PENCIL POINTS

VOLUME III MAY 1922 NUMBER 5

PENCIL POINTS AS A TWO-YEAR-OLD

WE DO NOT intend to follow the precedent established by many well known department stores and hold a celebration every time we have a birthday, but we find it impossible to let this, our second anniversary, pass without a word to our charter subscribers and our other readers who have backed us with their subscriptions and made possible PENCIL POINTS as it is today.

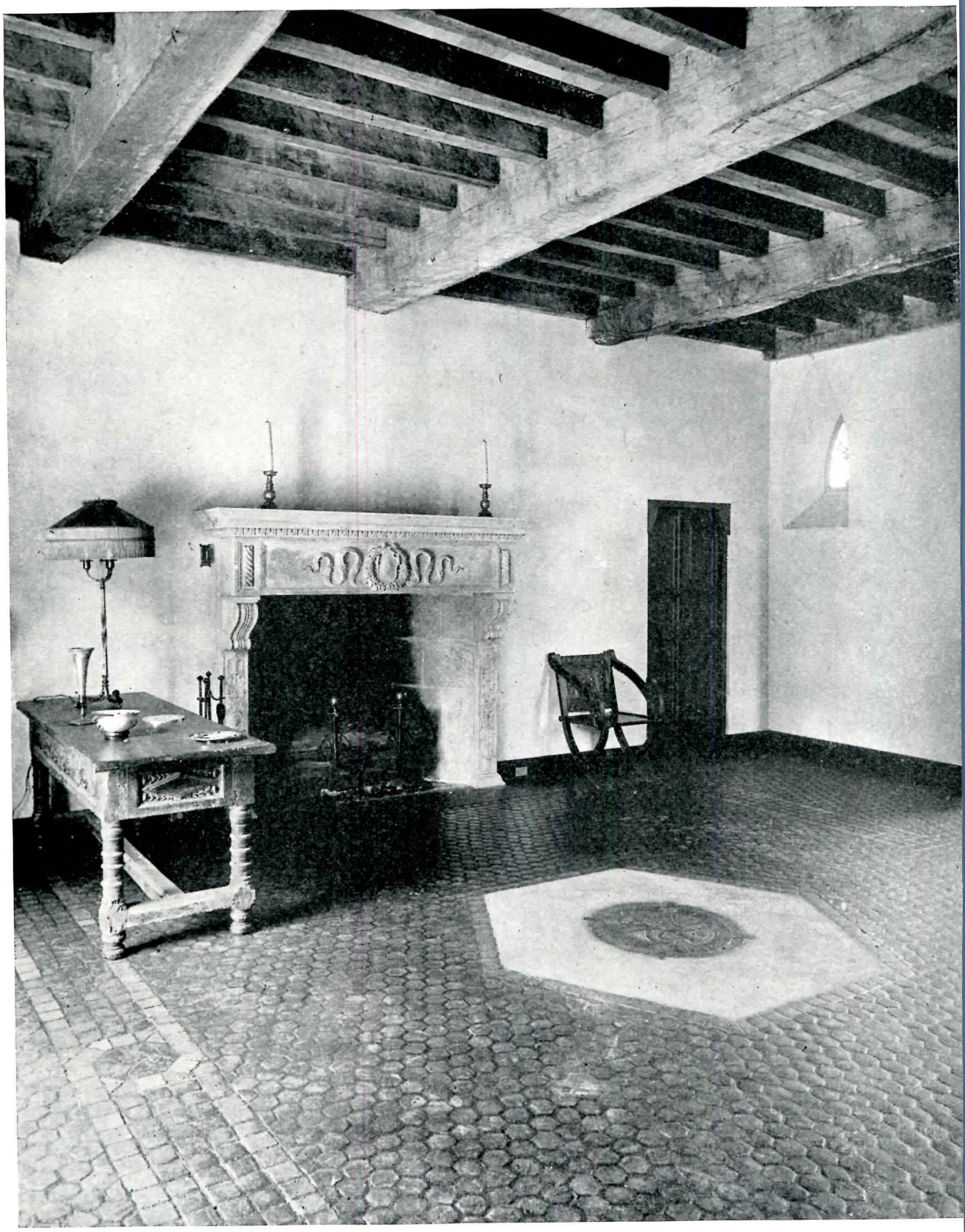
Just two years ago we sent out our preliminary notice announcing the forthcoming publication of PENCIL POINTS as a journal for the drafting room. Over three thousand one hundred architects and draftsmen responded to the first call. We knew right then that this journal had a distinct field and would grow and prosper, provided we kept faith and delivered the goods. Probably no new publication was ever started at a worse time in relation to the business conditions prevailing with those from whom its support must come. Most architects' offices were little more than skeletons of what they had been, with hardly a job in sight. As a consequence many excellent draftsmen were out of work, but in spite of this the army of Pencil Pointers has continued to grow, so that now, just two years after we chucked the good old hat into the ring, we number well over nine thousand, and the ranks are being added to every single business day of the year.

Architects, draftsmen and specification writers and students in the architectural schools have found this journal suited to their needs and have subscribed in large numbers for the paper We are greatly pleased that we have been able, with the help of those men who have contributed so generously of their material, to publish a paper which has found its way to the affections of a large number of practising architects, many of the important men employed by architects, and also a substantial group of advanced architectural students.

The support we have received has imposed upon us an obligation which we fully realize and which we are determined to discharge to the very best of our ability. In carrying our work still further we want and frankly ask the co-operation of our present body of readers in two entirely different, but equally important respects. First, we are extremely desirous at this time, when the entire building industry is experiencing a healthy and unmistakable revival, to extend the influence of our paper by doubling our number of readers, as recently laid before you in letter form. There are still architects who have not sent in their subscriptions and there are still draftsmen and architectural students who either are not readers of PENCIL POINTS or who buy it through newsdealers or depend upon glancing over the copies of their friends. Every one of these men should get the paper every month, because only in this way can they be sure of complete files, which will mean so much in the busy months and years to come. We are constantly in receipt of orders for back copies of the first and second volumes which we are entirely unable to supply, and we have even been unable to secure some of the early issues by offering five times the original subscription price for them. We hope that every reader will take the time and make the effort necessary to *bring one new subscriber* to us.

The second form in which we want co-operation is entirely different. We want criticism, and we want suggestions direct from the men on the firing line. What would you like to see treated in PENCIL POINTS that has not yet been presented? What particular problems are confronting you and your acquaintances which could be discussed to advantage in this journal? Frequently a publisher asks for suggestions more or less as a matter of form and hopes to goodness he won't get any. We want a lot of them and we want them from all parts of the country, and from representatives of the different groups making up the total PENCIL POINTS family. While we as publishers may be likened to a broadcasting station, we want you to know that we also have a receiving apparatus here and we trust that you will give us many occasions to use it.

In our editorial next month we will discuss in detail certain editorial developments and additions which will go into effect with the June number, and in connection with our editorial plans for the balance of this year and for next year we want as many carefully-thought-out suggestions as we can possibly get. We told you at the start that we purposed publishing PENCIL POINTS *with* our readers rather than *for* them. Any success we may have had in pleasing our readers we attribute very largely to the co-operation we have had from you men at the other end of the line.



Hall in House for F. S. McIlhenny, Esq., at Chestnut Hills, Pa. Mellor, Meigs & Howe, Architects. *(See text on the opposite page.)*

ARCHITECTURAL DETAIL PART XIII

BY JOHN VREDENBURGH VAN PELT

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

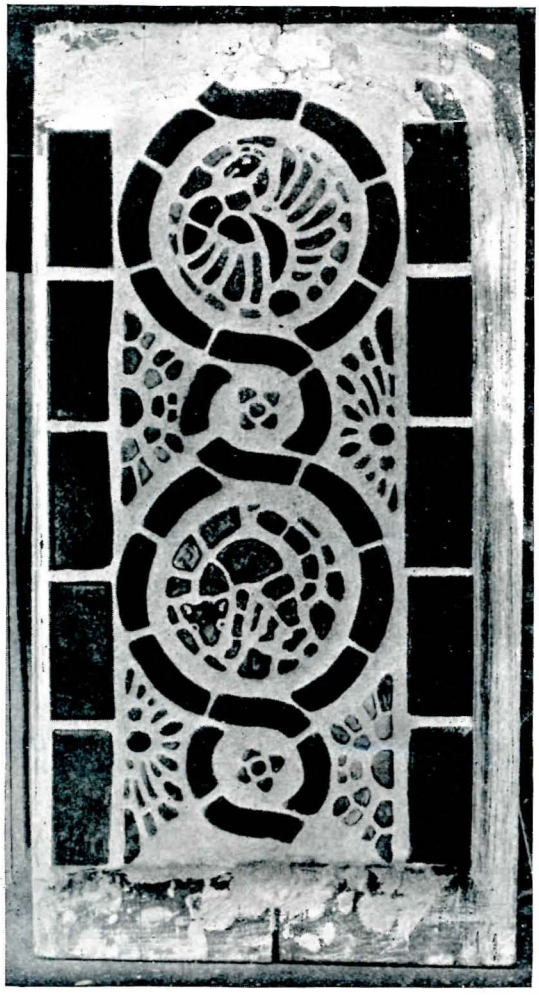
A FRIEND asked me recently, "What is the difference between pottery and faience?"

He might as well have added enamelled terra cotta to the list. I did so in passing the question on to divers manufacturers and experts and finally to one of the professors at an important university that has a whole department devoted to the study of the art. After receiving a somewhat noncommittal answer from the last gentleman, I said, "Well, then, which term ought one to use for all of these beautiful objects?" "If you are talking to the trade," he answered, "you call it 'Ceramics,' but if you are addressing an amateur, you weigh heavily on 'Keramics'."

Truth to tell there is really no very good dividing line between pottery and faience except that the former derives its name from pots and the latter seems to suggest plaques and tile.

Differences in the clays are really matters of convenience or whim in manufacture. There are two general distinctions termed "white body" and "red body," but each plant uses its own mixture and many plants make both white and red tile, the white being usually somewhat softer than the red. The effect of the body on the appearance of the finished tile is only noticeable in the thinner and more transparent enamels or, of course, in the partially glazed tile.

As architects and decorators we have less to do with pottery *per se,* although urns and vases may play an important part in a composition and unquestionably do in furnishing. The hand painting of this more intimate work may run from miniature to the broadest kind of free design. In pottery, faience or terra cotta, the modelled body is so often associated with the colored design that it seems hardly worth while, in a curtailed review, to try to study it separately. Perhaps no other comment is needed than the reminder that a background should be less brilliant in color and perhaps darker in value than a motif. The Della Robbias reserved their bright yellows or whites for the subjects of their plaques. Many of the old Persian tiles were painted on a flat surface, but examination of the illustration of the faience decoration Medresse-I-Chan, at Shiraz, Plate XVIII of this issue, and of the exterior of a portion of the Mosque at Safi at Ardebil, Plate XIX, will reveal intricate examples of both painted and modelled patterns on the same individual tile. The detail of the Blue Mosque shown on Plate XIV of the April PENCIL POINTS was tile mosaic.



Contrasting Textures Obtained by Setting Tile in a Background of Cement.

There is a certain quality of broad decorative modern vase painting made at some of the English pottery works that would be most appropriate for wall tile decoration. It seems a pity that it is not imitated by our American tile manufacturers. Perhaps one objection may be that painted designs are not so readily fired at high temperatures and are, therefore, not as good for exterior work. But exterior work has to carry to a distance and is usually large enough in scale to be made up of small tile, a variety of mosaic. At any rate, the different colors may be separated by incisions or little ditches to keep them from flowing into each other while molten.

This firing of tile is perhaps the best distinction between pottery, faience and enamelled terra cotta. Decorated china, hand-painted plates, etc., are often painted on the underlying white glaze and fired at low temperature in a small decorator's oven.

The next group, pottery and faience, are fired in kilns at a higher temperature, the body first, usua-

ally, the enamel separately afterward. They are enclosed in a coverless terra cotta box called a saggar, each successive box forming the lid of the one below it in the kiln. Where the tile, which have been moulded or cut out like cookies and dried out, are not to be enamelled, the saggars have small openings cut down an inch or less into the sides to allow the gases of the kiln to enter and produce the beautiful accidental fire flashings that are so much prized for certain work.

Terra cotta is burned in kilns with double walls so that the inside of the kiln is really a big saggar. It is fired at a still higher temperature. 2250 degrees, as structural strength is needed.

Different layers of slip or enamel are usually put upon the dried clay and all fired with the body in one operation. For enamelled terra cotta a material or slip that will close the pores is sprayed on and then one or two successive glazing materials are applied, one perhaps a flux and the other the real enamel color. All enamel contains a mixture called the "Base" which is the element that holds the color and forms the adhesive glaze. It must be of such a nature that it will unite with the body, else it will craze and perhaps crack off. The other distinctive parts of the enamel are the mineral that gives the color and a flux. Of course in many enamels the distinctive color may be a result of the influence of the color mineral on a particular base, and then the base has to be varied. For certain effects a tile is fired at a high temperature. Then a second glaze is painted upon certain portions and it is refired at a lower temperature that does not affect the first color. This may even be repeated a third time at a still lower temperature.

A more usual process in blending colors is to place a layer of one color on the tile and when this is dry, dip it in another color or paint, or dab the other color on pre-determined parts. When the enamels melt they mix together and produce very beautiful, more or less accidental, effects. If the heat is sufficient, they boil and bubble up together and when they have cooled there may result points where the under color has taken precedence of the upper. Usually the upper color predominates and the under color softens or tones it. Furthermore, some colors in drying will crackle or draw apart and may introduce an interesting texture contrast. See the panels on this page.

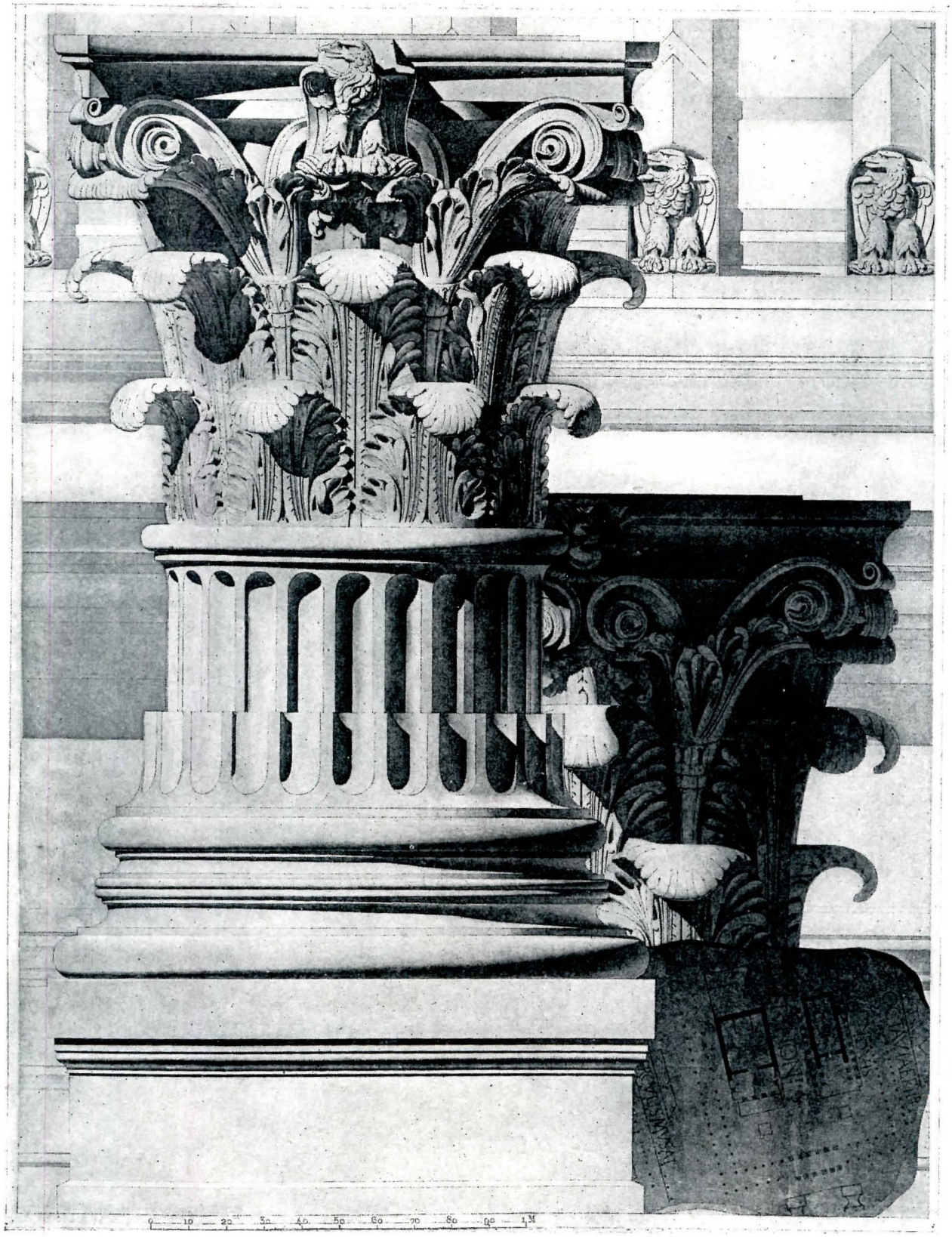
The designer of colored faience or terra cotta decoration must bear in mind that accidental colors are the rule. Even the intensity of a plain color is more or less uncertain. Of course before it is fired, no color gives any suggestion of the final appearance. In one factory that I visited lately, all the enamels were made up with a red lead flux, and the tiles, set out to dry before firing, had a thick coating on the top, no more beautiful than a piece of structural iron just come from the shop.

Past experience in the use of colored faience on the exteriors of buildings makes me feel that small tiles, forming a mosaic, are safer than large tile of a single color, even though the decoration is to be seen at a great distance. To illustrate: If a blue band, four inches wide, is required, it would be better to build it up of smaller triangular tile of slightly varying shades of blue than to set in four inch by four inch tile side by side, this despite variation of shade on each of the four inch tile.

I realize the process can be carried to excess and at times one may feel the need of a space filled by a simple, more even color, but the usual fault is in the direction of too great smoothness and too little

(*Continued on page 37*)

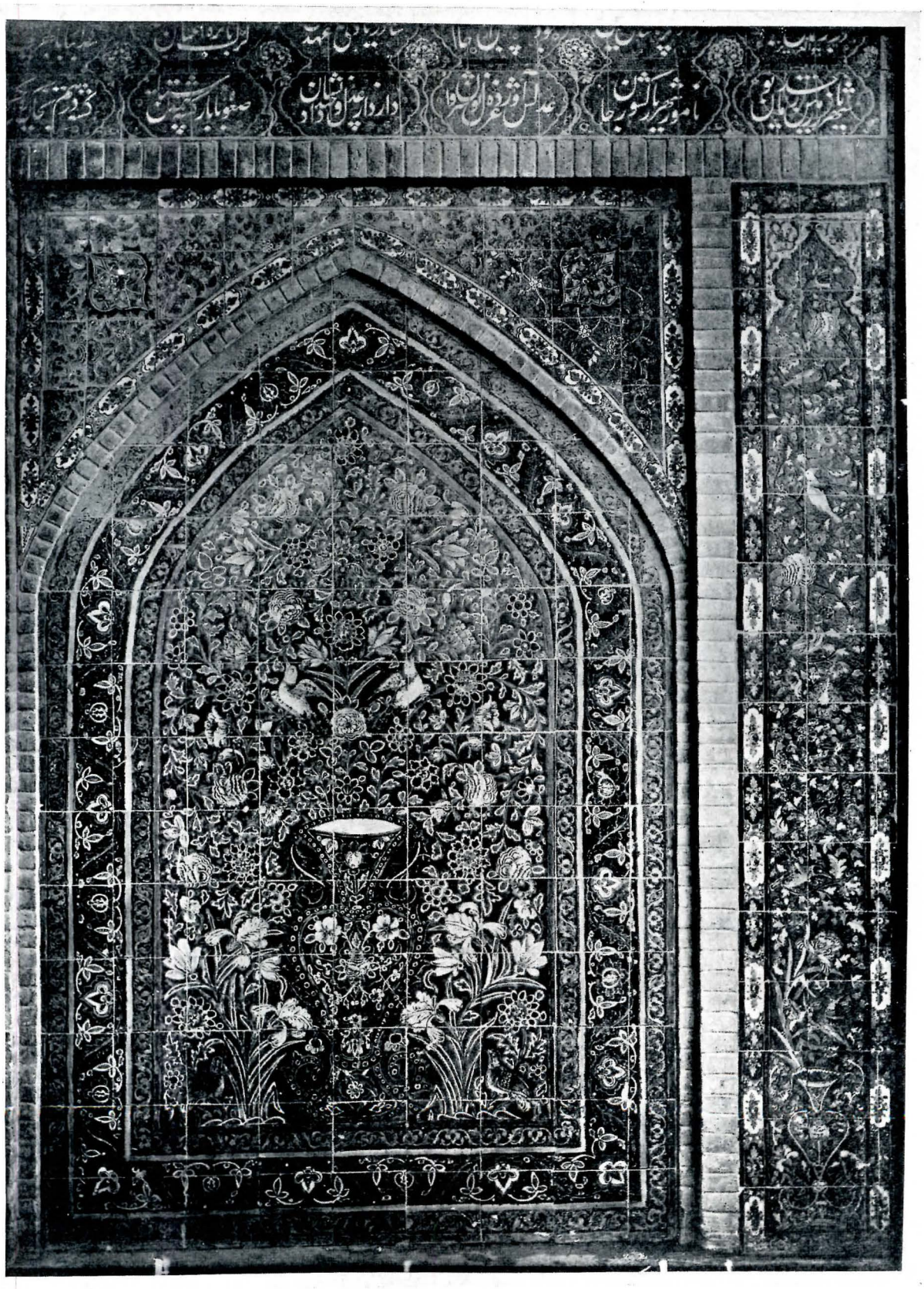
Tiles That Show an Interesting Crackle Texture.



DETAIL OF PORTICO OF OCTAVIUS, ROME.

FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The details of the portico of Octavius at Rome, reproduced on the other side of this sheet from a restoration by E. Paulin, are among the most virile of the many, well-chosen details of Roman architecture included by H. D'Espouy in his "Fragments d'Architecture Antique." This sheet is also an example of masterly rendering.



FAIENCE DETAIL, MEDRESSE-I-CHAN AT SHIRAZ.

FROM SARRE'S "DENKMAELER PERSISCHER BAUKUNST."

The detail of faience decoration from the main entrance of the Medresse-i-chan at Shiraz shown in the plate reproduced on the opposite side of this sheet is typical of the finer faience work of Persia. The skill of the designer in making a well distributed pattern of forms that are cenventionalized, with an appreciation of the character of the material, and made to express the spirit of the people and the times while conveying the essential characteristics of the natural objects from which these ornamental forms were derived, commands admiration and affords a wealth of suggestions to designers in modern faience.

PORTION OF THE MOSQUE OF SAFI AT ARDEBIL.

FROM SARRE'S "DENKMAELER PERSISCHER BAUKUNST."

The façade of the prayer room of the Mosque of Safi at Ardebil shown in the plate reproduced on the opposite side of this sheet is a most interesting example of the combination of faience with brick work, the former used as an enrichment, for which the simple brick surface provides an excellent foil.

Courtesy of Arthur H. Harlow & Co.

PENCIL SKETCH, SEGOVIA

BY ANDRE SMITH

The sketch by André Smith reproduced on the other side of this sheet is notable for the direct method of drawing and the production of a wide range of values by skillful use of a very delicate line. The freshness of the drawing is due to the artist's habit of working rapidly and making a drawing at a single sitting.

PERSPECTIVE DRAWING, PART XXIII

BY PAUL VALENTI

In this series of articles Mr. Valenti is taking the student step by step through a course in the direct construction or perspective plan method. Mr. Valenti, who is Instructor in Architecture at Washington University, St. Louis, Mo., is a graduate of The Royal Academy of Fine Arts of Brera, Milan, Italy, where he received the degree of Professor of Architecture. Mr. Valenti studied under Professor Ferrario, principal of the school of perspective at the Academy and scenographer at "La Scala," theater in Milan, and under other distinguished masters. Upon the investigations and the ripe practical experience of these men, he has based the course which he is presenting to the readers of this magazine. The method shown here, once it has been mastered, saves time and gives increased accuracy over the usual practice in laying out architectural perspectives instrumentally.—Ed.

PROCEEDING, we observe in plan, Figures 52A and 53 (See March issue for all figures referred to), that the side wings extend to the left and to the right of the central unit 28′-6″ and line with the centre of the tower (or centre unit) plus the cornice projections and are 43′-0″ deep; also that these wings are *not* as high as the central unit or tower but reach only to within 5′-0″ of the top of the tower. Consequently, first noticing in plan Figure 53, that the distance of these wings from the transparent plane is 18′-6″, measure off this distance to the *left* of point A on the geometric line $R\ S$ to point n. Then conduct a straight line from this point to measuring point $M\ I$ on the Horizon Line, intersecting a line conducted from point A to vanishing point $V\ P\ I$. From this intersection f conduct a straight line to vanishing point $V\ P\ II$ and where it intersects line $a'\ V\ P\ I$ (which is the left-hand side of the upper limit of the tower) at point e, lower a perpendicular to the ground plane. Conducting a straight line from point a''' to vanishing point $V\ P\ I$, you will intersect this perpendicular at point e'' which represents the lower point of the left-hand wing of the building 18′-6″ away from the left-hand corner of the building and emerging exactly from the centre of the tower, plus the cornice projection, as shown in the plan at Figure 53. Lowering a perpendicular from point f until it intersects a straight line conducted from point C to vanishing point $V\ P\ I$ at point M, we will have found the extreme left-hand lower limit of the left wing, and measuring up 35′-0″ on line $A\ C$ to point g representing the height of the wings (as indicated in the elevation in Figure 52B), and conducting a straight line from this point g on line $A\ C$ to vanishing point $V\ P\ I$ it will intersect line $f\ M$ at point g' representing the exact height of 35′-0″ or $g'\ M$ on line $f\ M$ 18′-6″ away from the transparent plane, as indicated in the plan at Figure 53, and represents the extreme left-hand corner of the left wing of the building. Again by measuring off 84′-0″ to the *right* of point A on the geometric line $R\ S$ to point m, representing the total length of the entire building shown in the plan at Figure 52A, conduct from this point m a straight line to measuring point $M\ II$ on the Horizon Line, until it intersects line $A\ Z$, at point m' which intersection will represent in perspective, from point A this given distance of 84′-0″ as given in $A\ m$ on the geometric line $R\ S$, or, in other words, $A\ m$ (in the geometric) $= A\ m'$ in perspective. This line $A\ m'$ as was shown previously, represents the upper front limit of the solid containing the building. Now upon observation we will notice that the wings of the building are 18′-6″ back from the transparent plane, consequently having already found this depth at point n to the left of point A on line $R\ S$, and also having found point f at the intersection of this measuring line and line $A\ V\ P\ I$ ($A\ n$ in the geometric $= A\ f$ in perspective); having also found point g' on line $f\ M$ ($A\ g$ in the geometric $= f\ g'$ in perspective), we may now proceed to find g'' which represents the upper extreme *right*-hand limit of the building. Conducting a straight line from point m' to vanishing point $V\ P\ I$ and intersecting this line by another straight line conducted from point f to vanishing point $V\ P\ II$ we will find f''. We may prove also the following: $A\ f = m'\ f''$ which in turn equals $A\ n$, the latter being in the geometric. Conducting a straight line from point g' (already found on line $f\ M$) to vanishing point $V\ P\ II$ it will intersect a vertical lowered from point f'' at point g'' thus determining the extreme right-hand limit of the building in $g''\ g'''$. Lowering a perpendicular from point f'' indefinitely and conducting a straight line from point m'' (which is the intersection of a vertical lowered from point m' and line $C\ V\ P\ II$) to vanishing point $V\ P\ I$, it will intersect this perpendicular at point g'' thus determining the lower right-hand limit of the right wing of the building. Uniting point $g'\ g''$ and $M\ g'''$, and closing with the lines $e'\ e''$ and $g''\ g'''$ with what we already have, we will obtain the front elevation of the building in perspective. Now for the depths. From point A on the geometric line $R\ S$ measure off in the scale of the picture 33′-6″ to the *left* representing the depth of the tower as indicated in Figure 52A and Figure 53, (measure the full depth or distance from the front face of the steps to the back wall of the tower) and place this distance to the left of point A at point p. From this point p, using measuring point $M\ I$ on the Horizon Line, conduct a straight line intersecting line $A\ V\ P\ I$ at point p', thence a line to vanishing point $V\ P\ II$ intersecting line $a'\ V\ P\ I$ at point p'' which determines the depth of the tower in perspective. To prove: $A\ p$—on the geometric line $R\ S$ equals 33′-6″ indicated in the plan at Figures 53 and 52A. Therefore, $A\ p$ in the geometric equals $A\ p'$ in the perspective and also equals $a'\ p''$.

The same is done to obtain the depth of the wings. For example: measure off the total distance from the transparent plane in Figure 53 to the rear left-hand corner of the building which, it will be observed, is 61′-6″. Then place this distance, in the scale of the picture, to the left of point A on the geometric line $R\ S$ at point t. Using once more the measuring point for this side, which is $M\ I$ on the Horizon Line, conduct a straight line from point t to point $M\ I$ intersecting line $A\ V\ P\ I$

(*Continued on page* 34)

Figure 155. St. Peter's, Rome.

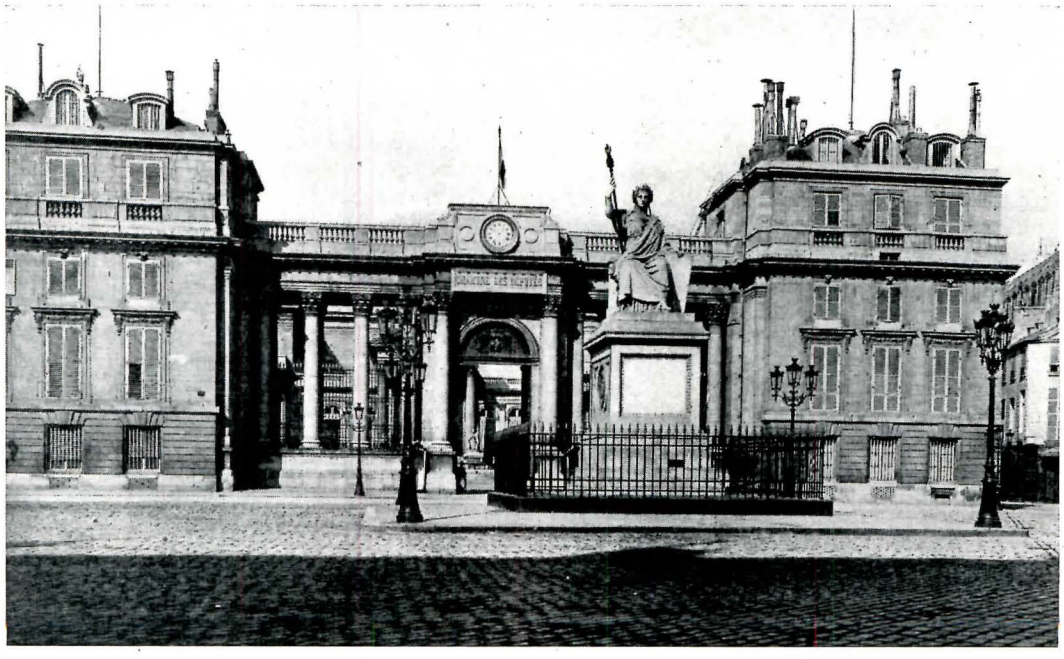


Figure 156. Chamber of Deputies, Paris.

THE STUDY OF ARCHITECTURAL DESIGN

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

CLASS B. PLAN PROBLEM. PART VIII.

Size, Scale and Proportion—(Concluded)

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—ED.

IN THE two previous numbers we have studied the sizes of various architectural motives; we have seen how they vary, both in size and in proportion, within certain limits. To complete this study, let us look at two façades in their entirety—that of the Pierpont Morgan Library in New York, Figure 151, and that of the Butler Art Gallery, at Youngstown, Ohio, Figure 152. They are of the same length, 120 feet, and are here reproduced at the same scale: they are particularly interesting as being so nearly the type and the size of an average Class "B" plan problem. Each façade is of the three-motive type, and in each the central motive is sub-divided into three; in each case the central motive is a loggia, and in each a niche forms the principal feature of the end motive. The arches of the Butler Art Gallery are fifteen feet from centre to centre of column; the central arch of the Morgan Library is, as we have seen, slightly less, fourteen feet from centre to centre of column. These are particularly good examples to study for their scale and proportion, which are excellent, and also for the careful use of detail, of profile of mouldings, and of the placing of ornament where it will be set off by contrasting surfaces of blank wall. As is usual, the line drawings hardly do justice to these carefully studied buildings, which depend for their effect on proportion, on beauty of execution, and the judicious placing of a small amount of ornamentation, rather than on a profusion of ornament and a complication of lines. The photograph of the Butler Art Gallery as completed, Figure 153, will show how beauty in good proportions is brought out in executed work. The Morgan Library is so well known as to need no further illustration.

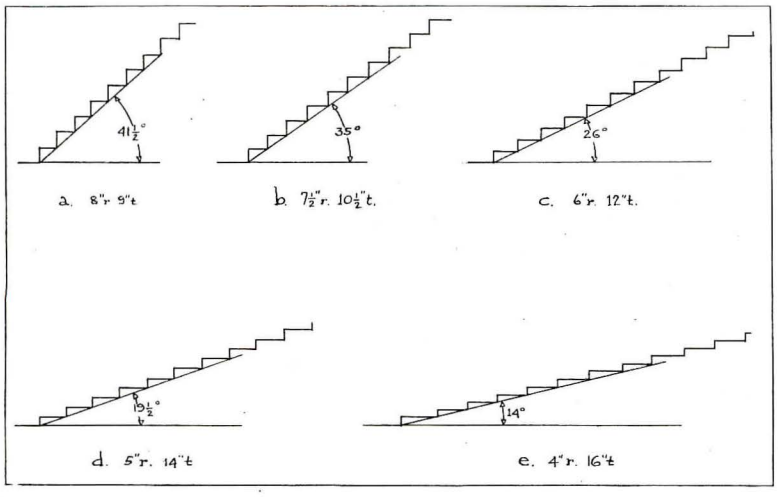


Figure 157. Sections of Stairs.

We need give no other examples. The value to the student will be in his making such a study of size and scale and proportion himself, devoting an evening to this purpose during the early stages of each problem.

In speaking of proportion so far we have used only terms of façade; however, all study of proportions is regulated by those of interiors. The natural order of study, for any program, is to make first a tentative disposition of the rooms and spaces required—that is the plan. Then must be determined the necessary heights of stories, of windows, of roofs—that is the section. In reality the *plan is only a horizontal section, the section a vertical plan, and these two have as their resultant, a façade.* The first study of façade will, of course, cause modifications here and there in plan and section; each of these studies—plan, section, elevation—is the complement of the others; they cannot be treated as successive phases of study.

The usual error is to make motives too small in scale—to crowd too many into a few feet. It is also a mistake to go to the opposite extreme; extravagant proportions do not give grandeur in composition. This grandeur of aspect is obtained partly by simplicity and unity, but also by the number of elements—a long façade should have a greater number of "bays" than a short one. Thus the façade of the Palace of Versailles fronting on the park, Figure 154, is

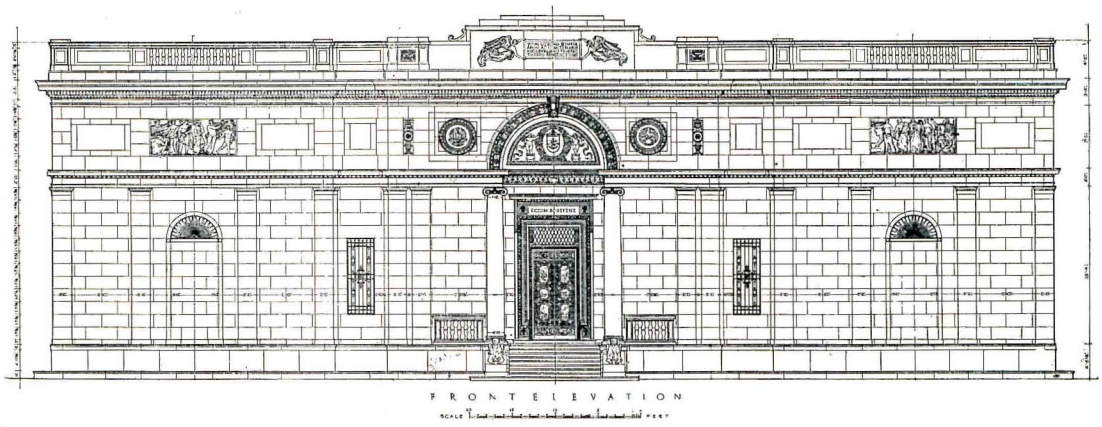


Figure 151.

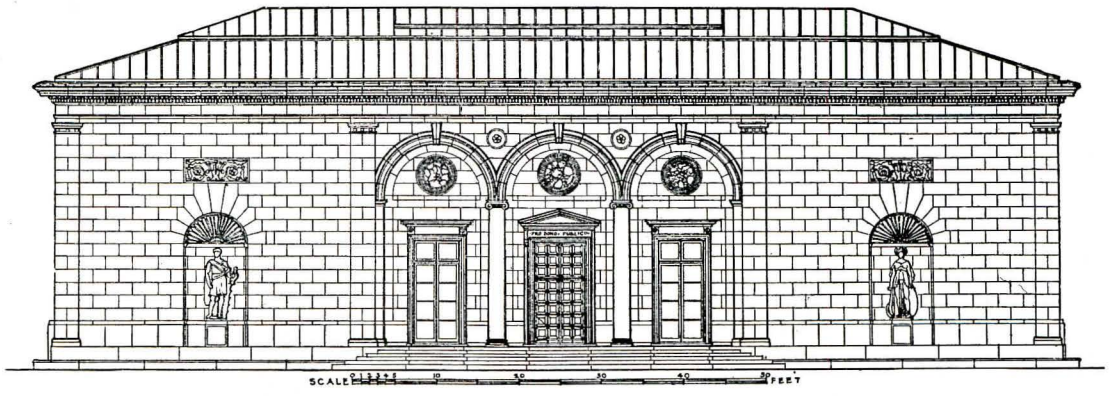


Figure 152.

Figure 151, Façade of The Morgan Library, New York, and Figure 152, Façade of The Butler Art Gallery, Youngstown, Ohio, are Reproduced at Reduced Size from the "Monograph of the Work of McKim, Mead & White," by Permission of the Publishers, The Architectural Book Publishing Co., New York City.

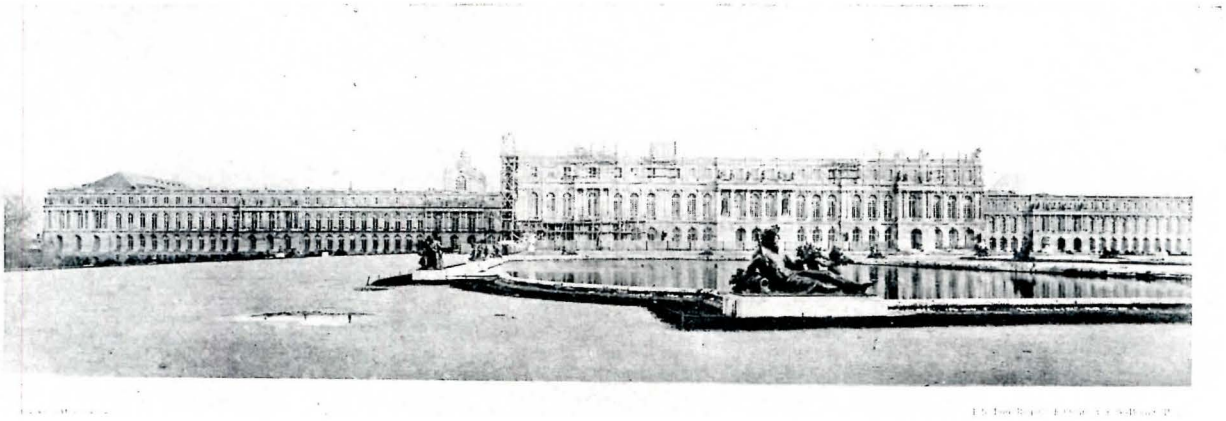


Figure 154. Palace of Versailles. General View of Front on the Gardens. From Paul Favier's "L'Architecture et l'Décoration aux Palais de Versailles et des Trianons."

very simple in composition and grand in aspect, but notice how many bays are contained in the projecting central portion—23 bays in 330 feet. The effect of grandeur is here produced by the multiplicity of motives—and these motives are large, quite large. If the number of bays had been reduced to a few there would not have been the same effect of grandeur, even though the total façade had remained the same in size.

It is well to remember in this connection that while some architectural elements may vary greatly in size—that a column may be six or sixty feet high, an arch five or a hundred feet wide—there are other elements that are fairly constant, because they are related to human uses. Thus a balustrade is usually from three to four feet high. The portico of the church of St. Peter at Rome, Figure 155, has a

(*Continued on page* 34)

Figure 153. Photographic View of the Front of the Butler Art Gallery, Youngstown, Ohio. Reproduced at Reduced Size from the "Monograph of the Work of McKim, Mead & White," by Permission of the Publishers, The Architectural Book Publishing Co., New York City.

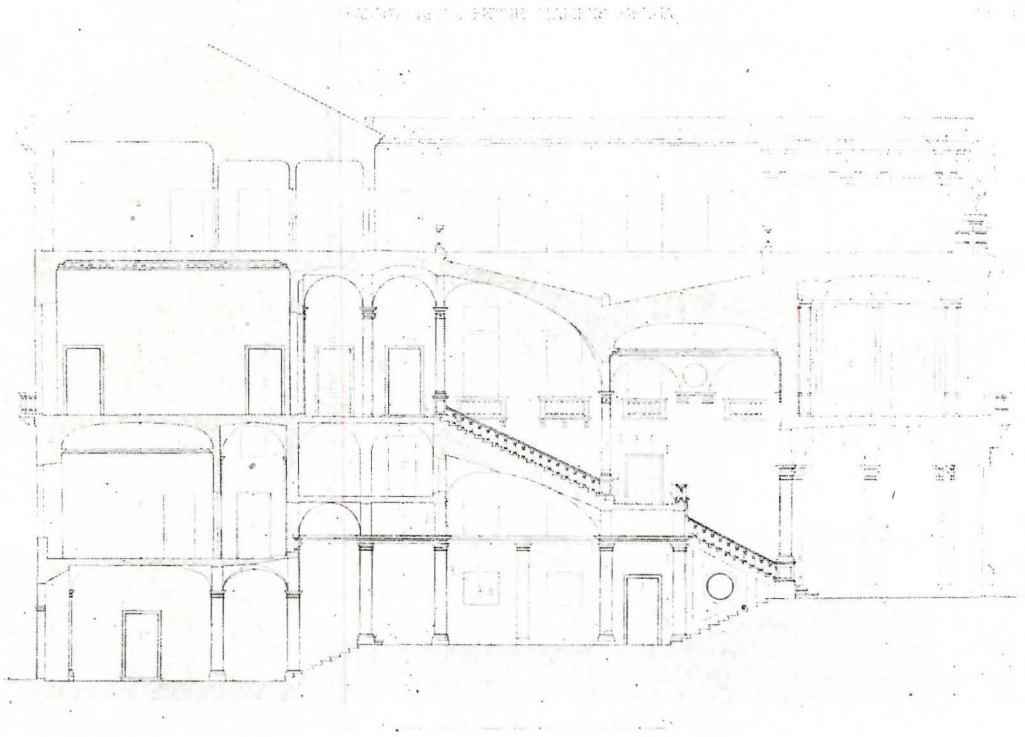


Figure 158. Section, Palazzo Balbi, Genoa. From Reinhardt's "Palast Architektur Italiens, Genua."

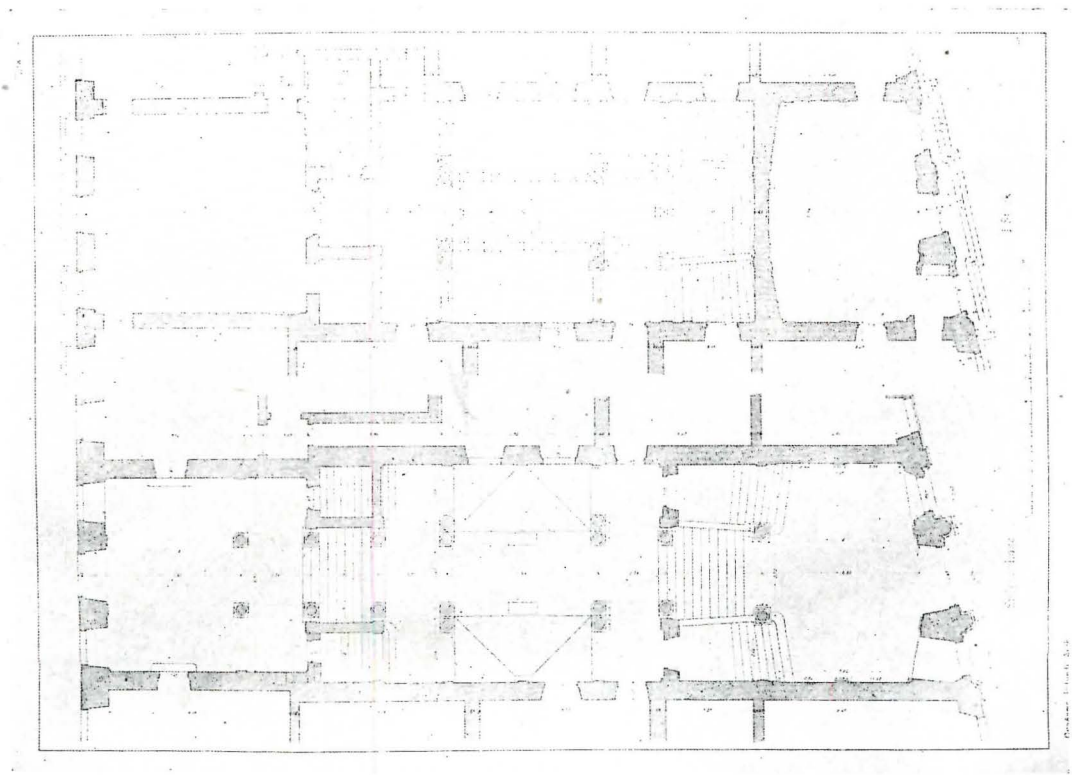


Figure 159. Ground Floor Plan, Palazzo Balbi, Genoa. From Reinhardt's "Palast Architektur Italiens, Genua."

A VOCABULARY OF ATELIER FRENCH. PART II

BY RAYMOND M. HOOD

This is the second installment of a vocabulary which Mr. Hood, Architecte Diplomé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—ED.

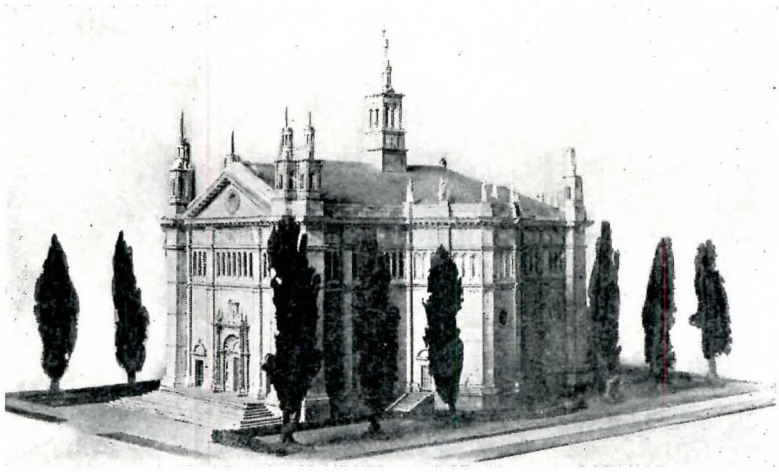
C

Caboche: *n. f.; (slang)* head.
Cabot: *n. m.; (slang)* dog.
Calicot: *n. m.;* calico; *(slang)* a ribbon clerk.
Calque: *n. m.; arch.,* tracing paper.
Calquer: *v.;* to make a tracing or copy.
Camelot: *n. m.;* a peddler.
Camelote: *n. f.;* an inferior merchandise; work that is badly done.
Camouflage: *n. f.;* the art of disguising.
Camoufler: *v.;* to disguise.
Canaille: *n. f.;* rabble.
Canard: *n. m.;* a duck; also, false news, a lie.
Carton-pierre: *n. m.;* paper-maché.
Cartouche: *n. m.;* an ornamental medallion; *n. f.;* a cartridge.
Cerner: *v.;* to surround, to silhouette (as in a drawing).
Chahut: *n. m.;* a racket, a scandal.
Chahuter: *v.;* to upset, to throw in disorder, to make a racket.
Chameau: *n. m.;* a camel; *(slang)* a bull, an error, a mistake.
Changement: *n. m.;* a change; *changement d'esquisse,* change from sketch.
Chapiteau: *n. m.;* the capital of a column.
Char: *n. m.;* a wagon, a car; also a float (as in a cortege or parade).
Charrette: *n. f.;* a cart; *en charette (slang, arch.)* the final drive to complete a projet.
Châssis: *n. m.;* a wooden or iron frame; *arch.;* frame on which a drawing or painting is to be stretched.
Chateau: *n. m.;* a castle, also a palatial country residence; *chateau d'eau,* the architectural front of a reservoir of water.
Chef-cochur: *n. m.; arch.,* the student in charge of the nouveaux in an atelier.
Chevalet: *n. m.;* an easel.
Chic: *n. m.;* style; also used in the ateliers to mean, manual dexterity, or clever technique.
Chicane: *n. f.;* trickery.
Chichi: *n. m.;* (a) pretentions, airs; (b) *arch.,* ornamentation.
Chiper: *v.; (slang)* to steal.
Choeur: *n. m.;* choir; *arch.,* choir of a church.
Chouette: *n. f.;* (a) an owl; (b) *adj.; (slang)* bully, fine.
Chute: *n. f.;* the action of falling; *arch.,* ornament disposed vertically in the form of a drop, as the "chute" of the Louis XIV style.
Clef: *n. f.;* (a) key; (b) *arch.,* keystone of an arch.
Ciment: *n. m.;* cement; *ciment armé,* or *beton armé,* reinforced concrete.
Cocasse: *adj.;* (a) pleasant; (b) ridiculous.
Cochon: *n. m.;* pig; *adj.; (slang)* dirty, indecent, smutty; *chef-cochon;* the student in charge of the nouveaux in an atelier.
Cocotte: *n. f.;* a sort of iron pot for cooking; *(slang)* a demi-mondaine.
Collage: *n. m.;* sticking, mounting.
Colonne: *n. f.;* column.
Comble: *n. m.;* (a) ridge; (b) roof space.
Compas: *n. m.;* a pair of compasses.
Concierge: *n. m.;* and *f.;* the porter or guardian of a building.
Concours: *n. m.;* competition; *hors-de-concours, adj.;* ineligible to competition.
Contre-coller: *v.;* to float a drawing; *literally,* to stick against.
Coquard: *n. m.;* an old rooster; *(slang)* a pretentious and ridiculous old fellow.
Corvée: *n. f.;* a difficult and thankless task.
Cossu: *adj.;* rich, well-to-do.
Costand: *adj.;* strong, powerful.
Couche: *n. f.;* (a) a bed; (b) a layer; *avoir une couche;* to be crazy or eccentric.
Couleur: *n. f.;* color.
Couloir: *n. m.;* corridor, passage.
Coupe: *n. f.;* (a) a cup; (b) the action of cutting; (c) *arch.,* a section.
Coupole: *n. f.;* cupola.
Cour: *n. f.;* court.
Cours: *n. m.;* course of study.
Crasse: *n. f.;* greasy dirt.
Crayon: *n. m.;* pencil.
Critique: *n. m.;* a criticism.
Croquis: *n. m.;* a sketch.
Culot: *n. m.;* (a) the husk in architectural ornament from which grow r nceaux and volutes; (b) *(slang)* nerve, crust.

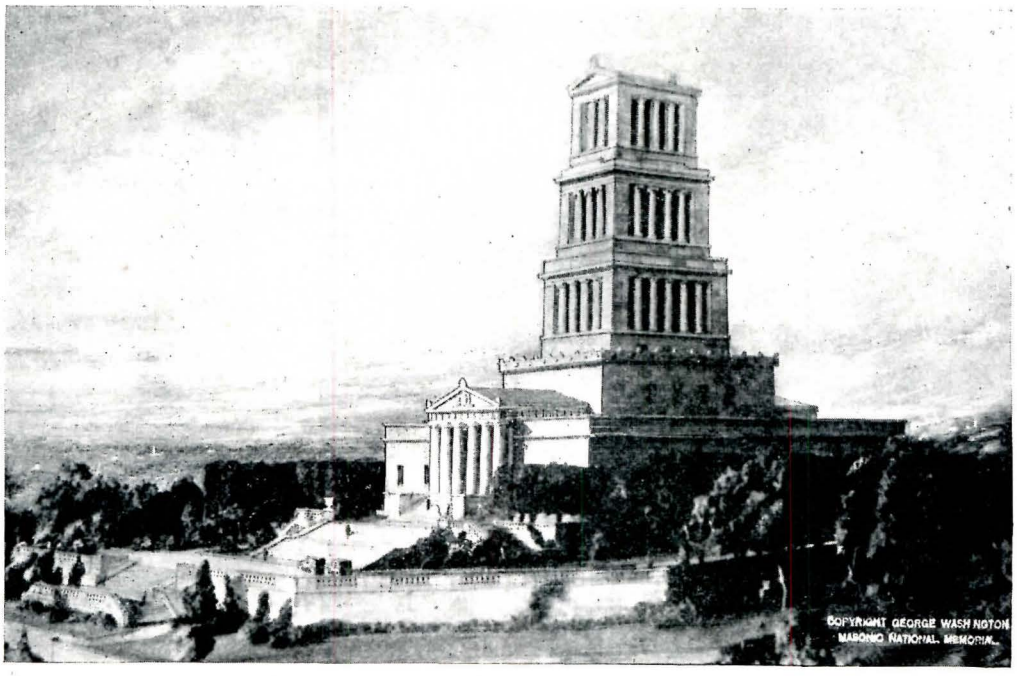
D

Dallage: *n. m.;* a floor or pavement of marble, stone or tile.
Debarbouiller: *v.;* to wash the face.
Dèche: *n. f.; (slang)* misery, want.
Degagement: *n. m.; arch.,* circulation or corridors of a building.
Dégotter: *v.; (slang)* to dig out, to find.
Dégoûtant: *adj.;* disgusting.
Dégoûter: *v.;* to disgust.
Denticule: *n. m.; arch.,* dentil.
Dessin: *n. m.;* drawing.
Dessiner: *v.;* to draw.
Détraqué: *n.* and *adj.;* deranged, crazy.

(To Be Continued)



Photograph of a Model for a Proposed Church Building. Scale of Model One-eighth Inch Equals One Foot. Helmle & Corbett, Architects.



Photograph of a Portion of Model for The George Washington Masonic National Memorial, Alexandria, Va. Scale of Model, One Thirty-second of an Inch Equals One Foot. Helmle & Corbett, Architects.

ARCHITECTURAL MODELS OF CARDBOARD, PART II

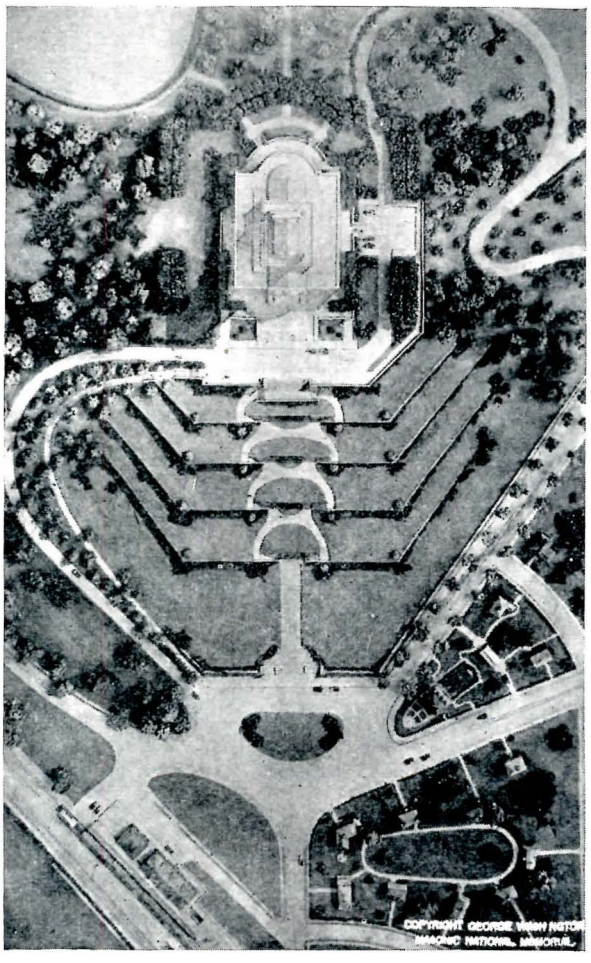
BY HARVEY W. CORBETT

This is the second installment of an article in which Mr. Harvey W. Corbett of the firm of Helmle & Corbett, Architects, New York, will tell exactly how he makes cardboard models of buildings; how he uses them for study in the process of designing and as a means of presentation. Mr. Corbett will go into the most minute details of the making of these models and will illustrate his descriptions with photographs showing the tools used and the various operations. There will also be numerous interesting photographs of models and of details of models. The making of landscape features, trees, hedges, lawns and other parts of the entourage will be described, also such incidentals as automobiles and figures.—ED.

THE photographs presented in connection with this article this month represent a cardboard model of a proposed church building at the scale of one-eighth inch to the foot, and a cardboard model showing the design of the proposed George Washington Masonic National Memorial, at Alexandria, Va., at the scale of one thirty-second of an inch to the foot.

As I stated in the first installment of this article, in the April issue, when I began making architectural models of cardboard, I worked at a rather large scale, one-eighth inch to the foot—the model of the church is one of these. Finding that I could attain my purpose by means of a model at smaller scale with less labor, I began making models at one thirty-second of an inch to the foot—the model of the George Washington Memorial is one of these. It is one of the most recent, just completed, in fact.

By referring to the photographs in these pages, one may see how much of the detail of the model at the larger scale had to be actually constructed of cardboard. It will be noted that the pilasters on the exterior and the mouldings have been built up, (see page 31). It will also be noted that the ceiling is an example of rather elaborate building up, six thicknesses of mounted water color paper having been used in producing the required depth. The ornament of the ceiling is drawn on the paper in ink and rendered in polychrome with water color. The view of a portion of the interior shown on page 32 also indicates the extent to which it is necessary to construct detail when making a model of any but the more simple type of building at so comparatively large a scale as one-eighth inch to the foot. In this model the stained glass windows are represented by pieces of mica upon which the leading has been drawn in waterproof ink and the colors suggested by touches of water color. Miniature electric bulbs are concealed in the panels of some of the arches. The altar and its fittings, as well as the detail about the main entrance, were constructed with very considerable care.

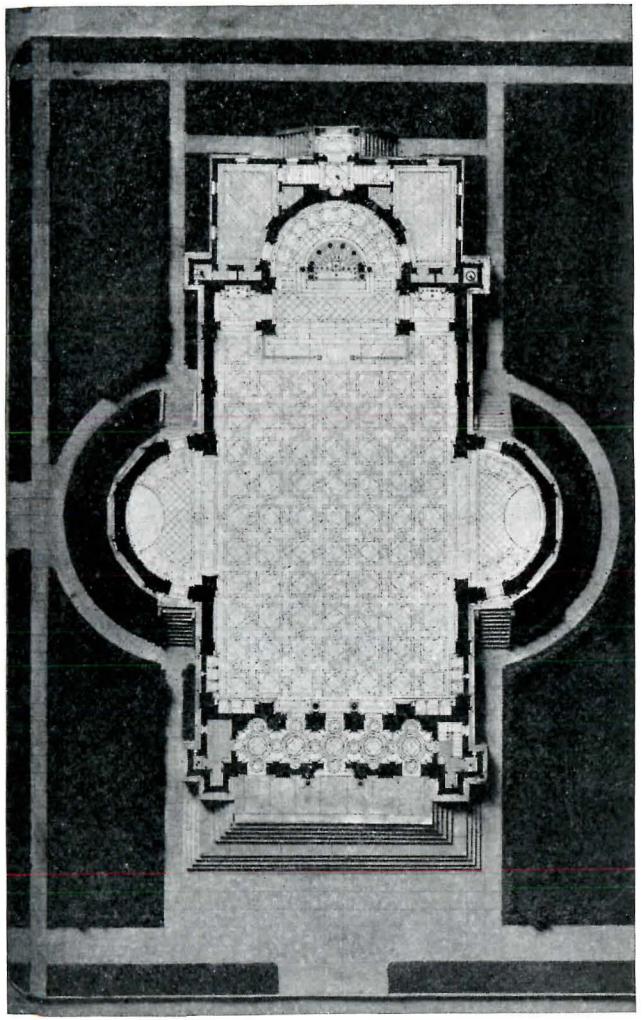


Plan View of Model for The George Washington Masonic National Memorial, Alexandria, Va. Helmle & Corbett, Architects.

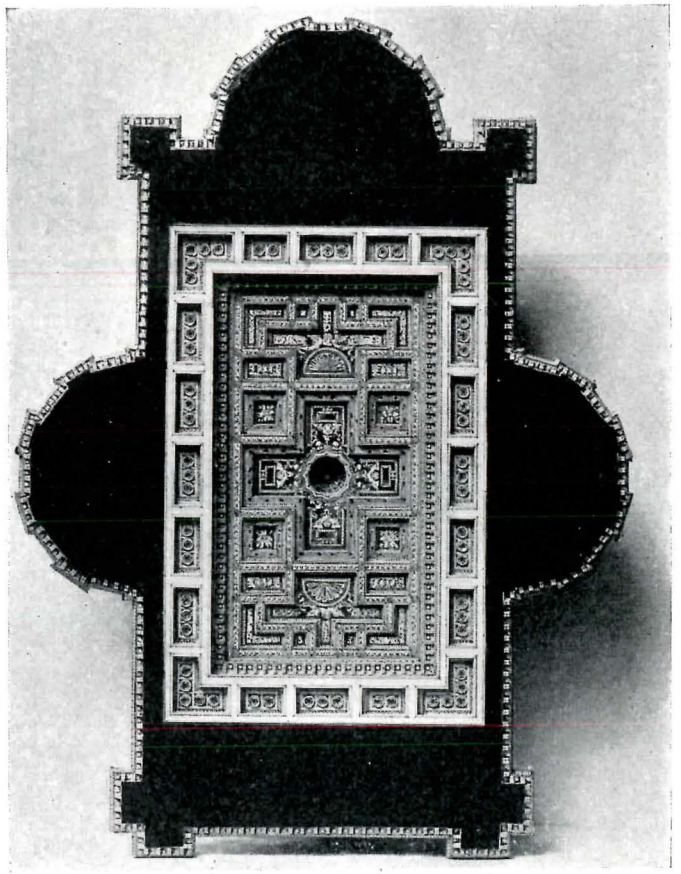
This model consists of six pieces. There is a base or platform section, including the floor of the church, the portion of the walls from the floor level to grade and the grounds and walks around the building. Upon this may be placed, in their proper relation, the four walls. Each wall section is of a thickness that corresponds in the scale of the model to the thickness of the walls of the building. The walls are built of mounted watercolor paper, hollow but reinforced and firmly braced within. These walls are held in place on the platform by small dowels. Resting on the walls and held in place by dowels is the roof portion, on the under side of which is the ceiling shown in the photograph reproduced on page 30.

Contrast with the model of the church the small-scale model of the Washington Memorial in which by far the greater part of the detail that would, of necessity, have been constructed in a model at one-eighth inch scale has been represented by rendering on the small-scale model. There is still quite enough to construct in a model of this kind.

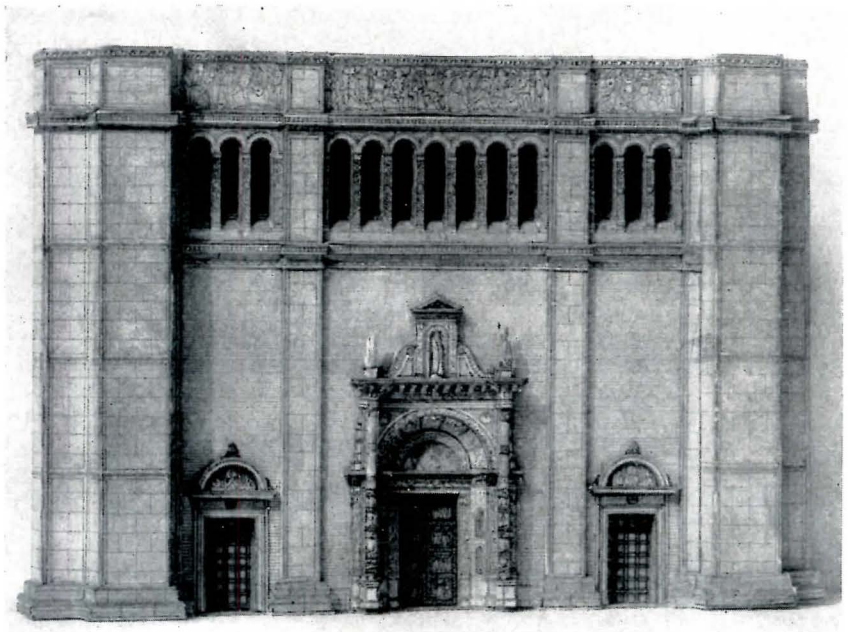
The base of this model is built up to correctly represent the contour of the ground, the levels of the proposed terraces, and the grades of the roadways and paths—all the changes of level in the grounds. This was done by constructing a grid of



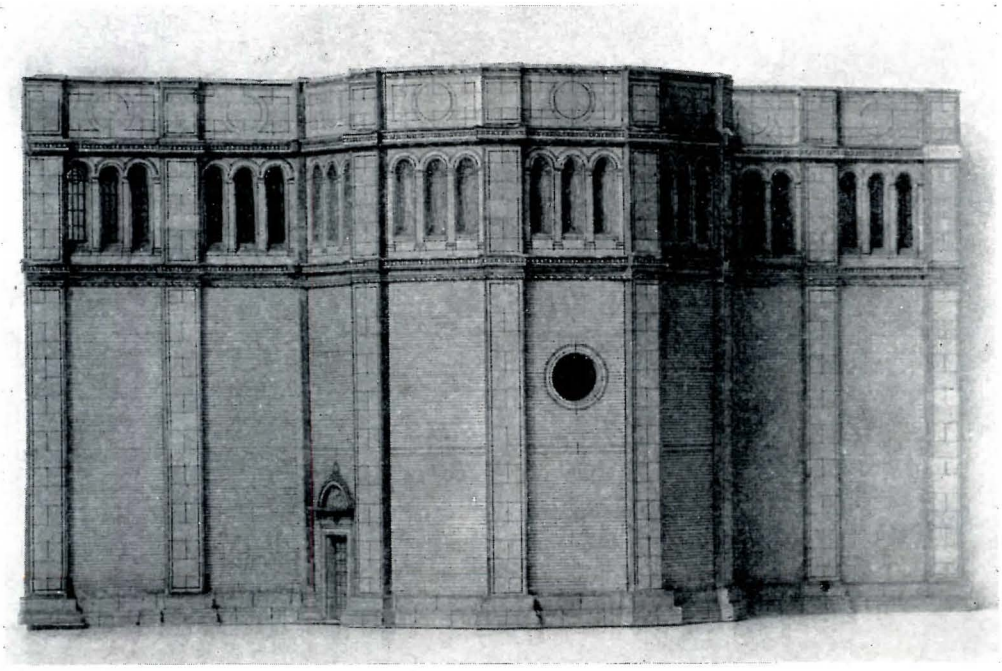
Photograph of Base of Model for a Proposed Church Building. Scale of Model, One-eighth Inch Equals One Foot. Helmle & Corbett, Architects.



Photograph of Under Side of Roof Portion of Model for a Proposed Church Building, Showing Coffered Ceiling with Polychrome Decoration. Helmle & Corbett, Architects.



Front Portion of Model for a Proposed Church Building.
Helmle & Corbett, Architects.



One of the Side-pieces of Model for a Proposed Church Building.
Helmle & Corbett, Architects.

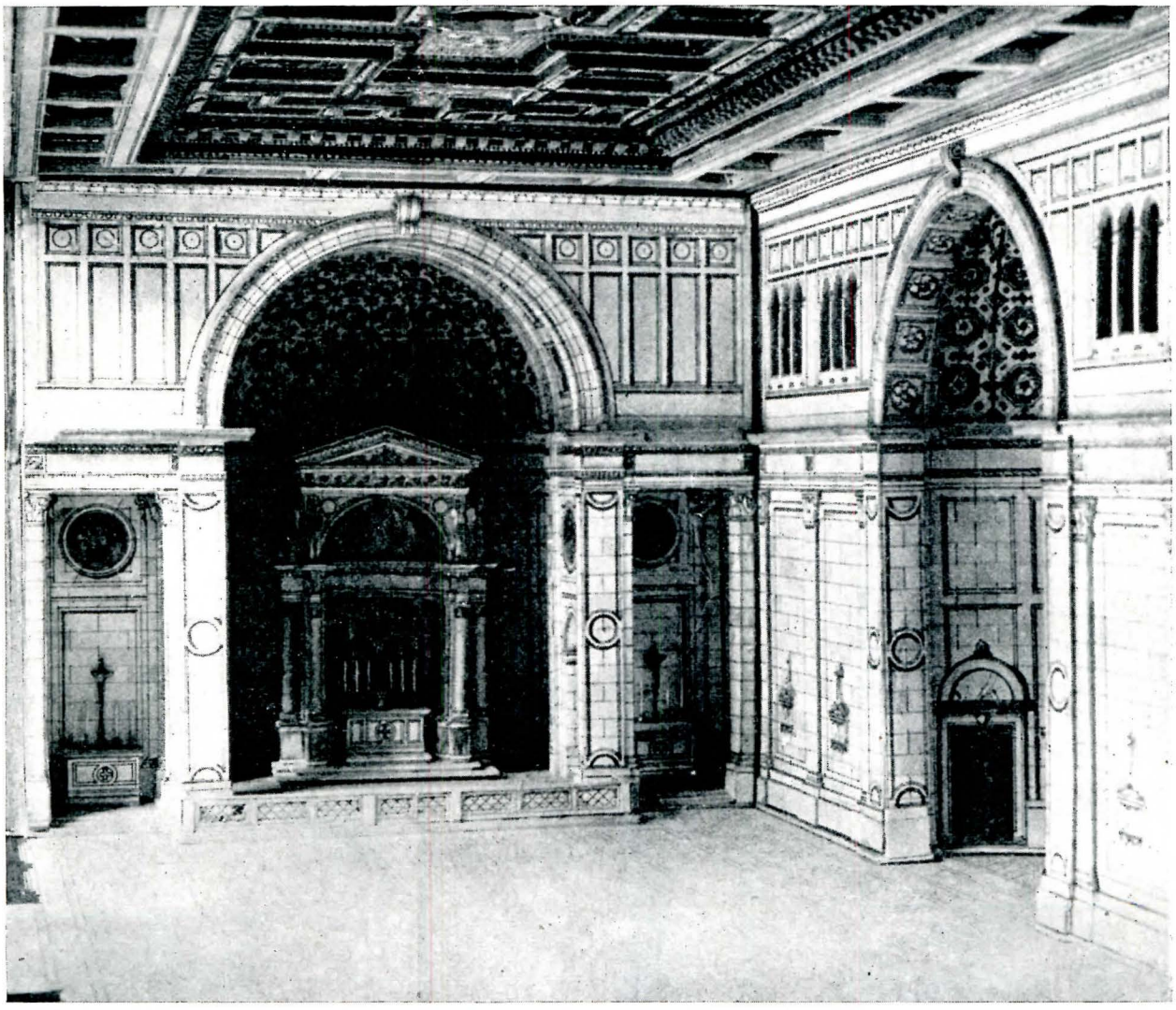
mat board on the same plan as the cardboard arrangement used in an egg crate, the top edges of the pieces of cardboard were cut to the contour. One set of cardboard strips extends from side to side, while the other set extends lengthwise of the base. Where they cross, they are notched and halved into each other. The plan of the grounds was rendered on a sheet of mounted watercolor paper, the lines of the terraces were cut through and the whole laid down on the foundation just described, the flaps representing the terraces being forced up. The retaining walls were then built of cardboard set on edge. The point at which the memorial will stand is about one hundred feet above the level at the railroad station. The memorial itself will be two hundred feet in height.

The model shows trees, shrubs, areas of grass roads and other features all worked out to scale and in the appropriate colors.

In the plan view of the model reproduced on page 29, the memorial will be seen near the top of the picture. In the lower left-hand corner is the railway station at Alexandria, Va., with a train standing at the platform. In the lower right-hand corner is a block of suburban homes, representing the character of the outskirts of the city adjoining the site upon which the memorial is to be built. On the roadways are models of automobiles done to scale.

The George Washington Masonic National Memorial will contain in the central portion of the ground floor a large memorial hall. At the end of the hall opposite the entrance will stand a statue of George Washington of heroic size. The walls of the hall will be surrounded by a colonnade and it will be lighted with clearstory windows at the sides. Beneath these windows will be mural paintings of an historic character. At right and left of the memorial hall will be the commandery room and a lodge room for the local lodge at Alexandria. At the left of the entrance will be a room, fitted up as

(*Continued on page 37*)



Photograph of Portion of the Interior of Model for a Proposed Church Building. Scale of Model, One eighth Inch Equals One Foot. Helmle & Corbett, Architects.

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THE AMERICAN ACADEMY IN ROME.

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

"Mr. and Mrs. Mead have been in town through the month, and Mr. Mead has come to the Academy almost every morning for two hours. Mr. Mead has been present at the meeting of the Academic Council, and he has likewise attended a meeting of the Library Committee. He has signed a power of attorney which enables me to act in cases of emergency, a thing which Lawyer Del Frate has been anxious to secure for some time. His Majesty the King has decorated Mr. Mead with the order of Commendatore of the Crown of Italy, and Mr. Mead has called upon the King to thank him for the honor. Mr. Mead has always been a champion of Italian architecture, and the good which he has brought to America can scarcely be overestimated. As far as Italy is concerned, the Renaissance in America for Italian architecture has caused many students and architects to visit Italy. The faith which Mr. Mead has in the civilizing effect of Italy upon America is amply proved by the fact that he was an original incorporator of the Academy and has been, for the last eleven years, its president. He has called upon Mr. H. Nelson Gay, who now possesses the largest library upon the Risorgimento. Mr. Mead has gone over the proposed budget for next year, and he has given us great assistance in its preparation. Just before leaving Rome, Mr. and Mrs. Mead went through the studios. They have gone to Sestri Levante, near Genoa, to recover from a rather strenuous time in Rome.

"Mr. Vitale has likewise been in town during the last month. He has attended the meetings of the Faculty and arranged the new plants and trees about the Main Building. We now have a fine set of potted laurels. Mr. Kendall is giving these various plants, at least those which exceed the $200 voted for quick-growing plants, by the trustees.

"Professors Whicher and McCrea have both been asked to lecture before the British and American Archaeological Association.

"Professor Fairbanks has suffered from a touch of pneumonia and pleurisy, but he is now about again; in fact, he has gone to Florence for a few days.

"Landscape Architect Lawson is still in Paris, working on the graves of American soldiers buried in France and England. His immediate chief has gone to America, so that he is now occupying a position of responsibility.

"One excursion was made, namely that to the Villa Cattena, situated between Tivoli and Frascati. This is a fine Renaissance villa, of considerable historical importance, and yet it has never been drawn out or photographed, due to the fact that it is seven miles from the nearest railroad station and in an inaccessible district. Landscape Architect Griswold is planning to measure the villa.

"A young Philippino architect, graduate of the University of Pennsylvania, has arrived.

"The banking situation in Rome is still unsolved, although this problem will be one of the first to be considered by the new ministry, which has just been formed. The American Ambassador and Lawyer Del Frate have both been helping us to see if it is possible to draw out some of our money, but without success—we are to be treated like all other creditors. The American Ambassador himself has money tied up in the bank. Professor Emerson, head of the Department of Architecture at the Massachusetts Institute of Technology, has sent $750 to assist those "Tech" men who are in difficulties on account of the closing of the Banca di Sconto, and other visiting students at the Academy have received assistance from their respective organizations in America.

"A Mr. George G. Booth, a publisher from Detroit, Michigan, has shown great interest in the Academy. He came here twice and has not only seen all the studios, but has also gone into the question of our finances. Mr. Lemond saw him in America during the drive last year and has now secured a promise from him to contribute to the Academy when Mr. Booth returns to America.

"The washing plant is now installed and working; there are, however, a few adjustments which still need to be made in order to perfect it.

"A Swiss lady, who owns a fine ancestral castle in Switzerland, is trying to start a Swiss academy, and she has come to us not only for information, but also to see if it would be possible for the two academies to collaborate. She is willing to take our students into residence, and would like to have a similar privilege for her students when they come to Rome. I have explained to her that this is impossible, but that we would be glad to assist her students in every other way possible. Even under these conditions she is willing to take our students into residence, and perhaps something of this nature might be advantageous to our students after they have fulfilled their terms at the Academy and for the Musicians.

KEITH CHEETHAM is the winner of the Chicago Architectural Club's Annual Foreign Travelling Scholarship for the year 1922.

Mr. Cheetham was born in Australia, but for the past few years has been a Chicagoan and a very active member of the Chicago Architectural Club.

He has been engaged in architectural work for several years, having started in his native country. He has been connected with a number of the leading architectural offices in the West and is now with Coolidge & Hodgdon, Chicago.

Mr. Cheetham will leave about June 1 for Paris, where he expects to meet A. S. Morphett, the winner of last year's scholarship, and make part of his journey in his company. He hopes to include in his tour many points of interest in Italy, France and England, and possibly some in Spain, studying as thoroughly as possible in each country.

KEITH CHEETHAM.

THE STUDY OF ARCHITECTURAL DESIGN.

(*Continued from page* 25)

balustrade of six feet in height, but this structure never shows its great size; there is quite a shock when one sees a human figure standing beside the balustrade.

When a greater height than four feet is needed for architectural effect, where a balustrade is used to crown a building, for instance, it can be set on a pedestal as in Figure 156, the building of the Chamber of Deputies, Paris, and as is also done in the Seventh Avenue façade of the Pennsylvania Railroad Station in New York City, so that the height of the motive may be propo.tioned to the scale of the composition, while the balustrade still retains its proper relation to human sizes.

Steps also have their relation to human uses; this is not a detail, but has an active and striking effect on design; many times sections are drawn showing ornate, complicated architectural motives surrounding a stairway which by reason of the size of the rise and tread of the angle from top to bottom, is nothing but a slide.

Fire and panic laws prevent a stair being made steeper than 8-inch rise and 9-inch tread—which gives the angle shown in a, Figure 157. Note the slope; it is the steepest that can be used for a service stair or a fire tower. A domestic stair—by that I mean the stair in a small house or bungalow—is frequently made with 7½-inch rise and 10½-inch tread, as shown in b, Figure 157; in the better class of such work the figures are more apt to be 7-inch rise, 11-inch tread. The stair so conveniently laid out with a scale, with 6-inch rise and 12-inch tread, is shown in c of the same figure. None of these are "monumental" stairs; they are not suitable for the important vertical communications of monumental buildings. For such a stairway, a 5½-inch rise with a 13½-inch tread, or a 5-inch rise and a 14-inch tread, as shown in d, Figure 157, is more suitable.

The effect of these different slopes on a section is considerable. In the first place, the lower the individual riser, the greater the number which will be required to compass a given height, and hence the greater number of treads required, and as, in general, the decrease in size of rise is accompanied by an increase in size of tread, it is easily seen that *the more monumental the stairway, the greater becomes its total length,* the total height being constant.

For an outside stair—the steps to a public building, or steps in a city park—an angle such as is shown in e, Figure 157, with a rise of 4 inches and tread of 16 inches is proper and fitting. Such stairs are not uncommon abroad. While in this country we have been in the habit of making our stairs too steep, possibly because of our great dependence on the elevator, in Europe on the other hand, they have been generally studied for monumental effect. The following table of examples is of interest in study:—

INTERIOR STAIRS

FRANCE

Example	*Height of Rise in Inches*	*Width of Tread in Inches*	*Angle of Slope in Degrees*
Louvre			
(Escalier de la Colonnade)	5¾″	15¾″	20
Versailles			
(Escalier de Mabre)	5½″	15¾″	19
Invalides			
(Great staircase designed for invalid veterans)	4¾″	15″	18
Luxembourg			
(Escalier de la Presidence)	5⅜″	14½″	20
Hotel des Mounaies	6″	13″	25
ITALY			
Rome, Farnese Palace	5¼″	21¼″	14
Rome, Borghese Palace	5⅜″	16⅛″	19
Rome, Vatican Palace	4¾″	16″	16½
Rome, Vatican Museum	4½″	14½″	17½
Venice, Ducal Palace, Giant's Stair	5¾″	12″	26

These examples will show that in monumental architecture the slope of stairways is very gentle. Exterior stairways should be still more gentle in slope. The following table will be of value:—

EXTERIOR STAIRS

Example	*Height of Rise in Inches*	*Width of Tread in Inches*	*Angle of Slope in Degrees*
Versailles			
Stair of One Hundred Steps	5½″	15¾″	19
Fontainbleau			
Court of Honor Perron	4¼″	16¼″	15
Palais de Justice			
Court of Honor Perron	5¼″	16⅛″	18

Many of the palaces of Genoa, built on hillsides, show the beauty that may be given by a well designed stair. That in the Balbi Palace, Figure 158, is a most interesting arrangement; it shows the very considerable place that stairways occupied in Italian Renaissance buildings; this stair is shown in plan in Figure 159.

To mention one or two fine examples in this country, the main stair in the Pennsylvania Railroad Station, New York City—the stair from the big central waiting hall to the passage to Seventh Avenue—has a tread of 17 inches and a rise of 6 inches, to which must be added one-half inch of slope in the tread; and the monumental flight of steps across the front elevation of the new post-office building, New York City, has a tread of 18 inches and a rise of 5¼ inches with a one-quarter inch slope in the tread.

We must also remember that floor height plays a very important role in the question of scale. Small domestic buildings with a clear height of eight or nine feet, will give in façade very different character from the more pretentious city residence with its clear floor heights of twelve feet or more, and, in turn, monumental buildings with vaulted rooms from thirty to sixty feet in the clear, or more, will immediately affect the design of elevation; in these latter buildings, lower floors or parts of floors are introduced for service spaces—for functions which are not "monumental," in fact, and which are only used by the force belonging to the building.

In very high buildings the so-called "typical" floor, which makes up the largest part of the building and occupies most of the total height in façade, is standardized by the question of cost on the one hand, of light and air, etc., on the other; this height is in the neighborhood of eleven feet six inches to twelve feet, from floor to floor.

In conclusion, let me again borrow from Guadet: Study pure drawing as much as possible. Proportion plays an immense role in the study of architecture; the sense of proportion is first of all an artistic sense, and nothing develops the sense of proportion as does the exercise of drawing.

Proportions in architecture are difficult and delicate—they are even more so in nature; among a thousand faces there are not two identical, and yet they are all made on the same "program"—the composition is the same—it is only a question of proportions. And what is it to be able to draw? It is to perceive and then to express the specific proportions which distinguish and particularize the subject. He draws best who is most able to perceive the proportions. And this is best developed by sketching from executed work—to sharpen your perception of form of mouldings and sizes and proportions—and sketching from nature to absorb ideas in rendering and presentation, the ideas of composition of entourage, of trees and shrubbery, and of color effects of the appearance of materials.

HAVE YOU AN ARCHITECTURAL CLUB?

IF THERE is an architectural club, or any society formed of men who are engaged in architectural work or in the study of architecture in your city, we shall appreciate it if you will send us the name of the organization, names of the officers, address of the secretary, and a statement of the aims and activities of the organization. We shall be glad to publish such information as news in PENCIL POINTS and to be of assistance in every way possible. Let the other fellows know that you are on the map.—ED.

ROYAL GOLD MEDAL FOR ARCHITECTURE.

IT is announced in the "Journal of the Royal Institute of British Architects" that Thomas Hastings (of the firm of Carrère & Hastings, Architects, New York) has been elected and his name will be submitted to His Majesty the King as a fit recipient of the Royal Gold Medal for Architecture for the year 1922. Upon the approval of the award by His Majesty, the Medal will be presented to Mr. Hastings at a formal meeting on June 26.

Since the institution of this medal by Queen Victoria in 1848, it has been conferred upon American architects on only two previous occasions; upon Richard Morris Hunt, in 1893, and upon Charles Follen McKim, in 1903.

PERSPECTIVE DRAWING, PART XXIII.

(*Continued from page* 21)

at point t'. Then lower a perpendicular until it intersects line $C\ V\ P\ I$ at point t''', and continuing line $g\ g'$ to point $V\ P\ I$ on the Horizon Line, it will intersect line $t'\ t'''$ at point t'', and enclosing with straight lines points $e'\ g'\ t''\ t'''\ M\ e''$ and e', we will obtain the perspective of the left wing of the building in its mass. Doing likewise, by uniting points $e''\ a'''\ a''\ w\ h'\ p''$, (lowering a perpendicular from point p'' to line $g'\ e'$), then uniting points $a'''\ a''\ w\ h'\ h''\ y\ b''\ b'''$ back again to a'''; also uniting points y to w, and b'' to a'', and again, g'' to g''' and g' to g'', and M to g''', etc., using the respective vanishing points as indicated in Figure 52, we have completed the operation and found the perspective of the mass of the entire building. By this we have obtained the true perspective of the mass of the building, cutting it out, as it were, from a solid block, working from a perspective plan, and are capable of proving each step to be mathematically correct and consistent with the requirements of the problem as indicated by the accompanying diagrams, and covering the minimum possible area for our operations. In the following issues we shall continue to develop the perspective, locating openings, and entering into the details, until we shall represent the entire building, complete in perspective.

LIONEL H. PRIES

LIONEL H. PRIES, who has just won the Le Brun Travelling Scholarship for 1922, was born in San Francisco, California. He attended public schools at Berkeley, California, also the Lick-Wilmerding Schools at San Francisco. He entered the University of California in 1916, and graduated with an A. B. degree in Architecture. He then took a year of graduate study under Professor Paul P. Cret at the University of Pennsylvania, where he received a degree of M. Arch.

Mr. Pries won the competition for the design of the "1920 Class Memorial Bench," now executed, on the campus of the University of California, one of the first uses of the native travertine. While at the University of Pennsylvania he was awarded the Arthur Spayd Brooke Medal for merit in design. He was placed second in the 1921 competition for the fellowship in architecture at the American Academy in Rome. He won an award in the Birch Burdette Long Sketch Competition for 1921.

Mr. Pries is a member of Tau Sigma Delta (architectural honorary) and Tau Beta Pi (engineering honorary). He is a member of the T-Square Club, Philadelphia.

He has been employed in the offices of Messrs. John Galen Howard and of Charles K. Sumner in San Francisco, and in the office of Mr. John P. B. Sinkler in Philadelphia. Mr. Pries is at present with Mr. Edgar V. Seeler, Architect, Philadelphia.

ST. LOUIS ARCHITECTURAL CLUB.

THE St. Louis Architectural Club from its humble beginning in 1894 has weathered the storms, grown, prospered and is starting on another season, the proud owner of its own quarters, with money in the bank, and a strong atelier.

Among the innovations announced for the coming year will be, the initial performance of an elaborate ritual ceremony of initiation, the result of much steady, earnest work on the part of the committee. Second, a "Bal Masque" that promises to rival any similar social function in the country will be given. Third, the traditional Theatrical Night will be revived. Fourth, "Ladies' Night" with a real, high-brow program will be a feature of the club's life. Fifth, stress will be laid on educational talks followed by quizzes. Sixth, there will be Radio Concerts.

At the annual meeting the following officers were elected: F. Ray Leimkuehler, President; Herbert Winkler, First Vice-President; Walter Wawrzyniak, Second Vice-President; Theron Groves, Secretary; Herbert Reinhardt, Treasurer; Herman Frauenfelder, Carl Trebus, Robert Rosebrough, Executive Boad; Hugo Graff, Trustee. In May, Wm. B. Ittner will talk to the club on school design.

FINAL COMPETITORS CHOSEN

THE juries that judged the work in the preliminary competitions for the Prizes of Rome, have chosen the final competitors as follows: In Architecture—L. P. Botting (M. I. T.); W. G. French (Cornell); C. F. Fuller (Harvard and Columbia); G. K. Geerlings (U. of Pa.); J. M. Hirschman (U. of Pa.); E. M. Loye (Minn. and Harvard); H. G. Marceau (Columbia); W. E. Meissner (M. I. T.); B. A. Weber (M. I. T.). In Painting—Alfred Floegel, R. G. Gifford and J. C. White. In Sculpture—Joseph Lore, L. T. Stevens and Wheeler Williams. A Fellowship for three years in the American Academy in Rome will be awarded to the winner in each subject.

SUMMER COURSES AT M. I. T.

THIS summer the Massachusetts Institute of Technology will offer courses in shades and shadows, perspective, office practice, elementary and advanced constructive design, elementary and intermediate architectural design and structural design. These courses will be given at the Rogers Building, Boston. If satisfactorily passed, any of these courses may be substituted for corresponding winter work. Full information concerning these courses can be had from Professor William Emerson, 491 Boylston Street, Boston, Mass.

NEW ROCHELLE ART ASSOCIATION

AN Architectural Exhibition was held recently by the New Rochelle Art Association, New Rochelle, N. Y. The membership list of this association includes the names of a great many artists of distinction. Some of these artists work and live in New Rochelle, while others have homes in that city and studios in New York. It is stated that more than fifty per cent of the illustrations in fifteen of the leading magazines in the country are produced by artists living in New Rochelle.

MECHANICS' INSTITUTE.

THE work of students in the architectural classes at the Mechanics' Institute School was exhibited at the Institute, 20 West 44th Street, New York City, April 11. Instruction in these classes is free. The training of students in architecture is one of the many branches of the educational work carried on under the direction of Mr. Louis Rouillion, at the Mechanics' Institute by The General Society of Mechanics and Tradesmen.

PERSONALS

H. T. LINDEBERG, Architect, has opened a branch office, under the management of his associate, John F. Staub, in the Union National Bank Building, Houston, Texas.

OSCAR T. LANG, ARNOLD I. RAUGLAND AND CARROLL E. LEWIS have opened an office for the practice of Architecture and Engineering, under the firm name of Lang, Raugland & Lewis, at 627 Metropolitan Bank Building, Minneapolis, Minn.

WILLIAM C. PRESTO, Architect, has removed his offices to Suite 726, Conway Building, 111 West Washington Street, Chicago, Ill.

MALCOLM MacGREGOR KILDUFF has opened an office for the practice of architecture at 197 St. Mark's Place, New Brighton, Staten Island, N. Y.

LAYTON ALLEN AND HUBERT M. GARRIOTT have become associated in the practice of Architecture under the firm name of Allen & Garriott, Architects, with offices at 401 Lombard Building, Indianapolis, Ind., and 4 Masonic Building, Logansport, Ind.

WILLIAM C. TUCKER has just been retained as Consulting Sanitary Engineer for the proposed thirty-one story hotel on the block fronting on Lexington Avenue between 48th and 49th Streets, New York City. The equipment of this building will include a large swimming pool, club quarters, gymnasium, bowling alleys, etc.

GREGORY BURKITT WEBB, Architect, removed his offices on April 15 to the Winfield Building, 469 Fifth Avenue, New York.

GEO. J. LOBENSTEIN has opened an office for the practice of architecture at 859 Flatbush Ave., Brooklyn, N. Y.

HERMAN M. SOHN, Architect, has removed his offices to the Winfield Building, 469 Fifth Avenue, New York.

R. GUASTAVINO COMPANY, for many years located in the Flatiron Building, New York, will move on May 1, to 1133 Broadway.

OSCAR VATET, Architect, has removed his offices to 565 Fifth Avenue, New York City.

QUERIES

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

Question—Will you kindly recommend some books of plates of designs for garden gates and balustrades of wrought iron? **Answer**—You will find much valuable material of this kind in the following works: "English Iron Work of the XVII and XVIII Centuries," J. Starkie Gardner. London, B. T. Batsford. New York, Wm. Heilburn. (Out of print.) "Motifs Divers de Serrurerie," Cesar Daly. "Rejeria of the Spanish Renaissance," Byne and Stapley. New York, The Hispanic Society of New York. "Gardens Old and New," published by Country Life. "Garden Ornament," Gertrude Jekyll. "English and Scottish Wrought Iron Work," Murphy, London, B. T. Batsford. "Gardens of Italy," Bolton, Country Life. "Divers Styles des Jardins," Fouguier, Paris. (Out of print.) You may be able to see the "out of print" books in your nearest public library or may be able to obtain them through some dealer in architectural books.

Question—I shall regard it as a favor if you will give me information on "Concrete in History." Will you please answer in your Queries department? J. S. **Answer**—From the engineer's point of view, Hool and Johnson "Concrete Engineers' Handbook," price $6.00, or Hool's "Concrete Engineer's Library," price $20.56, both published by McGraw-Hill Book Company, Inc., New York, are excellent expositions of the subject of reinforced concrete. From the purely historical point of view we suggest the following: General History—Architectural Publication Society, "Dictionary of Architecture, I, p. 125. Viollet le Duc, "Dictionaire Raisonne de l'Architecture," II, p. 205. Goodwin, George, "Prize Essay upon the Nature and Properties of Concrete and Its Application to Construction Up to the Present Period" (In "Transactions of the Institute of British Architects," 1835-36, Vol. I, pp. 1-37). Potter, Thomas, "Concrete: Its Uses in Buildings, from Foundations to Finish," 3d ed., London, Batsford, Pub., 1908. Potter, Thomas, "The Early Use of Concrete" (In the "American Architect and Building News," 1906, Vol. 89, June, p. 208-211). Phoenician and Carthagenian—Perrot and Chipiez, "Histoire de l'Art dans l'Antique," III, pp. 362-366. Roman-Choisy, Auguste, "L'Art de Batir Chez les Romains," Paris, 1873. Middleton, J. H., "The Remains of Ancient Rome," 2 V., London, 1892. Van Deman, E. B., "Methods of Determining the Date of Roman Concrete Monuments" (In the "American Journal of Archaeology," 1912. V. 16, pp. 230-251, 387-432, illus.). Van Deman, E. B., "The So-called Flavian Rostra." (In the "American Journal of Archaeology," 1909, V. 13, pp. 170-186, illus.). Van Deman, E. B., "The Porticus of Gaius and Lucius" (In the "American Journal of Archaeology," 1913, V. 17, pp. 14-28, Illus., plate.). Van Deman, E. B., "The Atrium Vestae," Washington Carnegie Institution. 1909. Reinforced Concrete (hypothetical)—Normand, Ch., "Essai Sur l'Existence d'Une Architecture Metallique Antique" (In "Encyclopedia d'Architecture," 3d Series, II, p. 72).

Question—Will you give me the names of some books on rural architecture? O. L. S. **Answer**—We suggest the following books: "Old Cottages and Farm Houses in Sussex and Kent," also of similar title on the cottages and farm houses in East Anglia, Surrey, Shropshire, and the Cotswold District. These books are by Davie. They are very good, but since they are out of print are not easy to refer to. In addition to these we recommend: Weaver, "Gardens for the Small Country House," pub. by Country Life Press, London, Eng. "Farm Houses and Their Repair," Mary Northend, pub. by Little, Brown & Company, Boston. "Homes of Moderate Cost," Dalzell, pub. by "The American Architect," New York. "Houses and Gardens," Lutyens, pub. by Country Life Press, London, Eng.

Question—Will you give me the name of a good book on heating and ventilating? R. A. F. **Answer**—"Designing Heating and Ventilating Systems," by Charles A. Fuller, published by David Williams Co., New York.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PENCIL POINTS, published monthly at Stamford, Conn., for April 1, 1922.

State of New York, } ss.,
County of New York, }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared Ralph Reinhold, who, having been duly sworn according to law, deposes and says that he is the President of corporation publishing Pencil Points, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of — *Post office address*

Publisher, The Pencil Points Press, Inc., Stamford, Conn.

Editor, Eugene Clute, One Madison Avenue, New York, N. Y.

Managing Editor, None.

Business Managers, W. V. Montgomery and Ray D. Finel, One Madison Avenue, New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

The Pencil Points Press, Inc., Stamford, Conn.
Ralph Reinhold, One Madison Avenue, New York, N. Y.
F. W. Robinson, One Madison Avenue, New York, N. Y.
E. G. Nellis, One Madison Avenue, New York, N. Y.
Marion S. Carpenter, 907 Fifth Avenue, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

RALPH REINHOLD,
President.

Sworn to and subscribed before me this 14th day of March, 1922.

[SEAL.]

G. H. SYKES,
Notary Public.
My commission expires March 30, 1922.

ARCHITECTURAL DETAIL, PART XIII.

(*Continued from page* 12)

color vibration. Especially is this true of enamelled terra cotta where the individual pieces are larger than in tile faience.

The surface of faience or terra cotta body may contribute greatly to the vibrant quality of the finished enamel. A firm of faience manufacturers, unfortunately no longer numbered among the producers of this beautiful material, had recourse to a very uneven hand-pressed surface for the body of some of their tiles. When the enamel was thin and transparent such dimpling permitted the color to puddle and a difference in value ensued. This went even further in their multiple glazes (one color over another, fired simultaneously). Moreover when viewed at an angle the shine, to be found in all high glaze enamels, gave high lights throughout the slightly billowing surface, white caps on the crests of the waves, and enhanced the effect. Too little work like it is done now-a-days; possibly because the architects appreciate too little the capacities of the material, and do not demand it.

There is a marked difference between high-glaze, semi-gloss, and matt enamel, just as there is between the color effect of polished and honed marble. I have not had experience with the use of the two finishes together, but I believe a successful contrast might be obtained by using a hand finished, uneven body with high glaze and more brilliant color for the motif of a design and a mat finish for the darker backgrounds. Contrasting surface texture of this kind is well known in the half-glazed red body tile where the unglazed body of the subject projects to the upper surface and a deep blue, a green yellow, or other colored glaze is filled into the depressions.

Within the last few years, another contrasting of textures has been obtained by setting red or enamelled tile, flat or modelled, in a background of cement. See the illustration on page 11. This has been further developed by making depressions in a single tile, to be grouted full of cement. The last saves the expense of setting up smaller elements of a design where several fall within the limits of a single tile size. The projecting portions appear to be small tiles set like their larger fellows in the same cement background. That is an "imitation," same conscientious reader will exclaim. Doubtless the answer will be that cloisoné is also an insert and that the real cement joints are the ones at fault, not the cement run into the depressions of the tile to mark the design. In any event, when done well, the result has charm.

This brings us to the important role joints play in tile composition. A general rule is that large tile requires wide joints and small tile narrow ones. Uneven tile require wider joints than those having straight edges and a uniform dimension. The old fashioned, smoothly shaped and colored encaustic tile of fifty years ago, were usually laid without apparent joint. Modern encaustic tile can be had already set up, glued to paper sheets, with a comparatively narrow border. The two inch to four inch soft, red body tile of the hand-made variety, similar to the old Moravian, are usually given a three-sixteenths to five-sixteenths inch joint, a quarter of an inch being good practice. Ordinary quarry tile, 4 in. x 4 in. or 6 in. x 6 in., may have a joint varying from a quarter of an inch for the smaller size to five-eighths of an inch or even three-quarters of an inch for the 6 in. x 6 in., if a somewhat rougher effect pervades the accompanying architecture. A wider joint than this, unless perhaps for 9 in. x 9 in. quarries, looks forced. The enamelled quarries, say 4 in. x 4 in., should ordinarily have a quarter or even three-sixteenth inch joint, but it must be kept in mind that the width of the joint is just as much a part of the design as any other element. Indeed it sometimes affects the final appearance more than the tile itself. To push this matter further, it may be that one part of the design will require a narrow joint and another part a wider one. I have in mind a walk laid with a one-inch joint between large Dutch tile or brick that are 8 in. x 14 in., while the border is of 2¼ in. x 8½ in. brick laid on edge and spaced five-eighths inch apart.

Except for very regular machine-cut tile, or for tile bedded in a cement background and having a flat surface, the joint is usually slightly depressed. Hand-made tile having a rounded edge require a depressed joint. Otherwise bits of the cement would creep up over uneven parts of the edges. It is not usual to rake the joint out or to depress it much, as that does not contribute to a feeling of security. Indeed it would be unwise to depress the joint markedly with a thin tile and in a floor it would leave spaces in which dirt could collect and which would make walking unpleasant and even dangerous. For the same reasons, in floor design avoid tile with deep depressions. It may be worth while to note that if joints were depressed, glazed tile would have to be specially enamelled on the edges. This is also true in turning corners or in fireplace openings when no frame is used.

The color of the joints is also very important in the final effect. White joints may retain their brilliancy in a wall, but not in a floor. Indeed, too white a joint is likely to be staring, although the red of ordinary red quarries looks well in contrast to a moderately white joint. At one time, it was quite customary to lay floor tile in a dead black joint. If the tile are waxed or oiled (glazed tile should never be either waxed or oiled as a film forms on them and collects dirt), the black takes on a luster and may also become too prominent. Therefore some tile men advise a dark grey joint and others the natural color of a cement joint, which, after repeated oilings becomes almost black and has an old antique look that is quite pleasing.

The concrete under-bed of floors should be made of cement one part, sand three parts, and hard boiler cinders or small stone six parts, set down so the surface of the tile when bedded will finish flush with a surrounding floor. Spread a thin layer one-sixteenth inch thick of neat dry cement on this under surface just before bedding the tile. For wall tile, the thin neat cement can be brushed on as a sort of cream. It must not be allowed to stand. To bed floor tile wet them, set a section and on it lay a board, tapping it down to the right level. The bed is usually one-half inch thick when finished. Bed the tile in cement mortar one to two, or one to two and one-half, and if the joints are to be white or if the tile are enamelled or oiled, a floor may be grouted. An excellent way to clean a newly laid floor is with wet excelsior, waiting until the joints are sufficiently set up not to come out, but not long enough to allow the cement to set into the face of the tile. Over night may be about right, but cold will extend the period considerably.

Another method is to rub the tile with damp sawdust and wads of burlaps, but one must be careful the sawdust does not stick in the joints. After cleaning unglazed tile with the excelsior or sawdust, if cement continues to stick, go over it with muriatic acid and water, one to ten or one to fifteen parts. Obtain a good sharp, coarse grained sawdust and never use chestnut as it stains the floor. The mortar for joints should be not fatter than one part of cement to two parts of sand, else it is likely to chip, and not leaner than one to two and a half parts. Some authorities advise oiling unglazed tile with raw linseed oil before filling the joints and this is best done by wiping them over after they have been bedded. Exercise great care that no oil runs down between the joints, else cement put in later will come out. Other practical tile men advise against oiling tile at this stage on account of the danger from oil run into the joints and also because they claim certain unglazed tile are subject to a white efflorescence which may come up under the oiled surface and can then not be washed off. If black joints are specified and the tile have not been oiled, the joints must be carefully pointed with a narrow pointing trowel or jointer. Prevent the black mortar from touching the face of the tile. Make such mortar with one part of cement, one-sixth to one-eleventh of a part of fine powdered oxide of manganese, and two parts sand. The mortar is usually made up first and the manganese worked in till it is the right color, although it is really easier to mix if the manganese is put into the dry sand and cement and the water added afterward. For that samples must be first made and dried and the proportions noted. Manganese is less dirty than lamp black.

If the tile have not been oiled before pointing, wait a month before oiling, to allow any efflorescence to come to the surface. Then scrub with muriatic acid and water, one to six, and wash this off with three rinsings of clean water, wiping up between rinsings. Wait a day to see if the tile remain clear and then if no efflorescence appears, wash over with clear water and mop up so the surface will be quite dry, but the tile damp below. Immediately put on pure raw linseed oil and turpentine in equal parts and soak for twenty minutes. Take burlap or rags and rub absolutely dry. Repeat the oil application every three months for a year and then once a year. In place of oil, beeswax dissolved in turpentine may be used, or prepared floor wax. Good results have been obtained by using a prepared cement floor filler and then waxing. The last method gives a high gloss.

Another means of applying the later oilings is to dampen sawdust and fill it with raw linseed oil. This can be swept over the floor, some authorities say, at intervals of a month. Unglazed wall tile may be oiled or waxed with a cloth. Waxed tile should be well polished with a brush and woolen cloth, as are waxed oak floors.

ARCHITECTURAL MODELS OF CARDBOARD.

(*Continued from page* 32)

a replica of the Masonic lodge room at Alexandria in which George Washington presided as master. Full data concerning this room have been preserved and the reproduction will be faithful in every particular. The room will be furnished with old pieces and it will contain original records treasured by the lodge in Alexandria.

The model of the memorial itself is so constructed that the tower portion can be lifted off in three sections. Other models for this portion of the memorial were carefully made and tried out and the design shown in the illustration on the lower part of page 28 finally adopted. This view shows only a part of the grounds represented in the model and the painted landscape background. In the next issue I shall go more deeply into the process of making models of this kind.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART III.

By Otto Gaertner

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat 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.

The Constructing and Proportioning of the Parts of the Fireplace—In the case of the fireplace the first things to determine are the size and the design. Fireplace openings are usually made from thirty to sixty inches wide and from thirty to forty-eight inches high. They should not be as high as they are wide, although the smaller-size fireplaces generally work properly if all the other features connected therewith are correctly proportioned and constructed. The usual proportions are for the height to be about two-thirds to three-quarters of the width. If the opening is too high, too much cold air will be drawn in over the fire instead of through it, so that the draft will be retarded. To remedy this a metal shield must be set into the upper part of the opening to reduce its height. But such a shield is difficult to design so that it will tie in with the fireplace design and not look like an after-thought.

The depth of the fireplace opening is usually made from one-half to two-thirds its height, but it should never be less than sixteen inches for burning coal and eighteen inches for burning wood. Twenty inches is better for burning wood in medium-size fireplaces and twenty-four inches for large fireplaces. The depth should never be more than twenty-four inches, however, as a deep fireplace does not throw much heat into the room. To increase the amount of heat thrown out, the sides of the opening should extend four inches back from the facing and at right angles to it and then back on a splay of two inches to the foot, or a little more, toward the centre of the fireplace. This will make the width of the fireplace less at the back than at the front, and the smaller dimension must, of course, be considered in connection with the length of the logs to be burned or the size of the grate to be installed.

The back of the fireplace opening should be built upward with a forward curve or slant starting above the hearth at approximately one-third the height of the opening and extending to at least six or eight inches above the head of the opening, where the top of this slant forms the smoke shelf or back-draft shelf. As the word back-draft implies, the purpose of this shelf is to prevent a downward-moving draft from blowing the smoke back into the room. When a fire is started, the heated air starting up the flue causes a movement therein and the colder and heavier air is forced downward. But since the rising heated air occupies the forward part of the space, the downward draft occurs at the rear of the space where it strikes the draft shelf and is deflected in the direction of, and upward with, the rising draft. This shelf should be cleaned of all mortar drippings when the chimney is built, and it should be kept free from soot afterward, otherwise this will lie at an angle from the front toward the back and the back-draft will be deflected downward into the fireplace carrying smoke and soot with it into the room. This shelf should be at least eight inches wide, and wider, if possible. If it is wide enough, its top surface can be covered with cement mortar to form a surface with a concave segmental cross section so as to deflect the downward draft to meet the upward draft at a tangent instead of at right angles. This helps to eliminate some of the friction of the opposing air currents.

The head of the opening should be supported on an angle-iron lintel, and the soffit of the head should never be wider than four inches. On the inside it should extend vertically at least four inches before being built upward and inward, on a slant toward the edge of the smoke shelf, to form one side of the throat. If the soffit is wider than four inches there is danger of the smoke striking it and being deflected into the room. This upward slant should be built with the corners clipped off as before mentioned, but the surface may be parged to make it smoother since it is accessible and the parging can readily be replaced. The slant deflects the smoke into the throat and thus into the smoke chamber above. The head of the opening may be made a brick or stone arch, in which case the angle-iron lintel may be omitted.

The front edge of the smoke shelf forms the rear of the throat whose position is governed by the depth of the fireplace, and the size, shape and location of the smoke flue above. It should be built well toward the front of the fireplace and extend the entire width of the fireplace opening. Its area should be from one to one and one-half times the area of the smoke flue, but its width should never be less than three inches and more than four and one-half inches. A throat that is too large will let the air escape toward the flue before it is thoroughly heated, resulting in less velocity and a poor draft. There are several iron throat and damper combinations on the market that may be used in connection with the fireplace. Such a combination usually consists of a pivoted or hinged damper set into a frame and regulated by a bar back of the fireplace opening, and also to support the masonry forming the head of the opening. But when such a combination is used the smoke shelf should not be omitted. It will be necessary, however, to raise it about eight inches or more.

It is important to see that the patented throat and damper, if used, has the opening as already called for; though it can be reduced in size by means of the damper.

The space from the top of the smoke shelf to the flue is called the smoke chamber. It should begin at the ends of the throat and its sides should extend vertically from the smoke shelf for a few inches, and then its sides should slope upward toward the flue at an angle of sixty degrees from the horizontal. These sides should have smooth surfaces and if they are built of bricks or stones, by corbeling, the corners should be clipped off them. The surfaces, however, must not be parged with mortar. The mortar is sure to crack and peel off leaving them rough to retard the draft, especially if the corners are not clipped off before the parging is done. There are also patented iron sides sold for smoke chambers. They are set first and then the masonry is placed against them, the iron being the finished surface.

After the fireplace opening has been properly proportioned, the next item under consideration is the flue. The size of the flue depends upon its shape, whether it is lined or unlined, the distance from its start to the top of the chimney, the kind of fuel to be used, and the size of the fireplace opening. The rising draft has a circular motion and therefore a round flue is the best one to use. The areas of the flues being equal, the next best one to use is the square flue, with a slight loss of draft on account of the friction caused by the dead corners, and then the flue of oblong cross section with still more loss of draft on account of the additional friction caused by the dead ends. Therefore, for any given condition the round flue will have the smallest area, and the oblong one will have the largest. The latter should not have an opening less than two-thirds as wide as it is long, and no flue should be less than eight inches wide. A narrow flue is easily choked with soot and it is difficult to keep it clean.

A metal or tile-lined flue has a better draft than an unlined one, since the smooth surface of the latter causes less friction than the unlined one. All flues should be lined, and most building codes and ordinances insist upon it for safety. An unlined flue should not be parged as the parging mortar is likely to peel off and choke the flue if it has a bend in it near the bottom.

In heating and ventilating work the higher the flue is, the greater is the draft efficiency—and therefore a flue one story high should be, relatively, larger than one that is three stories high. And as mentioned before, the type of fuel must also be considered. Wood and bituminous coal require larger flues than does anthracite coal. For practical purposes, however, there is generally no distinction made between round and square flues, lined and unlined flues, and between flues one and three stories high. One's judgment and experience must aid in proportioning the size of the flue. The writer generally proportions the area of a lined flue for a fireplace burning wood or soft coal as follows: Area of an oblong flue, one-tenth of the area of the fireplace opening for a flue one or two stories high and one-twelfth of the area of the fireplace opening for a flue three stories high. Area of a round flue, one-twelfth of the area of the fireplace opening for a flue one or two stories high, and one-fifteenth of the area of the fireplace opening for a flue three stories high. These flue areas may be decreased about thirty per cent. when hard coal is to be burned. No flue, however, should have an area of less than seventy square inches. The area of an unlined flue one story high may be made one-eighth of the area of the fireplace opening, except for a large fireplace where it is better to use a slightly smaller flue so that not so much cold air must be moved before a good draft is created when starting a fire.

The flue should start directly over the centre of the smoke chamber. If this is done, both sides of the fireplace will have the same amount of draft. Usually, when one side draws better than the other, smoke escapes into the room from the side which has the less draft. The flue should also be built as straight as possible. If offsets are made, they should be made at an angle of not less than forty-five degrees with the horizontal, and preferably at an angle of sixty degrees or more. The straighter the flue is, the less likely it is to be obstructed

by deposits of mortar drippings, brick, and other rubbish while it is being built, and by soot afterward. Our chimney fires are often caused by deposits of soot, with the consequent danger of the sparks being thrown upon the roof. Where bends occur in the flue, precautions should be taken while it is being built, so that it may be left clean when it is finished. For instance, openings can be left at the bends in the flue for cleaning out deposits of rubbish, after which the openings can be closed with masonry. Another precaution is to tie one or two burlap bags at the centre with a rope and to draw them up as the flue is built. The top of the flue should be covered temporarily whenever the work is stopped and when the flue is finished. During its use the flue should be cleaned about once a year with a weighted brush or bundle of rags.

There should not be any openings into the flue other than the one of the fireplace which it is to serve, otherwise the draft will be affected and the fire hazard for the building will be increased. The masonwork around the flue should be at least eight inches thick if it is of brick, and twelve inches or more if it is of stone. If the flue is lined, four inches of the brick may be used, but it is better to have eight inches for exposed or exterior sides of the flue so as to provide a dryer and warmer flue, which will make starting a fire easier and avoid smoking. There should always be eight inches of brickwork or four inches of brick and two inches of other fireproofing material between the lined flue and any wood beams, studs, rafters, or furring. The exterior eight-inch thick structural tile wall of a stucco house may form the one side of a chimney if it is well bonded to the brickwork of the other sides.

The chimney should extend at least two and one-half feet above the highest point of the roof, and it should extend at least four feet above the roof where it comes through. It should be capped with brick, stone, terra cotta, or concrete, having a minimum pitch of one inch on top. The flue lining should extend at least two inches above the top of the chimney cap. This insures the flue being of the same size throughout instead of being cut down in area by a projecting cap. All joints in the lining should fit closely, even where they are cut to suit changes in direction, and no broken pieces should be used. If there is another flue in the same chimney, the two flues should be separated by a four-inch withe, but if they are both lined, they may be placed with one inch of mortar between them, provided that no joints in the flues come within six inches of each other. Not more than two flues may be built together without a withe between them, the best practice being to separate all flues by withes, in order to help to stop air leakage and to bond the chimney walls together. External conditions must be studied to see that the draft is not affected by adjoining trees or buildings.

But there are still a few items in reference to the fireplace to be considered. Its walls should not be less than eight inches thick if of brick and not less than twelve inches if of stone. If brick is used, the back and side linings should preferably be made of fire brick set in fire clay. The same applies to the back hearth. The front hearth may be of brick, stone, marble, or tile, laid on a concrete fill placed over a trimmer arch or over a concrete slab. Sometimes soapstone, two inches thick, is used for the back hearth and linings, and sometimes cast iron is used for the linings. Soapstone and cast iron linings must be set so as to allow for expansion and contraction, and for this reason a one-inch space must be left behind them. The rough fireplace must be built large enough to receive these linings and to insure a finished fireplace of the proper proportions. The space behind the linings must be closed off at the top with masonry, and this is specially important when the sides of the rough fireplace are built straight back instead of on a splay. The facing of the fireplace may be of brick, stone, marble or tile, the last two generally having a narrow metal protective frame around the opening. When marble is used, care must be taken to select a kind that will not be affected readily by the heat, as in the case of marble with seams that are doctored with sealing wax. Since the depth of the opening is measured from the facing, allowance must be made for the thickness of applied facings when building the rough opening. If a wood mantel is to be used, the facing should be made at least eight inches wide at the sides and top; most building codes demanding twelve inches at the top, which prevents scorching the mantel.

The fireplace may be provided with an ash dump. It consists of a hinged or pivoted iron cover set into an iron frame about five inches by eight inches, and is placed in the back hearth with an unlined flue extending from it about three feet above the cellar floor. There an iron clean-out door is placed for removing the ashes that are brushed into the dump. The flue from the ash dump may be connected to a removable galvanized iron ash can cover, permitting the ashes to fall directly into the can below.

All mortar used in connection with the work should be Portland cement mortar. No masonry should be corbeled out more than eight inches and this amount of projection should be secured by at least five courses. However, if the wall from which the corbeling is done is heavy enough to carry the load, the projection may be made greater, and supported on iron beams or angles covered by a plate to receive the masonry.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm issuing the publication. When writing for any of these items please mention* PENCIL POINTS.

Modern Memorials in Marble—Handsome 80-page brochure. Sixty-six illustrations in color showing ancient and modern memorials in marble. Exterior and interior views. 7½ x 10½ in. Applicants are requested to use business letterhead. Vermont Marble Co., Procter, Vt.

Specifications and Construction Details—Booklet showing complete line of door hangers and special hardware for elevator and other sliding doors. Sections showing construction and application. 32 pp. 8½ x 11 in. Reliance-Grant Elevator Equipment Corp., 101 Park Avenue, New York.

Truscon Steel Basement Windows—Detail sheet showing improved type of equipment. Sections and working drawings. 8½ x 11 in. Truscon Steel Co., 250 West Lafayette Blvd., Detroit, Mich.

Chains and Hardware Specialties—Catalog No. 11. Showing complete line of window and other chains for use in buildings, sash fixtures, etc. 40 pp. 7 x 9 in. Smith & Egge Mfg. Co., Bridgeport, Conn.

Ben-Ox Interchangeable Devices—Bulletin illustrating and describing special wiring devices for suspended lighting units. 16 pp. 8 x 10½ in. Benjamin Electric Mfg. Co., 847 W. Jackson Blvd., Chicago, Ill.

Swimming Pool Sanitation—Special bulletin covering this subject, with diagrams and illustrations of typical pools. 8 pp. 8½ x 11 in. R. U. V. Co., 165 Broadway, New York.

Zinc as a Paint Pigment—Scientific treatise on properties of zinc oxide. 16 pp. 6 x 9 in. New Jersey Zinc Co., 160 Front Street, New York.

Doors for the Home and for the Public Library—Two special bulletins covering modern metal equipment for these two classes of buildings. Entrances, elevator enclosures, stairs, halls and fire exits, corridor and communicating doors and doors for special uses are considered. Specifications and diagrams showing construction and suggestions for ordering. 8½ x 11 in. 16 pp. Dahlstrom Metallic Door Co., Jamestown, N. Y.

Roofing Slate—Illustrated brochure showing antique roofs and modern applications of slate in well designed buildings. Two pages of detail sheets and complete specification data. 24 pp. 8½ x 11 in. Vendor Slate Co., Easton, Pa.

Electrically Operated Temperature Regulating Systems—Catalog and handbook showing application of special devices for different requirements. Diagrams and technical data. 32 pp. 8½ x 11 in. Gold Car Heating and Lighting Co., Bush Terminal Bldg., Brooklyn, N. Y.

Ru-ber-oid Roofing Specialties—A collection of eight booklets illustrating and describing felt roofs, roll roofs, shingles, roof coatings, special paint and shingle stains. The Ru-ber-oid Co., 95 Madison Ave., New York.

Quarter Turn Packing Lock Valves—Complete booklet illustrating and describing this convenient valve for all types of steam, vapor and hot water heating systems. 32 pp. 4 x 7 in. Gorton & Lidgerwood Mfg. Co., 96 Liberty St., New York.

Moving Picture Equipment—Bulletins illustrating projectors and other moving picture equipment for theatres and other auditoriums. Nicholas Power Co., 88 Gold St., New York.

Industrial Chimneys—Booklet illustrating improved types of chimney construction with tables of sizes and capacities, illustrations showing various designs and complete data. 24 pp. 4 x 9 in. American Chimney Corp., 147 Fourth Ave., New York.

Forging Ahead in Business—Exposition of the courses offered by the Alexander Hamilton Institute. Complete survey of modern business science. 120 pp. Alexander Hamilton Institute, Astor Place, New York.

Supplies for Architects and Draftsmen—Complete catalog of everything required in the drafting room. Revised prices. Instructions for ordering, etc. 558 pp. Substantial cloth binding. 6,x 9 in. F. Weber & Co., 1220 Buttonwood St., Philadelphia, Pa.

Drafting Roof Furniture—Catalog of drafting room specialties, drawing instruments, filing equipment, etc. 32 pp. 6 x 9 in. C. F. Pease Co., 846 No. Franklin St., Chicago, Ill.

Brayman Watertight Drains—Booklet illustrated with diagrams and sections showing different types of drains for stables, garages, roofs and various special uses. 40 pp. 4 x 9 in. Jiffy Fire Hose Rack Co., 133 West 52nd St., New York.

Corner Beads and Metal Specialties—Six folders illustrating and describing improved types of corner beads, metal furring, picture mouldings and wire lath. Special emphasis on labor saving and fire protection. Milwaukee Corrugating Co., Milwaukee, Wis.

THE SCARAB CONVENTION.

THE sixth convention of the Scarab Fraternity, which, in recent years, has grown to be an annual affair, was held in Pittsburgh on March 31 and April 1. Last year the convention was held in St. Louis and if present plans are carried out the Scarabs in Chicago will play the part of host for the next conclave.

Scarab was founded at the University of Illinois in 1909 for the purpose of fostering good-fellowship and developing a professional spirit and stimulating friendly and personal co-operation. Its members are picked from the students who aspire to become architects, architectural engineers or landscape architects, and only those who have proven their aptitude are invited. While Scarab is a professional organization primarily for the younger men, it has among its members some of the most successful and most prominent practitioners of the day. Their radiating personalities lend prestige and dignity and their inspiration is fuel for the fire of enthusiasm burning in the hearts and souls of the younger Scarabs. They command respect and their honest opinions are taken at face value. They are the men, who by a few words, can point the way to avoid the professional pitfalls and encourage a desire and belief in a code of ethics.

The Grand President, E. J. McDonald, called the convention to order at 10 A. M., in the Fine Arts Building at the Carnegie Institute of Technology. Clemens Nicholas, who is also a Grand Officer in the fraternity, journeyed from Jackson, Miss., to answer "here." The delegates were: Edwin E. Valentine, University of Illinois; Charles M. Gray, Washington University; W. J. McCormack, Armour Institute of Technology; J. H. Savolaine, State College of Pennsylvania; C. W. Hunt, Carnegie Institute of Technology; Bertram A. Weber, Massachusetts Institute of Technology; D. Kent Frohwerk, University of Kansas.

From the reports of the delegates one can glean an insight into the activities and principles of the fraternity. Each chapter offers some sort of a prize, be it a medal, books, cash, or what not, to the entire student body at their respective schools. At some institutions this sort of thing has become traditional, and the men anticipate it and apply their energy and ability to the maximum in order to survive the preliminaries.

There are a number of Scarabs in Europe who are enjoying their opportunity to study under the great masters by virtue of their ability to win a fellowship, be it known by one name or another. Some chapters boasted that during the last year every prize offered at their particular institution had been won by a member of the fraternity.

The social life of the young architect is not neglected. It is considered quite as essential to develop the personality as it is to develop the intellect and an insight into the mysteries of composition. Dances and smokers permit the members to find one another away from their major activity and permit the assimilation of ideals and idiosyncrasies. They are of further value in that human contact helps to wipe out provincialism. Lectures animate public spiritedness, and an opportunity to drink in the personalities and imbibe the ethereal ecstasies of a notable contemporary are foregone only under the most unusual circumstances.

The convention authorized the establishment of a national competition to be held some time during the coming year. The nature of the prize and the character of the problem will be left to the committee appointed to make arrangements. The committee consists of Gabriel Ferrand, Louis H. Sullivan and F. R. Leimkuehler.

In order to build up a closer bond of good-fellowship and to make the interrelation of one chapter to another a more personal sort of thing, a travelling exhibit is to become an annual affair. There is one in the process of circulation at the present time and it is being received with great favor wherever it is hung. Within two months every school that accepted the invitation to assist in building up a noteworthy exhibit will have enjoyed the opportunity of learning what is being done by their student contemporaries.

The Scarab medal is to be offered as a prize each year at each school where a chapter of the fraternity is established. This medal is to be of the same design for all schools. The old style medal will be given until the new one, which is to have several new ideas incorporated, is designed.

With the increasing number of alumni Scarabs in the principal architectural circles, it is planned to establish alumni chapters. The nucleus for such organizations has already made its influence felt by combining the principles of the fraternity with the practice of their profession according to the highest ideals and ethics.

The Grand Officers who were elected to inspire the chapters to greater effort and to influence its policies for the coming year are: Clemens Nicholas, Washington University; H. R. Gamble, Pennsylvania State College; E. E. Valentine, University of Illinois.

It seems only fitting and proper that the business of a convention be tempered with entertainment to direct the imagination into a lighter vein. The Scarabs at Pittsburgh, and every one else with whom their visitors came into contact, proved by their sincerity and the ample evidence of their hospitality that they were hosts of no mean ability. The visitors' every want was anticipated and provided for in a manner befitting a king.

On the evening of the first day the visitors were guests at the Little Theatre in the Fine Arts Building. Dancing took place in the foyer and corridors of the building after the play.

On the last evening the Scarabs from far and near gathered at the Schenley Hotel to banquet and to become better acquainted with one another. C. W. Hunt acted as toast master and the retiring Grand President, Edgar J. McDonald, spoke in his usual delightful manner. Clemens Nicholas, the newly-elected leader, also responded with a speech. But those who came from afar were well repaid when Mr. Hornbostle radiated his enthusiasm and related his impressions of the work done by Scarab. Those who met him for the first time will never forget his charming personality and his marvelous power of speech.

DALLAS ARCHITECTURAL CLUB HOLDS ITS FIRST ANNUAL EXHIBITION

THE Dallas Architectural Club held its first annual exhibition at the Jefferson Hotel recently. From every angle it was more successful than we had dared to hope for. Over five thousand people viewed the exhibition which contained some three hundred pieces. The exhibition was an epitomy of state architecture as every section of the state was well represented.

A series of lectures was held during the week on architectural subjects. The speakers were Professor J. J. Kellog of A. and M. College, who delivered an informal address on "Traveling Through Italy"; E. A. Wood, manager of the Civic and Service Departments of the Chamber of Commerce, on "City Planning"; Miss Marian Long of the College of Industrial Arts at Denton, who gave an illustrated lecture on "Interior Decoration"; Professor S. E. Gideon of the University of Texas, who spoke on "Our Home Products in Architecture and Art"; Professor W. W. Watkins of Rice Institute at Houston, whose subject was "Church Building of the Gothic Period in England."

The lectures were very well attended and it was estimated that at least a thousand heard them.

We are greatly indebted to Mr. Charles Mangold of the Jefferson Hotel who was broad enough to see the great benefit that was to be derived from the exhibition and who donated the use of the ball room for the exhibition and who worked hard to make it a success. We are also indebted to the press and the architectural papers for their ever loyal support of things architectural.

We are now preparing for our next exhibition and we hope to make it not better, as the past one was excellent, but we hope to enlarge and get a greater state showing. It has attracted the attention of every person interested in architecture and they realize that the Dallas Architectural Club is a factor in the architectural world and that it is working not selfishly, but for the good of the profession at large. Our atelier is still taking down the awards and we soon hope to have new quarters, as the local Society of Architects has donated $10 a month towards the rental of quarters, and Mr. C. D. Hill, a local architect, has also given $5 a month, so just watch us grow.

AWARDS IN THE EBERHARD FABER SKETCH COMPETITION

THE jury in the Eberhard Faber Sketch Competition, which closed at noon on April 1, has awarded the prizes as follows:

First Prize, Fifty Dollars, to John F. Jackson, New York City, for the sketch "At Pier 15, East River, New York." Second Prize, Twenty-five Dollars, to Walter T. Vohlberg, Boston, Mass., for the sketch "Porte Nord de Menneton-sur Cier." Third Prize, Ten Dollars, to Hugh McLean Poe, John Herron Art School, Indianapolis, Ind., for a portrait sketch. Fourth Prize, Five Dollars, to C. Harold Kiefner, New York City, for "Scene in Mt. Rainier National Park." Fifth Prize, Five Dollars, to W. H. Butterfield, New York, for "Les Baux, Provence." Sixth Prize, Five Dollars, to H. G. Ripley, Boston, Mass.

In judging the sketches submitted the jurors endeavored to adhere strictly to the conditions of the program which stated that the judgment was to be made on the basis of pictorial quality, skill in pencil technique and adaptability to use in advertising the Van Dyke drawing pencils. Giving due weight to the last mentioned requirement resulted in the placing of some drawings that were excellent in other ways, lower than would have been the case if adaptability as an advertisement had not been required.

More than one hundred forty sketches were received from all sections of the country, and the quality of the work was, in general, excellent.

The jury felt that many of the drawings that could not be awarded prizes showed merit that should be recognized and that the more meritorious of these should be given mentions. Honorable Mention was given to the following: V. Bates, New York; Oliver M. Waird, New York; Catherine B. Heller, Ann Arbor, Mich., E. O. Christensen, University of North Dakota, Grand Forks, N. D.; Eric H. Gibson, Chicago, Ill.

The jury consisted of Birch Burdette Long, Eugene Clute, Editor of Pencil Points, and E. L. Faber, Advertising Manager for Eberhard Faber.