

OUR THIRD ANNIVERSARY

THE old folks say that if an infant successfully passes through its second summer it has a good chance of living to a ripe old age. If there is any truth in this old saying, PENCIL POINTS appears to have passed the crisis successfully, as we can now boast of three whole years.

While we have not by any means accomplished all the things we had in mind when we plunged into the field three years ago, we do feel a slight glow of pride and satisfaction in the progress we have made along the road which we have laid out for ourselves.

First and foremost we have an army of more than 10,000 regular subscribers—architects, specification writers, draftsmen and students of architecture, all of whom together constitute what is broadly understood by the term architectural profession. We not only have this large and constantly growing group of readers, but we have ample evidence that our subscribers like our paper, want to see it prosper and are willing to do all they can to make it better and more useful from month to month. We know this because of the letters we get from all sections of the country expressing appreciation of what we have done and in many cases pointing the way to improvement. This is most stimulating to us as we want to improve PENCIL POINTS, in every way we can, so that it may be of the greatest use and interest to all classes of readers in all parts of the country. Nor is our circulation limited to the United States. We have at the present time nearly 900 readers outside of the United States and its possessions. For this we are very glad, as architecture is one subject in which there should be no such thing as a borderline or a frontier.

And our advertising section, which naturally started in a small way, has developed in most gratifying fashion during the past year. Manufacturers are beginning to appreciate not only the great importance of the architect as a factor in the sale of their goods, but the part played by the specification writer and the draftsman in the selection of materials is also being appreciated more and more as time goes on. We have been fortunate in attracting to the pages of our journal the advertising announcements of a group of producers and manufacturers of the very highest class. We commend these firms to the attention of our subscribers as being worthy of their fullest confidence and we trust that when our readers are communicating with our advertisers they will take the slight added trouble of mentioning the name of this paper.

You all know what we have done in the past thirty-six issues of PENCIL POINTS. We trust that our program has been such as to serve you satisfactorily and to give you what you want—and need. For the future we have only to say that we purpose following the same general editorial principles which have so far proven to be so popular, with two modifications, or rather additions, which have become possible now that the amount of space available for editorial material has been increased. Starting with this issue we are taking up some of the practical, every-day work of the drafting room for careful analysis and study. We refer to the series of articles by Mr. Breiby, the first installment of which begins on the next page, and which

treats of "The Making of Working Drawings." This series will be continued in the coming months and we also have the promise of additional articles on drafting room practice, drafting room conditions and drafting room economics, which we believe will be equally interesting to all the various elements represented by our subscription list.

We trust that any of our readers who would like to see any particular matter pertaining to drafting room procedure discussed in our pages will let us hear from them. Anyone who has a suggestion which he thinks would be valuable to his brothers in the profession is invited to submit an article or a digest of it to us for consideration. By telling the man in San Francisco what the man in New York is doing and vice versa we render available for general use ideas and methods which have been found to work in one place and which would no doubt be equally successful if adopted under similar circumstances elsewhere. We want PENCIL POINTS in the future, even more than it has been in the past, to be a clearing house for all the things which interest so vitally those who read our paper. Do not hesitate to send even short items, as a ten line note, if it contains material of interest, is most welcome.

So far we have stuck to the little sentiment expressed in our first issue, that PENCIL POINTS is to be edited *with* our readers rather than *for* them. We want to extend this principle even further as we do not believe any publication can serve its readers as well as it should by following any other policy.

We take this opportunity to thank all of those who have contributed so much by way of encouragement, suggestions, and advice, and especially to extend our best wishes to that staunch group of charter subscribers who came to us to the number of over three thousand before our first issue was published, and most of whom, we are glad to say, still appear on our subscription list.

We realize that during the coming year we have a big job ahead of us in serving our readers during a period of great activity. We hope to be equal to the task and all we ask is that each of our subscribers let us hear from him at least once during the year. If you like some particular thing we have done, drop us a line and tell us so. If you have a criticism to offer, shoot it before you have a chance of forgetting it. If you have a suggestion to make, please do not fail to get it down on paper and send it to us. It will take but a few minutes of your time to comply with this request and this co-operation from our readers will make our fourth year the best yet.

In addition to publishing PENCIL POINTS we have, as our readers know, begun during the past year the publication of a group of books intended to form a practical working library on the various interests centering in the drafting room. The two books already issued under the general title of THE PENCIL POINTS LIBRARY, namely, "Sketching and Rendering in Pencil" by Arthur L. Gupitill, and "Good Practice in Construction" by Philip G. Knobloch, have met with gratifying success. Other books in this series are in preparation and will appear in the near future.

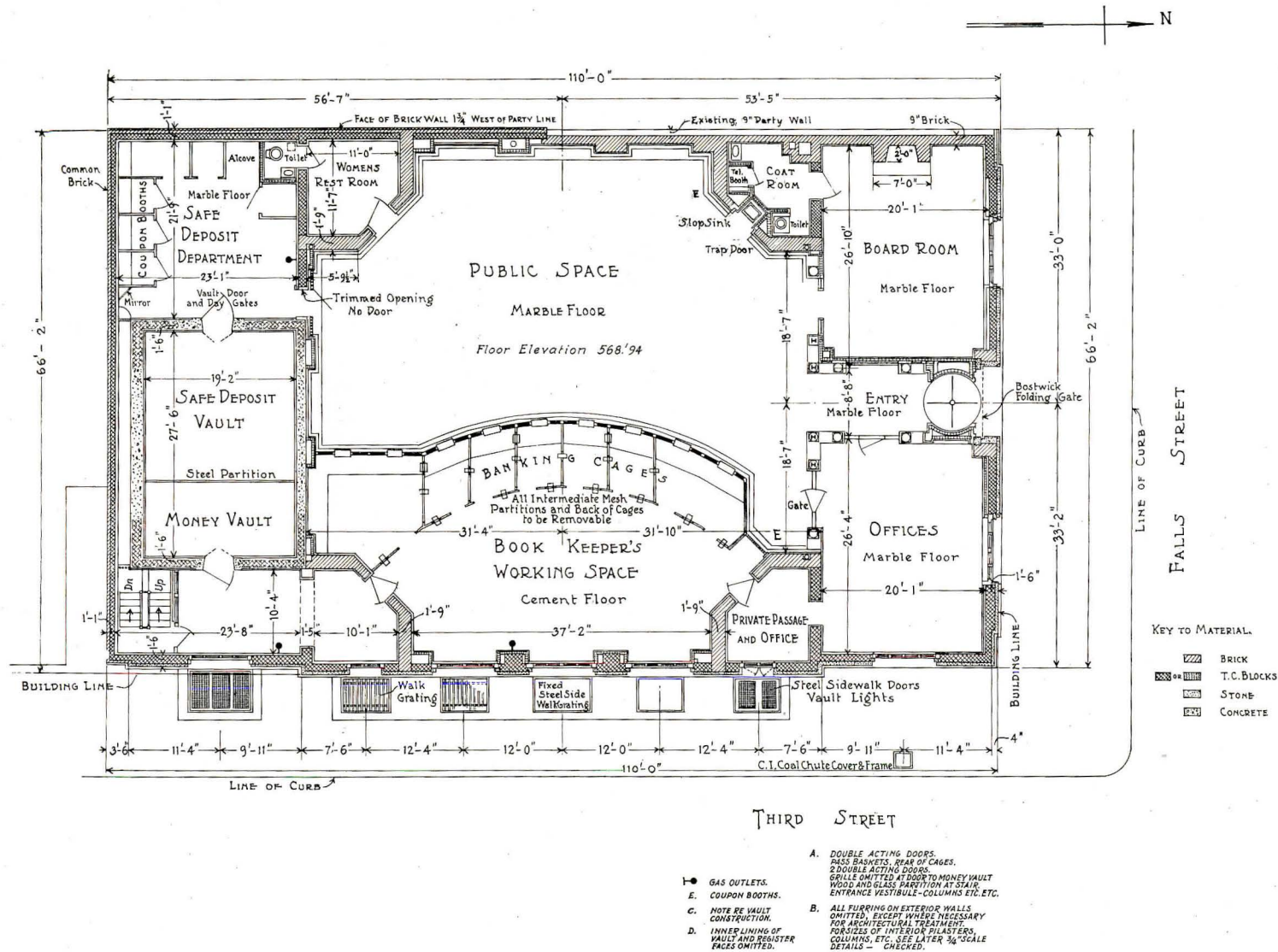


Figure 1. Plan of Bank of Niagara, Niagara Falls, N. Y. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

THE MAKING OF WORKING DRAWINGS

GENERAL DRAWINGS

BY JOHN C. BREIBY

This is the first of a series of articles in which Mr. Breiby, of the staff of Carrere & Hastings, will give much practical information on drafting room work. This first article covers the preparation of general drawings, the one-quarter or one-eighth inch scale drawings. The succeeding articles will cover the making of three-quarter and other scale details, architectural models relating to them, shop drawings, etc. At the conclusion Mr. Breiby will take up the preparation of sketches, etc., particularly sketches of interest to the drafting room.—Ed.

ROUGH architectural sketches of plans, sections and elevations, are prepared by the architect or his designer for the study and solving of a particular problem, after which more completed presentation sketches or elaborate drawings are made to show the client how the completed building will look from a point of design and utility. When such drawings or sketches satisfy the client or so-called owner, the word to "go ahead with the job" will be given, and the project then becomes "active work." Up to this point the drawings have been worked out with a view of scheme and design. From then on, the practical and analytical side of the architect's office will have to prove that the builders can execute in materials what the designer has expressed by his drawings. For this, working drawings are required.

Working drawings are drawings which will give all the necessary information for the actual construction and finish of work and to enable the builders to take off quantities of materials and to establish prices thereon. These drawings with the specifications form the basis of work required to be executed and the cost thereof and as such become a part of the contract documents between the owner and builder.

A word may here be said regarding the relation of the working drawings to the specifications. The drawings should clearly show what is to be done and the specifications should tell how to do it.

Fixed rules for the making of working drawings cannot be given; each office will have its own particular methods, traditions govern some, daily experience and development control all.

Architectural working drawings can be divided into three general parts, first, the general drawings drawn to a scale of $\frac{1}{4}$ -in. or $\frac{1}{8}$ -in. to the foot, secondly, the more detailed scale drawings, drawn to scales of from $\frac{1}{2}$ -in. to 3-in. to the foot, and lastly, the full size details. On some particular jobs it may be necessary at times to make drawings for the shell of the building only, i.e., the enclosed structure itself, with little or no indication of interior finishes, merely showing rough work as openings through bearing walls, furring in part, chases and rough fireplaces, or other necessary structural conditions which will affect the interior work to be executed under other contracts. Later interior or other work would come under the class of "special finish." Drawings for "special finish" may be prepared by the architect or interior dec-

orators. In the event of the architect receiving the commission to design the interiors, drawings therefor would have to be prepared, (after sketches are accepted), as working drawings.

We are considering at this time the $\frac{1}{4}$ -in. and $\frac{1}{8}$ -in. scale architectural working drawings or "general drawings" as they are sometimes called. Mechanical, plumbing, heating and electrical drawings are so interwoven that they must be considered with the general set. In mentioning drawings, it is generally understood that such drawings will include layouts for plumbing, heating, ventilation, drainage, electrical work, elevator machinery, pumps, etc., all being apart from the general architectural drawings.

On small work and if the mechanical work is not too complicated, such information can be indicated on the general drawings. However, as a rule it is much better to have separate mechanical drawings, thereby avoiding complicated looking architectural drawings difficult to read.

Framing drawings are directly related to the architectural drawings, as such information as footings, columns, girders, beams, trusses, etc., are given thereon and they form the skeleton or bone structure in the anatomy of a building. Simple framing for small buildings may at times be indicated on the general drawings.

Framing and mechanical drawings are usually prepared by technical experts of their own professions, sometimes retained by the architect on the regular office staff, or such experts may be retained as consulting engineers for a particular work.

To the younger draftsman who is given the task of preparing working drawings many words can be said in caution, as a guard against pitfalls: listen carefully to instructions given by the men higher up, give close attention to the work which is to be performed. Remember that if incorrect dimensions are not watched out for, or materials are not correctly indicated and many other careless errors slip by, it is up to the man who made the drawing and a loss therefrom will always be incurred. Be neat, for this counts much. In giving an outline of how to make the general drawings, a few general cautions or "look out" signals will have to be given.

All possible information should be obtained from the sketches. Consider carefully the class, type and purpose of the work, consult with the designer to learn his intent and what materials are to be used.

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Lay out a program, foresee what is to follow step by step. A general questionnaire will help to procure first hand information. This may be gotten up as a memorandum specification or in outline form and will help to answer questions; for example: Are the footings to be of concrete? Is the building of a wall bearing or skeleton construction type? What materials are to be used for the roof, etc., etc.? and so on, obtain necessary information of all important parts, even down to the treatment of the gardens. The architect should himself be consulted and his sanction given.

The architect should obtain a survey of the property on which should be given information as to the size of the plot, intersecting angles at streets or property lines, showing locations of adjoining buildings, giving levels of same, location and depth of sewers, water lines, electric service, etc. On surveys of country properties, contour lines and location of trees are very helpful. In closely built districts where building adjoins building, party walls are often encountered. Such walls are erected to serve two buildings, saving the cost of independent walls for each. These walls are generally centered on the lot line, the wall then becoming a jointly owned wall by the owners on each side of the property line or some other legal arrangement exists. Such party lines would, of course, be shown on the survey. Beware of encroaching walls, projections, etc., over the neighboring properties or vice versa.

With the general information obtained from the sketches and list of questions answered, from the survey, etc., the working drawings are well begun. Some general knowledge of the strength of materials, plumbing, heating and ventilation is necessary. Also to be familiar with some of the principal legal rules or ordinances concerning buildings is very important. Perhaps the best way to begin actual drawings would be to lay out on detail paper the main governing lines such as the property lines, building lines, axis lines, centers of columns, accented doors, windows, etc. Choose the most important plan as a starting point, the plan which governs the principal division of rooms around which the building is designed. For example: see Figure 1 which is the main banking room floor; Figure 3 is the first floor of a country residence; Figure 7 is the typical floor of an apartment house or hotel, etc. For the sections and elevations establish floor lines, building lines, center lines of doors and windows, which of course must agree with the plans. It is a good practice to establish some grade elevation to be known as *Datum* = 0'-0". This may be taken as the first floor or some established point on the curb, in fact, any arbitrary level. From this, all up and down levels can be taken and it is especially useful to the contractor in checking heights from fixed bench marks. Some draftsmen prefer using colored ink for the indication of governing lines as mentioned. It is well to keep the plans, elevations and sections working up together as far as is possible. Use the drawings whereon the governing lines were established for a constant check, in fact, it is best to complete the

entire plan which may be called the governing plan, on the detail paper. On these drawings establish all principal dimensions and mark figures on such clearly. From these drawings, then, can be traced over, or measured off, determining points, as bearing walls, column centers, chimneys, etc., for all other drawings at the same scale required for the job.

All drawings should be made as simple as possible. Avoid unnecessary elaborations. Figures and lettering should be clear and readable and it may be well to mention here, that indistinct figures cause a great deal of annoyance, especially when the prints of the drawings are used in the field where they are more or less handled under severe conditions. Do not jumble up the drawings with detail specification notes,—let the specifications take care of that. However, be sure that all required information in connection with the drawings or notes of materials is distinctly shown. Locate correctly chases in walls as required for mechanical installations. Consult the mechanical drawings (which should be worked along with the general drawings) for sizes and locations of ducts and chases and be careful that these do not interfere with any structural or other work. Especially avoid interference with the framing (drawings of which should be worked up along with the general drawings). Watch out for pipes, girders or columns being exposed where not desired. Check carefully for all interference or confusions between mechanical drawings, framing drawings, and the architectural drawings. Watch out for drainage of the cellar bottoms or other places where water need be carried off from the footings or grades. "Look out points" are so numerous that it will be impossible to mention more than a few. Do not be afraid to ask intelligent questions from the various experts, the chief draftsman, or others in charge, and if necessary obtain outside information from builders or material men (this of course with the office's permission). The boss himself will gladly help.

Final specifications, the general specifications as well as those for the mechanical work, should be commenced when the drawings have been brought up to a point of about 75 per cent. completion. Most likely an outline specification has previously been made. Blue prints should be made for the guidance of the specification writer and it is well to have an office set of prints of finished drawings made while there is still work to be done on other drawings. The blue prints necessary for the specification writer or for the drafting room while the drawings are still in the state of preparation need not be prints of entirely completed drawings, and for general reference around the drafting room or specification department the small cost of having the same drawings printed several times is well worth the expense, as it saves so much wear on the original drawings. Often the original drawings are in a very bad condition, due to being handled around the drafting room, before prints are issued to the contractors for estimating or erecting purposes.

Whether or not the final drawings should be

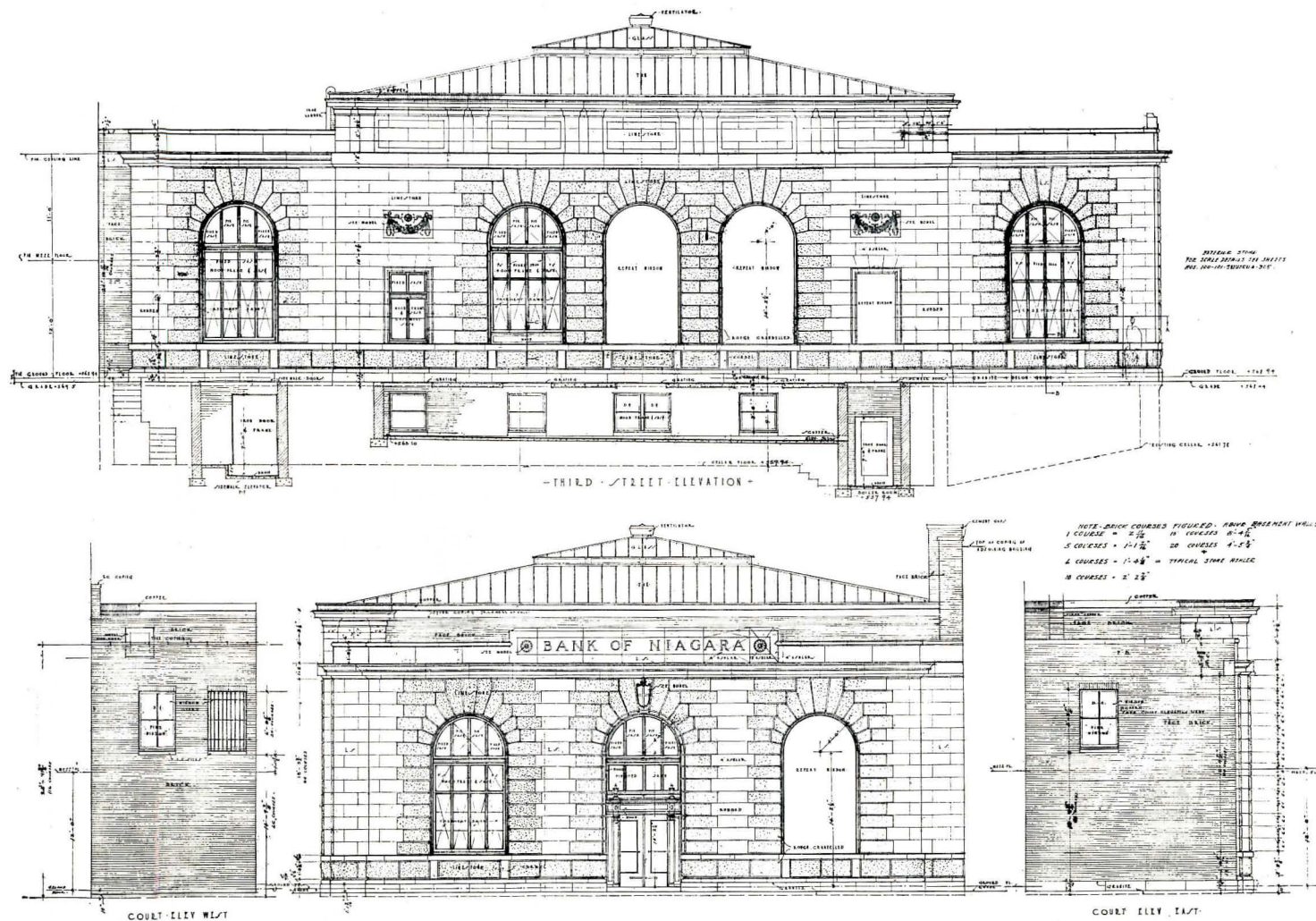
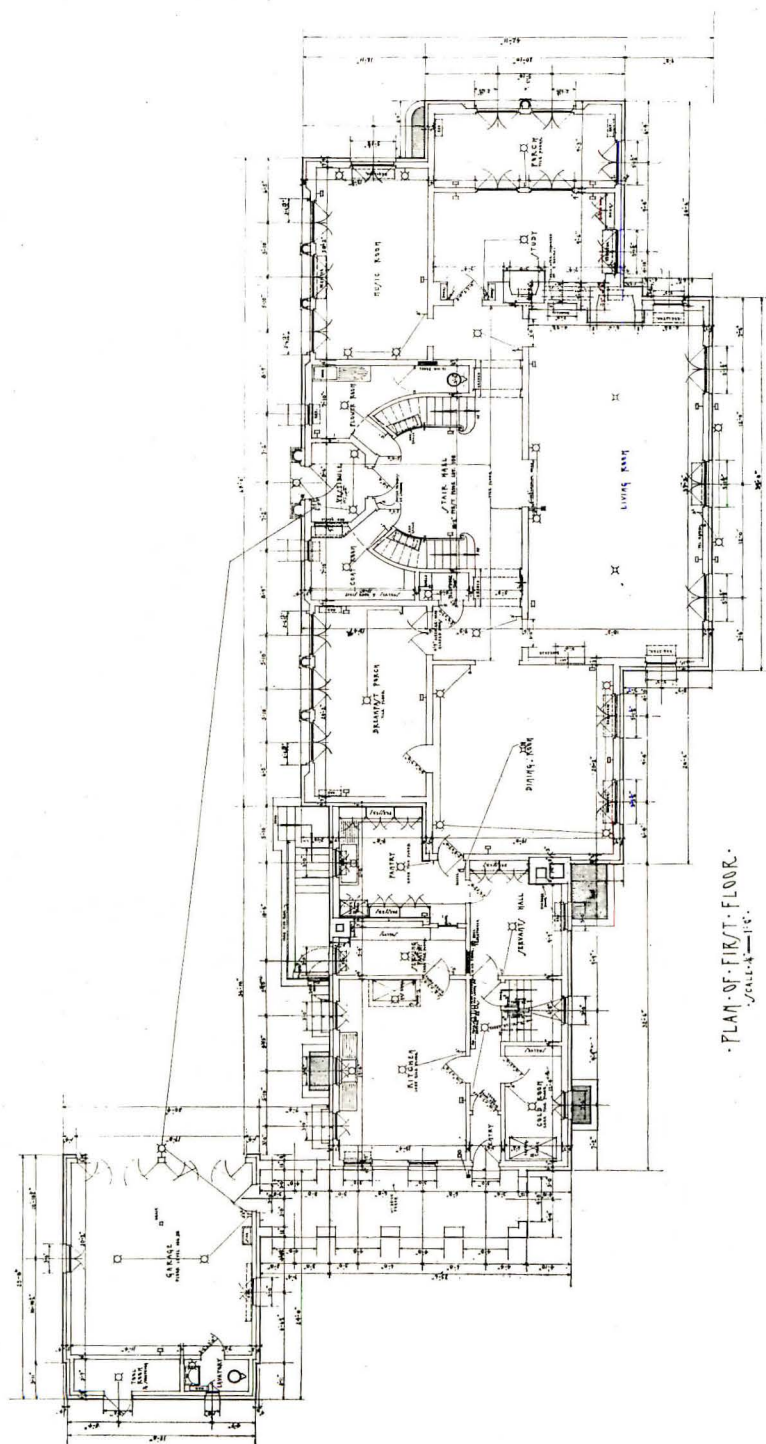


Figure 2. Elevations of Bank of Niagara, Niagara Falls, N. Y. Carrere & Hastings, Architects.
 Shreve, Lamb & Blake, Associated.

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PLAN OF FIRST FLOOR.
SCALE—1/4"

Figure 3. Plan of First Floor. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.

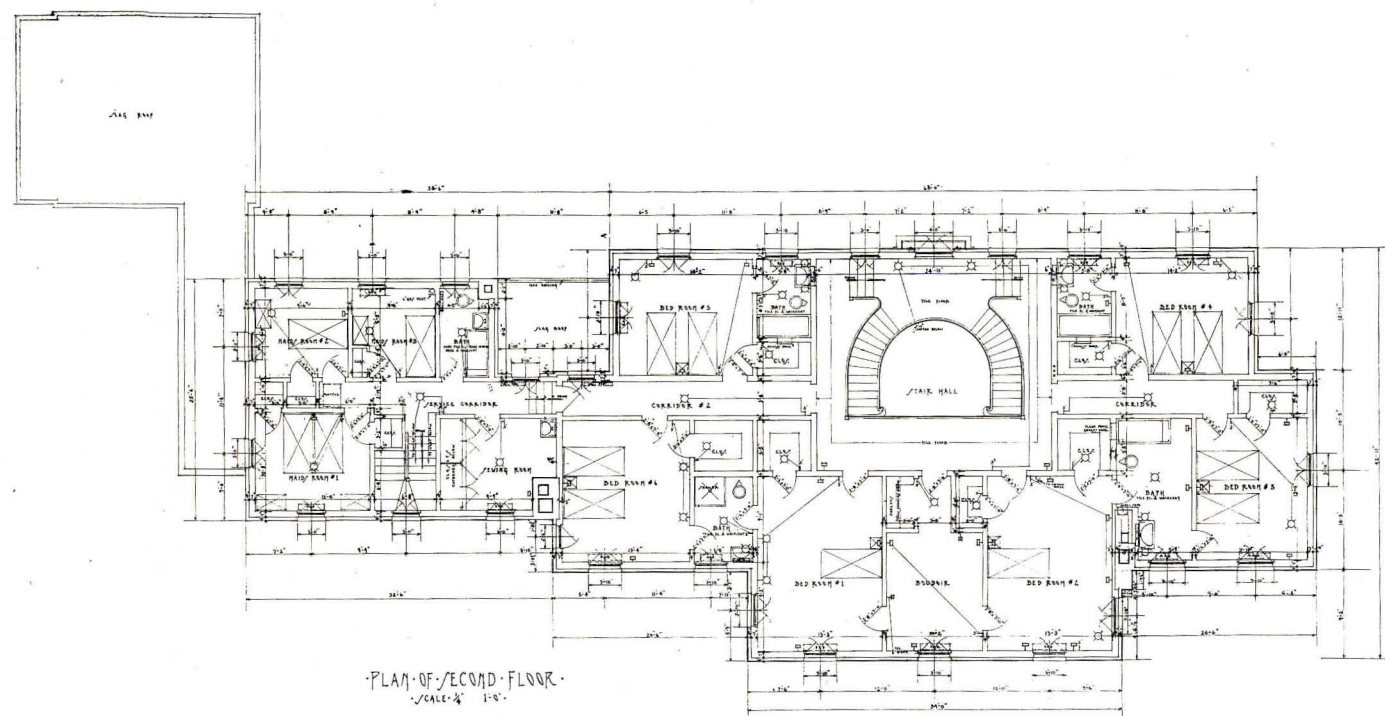
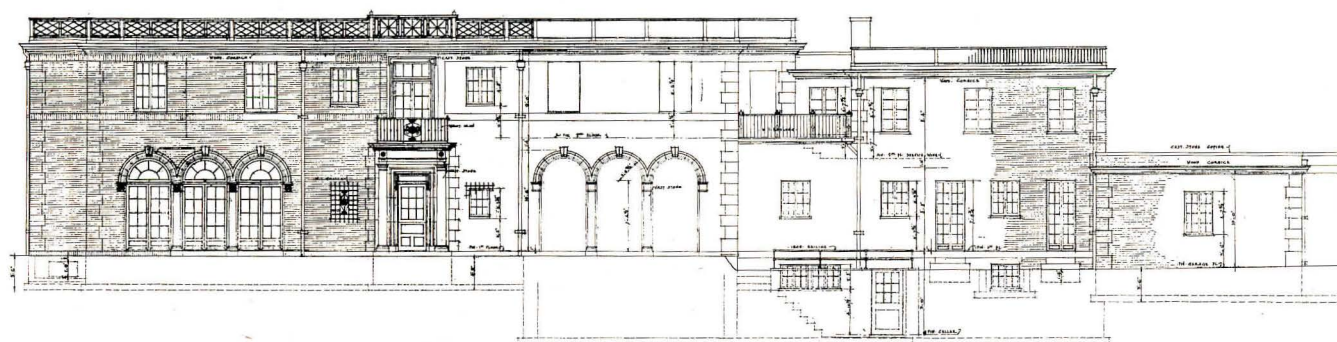


Figure 4. Plan of Second Floor. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.



• EAST • ELEVATION •
• SCALE 1/8" = 1'-0" •

Figure 5. East Elevation. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.

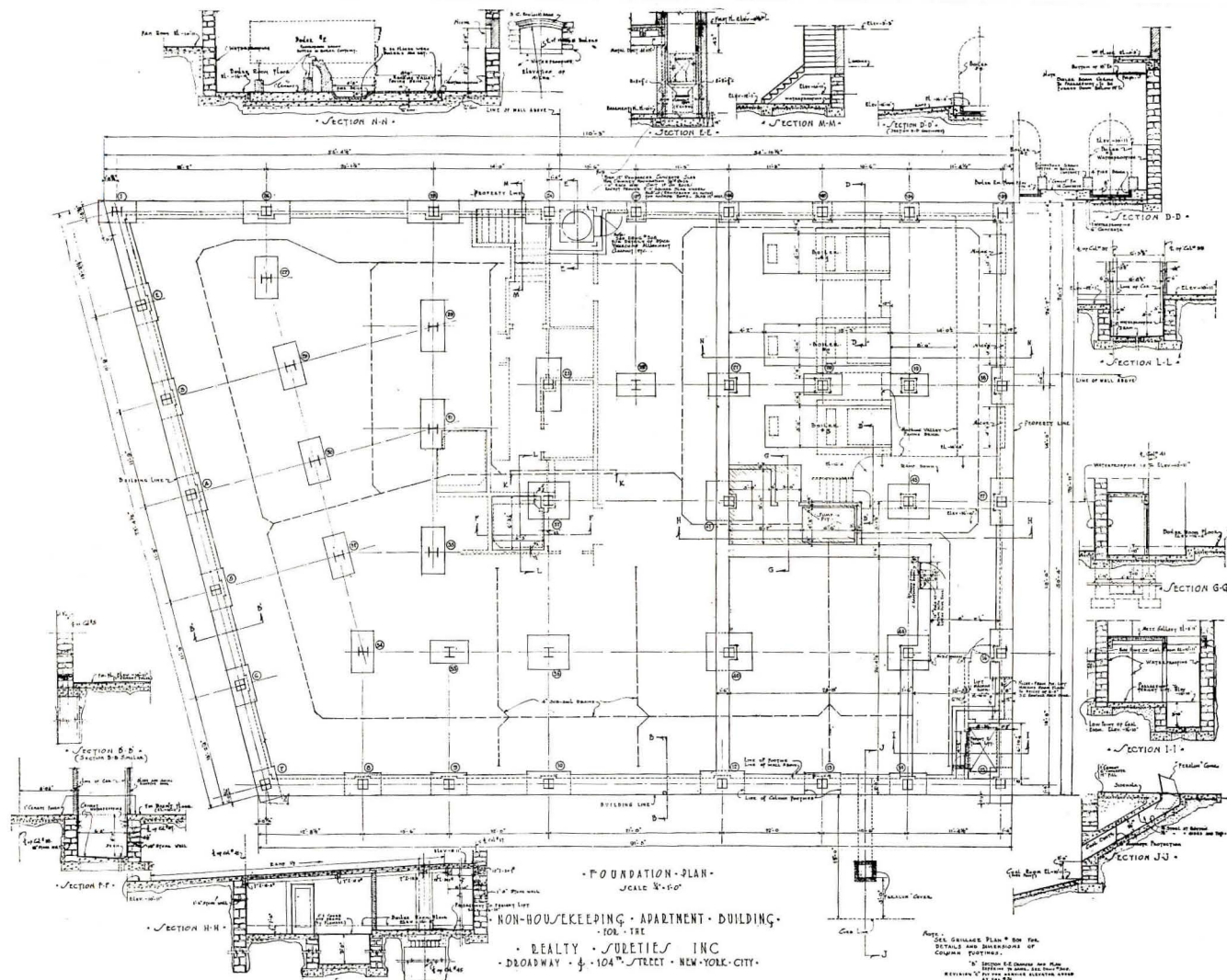


Figure 6. Foundation Plan, Non-housekeeping Apartment Building for Realty Sureties, Inc., New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

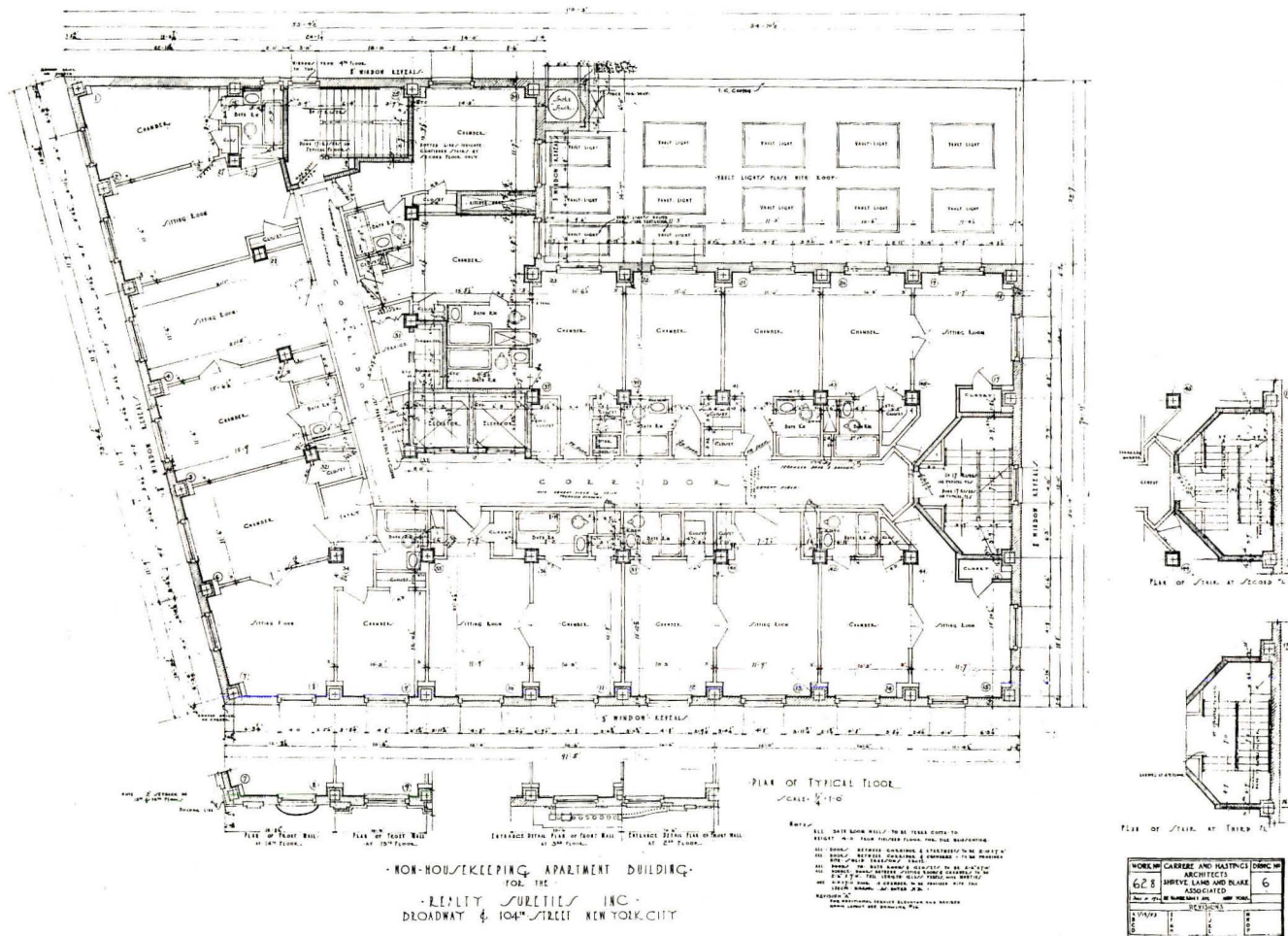


Figure 7. Plan of Typical Floor of Non-housekeeping Apartment Building for Realty Sureties, Inc., New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

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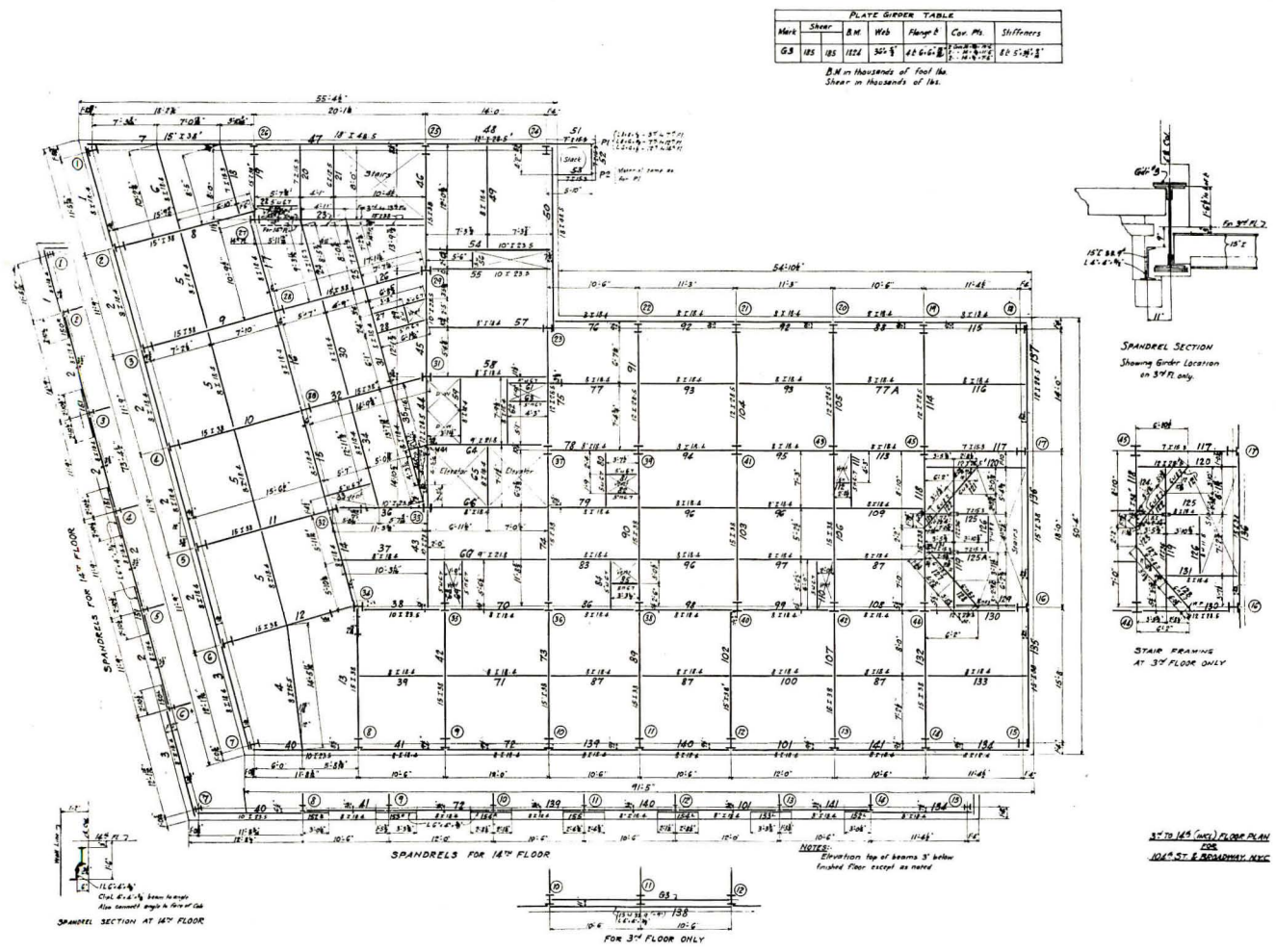


Figure 8. Steel Framing Drawing for the Typical Floor of Non-housekeeping Apartment Building for Realty Sureties Inc., New York City. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

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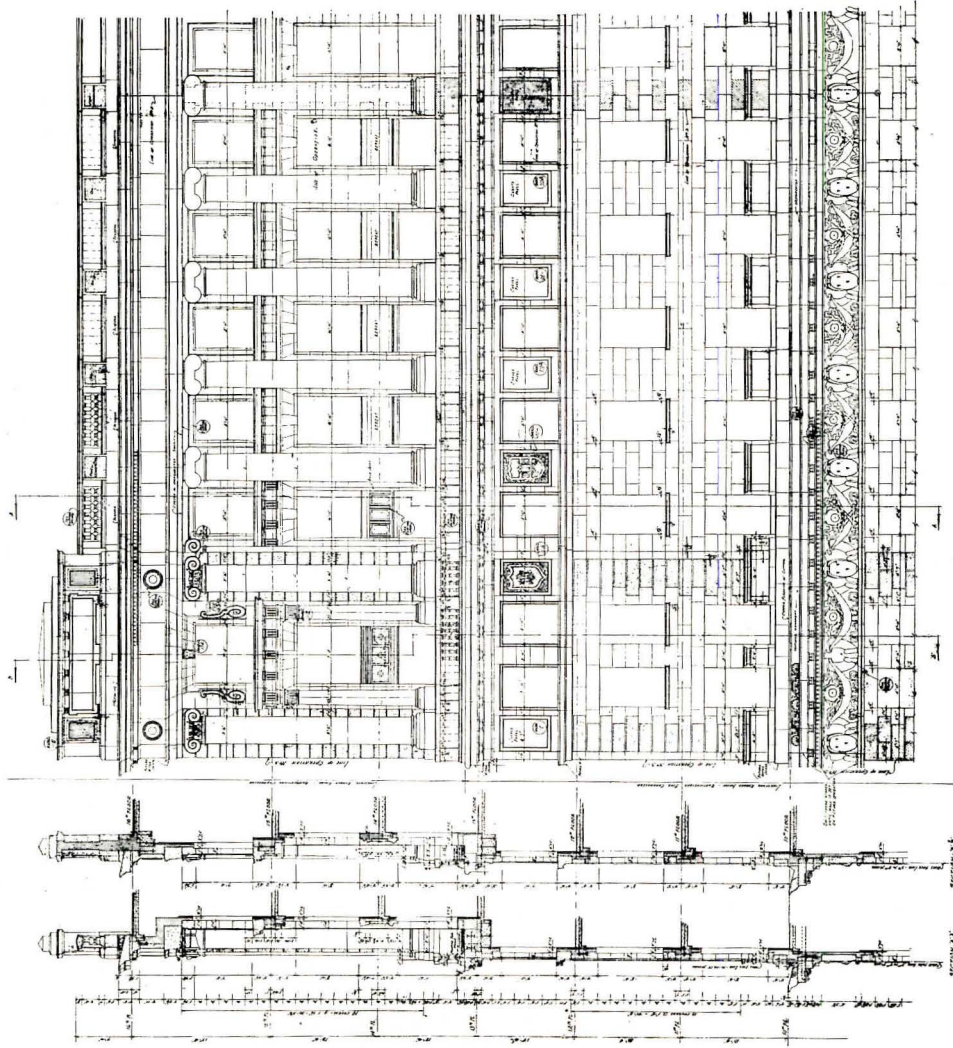


Figure 10. Elevation on Broadway, Building for the Standard Oil Company, New York City. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

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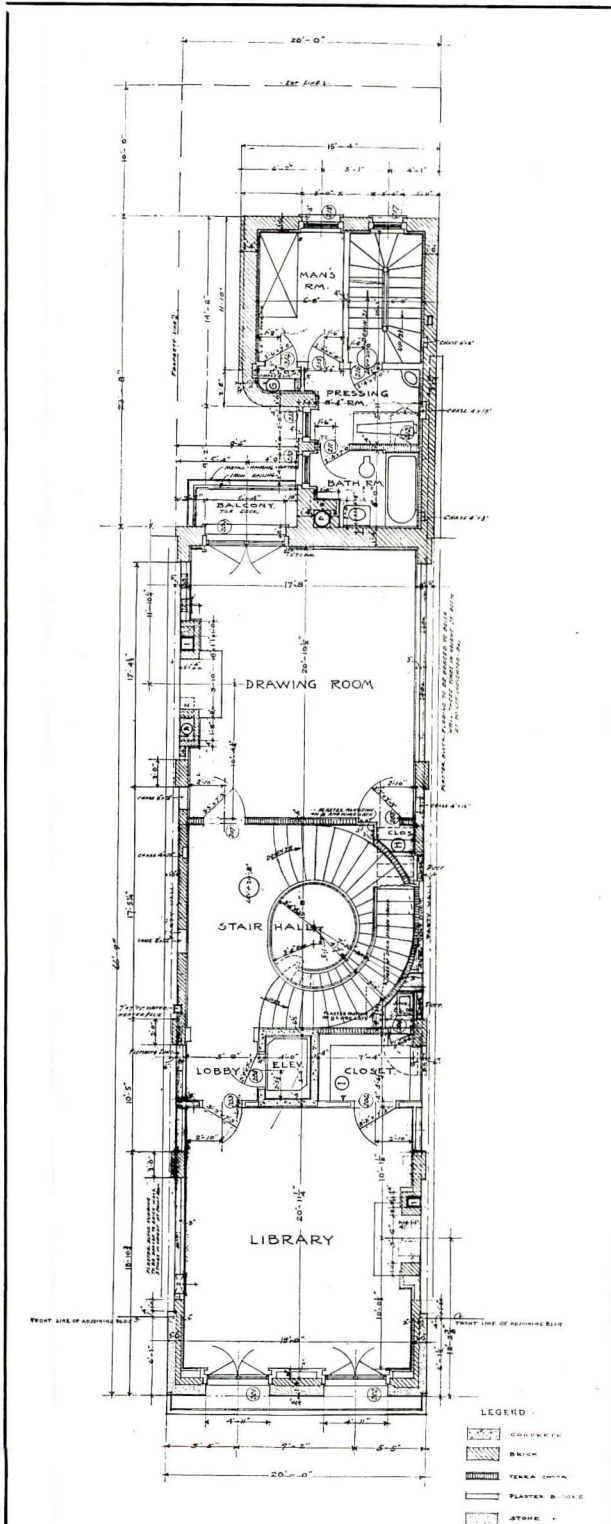


Figure 9. Floor Plan, Residence for
Bertram H. Borden, New York City.
Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

traced on paper or cloth depends entirely upon the practice of the office. For small jobs, tracing paper drawings may be satisfactory, but for larger work and where drawings are to be handled often, the drawings ought to be traced on cloth.

After all architectural, framing, and large mechanical drawings and all specifications are completed—some large scale drawings showing important features are usually necessary, no mention however will be made regarding large scale drawings in this article—it is then most necessary to check the entire set of drawings. See that all notes and indication of materials, as called for in the specifications and mentioned “as shown on drawings,” are shown, etc. Check all framing and mechanical work with the general drawings, check dimensions carefully. For checking it is best if possible to have a complete set of prints of all drawings, and complete specifications. Ring errors with red or yellow pencils. Some hints of troubles which it may be well to guard against have been mentioned in foregoing paragraphs. When the checking has been completed and drawings corrected accordingly, the working drawings are ready to be blue printed and issued with the specifications to the builders for estimating or erection purposes.

It is necessary at times to prepare outline working drawings and specifications as a basis on which to obtain preliminary estimates. If this is required the working drawings should be prepared in the same general way—possibly to be used as contract drawings later.

Complete detailed information of materials and dimensions need not be so fully shown. A general outline specification would also be required. It is well to bear in mind that outline estimating drawings and specifications may at any time have to become completed working drawings.

The principle of preparing all working drawings, whether for a large operation or for a simple cottage, is the same: do not take it for granted that the builders can interpret your intentions correctly unless clear and distinct drawings are prepared.

The illustrated figures will perhaps help to give suggestions for the presentation of drawings, indication of materials and methods of figuring.

Figure No. 1 shows the plan of a medium sized bank which gives a fair idea of a working drawing for estimating and erection purposes. Materials are indicated by various lines and dots. A key to material is given on the drawing, over all dimensions are given, detailed figures were added before actual construction was commenced, sizes of windows, piers, etc., were completely figured on larger scale drawings—point of the compass is given. Note that a portion of the westerly wall is a party wall—no detailed indication is made of the general interior treatment more than to indicate floor finishes; this assists in some measure as a guide for the general character of the rooms. The plans for this particular building were drawn to the scale of $\frac{1}{4}$ -in. to the foot—the sections were taken on dot and dash lines marked “A” “A” “B” “B” etc.

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Figure No. 2 shows the elevations of the same bank. This is an excellent example of what information is required on an elevation. Vertical stone joints are figured. A few windows are completely drawn to show type—the remaining being marked "repeat window." The floor lines are shown in relation to the elevation and are figured, floor to floor. The floor levels with stone courses can readily be obtained.

Figures No. 3 and 4 are plans of the first and second floors, respectively, of a country residence. These drawings are very simple in presentation and easy to read, much information however is given—the sizes of all doors noted, the electric outlets located. Radiators and registers are indicated, etc. All dimensions are given center to center of openings and the openings figured for their over all dimensions. This method enables the builder to determine easily outside locations around the building and enables easy checking—for exterior and interior work—interior dimensions are given rough to rough.

Figure No. 5 is one elevation of this residence. The general scheme of indication is the same as for the plans, very simple in treatment, materials clearly indicated, depth of footings shown, etc.

Figure No. 6 is the foundation drawing of an apartment hotel. This drawing clearly shows what happens above the grillage beams, the grillage plan however is not shown—the structural steel drawings take care of this. All columns as determined by the structural steel or framing drawing and are shown numbered and figured for location—many interesting sections through various levels, elevators, pits, sump pit, boiler foundations, etc., are shown by marginal sections, also indicating elevations below *Datum=0'-0"* established by high point of curb. Marginal sections as shown on this drawing, plans, sections and elevations are of great help for the reading of different special points and avoid the necessity of making drawings on separate sheets.

Figure No. 7 is the typical floor plan of the same apartment hotel, no special mention being made of indications. Compare this with Figure No. 8, being the steel framing drawing for the typical floor. Observe how closely the framing of the building and the architectural plans are related. The columns, girders, framing out for elevator and stairway wells and for ventilating and plumbing ducts are well allowed for and clearly figured. Careless checking will cause endless trouble resulting in fouling headroom, projecting girder or beams into shafts giving trouble to plumbing risers, heating risers, stacks, etc.

Figure No. 9 is a floor plan of a city residence built between party walls. It will not be necessary to describe the technique or indication. Note on this drawing that in some cases it was necessary to strengthen the party walls by erecting additional walls and piers against same, also to allow for the bearing of steel girders or beams and to provide necessary spaces for heating, vent or plumbing ducts. Fireplaces are also added to the insides of the party walls. Simple as this plan may seem, this was a very difficult problem.

Figure No. 10 is a very interesting drawing part-elevation and sections of a large operation. The indication of materials clearly shown, numbers and models given—no unnecessary repetition of ornament or other details. The sections are splendidly taken—the stone facing as built up on the face of the building with its brick backing also, terra cotta furring, concrete slabs, fireproofing around beams, sections through the steel framing, where same occurs at the walls, vertical stone joints are figured tying up with the floor levels, etc.

Figures Nos. 1 to 10 illustrate in a general way the preparation of working drawings that come within the average draftsman's field of work. The illustrations are from the office general routine work. To draw comparison as to draftsmanship would be unfair, the drawings have all served their purpose. Comparisons, however, may be made as to general appearance. For example, Figure No. 1 appears to have more information on it than Figures 3 and 4, still about the same kind of information is given. Remember that the drawing illustrated by Figure 1 was prepared at $\frac{1}{8}$ -in. to the foot, whereas drawings as illustrated by Figures 3 and 4 were prepared to twice the scale. Figure No. 2 and Figure 5, both being elevations drawn at the same scale, it is quite safe to say are equally good. The drawing illustrated in Figure 2 is presented in keeping with a monumental design. Drawing as illustrated by Figure 5 has a more graceful appearance as becomes a country home.

Each draftsman whether he be the boss, head draftsman, squad boss, or man in charge of a job, must decide for himself the best way for the making of working drawings.

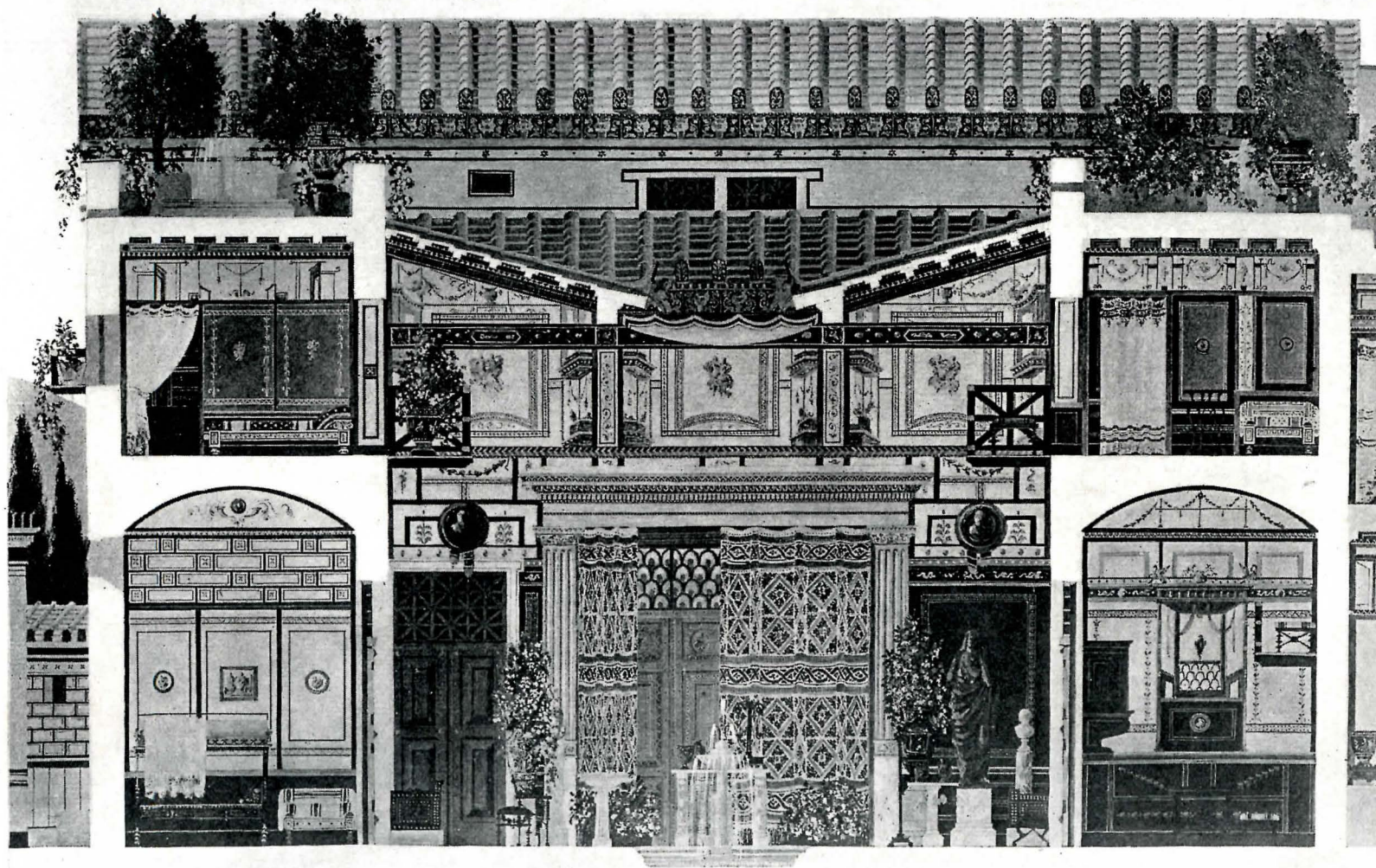
Note—On the figures illustrated with this article many indications of materials, dimension lines, windows, etc., were drawn in light ink, (which is the general practice in many offices). Such light ink lines do not reproduce perfectly. Ed.

VENTILATION

THE Report of The New York State Commission on Ventilation, just published by E. P. Dutton & Company, New York, (Royal 8vo., 612 pages, 134 illustrations; price \$15.00, carriage extra) contains a mass of valuable material on this subject, the result of a carefully conducted series of investigations designed to establish a scientific basis for ventilation practice.

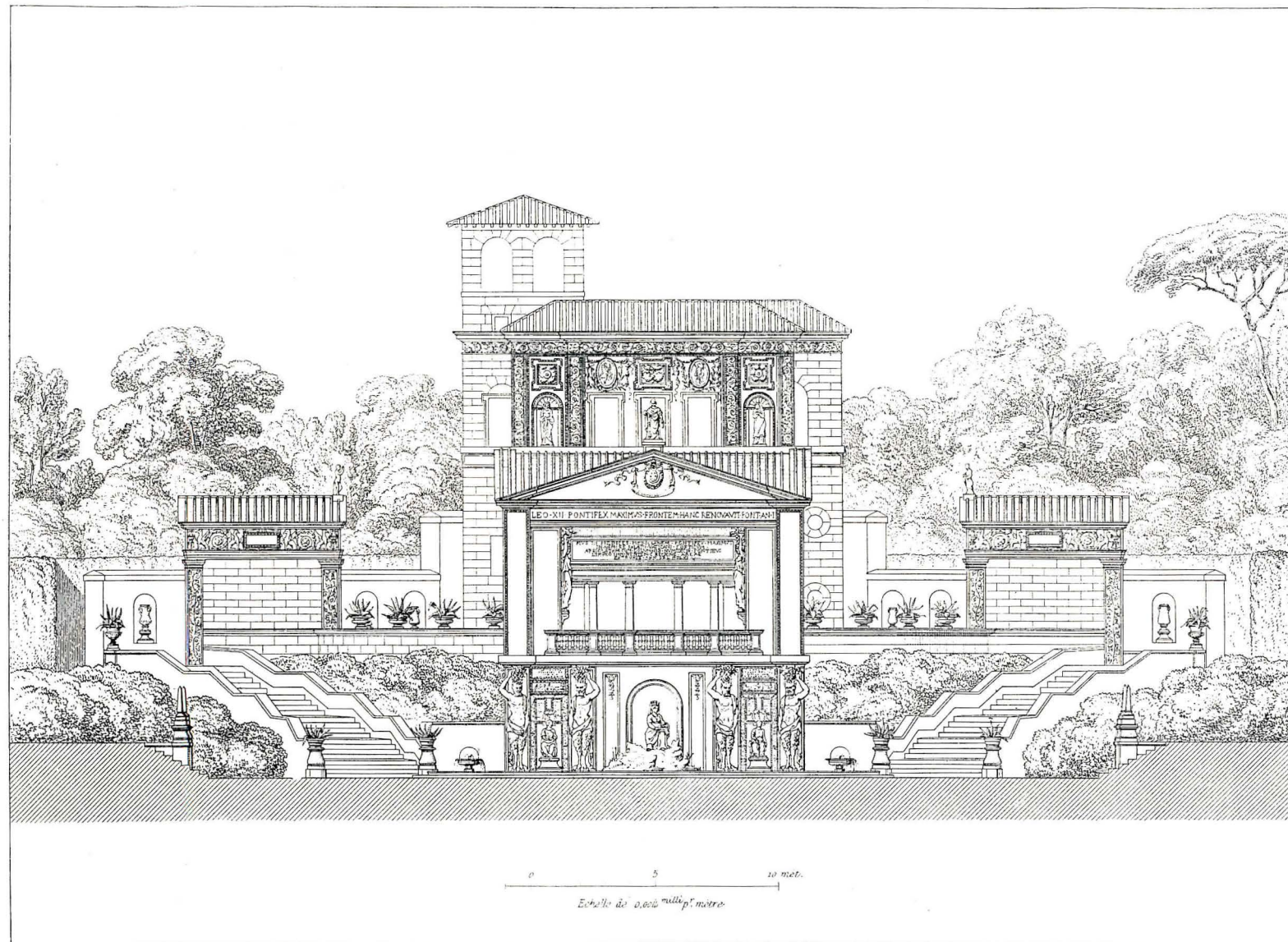
This Commission was appointed by Governor Sulzer in 1913. The members of the Commission were: C-E. H. Winslow, Chairman; D. D. Kimball; Frederick S. Lee; James Alexander Miller; Earle B. Phelps and Edward Lee Thorndike. George T. Palmer was Chief of Investigating Staff and Joseph Hertzstein, Secretary.

The work was done without state appropriation, the entire large cost being borne by The Milbank Memorial Fund, established by Mrs. Elizabeth Milbank Anderson, who was impressed with the need for fuller knowledge of the subject of ventilation as affecting public health and welfare.



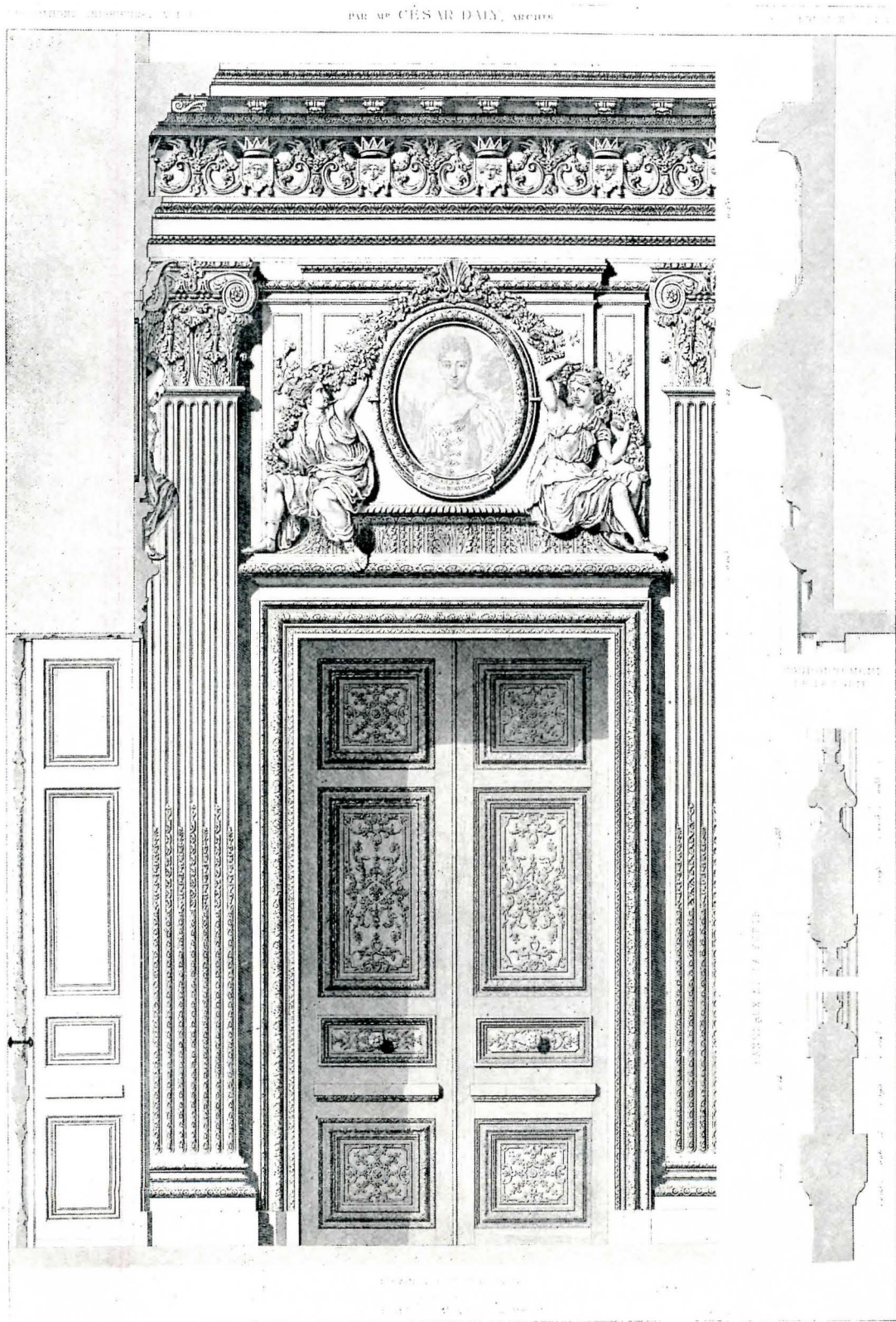
HOUSE AT POMPEII, FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE."

On the other side of this sheet is shown a most interesting restoration of a Pompeian dwelling. The charm, and the beauty, of Pompeian domestic architecture are well presented in this plate.



VILLA PIA IN THE VATICAN GARDENS, FROM LETAROUILLY'S "VATICAN."

A plate typical of the most interesting material in Letarouilly's "Vatican" is reproduced on the other side of this sheet. A plan of this particular building, the Villa Pia, was published in the issue of PENCIL POINTS for October, 1922.

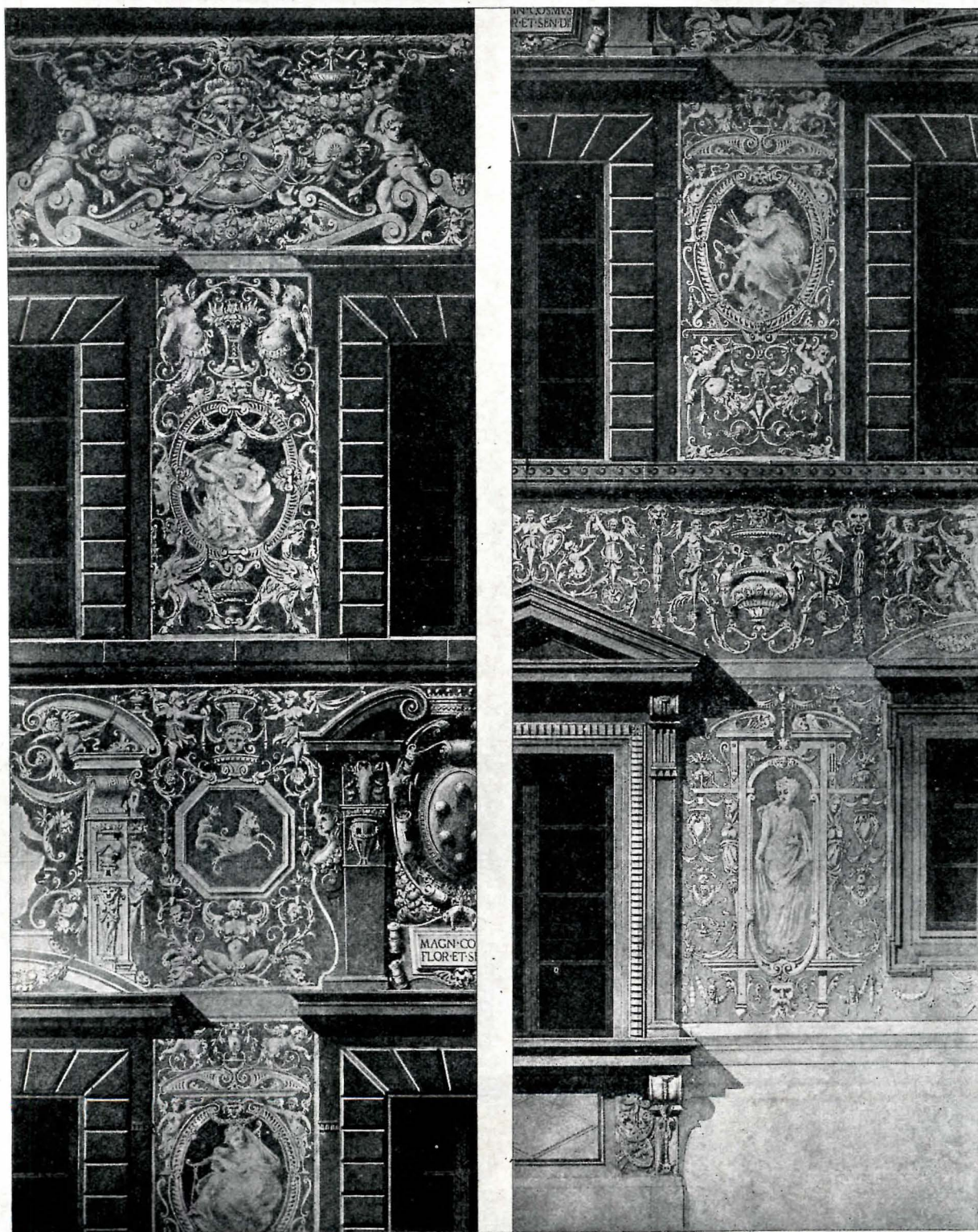


DETAIL OF DOORWAY, PERIOD OF LOUIS XIV, PALACE OF VERSAILLES.
FROM CÉSAR DALY'S "MOTIFS HISTORIQUES."

From César Daly's "Motifs Historiques" we reproduce on the other side of this sheet an interesting plate of interior detail. This characteristic doorway of the period of Louis XIV from the Palace of Versailles is admirably presented in this engraving.

MOYEN-AGE ET RENAISSANCE

75



DETAIL OF MONTALVO PALACE, FLORENCE
 FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE DU MOYEN AGE ET DE LA RENAISSANCE."

A most interesting study of ornamental detail is presented in the plate on the other side of this sheet from H. D'Espouy's "Fragments d'Architecture du Moyen Age et de la Renaissance." The decorative sense and the freedom of fancy displayed by the Florentine creator of these details are well worthy of study.

THE STUDY OF ARCHITECTURAL DESIGN

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

THE USE OF PERSPECTIVE IN ATELIER WORK

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, the Class B Plan Problem and the Archaeology Problem in later issues.—ED.

WE HAVE spoken several times—especially in the chapters on the "Archeo" and measured drawings—of the value of perspective, and of its psychological effect on the jury.

The principal use of perspective, of course, is to give a sense of the third dimension more effectually than can be done with a rendered geometrical drawing. It is always more effective in this way to a layman, and frequently also to one trained in the convention of 45 degree shadows and their relation to the projections which cause them. Indeed some architects use perspective very largely in their practice, not primarily for the client, but for themselves. Mr. Charles Z. Klauder is one of these, and Figures 1, 8 and 9 show some of his drawings made for studying a single detail of the Dining Halls at Princeton University. Studies of this sort were made for all portions of the buildings—and many of these perspective studies will never have been shown anywhere outside of the drafting room.

Many students by the use of perspective are made to realize that architecture of any kind does not have one "front" only; that it is

not stage scenery. Many elevations studied just as elevations and without any intelligent working out with the plan and section, are impossible of buildings; things that do not show in elevation however

do show in perspective, and by studying with perspective many errors are eliminated.

Of course this does not mean that perspectives always show up faults; far from it. A judicious choice of the point of view, or the clever placing of a group of trees, etc., makes it possible to very much disguise defects—some that could not be so easily hidden in a geometrical elevation.

However, it is one thing to deceive an innocent spectator—even if he be trained in architecture—and quite another to deceive oneself—this is what should be avoided. Of course you want to make the best possible presentation of your design, whether that be good, bad or indifferent—to know its faults will help you in the presentation, as you will make an attempt to hide them from others. If you hide them from yourself, you are due for a hard fall.

Do not be afraid of deceiving the jury; it can take care of itself; but be prepared to take

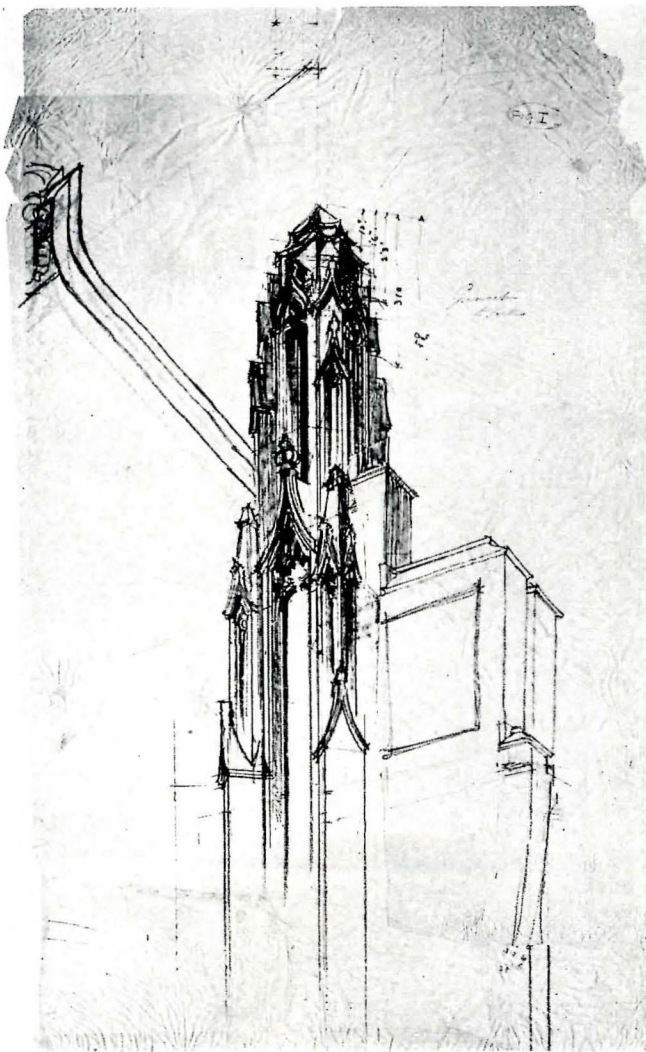


Figure 1. Study by Charles Z. Klauder, Detail for Dining Halls at Princeton University.

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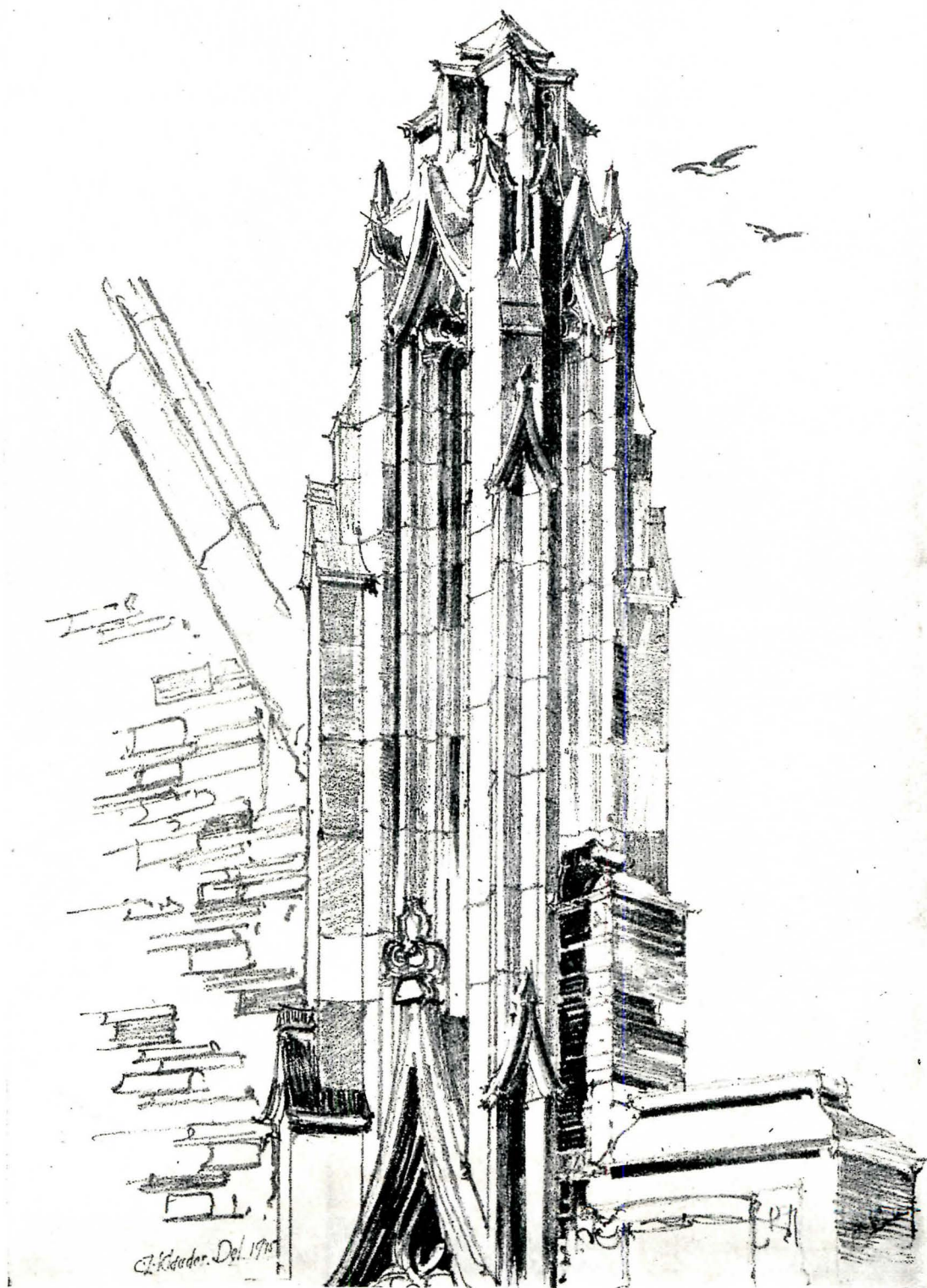


Figure 9. Study by Charles Z. Klauder for Top of Buttress for the Dining Halls at Princeton University, Day & Klauder, Architects. See Figure 1 for Another Study for the Same Detail.

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your medicine if they find you out; the jury asks no quarter—and gives none.

Before making any careful drawing in perspective, it is well to make a few free hand, small size sketches, to help in choosing an advantageous point of view—to decide whether to try to show as much as possible of two sides of a building, or by throwing one side in sharp perspective to emphasize the other;* whether to keep the horizon low, so that most of the horizontal lines vanish downwards, or to have the horizon higher, so that half the horizontal lines vanish up and half down, etc.†

In choosing the point of view these two things especially should be borne in mind. (1) The point from which the finished drawing is to be seen, and (2) the limits of the "visual cone."

As an archæo is usually put on a No. 1 mount it must be looked at from at least four feet away—preferably more; as a perspective is absolutely ac-

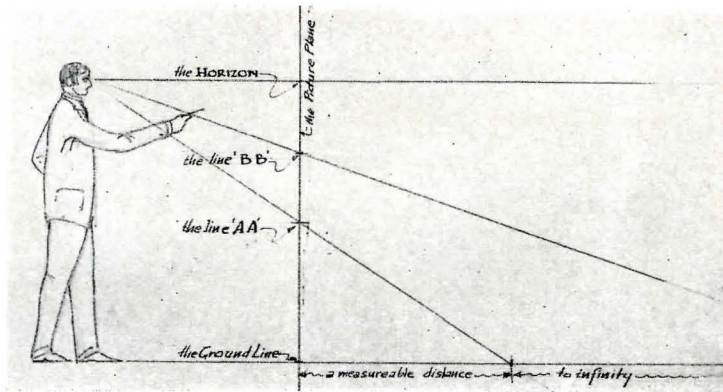


Figure 4.

curate from one point only, it is well to keep this distance in mind. Then, too, men have a habit of drawing a perspective from a plan and think that if they so place the point of view or "station-point" that a 30 degree angle from it will enclose the plan of the building, all will be well. If, however, the building is high, this will not be the case, and, too, such an arrangement leaves no leeway for portions of surrounding architecture in the foreground. The visual cone,

**Note.—The latter is usually much more effective. A drawing at about 45 degrees—i. e., showing two sides about equally is usually most uninteresting and even ugly. Try to look at one of your favorite buildings from such an angle and see how unpleasant it is.*

†Note.—Of these two the latter is in most cases very unpleasant. So many buildings are seen from the street—with the eye at, say, five feet above the ground, that what might be called a "second or third story view" is usually unsatisfactory.

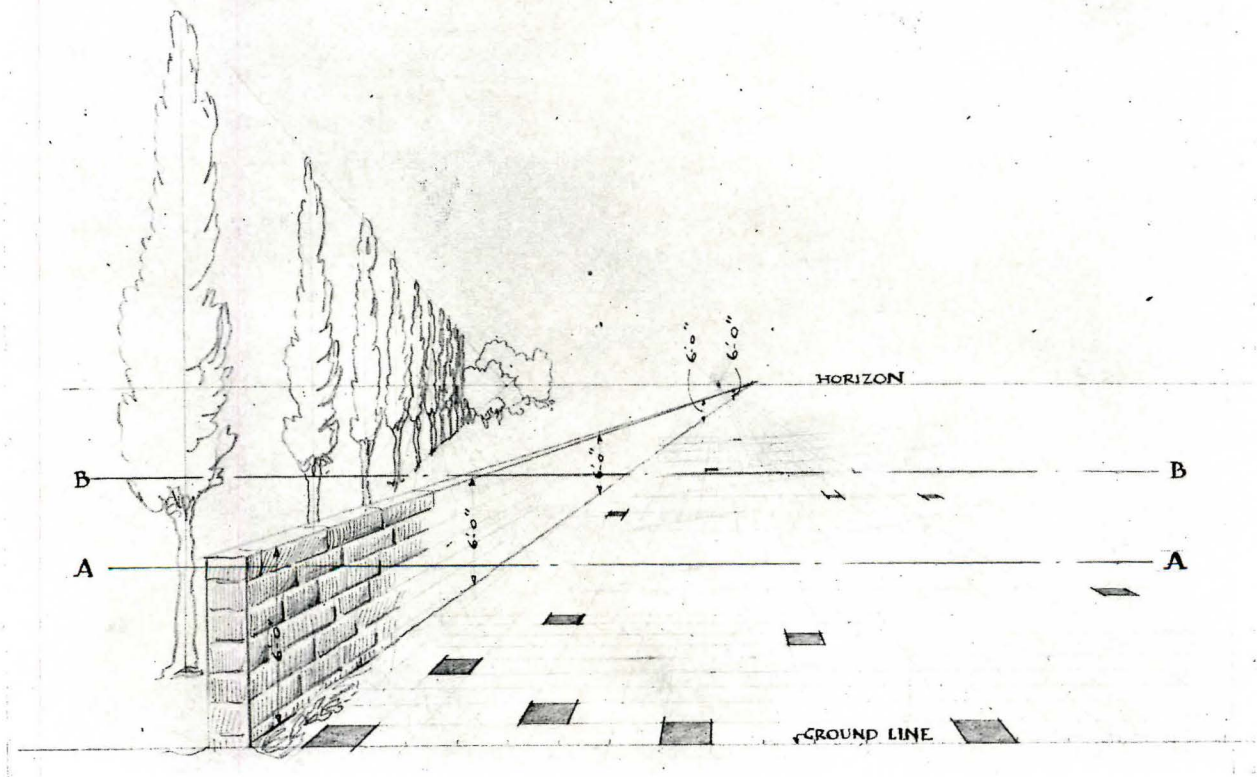
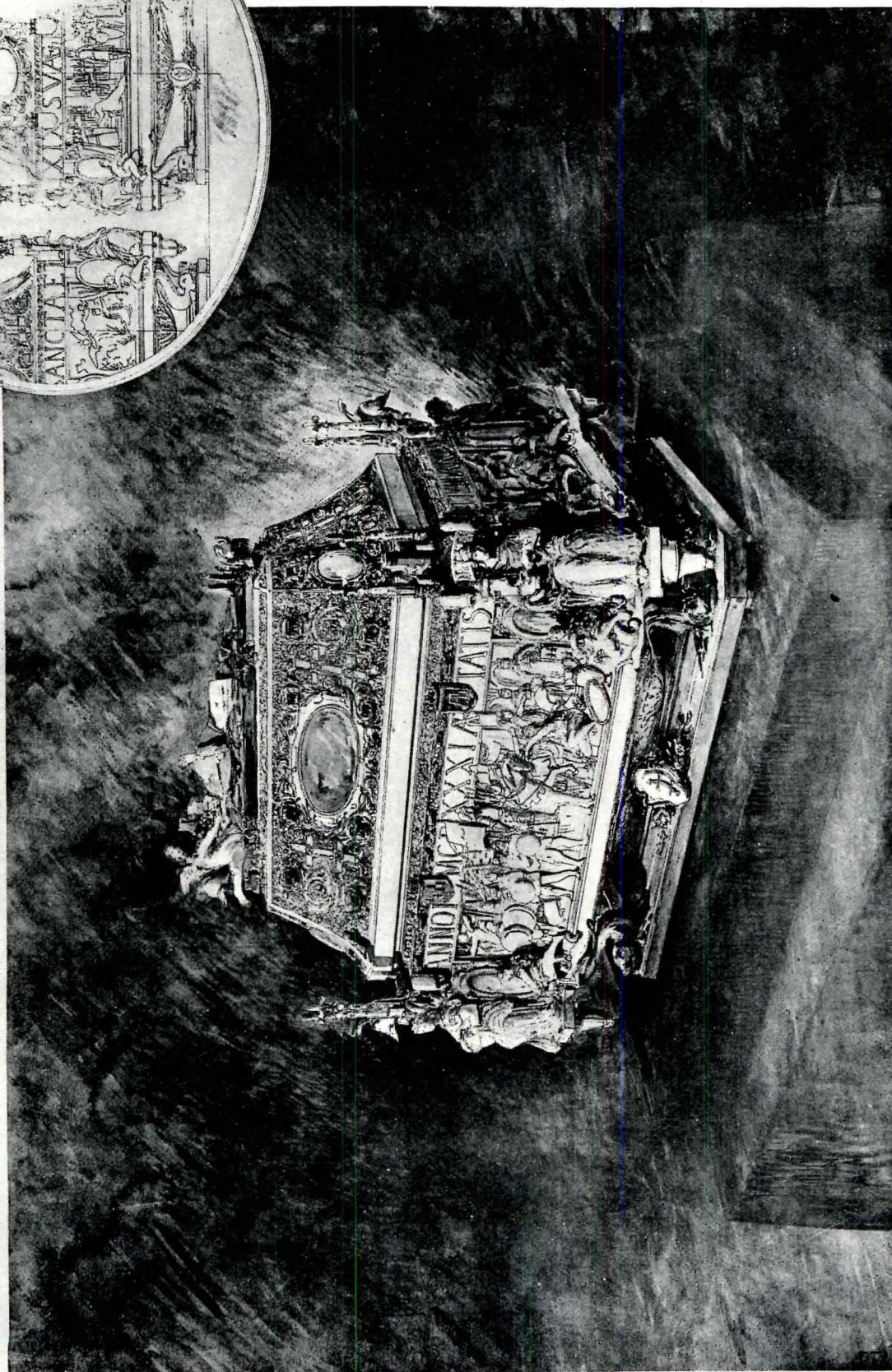
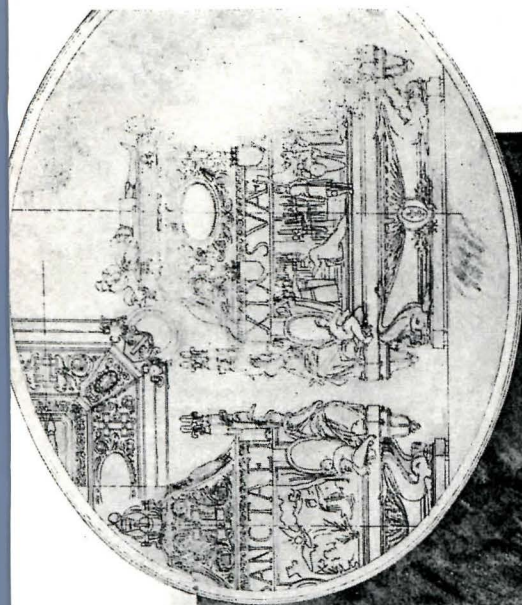


Figure 3. Vanishing Lines and Squares in Perspective.



A. Vincent, 4, rue des Beaux-Arts, Paris.

Figure 6. Design for a Coffin by M. Delaun, Pupil of M. Laloux.
Second Prize and First Medaille. Concours Rougerin.

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Figure 2a, which delimits the "field of vision" on the picture plane, should include everything you wish to show, if there is to be no distortion. Any portion of this field of vision may be used for the "picture." Figure 2b. Having chosen the point of view, and arranged somewhat the composition by means of small and more or less free-hand studies, lay out the "bones" of the perspective—the framework—carefully, even mechanically at the final scale. If you are to trace the drawing—to rub on the final sheet—or if the final drawing will be on a piece of tracing paper that may be mounted—this framework may be done boldly and with a soft pencil. If the work is to be drawn on the final sheet at once, the framing-in must be lightly done, so as not to spoil the surface of the paper or draw lines that require erasure, as erasures ruin an even wash. It will pay to do these framework lines carefully—the finish may be as rapid and "free-hand" as you wish. Any method of perspective may be used—perspective plan or apparent plan. The book of Benj. Lubschez (D. Van Nostrand Co.) is valuable for the purpose as giving just enough information in helping to solve difficult questions, and in a book small enough so that the necessary information may be found easily. Skill in perspective is largely a question of practice—intelligent practice—just as is the case in swimming or any other sport.

One's ability to lay out a perspective rapidly will be much advanced by the practice of sketching in perspective—such things as the returns of cornices, modillions from different angles, and column caps—the things that one wishes usually to put in rapidly and yet with a convincing sureness, rather than to have to work them out labori-

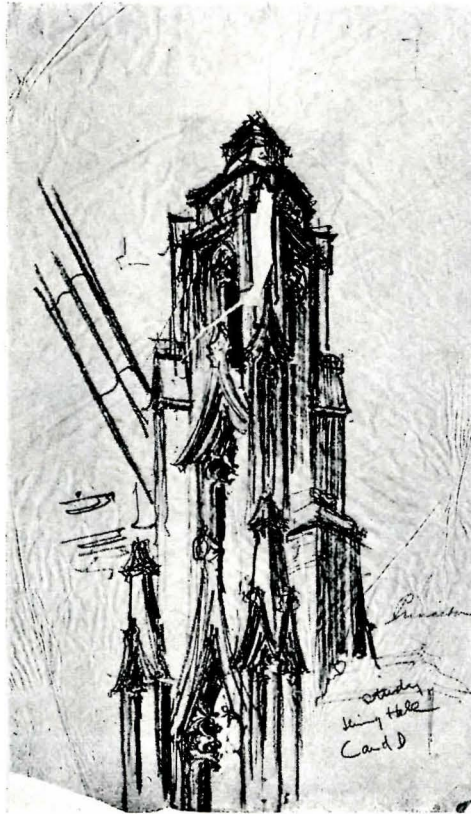


Figure 8. Study by Charles Z. Klauder for Top of the Buttress Shown in Figure 1.

ously to make them appear right.

To acquire this "perspective sense" one should develop particularly two things. (1) The ability to "vanish" lines, i.e.—to carry them toward a vanishing point without having to keep a straight edge against a pin at that point, and, (2), the ability to visualize and draw a "square" anywhere in perspective.

In Figure 3, for instance, the trees vanish, the lines in the wall vanish; and from the checkerboard on the foreground we see that what is in reality a square may take an infinite variety of diamond shapes in perspective, depending upon whether it is in the center, or at the extreme side, whether it is in the very foreground or approaches the horizon, etc. A few hours can be well spent in visualizing the appearance of a square in any position—in vertical and oblique planes as well as horizontal ones. Once you are able to visualize a square anywhere in perspective, it is a simple matter to compare

any object to a square, or to several squares, or in the solid, to cubes.

Once you have the sense of "vanishing lines," it will be easy to carry measurements "into" a drawing.

If the wall of Figure 3 is six feet high, for instance, this six feet can be measured off anywhere along the wall—carried at any point of the wall from side to side, thus giving measurements anywhere within the picture by sliding the six feet around on planes parallel to the picture plane—and of course other dimensions may be laid off by proportion to the known figure.

It is well also to bear this in mind: Suppose you have a foreground as in Figure 3; if you divide the distance from the bottom

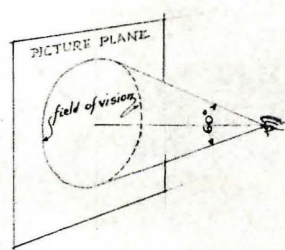


Figure 2a. The Visual Cone.

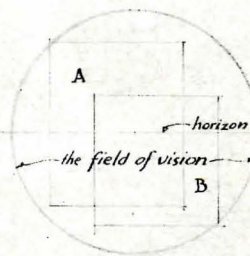


Figure 2b. Different possible "pictures" in the field of vision.

Figure 2a. The Visual Cone. Figure 2b. Different Possible Pictures in the Field of Vision.

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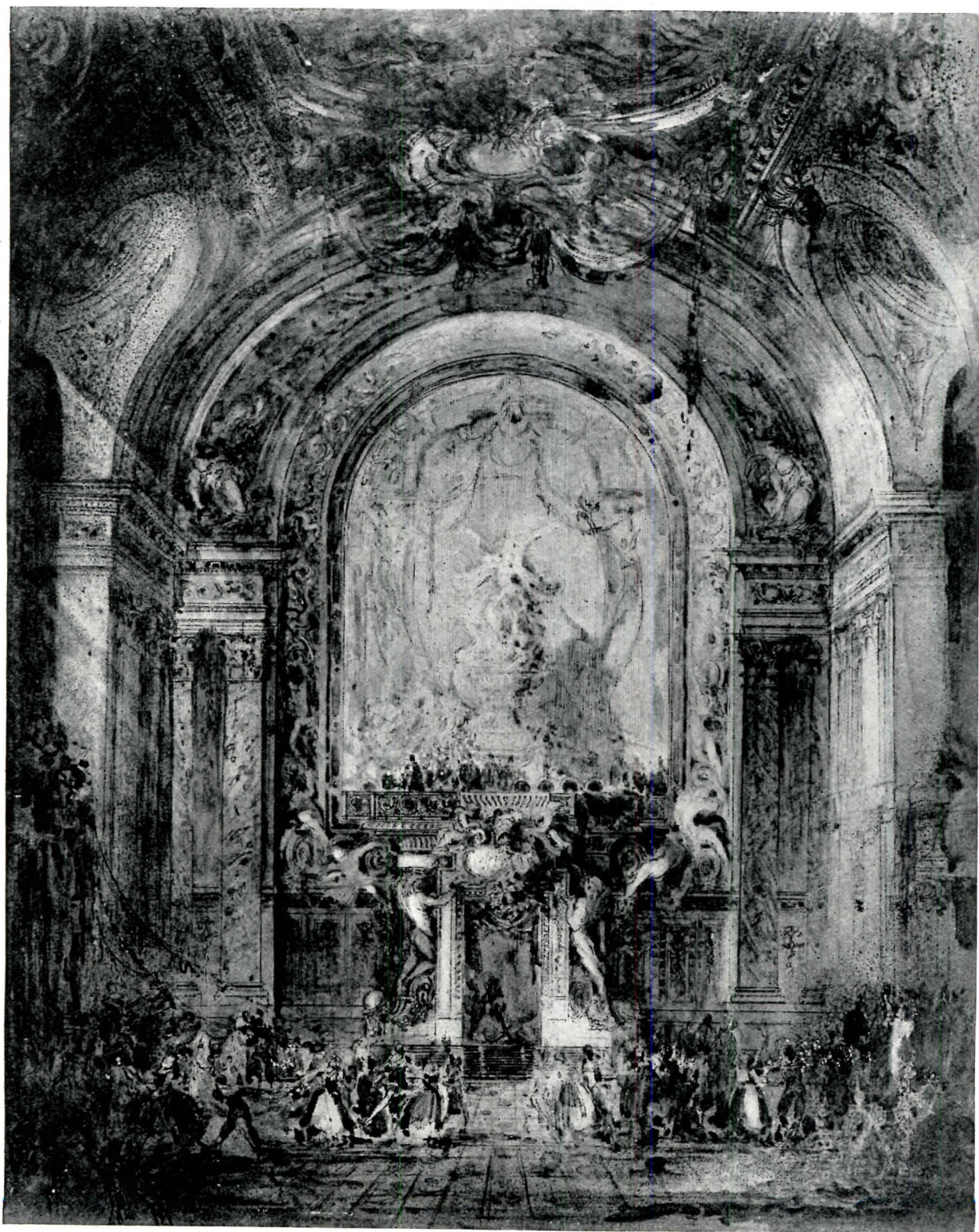


Figure 7. Drawing by M. Aragon, Pupil of M. Redon. Awarded 1er Seconde Médaille in the Concours Rougervin for 1910-11.

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of the drawing to the horizon in half—as by the line “A-A,” the portion of the ground below “A-A” represents *only a few feet*, while the portion above this line to the horizon, extending as it does to infinity, represents *a tremendous distance*. If we divide the space above “A-A” again in half, as by the line “B-B,” we see that the portion nearest to us—between “A-A” and “B-B” is again only a short distance,—a measurable distance—while the space between “B-B” and the horizon is again a tremendous distance. If we should divide this space again in two, we should have the same result. The lower half—the portion of ground nearest to us, is measurable—the part above—farther away from us—too vast to measure. If we now look at Figure 4—a diagram showing a

side view of the spectator and of the drawing, we will understand why this is so. Above the horizon this would be reversed of course; and the same phenomenon takes place on vertical or oblique planes.

Now a word as to vanishing points and vanishing lines. All lines that are parallel to each other and are running away from us, will appear to vanish in a point. If they are horizontal lines this point will be somewhere on the horizon—and we may conceive of the horizon as a series of different vanishing points; each one the place to which some set of parallel horizontal lines will appear to vanish. If we now think of these horizontal lines, as being parts of *horizontal planes*, we

(Continued on page 60)

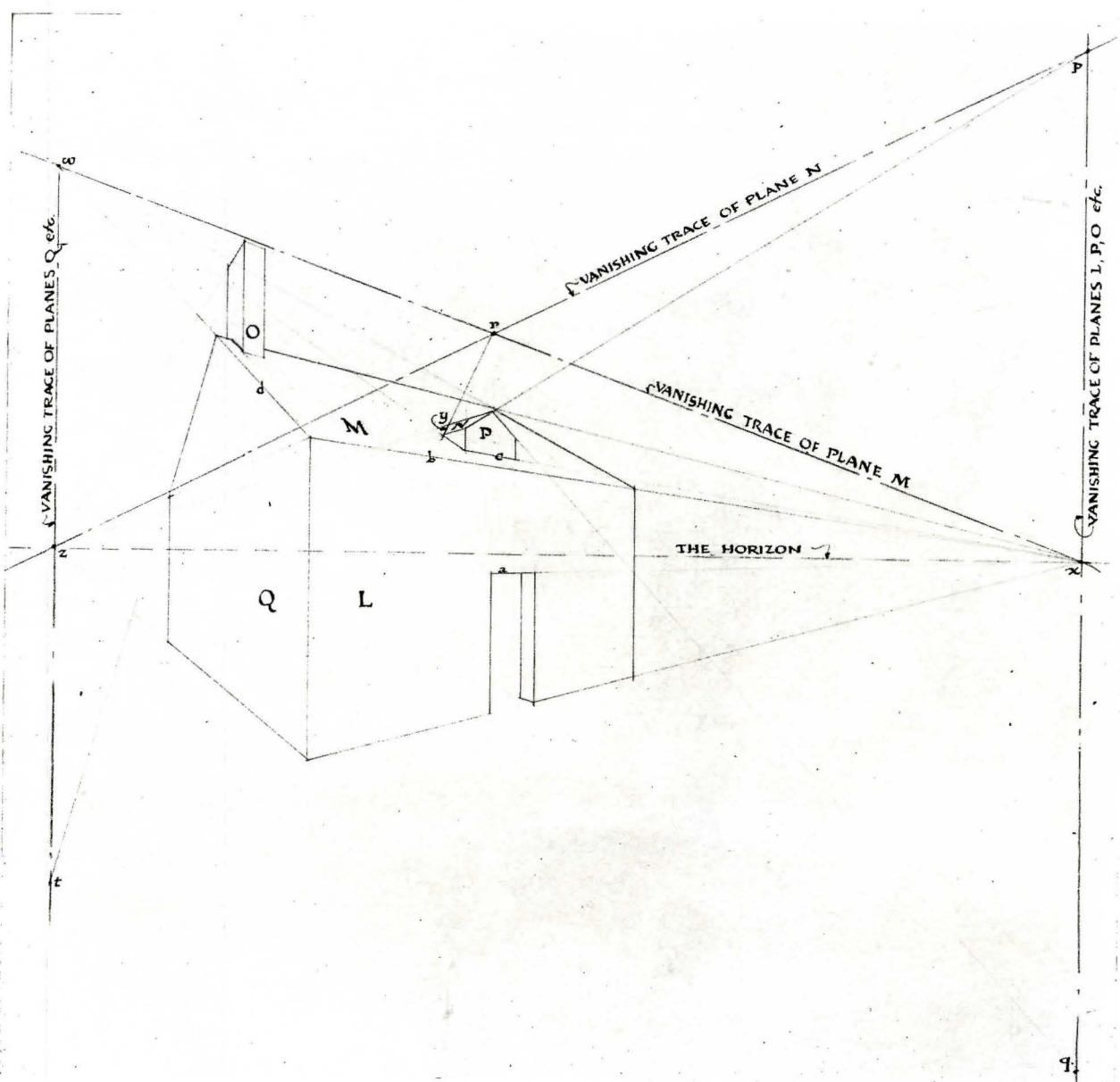
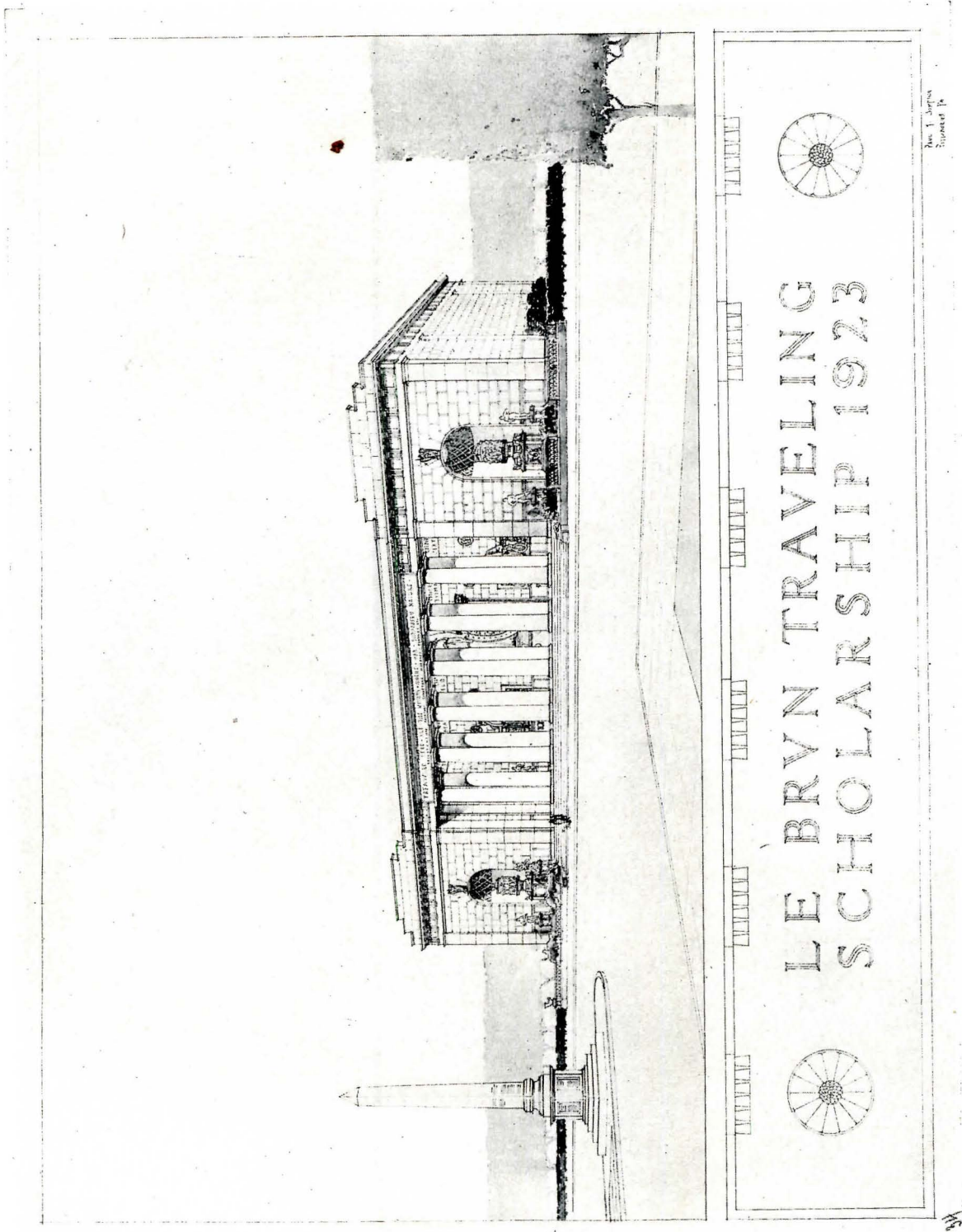


Figure 5. Vanishing Points and Vanishing Lines.

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*Perspective of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.*

AWARDS IN THE LE BRUN TRAVELLING SCHOLARSHIP COMPETITION

THE New York Chapter of the American Institute of Architects has recently announced the award of the Le Brun Scholarship to Paul F. Simpson, of 4921 Forbes Street, Pittsburgh, Pa. Mr. Simpson, who was nominated by Henry Hornbostel, of the New York Chapter, is a graduate of Carnegie Institute of Technology and has been awarded several medals in the competitions of the Society of Beaux Arts Architects. He served with the construction division of the American Expeditionary Forces in France. He is twenty-seven years of age.

The successful competitor will receive an award of fourteen hundred dollars which he is to use to take a European trip of at least six months, devoting that length of time to travel and the study of architecture otherwise than by entering any school or atelier or attending lectures. It is intended that the benefit derived from the scholarship shall supplement school or office experience. The winner must leave before May 1, 1923, unless other arrangements are made with the Executive Committee, and his proposed itinerary must be approved by this committee. The winner will write at least every two months to the New York Chapter giving an account of the employment of his time.

Twenty-five sets of drawings were submitted. The jury, consisting of Messrs. Louis Ayres, John Cross, H. Van Buren Magonigle, Lawrence F. Peck, Egerton Swartwout, Pierre Le Brun, ex-officio, and the Chairman, Julian Clarence Levi, commended the competition upon its high order of excellence, and exceedingly varied solutions of the problem.

The program called for "A Municipal Art Gallery" in a prosperous city of from 100,000 to 150,000 people, which had voted funds for its construction. Through gifts of public spirited citizens the city had become the possessor of a small, well chosen collection of books on art and allied subjects, and the municipal authorities wished to institute a competition for the selection of an architect to construct the building. No particular size, materials or type of architecture were called for, leaving the architect to solve his problem with a free hand. It was to be located in a public park in proximity to a main street that forms one of the boundaries of the park, and at a point where there was no grade—the building with its approach being confined to a space of 190 feet by 250 feet, and freedom being given the architect to make either the long or short axis parallel with the street. Exhibition Halls for Sculpture with an approximate area of 3,000 sq. ft.; for Paintings, 3,000 sq. ft.; and for Decorative Arts, 4,000 sq. ft.; a library, 2,500 sq. ft.;

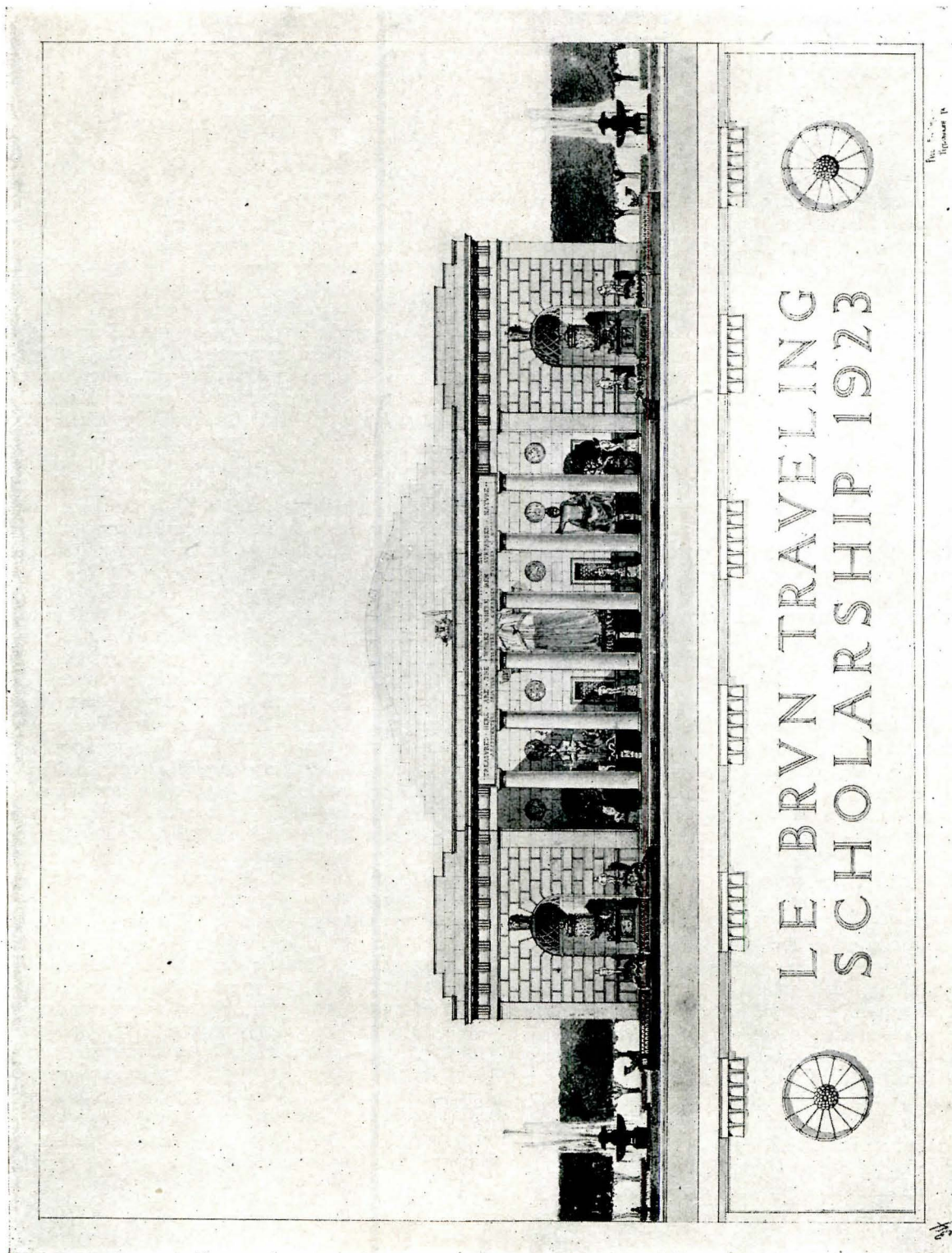
an auditorium, 2,000 sq. ft.; curator's room, office of administration, toilet facilities, and ample entrance and exit facilities were required.

It was particularly specified, that, in order to make these collections of the greatest use to the public, the building should be so designed that students of art might study freely, and all objects be well lighted and easily accessible. The different galleries, the library, auditorium, etc., should be so related to each other that they would serve their intended purpose without also becoming a means of communication from one part of the building to another. Those portions devoted to painting and sculpture should have overhead light. The library, so that its books might be readily consulted, should have an open shelf room; the auditorium was intended for lectures on art, with a small platform for the speaker.

How well the winning design satisfies the requirements of the program may be judged from a study of the drawings, here illustrated. Mr. Simpson's conception of the plan has the grace and simplicity of Roman architectural planning at its best, while he has also given character to each room according to its use. The directness of access to each unit is most commendable, while the presentation, the mosaics, etc., are good in scale and character. The elevation and perspective are charming in their simplicity—of the Roman Doric style of architecture, with sufficient sculpture, fountains, etc., to add charm and to unmistakably indicate the purpose of the building. The section is a logical exposition of the plan—truly Roman, but well adapted to present-day requirements. Quoting from the report of the jury, "Mr. Simpson's design was one that showed great knowledge, skill and talent. His plan was refreshingly original and showed independence in thought. It fulfilled the requirements of the program in a novel way and if constructed would be very effective in its arrangement. The elevation and section were well studied and in good scale and character. All drawings were simply and well presented. The jury regretted, however, the introduction of the colossal statue in the small forecourt as the only weak point in a sterling design."

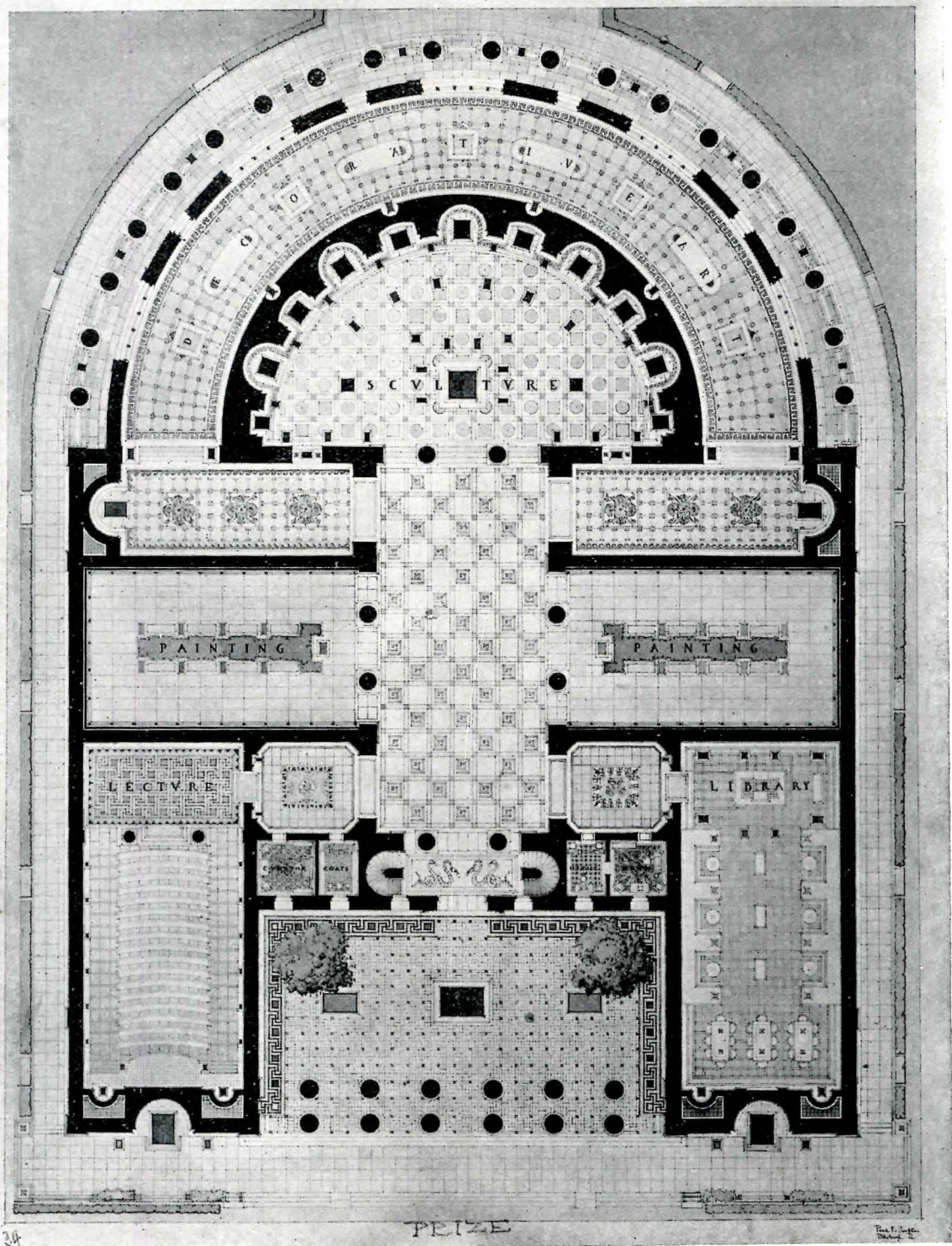
George N. Pauly, of 21 Mawhinney Street, Pittsburgh, Pa., nominated by Harry Sternfeld of the Pittsburgh Chapter, was awarded Second Place, carrying with it the Award of First Mention. Mr. Pauly has had nine years of practical experience and has been a student in Carnegie Institute of Technology. He received a mention not placed in last year's Le Brun Competition. The jury found Mr. Pauly's plan interesting but so sub-divided as to be

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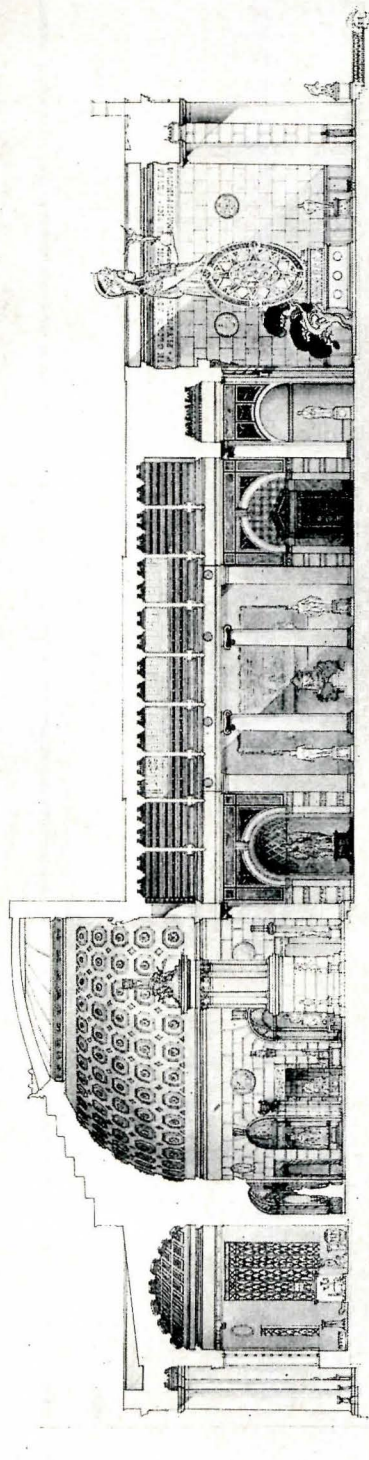


*Elevation of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.*

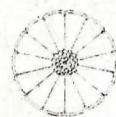
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Plan of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.



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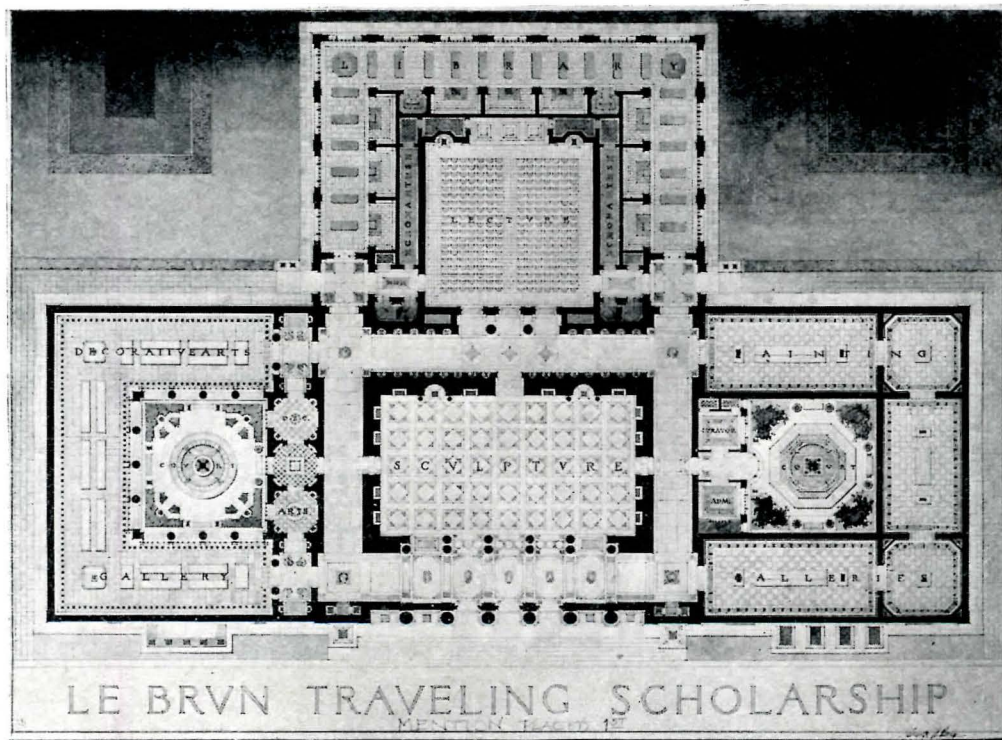
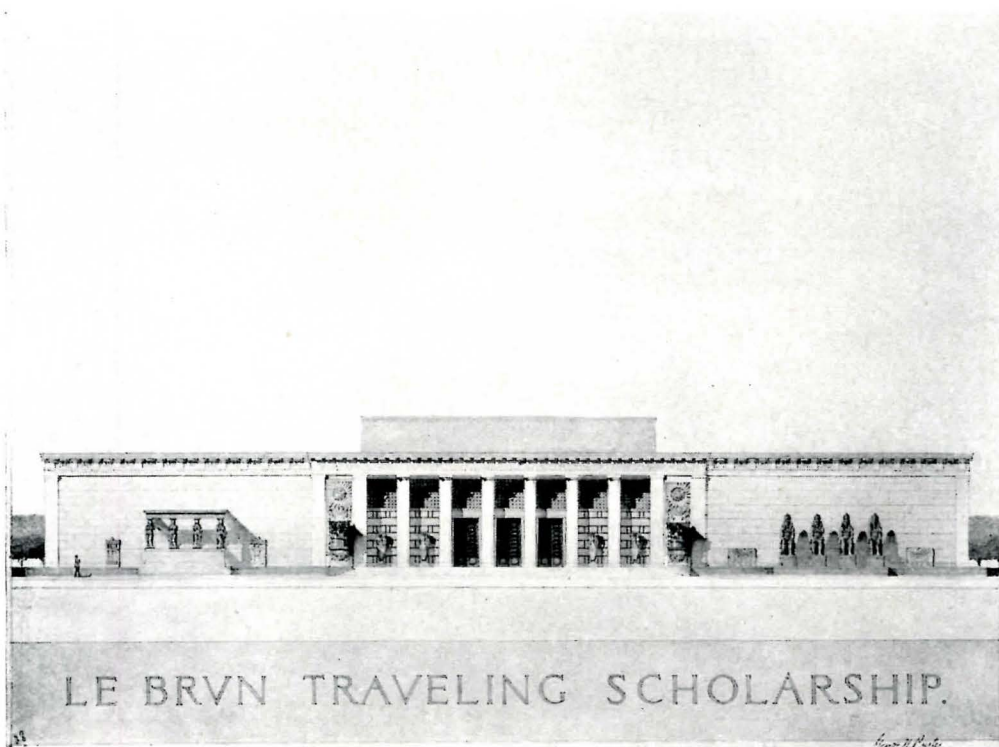


By Le Brun
Scholarship 1923

Section of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.

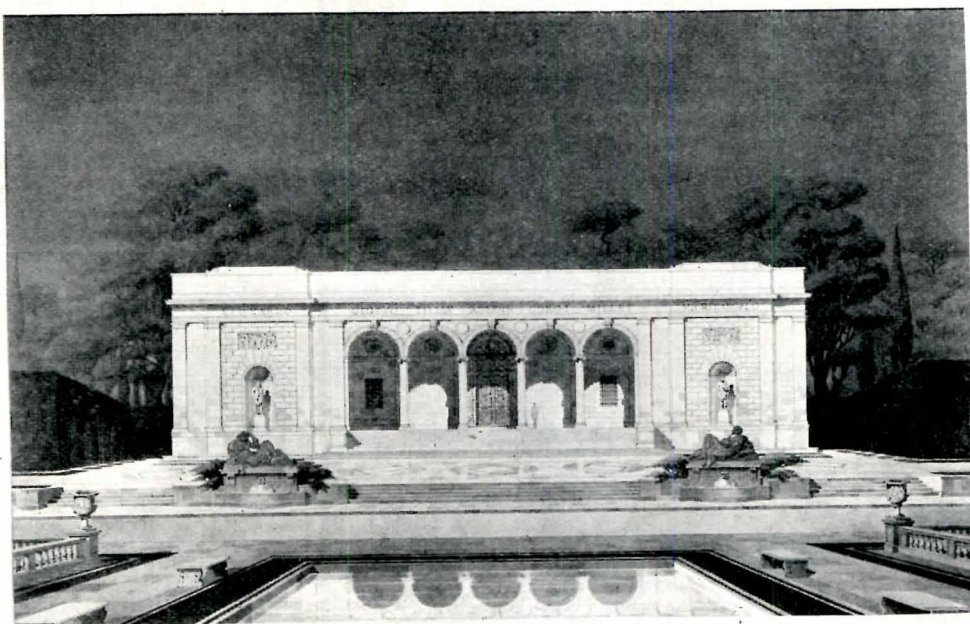
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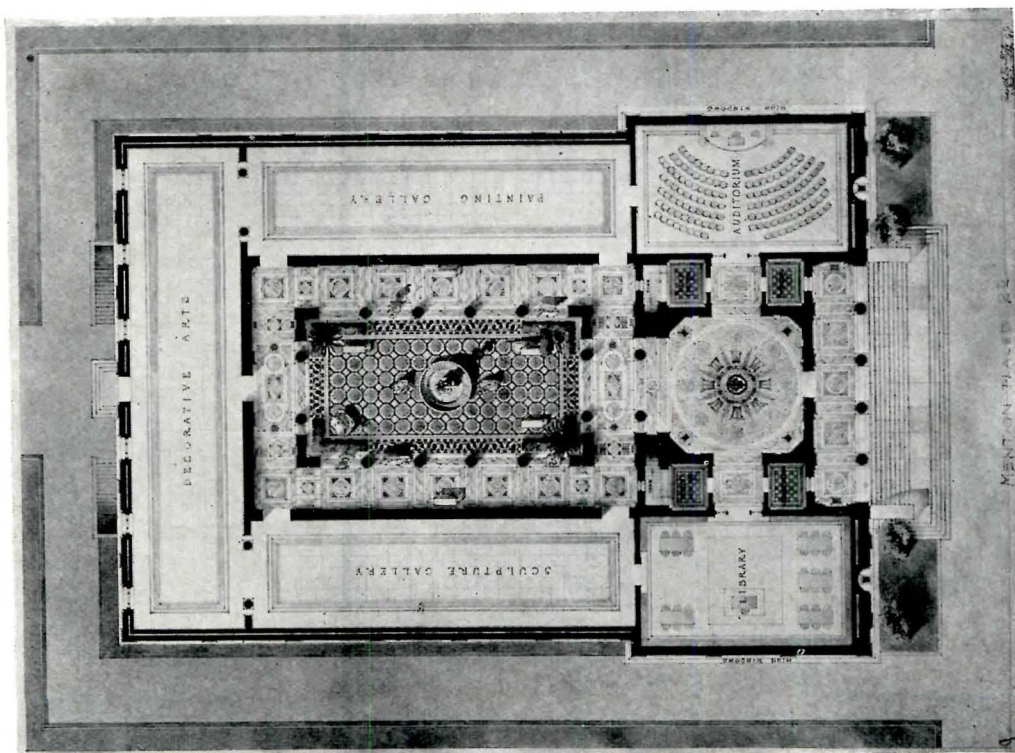


*First Mention. Design by George N. Pauly.
Le Brun Travelling Scholarship 1923.*

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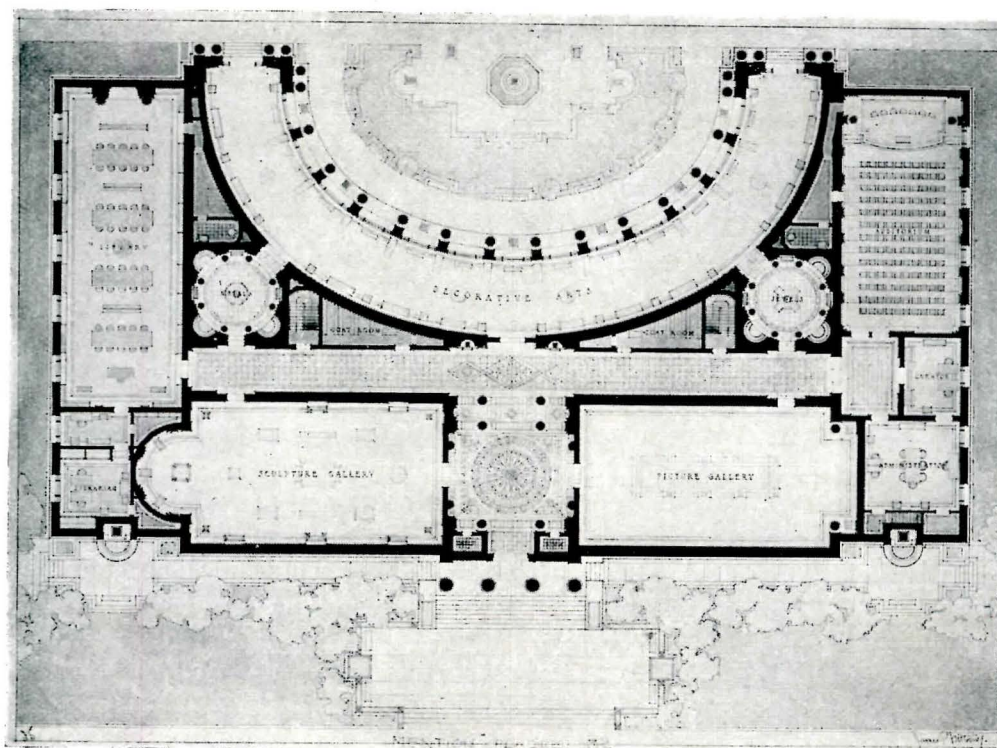
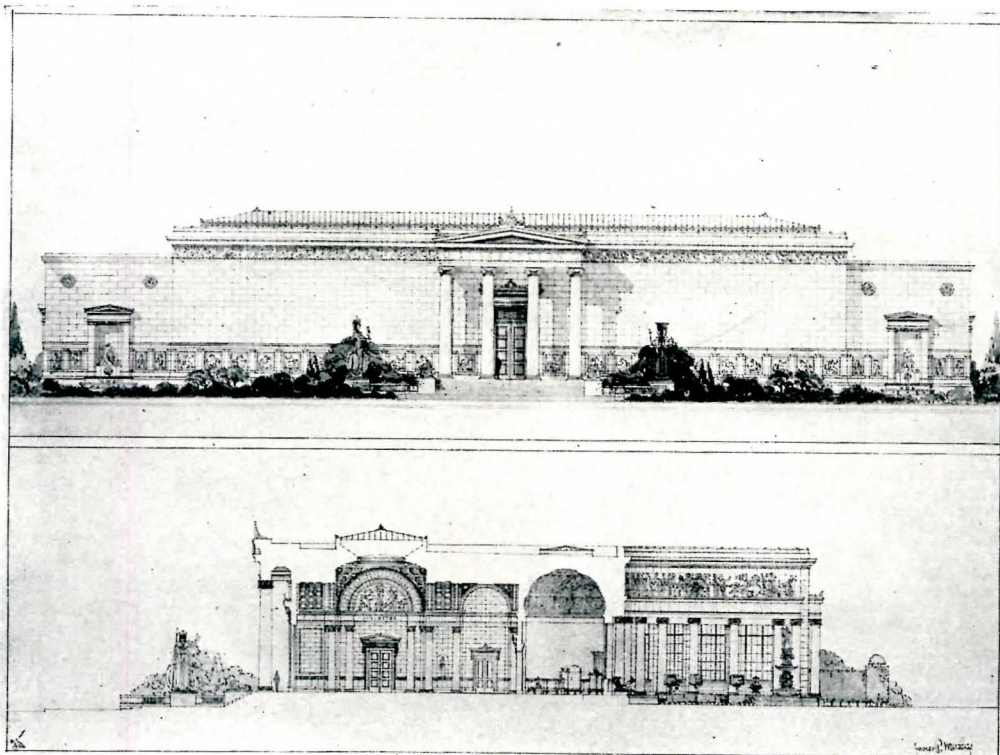


THE LE BRUN SCHOLARSHIP COMPETITION



*Second Mention. Design by Rudolph De Ghetto.
Le Brun Travelling Scholarship 1923.*

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*Third Mention. Design by James Parker Matheny.
Le Brun Travelling Scholarship 1923.*

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ALUMNI MEETING OF THE SKETCH CLUB OF NEW YORK

A PHOTOGRAPH taken at the Nineteenth Annual Alumni Meeting of the Sketch Club of New York is shown on page 59. This meeting was held at Murray's 228 West 42nd Street, New York City, March 31. The members shown in this photograph are as follows: Top row, left to right—Charles F. Winkelman, Arthur M. Duncan, Emil G. Hantsche, Jr., William C. Haskell, James S. A. Mercer, Edward J. Brown, Bernard Jamme, Edward L. Howell, J. Oliver Cummings, Robert Lange, Henry J. Healy, Hobart A. Walker, August J. Rahm, Frederick R. Hirsh, Albert Shonnegal. Row next to the top, left to right—Edgar J. Moeller, Charles H. Fox, William E. Lemke, C. H. B. Hollers, George F. Kiess, James Ross, Charles H. Eckert, Hughson Hawley, William A. Hewlett, Frank H. Quinby, Nicholas W. Hausman, Harry T. Stephens, John J. Petit. On chairs, left to right—Henry B. Herts, William F. Harper, Milton F. Duflocq, Haroldson Bleckley, Julius Harder, Henry C. Van Cleef, A. T. Rose, William J. Blackburn, Edgar A. Josselyn, Fred L. Metcalf. Front row, left to right—Arthur M. Hedley, Emery Roth, Robert A. Greenfield, Henry H. Braun, A. J. Van Suetendael, A. L. C. Marsh, Charles H. Detwiller, Charles H. Darsh, Alex. McC. Welch and Otto J. Gette were present at the meeting, but they are not shown in the photograph.

On page 61 is shown the attractive and timely design for the invitation to this dinner.

CARNEGIE INSTITUTE OF TECHNOLOGY

THE regular faculty at Carnegie Institute of Technology will again be in charge of the work of the Summer School, which opens June 25th, and ends August 17th. During this period courses of six and eight weeks' duration covering a wide range of technical instruction will be given by the faculty employed throughout the college year.

Another big summer school session is predicted at all of the leading universities and colleges, judging from reports already circulating. In anticipation of substantial increase in enrollments, many of the technical institu-

tions such as Carnegie Tech, have enlarged their scope of summer work.

Courses to interest nearly anyone in need of technical training will be given this summer at Carnegie Institute of Technology, at Pittsburgh. The variety of the subjects has been increased by the addition of many new courses, and special emphasis will be placed on these courses that have been outstanding successes of former years. The summer session is, of course, arranged primarily to fill the needs of teachers and under-graduates, but it will doubtless attract many men and women who have found themselves handicapped without the proper instructions and training.

The College of Fine Arts, the College of Engineering, the College of Industries, the Margaret Morrison Carnegie College, and the Division of General Studies are included in the summer program.

Dormitory accommodations will be available for out-of-town students, and in connection with this announcement a substantial decrease in the rates for board and room on the campus, is noted, in comparison with the rates of former post-war years.

Of special interest to readers of this magazine are the courses in architecture. In the College of Fine Arts, courses will be given in Design, Working Drawings and Superintendence of Works, and Outdoor Sketching. In the College of Industries, the Department of Building Construction is offering various courses in Architectural Drawing.

SAINT LOUIS ARCHITECTURAL CLUB.

THE annual election of officers for the St. Louis Architectural Club was held on the evening of April 5th. After the most spirited campaign that the Club has experienced for eight or nine years, the following officers were selected: President, Clemens Nicholas; First Vice-President, Walter Wawrzyniak; Second Vice-President, Charles M. Gray; Secretary, John A. Bryan; Treasurer, Herbert Reinhardt; Members of Executive Board, Carl J. Trebus and Ernest Friton; Trustee, A. A. Aegerter. The other two trustees, whose terms have not yet expired, are Louis La Beaume and William A. Hirsch.

The Club membership now numbers 220; and the recently acquired additional building, facing Washington Avenue at Culver Way, will be remodelled and furnished in time for the opening of the coming fall and winter season. The money necessary for the purchase of the additional building was subscribed by the members of the Club.

AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of The American Academy in Rome from Mr. Frank P. Fairbanks, Professor in Charge of the School of Fine Arts, we quote the following:

We are fortunate in having the approval of the Trustees for carrying forward the plan for obtaining permission from the owners of Italian Villas to permit the Academy to issue to students of the Fine Arts, and others properly qualifying for such a privilege, a book of free admission to the most noteworthy shrines of Villa Architecture in Italy. The idea is to assist the owners to avoid an endless stream of correspondence from personal applicants, and to provide for a blanket grant to visit, for those students of bonafide standing, while at the same time avoiding for our own Fellows a continual interruption of their work by requests for the latest method of entrance to these Villas. If the owners will now co-operate with us, we can fulfill an excellent service for all concerned. Mr. Griswold, our Landscape Architect, who from necessity has been forced to evolve this excellent scheme, is to handle the initial correspondence.

The program for the collaborative problem has, up to this year, been furnished us from New York, to provide for as even a distribution of interest in the problems for architect, painter and sculptor as is possible. These

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problems have quite naturally been predominantly architectural. In order to give the painters and sculptors the initiative in their chosen fields, a plan has been desired to fill such a requirement. Next year, the senior architect, painter and sculptor will select his own problem, and frame a program for his team which will permit him to solve a problem that may be conceived as mainly pertaining to his own particular profession, giving at the same time some scope for the other collaborators. The judgment and successful award for a competition among three teams treating different subjects will naturally be a difficult one and require an adjudication almost entirely on the purely collaborative merits with which the individual problem has been met.

Of the work of the Fellows, J. K. Smith, senior architect, has had to postpone his work, temporarily, on his S. M. Del Popolo ceiling by Pinturicchio, and his rendering of the Palazzo Farnese because of a violent attack of "flu." He is now recovering and "carrying on" with his usual vigor.

Ciampaglia and Cecere, senior painter and sculptor, are both at work on new ventures, Ciampaglia with a composition of several figures and Cecere with the execution of kneeling figure of a young girl. The fresco class has begun under Ciampaglia's direction.

Griswold is preparing to lay out his perspective of the Villa Catena, the general plan of which he has about finished. Griswold and Smith, who is collaborating with him architecturally, have met with the most cordial co-operation from the owners of the Villa Catena, the Torlonia family, who put them up for a week at the Villa during

the time that was required to measure the scheme and collate the facts concerning this rather isolated and interesting monument.

Hafner, Schwartz and Amateis, Architect, Painter and Sculptor of the second year, are equally assiduous. Hafner is laying out final full sizes of his model of St. Peter's dome after Michelangelo for which he is now getting preliminary bids. Schwartz is doing a color study of the ceiling of the Sala dell'Incendio of the Raphael Stanza, and Amateis is at work on a nude figure of a bathing girl that is full of charm and great promise in the sketch.

Marceau, Floegel and Stevens, first year Architect, Painter and Sculptor, are an energetic group. Marceau is occupied with his restoration of the Temple of Concord, Floegel on cartoons for a figure composition, and Stevens has been copying the "Afrodite di Cirene" in the Terme Museum.

Charles B. McGrew, Architect on the Scholarship from the University of Illinois, has registered with us.

The first signs of spring have been apparent in sore arms from inoculations and sundry plans for travels. Five of the Fine Arts men are going south and to Greece, all three first year men, Marceau, Floegel and Stevens, as well as Amateis and the visiting Architect Harrison.

Both our Annual Professors, Prof. Faulkner and Prof. Manship, have entered into the life of the Academy in a most constructive manner. Prof. Faulkner has his cartoon and working drawings for the Thrasher-Ward Memorial well advanced. Prof. Manship has returned from doing some children's portraits in Paris.



Photograph Taken at the Nineteenth Annual Alumni Meeting of the Sketch Club of New York.

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THE USE OF PERSPECTIVE IN THE ATELIER WORK.

(Continued from page 49)

will realize that these planes, if continued away from us indefinitely, will appear to vanish in a line—a horizontal line; in fact in the "horizon" which may be called the "vanishing trace" of all horizontal planes.

In the same way all vertical planes that are parallel to each other will vanish in a line, which line will be the "vanishing trace" of these vertical planes. It will be a vertical line, and we may find the vanishing trace of such a set of vertical planes by drawing a vertical line through the point on the horizon which is the vanishing point of a horizontal line which lies in one of these vertical planes.

This vanishing trace will contain the vanishing points of all sets of parallel lines that lie in these vertical planes, just as the horizon contains the vanishing points of all lines lying in horizontal planes (thus in Figure 5, p, q is such a trace of vertical planes, three of which are L, P , and Q . It contains the vanishing points p, p , and q , of lines lying in those planes).

Thus in Figure 5, the line a is a horizontal line—a line parallel to level ground, that is, and it lies in a vertical plane L —the side of the house. The line a being horizontal will have a vanishing point on the horizon—it may be found by extending the line until it cuts the horizon—at x . This will be the vanishing point of any line parallel to a —such as b , the eaves, and c on the dormer window. If we draw a vertical line through x (p, q .) we shall have the vanishing trace of the plane L —and of any plane parallel to it, such as P , the front of the dormer window, or Q , the front of the chimney.

Now we shall see why all this is of very great use. Every plane has a vanishing trace, as we said, (and this includes oblique planes such as M and N of course) and any line lying in a plane has its vanishing point in the vanishing trace of the plane; in fact any vanishing trace may be found by drawing a straight line through the vanishing points of two different sets of parallel lines lying in a plane. We make use of this if we want to find the direction of such a line as y , a line in which two oblique planes meet (M and N). Think of it in this way. The line y lies in two planes—if we can find the vanishing traces of these two planes the vanishing point of the line y will of course occur where these vanishing traces cross. We can find these vanishing traces if we work back to lines we know something about—usually horizontal lines are the most useful, as we know they have a vanishing point on the horizon, which can be found by extending the line until it crosses the horizon. To find the vanishing trace of the plane M ; we have one vanishing point of lines in this plane already—horizontal lines (b and c and the top and bottom of O) at x . We need find only one more; the line d , at one side will serve the purpose—because it is in a vertical plane (Q) and we know the vanishing trace of this plane will be a vertical line through the vanishing point of horizontal lines in this plane— q ; w, x is then the trace of this plane. If we continue the line d until it cuts this trace, we shall have its vanishing point— w , and that is what was needed to determine the vanishing trace of the plane M . We connect the two vanishing points then— w and x by a line (wx) which is the vanishing trace of the plane M . In the same way we find the vanishing trace $z-p$ of the plane N . These two traces cross at r —which then must be the vanishing point of the line y which occurs where these two planes cut through each other.

This will be much more intelligible if you read it through a second time; if you can understand it, you will find it much more easy to visualize in perspective—and such men as Leonardo da Vinci and Michelangelo found it worth their while to do all sorts of problems in perspective,—and enjoyed the sense of power given them by their success in solving these problems.

From such dry diagrams as Figures 3, 4, and 5, it is interesting to turn to Figure 6, which is a Rougevin second prize drawing at the Ecole des Beaux Arts in Paris. But it was no doubt made over a framework just as diagrammatic as Figure 5.

Drawings in parallel perspective—such as Figure 7, another Rougevin competition drawing—give all the aspect of being in perspective, and yet are, for the most part, elevation drawings. They are much more effective than the elevation alone would be.

The casting of shadows in perspective in another interesting field that should be studied, for in a perspective the sun need not be (preferably will not be) considered always at an elevation of 45 degrees. Some hours spent with Lubschez' book before mentioned—or with Hatton's "Perspective for Art Students" (Chapman & Hall, 1910) will be well worth while—and then, after that,—as much practice as possible.

AWARDS IN THE LE BRUN TRAVELLING SCHOLARSHIP COMPETITION, 1923.

(Continued from page 51)

somewhat out of scale with the requirements of the program. The scale of the façade was likewise forced but the drawings as a whole were well and simply presented and showed knowledge and ability.

Third Place with Second Mention was awarded to Rudolph De Ghetto of 2 South Avenue, Clifton, N. J. Mr. De Ghetto was nominated by Eric Gugler of New York. He is twenty-nine years of age, is in Class A of the Beaux-Arts Institute of Design, and has had six years' office experience. His plan was charming in its simplicity but more usual in type. It was well studied and proportioned, the façade in good scale and character, and very suitable for a building in a park. The perspective point of view was most unfortunate and its presentation not up to the standard of his other drawings.

Fourth Place with Third Mention was given to James Parker Matheny of Pittsburgh, Pa. He was nominated by Eric Fisher Wood of the Pittsburgh Chapter. He is a graduate of the Carnegie Institute of Technology and has had six years of office experience. He served in the Artillery of the United States Army for twenty months during the World War, of which twelve months was overseas. According to the jury, Mr. Matheny's plan was very interesting and distinctive. He made a serious attempt to express the relation of the building to the park, which led to complications in plan and elevation, which were not solved as successfully as were the other problems. The elevation, however, was good and with sections and perspective, was well presented.

STUDY TOUR FOR ARCHITECTURAL STUDENTS

AN OPPORTUNITY to study the development of architecture in Europe this summer under Professor Albert C. Phelps of the College of Architecture, Cornell University, will be offered by the Institute of International Education, for Professor Phelps will be a member of the faculty of the art students' tour which has been organized for the summer of 1923.

The group will sail from New York, June 30, 1923, on the Cunarder "Saxonia". Professor Phelps will lecture each day of the transatlantic voyage, as a means of sketching in the broader outlines of the development of architecture and of preparing for the more specific lectures to be given during the land portion of the trip. His lectures on shipboard will be illustrated with stereopticon slides from the collection of the Cornell College of Architecture.

After landing at Cherbourg, the group will visit Paris and Versailles, Rome, Perugia, Assisi, Florence, Venice, Milan, Ghent and Bruges, Brussels and Antwerp, the Dutch cities of Amsterdam, Haarlem and The Hague, and finally England. The return voyage will be by the "Saxonia", due to arrive in New York, September 4. Full information can be had by addressing the Institute of International Education, attention of Mr. Irwin Smith, 30 East 42nd St., New York City.

PENCIL POINTS

THE TESTING AND CARE OF DRAWING INSTRUMENTS

By ROBERT GRIMSHAW

THE importance of seeing that the drafting room equipment and instruments are accurate and are kept accurate need not be dwelt upon here, but a brief statement of the ways of testing and caring for drawing instruments may prove useful.

Among the instruments and accessories upon which the draftsman's ease of working and the accuracy of his results depend, are, of course, the drafting board, the T-square, the triangles and straight edges and the various hand tools such as bow-pens, "wholes and halves", etc.

The board, to commence with, should have (1) four equal angles which would, of course, make them ninety degrees each; (2) have all its edges straight, out of wind and smooth; (3) have at least one working surface perfectly flat, that is to say neither convex, concave nor twisting; (4) be hard enough to resist denting; (5) be soft enough to take the thumb tacks easily; (6) be close pored so as to resist dirt and (7) unless purposely used vertically or slightly inclined to the horizontal, be perfectly level.

Its angles are best tested with a large machinists' metal square, metal squares being the only ones that are reliable for angular measurements. Where the board is thick, care should be taken to keep the surface of the square either in, or parallel to, the plane of the board.

Testing the rectangularity of the board by measuring the diagonals with straight, stiff, tough paper strips is sometimes deceptive. If the diagonals are of different lengths

it is always proof that the board is out of square, but they may be of equal length if two sides are parallel and the two adjacent angles connected by one of these sides are equal, as in any trapezoid.

Straightness of the edges (as distinguished from absence of twist) should be measured by a straight edge, preferably of metal, of known correctness. This should be applied lightly, edge on, and the accuracy of contact judged against a strong light.

The flatness or "truth" of the surface can be tested by a long straight-edge applied lengthwise, crosswise and diagonally.

The hardness is tested by thumb tacks.

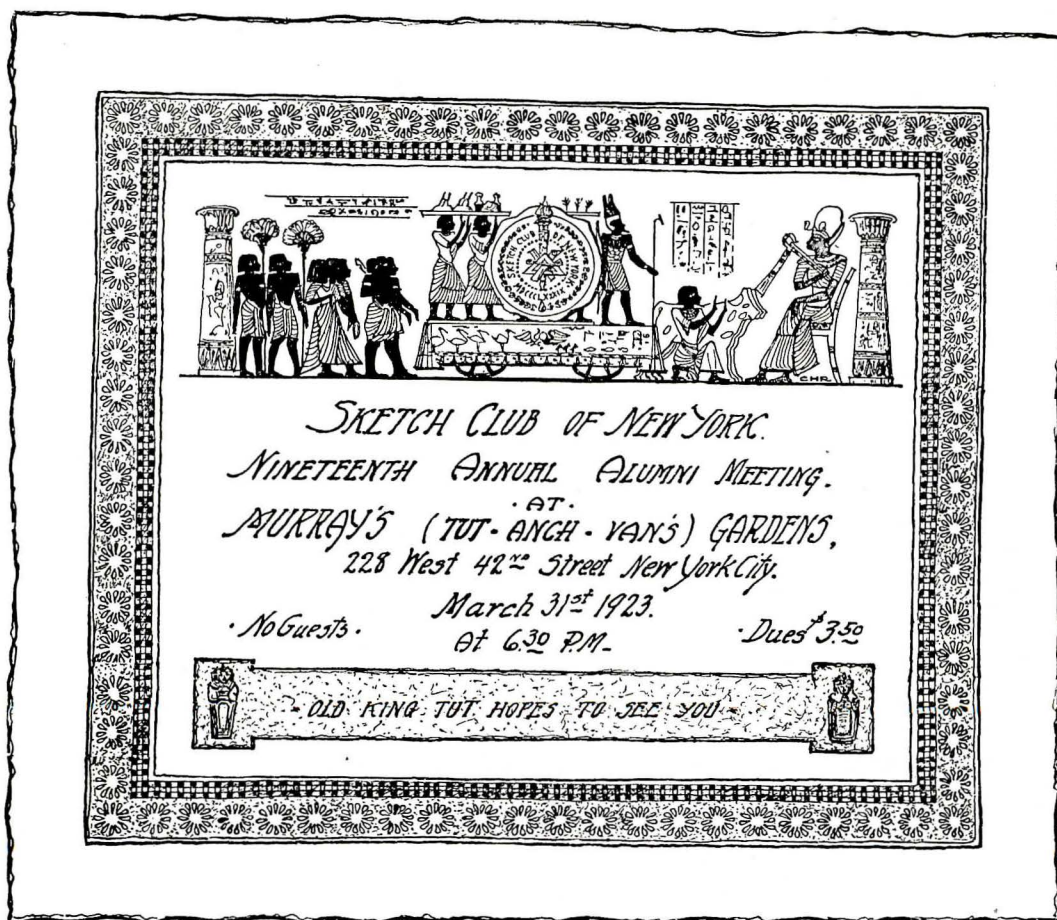
If the board is to be used in a level position, it should be absolutely level in order that even a round pencil may not roll off when laid thereon lengthwise, crosswise or diagonally. (But no draftsman should use any but a "hex" pencil, if he can get one.)

On every drawing board there should be a distinctly scribed horizontal line and a vertical one, to be used from time to time for test purposes.

Centre lines on drawings are preferably made by a needle point just sharp enough not to scratch the paper or the board. This applies to lines on regular drawings as well as to those used in testing.

Where work has to be done on a board that is not perfectly rectangular, only one edge, preferably the left-hand one, should be used with the T-square and all lines perpendicular thereto made either by the use of the triangle or by geometric construction.

The T-square should be tested for (1) rectangularity of both angles, unless the blade, being very long, is purposely tapered in width, in which case the top angle only should



Design for Invitation to the Nineteenth Annual Alumni Meeting of the Sketch Club of New York.

PENCIL POINTS

be tested; (2) for parallelism of the two edges of the blade (with the exception above noted); (3) for straightness of the edge; (4) for smoothness of edge; (freedom from nicks, dents or roughnesses due to ink deposits.)

Its rectangularity may be proved by drawing the longest line possible with the head firmly pressed against the board, then taking the metal L-square to test the angle, the metal square being pressed against a straight edge, the flat side of which is pressed against the left-hand edge of the board. If the T-square has a parallel blade, both angles should be tested.

Parallelism may be tested by drawing a long line against the top edge of the blade, moving up the square so that the lower edge coincides at one end of the line and scribing a second line; the two lines should coincide through their entire length. (This does not, however, prove straightness, as the blade might be bowed.)

Straightness is tested with a straight edge, preferably of metal, the contacting edges being held against the light and the straight edge shifted lengthwise along the T-square blade.

It is well never to use the under edge of a blade. Where it is set on, not let into the head, and the upper edge gets injured, the blade may be removed and replaced in reversed position, the old lower edge becoming the top.

The longer the head of the T-square, the less the liability there is of doing incorrect work with the instrument.

The forty-five degree triangle should be tested for angularity by scribing a perpendicular line while it is pressed against the T-square blade or any other straight edge, then turning it the other side up (that is, flopping it over) and seeing if the line then described coincides, as it should do, with the first one made.

Its sides should be of exactly equal length, if the points are intact. (It need not be discarded, however, if one or more points are broken off; it will still be useful in cross hatching and the same is true of the sixty degree triangle.)

The sixty degree triangle should permit scribing a line thirty degrees from a scribed line, then placing its long side against this and scribing a third line perfectly parallel to the first one.

The backs of two forty-five degree or sixty degree triangles, or one of each sort, placed back to back, with bases against a straight edge or a scribed line, should coincide.

Wooden straight edges should be tested against a metal one of known accuracy. (For straightness and rectangularity, testing instruments should be of metal; for length

they may prove deceptive on account of their changes due to temperatures.)

All straight edges, metal or other, should be tested in sets of three: A against B and C, and B against A and C, the edges being slid along each other and the contacting lines held against a strong light.

Bow pens should be carefully wiped free from ink after each using. Should they get sharp from corrosion, or dull from long use, the remedy is an oil stone applied on the inside of the blade. The edge should be just sharp enough not to score the thumb nail.

"Wholes and halves" can be tested for accuracy by stepping off ten paces say four inches each from the end of a scribed line, with the wide points then twenty from the same point with the close points; the last points stepped off should coincide to a hair. Truing is necessary, should be done with the long legs, using an oil stone on the outside and testing frequently.

Metal centres with mica insets, used to prevent the divider points from reaming out centres in the drawing, should be thrown away if the mica centre hole becomes worn.

Compass points with shoulders should be used wherever the instrument will permit. In case of accident, they must be repaired by an instrument maker.

PERSONALS.

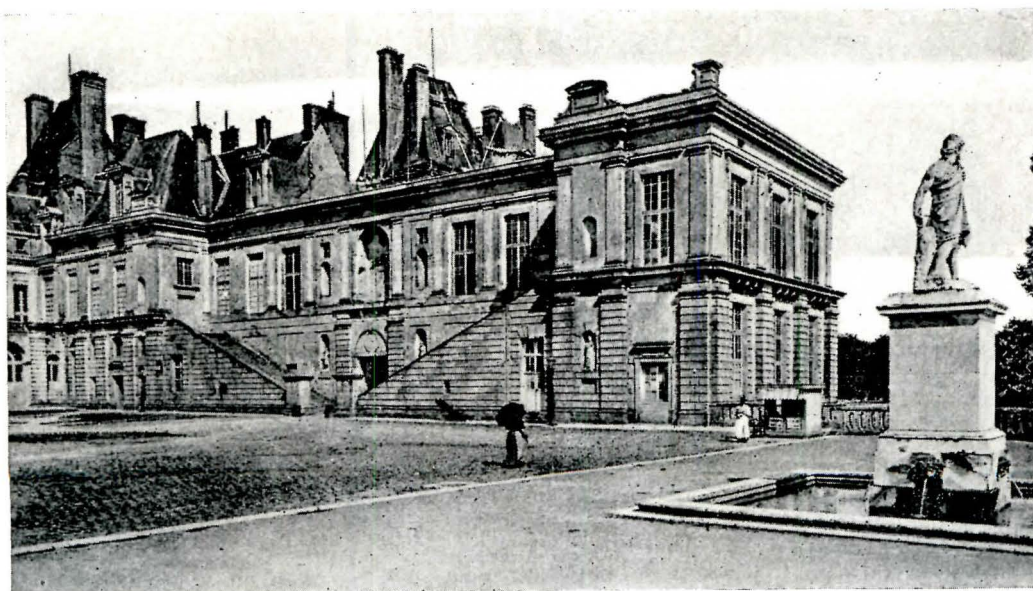
WALTER C. SHARP, W. BROWN FOWLER and RALPH BRYAN are now associates in the firm of Herbert M. Greene Company, Architects and Engineers, Dallas, Texas. The firm name remains unchanged.

JOHN MEAD HOWELLS and RAYMOND HOOD, Associated Architects, have removed their New York office to 18 East 41st Street.

NELSON P. RICE has opened an office for the practice of architecture at 1503 Arcade Building, St. Louis, Mo.

WILLIAM F. STONE, JR., formerly associated with the late Otto G. Simonson, Architect, is practicing architecture with offices at 1122 Munsey Building, Baltimore.

H. G. ANDERSON, formerly with MOWBRAY & UFFINGER, Architects, New York City, is now associated with HARRY LUCHT, Architect, at 242 Fulton Terrace, Cliffside Park, N. J.



The Wing of The Palace of Fontainebleau in Which the School of Architecture Is Being Installed.

PENCIL POINTS



PAUL F. SIMPSON.

PAUL F. SIMPSON, who has just won the Le Brun Travelling Scholarship for 1923, was born at Lima, Ohio, in April, 1896, and received the usual education in the public schools and the Central High School of that town. Graduating in '14 he spent the following two years in one of the architectural offices of that city.

He entered the Carnegie Institute of Technology in 1916 and graduated with an A.B. in Architecture in 1921. His course was interrupted by the war and he spent twenty-one months in the army, seventeen of which were in France with the 53rd Aero Squadron. After 1921, Mr. Simpson went to the office of Mr. Henry Hornbostel. He spent his evenings and spare time since, doing various projects of the Beaux-Arts Institute of Design program and he holds four medals in Class "A."

Mr. Simpson is a member of Tau Sigma Delta, Scarab, and the Pittsburgh Architectural Club. He gives special credit for inspiration to Mr. Harry Sternfeld, and associate faculty at Carnegie Institute of Technology.

Mr. Simpson expects to extend the period of travel and study to a year or more.

MECHANICS' INSTITUTE ARCHITECTURAL ASSOCIATION OF ROCHESTER, NEW YORK.

MECHANICS' INSTITUTE ARCHITECTURAL ASSOCIATION was founded in the spring of 1921 by a few students who visualized the great mutual benefits to be derived from the stimulation of fraternal feeling among the architectural students of the Rochester Athenaeum and Mechanics' Institute, Rochester, N. Y.

Founded for the purpose of developing good-fellowship and personal co-operation among its members, the association hopes that, with the guidance of its faculty adviser, Mr. Hendrik Van Ingen, and the instructor of the Department of Fine Arts, it will help to stimulate a stronger interest in architecture and allied arts, through lectures, sketching trips, outings, etc. During 1922, the

society sponsored a number of successful social events, although handicapped by the loss of a number of members who left the city upon graduation from the Institute.

In the early weeks of the present year, the association's by-laws were revised and changes were made to make provision for the future growth and welfare of the society. Under the able leadership of President Bernard D. Seeley and Secretary Arthur J. Blanchett, fourteen new members have been added since New Years, bringing the total up to thirty.

Great interest in the work has been displayed by the faculty of the Department of Fine Arts and prominent local architects have promised to give addresses on topics of interest in the near future; and with the assurance of close co-operation on the part of its membership, the association confidently looks forward to a banner year of activity during 1923.

COMPETITION FOR TRAVELLING SCHOLARSHIP

A TRAVELLING Scholarship in architecture with special emphasis laid upon the use of interior marble has been announced. This scholarship is to be financed by the Alabama Marble Company and conducted under the guidance of the Committee on Education of The American Institute of Architects.

This scholarship is offered in the belief that such a course of study will result in a better understanding of marble as an available material for interior finish and the opportunity this scholarship affords to study master pieces of architecture and particularly the wonderful marble interiors abroad is an extremely attractive one. It is to be hoped that many men of unusual ability and good educational equipment will enter this contest, as a winner so equipped will profit most from such an opportunity.

The idea of this scholarship is a highly commendable one for it shows an appreciation of the fact that the more an architect knows about a material the more creditable will be his use of it, not only to himself but to the material. What more certain way can there be to promote the proper use of interior marble than to give a well equipped man a travelling scholarship that will enable him to see the best examples?

Details of this contest may be had by applying to Walter D. Blair, Architectural Advisor, 154 East 61st Street, New York City.

THE FONTAINEBLEAU SCHOOL.

THE work of preparing for the opening of the Summer School in the Palace of Fontainebleau is going forward with gratifying rapidity. Mr. Whitney Warren is now in Paris following out the ideas of his brother, the late Lloyd Warren who originally arranged with the French authorities for the school.

Mr. Warren is co-operating with the French authorities in the installation of the necessary equipment and the fitting up of the wing of the Palace of Fontainebleau assigned for the purpose. He is also in communication with the authorities of the Ecole des Beaux Arts in Paris in regard to the course of study to be pursued. Particularly he is co-operating with M. Maurice Fragnaud, *Sous-Prefet* or Governor of Fontainebleau, and with M. Laloux, who is to be in charge of the instruction in architecture. It is particularly interesting to note that M. Carlu is to be a member of the faculty, for he has spent much time in the United States, speaks English fluently, and is familiar with the problems of American architectural practice. M. Carlu was associated with Mr. Lloyd Warren when the latter was head of the A. E. F. School at Bellevue. The presence of M. Carlu should do much to reassure students who may fear that their lack of knowledge of the French language may be a handicap to them in their studies at the Fontainebleau School.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the first installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

BRICK AND HOLLOW TILE WORK

(Continued)

The backing up of outside walls will consist of hard burnt 4 x 5 x 12 and 5 x 8 x 12 hollow tile. Above hollow tile to be well bonded and in all cases to be free from support on wood. Hollow tile will also be used at pockets, jambs, niches, etc. The general drawings shall be used as a guide for the above work.

Face brick will be tied to hollow tile or brick walls as specified under heading of face brick work.

This contractor will build in all necessary nailing blocks, etc. He will build relieving arches over all openings where especially noted on drawings full width of rough walls. No light colored brick will be allowed in the building. Recesses, pockets, etc., per drawings and details and as directed shall be left for the other trades. All common brick and hollow tile and brick to be well soaked before being laid.

FIREPLACES AND FLUES:

Construct fireplaces, flues, etc., as shown and carry up 9" x 9" flues, unless otherwise marked with 9" back walls from each open fireplace, each of which are to have neat arches turned over same. All to be carefully built with all joints slushed full of mortar as each course is laid, and the entire inside of flues smoothly pointed from bottom to top.

Chimneys above roofs will be built with face brick similar to outside walls, of designs shown.

Provide and build in flue rings at all openings in cellar, kitchen and where marked in attic. Build trimmer arches under the hearths at second story den mantel and at first story fireplace. Leave all pockets, niches, etc., for pipes, wires, etc., as per direction. Flues marked with double line to have terra cotta flue lining. Cellar flues in all cases to start 2'-0" below first floor joists. Cleanout flue at living room fireplace will also be smoothly pointed similar to other flues.

This contractor will furnish and install 16" x 20" cast iron cleanout door and frame at bottom of ash chute under living room chimney. Said cleanout door to have approved fastener and the bottom of this door to be kept 2'-0" above cellar floor. This contractor will also furnish and install approved type ash chute doors at rear hearth of living room fireplace.

Furnish and put in place —, or approved equal,

adjustable damper the full size of opening at living room fireplace.

FACE BRICK WORK:

The entire front, sides and rear of building shall be faced with a standard brick \$24.00 per M. f. o. b. Pittsburgh, Penna., of such make and color as selected by architect and owner (brick contemplated is a red tapestry standard brick which it is intended shall be laid up with a square struck joint about 1/2" wide, the face of joint being kept flush with face of brick). Chimneys above roofs to be laid up of above face brick and of designs shown and capped with a 2" layer of 1 to 2 cement mortar finished as shown.

This contractor will include string courses, window sills, lintels, arches, pattern work, etc., all as indicated on drawings and per details. Care must be used by brick contractor so that no defective brick or chipped brick are used on the work. The face brick shall be tied to hollow tile back walls with crimped galvanized iron wall ties every fifth brick and every third course and where the design permits and it is possible for the header courses to bond with hollow tile or brick same shall be done. Regarding above specification for crimped galvanized iron wall ties it is assumed same comply with city building laws. If not, brick contractor will substitute wall ties that do comply with city building laws.

Contractor will note face brick work starts 2" below finished grade line on the offset of stone foundation walls. The offset will be provided by stone contractor.

All the above face brick to be laid up in dark red mortar as hereinafter specified. Said face brick work to be laid up from outside scaffold.

At completion of building brick contractor will thoroughly clean all exterior brick work with diluted acid and water.

MORTAR FOR BRICK WORK:

Mortar for face brick work to be composed of best quality lump lime, sharp river sand and tempered with either A—, A—, V— or L— P— cement and best ground color, counting on one sack of cement to the cubic yard of mortar. Mortar to stand three days before being used and shall be tempered as it is used on the scaffold.

STRUCTURAL STEEL WORK:

Furnish and put in place all beams, pipe columns, angle irons, "Z" bars, etc., of weight, size and construction as indicated on drawings. In all cases beams are to have proper size bearing plates and where especially shown bearing beams under same and of proper area size. Pipe columns to be stock pattern and shall have cap and base plates. Where more than one beam is used same must be bolted together with iron bolts, and including standard separators which will be placed at intervals not exceeding 5-feet. All the above steel work to receive one heavy coat of No. 1 quality oxide of iron paint at the mill.

WROUGHT IRON BALCONIES:

Wrought iron balconies to be built at second story windows where shown and shall consist of square bars forming front, sides and bottom and scroll brackets underneath of size material noted on drawings. The square bars will be screwed or riveted into frames and shall be of substantial construction throughout. Same will be anchored to wall with substantial bolts running through full thickness of wall with plates on the inner side. Said plates being installed in such manner as not to interfere with plastering or tile work. The balcony to receive one good coat of metallic paint at the shop. Balance of painting will be done by painting contractor.

PENCIL POINTS

TIE RODS, ORNAMENTAL PLATES AND BOLTS AND COAL CHUTE:

This contractor will figure on three $\frac{1}{2}$ " tie rods that will run down from brick arch at main entrance and at the bottom of the tie rods cut plates $\frac{1}{4}$ " thick per details will occur on the soffit of the brick lintels at main entrance. Said plates will support the stucco circular panel and the brick lintel. Above is clearly shown on drawings.

This contractor will furnish the circular boiler plate coal chute of the form shown on drawings, he to include stock pattern frame and cover at terrace level. The cover to have approved type locking device. The above to be set in place complete ready for use.

TIN AND GALVANIZED IRON WORK:

Cap flash around all chimneys, roofs and decks with material hereinafter specified. Said work to be done in a neat and uniform manner, each step must be uniform. This contractor to include saddles back of all chimneys and the covering of exposed wood mouldings. Expansion joints shall be used throughout for this work.

Roof over one story addition at rear to be covered with material hereinafter specified counting on 14 x 20" sheets with flat seams. The sheets shall be nailed in place with 1" barbed and tinned roofing nails not over 6" apart well under the edge. They shall be well covered up and the seams should be pounded down over the edge. In no case shall nails be exposed.

Tin roof over main entrance hood to be covered with material hereinafter specified counting on raised seams. This work to be done in a careful manner as the workmanship is part of the design. Cap flashings to be used at all roofs where they come in contact with brick or frame work.

Contractors will figure on using S——, M. F. Terne Plates, H—— or M—— & E—— C—— "IX" redipped charcoal tin painted on all sides before material is put down and one coat after. Balance of painting will be done by painting contractor.

FLOWER BOX:

This contractor shall include lining of flower box at dining room window with above tin and including three drain outlets at bottom.

GUTTERS:

By reference to drawings it will be noted that hanging gutters are used throughout and this contractor will therefore figure on 5" 16 oz. cold rolled copper gutters, single bead of slip joint construction allowing the back of gutter to run up under slate 4". The gutters will be provided with stiffeners at short intervals. Above gutters will rest on bed mould of cornice construction as clearly shown on drawings. This contractor to include neat miters at all angles, and conductor connections as required for rain conductors as hereinafter specified. This contractor will also include gutter end pieces where required by drawings.

CONDUCTORS, ORNAMENTAL CAPS, ETC.

All of the rain conductors required by drawings shall be 3 x 4" square with ornamental stock straps of approved pattern and ornamental stock caps of approved pattern. This contractor to include proper radius, elbows, easements, etc., as required by drawings. All rain conductors shall be of uniform lengths with soldered joints and shall stop 6" above finished grade as they will be cemented into cast iron drain pipes by plumbing contractor. All conductors to be in exact positions shown on drawings as no offsets will be allowed. Above conductors to be galvanized iron with flat seam on back.

SLATE ROOFS:

Entire roofs over house, roofs and sides of dormer windows, all as shown on drawings shall be covered with selected quality B—— slate 10 x 16", laid $6\frac{1}{2}$ " to

the weather. Closed valleys to be used at all dormers and slate shall be doubled at all eaves. This contractor will count on putting B—— or approved equal single ply roofing paper, 15-lbs. to the square, well overlapped at all joints, over all roofing surfaces before slate work is started. The paper to be well fastened to roof. The above slate to be well nailed counting on two nails to each slate. The nails to be galvanized iron nails. Slate to be carried out over all cappings, wood mouldings, etc. The slater will furnish and install flashings of N & G T——, S—— or M—— & E—— "IX" redipped charcoal tin where required including at valleys, ridges, hips, etc. This contractor will use approved elastic roofers cement as required at hips, ridges, etc. The above roofs to be guaranteed for a period of one year in writing by this contractor and countersigned by the general contractor.

PLUMBING AND GAS FITTING:

Gas pipes to be put in house for both light and heat. All lines to be connected to one meter and only run to such light outlets as designated on drawings, as it is not the intention to carry gas to all light outlets. Where especially marked, piping shall be carried to side brackets. All brackets on first floor to be 6'-2" above finished floor. All brackets on second and third floors to be 5'-8" above finished floors. All risers to be $\frac{3}{4}$ " pipe and all branches for lights to be $\frac{3}{8}$ " pipe and branches for all fireplaces and stove outlets on first, second and attic floors to be $\frac{1}{2}$ " pipe.

Provide at the side of each fireplace on first and second floors a s—— brass gas valve brass key and washer. Said valve to be approved by architect before installation. This contractor will run pipes to kitchen for range, to water heater in cellar to a point within 10'-0" of boiler location with shut-off provided on boiler line. He will also run line to laundry stove location and to such stove outlets as are noted on drawings. The plumber will figure on connecting instantaneous water heater, laundry stove and kitchen range. The laundry stove and kitchen range will be furnished at building by owner.

All pipes above cellar to be concealed and no joist notched any further than 5'-0" away from their bearings unless permission be given by the architect.

All pipes to be perfectly tight and to be left open for inspection, architect to be notified when this is to be done, so he can be present.

(To be Continued)

CRITICISM OF SPECIFICATIONS

IN response to the invitation to criticise the specifications of a brick and hollow tile house the first installment of which was published in the April issue we have received the following letter from one of our readers:

Your idea of presenting an anonymous specification with an invitation to criticise it, should serve to produce more practical specifications, a much needed improvement which will be appreciated by those for whom specifications are written. It would take much space to make clear the reasons that all changes needed should be made so that the architect could realize them.

Let us follow the operation of one or two clauses to illustrate.

The superintendent comes on the job with a force of men whose time goes on at say \$5 per hour. Materials are on the ground for a "shanty" and a workmen's toilet. The latter is the first thing to tackle. The superintendent examines the site plan and does not find a location indicated. He looks at the index. This not being in alphabetical order, and having several items bunched together, he has to read every word, but he finds nothing about the location. He glances over the items, reading parts of each, but finds nothing on the subject. He decides upon a location near the sewer and sets the men at work digging the trench, putting up the building, and making sewer and

PENCIL POINTS

water connections. After a week or two, the architect comes around and orders it removed. He points out that in an obscure place, under "PART 2", is the clause, "location to be given by the architect". Or, suppose the supt. found the clause and called up the architect to find where this important structure should be located, probably in a week or two the architect would come out and study the site over with great deliberation and finally stamp his heel in the ground and say "put it there". It would seem that the question was not so momentous that it could not have been determined and indicated on the site plan.

The writer recalls a similar incident in actual experience. A building was specified to be plastered "to the satisfaction of the architect". The plasterer thought he knew how to do a good job without bothering the architect and did a fine job of white coat work. Weeks later, after the trim was on, the architect saw it and demanded that it be taken off, giving instructions by phone as to "what he wanted." The plasterer did another good job omitting the white coat but troweled to a fine finish. After a week or two, the architect again demanded that it be removed and took the plasterer to another building and said "I want it like that". If he had specified "sand finish" or "float finish" it would have saved the architect much time and the owner and contractor a lawsuit. "The architect is responsible" but he does not foot the bills.

"PART 12" reads: "The architect has the right to discharge any workmen on the buildings without question." If the contractor has to figure on the consequences of this clause the owner will have to pay a goodly sum for something that will not show. The owner can depend upon it that he must pay for every unreasonable arbitrary demand found in the specifications.

An index made up as this is, not in alphabetical order and in bunches, such as "TIE RODS, ORNAMENTAL PLATES AND CLOTHES CHUTE", is of no practical use. It should have but one item in a line, be in alphabetical order, using the common general terms, and not in capital letters. Caps and lower case letters admit of catching every word at a glance, all caps do not. The first typewriters were quickly condemned for being all in caps.

Each item in the specification should begin with the subject in a cap and lower case letters about four letters in the left margin. One can run his eye rapidly down the margin and catch what he is looking for readily. "PART 1, PART 2", etc., serves no useful purpose. It is confusing to have a title in caps and begin the clause with the same word like "EXCAVATION: Excavation to be made" etc., and involves a waste of time for everybody from the writer to the reader.

Instead of "SPECIFICATIONS of Workmanship and materials to be used in the erection and completion of a brick residence and garage FOR.....ON.....CITY, etc.," we should prefer at the top, where it could readily be found in a bunch of specifications, a simple title identifying the job, like "Pershing Bldg.", "M. E. Church", "Jones House & Garage." with the location immediately under.

Generally speaking, important clauses are buried in a mass of useless stuff which is clearly set forth on the drawings, is embodied in the building laws or is in universal practice like: "every sixth course shall be a header course."

The popular word "workmanlike" has no definite meaning, except in a case where a fireplace was specified to be built in a "workmanlike manner". It certainly was "workmanlike", like the workman that built it, it smoked all the time.

A LETTER FROM WILLIAM T. SCHMITT

THE part of the specifications which you have printed in your April number I consider a ——— good specification. The fellow who edited it knows his "beans".

At the end of twenty-five mile stones, I have come to the conclusion that a specification must convey the idea that one knows whereof he speaks; that he is thoroughly acquainted with results that may be obtained, and that can be reasonably expected. A technical specification would

be Greek to a builder organized to build a house and a garage. I say, therefore, that the specification which you are holding up for a target, is written in terms that such a builder understands. Incidentally, I would say, that this said target is very nearly invulnerable, so to speak. No very sound criticism can be made of the part of the specification you have submitted.

THE TRAVELLING EXHIBITION OF SKETCHES

THE Travelling Exhibition of Sketches selected from among those entered in the Birch Burdette Long Competition for 1922 is now well on its way across the continent. It has been shown at the Massachusetts Institute of Technology, Boston; Pratt Institute; the T-Square Club, Rhode Island School of Design, and The Pennsylvania State College. It will be shown at Ohio State University from April 30th to May 3rd; University of Michigan, May 8th to 15th; Agricultural College of North Dakota, May 21st to 26th; Oklahoma Agricultural and Mechanical College, May 30th to June 3rd. Making a number of other stops on its way it will reach Los Angeles in September; on the return trip it will be exhibited at a number of clubs and educational institutions.

This exhibition includes the work of the prize winners, together with examples of the work of those who received honorable mention and in addition a number of the more meritorious works submitted. Sketches by the following are comprised in this exhibition: Robert M. Switzer, Denby T. Hird, G. G. Gilkison, Robert A. Lockwood, Ralph Fanning, John Wenrich, Arthur H. Gilkison, Earl Purdy, Armand D. Carroll, Joseph F. Kriner, F. Ray Leimkuehler, R. H. Douglas, H. Thearle, Charles M. Cowan, John Scott Lawson, Lester G. Chapin, Charles H. Marsh, J. T. Cronin, T. P. Yang, Frank Lee Bodine, Katherine Brady, J. E. Jackson, K. J. Baldwin, George Fred Keck, J. Louis Schillinger, Elmer A. Bennett, Meade A. Spencer, Edward H. Wigham, John Craig Janney, Louis C. Schlalos, Wilson R. Stewart, Robt. W. Snyder, E. Maxwell Fry, Edward J. Weber, George A. Gibbons, Lionel H. Pries, Hugh Perrin, Gerald K. Geerlings, Louis C. Rosenberg, Robert D. Murray, Ruth Seymour, Perry Coke Smith, Frank Martinelli, S. E. Mahon, H. A. Wieland.

BRASS MAIL BOXES

AN IMPORTANT new use for brass was marked at Atlantic City recently when the Post Office Department placed the first brass mail boxes ever used in this country at all mail collection points along the boardwalk. This step is the result of an inquiry instituted about a year ago by the Post Office Department at Washington with a view to reducing the heavy maintenance expense due to the rusting of the steel boxes, the average life of which is about three years. At the suggestion of the Copper and Brass Research Association, it was decided to try the brass boxes, and the Association furnished a specimen box, upon which pattern the Government manufactured the first lot of one thousand boxes at the Washington, D. C. Navy Yard.

Consideration has been given to the fact that long familiarity with the dark green paint used on the steel boxes might result in confusion on the part of the public if the brass is left unpainted, but inasmuch as the painting of the steel boxes is in itself a costly item which will be obviated with the brass boxes, it is possible that the Post Office authorities will eliminate painting.

Atlantic City was selected for the first use of the brass boxes because the sea air is particularly severe on the steel, it being necessary in some cases to replace boxes along the boardwalk in as short a time as three months. Brass boxes will shortly be placed in use in New York and other cities where conditions are favorable for speedy determination of the theory that the brass box will, by outlasting several of the steel boxes, and requiring no paint or other protection, result in marked economy for the department.