at its peak, and something more than technique—the

imagination of a very able artist at work. The rendered area of the drawing is  $8\frac{3}{4}$  in. x 23 in. The drawing of the Waterbury City Hall (Figures 32 and 33) is at least equally fine in technique. Brick joints, sash bars, iron balconies, and the gates and railing shown against the dark background are, however, put in with Chinese white. The idea of representing a small model of the building rather than the building itself is the convention adopted. Note that the window openings are graded by stories from a dark, in the ground story, that is much lighter than the background but darker than the brickwork, to a light value in the top story that is lighter than the lightest part of the brickwork. The silhouette of the design is firmly marked by placing the lightest or "whitest" parts against the dark background. The background is graded from the ground line upwards, but the gradation counts but little in the effect. The brickwork is graded downward from the top story and meets the light tone of the stonework of the lowest story without the usual "jar" felt in most representations of red brick and light stone combinations. The *piquage*, in white, is maintained all over the surface but with such delicacy as to require the closest scrutiny to detect it. The rendered area of the drawing is only  $9\frac{1}{2}$  in. x 17 in.

(To be Continued)

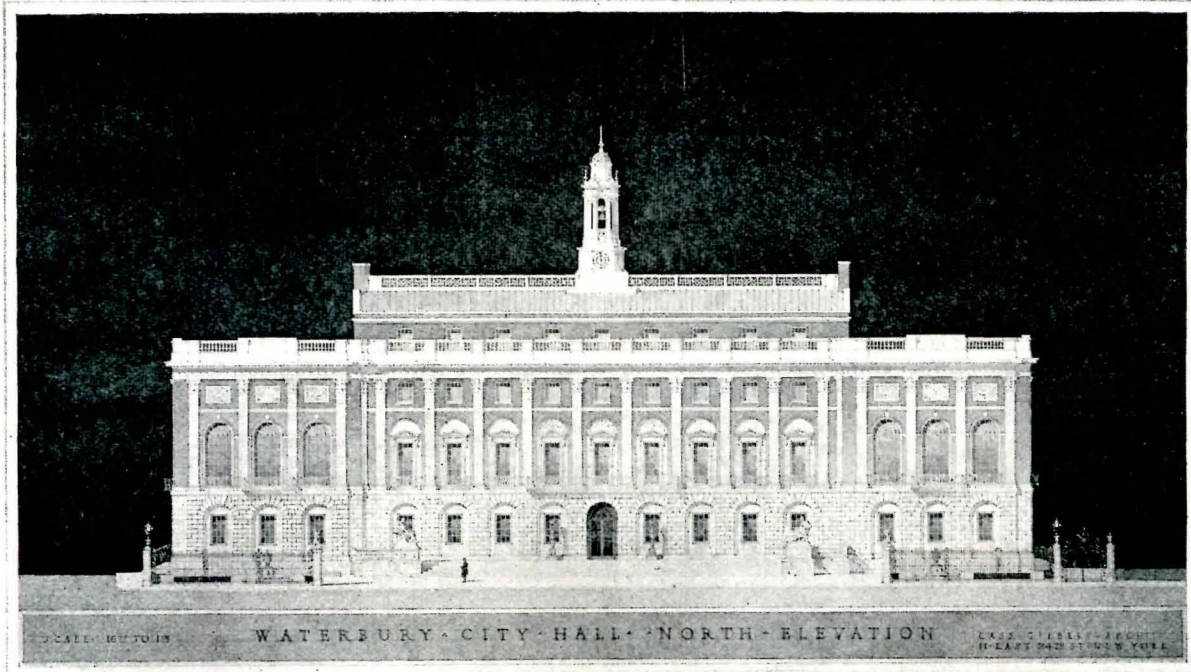


Figure 32. Competition Design for City Hall, Waterbury, Conn. Cass Gilbert, Architect.  
Rendered by Thomas R. Johnson. (See detail on page 32.)



# DETAILING STONE WORK

BY J. R. S. SCOTT

**P**LANS are prepared, tenders are taken, contracts are let for the stonework. At this stage the stone draftsman appears, and much depends on how he interprets and carries out the design. In his way he is just as much interested in doing his part of the work and seeing it executed to the satisfaction of everybody as is the architect himself.

Stone, of one kind or another, is among the most important materials applied in quantity to the exterior of a building, and on that account the detailing of it deserves the most careful study. Up to a comparatively few years ago it was cut almost entirely by hand at the job, and on this account and because it has no fixed unit of size it was a simple matter to introduce any last-minute changes. With the present general use of machinery for sawing and planing the conditions are quite different, and the drafting is begun weeks before delivery is required, making alterations discouraging, difficult and expensive.

Often it is not what the architect fails to show that presents difficulties, but what he does show. In a stone mill of any size there is more stonework laid out and detailed in a year than many architects turn out in a lifetime. The stone draftsman must study it out for himself, for he cannot leave it to the next man to work out. Necessarily, therefore, he is well enough trained and has had a broad enough experience to be quite competent to lay out and make details for any part of the work where the architect has not seen fit to supply them. It is when the specification calls for sizes and sections that will not work out, or when the details are hazy, that most trouble arises, and one or two such points raised here may not only tend to correct them on the next job but ease the draftsman's path in other directions.

In the working drawings it is usual to show scale-detail sections of walls and other features. Often the section drawn is taken through an apparently tricky little place that actually will work itself out almost automatically, while nothing is shown by which the sill, lintel, cornice or coping construction can be determined; and these are always important. Or if one window is shown, the one beside it, of a different character, is omitted, or there isn't room to show the door. Often a section is made through the blank wall—it shows the water-table, perhaps, and omits the window and door.

It is usually in stone trim work that most trouble arises. If the entire wall is of stone, the draftsman has a chance to manipulate the jointing and details so as to make everything fit, but not so with a trim job. In such work it is customary to make the stone joints line with those in the brickwork. How often does the architect omit to give the brick sizes or neglect to figure his sizes to fit the lay of the bricks? Tables and scales giving multiples of various brick heights are available; if not, one can

easily be prepared and blue prints supplied to every draftsman. By working out the heights to brick sizes the architect gets better work by saving the splitting of bricks, and also gives the stone draftsman an opportunity to check the dimensions; a figured height of 7'-0" may be right or wrong, but if it is 7'-1 $\frac{1}{4}$ ", with the brickwork running four courses to 11", the draftsman has reasonable assurance that it has been worked out and is correct. The growing practice of indicating heights by the number of brick courses is of great assistance.

In figuring heights it is customary to locate the dimension points at the centers of the joints. In theory this is correct, and the smaller joint for stonework (at quoins for instance) should have its bottom a little higher, and its top a little lower, than the larger joint in the brickwork. In practice, however, this is almost out of the question; the stone is set, the line is stretched across from its top bed, and the brick is laid with its top bed to the line. The bricklayer will never bother to measure down from the top of the stone the one-eighth or three-thirty-seconds of an inch, or whatever is half the difference between the thickness of the brick mortar joint and the thickness of the stone mortar joint, and lay to that.

What at first might be considered a neater arrangement for quoining would be to make the wide quoins line with the bricks, i.e., to make the height from wide quoin to wide quoin equal to  $x$  times the height of a brick and its joint + one more brick joint. The trouble is that in irregular quoining, a quoin of a certain length might in one position be narrow, in another wide, and in a third it might be narrow when compared with the quoin above and wide when compared with the quoin below. This would mean three different heights for practically the same stone, with confusion to the draftsman, in the mill, and on the job. Moreover, this system will not work at all with stones oblong in plan, where the face makes a long quoin and the return head makes a short quoin.

Figures should, therefore, be taken from top bed to top bed. This method conforms to the actual operation at the job and solves most of the stone draftsman's problems as to whether or not the joint is to be included. By way of exception, cases like that of the daylight opening from sill to soffit of lintel should not be figured in this way but should have the one extra mortar joint added.

The three average dimensions of the brick to be used should be furnished, together with the size of the brick mortar joint. When the stone draftsman knows just where he stands, not only with respect to the heights, but in connection with the exact projection of piers and pilasters, the correct sizes for chimney caps, the reveals of doors and windows, or the face measurements of piers. It is a needless expense to clip a brick in every course in the

*(Continued on page 64)*





*Courtesy of the American Hellenic Society*

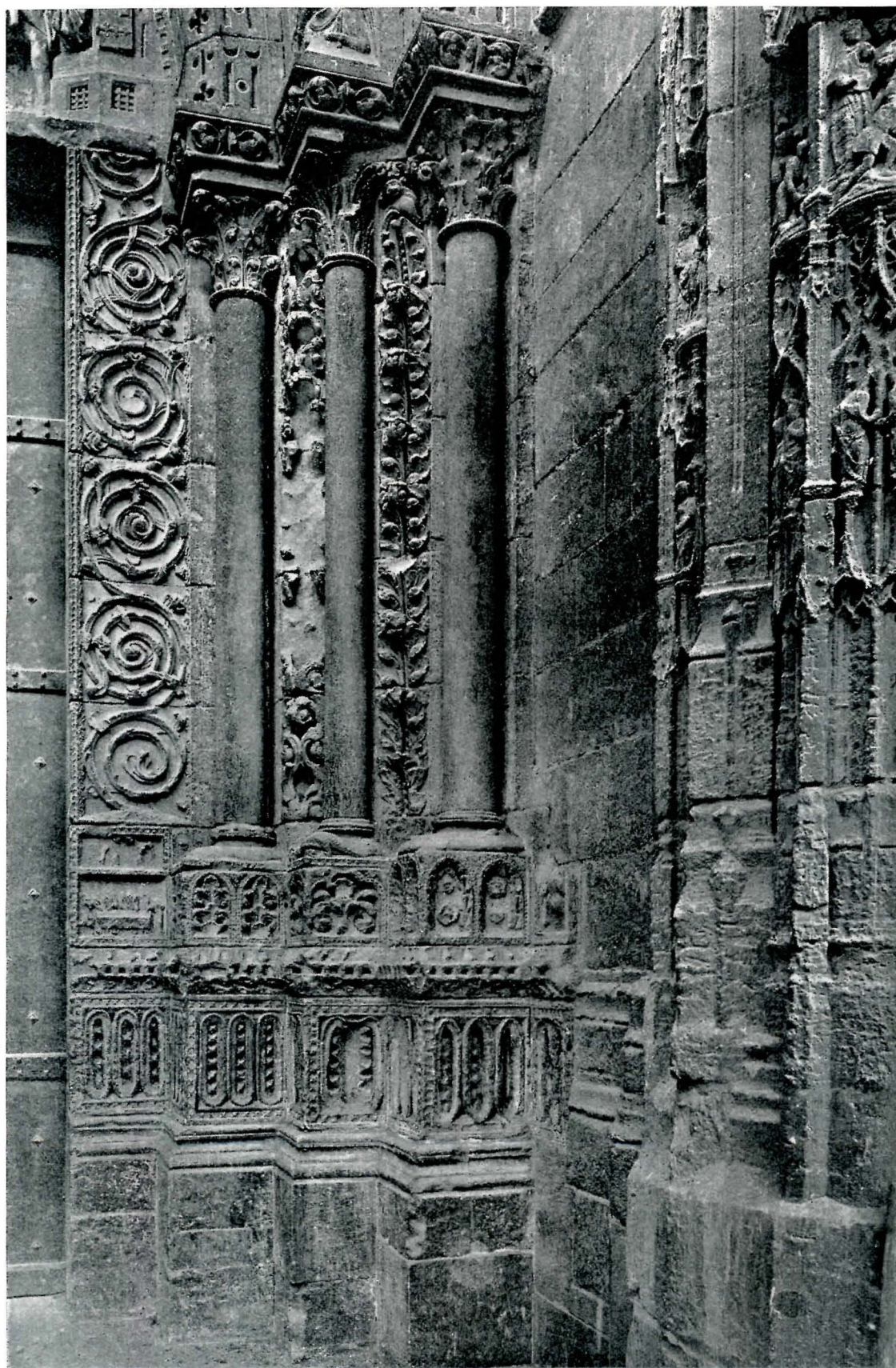
*Frederick Boussonnas*

THE ERECHTHEUM FROM THE WEST



One of the remarkably fine photographs of Greek architecture which formed a feature of the exhibition sent to this country by the Greek Government is reproduced on the other side of this sheet. Other photographs in this series were reproduced in the October and November issues of this journal. Frederick Boissonnas who made this view is widely known as a distinguished photographer. He resides at Geneva, Switzerland.



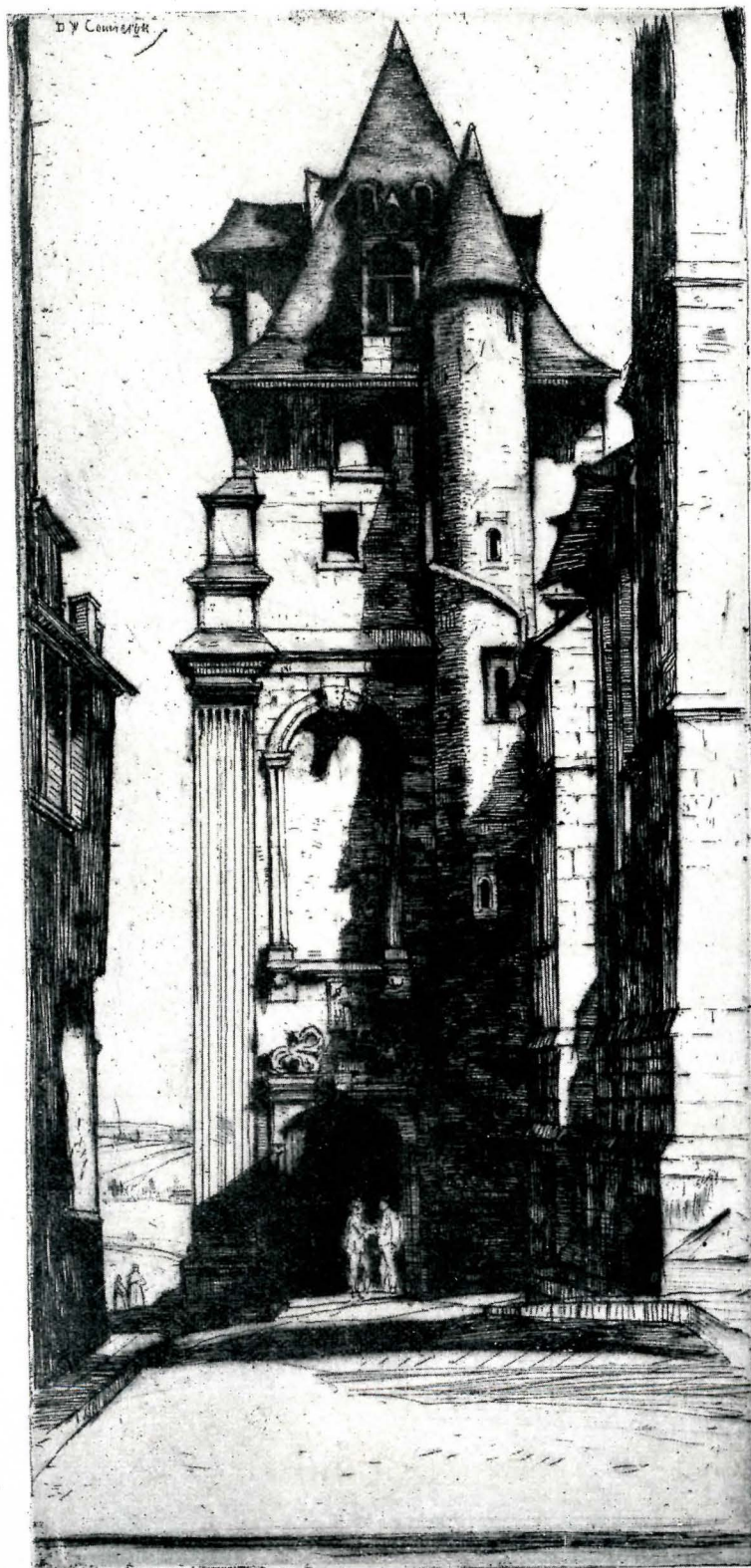


DETAIL OF PORTAL, ROUEN CATHEDRAL  
FROM "SELECTED MONUMENTS OF FRENCH GOTHIC ARCHITECTURE"



A remarkably fine photograph of Gothic detail is shown in the plate printed on the other side of this sheet. This plate is from "Selected Monuments of French Gothic Architecture," a book which will be issued shortly by the publishers of PENCIL POINTS. This book consists of one hundred plates carefully selected with a view to their usefulness in the drafting room and as good examples of French Gothic Architecture. These plates have been chosen from the archives of the Commission on Historic Monuments and from "Cathedrals of France," prepared under the direction of the Commission and of the Ecole des Beaux Arts.





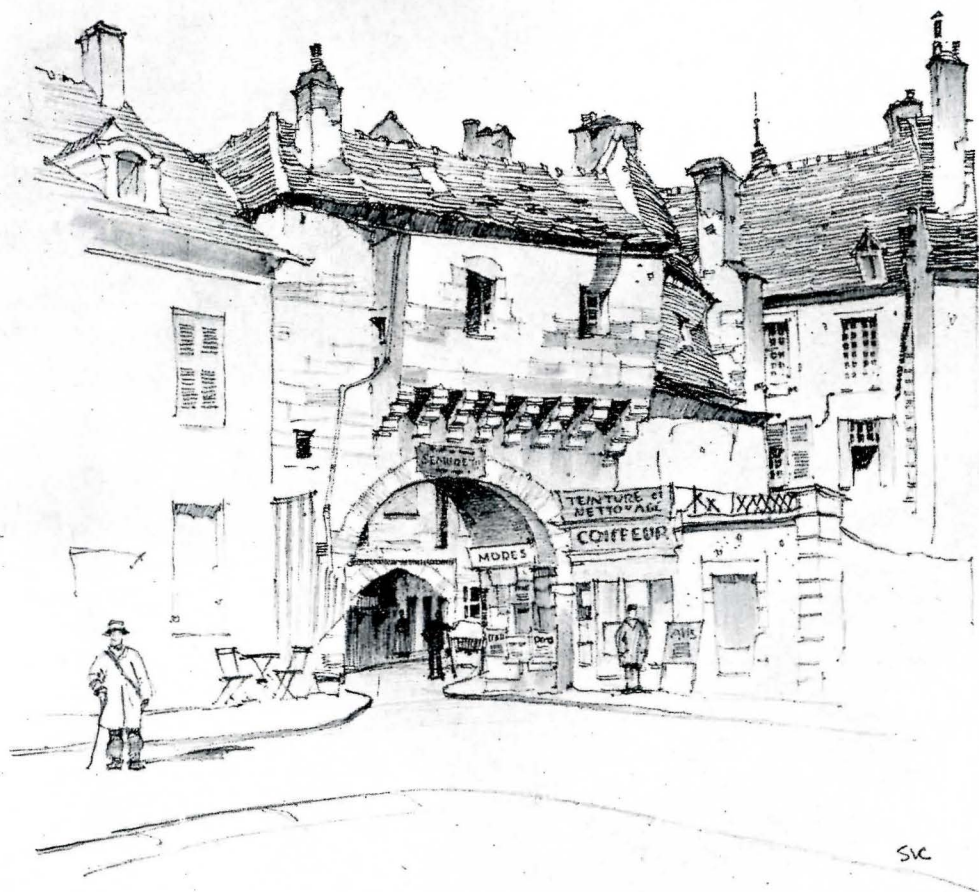
*Courtesy of Kennedy & Co.*

ST. AIGNAN, CHARTRES: FROM AN  
ETCHING BY D. Y. CAMERON



*It is always a pleasure to present one of D. Y. Cameron's etchings, and the one reproduced on the other side of this sheet is of more than usual interest. In this plate, as in reproducing other etchings, special care has been taken to preserve the qualities characteristic of the etching process,—the richness of the blacks, the luminosity, and the suggestion of translucence in the paper.*





THE TOWN GATE  
SEMUR-EN-AUXOIS

PENCIL SKETCH BY SAMUEL V. CHAMBERLAIN. THE TOWN  
GATE, SEMUR-EN-AUXOIS, FRANCE



On the other side of this sheet is reproduced a pencil sketch which Samuel V. Chamberlain, who is now abroad, has sent to PENCIL POINTS, keeping a promise he made to this journal before he sailed on his present trip. It is an interesting drawing from the standpoint of subject matter as well as that of pencil technique.



# THE SKETCH PROBLEM

BY JOHN F. HARBESON

*In this article Mr. Harbeson treats the sketch problem in the same manner in which he has discussed other problems in the pages of this journal under the general heading "The Study of Architectural Design." This article will be followed by one on "Competing for the Paris Prize."*

THE schedule of the Beaux-Arts Institute of Design has not only the "projet," but there is also the "esquisse-esquisse" or sketch problem. The "projet" we have seen is a problem to which from three to six weeks' time is allowed; for which a scheme or "parti" is set down in sketch form in the "esquisse"; this "parti" is then developed and studied by means of many successive drawings under the guidance and regular criticism of the "Patron," who has been all through a training of this sort some time before; and then the solution is presented in fairly elaborate and carefully drawn and well rendered drawings. For the projet "documents" and information of all sorts are used in the study.

The sketch problem is quite different. It is done in a few hours—usually only nine—and without criticism or advice, or the use of documents; and within these few hours there must be formulated a solution to a program—like the esquisse for a regular projet; but unlike the esquisse this solution must be "presented," that is, rendered to give an effect.

As we have said before, making the esquisse for a projet develops the power of quick, right thinking, for one soon learns that with an esquisse that does not contain a solution to a problem, no amount of care or study in presentation will make a first class projet; the sketch problem develops this same faculty, for here again a solution must be found for a problem, and only a small portion of the nine hours can be used for finding a "parti." Therefore a good "parti" must be found quickly.

Sketch problems may be roughly separated into two divisions, of

which the plan sketch problem is mentioned first because it is the more important and the more difficult. In these problems elevation and section are explanatory only. There are a few plan sketch problems in Class B. In Class A, there are many and these are elaborated; and they become quite elaborate—difficult—in such competitions as that for the Warren Prize, for which a longer time is given, it is true, but where the program is complicated and difficult; in this competition criticism and documents may be used, however. This type of problem culminates in the second preliminary competition for the "Paris Prize," a forty-eight hour sketch problem that is a severe test of ability in thinking out a scheme—solving a problem—and in presenting it in a telling way. We shall consider the plan sketch in the next article.

The other type is the decorative sketch problem, usually requiring an elevation or perspective of a small composition with an explanatory plan at small scale. This starts in Class B with such simple problems as those shown in Figures 1 and 2, includes the Spiering Prize Problem (Figure 3), and is continued in Class A with more complicated problems of a similar nature, such as Figure 4, and in such problems of interior decoration as Figures 5 and 6. The Pupin Prize problem is of a decorative nature; for this, like the Warren Prize, more time is given and criticism and documents may be used.

The first preliminary for the Paris Prize is a problem of this kind—a test in the handling of the elemental forms of architecture of good proportions, and in presentation—Figure 7 and Figure 8. Those who go to Paris to take the regular examinations for



Figure 11. Class A Esquisse-Esquisse, "The Entrance to a Dance Hall," by R. S. Potter, Atelier Cret, University of Pennsylvania.



## PENCIL POINTS

entrance to the *Ecole*, find the test in design is a problem of this sort (Figures 9 and 10). In these a direct elevation, a plan and a section of some small architectural form are required. The authorities of the Paris school thus make proficiency in the sketch problem a requisite for entrance to the school—for any further study. As only a definite number are admitted to the *Ecole*, and as those who fail at one test usually try again at the next examination, the competition becomes very keen; so keen, in fact, that there are various ateliers in Paris that are filled with men preparing for this examination, taking sketch problem after sketch problem on programs similar to those used for the entrance examinations, so that when they come to take the examination itself, they have learned just what to do to use their time to the best advantage.

The sketch problem forms habits of quick thinking; it also develops facility in presentation, and both of these are of great value in work on the projets. It is a necessary part of any student's training, doubly necessary if one hopes to become a logist for the Paris Prize, the surest test of proficiency in Beaux-Arts training. If a student ever expects to enter the first or second preliminary competitions, he must take as many sketch problems as possible. One cannot make a good sketch problem on the first attempt—to do them well means to do them often, for this is the only way to learn how to make the most of one's time, how much time may be used for finding a scheme, and still leave enough for the presentation. These things cannot be determined while doing a sketch problem; there is not sufficient time. It is a mistake to think of the sketch problem as a matter of trickery, of indication; but there are conventions and methods of presentation that are different from those used in a regular

problem, and these must be learned—the technique of the sketch problem.

Usually if you have an idea you can visualize it—can see it among a few lines on the paper. But it will take more lines to express this idea to some one else—and more and more lines—up to a certain point—will help to express the idea to an outsider. Beyond this point more lines will only complicate and confuse the idea. The esquisse-esquisse must make a picture. It must also express your idea, your solution of the program, to some one else—to a stranger.

There are two things we must do then. First, we must conceive a solution to a given problem—quickly; second, we must “get it across”—present it in a convincing way in an incredibly short space of time.

Let us consider the decorative sketch problem: a man who has done a number of them usually has evolved a system, a technique of his own, based on his knowledge of his own talents and ability, that works out well for him, brings him results. If it does not do this, he will be willing to consider trying other ways of doing it. And the man who has done few sketch problems may find a great deal of value in a method of procedure that will help him arrange his time and use his talent to the best advantage until such time as he will have developed his own “system.” If we take a Class B sketch problem then, such as the “flower market” of Figure 3, it is well to do it in this way, remembering that we start with an empty paper and a program, and must turn in, nine hours later, a well presented solution to the problem.

We speak of the Class B Esquisse-Esquisse, for the Class A sketch problems are a part of a progres-

(Continued on page 60)

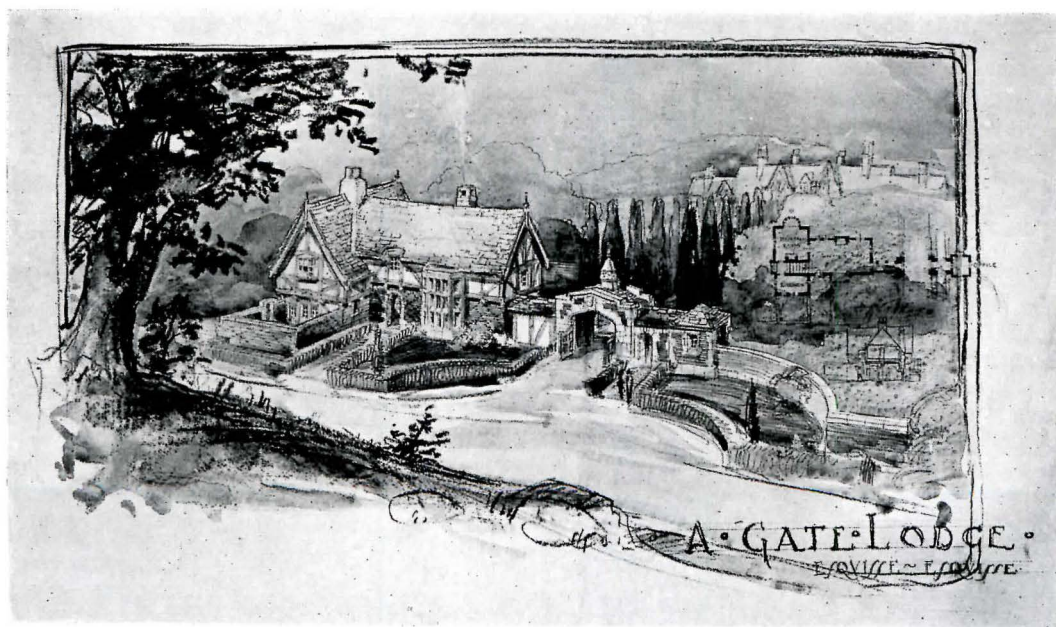


Figure 12. Design for “A Gate Lodge” by Lionel Pries.



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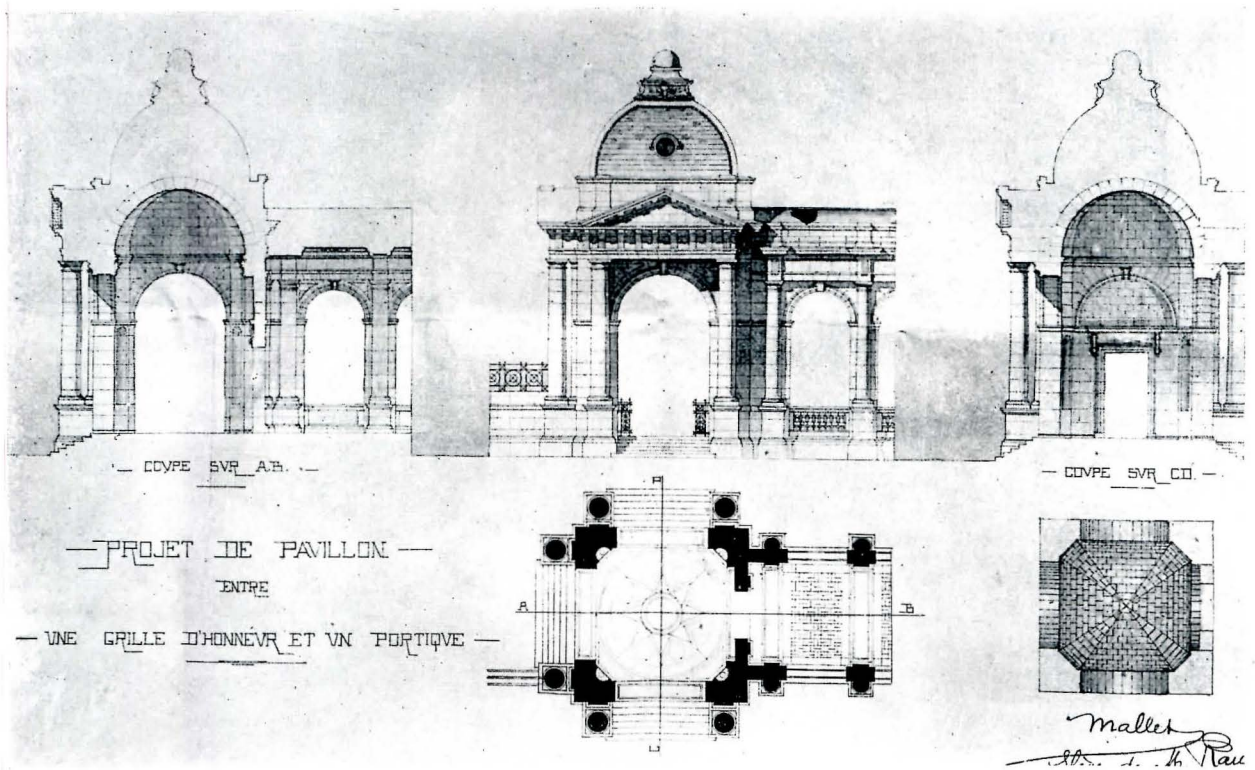


Figure 10. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Mallet, Pupil of M. Raulin.

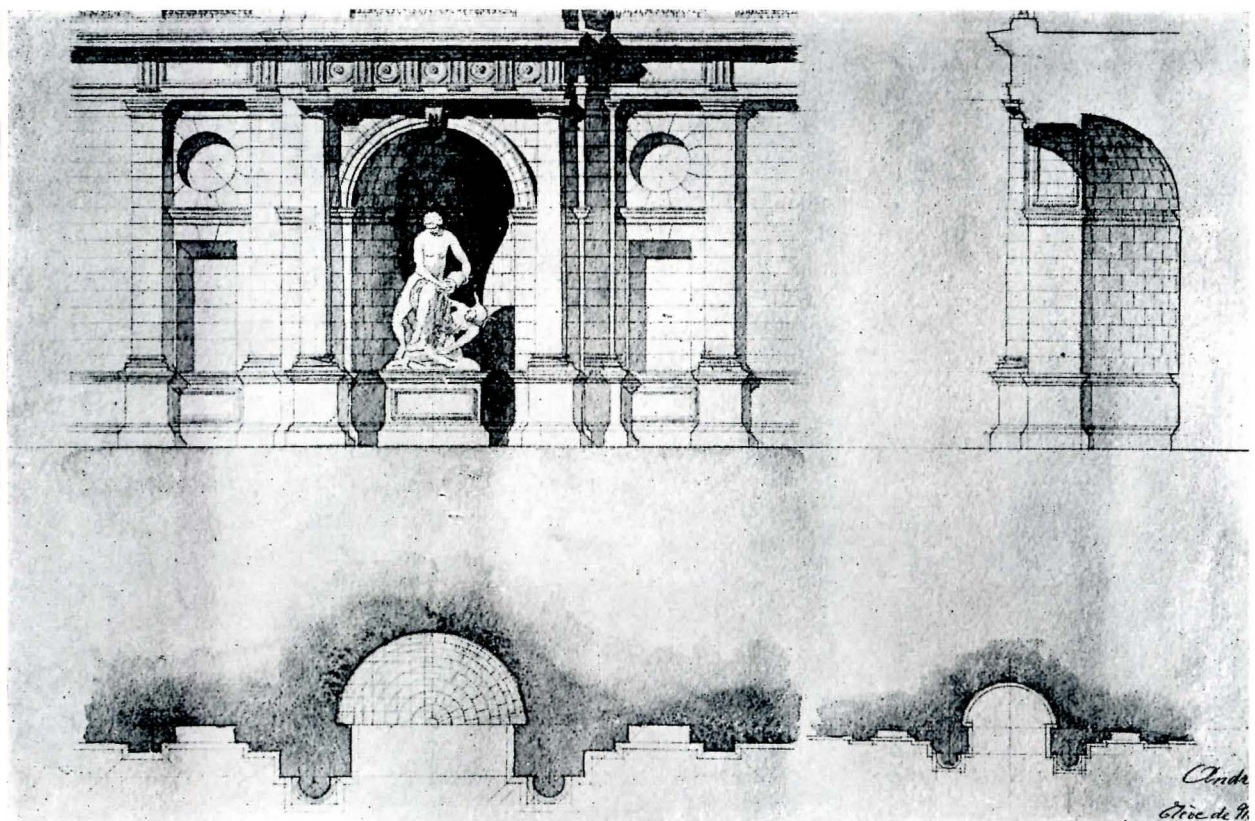


Figure 9. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Dassier, Pupil of M. Laloux.



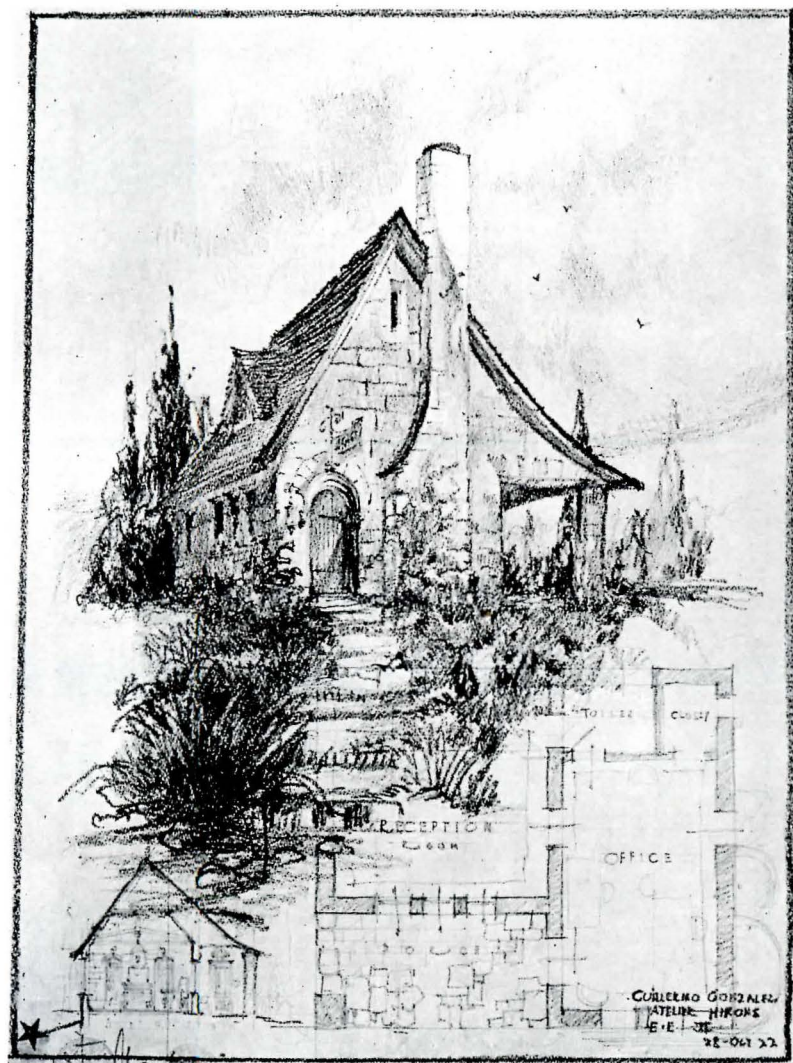


Figure 1. Class B Esquisse-Esquisse. "A Real Estate Office in the Country." By G. Gonzalecz, Atelier Hirons, New York.

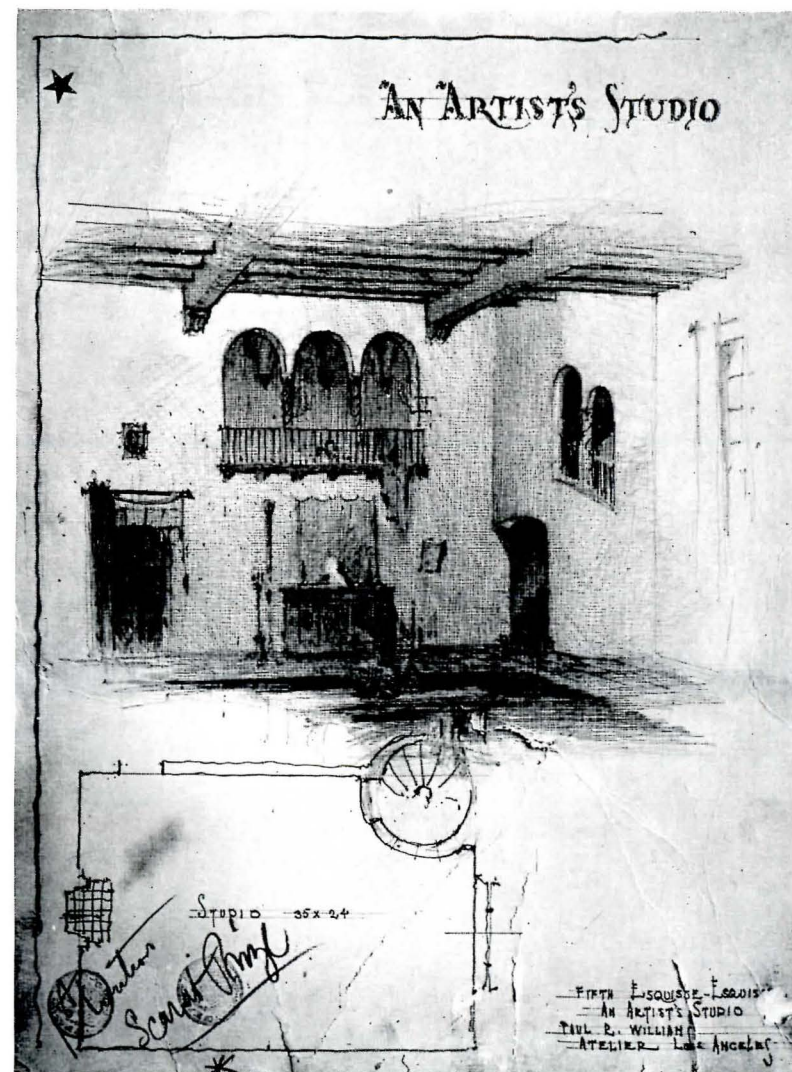
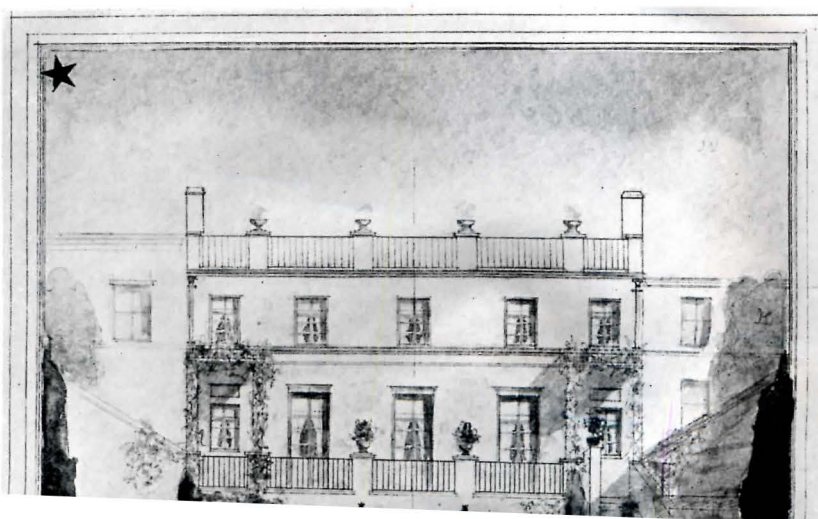


Figure 2. Esquisse-Esquisse. "An Artist's Studio." By Paul R. Williams, Atelier Los Angeles.



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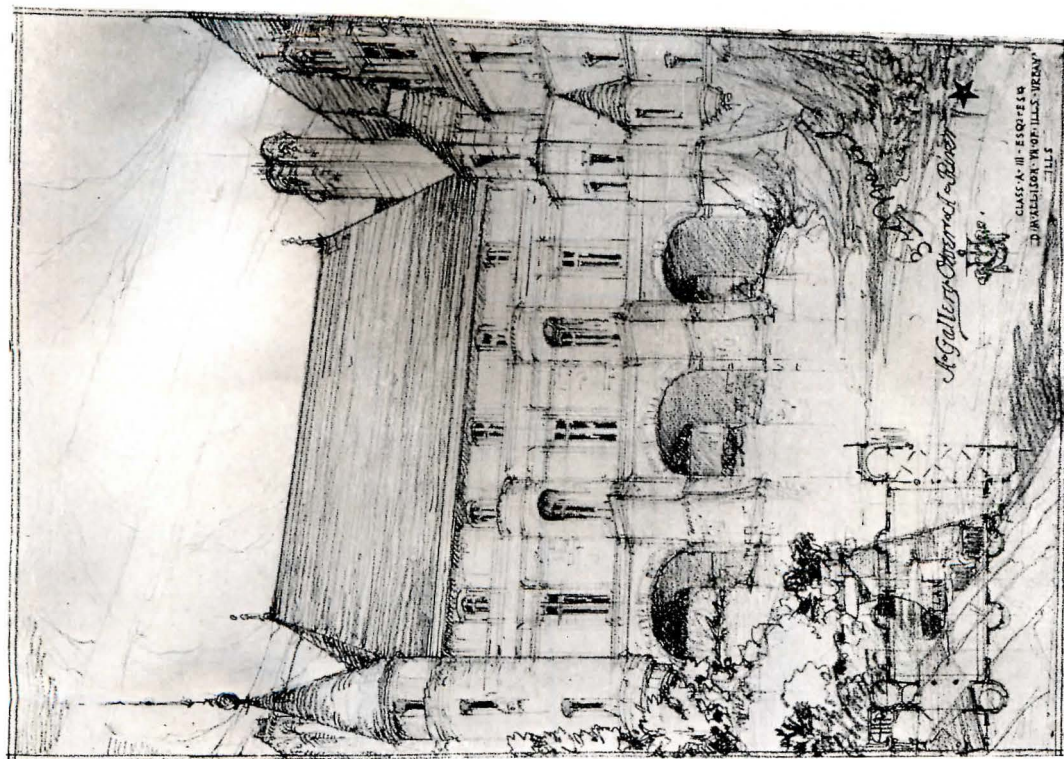


Figure 4. "A Gallery Over a River." By D. M. Allison,  
University of Illinois.

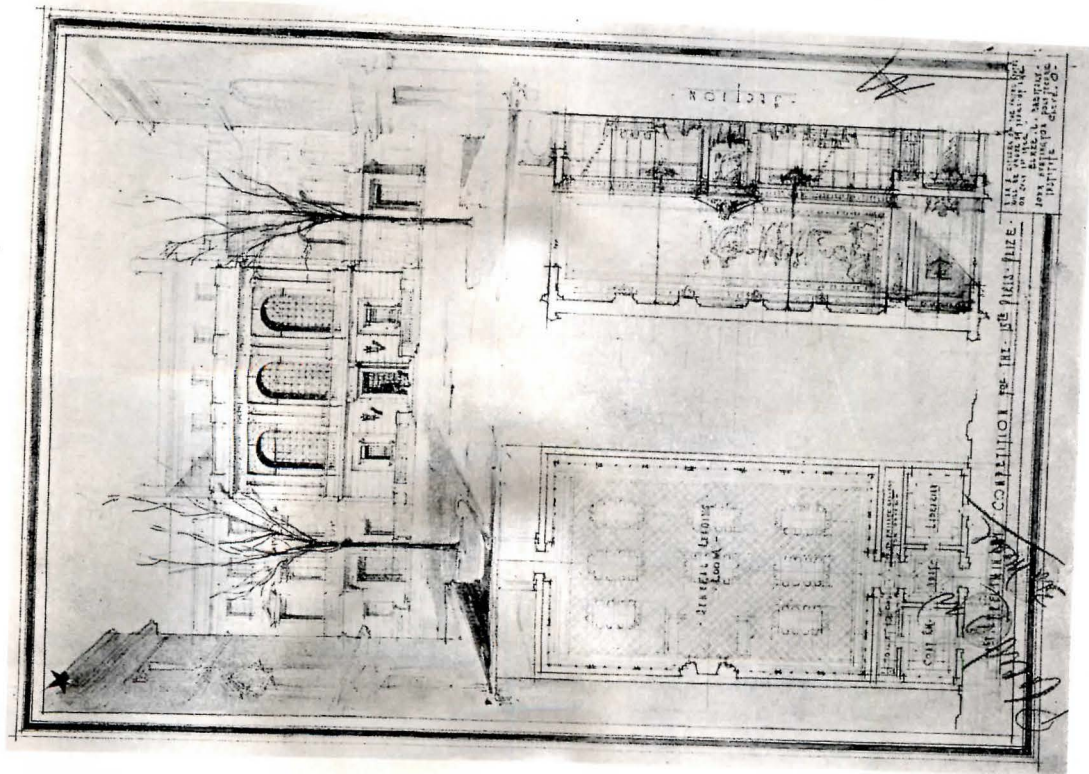


Figure 8. "A Private Library." By Elmer L. Babitsky,  
John Huntington Polytechnic Institute.



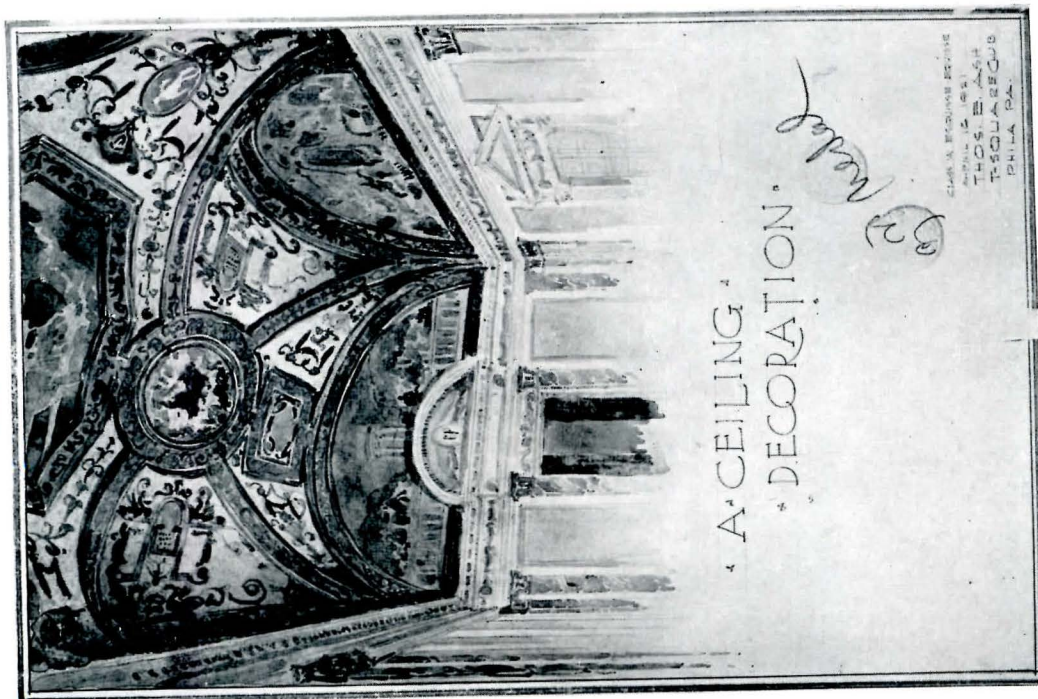


Figure 5. "A Ceiling Decoration." By T. E. Ash,  
T-Square Club, Philadelphia, Pa.

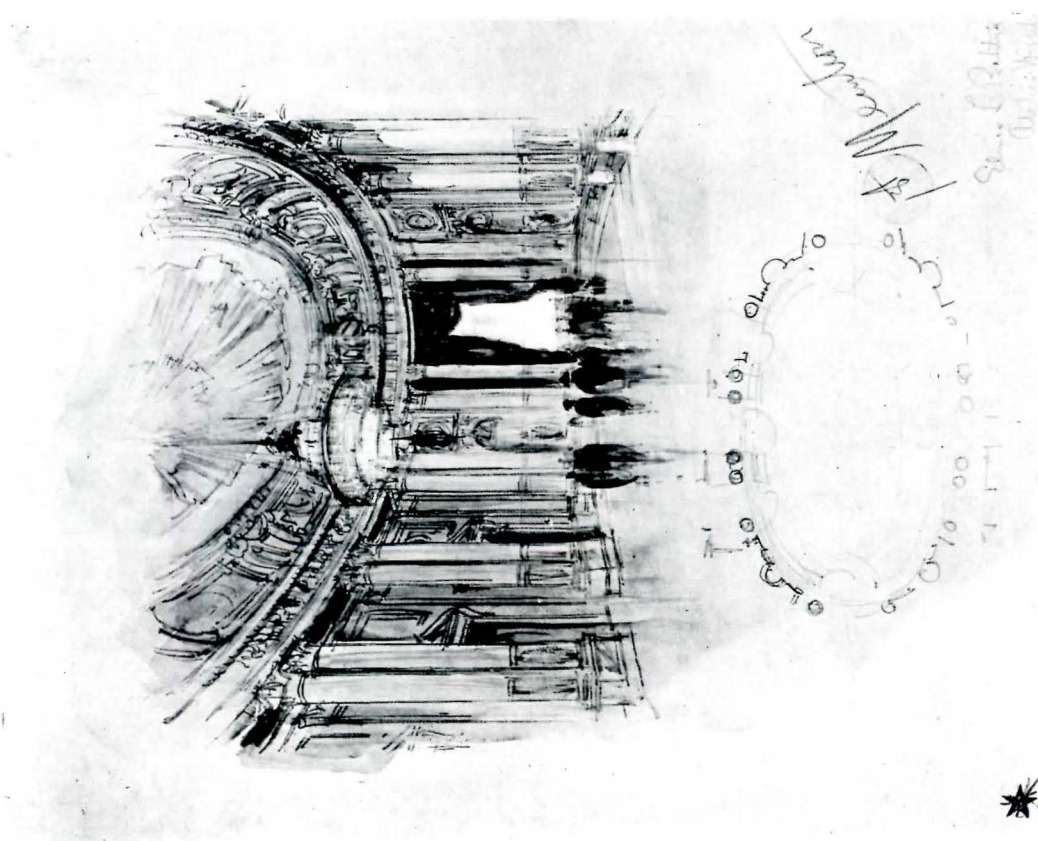


Figure 6. "A Reception Room on a Steamship Pier."  
By Elmer L. Babitsky, Atelier Wynkoop, New York.



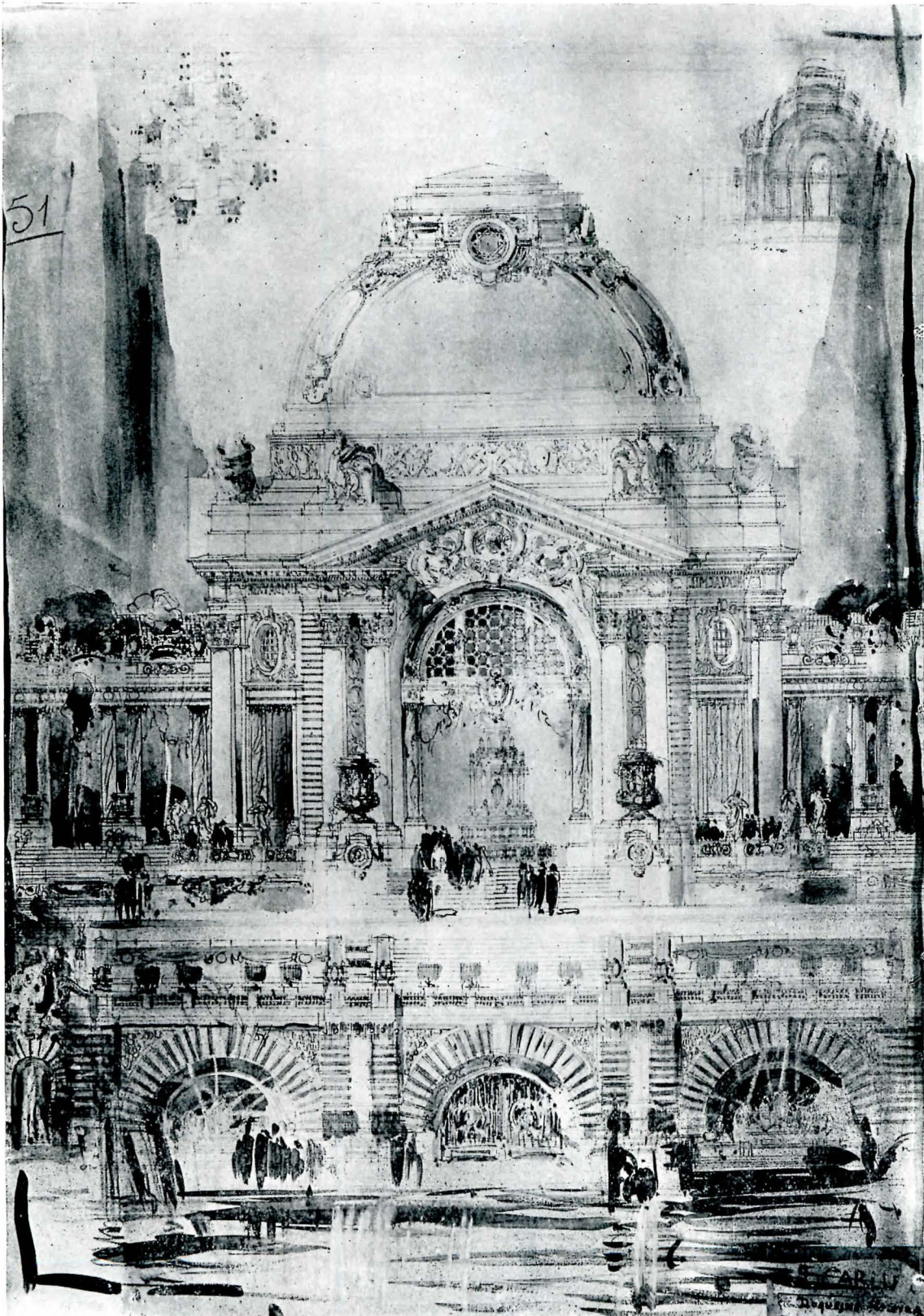


Figure 13. "Un Pavillon pour Une Source d'Eau Thermale." By M. Carlu, Pupil of MM. Duquesne and Recoura. Ecole des Beaux Arts, Paris.



# DESIGN IN THE DRAFTING ROOM, PART II

BY JOHN C. BREIBY

*This is the second installment of a new article in which Mr. Breiby goes back of the subject "The Making of Working Drawings," which he has treated in recent issues, and discusses the preliminary study that precedes the beginning of the working drawings. In this installment Mr. Breiby discusses elevation study particularly. Mr. Breiby is a member of the organization of Carrère & Hastings, Shreve, Lamb & Blake.—Ed.*

SUCCESSFUL designing can be attained only after a thorough analysis and earnest criticism of the design problem to be solved. Self criticism is perhaps the most important guide for the artist or designer to follow. The spirit of self criticism is the ever-willing voice which will whisper to the mind praise, when praise is due, or rebuke when deserved. Its warning voice is like the refiner's fire which separates the gold from the dross. The designer does well to take heed of the warning which comes from within. Criticism, by persons qualified to give it, should always be taken as the helpful and kind expression of a friend.

Anyone can criticise, but everyone cannot criticise justly and wisely. Personal opinions, desires and tastes differ with each individual and these traits will color the advice and suggestions given. Never offer a destructive criticism and leave it at that; do not allow personal opinions or feelings to take such an upper hand so as to shut out another viewpoint. Never belittle the work of another. Always be ready to rebuild and strengthen, if need be, that which by necessity has been torn down. Co-operative discussions, suggestions (if sincere) and criticisms are the stepping stones to good design.

In the working out of any composition, the artist or designer usually feels a sense of self-satisfaction (this feeling should by no means be quenched); the danger, however, is that the composer is often carried away in thought to a

high state of ecstasy, even at times to the exclusion of sound judgment. This feeling of ecstasy, when used to advantage, is the very reason why the first "snap judgment" of a problem will often be the

final solution or—as expressed in part in the editorial of the November number of PENCIL POINTS—"A man's first reaction to a problem is often the best." As a check, when the imagination has a tendency to become more or less rampant, it is well to lay the problem aside for a time, even if necessary to forget it or "sleep on it," to express it in slang. It is remarkable, when work on the problem is resumed with a rested mind and refocused vision, how many interesting and necessary modifications or means of disentanglement will unfold themselves. This is a part of the work of self criticism. There is no need to describe in detail how valuable are the judgment and criticisms of others whose different viewpoints, fresh thoughts, and rested eyes can always help to detect faults and render helpful suggestions. As pointed out before, such suggestions to be of value must be unselfish and not partial.

Architecture has developed by means of traditional and progressive criticism either for aesthetic or practical results and reasons. Aesthetic criticism is a hidden indescribable gift which arises from within, and this gift makes itself known purely through the attribute of the power to feel emotions. Truly enough, laws and rules are given for basic effects de-

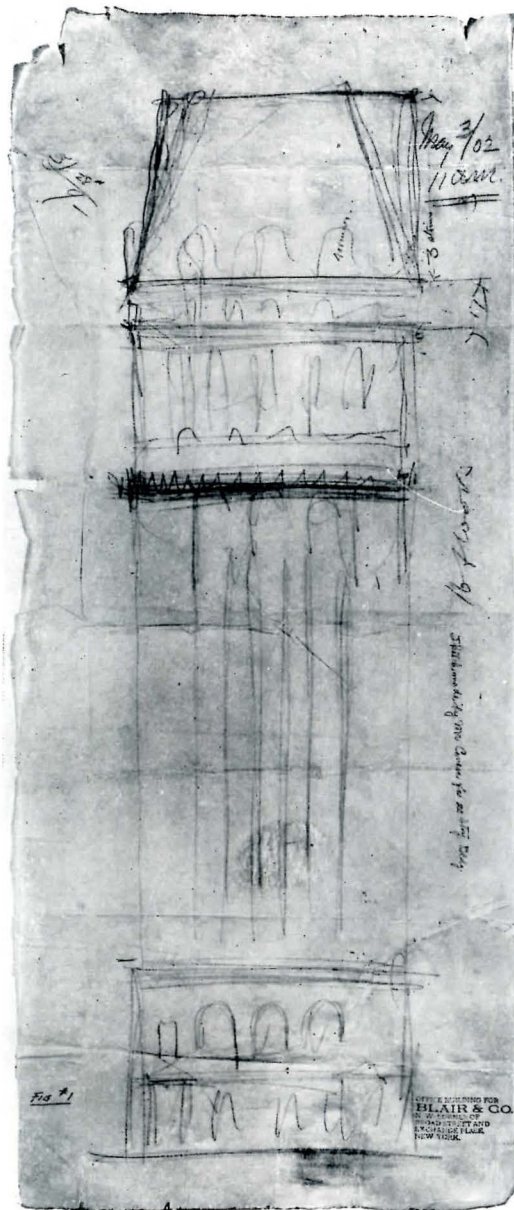


Figure 6. First Sketch for an Elevation by the late John M. Carrère.



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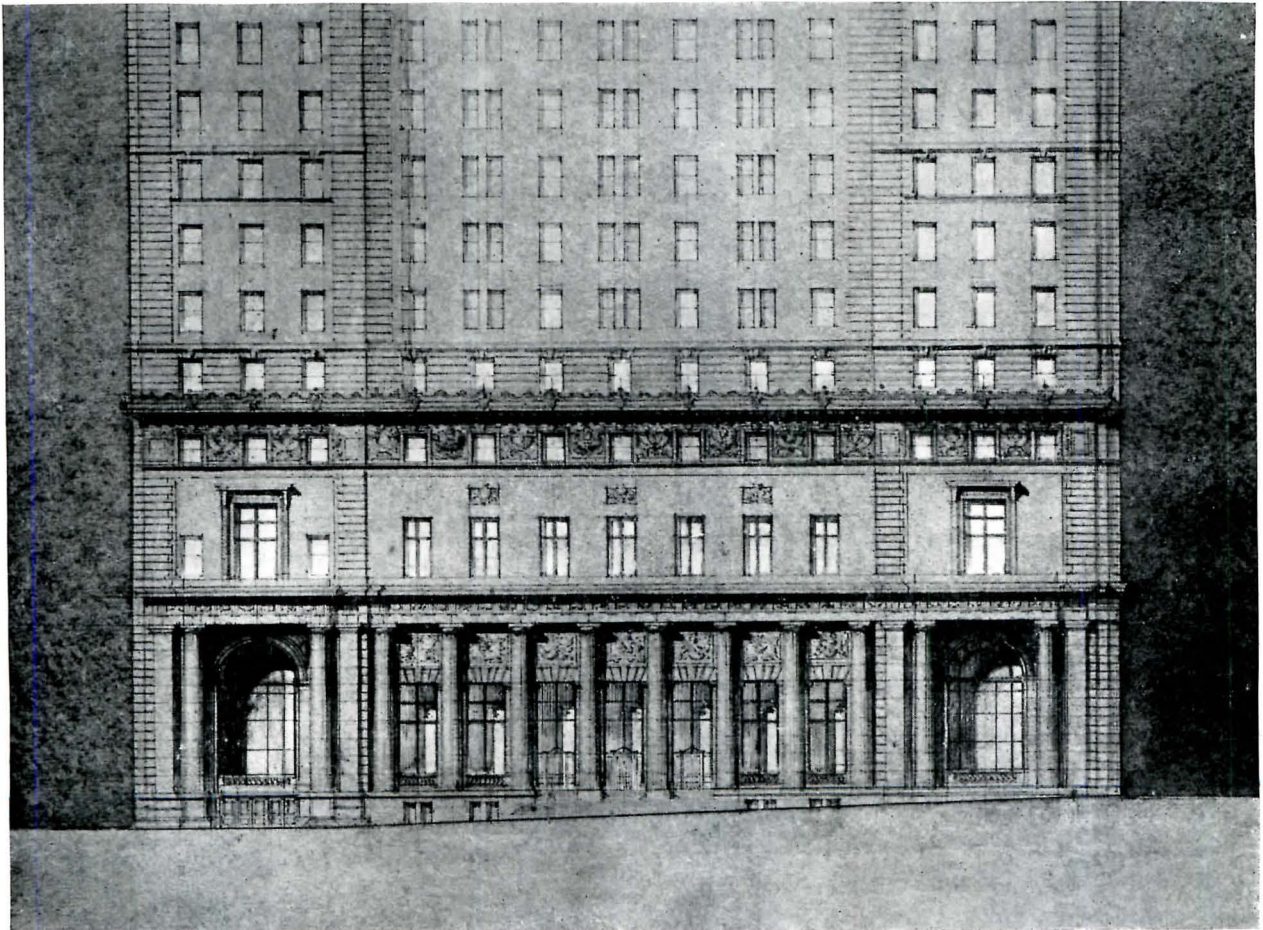
sired, but such laws and rules are very flexible and even though some given law is followed for that which is pleasing to see, the beauty resulting is felt not merely because a particular law is followed, but because the effects stir or set in motion the faculties within, which find the result good. Aesthetic laws or rules are, therefore, not laws of formulas or calculations.

As an example, the architects or master builders of the early historic periods, who had in turn inherited aesthetic rules from their predecessors, developed a definite method for obtaining the entasis on a column shaft. They discovered the reason the column would appear more graceful and refined; if given an entasis which among other things overcomes certain optical illusions and gives a sense of life that is lacking in columns shaped as true cylinders throughout their entire height. Again, in designs of architecture of the Classic periods we find rules in which practically all proportions, all relative divisions of detail are based upon the unit of or parts of the unit which is established by the radius of the column shaft, measured just above the base, now known by the term of "one module." We accept these rules without question, because they please us. In so doing, therefore, are we not

of like nature with the ancients and heirs to their kingdom of thought, aesthetic emotion and visual vibrations? In working out design, this aesthetic inheritance is the great force which unconsciously guides the mind and eye in the seeking of that which is good. The wonders of nature itself offer a splendid opportunity for the study of proportion, mass and color, as revealed in the human form, in the lower animals, in vegetation, in the formation of rocks and crystals—in short, nature's creation is a work of beauty.

Architectural design then is a work of adaptation of the written and unwritten laws for aesthetic values, applied to the actual casting and moulding into shape of materials which are to be used in building construction. Even purely structural design of practical and sustaining materials calls forth these same feelings. It does not require much experience to train the mind and eye to judge whether a structural column or beam appears too light or too heavy for the particular load or work imposed thereon, or whether a wall appears thick enough for its height or length, etc.

The proper use of materials has a purely aesthetic value (even though this may be for absolutely practical reasons), for instance, to give a



*Figure 7. Portion of a Study for an Elevation by Thomas Hastings.*



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rather crude example: It surely would not look proper and right to support stone work upon wooden posts, even though the wooden columns were designed for sufficient strength to do the work required. The reason for this faulty relationship is obvious. The lasting qualities of the stone and comparatively short-lived nature of the wood will clash in the expression of varied durability. The materials may of course be painted to imitate each other, nevertheless the different vibrations will stir up the feeling of inequality and will not appeal to our sense of fitness and therefore are not of beauty. Improper uses and relationship of materials are too numerous to mention. To avoid conflict between materials, great consideration must always be given, as it is a part of the work which has made architecture a fine art.

As structural steel has to be protected from the action of atmospheric moisture, gases, and also from fire, which attack and structurally weaken this material, protection must be provided and the method of protection, and materials to be used, are usually determined by building ordinances and good

practice. Concrete, terra cotta, brick and stone are the usual structural steel protective materials (the rust proof paint required will not be considered as architectural design material), it will then be perfectly good architecture to enclose the steel with and in the character of design which the selected material calls for. So if the protection is to be of stone, the character of architectural stone column of classical proportions may properly be adopted.

Architecture differs from all other fine arts, owing to its nature of being constructive not merely to the mind and eye, but also meeting the practical requirements of human life. No matter how beautiful a painting or tapestry may be, it would be utterly impossible to clothe a building therewith, and call it architecture. This would be unfit for the beauty of building design. The enclosing of a structure by suitable and lasting materials will always be a subject for deep study. Constantly new materials and building requirements are being developed which will all have to find their proper places in the art and science of Architecture. Among the many features for architectural study, com-



Figure 8. Enlargement of a Photograph Showing a Building to Which it Was Proposed to Erect an Addition.



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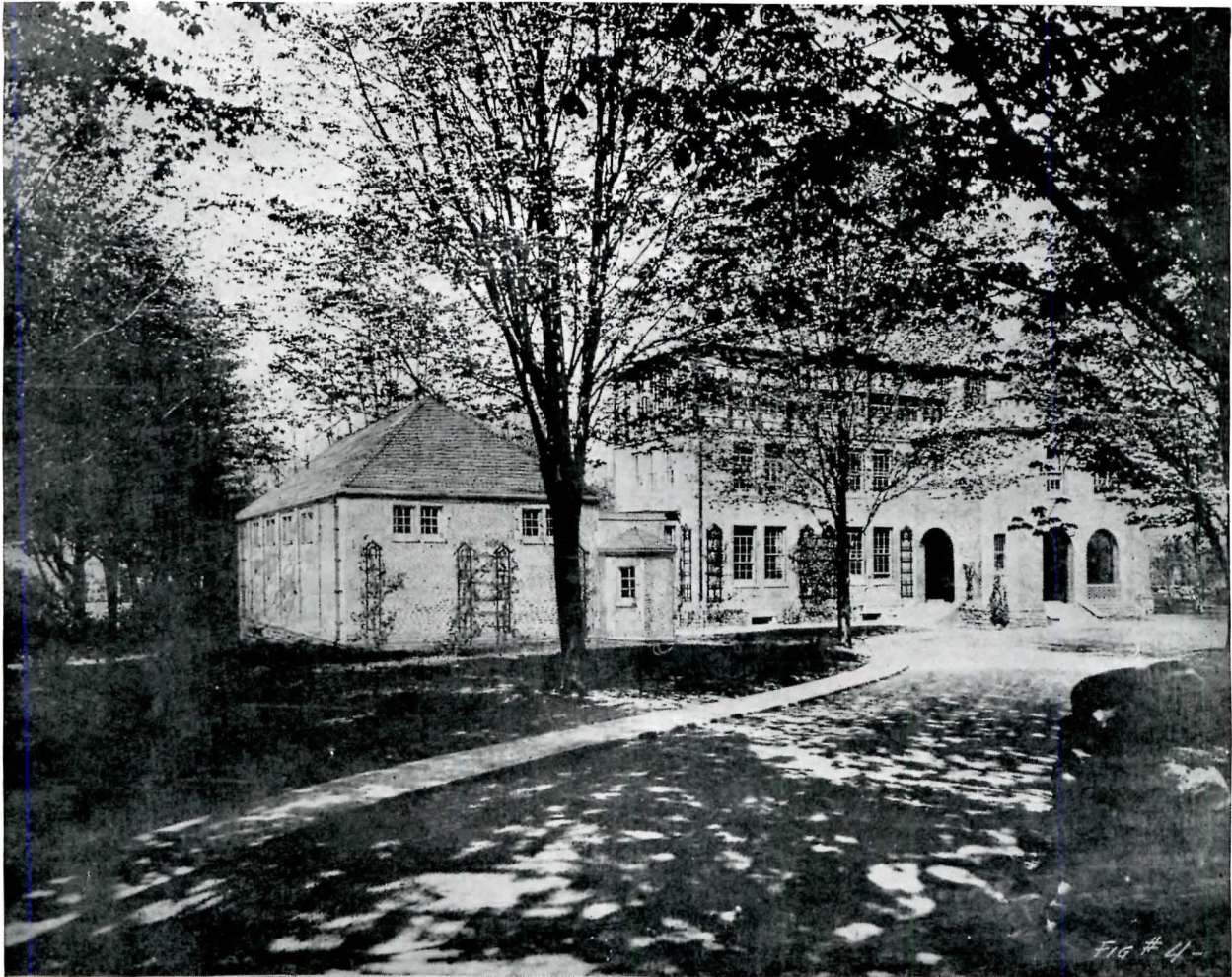


Figure 9. Photostat of Enlargement Shown in Figure 8, Upon Which a Perspective of a Proposed Addition to the Original Building Has Been Drawn. Theodore E. Blake, Architect.

paratively recently introduced to meet modern demands, are the large show window, the fire escape, the revolving door, the smokestack, etc.

Perhaps one of the most interesting recent developments is that of the zoning and height of building regulation. This meets a long felt want, especially for the larger cities. In the smaller communities a step to enforce similar regulations should be taken before such laws will become an absolute necessity to safeguard the well-being of the growth of building operations from a standpoint of beauty, safety and utility.

The work of design in the drafting room is not merely the study of proportion, scale, color, etc., for beautiful architectural effects, but the most important work is to fit a beautiful architectural composition to requirements, and demands, which are at times very prosaic and precise. The required sizes of window openings may often be given, and for certain classes of buildings a definite size is required by law, and these definite requirements may not permit one to design to the best advantages for architectural composition. The difficult problem

must be overcome, however, and it must be well done. The façade of the modern apartment house in reality is made up of walls punched full of holes of required size to be shaped into windows. Even the size of each pane of window glass is given as a factor to be struggled with by the designer. To make a pleasing way of grouping these windows, which are to be in scale with the entire composition, is only one of the many problems to be solved by designers in the drafting room.

No invariable rules or laws for aesthetic effects or the consideration of harmony in material combination, nor for relationship of wall surfaces or formulas for architectural composition can be given. The designer must feel his work always, working with the knowledge as to how the completed work will appear, properly using materials in harmony with the purpose of the building and with its surroundings. Fill the mind with beauty by reading and looking at good books of designs. Develop that feeling which comes from within, and be able to unconsciously discern what is pleasing and in good form and one can cast aside the unfit.



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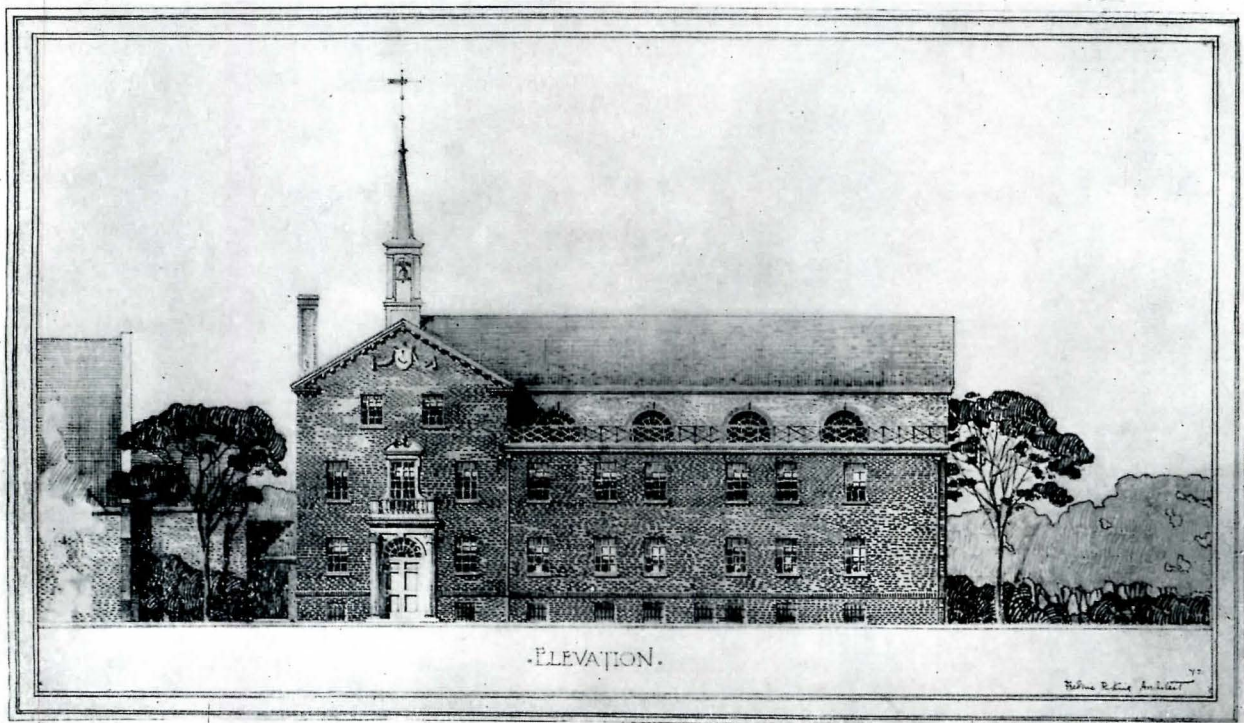


Figure 10. Elevation of a Parish House. Frederick R. King, Architect.

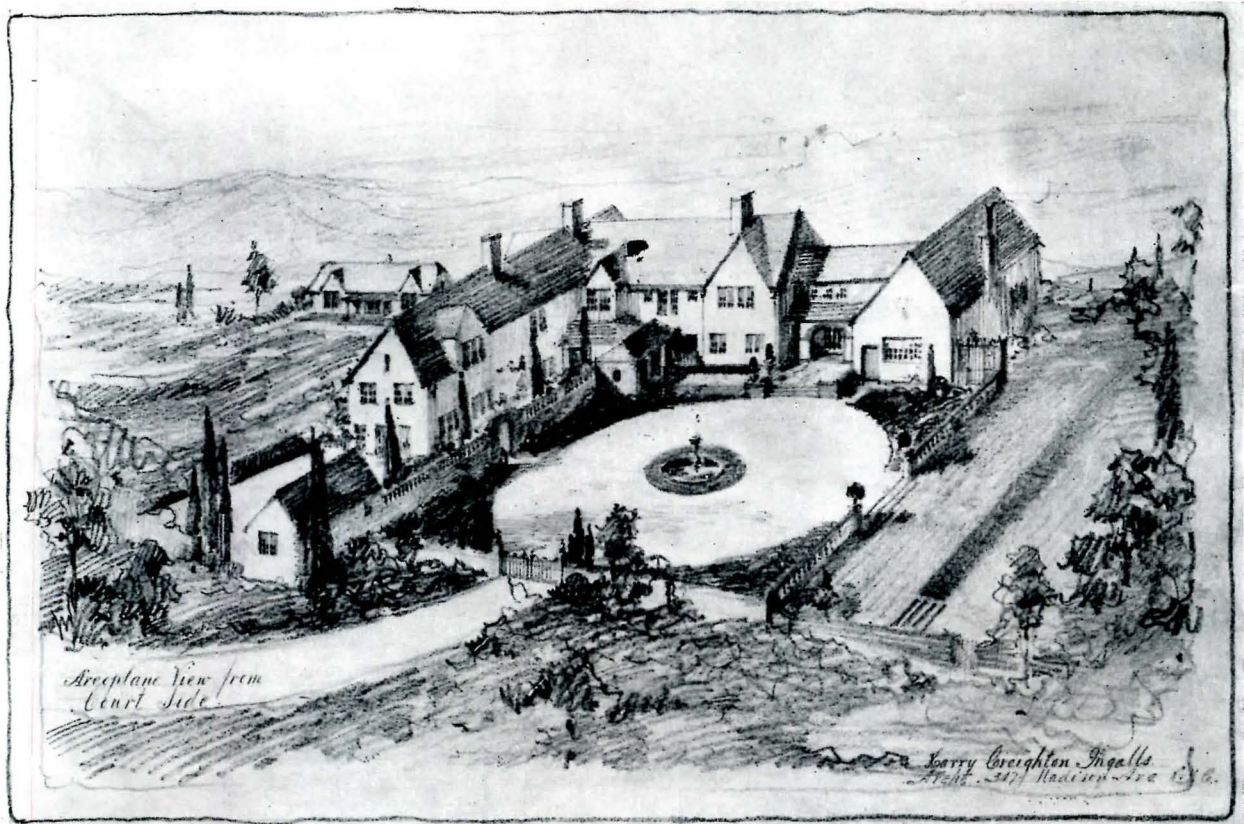


Figure 11. Sketch Study of a Country House. Harry Creighton Ingalls, Architect.



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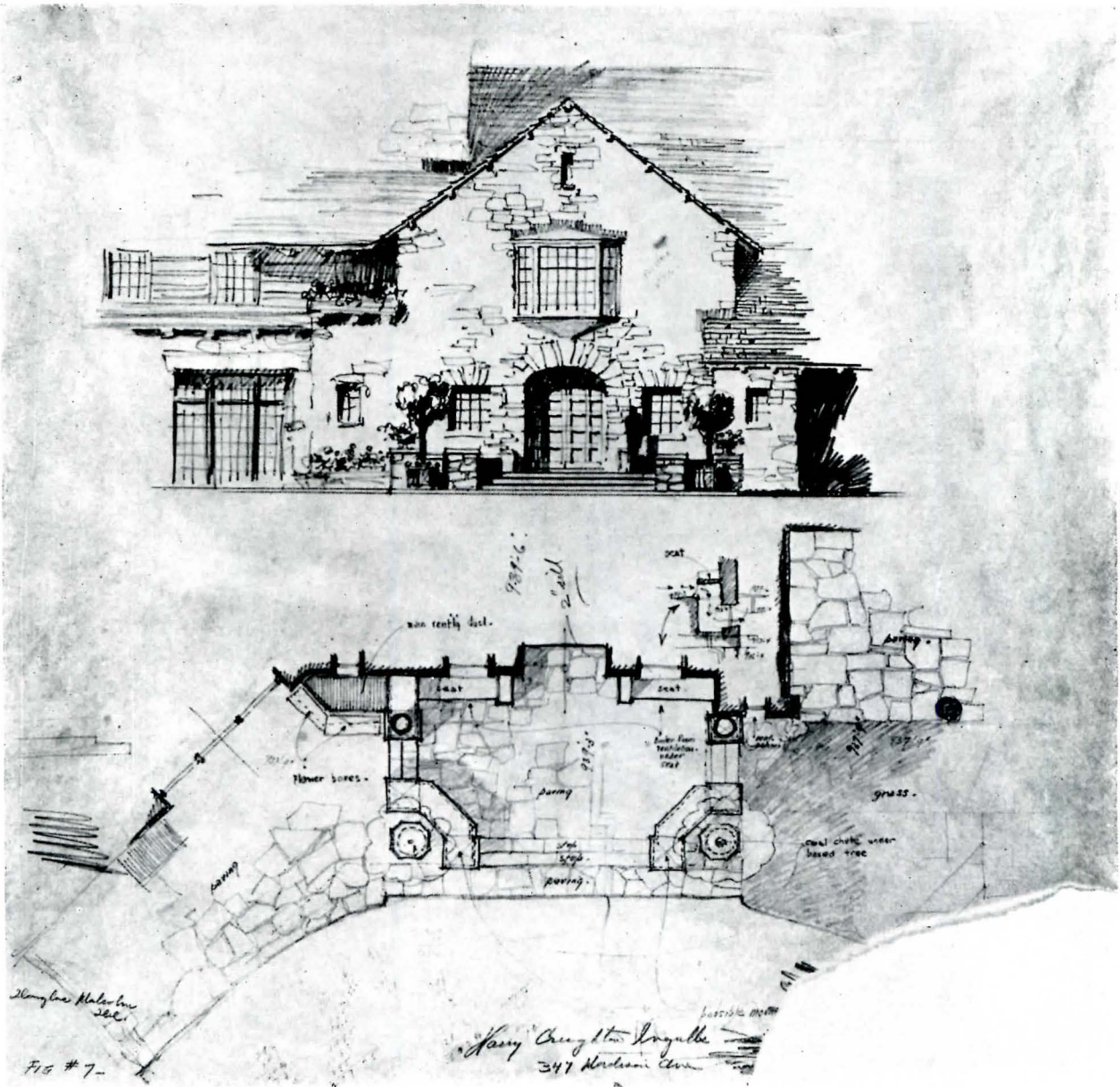


Figure 12. *Free-hand Study, Part Plan and Elevation for the Main Entrance to a Country House.*  
Harry Creighton Ingalls, Architect.

Figure 6 is a reproduction of the first sketch suggestion of an elevation drawn by the late John M. Carrère for the Blair Building, New York City. Perhaps this very sketch helped in some degree to solve a very difficult problem with which the architects of some twenty years ago were struggling. This was to develop a pleasing design suitable for tall buildings. The building of such structures at that time was rapidly becoming more and more necessary, in order to obtain the maximum return in rentals for floor area on properties having extremely high land values, especially in overgrown and congested districts.

The taller buildings erected, up to about the time this sketch was made, were generally designed with

horizontal bands or superposed architectural treatment to overcome the appearance of being "stretched out." The demand for a suitable design of the so-called "skyscraper" then grew beyond the bounds of the architectural motifs used, for it would have been impossible to continue the superposed orders and horizontal bands upwards for twenty stories or more, without having the building look like "Jacob's Ladder."

Mr. Carrère, as his sketch would indicate, clearly foresaw the requirements of a suitable design for the skyscraper, in his conception of the building as a complete mass and not something formed by piling one narrow architectural treatment above another. The result was the introduction of what



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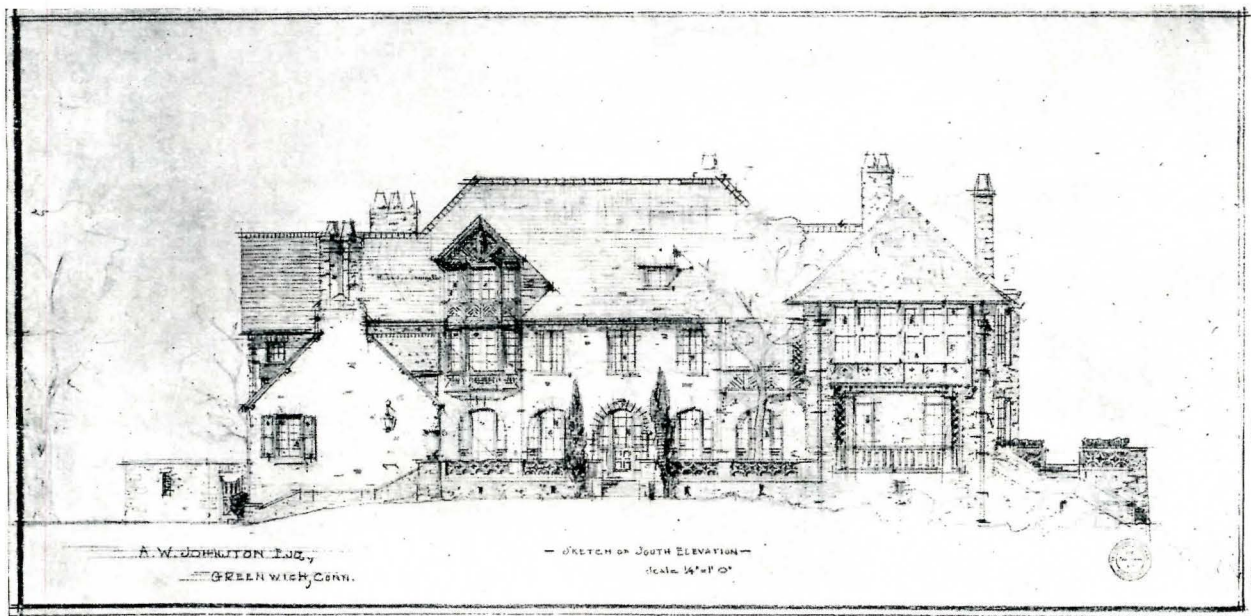


Figure 13. Study in Elevation for a Country House. Theodore E. Blake, Architect.

might be called a new type of architecture, which is characteristically American. The forerunners or prototypes of the design of tall buildings can, of course, be seen in the campanile and towers of the old world, or perhaps the column with its base, shaft and capital may be used as a prototype, with the lower stories of the building treated as a base, the main long body being considered as the shaft, and the upper floors, which are usually embellished with the cornice, may be regarded as the capital.

Embryonic as Mr. Carrère's sketch is, it is really the beginning of the working drawing for this façade and it is very interesting to view the erected building which has now been standing for about twenty years. Compare the general treatment and effect of design with this sketch and note how all the principal features have been retained and are executed in a solid mass of materials which was so roughly, almost crudely, indicated on a scrap of tracing paper by one whose enduring testimony will be for all that is good in architecture.

Figure 7 illustrates a sketch study drawn by Mr. Thomas Hastings for the lower part of an office building. This drawing has been selected to show the technique in draftsmanship, the perfect command in the study of composition, the knowledge of motifs. Perhaps this drawing will illustrate in some measure the remarks made in this article, regarding the fact that the feeling and ability to judge that which is good must come from within. A certain sense of pleasure or composure is felt when the design is in scale and harmony.

Another important effect can be seen, or rather felt, from this drawing in the relationship and scale of the windows above the principal column motif. The windows are of just the right size and shape and could not be any differently arranged nor

changed in shape, without having a disturbing effect. It is from the working and association with men who have attained prominence through their own ability in producing actual results, that the younger and less experienced will obtain confidence in their own work. Advice from the superiors will always be gladly given; and with it is placed a trust which is, that the work of good architecture will be carried on.

Figures 8 and 9 illustrate a very interesting way of presenting to the client a "picture" of work to be executed, especially for an addition to be built to an existing building. Figure 8 is an enlargement from a photograph showing the present building designed by Theodore E. Blake, over which enlargement the contemplated addition was drawn along the same perspective lines, although this addition, in this case was made on another sheet of paper. There is no reason, however, why the drawing could not be made on the enlargement itself, if the character of the photograph would permit.

This additional drawing was then pasted on the enlargement and then rendered in pencil or wash to harmonize in tone value with that of the parts shown in the photograph. The enlargement on which the additional drawing had been pasted was then re-photographed and the reproduction shown by Figure 9 presents the finished result.

With the modern and economical methods of obtaining photographs and photostats, either from drawings or of actual executed work, the method as illustrated may perhaps develop into a very interesting way of presenting contemplated work to the client. Drawings can also be photographically copied and then be used as studies for development, changes, etc., without the necessity of altering or

(Continued on page 60)



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## SAN FRANCISCO ARCHITECTURAL CLUB NOTES

AFTER the banquet all effort is directed toward the success of the Annual Club Jinx to be held in December. Al Williams may be seen most any day in whispered consultations with other members of the Entertainment Committee, with a mysterious and knowing smile forcing itself upon his countenance. Wilton Smith closes up like a clam, and is apparently as much unconcerned, but we have always been told that appearances are deceiving with these quiet fellows. Discordant strains of guitars, banjos and ukeleles are heard emerging from the Atelier room every night, but still a trained ear can discern a remarkable improvement from a week ago. Rehearsals are the order of the day, and yet everything seems to be shrouded in mystery. This much only has gotten to the reporter's ears: that it is going to be SOME JINX, and this is all that he can testify to.

The Free Hand Drawing Club started in September has proved such a success that it has been decided to continue the class for another ten weeks, starting on November 27th, to draw from living models.

The following new members have been elected during the past month: H. W. Ruppel, Geo. W. Travis, M. Bernstein, Mark E. Manning, Theodore Vierra, Edward Cereghino, Bernard W. H. Scott, and James Edward Bodem. The Club is now aiming toward a goal of three hundred members, and at the present rate of increase, it will soon be reached.

## THE PITTSBURGH ARCHITECTURAL CLUB

WITH enormous gobs of enthusiasm, the Pittsburgh Architectural Club conducted their initial event of the season, at the Schenley Hotel of Pittsburgh, on the evening of October 25th.

Aside from a sumptuous banquet, the annual election of officers was the piece d'resistance of the evening, and in spite of the usual withdrawals of candidates, etc. (the architects of Pittsburgh are extremely retiring and office shy), the following victims were inducted into office: Leo A. McMullen, President; W. B. Chalfant, Vice-President; H. B. Steffler, Secretary; Thomas Pringle, Director, and William Harrold, Treasurer.

Mr. Chalfant (Compte de Chalfant), editor of the *Charette*, addressed the assemblage in his usual vigorous manner, at length; easing his mind of a burden that has evidently been troubling him a long time.

The guest of honor of the evening was Henry McGoodwin, who has recently returned to Pittsburgh and is putting much spirit into his work at Carnegie Tech. More power to him! Introduced by Mr. Pringle, chairman of the meeting, Mr. McGoodwin responded with a few very brief words of appreciation. Mac is an ardent, hard worker but dislikes to talk about it.

Mr. Grapin, Prix de Rome, etc., recently appointed professor of Architecture at Carnegie Tech., was the assistant guest of honor, but responded to an invitation to speak with a mere smile. Mr. Grapin is very modest and in addition to that *parles* mostly *Francais*.

The members of the Institute avoided the tedium of a business meeting by wandering off to the Carnegie Galleries to view the Fall Exhibition of Paintings. The Club members expected to join them later, but became lost in a maze of discussion and argufication;—hence lost the pleasure of listening to the wisdom of the ancients (advisedly). "A pleasant evening was had by all."

## THE CARNEGIE ARCHITECTURAL SOCIETY, PITTSBURGH, PA.

THE Carnegie Architectural Society, a reorganization of the Tech. Architectural Club of 1912, has successfully started the school year. The graduate and undergraduate members of the society have always endeavored to foster and develop architectural interest and ability amongst the members and to create a better feeling of fellowship between the students in the department.

Professor Henry McGoodwin, Director of the College and faculty advisor of the society, attended our first meeting this year. He spoke on Beaux-Arts problems. Our purposes were discussed, plans were made, and from all indications, this year will be more active than ever before.

The Carnegie Architectural Year Book which was first published last year is again being considered this year. A scholarship has been offered by the society for the best work in the department, also prizes for the best esquisse-esquisses. Then, too, smokers, dances, a banquet, and an exhibition have been scheduled so that the social as well as the professional activities have been well balanced.

The society has rented a home on the campus where many of the members are living. The weekly meetings are held in the club rooms and during this season, as in the past, addresses will be made there by city men, prominent in the profession. Classes are also conducted in sketching and water coloring at every other meeting.

Last Tuesday, the members held an informal banquet. Several of the alumnae were present. Among them was Mr. "Will" Perkins, who is an instructor at the College. Mr. "Art" Gehring, who has just returned from his study and travels in Europe, was also with us.

We take this privilege, which PENCIL POINTS has so kindly extended to us, to ask our alumnae and friends, whom we have been unable to communicate with, to send us their address. We wish to send each and every one The Carnegie Tech. Year Book and circulars.

## COLUMBIA EXTENSION ATELIER

AT THE annual election of officers of the Columbia Extension Atelier, the following men were named to hold office for the ensuing year: Massier, Walter Conley; Sous-massier, Merrell G. Maybeck; Treasurer, G. R. Tyler; Secretary, W. E. Page; Librarians, Charles H. Dornbusch, A. E. Klueppelberg.

The Atelier has been very fortunate in securing the services of Mr. J. G. Schuhmann, Jr., as critic. He will serve with Messrs. Corbett, Van Pelt, and Flanagan.

Mr. Schuhmann was a former member of the Atelier and was its massier 1919-1922. He won the French Society Medal in 1919 and in 1920 he won the Municipal Art Society Prize and the Emerson Prize. For two consecutive years he was a Paris Prize logist. He enlisted in the U. S. Army Corps of Engineers in November, 1917, and was promoted to Master Engineer. Mr. Schuhmann's ability and intense interest in Beaux-Arts work have long been recognized by those associated with him, and he makes a valuable addition to the Atelier's able staff of critics.



## PENCIL POINTS

### THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following news items:

"The month has been one of departures, preparation for the new Professors and Fellows, and report writing for all concerned. The new Professors and new Fellows are now in residence, and the first meeting of the Academic Council has already taken place. The student body never grows old—this is an affliction visited only upon the Professors! The work of the seven or eight students in residence has gone on quietly but satisfactorily. Of especial interest to me has been architect Hafner's study of the Dome of St. Peter's. He is making an investigation of the line of thrust of the dome. The two shells and the ribs are covered with plaster, so that it is impossible to see whether the shells are bonded into the ribs or not, a fact which is essential for him to know in making his calculations. The Vatican authorities kindly allowed us to remove the plaster in eleven places. The results will appear later on in Mr. Hafner's report. Mr. John R. Morron, President of the Atlas Cement Co., has presented us with ten barrels of his best cement for repairing certain portions of St. Peter's. It will interest you to know that some of the cement has already been used in restorations which are being made on the façade. Hafner's copy of Michelangelo's model of the dome of St. Peter's, which Sig. Ranieri, who built the Academy, is making, is a splendid piece of work and is to be delivered in a few days.

"An event of importance has been Mr. Mead's visit. He and Mrs. Mead arrived last Wednesday and they left last Saturday for America. Mr. Mead went through the studios, and both Mr. and Mrs. Mead lunched with the Staff and Student body on Saturday.

"Other visitors were Prof. David S. Smith of the Jury on Musical Composition, Ex-Senator Theodore E. Burton, who has been a contributor to the Classical School for many years, and the artist Mr. Frederick Dielman.

The gifts of the month were: Mrs. Donald W. Brown, for Concert of last Spring, \$100; Prof. Charles A. Caruth, for Library, Lire 450; Ex-Senator Theodore E. Burton, for museum, Lire 50.

"We have a splendid lot of Professors and Fellows for the new year. Every room in the main building is for the first time occupied by our Professors and our own Fellows, and there are three women Fellows from contributing organizations in residence at the Villa Aurelia, which is the maximum number of women we can take into residence. Thus we start the year propitiously."

From a letter from Mr. John C. Rolfe, Professor in Charge of The School of Classical Studies, we quote the following:

"The work of the School began on October 3, with a general meeting of all the students, at which the plan of the year's work was outlined. There are seventeen students registered. Of these three are fellows of the Academy, four hold fellowships from universities in America, six are graduates or post-graduates of American colleges, and four are visitors, three of whom are university professors. Six of the students are already engaged upon special work of a technical character, and several others are planning to begin such work in the near future.

"As usual a varied and somewhat full program has been offered, including topography, sculpture, vases, and Etruscan archaeology, but attendance is required only on the lectures preparatory to the weekly Campagna trips. I have found it advisable to offer an introductory course in Latin inscriptions, attended by eight students, partly to give some acquaintance with the subject to those who have had no previous work in epigraphy, and partly to prepare some of them for the more advanced work beginning in January. A liberal amount of time is also set aside for consultation with students who are engaged in research.

### POWER SHOW OF INTEREST TO SPECIFICATION WRITERS AND PRACTICAL MEN

IT WILL be well worth the while of any specification writer or any one interested in the practical or engineering side of architecture to visit the Second National Exposition of Power and Mechanical Engineering to be held December 3-8 at The Grand Central Palace, New York.

The list of exhibitors shows that there will be much of value and interest for the man who is concerned with mechanical equipment as a part of architectural work as well as for the man who specializes in power and mechanical engineering. This is a side of architectural work to which an increasing amount of attention must be given, and an exposition of this kind affords a special opportunity for the architect, and members of his organization to familiarize themselves with the advances in this field with the expenditure of a minimum of time. In addition to hundreds of exhibits there will be a comprehensive program of twenty-five motion picture films that present vividly various interesting industrial and engineering processes.

### COMPETITION FOR PARIS PRIZE

THE first preliminary competition for the Paris Prize of the Society of Beaux-Arts Architects will be held January 5, 1924. The winner of this prize receives a free course in architecture in Paris. All desiring information about this competition should write immediately to the Chairman of the Paris Prize Committee, Care of The Beaux-Arts Institute of Design, 126 East 75th Street, New York City.

### ARCHITECTURAL BOWLING LEAGUE

IN THE November issue an account of the reorganization of "The Architectural Bowling League" was given together with a report of the standing up to the time of going to press. Below is given the standing to November 20.

	Total games played	Won	Lost
1. B. W. Morris .....	11	1	8
2. McKenzie, Voorhees & Gmelin .....	11	9	2
3. Cass Gilbert .....	11	6	5
4. Donn Barber .....	11	0	11
5. McKim, Mead & White .....	11	4	7
6. Thos. W. Lamb .....	11	7	4
7. W. L. Stoddart .....	8	4	4
8. Sommerfield & Steckler .....	8	2	6
9. Dwight Robinson (Arch. Dept.) .....	8	7	1
10. Alfred C. Bosson .....	8	6	2
11. J. Gamble Rogers .....	8	4	4
12. Warren & Wetmore .....	8	6	2

High Team Score, 798, by McKenzie, Voorhees & Gmelin.  
High Individual Score, 201, by Lyman of Warren & Wetmore.

High Individual Average by Ackerman of McKenzie, Voorhees & Gmelin.

N. T. Valentine, Sec., Warren & Wetmore.

P. Lynch, Treas., Central Blue Print.

### AN ACKNOWLEDGMENT

DURING the past two months we have written to many hundreds of PENCIL POINTS subscribers in all parts of the country asking them to send us data regarding their own localities for our files. The response has been highly gratifying and since the number of our correspondents is so great that it is impracticable to express our appreciation by means of individual letters, we take this opportunity to thank all who have helped us in this work for their splendid co-operation.—PENCIL POINTS.



## PENCIL POINTS

### DESIGN IN THE DRAFTING ROOM

(Continued from page 57)

retracing the originals. This will in no way belittle the value of draftsmanship, nor necessarily be over commercial.

Figure 10 shows a study of the elevation for a parish house. This drawing illustrates a very interesting and effective method of development study. No hard lines have been used, but the free-hand pencil lines form the shape and mass by being carried to an equal stopping point without being bound or received against hard lines. The designer has worked with the image of the completed work before him, and the brick, texture, proportionate sizes of openings, and carefully studied scale have been well considered and worked out, and the drawing does not show any unnecessary lines for particular effects.

Figure 11 shows a sketch study in perspective of a country residence. The ensemble is complete and the roof levels and intersections charmingly worked out. The entire composition is well tied together by the design of the garden court, architectural walls and balustrades. The wall surfaces in relation to the openings are studied and graceful and form a very pleasing effect. The drawing itself connects well for good drawing composition. The forecourt and entrance splendidly emphasize the light effect on the walls. The sketches show no undue effort in obtaining the necessary indication and tone values. The use of free-hand perspective in drafting room design is of great value, offering perhaps the best means of study for ensemble. The drawings need not be "finely drawn" or made laboriously, just a few lines with the shade values strongly marked will tell the story well in three dimensions.

Figure 12 shows a free-hand part plan and elevation study for an entrance door feature of a country residence. This is a very interesting drawing. Much time is often wasted by making sketch studies too much of a T-square and triangle operation. Values are what count and the best way to obtain the desired freedom of imagination is by the use of a soft pencil which should be handled very much as the painter uses his brush. Train the eye and hand to make every line count.

Figure 13 illustrates a free and bold sketch of the main façade for a country residence. The drawing speaks for itself. How well it calls forth the play of imagination so that the actual house appears to grow, and that it must be placed with terraces, steps, trees and gardens in the exact place where the designer intended that it should be placed. The manner of representation in this case was chosen to give the client a more clear idea of the design than would have been conveyed by an elevation purely in the nature of a working drawing and without the touches that give realism.

To be able to express constructive thought by means of drawing is a wonderful gift, to be developed by the architect and draftsman through constant study and practice.

### THE SKETCH PROBLEM

(Continued from page 44)

sion; it is best to start with the Class B sketches and work through those in Class A to the prize problems; do not hesitate to try for these prize problems as soon as you are eligible. One seldom wins one of these prizes on the first trial—by the time he is making his second attempt he knows better what is wanted, and is more able to dispose of his time to advantage.

First, it is needless to say, a man's "kit" must be ready beforehand—pencils, erasers, water-colors, transfer paper, the final paper or board, "T" square and instruments, etc., etc. No time can be taken from the nine hours for this purpose.

Then, read the program, and reread as often as necessary to understand what it is all about,—what are the important requirements, what is to be the character. You

must form a picture in your mind of what you are after, of the solution as a whole without thinking of details. Next you must find out what are the strokes and lines that will bring out this character.

People use different language to express thought; draftsmen use different mediums to express an idea. Any of these mediums will be good if it will express the thought; but certain things are essential in a good sketch problem—you must fill the paper, or, to put it in another way, you must compose the sheet. The lines on your drawing must not lead the eye out of the picture, but should focus it on the thing that is to be seen; the sheet must always count as a sheet—as a whole. Decide beforehand what medium you will use, so that you will not waste part of the nine hours to make this decision. It is wise to find out in your early sketch problems what is your best medium—and then use it and become proficient in it.

It is important to get the proper scale:—mark in the corner of the paper a drawn scale to keep it in mind. Once you have it in mind you will not need again to use a scale.

Now, as to the division of your time. How long shall you study the program, how long study at a small scale; when is the proper time to start the final drawing? Each man has a different way of working; some can speed up more effectively in the early stages of the process, and are sluggish in the actual drawing; others will be the reverse. In making a few sketch problems you will begin to understand your own characteristics in this. Until you "know yourself," keep at least six of the nine hours for the final presentation. It is most important to have plenty of time for this, for *whatever else a sketch problem must be, it must be completed when the time is up.* No matter how good your idea, unless it is adequately presented it will not interest the jury.

In presenting this idea, detail—carefully drawn detail—is not necessary. All detail is indicated, but it must look like something,—must be reasonable. The Class A sketch problem shown in Figure 11, shows a very free indication of detail, quite different from that of Figure 12, where everything is drawn, rather than indicated although drawn free-hand. One thing which is important in the sketch problem, as in any composition, is to have a dominant feature, and I mean here a dominant feature on your sheet arrangement, quite aside from the design of the piece of architecture which is being presented.

A study of the examples shown here, as well as of the premiated work published after each judgment, will be of great value. It is interesting to compare these with the French example shown in Figure 13—a sketch submitted in the first preliminary for the "prix de Rome" at the Ecole des Beaux Arts. But, after all, to do a good sketch problem, one must have done sketch problems,—the more the better.

### QUAINT SPECIFICATIONS

FROM one of our readers, Mr. C. R. Stephany, specification writer, with Gordon & Kaelber, Architects, Rochester, N. Y., we have received an interesting clipping from the *Rochester Democrat*, quoting the specifications for one of the oldest, if not the oldest, of frame buildings now standing in this country, the Quaker Meeting House in Easton, Maryland. This building was erected two hundred forty years ago.

The old contract for the building reads: "To agree with ye carpenters for ye building of ye said house 60 foote long and 44 foote wide, and to be strong, substantial framed work, with good white oak sills and small joyst, and ye upper floors to be laid with plank and ye roof to be double raftered, and good principal rafters every ten foote, and to be double studded below, and to be well braced, and windows convenient, and shutters, and good large stairs into ye chambers which chambers are to be forty foote square at each end of ye house, and twenty foote between them, and for other conveniences to be left to direction of ye aforesaid friends."

How it was possible to build two rooms "forty foote square with twenty foote between" in a house sixty feet long is something of a mystery.




# HERE and THERE and THIS and THAT

*Editor's Note:*—In our January issue we hope to be able to announce to our readers that arrangements have been concluded with the one man in this country best qualified to conduct this section of PENCIL POINTS. In the meantime the general purposes of this department are being set forth so that our readers may send in suitable contributions for publication under this heading.

In establishing this column or department it is our purpose to provide a place in PENCIL POINTS for the publication of miscellaneous items, many of which are too short for articles, and many of which, in the form of letters, have heretofore been omitted from the paper because of lack of space. Contributions are solicited on any subject having to do with our field. They may be technical or non-technical in character, verse, sketches, caricatures, personal items, news items, opinions, kicks, &c are welcome. So sharpen up your pens and pencils and send your stuff along.

JOHN A. AHLERS, a good PENCIL POINTER from Baltimore, sends this on a postal:

*Pencil Points. Nov. 7.  
GENTLEMEN—  
SEND ON SOME OF YOUR INTRODUCTORY  
SUBSCRIPTION CARDS. I BELIEVE I CAN SEND  
YOU SOME GRAND NEW "POINTERS"*  
  
JOHN A. AHLERS  
25 LEXINGTON ST.  
BALTO MD.

Good work, John!

WHO will give Samuel Davids, rehabilitated war veteran, a chance to earn a living? Here is his story as told by himself.

Washington, D. C.,  
Nov. 15, 1923.

"PENCIL POINTS:  
Dear Sirs:

Some time ago we became acquainted and you did me a very good turn, which was much appreciated by me. I am going to ask you to do one more—a little harder than the last one. As I have previously told you, I am a disabled war veteran and being rehabilitated by the United States Veterans' Bureau in Washington, D. C., where I am making my home. I was notified by the Bureau that I would be cut off from the pay-roll on December 1, 1923, as being rehabilitated as a copyist architectural draftsman. I have a sick wife and two children to take care of and a hard winter ahead of me. I am not asking you for any financial aid, but would like you to help me in this way. I can read plans thoroughly and do tracing and copying—some construction work or superintend same. I am a strictly sober man and would like to secure a position where there is chance for promotion—salary to be a fair one to start with and to enable me to support my family. I prefer Washington, D. C., or some nearby city. Thanking you for your interest in advance and trusting that you will be able to secure me a position commensurate with my accomplishments, I remain,

Sincerely your friend,  
(signed) SAMUEL DAVIDS,  
2206—16th St. S. E.,  
Anacostia, D. C."

PROFESSOR WILLIAM EMERSON of the Department of Architecture, Massachusetts Institute of Technology, has been an enthusiastic supporter of PENCIL POINTS from the beginning and finds himself especially interested in some of our recent publications. We print herewith a letter recently received from him.

"Again I write to fulfill my obligations to you and to PENCIL POINTS, a debt which is steadily growing, as PENCIL POINTS is to my thinking doing a service to the profession in general and to the architectural beginner in particular that is of very high value, through the publication of such books as 'L'Architecture Toscane' and the 'D'Espouy Frangments d'Architecture Antique' in such form as to make them available for the most limited purse. I have been carefully through both of these books and highly commend both the presentation and the little commentaries presented by Mr. Van Pelt concerning the subject matter of the different plates so that these buildings assume some individuality in the eye of the professional reader. I should like to order herewith additional copies of both these two books for our architectural library, and shall be obliged to you if you will bill them to the Department of Architecture, Mass. Institute of Technology, Boston. Thanking you again for this added service, and hoping that you will let me know in what way I can further the excellent work you are doing.

Yours sincerely,  
(signed) WILLIAM EMERSON."

THE Registration Cards are coming in steadily but there are still many draftsmen identified with the building industries who have not yet taken the trouble, both in our interests and their own, to send in their registrations. As we have previously explained, we regard it as highly desirable that a complete roster of all men engaged in drafting room work should be in existence in this office for the convenience of the profession generally. There is absolutely no cost attached to this registration and those registering may be absolutely sure that no embarrassing or improper use will be made of their names. It has frequently been possible for us, through our office records, to forward mail where the sender desires to reach a certain draftsman either for business or personal reasons and has lost track of his whereabouts. The more complete our list becomes, the better service we can render in this respect. So if you have not yet registered, please send for a card and take the necessary two minutes to fill it out and send it in.

THIS department closes for the press on the fifteenth of each month. Contributions should be sent to the editor of PENCIL POINTS. For the best contribution each month a ten dollar bill will be mailed the day the magazine is published. Other contributions, if found suitable, will be published and those not considered available will be returned if such request accompanies the contribution. If you are in doubt concerning the availability of any items you have in mind, send them along and let's look them over.



# THE SPECIFICATION DESK

## A Department for Specification Writers

### MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XIII.

BY OTTO GAERTNER

*In this series of notes Mr. Otto Gaertner, A.I.A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—ED.*

**Garages (Continued)**—It is well to remember that where the machine room is at the top of the shaft the headroom should be not less than six feet and six inches for small elevators, but if possible eight feet. The saddles at the doors generally project one inch into the shaft and are beveled on the under side so that nothing can get caught under the projection when the car rises. There is generally three-quarters of an inch or so clearance between the edge of the sills and the platform of the car. Space must be allowed at the top and bottom of the shaft for over travel. The amount of space required by building codes and ordinances depends upon the speed of the car, the recommended distance being from three to six feet at the top with two feet additional for clearance, and from one and one-half to five and one-half feet at the bottom with two feet additional for clearance. It will generally be found that three feet top and bottom will be sufficient over travel but the code requirement will govern. Also a pit extending four feet below the lowest landing will generally be acceptable but five feet will give more space for oil buffers under the car and counterweights.

A substantial iron or steel grating must be provided directly under the sheaves at the top of every elevator shaft in New York. If the elevator machine is over head it should be supported on a concrete slab over steel beams supported on the shaft walls or on the structural steel of the building. Planks two inches thick laid on steel beams are sometimes permissible. It is well to allow thirteen to fourteen feet from the top landing to the under side of the sheaves above and more if possible even when not required by law.

All parts of the elevator machinery should be properly enclosed, but ample clearance should be left for access to limit stop devices, motor bearings, oil cups and all movable parts requiring oiling or other attention. In addition, when the machine is located at the bottom of the shaft it may be necessary to protect it with a substantial pit pan.

Substantial buffers of the oil, pneumatic, or spring type should be provided under the elevator car and under the counterweights. On account of the short travel and low speed, the sidewalk type elevator need not have them. Spring bumpers are used for speeds of over fifty feet per minute, but it is generally conceded that for elevators with speeds exceeding three hundred and fifty feet per minute, substantial oil buffers should be provided. The sidewalk type of elevator is often a hand power lift but where it is extensively used the electric type is essential. They are not often adaptable for garage purposes, that is for lifting or lowering vehicles, on account of the sidewalk area which they obstruct when in use. If they are not placed on the sidewalk, but are kept within the building lines as when they are placed in a court, there is no objection to them. A number of them have been installed in this way, their capacities being from one to six thousand pounds and their speeds being from twenty-five to fifty feet per minute. For the more speedy type of elevator the bumpers must be designed according to the speed and on the supposition that the car is fully loaded. For plunger elevator installations provision must be made to stop the plunger as well as the car. Bumpers or buffers should be located symmetrically with reference to the center of the car.

The car and counterweight guide rails should be of steel or iron fastened to the sides of the shaft with wrought iron or steel brackets. The size of the rails and the strength and the spacing of the brackets should be such as to safely withstand the application of the safety when stopping a fully loaded car. Wooden guides are sometimes used for freight elevators having less than one hundred feet travel and having less than a speed of

one hundred feet per minute but they are not recommended and in some localities they are not allowed by local ordinances. All guides should be run high enough so that the car shoes will not run off in case the over-travel is exceeded and they should rest on a secure support at the bottom. Where safety devices operate on the rails, the guiding surface of the rails should be finished smooth and the joints tongued and grooved or doweled. Special attention must be paid to the rail supports at a point where the guide shoes come in contact with the guides when the car is at a landing. The guides should be supported so that the deflection does not exceed one quarter of an inch under normal operation. Bolts for fastening the supports should be of ample size and suitable for the material to which the supports are to be fastened.

Ropes or cables are generally of iron or steel without covering except that marine-covered cables are used where there is any special hazard or liability to corrosion. Ropes of other materials are permitted for hand power lifts, and chains instead of ropes are satisfactory for sidewalk lifts. The length, size, and winding of the ropes depends upon the type of elevator machine used. The ropes and cables should be tagged to show the diameter and strength of the material of which they are made and the date of installation. Allowance should be made for defects and wear, suitable factors of safety being allowed. They should frequently be inspected and, in the case of cables, lubrication should be attended to. At the car and counterweight ends of the ropes equalizer arms or springs are recommended.

The counterweights are generally composed of sections bolted together by at least two tie rods passing through holes in all the sections and having lock nuts at the ends secured by cotter pins. When necessary the counterweights shall have metal enclosing shields.

Elevators for carrying automobiles should have car platforms of ample strength to support with safety at least seventy per cent of the live load concentrated equally at any two points fifty-six inches apart on a line parallel with the entrance doorway of the car.

(To be continued)

### SPECIFICATIONS FOR HOLLOW STEEL DOORS

Made by

LAWTON-STEPHENS CO., INC.,

427 Marcy Avenue, Brooklyn, N. Y.

Successors to Grinden Art Metal Company.

**Specifications**—All doors to be of size and design as shown on door schedule and drawings, of LAWTON-STEPHENS CO., Inc., manufacture, constructed throughout of open hearth, cold rolled, patent leveled furniture steel. They shall be  $1\frac{3}{4}$  in. thick, 5-in. stiles and rails, except bottom rail which shall be 10 in. in height, and be welded at all points of intersection. Stiles and rails to be of No. 18 gauge steel, with suitable asbestos or cork filler; panels to comprise two sheets of No. 18 gauge steel with suitable asbestos or other filler, and mouldings to be cold drawn of No. 20 gauge steel. Mouldings should be interlocked with and into these stiles and rails, and where doors are glazed be provided with loose steel stops arranged to receive the glass.

If Underwriters' doors are required, they should be so specified in which event, stiles and rails are lined with asbestos, with Z-bar or other suitable spreader.

Jambs may be No. 12, 14 or 16 gauge, one-piece combination buck and frame, or No. 18 gauge and installed over No. 12 gauge steel bucks or over wooden bucks. With the last named construction, trim is separate and can carry, as with the jambs, baked enamel finish, either plain or grained as desired.

Door transoms, base, chair rail, picture or wire mouldings may be had either in prime finish and finished afterwards at the building by the painting contractor, or in baked enamel finishes, either plain color, stippled or grained to imitate wood.

(Advertisement)