PENCIL POINTS

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THE ARCHITECT'S PROFESSION

FROM "ÉLÉMENTS ET THÉORIE DE L'ARCHITECTURE."*

By J. Guadet

I SHOULD FEEL that this work was incomplete if, after speaking to you to the best of my ability about the art of architecture, I did not tell you as briefly as possible what the architect's profession is. In certain respects I might even better have begun with this, since before undertaking long and laborious studies it is well to know to what they lead; but, on the other hand, how can I make you understand your professional functions if you are not prepared for them by conscientious studies?

I wish, therefore, to speak to you first about your duties, that is the first thing to know. Then, I must speak to you about the rules, or, more simply, the practices which to-day direct the architect in his career. These practices have not always existed, and even at present do not exist everywhere; but everywhere it is well to know them, for I believe that nowhere is the architect's profession better defined than with us in France. It is essentially liberal, not lending itself to doubtful speculations nor to industrial enterprises. But in order to insist strictly upon this characteristic, we have to struggle against compromising encroachments and against opinions honestly supported by precedents which we refuse to countenance. There is no group of men, however honorable as a whole, who have not blemishes of this kind; all the more reason, then, for not exposing ourselves to any suspicion, and for showing by all our actions the dignity of our calling and our determination to have nothing in common with those who would compromise it, if we recognize as theirs a title which they have usurped.

Not that this title is legally usurped,—for the title of architect belongs legally to no one,—every one, even the most unworthy, can call himself an architect, as he can call himself a painter, engineer, poet, or writer. The payment of a license-fee will settle all legal formalities; a cleverly staged equipment will mask his intrusion upon a domain which is not his; the talent of his draftsmen will enable him to sometimes sign works which he himself would be incapable of planning or executing. All that is most regrettable, but no law prevents it. While the doctor, guardian of the public health, is forced to give guarantees,—justified by the fact that the crime of illegal medical practice appears in the penal code,—the architect, guardian of the country's buildings, is not protected by any legal guarantee. Is this regrettable or fortunate? For my part, I believe that one cannot imagine our profession a closed one without foreseeing that it would be paralyzed; and that in this, as in other things, there is no régime more stimulating than liberty.

And then, what is the good of imaginary regrets? For some years past architects, stirred up by these intrusions which compromise our profession, have frequently agitated the old question of an obligatory diploma. The defenders of this idea have an abundance of excellent reasons to bring to its support; but their illusion is profound. A century after the Revolution we are not going to reëstablish in a new form anything like the corporations and guild wardenships of the Old Régime. The privilege of the doctors and the lawyers has survived; nothing could be better. If they, too, had disappeared in the upheaval, they would not be reëstablished. We will not by any new exceptions weaken the principle of the liberty of the professions; and against parasites and the unworthy we, like others, have no other weapon in competition than superiority. Let us have, therefore, this superiority in talent, dignity, honor, and faith.

Now you must have realized already that one cannot be an architect without first being an artist and a man of honor. You know the fine ancient definition of an orator: *Vir bonus dicendi peritus* (the honest man skilful in speech); we may also define the architect as *Vir bonus ædificandi peritus* (the honest man skilful in constructing). And by this word "honest," I do not mean simply material honesty,—which consists in respecting one's engagements, in living as if each act of one's life had its witnesses,—I mean artistic honesty; and I should certainly be unfortunate if, after all that I have said to you, it would be necessary for me to give it further definition. But, as a great moralist has said, it is often more difficult to know one's duty than to do it. I do not pretend to compose for you a guide in which you can find answers to all the doubts which at times will torment you; I can at least lay down some principles, some rules even, deriving my authority from the recollections of a

*A course of lectures given at the École des Beaux Arts by J. Guadet, Professeur et Membre du Conseil Supériéur à l'École des Beaux Arts.

long career which, I venture to say before you, has never wavered.

After performing this first duty of studying your art as fully and as perfectly as possible, in all its parts,—for everything we teach you is necessary for the architect,—you will, in most cases, be at first the employee of another, even before the completion of your studies. I hardly need to tell you that your work for him must be conscientious; that even at the risk of having your knowledge somewhat exploited you must be his devoted collaborator. But there must be a return for this devotion; keep it well in mind for the time when you will be a "boss" in your turn. The young man, still a student or a student of but yesterday, has learned everything that a school can teach; he still needs the practical stage, the experience which his preparation will enable him to acquire rapidly, but which, of necessity, he still lacks. The time that he gives is, therefore, not simply a means of earning some money; it must be an opportunity for further study. Consequently, if you can choose, go to the man who knows enough to make association with him instructive; earn a little less, if need be, with a skilful artist; avoid the man who would have nothing to teach you.

In our Ecole des Beaux Arts, as I have told you, the instruction is amicable; it is necessary for this amicable instruction to be continued in the stage of the first years of the profession. And be not mistaken—you will not always find it so. Are you skilled in planning and design? You have as yet no experience of the workshop or the cost of building. Then, they will prefer to make use of you in planning and drafting—not for superintending works, making out estimates, or settling accounts; they will make you do what you know already, and not what you might need to practice. It is generally only by chance and indirectly that you will become experienced, unless you have the good fortune to meet a man who combines with his talent the desire to be useful to you, and to reward your devotion by endeavoring to secure for you necessary opportunities. Choose, then, if you can. That is all we can say on this subject;—in fact, this applies to the "boss" rather than to the draftsman. Keep, at least, the advice for the future,—if you have had the good fortune to find a desirable master, you will repay the debt later on to those whom you will employ in your turn. If this good fortune does not fall to you, later on, as you measure your regrets, you can be more liberal with young men than others have been with you.

But, then, supposing your unlucky star, or necessity, has led you to one of those wire-pullers who usurp the title of architect,—who confine all their activity to looking up jobs; who, unfortunately, find them; who have in their office an agency, or rather a kitchen, where they assign to one the task of composing, combining, planning,—very little, alas!—the job picked up; to another, the same for another job; who give the illusion of remarkable activity and extreme diversity in the productions they sign, thanks to the variety of the real authors of them. What is to be done in such a place? There you can be nothing but dupes and accomplices at the same time,—lose your honor, and learn lack of principle in all its forms. Make your escape at once, and do not bring to this kind of work the coöperation of your talent cynically squandered.

Perhaps you will have the good fortune to be connected with work for the Government, for a city, or a great corporation. There, generally speaking, you will be in a good school; somewhat tempted, perhaps, to measure your work by your salary, which will usually be a modest one. That would be a mistake, a wrong calculation. You are useful to your work; but your work is also useful to you. The man who interests himself in everything is rewarded by the value he acquires; and here is what always happens: the hierarchy officially establishes the grades and ranks; but very quickly the one who has deserved to become the chief's right-hand man succeeds, even if he should come after several others on the pay-roll. And this success follows him in his career just as the recollections left at the École among his contemporaries follow him throughout life.

And always remember that the emulation which was at the École the mainspring of your progress remains the law of your whole life. The architect's profession is untrammeled; the diploma that you have obtained is an academic title,—a certificate of serious studies,—nothing more. There lies open to every man the place he merits,—the place which he must first win, and which he must next retain. One can still rise, slowly and with effort; the descent is always rapid.

Now, I will consider you in the performance of your architectural functions, having as your client a corporation or a private individual. In either case the duties will be the same. In the first place, whatever may be the importance of the work entrusted to you, do not balance the amount it will yield with the work it will cost you. You owe it all your talent, all your efforts, all your severity toward yourself. You must satisfy your client—that is taken for granted. But you must above all satisfy yourself; and if you are a true artist that is more difficult. "Twenty times on the loom put back thy work and seek its full perfection."

I have often told you that the general program of the work to be executed does not fall within the architect's domain. Evidently it is the client who should know what he desires, and should seek its realization from the artist of his choice; and the latter, for his part, must insist upon the carrying out of this program. But this rule cannot be absolute. The architect is the counsel of his client, and not merely the man to carry out his wishes. He must therefore enlighten and warn his client; show him, for example, that the lot of ground at his disposal, or the surface that he wishes to give to the building, cannot suffice for everything he would require of it; that all that he wants on the second floor could not be built over what he wants on the ground floor, etc.; and still more frequently, that everything he wants would involve an expenditure far beyond his resources; that, accordingly, he must

make the program more modest, or increase the means. Of course, the architect may in this way lose a contract. While he is making these honorable protests another will appear who will promise everything the client wishes, and more besides; only to struggle, later on, in difficulties from which you will be glad to have escaped. Nevertheless, believe me, that the sincere, logical conviction, affirmed without stubbornness but without weakness, is accepted as authoritative, unless you are dealing with people who wish to be deceived, or appear deceived for some underhand motive;—then, do not be sorry to lose them.

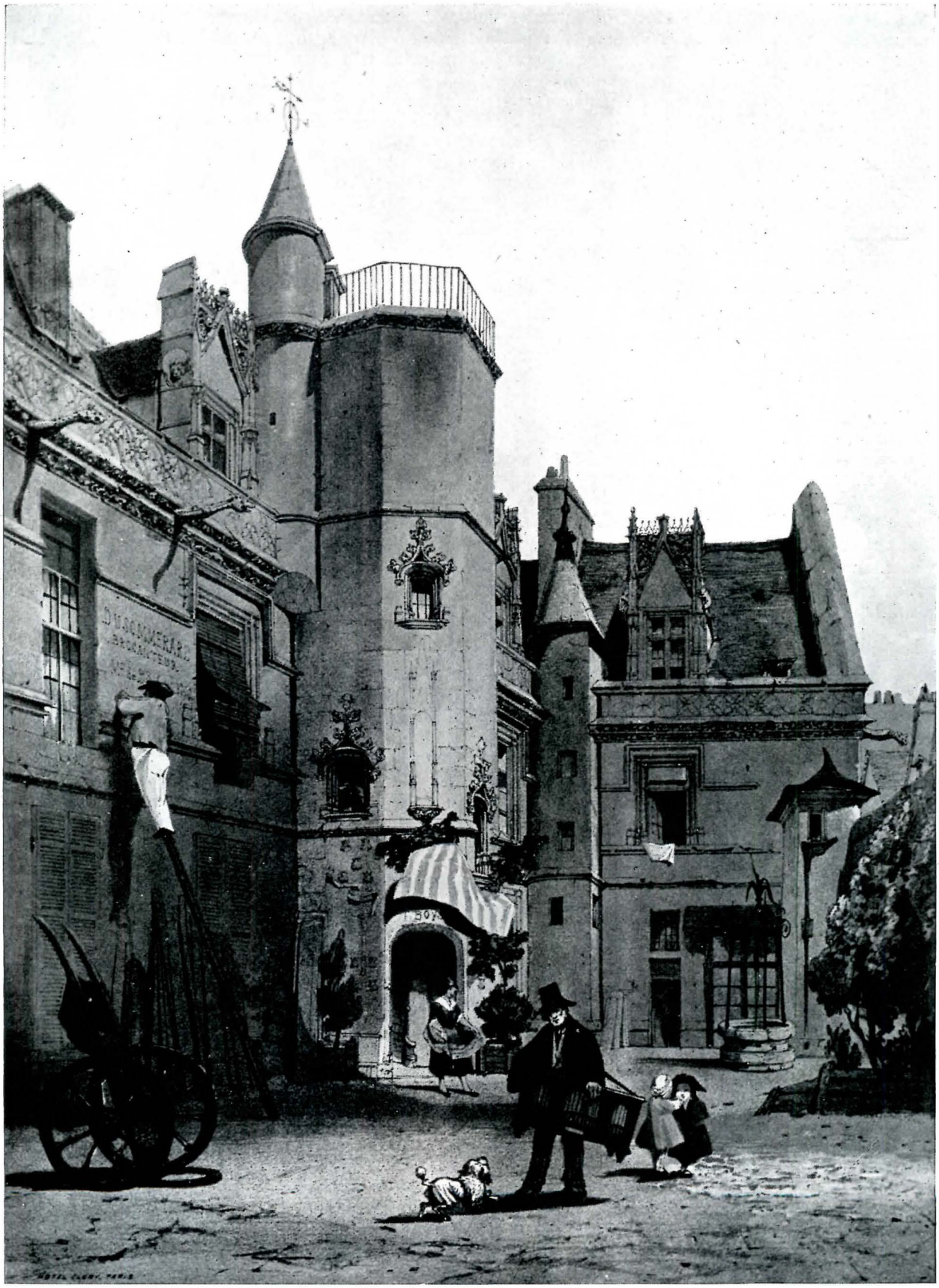
You will be, therefore, in the preparations for every contract, very clear, very frank, and very honorable. I know that architects yield sometimes to the desire to close with a contract, saying to themselves that when the wine is drawn it has to be drunk; that the importance of the work and of the expenditure will be gradually revealed. To reason thus is not a clearly defined crime; it is, however, a real abuse of confidence; it would be permissible only in a conscience of too great latitude and in ethical standards that are too lax.

But if the architect is and ought to be the faithful, devoted representative of his client, he is also the intermediary agent between this client and the contractor. Realize fully the real greatness of this position. On the one hand, a man or a corporation who understands nothing about questions of construction, whose relation toward you is that of a minor to his guardian; on the other hand, men who have to be competent and skilful in these matters, but whose interests are opposed to those of the former. Between the two the architect acts as a kind of conciliatory judge. The balance of his justice must not lean to one side;—he must, as far as lies within his power, assure to each one his due: to the client, the faultless workmanship to which he is entitled; to the contractors, the legitimate remuneration for this work in accordance with the terms of the contract. You will see, as I have seen, clients greatly annoyed, even furious, because their architect, in a contractor's bill, rectified a mistake in calculation; for example,—a comma in the wrong place, reducing to a tenth of the right estimate a piece of work really performed. That is, however, the strict duty of the architect: he may fail to perceive an error, but if he does perceive it, no matter to whose detriment it may be, he must rectify it without dispute. And first of all, he must see to it that the reciprocal obligations are stated in precise terms—a contract carefully prepared has every chance of remaining clearly understood.

The architect, moreover, will be quite often the intermediary agent between his client and neighbors, tenants, and insurance companies; the same principles of fairness must guide him in these various cases. He has interests to defend, of course; but he must not defend them *per fas et nefas*. It would be an insult to expect from him services which his conscience would condemn.

Finally, the architect is also in certain respects the guardian of the workmen employed in the work he is overseeing. To be sure, it is not his place to interfere in disputes about the contract between bosses and workmen. He should be ignorant of the salaries paid; and yet, he can sometimes, by discreet and kindly intervention, place his influence at the service of the necessary agreement. But he ought to watch over the safety of the workmen, sometimes in opposition to themselves and their own imprudence; he must even forbid a method of work that seems to him dangerous,—notably, through an insufficiency of scaffolding or material, and, if necessary, stop the work rather than tolerate imprudence that might be dangerous. There are, as it is, enough inevitable dangers in building.

All this is a delicate matter, and involves a great number of special cases. In this general treatment I have been able to deal only with principles while withholding the applications. But such a work, dealing with details, does exist in a certain measure. The *Société Centrale des Architectes Français* has concentrated in a substantial set of rules the professional duties of the architect; and these have been successively approved and adopted by the various societies of architects existing in France. In drawing up this document they have endeavored to be as far-seeing as possible, sometimes even minute; and the doubtful questions, when any arose, have been preferably settled with a tendency to severity. This collection has two purposes: on the one hand, it reminds architects, if necessary, of the rules to be followed in their duties with regard to themselves, fellow-architects, clients, and other parties; but we must add that in this it makes no innovations, and is nothing more than the statement and record of the habits and ethical standards of all honorable architects. On the other hand, it makes known to clients, corporations, and magistrates the strict duties that we recognize,—the things which can be asked of us, and those which cannot. And the thought which has been kept constantly in mind as it was being framed is that every profession honors itself and gains in consideration when it shows severity toward itself and knows how to reject, through professional dignity, any doubtful action.



CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

HÔTEL CLUNY, PARIS

RUE DU RIVAGE, ABBEVILLE, CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

"PICTURESQUE ARCHITECTURE IN FRANCE"

BEING A SELECTION OF CHROMOLITHOGRAPHS BY THOMAS SHOTTER BOYS, AN ENGLISH DRAFTSMAN OF THE EARLY NINETEENTH CENTURY

By Carl Zigrosser

Illustrations from the Collection of E. Weyhe, New York.

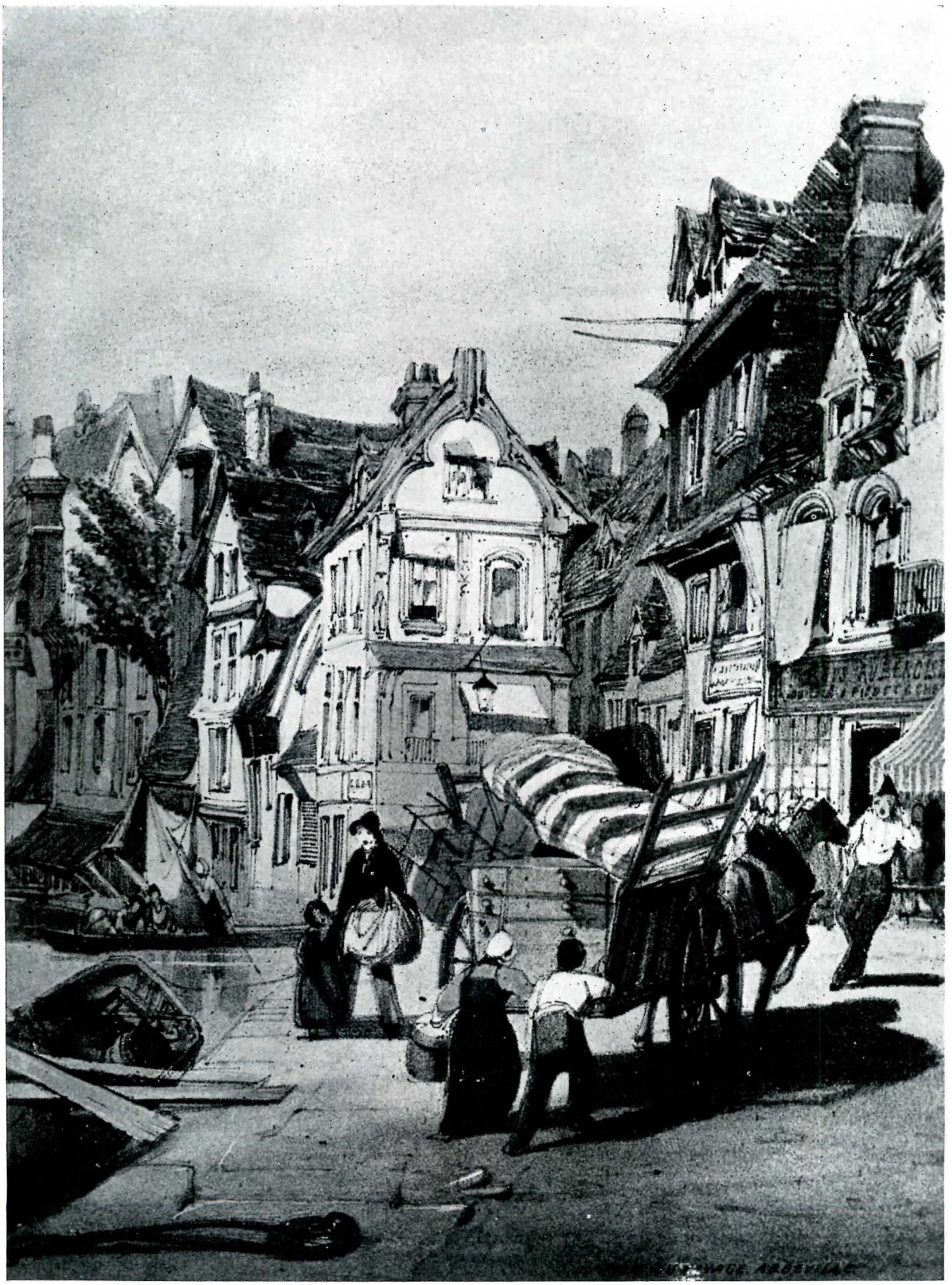
IT IS WITH SOME misgivings that I venture to place before the readers of "Pencil Points" a paper on the chromolithographs made in 1839 by an almost forgotten and until recently ignored architectural draftsman, Thomas Shotter Boys. I am conscious that one may feel that it savours of pedantry to delve into the past when our eyes are on the future. "Why", you will perhaps ask, "should we devote our attention to the works of a nineteenth century artist when there are so many eminent draftsmen of our own day whose work should be better known and appreciated?"

And yet, I think that it is valuable sometimes to look into the past to see what has been done and to note the great difference between the old drawings and what has come to be considered the typical manner of delineating architecture. It has been said that American architects do not hesitate to receive inspiration from the architects of the past, but that draftsmen seem to believe only in the absolute efficacy of the modern Beaux-Arts methods.

Reginald Blomfield, in his book, "Architectural Drawing and Draughtsmen"*, states that "There is no royal road to draftsmanship - - - - and the tendency to concentrate attention on contemporary work to the neglect of the study of the past is peculiarly dangerous in the case of the Arts, because the standard of appreciation, the tests to be applied to the works of living artists, are apt to degenerate through simple ignorance of what has actually been done in the past; and although of course students will note the work of their contemporaries, it is not here that one should search for the touchstone of criticism but in the achievements of men long since dead".

Before the practical development of photography the architectural student who was unable to study a

* *Published by Cassell & Co., London 1912.*



CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

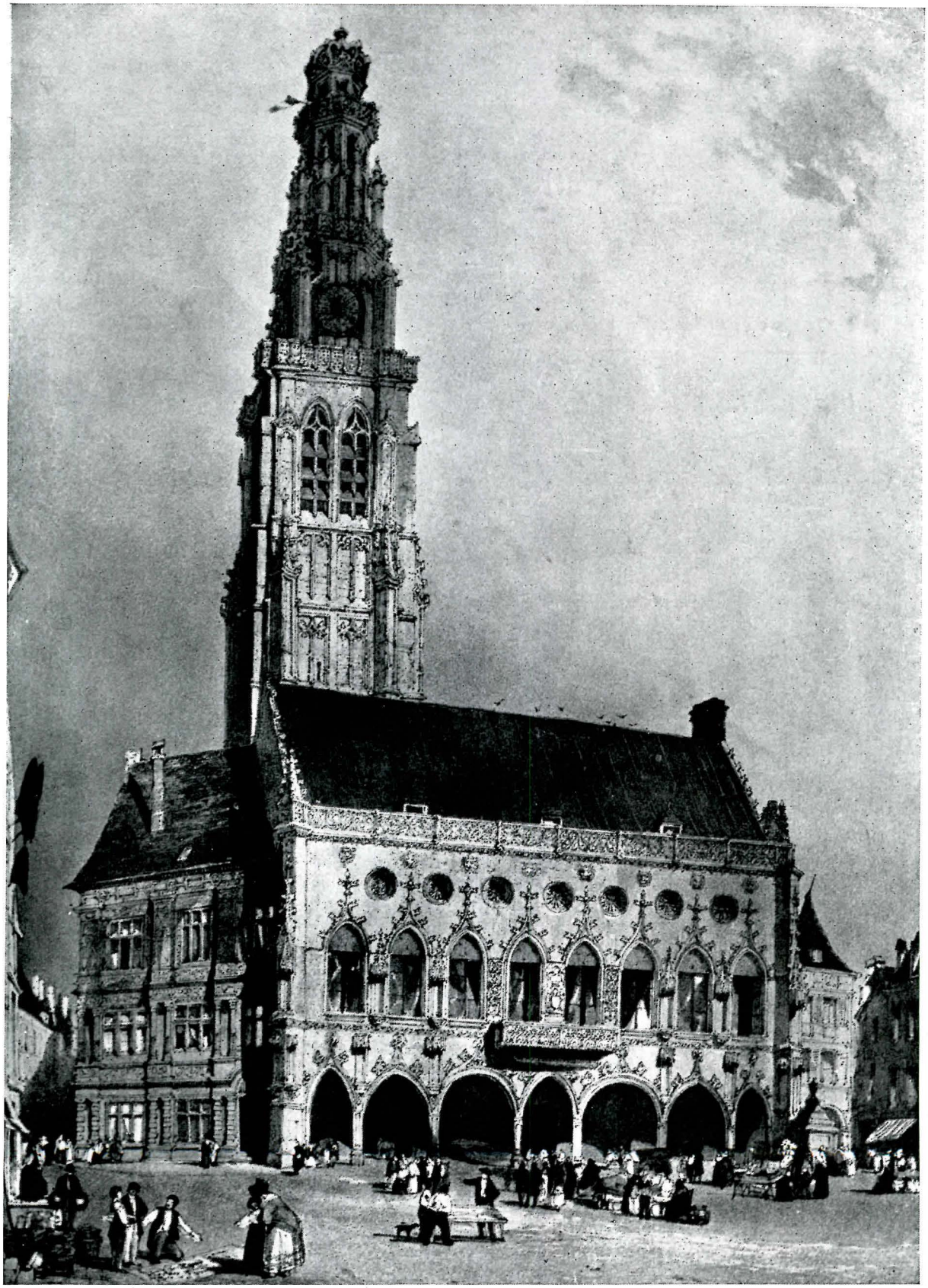
RUE DU RIVAGE, DETAIL AT LARGER THAN ORIGINAL SIZE

CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

L'ABBAYE ST. AMAND, DETAIL AT SIZE OF ORIGINAL

CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

L'ABBAYE ST. AMAND, ROUEN



CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

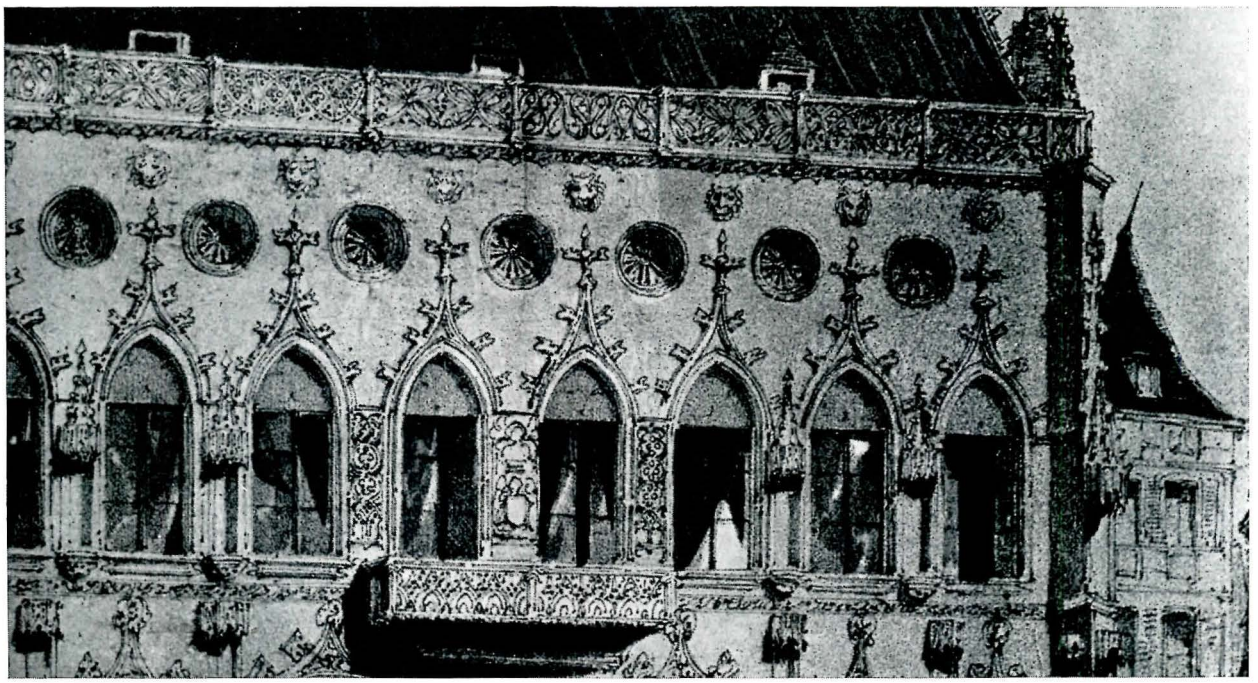
HÔTEL DE VILLE, ARRAS

building *en-situ* was forced to form his impression of the subject from drawings. There was a lack of mechanical means of translating the building into a graphic medium. For this reason many of the drawings of the masters of the past century show a fidelity to the subject and an accuracy of transcription that has been lost or neglected by the modern draftsman. The thing to do today seems to be to concentrate all one's effort upon the delineation, with a sharp point, of the more picturesque bits of old buildings, or to give an impression of the building as viewed in the mood of the beholder rather than to make a drawing of the subject as the architect intended it to appear.

Thomas Shotter Boys did his important work before the advent of the photograph, at a time when process was fully understood as distinct from a means merely of reproducing drawings in quantities.

Nothing much is known of his early life and we do not find that he achieved any great reputation prior to his publication of the volume of plates, "Picturesque Architecture in France",—the work we are considering. We know that he supported himself by copying other men's drawings on the stone and on copper for publication and that he returned to England in 1837 to put upon the stone the sketches and designs of David Roberts and of Stanfield.

The drawings which we have selected are among the first chromolithographs produced which have real artistic merit. It is to be regretted that it is not practical to reproduce these drawings in their original



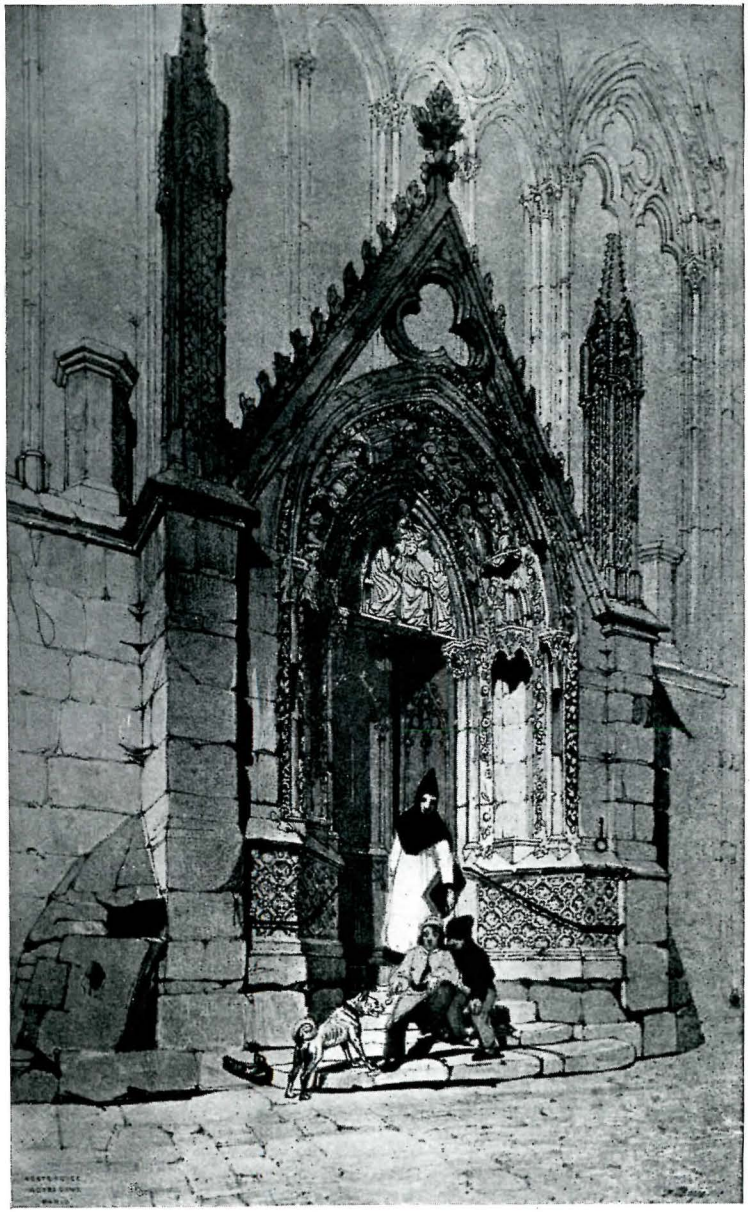
CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

HÔTEL DE VILLE, ARRAS, DETAIL AT SIZE OF ORIGINAL

volumes of "Vistas" and "Views" were in style. He was required to make an accurate portrait of his subjects and to render his drawings so that they should have a documentary and not merely a personal, inherent artistic interest. The building was the thing Boys put upon the lithographic stone, but he developed a scenic quality in his compositions and manipulated the focus of interest in a skillful manner. His drawings seem to be a happy medium between the realistic and the picturesque, where pictorial effect and feeling are added to the documentary facts of the subjects, creating a living and human atmosphere.

Boys was born in England in 1803, a few years after the discovery of lithography by the Bavarian, Aloys Senefelder. He spent the early part of his life in France where lithography had taken a firm root as a graphic medium and the artistic side of the colors, for a great part of their appeal is due to the judicious and sparing use of tints and small masses of solid color—which in the case of Boys' lithographs were conceived and printed in color from several stones. This was not done in many of the so-called "chromolithographs" where the color was painted on after the black and white outline proof was made. Seldom do we find prints from the stone where the color is so clear and so well applied as on those made by Boys.

In continuing to speak of Boys' "drawings" and illustrating our subject by reproductions of the lithographic prints of these drawings, we do so fully recognizing that the only way in which the print differs from the drawings on the stone is in the putting together of the several colors and the obliteration of the traces of working. The artist has complete freedom to work as he chooses in lithog-



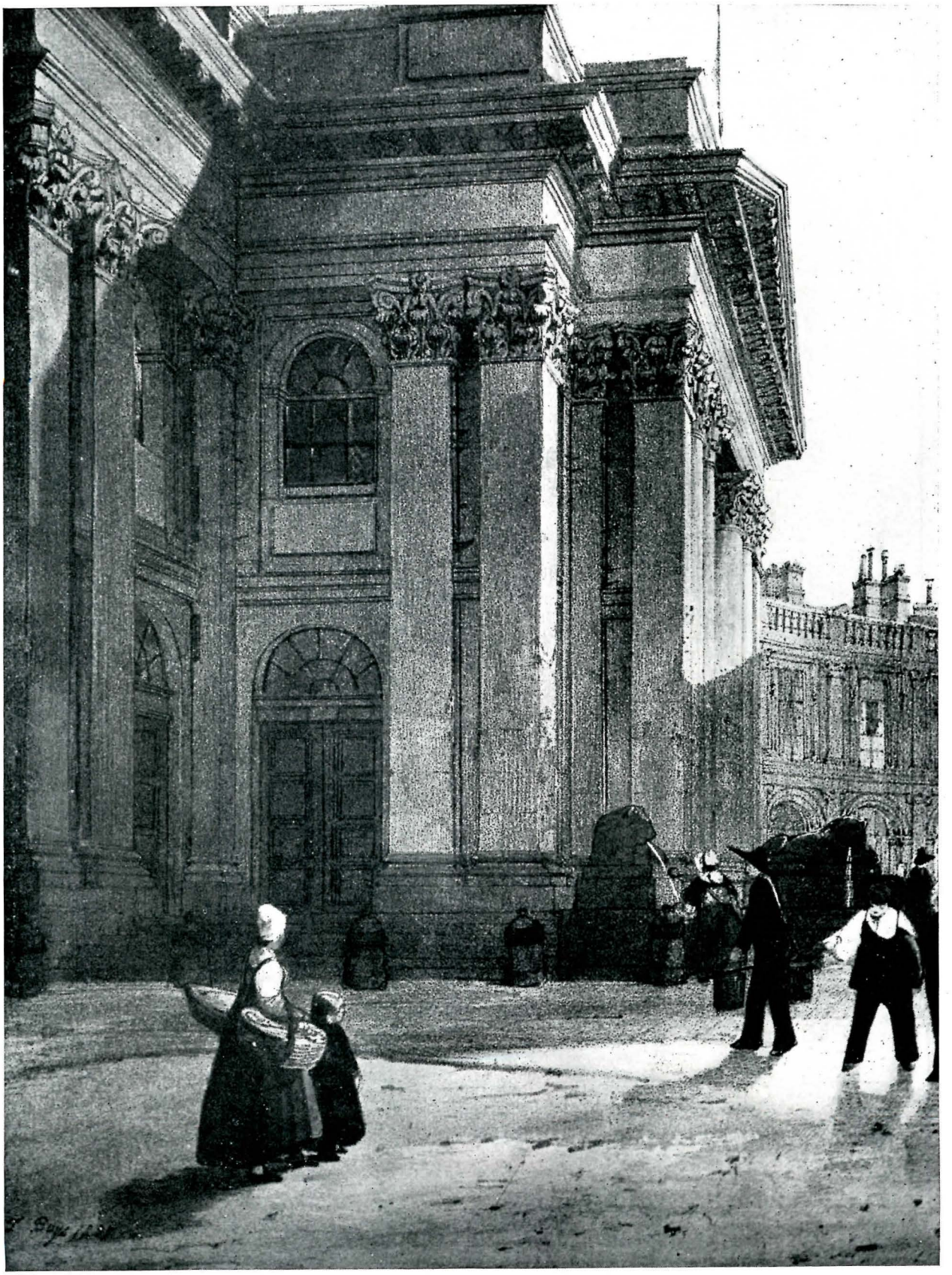
PORTE ROUGE, NOTRE DAME, PARIS

RUE DES MARMOUSETS, PARIS

CHROMOLITHOGRAPHS BY THOMAS SHOTTER BOYS

CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

CHAPELLE DE L'INSTITUT, PARIS



CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

LA CHAPELLE DE L'INSTITUT, DETAIL AT SIZE OF ORIGINAL

CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

PAVILLON DE FLORE, TUILLERIES, PARIS

CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

PAVILLON DE FLORE, TUILLERIES, DETAIL AT SIZE OF ORIGINAL

raphy; because of its nature he can use pen drawing, crayon drawing, wash drawing, or, by scraping and scratching, work from solid color to white.

By using all these at the same time, in one or many colors, a facsimile of his drawings can be obtained—provided, of course, that the printer has the necessary technical expertness. The result is that the products of lithography can be truly seen only as a part of the drawing and design.

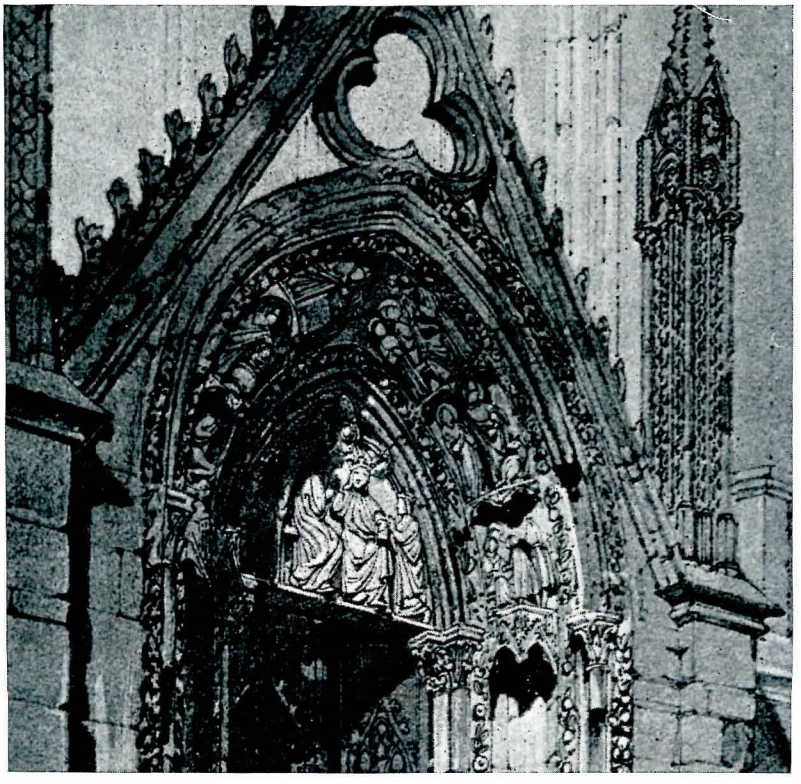
Boys' drawings cannot be said to have any specific lithographic technique of draftsmanship, unless he might be considered to have devoted to his work an amount of labor and time which would have been uncalled for if there had been but one drawing to sell. Boys, in making one elaborate drawing, was enabled to produce many duplicates of it—each of which had a market value.

The outstanding feature of the technique employed by Boys appears to be his remarkable sureness of drawing. No meaningless scratches appear to give evidence that he was in doubt about a line. What his eye transmitted to his hand was put down with accuracy and without hesitation. He may perhaps have made preliminary sketches for the final drawings on the stone, but if he did no evidence of them appears in the finished work.

The assured freedom of hand and lightness of touch in his drawings transmits a true portrait of the subject. His ornament is never slighted—he draws it as it exists. There is informative character in all the details. Some of Boys' drawings show the use of a straight edge for ruling lines. Just how difficult it is to combine free hand lines pleasingly with ruled ones is known to all who have tried the experiment. In Boys' case, however, he seems to get a feeling into the ruled lines that in no way clashes with the freedom of the others.

Boys died in 1874. That his work is not more generally known is not due to lack of merit, but perhaps to the fact that his two works which have the greatest value, "Picturesque Architecture in France," and "London Views," are to be found complete only between the covers of large and heavy volumes in the more progressive public libraries and museums. Occasionally a set of prints or some odd drawings come into the possession of the larger or more discriminating book and print dealers, and when this happens they are usually snapped up by a collector or by a discerning buyer.

If this glimpse of the achievements of Thomas Shotter Boys serves to introduce his work to the draftsmen of today and if, through this acquaintanceship, they are better able to criticize their own work, it will have served its purpose. Every draftsman who has access to the original lithographs of the artists of the past—men of the calibre of Boys, Roberts, Hague, Bonington, Isabey and others of the same period—who devoted the majority of their efforts to the delineation of architectural subjects will find the time well spent if they study the technique of these masters. If they absorb only a sense of the necessity of accurate and sure transcription, they will have added to their talents an element which so many seem to lack.



CHROMOLITHOGRAPH BY THOMAS SHOTTER BOYS

PORTE ROUGE, DETAIL AT ORIGINAL SIZE

STUDYING IN THREE DIMENSIONS

SOME NOTES ON THE USE OF MODELS DURING THE PRELIMINARY STAGES OF DESIGNING A BUILDING

By Maurice Gauthier

THOSE ARCHITECTS who have, of recent years, made use of scale models in the study of their designs must often be tempted to wonder why they never thought of adopting this practice long before. To these men, models have become a necessity, a natural means of searching for solutions to their problems, which offers important advantages over drawings on paper. I am not writing here about presentation models, made after the design has been all worked out on paper. The function of the model in such cases is simply to give to architect, client, and public a more complete idea of the finished building than can be obtained from the rendered elevation and perspectives. Such models are valuable indeed, and have their place. This article, however, is written to advocate an extension of the use of models to cover the preliminary study of the design, at which time ideas are plastic and may be freely and appropriately expressed in a plastic medium.

The several advantages of models for purposes of study are perhaps obvious, but they are soon stated and it may be well to set them down here. To say simply that they show the third dimension is putting it too mildly. What is more important is this: they give to the draftsman a very real and strong sense of that third dimension with which he must be so almightily concerned in designing architecture. "Paper architecture" is thereby made almost an impossibility, for the model cannot fail to bring out pitilessly every awkward angle and clumsy proportion. One model is better than many perspectives, and likely to give a far truer impression of the building, because it eliminates the possibilities of deceptive presentation and trickery, often unintentional, so well known to the skilful draftsman. Another advantage of models lies in the rapidity with which they can be made. This point will be emphasized later in explaining the methods of working.

There are two types of models in common use, those made of cardboard and those of modelling clay or plastelline, from which casts are made in plaster of Paris. The choice of material to be used for the model depends entirely on the size and type of the building. In extremely simple buildings, where the interest is to be obtained only by bands or areas of color, the cardboard model comes forward as a time saver. If, for example, a business corporation such as a firm of tile manufacturers requires a building characteristic of the product in which it is dealing, color becomes the ruling factor of the parti, and cardboard is obviously the thing to use. Again, when it is necessary to show the complete building, interior and exterior, cardboard will be found the logical material. On the other hand, when the important thing is the relationship between the masses, in a building with set-backs or with several distinct divisions, or when there is a large amount of important sculptural ornament, plastelline or modelling clay makes things much easier. Depth of reveals and all recesses from the lot line are easily shown without complicated manipulation and very realistic effects may be obtained in the casts, which may be shellacked and then painted the actual colors of the materials to be used in the finished building. Plastic material is, of course, the thing to use for modelling details at large scale or full size as a guide to the stone cutters or terra cotta men. This work, however, had best be done by an architectural sculptor, under the supervision of the architect.

The technique of constructing cardboard models was made admirably clear by Harvey Wiley Corbett in a series of articles which ran in PENCIL POINTS in 1922, so that it will perhaps be unnecessary to go into further detail here about them. I shall, however, attempt to explain the procedure followed in the office of Dennison and Hirons in making plaster studies of buildings. This I believe I can best do by considering a specific problem.

Let us follow the study of the elevations for the new building of the Liberty Title and Trust Company of Philadelphia. This building is to be built on a rectangular corner plot involving two principal elevations. Different schemes for these elevations are first studied and presented to the clients in the form of $\frac{1}{16}$" scale colored cardboard models similar to those shown in figures 1 and 2. These models are simply and quickly constructed to show the general mass of the building with its setbacks. The windows and entrances are rendered to show reveals, spacing and so on. After conference with the client, one of these schemes is adopted for further development, the first step of which is to make $\frac{1}{16}$" scale models in plastelline of the two most important elevations. This is the way it is done.

On a board there are fastened two pairs of parallel cleats spaced apart at distances equal to the widths of the elevations at $\frac{1}{16}$" scale. If additional elevations were needed an extra pair of cleats would be necessary for each one. The spaces between these cleats are filled in with plastelline to form two slabs of sufficient thickness to allow for the modelling of any setbacks. The arrangement is shown graphically in the isometric sketch, figure 9. Using a T-square and triangle just as in making a drawing on paper, but substituting a needle-pointed tool for the pencil, the elevations are then rapidly drawn. The next step is to cut out the setbacks, and for this a metal plate adjustably attached to a cross bar of wood is used. Reference to the isometric sketch and to figure 10 will show this more clearly than words.

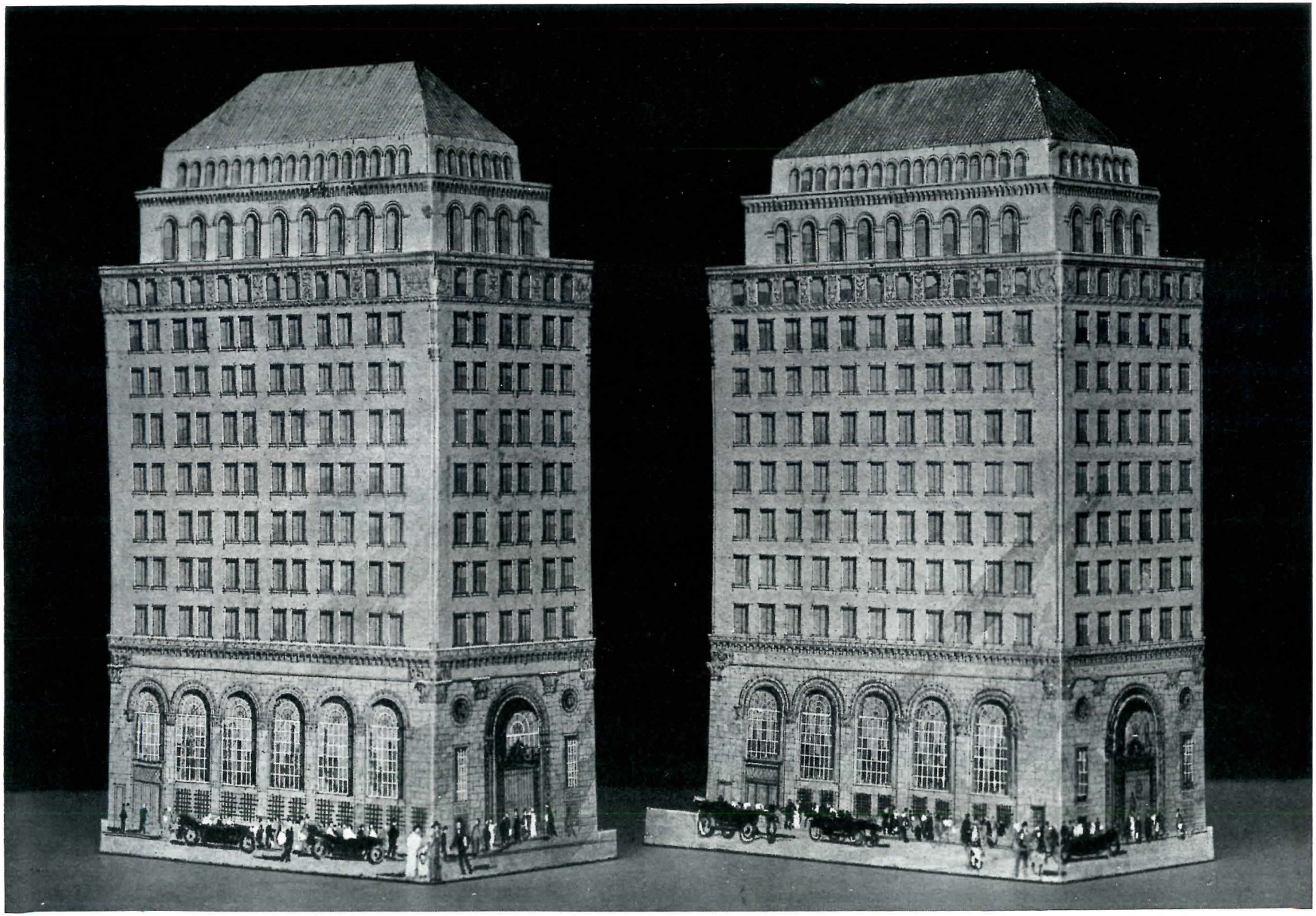


FIG. 1. LIGHT CARDBOARD PRELIMINARY STUDIES FOR BANK BUILDING, COLORED AND SHADOWS CAST

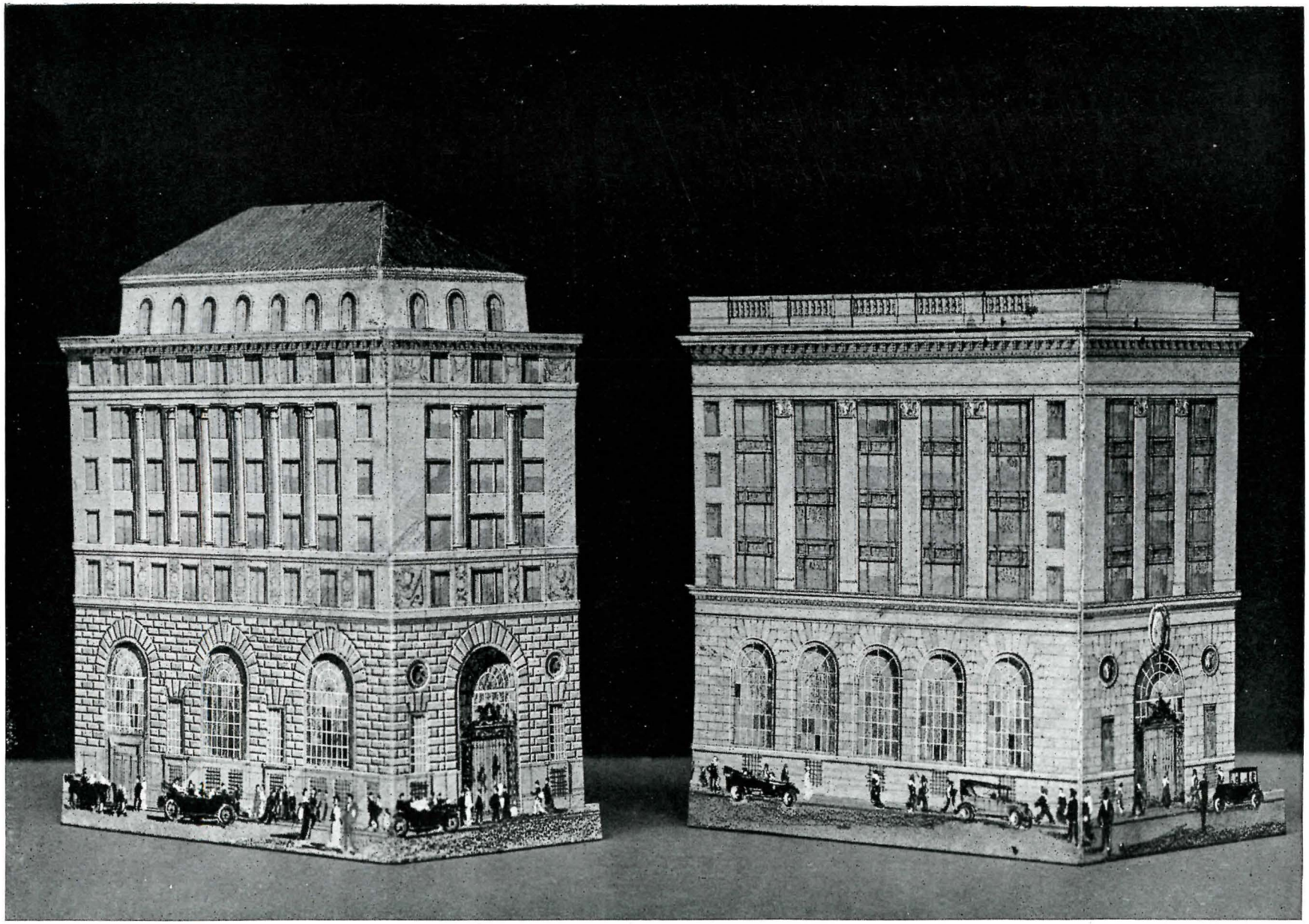


FIG. 2. LIGHT CARDBOARD PRELIMINARY STUDIES FOR BANK BUILDING, COLORED AND SHADOWS CAST

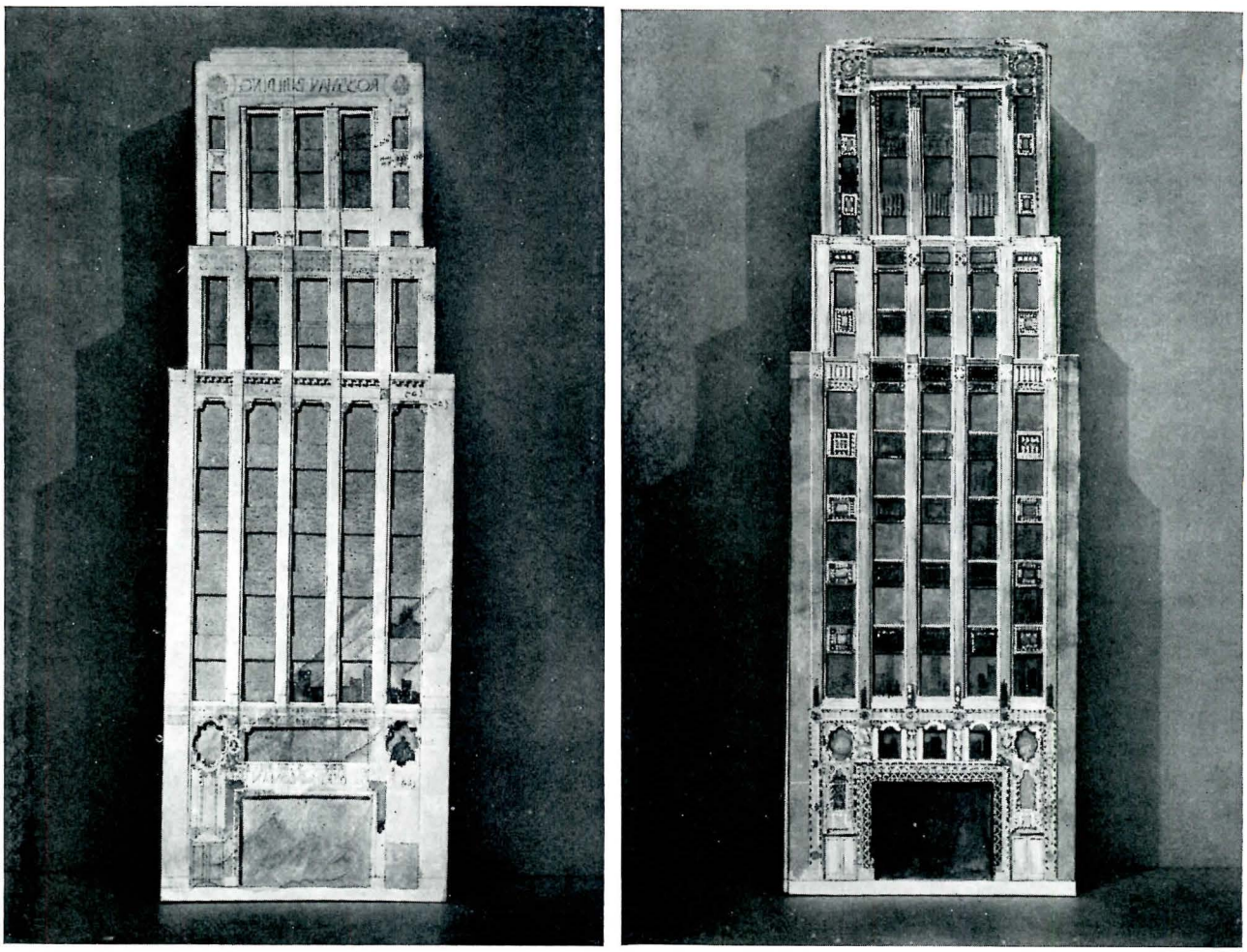


FIG. 3. STUDIES OF BUILDING FOR TILE MANUFACTURERS, MADE OF LIGHT ILLUSTRATION BOARD

By sliding the cross-bar, carrying the plate, along the cleats the excess plastelline is plowed away from the model. If much is to be removed it may be necessary to take it out by stages, but the plate, accurately set, should be used for the final cut. Where there is a setback on one elevation the one at right angles to it must, of course, be carefully made to correspond so that when the two are mitered and assembled in the cast there will be no discrepancies. The setbacks now only require to have their surface detail drawn in, as was done on the main part of the facade, and the building will be blocked out in mass, ready for the modelling of detail.

Those who are acquainted with sculptural modelling will know that the sculptor builds up his design by *adding* his clay or plastelline bit by bit. We, however, will follow the reverse procedure by *taking away,* cutting back from the face of the building for our recesses, window openings, doors, and so on. In doing this we apply our common sense in using modelling tools and contrivances to shorten our labors and bring the work to a conclusion as rapidly as possible. For cutting the long vertical recesses we may use metal plates, specially shaped and mounted on sliding cross-bars in the same way as the large one used for the setbacks. Or we may use a wire cutting-tool clasped tightly against the cross bar which is then slid along the cleats for the required distance. Window openings may be cut out with the wire tools or may, if they are not too deep, be impressed in the clay by means of the end of a stick of wood suitably shaped.

The ingenious man will find that many short-cuts suggest themselves to him as he works along. Pieces of sheet zinc, thin enough to be easily cut, thick enough to have stiffness, will be found useful. By cutting out the profiles of mouldings for the vertical elements in a strip of this material and fastening the strip to the sliding cross-bar, you can run in, with a moment's work, detail that would take hours to model accurately by building up. This same principle can be applied to all mouldings. Ornament is put on last, and as this is a small scale preliminary study it will probably suffice to scratch it on with one of the tools, though if it is sufficiently large it may be better to model it more carefully.

This whole study is made very rapidly, work on the model we are considering, shown in figure 5, having been completed in the office in about six hours. The plastelline elevations were sent to the architectural modeler's studio in the afternoon and several casts from it were delivered next day. The

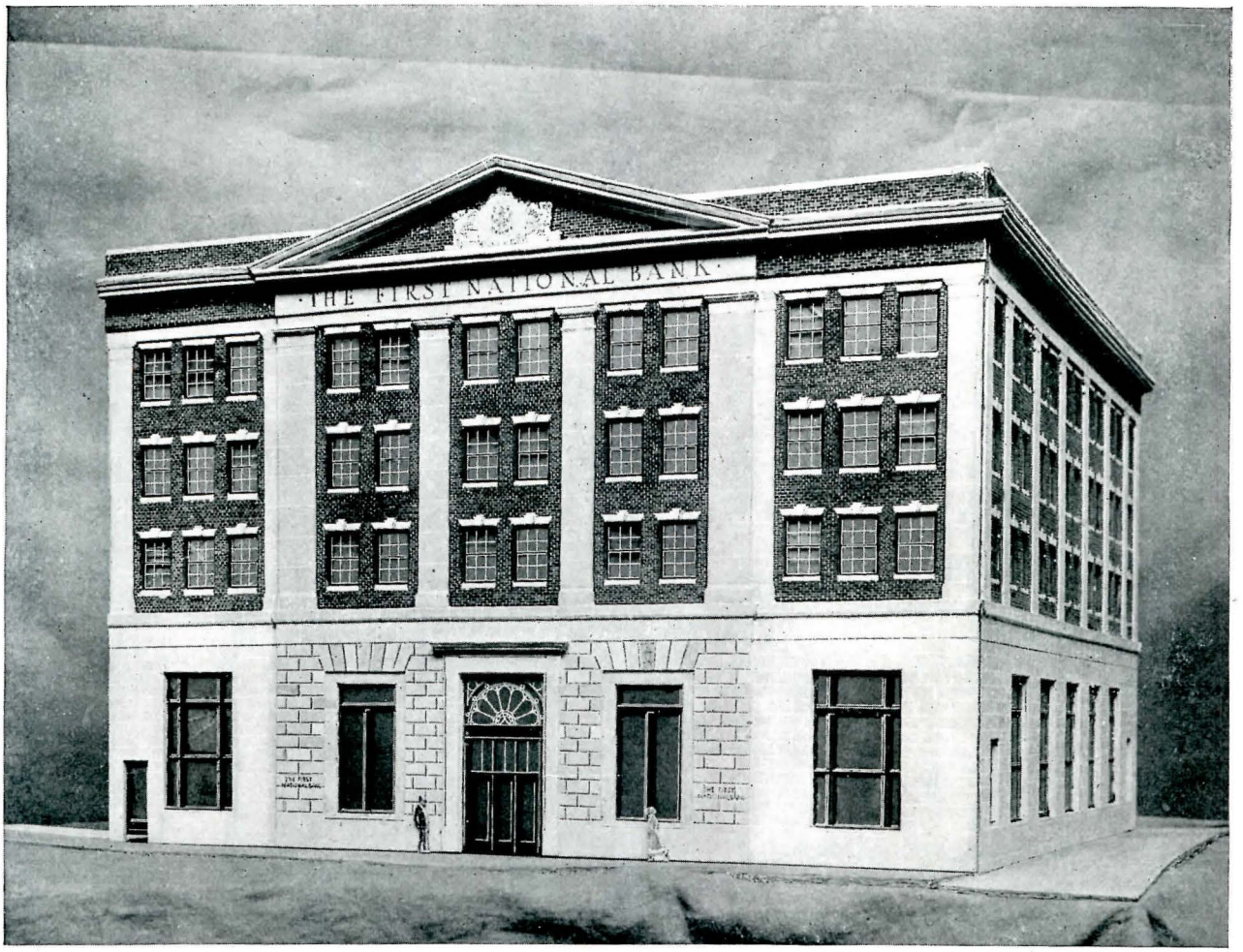


FIG. 4. MODEL OF COMPLETE BUILDING MADE OF HEAVY MOUNTED "WHATMAN"

modeler makes glue moulds from the elevation studies furnished him by the architect, casts the work in plaster of Paris, miters the corners, and fits them together, so that what the architect gets is a cast, or several casts, of the complete building to scale. One of these casts is kept intact as a record while the others are changed, as the design is studied, by cutting or carving the soft plaster, or by making additions with white plastelline. Buttresses or piers are added, others are removed, the roof is lowered, bands of ornament are subdued or increased in importance until a satisfactory mass effect is obtained.

When the general design is fairly well "set," a new model at ⅛″ scale is made (figure 6) just as was done with the smaller size. This, however, is made much more carefully, for the design is at this stage becoming crystallized and the detail is assuming definite form and position. Several casts of this model are obtained and studied and changed until the designer is satisfied with his solution. These casts are painted with tempera as nearly as possible to the exact colors to be used in the finished building. Before applying the color, a coat of shellac is put on; otherwise the paint would not take properly on the absorptive plaster. The color is important because a surprisingly false conception of the scale of the ornament may be given if it is seen only in cold white plaster. The color also brings out clearly the relative emphasis given to the different details. The solution being finally approved by the architect, the corrected cast is sent to the architectural sculptor, who, from it and a few governing dimensions, makes ½″ scale models of the lower and upper portions (figure 7). This he does, of course, under the architect's supervision so that any necessary minor changes can be made as he works. The casts from these final models are brought back to the architect's office where all dimensions of piers, window openings, set-backs, etc., are established for the last time. Working drawings are then made by taking the dimensions directly from the ½″ scale and ⅛″ scale models. It can easily be seen how, through this procedure, the finished building, as far as the exterior is concerned, is made an exact enlargement of the final studied models.

All this has seemed a bit dry in the explaining but the actual working with the clay or plastelline is intensely fascinating. The designer, whoever he may be, cannot help but feel surer of his design when he can see it actually taking form before him

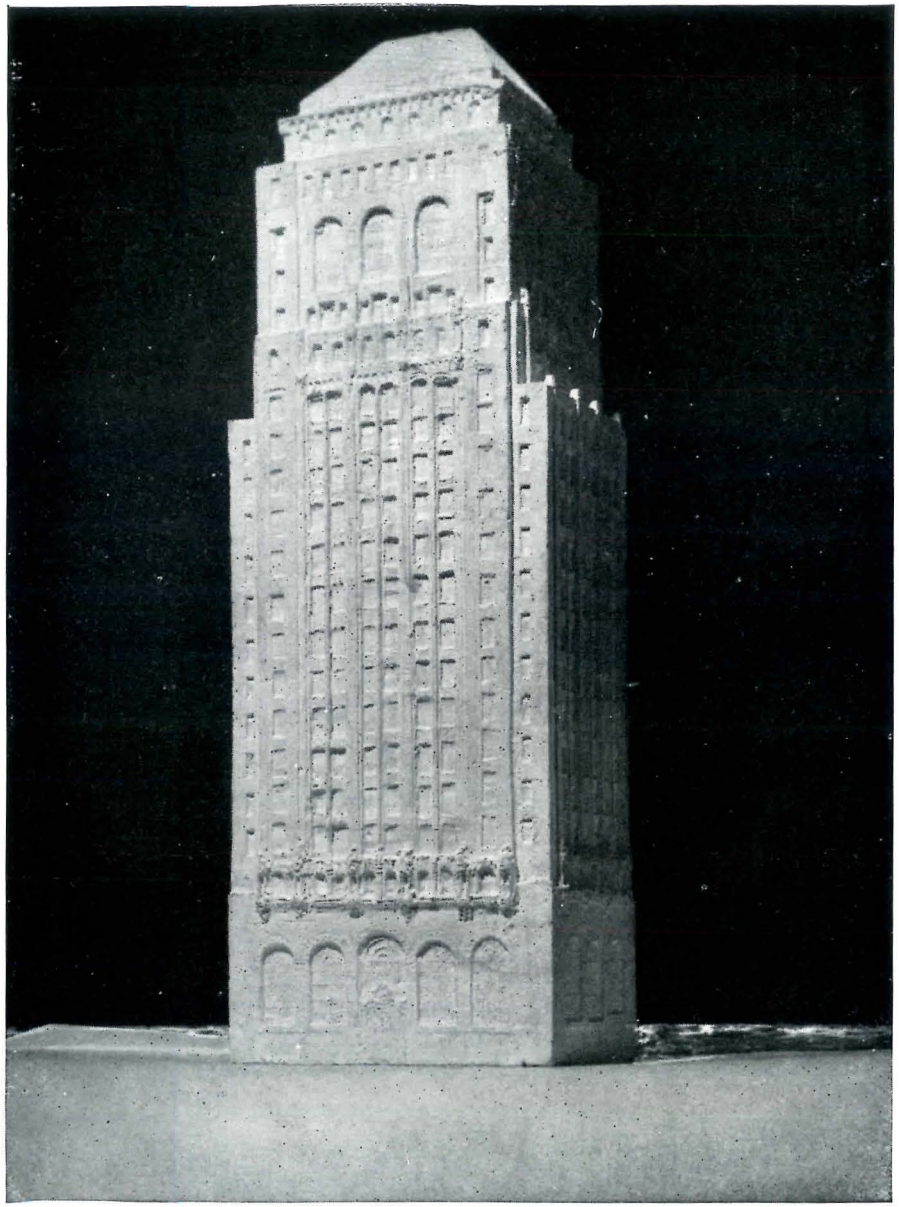


FIG. 5. CAST OF PLASTELLINE STUDY AT SIXTEENTH INCH SCALE

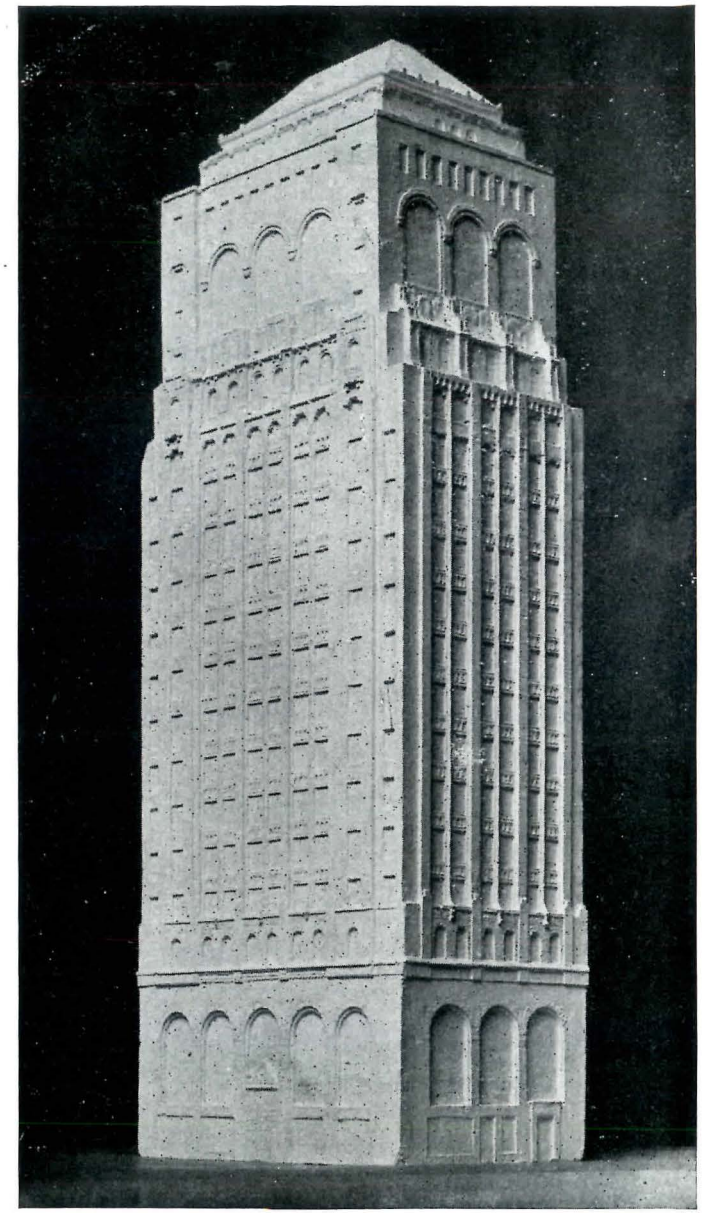


FIG. 6. CAST OF STUDY AT EIGHTH INCH SCALE

LIBERTY TITLE AND TRUST COMPANY BUILDING, PHILADELPHIA, PA.

Dennison and Hirons, Architects

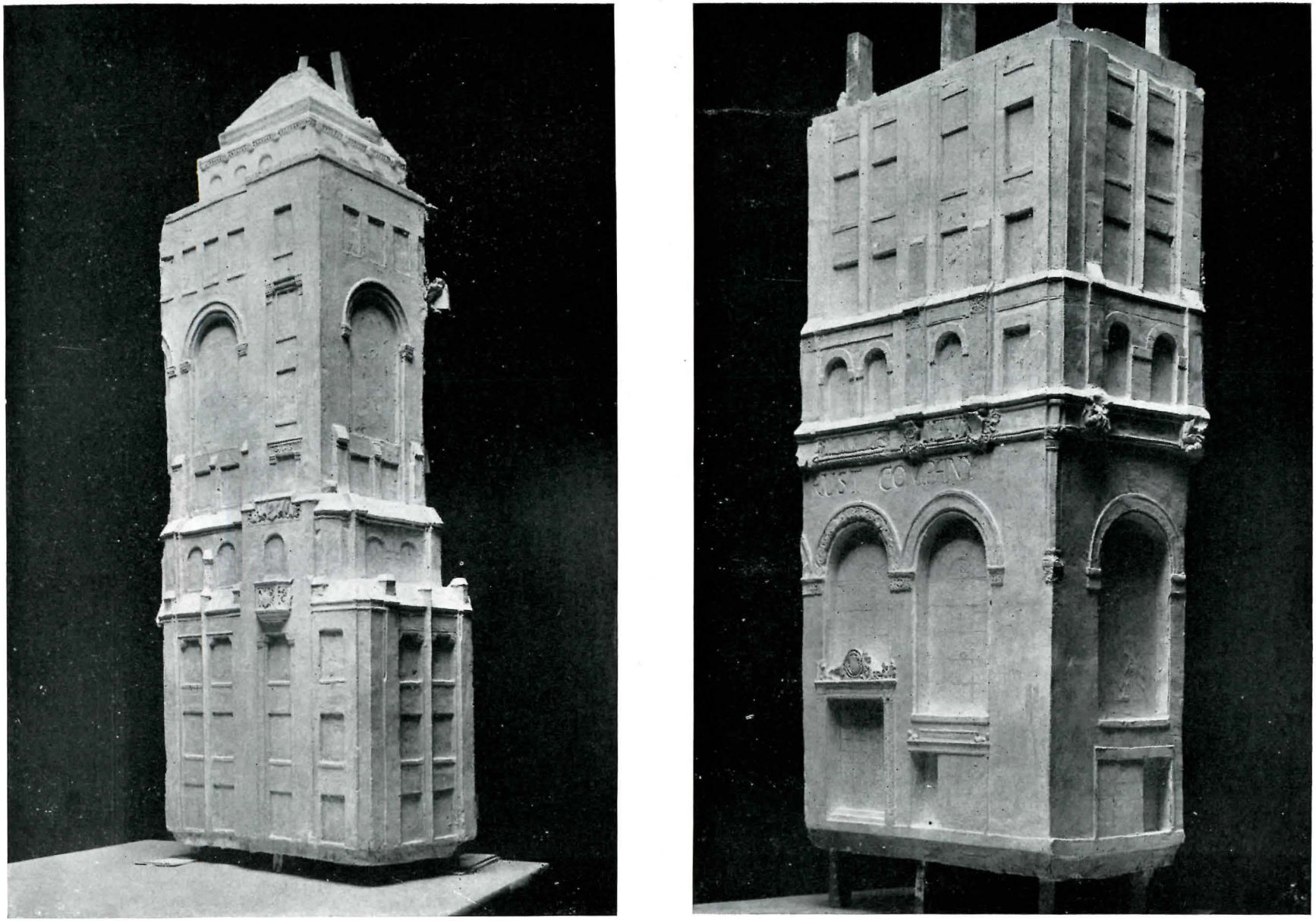


FIG. 7. HALF INCH SCALE MODELS FOR DETAILS OF UPPER AND LOWER STORIES, LIBERTY TITLE AND TRUST COMPANY

Dennison and Hirons, Architects

FIG. 8. PHOTOGRAPH OF QUARTER INCH SCALE MODEL OF BANKING ROOM OF SOCIETY FOR SAVINGS, AT HARTFORD, CONN.
Dennison and Hirons, Architects

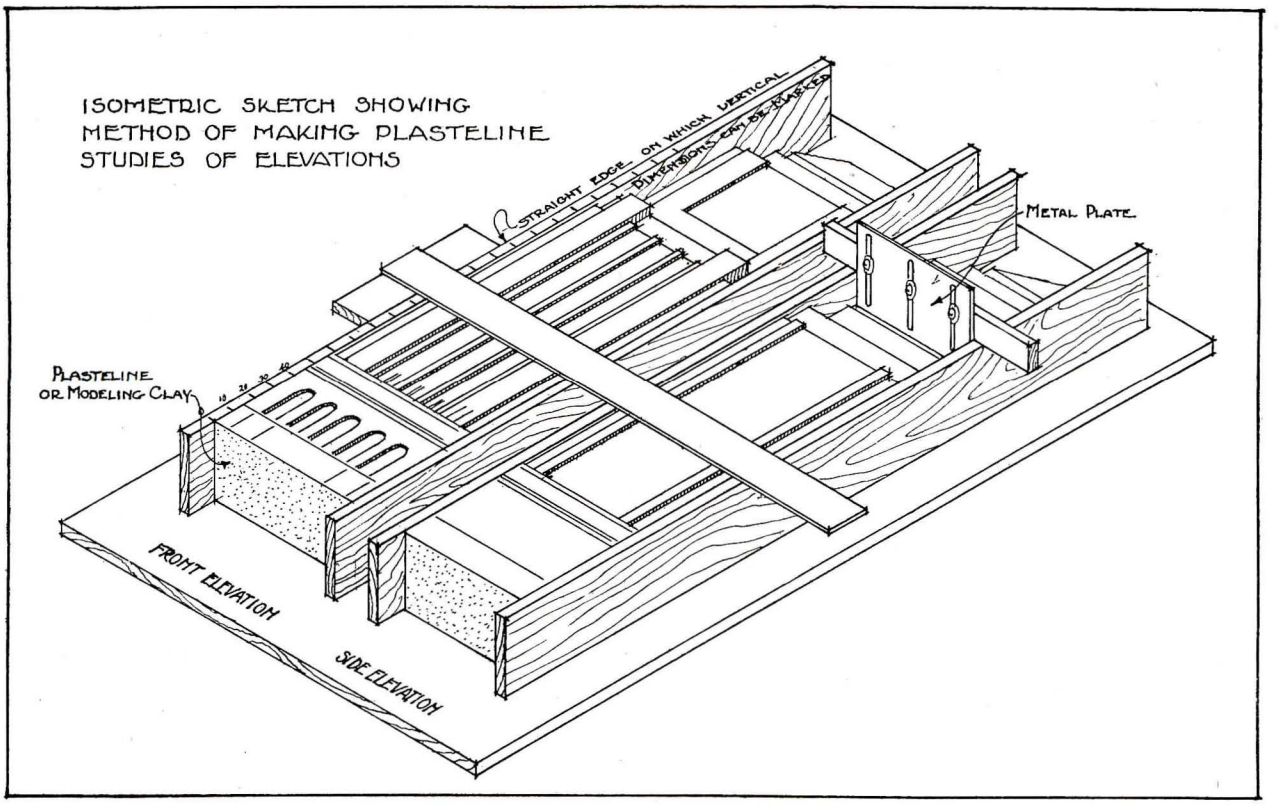


FIG. 9. MODEL IN PROCESS OF LAYING OUT IN PLASTELLINE

in three dimensions, instead of having to visualize it from paper elevations or perspectives. He can walk all about it, viewing it from all angles, and can seek out weak points which otherwise might be missed until the building was built. Altogether, studying a design with models is a most satisfactory way to go about the creation of architecture which shall have grace and solidity.

While I shall not go into details about the making of cardboard models I shall say a few words about their use for study. In figure 3 there are shown photographs of what are apparently two cardboard model sketches of alternate designs for the same building. It is the building for the firm of tile manufacturers mentioned before. There is, however, but one model,—that on the left. Elevations of another suggested design have been drawn on paper, cut out, and applied to the first model to produce what amounts to a second. Other elevation studies can be rapidly drawn and rendered *ad lib.*, and held in position with dabs of paste or by rubber bands. In this way a multitude of designs may be very quickly studied without going to the trouble of turning them all into actual models. At the same time the three dimensional effect is obtained and the designs may be viewed as they would be if actually built.

Figure 4 shows a presentation model of a bank building, very carefully worked out in heavy "mounted Whatman" (which is simply sheets of Whatman's drawing paper mounted on cardboard, the whole being $\frac{1}{4}$" to $\frac{5}{16}$" thick). In this case the architects were dealing with a lay building committee where it would have been difficult to have conveyed a satisfactory idea of the design by means of drawings. For this reason three dimensional expression was resorted to, and the model was made complete, exterior and interior. All floors were accurately laid out and fitted up, so that by removing the roof and successive floors each story could be seen with all partitions, screens, and so on, in place. Window openings were cut out and backed up with glass upon which was painted the sash. In doing this it was found necessary to give the glass first a light coat of shellac so that the color would take. The whole model was painted with tempera color and furnished an almost perfect picture of the completed building.

In figure 8 we see a photograph of a model by Dennison & Hirons of the banking room of the Society for Savings at Hartford, Connecticut. This model at $\frac{1}{4}$" scale was made for the purpose of studying the colors in the ceiling in conjunction with that of the walls. Four different models of the central portion of the ceiling were made so that they could be interchanged. The designs for all of these were the same except in color. A piece of amber glass in the floor of the model allows light to shine up from an electric lamp placed below and so illuminate the room as to produce an amazingly realistic effect when viewed through the entrance doorway. Light is also admitted through the windows which are of glass with painted sash. The floor, walls, and ceilings of this model were made of "mounted What-

man" and painted in tempera. The columns shown are of painted wood with cardboard caps. The screen partitions and ballustrade enclosing the working space were made of glass, painted with opaque color. A more skilful retoucher than the writer might have made this photograph indistinguishable from a photo of the real building, but it is perhaps sufficiently realistic to demonstrate the possibilities of models of this type.

At first the working space in this design reached farther over to the left so that the screen hid the lower portion of both of the columns in the rear and produced an uncertainty in the mind of the observer as to whether or not the columns reached to the floor. This defect in design was made clear by the model and as a result the position of the screen was changed to allow the whole length of one column to show from the entrance door. As a result of this change a small wing was added to the right of the building to provide the necessary additional working space. It is doubtful, however, if the architect could have persuaded the bank officers to allow him to make this addition had he not been able to show them the room in model form. At it was, the model brought out the point beyond question.

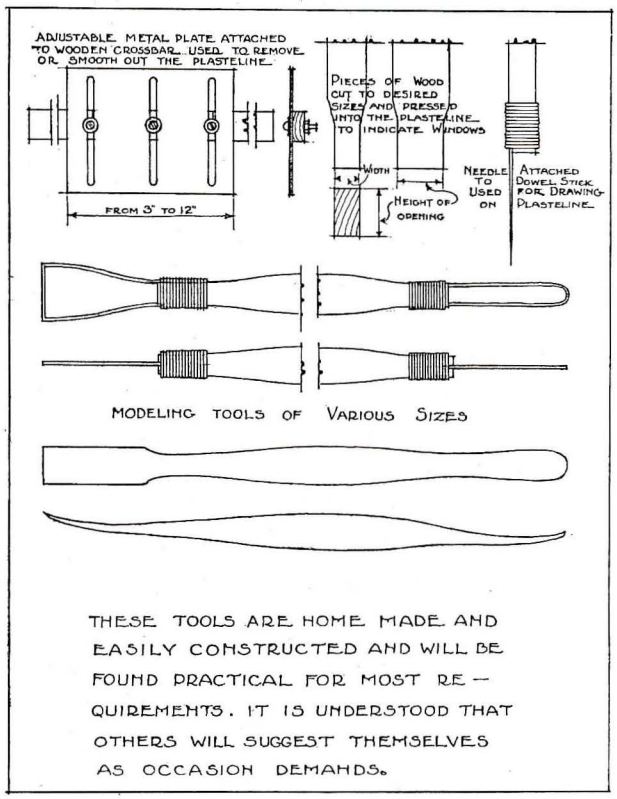


FIG. 10. TOOLS AND ACCESSORIES

The materials necessary for making plastic models are relatively inexpensive. Plastelline can be bought for from forty to sixty cents a pound depending on where and how much you buy. It runs about 22 cubic inches to the pound so that a sufficient amount for ordinary purposes would not cost a great deal. Modelling clay is much cheaper.

Whatever the cost of the plastic material, it is a permanent investment, for the clay or plastelline can be used over and over again for different models. If plastelline is used it is best to buy the Italian variety made by Giudice, which keeps uniform in texture and plasticity over a long period of time. American-made plastelline is a little cheaper but is affected by heat and cold and becomes uneven in consistency as it ages. A sculptor friend tells me that he has modelled a piece of sculpture in Italian plastelline and laid it aside for several years, and that upon resuming work on it the material was just as soft and even textured as when it was new. Most dealers in drawing materials either carry plastelline in stock or can obtain it on short notice. Clay can be bought through dealers in artists' supplies or through terra cotta makers. The board upon which the work is done, together with an assortment of cleats of various dimensions may be made up in almost no time by a carpenter, even an amateur one. The various modelling tools and appliances are surely not beyond the powers of the ordinary draftsman to make. Indeed the man who is to use them, knowing just how they are to be employed, is better qualified than anyone else to make them to suit in special needs.

The services of the architectural sculptor who makes the casts contribute, of course, a more expensive item. This varies with different localities and in accordance with the extent of the work. Every town does not boast of an architectural sculptor, to be sure, and in the absence of such a man it would be difficult to carry out the making of models as described. In cities, however, there should be no difficulty in finding the right sort of a man to work with.

No matter how intricate the design may be, a simple way can be formed to study it in the model. The method used may not necessarily be any of those suggested in this article, but there is no doubt that through models the draftsman can save himself endless hours of worry over drawings which are in two dimensions and which by their nature can give only an inadequate conception of the form or projection of ornament. And in familiarizing himself with the process of making models, the draftsman acquires another tool of his trade which will serve him well if intelligently applied. Let me repeat that by studying his designs carefully in three dimensions, the designer cannot fail to make his finished buildings correspond more closely with his intentions. Models of some sort are the logical means to this highly desirable end.

WROUGHT IRON PRECEDENT, II

By Gerald K. Geerlings

(Editor's note: An article in the June issue introduced a series on the subject of Wrought Iron. In this installment are discussed the chief characteristics of the material considered as an architectural adjunct, and the forms which are best suited to its use.)

WE HAVE NEVER SEEN any draftsman come strolling into the office sporting a morning coat and top hat; neither have we seen a worshipper go down the aisle of St. John the Divine enclosed in a smudgy drafting-room smock. That is probably because both draftsmen and Sunday church-goers know better. But—

We have seen wrought iron used like a cast repeating motif in a running frieze, an impropriety which would make even a plumber inwardly remark that labor must have been cheap. We have seen a setting, in which every element was as prim as a Dutch tulip-bed, marred by a playful piece of wrought iron, whose humor was there introduced with about as much appropriateness as could be achieved by planting poison ivy in aforesaid tulip bed. We have also seen cast metal work, sleek, delicately refined as to detail, and superbly finished, yet utterly out of place amid informal surroundings where texture ran riot and rakishness was rampant.

From which it may be deduced, geometrically or otherwise, that the effect produced by drafting-room smocks in St. John the Divine is not so very different from that achieved by decorative wrought iron in a classical Grecian atmosphere, and that a morning coat, further dignified by a top hat, worn in a drafting-room, is not incomparable to a prim and proper bronze casting set in a happy-go-lucky design full of imagination and texture.

And so, that leads us to a critical examination into the niceties of conduct, and a cataloging of the places where the smock may be suitably worn and the morning coat becomingly displayed. We must also consider what effect each, in its proper environment, can hope to attain and how it may most simply do so.

The keynote of wrought iron is frankness—good work never resorts to hidden devices. There are no concealed rivets, no mean subterfuges. Parts to be assembled are openly joined. The joining may be accomplished by means of bands as in the grilles illustrated in the previous issue or those accompanying this; for example the one from the Collegio di San Isidoro or the one in the loggia of the Casa del Conde de Toledo. A second device for joining parts together is to split one member so that it may receive another which is thrust through it. This practice is illustrated in figures 1 and 2. It is the principle of the so-called "basket-grille," which has, as a rule, its horizontal members wide but not thick, so as to be the more readily pierced to receive the verticals. In the case of the basket-grille the top and bottom members, as well as the sides, are usually turned into the jamb opening. That solves the termination problem, but where the top and bottom members form rails, as in figures 1 and 3, the rails in question are generally pierced and the vertical members are forced through just far enough to allow their ends to be hammered over slightly, which really amounts to riveting them in place while hot.

FIGURE 1
WINDOW GRILLE IN FIRST FLOOR LOGGIA OF THE CASA DEL CONDE DE TOLEDO

Width of grille 3'9": height of verticals 4'1¼": frieze at top 6" high: cresting 22" high: projection from wall 10". Vertical bars ⅝" square and untwisted. Same for intermediate horizontal bars. End bars 1⅝" bt. ⅞". Top and bottom bars 1⅝" bt. ⅝".
(Photo by G. K. G.)

The grilles shown in figures 1 and 2, in common with many other wrought iron grilles, have one series of bars, either vertical or horizontal, pierced by another series at right angles. Executed in a cast material this would, of course, involve complications in the making of moulds. In wrought iron

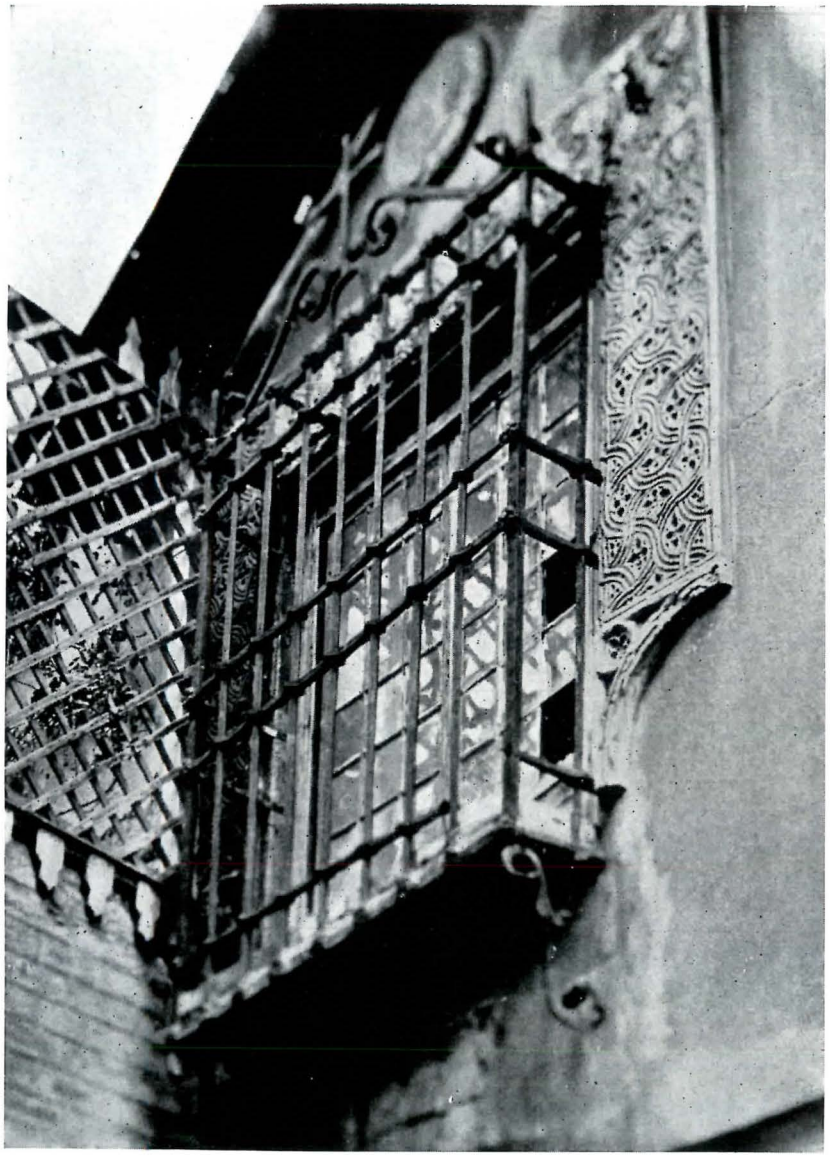


Photo by G. K. G.

FIGURE 2

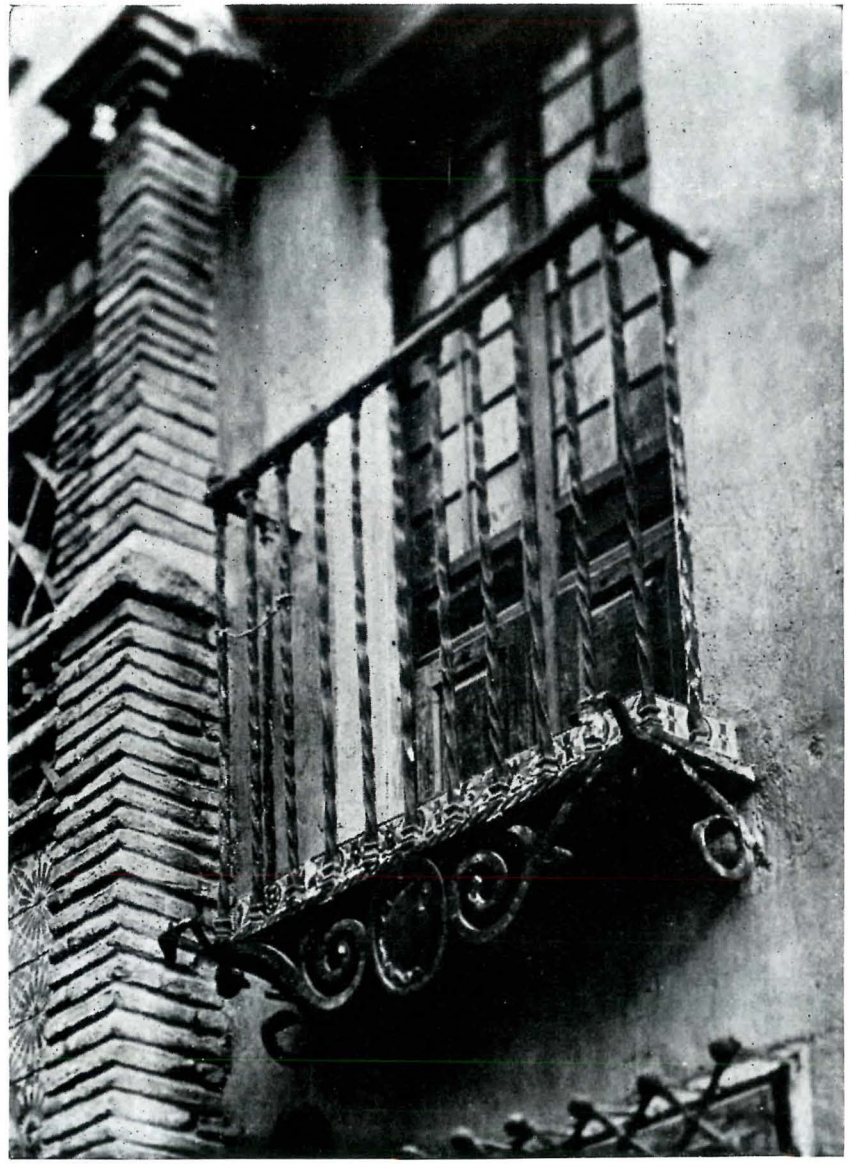


Photo by G. K. G.

FIGURE 3

WROUGHT IRON WINDOW GRILLE AND BALCONY ON STREET FACADE OF CASA DEL CONDE DE TOLEDO, TOLEDO, SPAIN

it is a simple matter to heat the bar which is to be pierced and to punch it through by means of a tapered punch or hot-chisel struck by a hammer. As the punch is driven through, the hole is opened up to its finished size, and the sides of the bar swell out in the manner so characteristic of wrought iron. A glance at figures 1 and 2 will serve to clarify this point.

Structural members of a grille, as well as good-sized units of an ornamental feature, are often united by banding them together or by running one bar through another. But when the two parts to be connected are relatively small, as in the quatrefoil typical of the Italian grille, or in an ornamental feature such as a leaf, then it is a common as well as an accredited practice to employ welding. An example of this treatment is to be seen in figure 6, showing a detail of the well-head of the Bruck creation. Many of the fish-heads and leaf forms such as occur here would scarcely be possible but for the introduction of the welding method.

The old wrought iron craftsmen seemed possessed of a certain humility complex which at times made them appear conscious that a junction of several parts was not as orthodox as it might have been, although at other times irregularities seemed to amuse rather than annoy them. At all events many of the old grilles vary their regular and geometric conduct by sporting an occasional rosebud of ornament or a leaf at the intersection of engaging members. Where time has not been too respectful of quality, some of these beautifications and refinements have disappeared without damaging the structural health of the grille. But in listing the manners and means of constructing a wrought iron grille the ornamental rosette or leaf at the crossing of the ways deserves at least passing mention.

One of the many appeals which wrought iron should make to the modern architect and small-pursed client is that the finished product depends almost entirely upon structural members for its beauty. There are no electioneering quantities of oratorical gestures used simply for effect. Just as grilles are meant to keep people in or keep them out, to allow them to stand on balconies, or to do whatever is specified in the most practical and business-like way, —so in the same straightforward manner vertical rods meet horizontal ones and dive through them, following as direct and simple a course as possible; that is all there is to it. Top and bottom rails are invariably simplicity itself. What is best sense and economy is best wrought iron structure. Tricky and complicated construction cannot be close chums of the anvil.

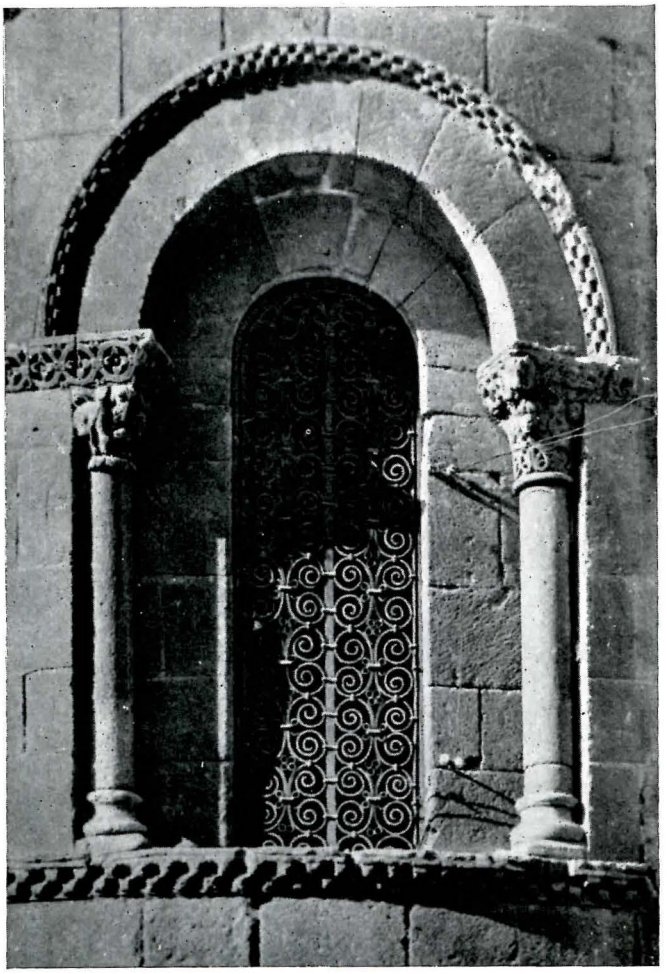
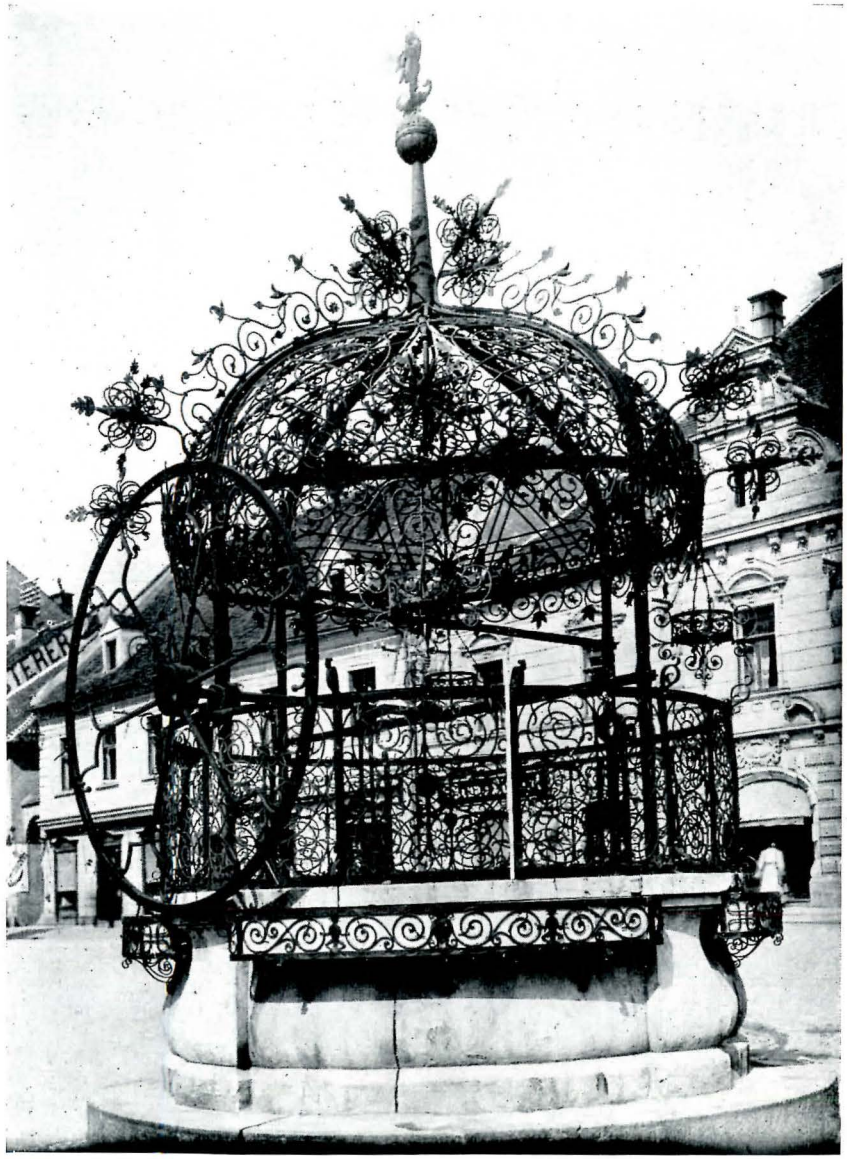


FIGURE 4
COLLEGIO DI SAN ISIDORO, LEON, SPAIN
Detail of wrought iron window grille in apse. Approximate width 2'3½". (Photo by G. K. G.)

In the examples of old iron work already illustrated and in those to come, it is of interest to notice the almost elementary means of constructing the grilles or whatever the subject may be. In every case, one critically inclined would inwardly remark that fewer members could hardly have been combined to attain an equal effect. Each is simple, and therefore good iron work. It is the badge of merit of the present day iron craftsman to build up his designs similarly. With the growing popularity of the material there are too many contemporary examples where the basic construction has suffered through the designer's lack of acquaintance with the old classics. The old grilles all look as if they were designed for iron, not wood. Plates are no heavier than is necessary. Rods do not pretend to be balusters. There is contrast between heavy and light members for the sake of variety and good design to be sure, but in no case do the members even approach clumsiness.

There are wide differences between the arrangement of structural members in designs peculiar to different countries, as is shown by a comparison of the Italian all-over design laid out in rectangular panels, in contrast with the Spanish type with its favoritism for a series of pleasant varied verticals. That, however, is a separate subject better con-



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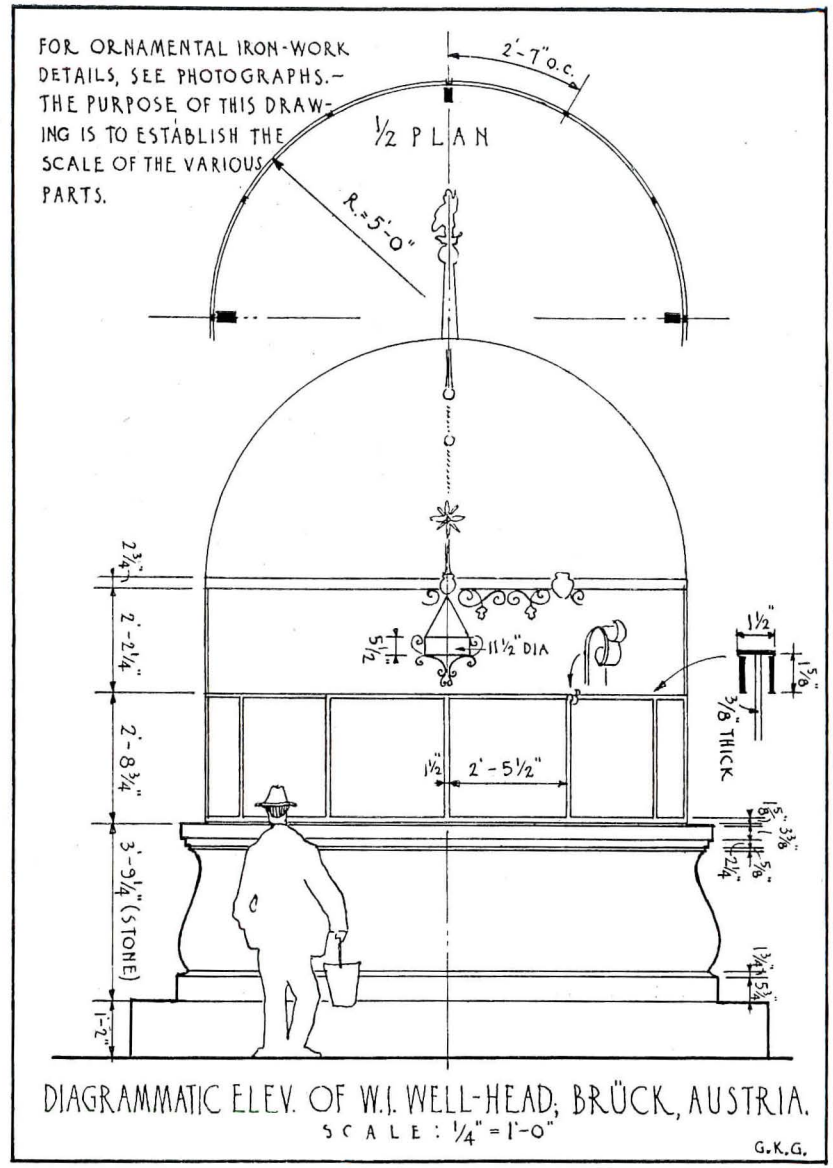


FIGURE 5.

GENERAL VIEW AND DIAGRAMMATIC ELEVATION OF THE WROUGHT IRON FOUNTAIN HEAD, BRUCK, AUSTRIA

This fanciful design in itself would be of doubtful inspiration for modern work, but its details are suggestive of practical application as in crestings, all-over design and so forth.

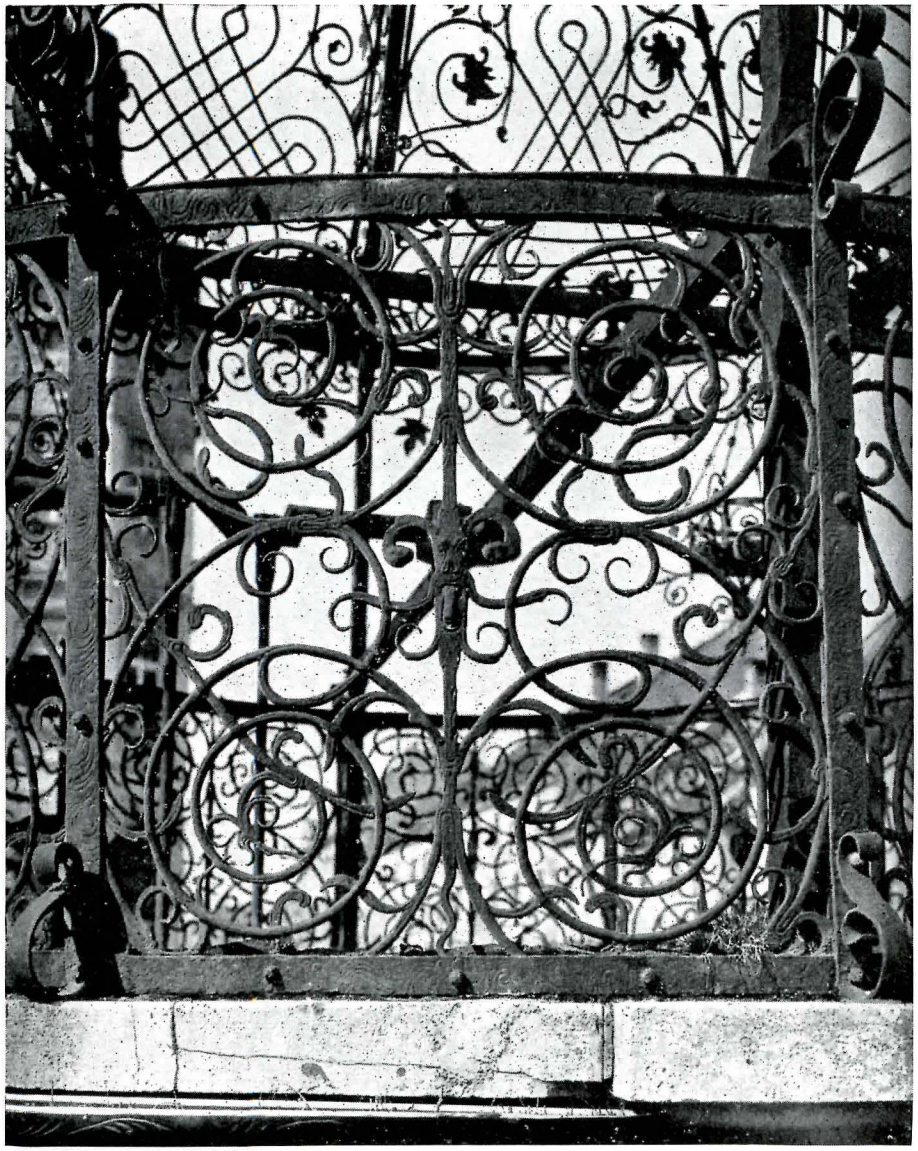


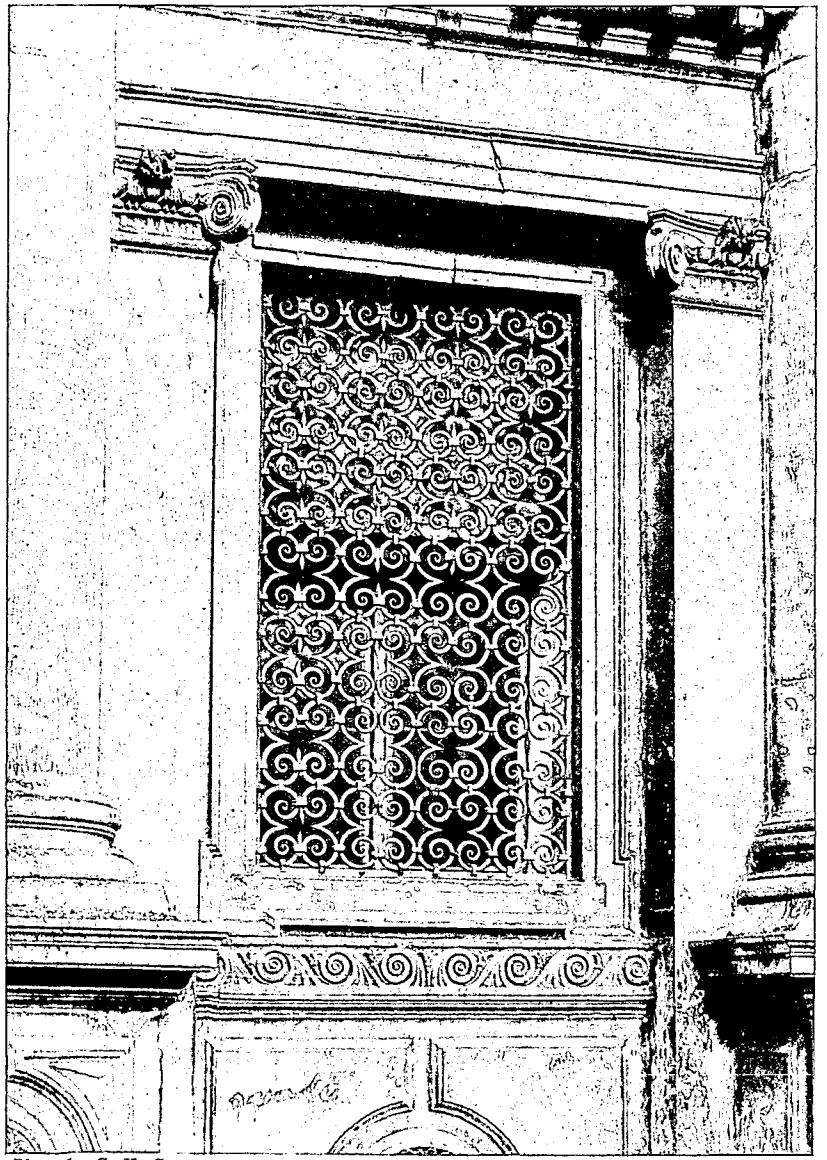
Photo by G. K. G.

Photo by G. K. G.

FIGURE 6

DETAILS OF FOUNTAIN HEAD AT BRUCK, AUSTRIA, SHOWN ON OPPOSITE PAGE

At the left is one of the twelve different panels around the bottom; at the right is one of the terminal crestings and lighting fixtures.



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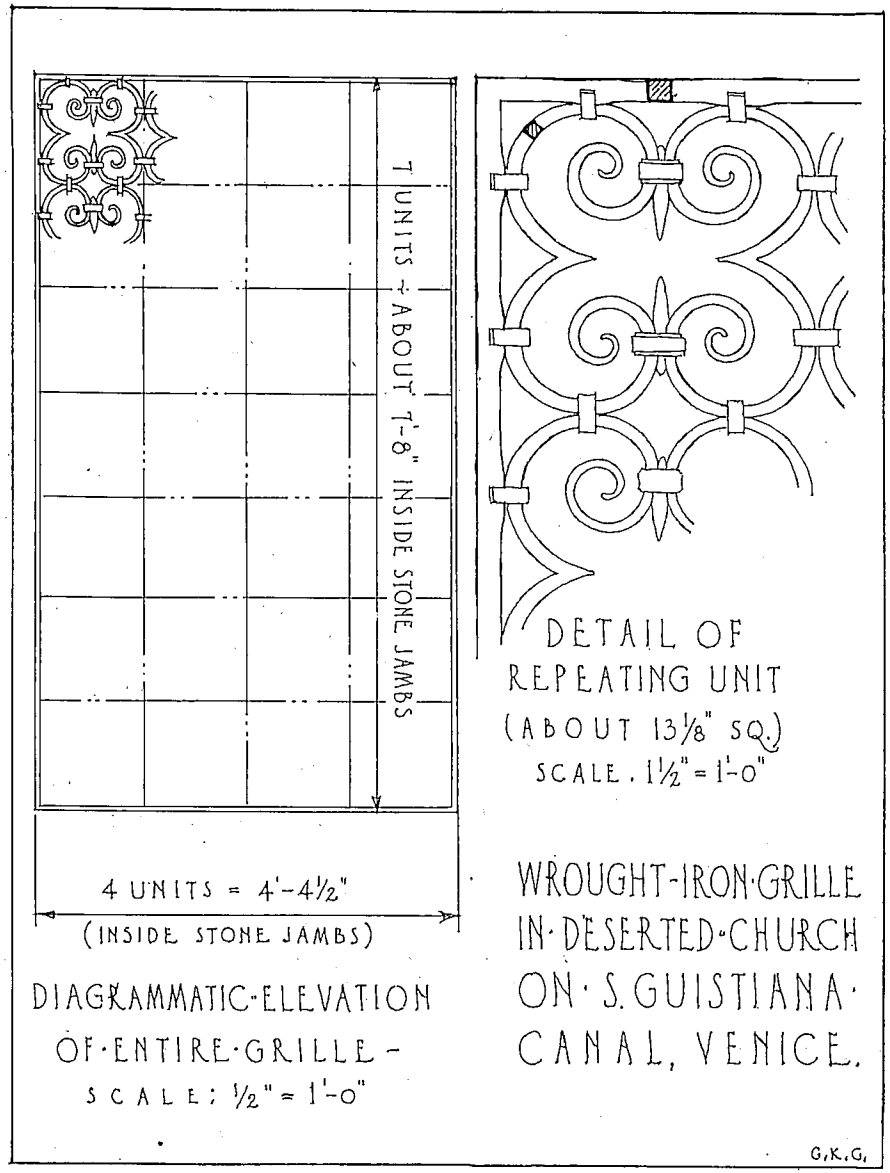


FIGURE 7

WROUGHT IRON WINDOW GRILLE IN DESERTED CHURCH ON S. GUISTIANA CANAL, VENICE.

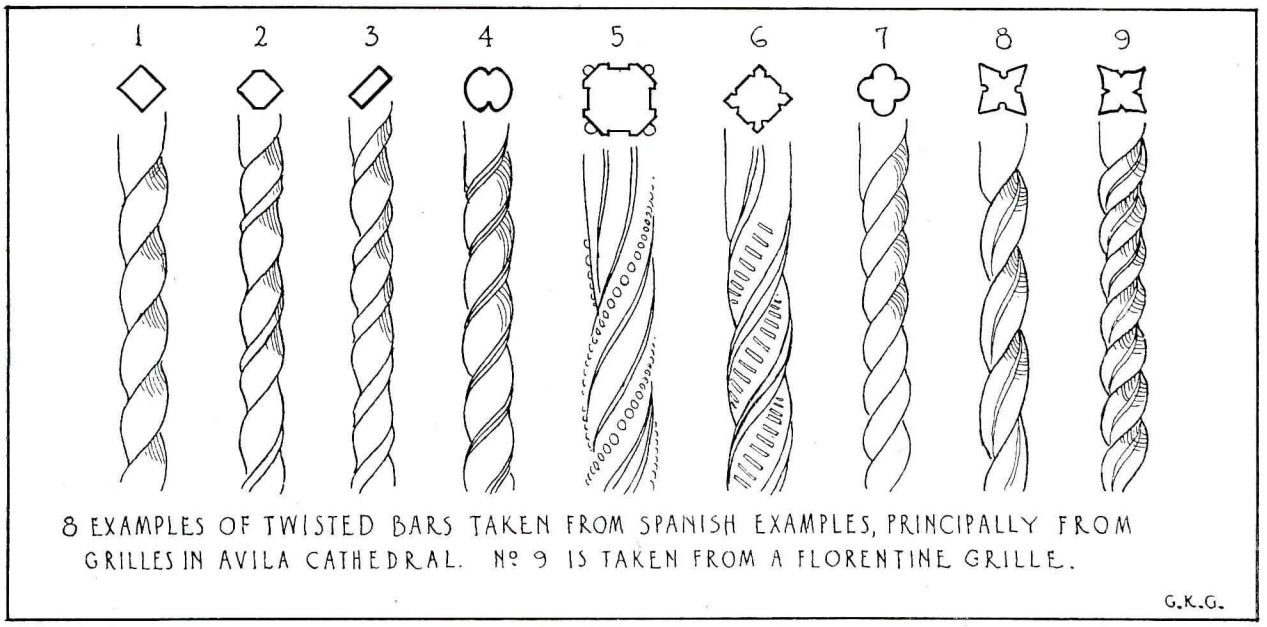


FIGURE 8

sidered under the title of "Iron Design." At the moment we are more concerned in noticing that in all good iron work, regardless of national origin, a similarity exists as already pointed out: members are no heavier than they need to be for structural purposes; they are combined by very obvious and simple methods; their charm lies largely in that simplicity and naiveté.

On first thought it might seem that the designer's wrought iron vocabulary was decidedly limited. His products can be fashioned from rods square or round in section or from plates of varying widths and thicknesses. That is all. Whatever else is desired must be accomplished through the craftsman's ingenuity. Not that it is impossible for a master craftsman to fashion jewelry from iron! He could, but it would be fabulously expensive. The architect's concern is to produce the most enviable effect for the smallest cost—the first requisite of modern architecture. Consequently it is of primary importance to have a working knowledge of the simplest wrought iron forms (ergo the most inexpensive) in order to combine them into a harmonious design. For inspiration we may turn with perhaps greatest profit to the Spanish, as for example the window grille of the Casa del Conde de Toledo, figure 2. This *reja,* built with the minimum amount of work and material, embodied at once a very efficient protection from the sometime troublesome citizens of Toledo, as well as a design above reproach. The only adorning features are the two simple scroll-brackets below and the cresting above, wrought from flat bars with imaginative little quirks, swellings, and leaves to make them genteel. It was all a simple matter on the anvil.

The last cited example of grille consisted only of square bars with their faces turned to an angle of 45 degrees with the plane of the wall,—constituting the ABC of the wrought iron catalogue, let us say. The next degree of square bar usage is illustrated in the simple balcony rail, figure 3, where the verticals are all twisted. Variety in the twists is here responsible for an unusually pleasing appearance. In a cast material the models and moulds for these sundry twists would be so expensive that a single type would probably have to suffice, whereas in the wrought product it would be difficult to turn out ten bars exactly alike. In the illustration there has been a bar with a few twists placed beside one with many, or else made envious by a neighbor with a few twists, a straight run, and a few more twines. The actual labor involved in thus turning out a variety was not a mil more expensive than if each bar had been absolutely like every other one. In fact it would be costly indeed to guarantee that all would be uniform. Yet where the contractor is not interested in his work beyond making all the money possible (as in the vast majority of modern cases) he would very likely make a higher charge in estimating a grille with a variety of twists than for one with only a single type of bar. But if such an unscrupulous wrought iron worker becomes the successful bidder on the work and seeks to take advantage of the architect's lack of knowledge by increasing the price of the article when he should really do the reverse, then let it be most emphatically stated that it is better to make the job cast iron! Wrought iron is one of the most human of materials, and it requires a human being with enthusiasm and genuine interest to produce happy results. Good work cannot be ground out on a commercial basis by a mere money seeking concern.

Until one has become engrossed in the wide range of dormant possibilities in even the humble raw wrought iron rods, it is impossible to comprehend what may be done by a little ingenuity and effort. The various bars drawn in figure 8 give only a shabby idea of the countless ways of twisting bars, but show some of the simpler sections which can be used. One of the most easily wrought, and one

which contributes very appreciably to any series of bars, is No. 2 of figure 8. It is merely a square bar which has been hammered on one of its edges when hot. The edge opposite has been equally flattened by the anvil. When twisted it gives the effect of a bar with an intricate section yet the operation is so simply done as to be almost negligible as to time and cost involved. But unless the architect knows how simple and inexpensive this form is, he is either loath to show it on a drawing, or, after the contract is "let," is easily convinced that his full size detail is a "radical departure" from the scale drawing and is bullied by the contractor into believing that a huge "extra" would be due if the design were executed as shown.

Bars oblong in section do unexpectedly pleasant things when twisted. Round bars given an incision along their length will also perform surprisingly, although it is needless to point out that *without* the previous chisel incision twisting would do little good. The splitting of square bars for a part of their length, as in the handsome grille of figure 1, opens up a whole realm of design. As will be seen later, the Spanish were the foremost among the craftsmen who utilized this form. For the present it suffices to remember that splitting a bar is perfectly good wrought iron technique, is easily and readily done by a craftsman, and in combination with welding offers one of the main fortes of Spanish design.

EDITOR'S NOTE: In the previous issue the cut on page 357 illustrating a bronze knocker was erroneously captioned as being "hand wrought" where obviously it was really "cast." It was intended to show, by contrast with the flag pole socket on the same page, the typical cast bronze treatment as opposed to wrought iron.

LUCCA—WROUGHT IRON LUNETTE IN PALAZZO ORSETTI (XVI CENTURY)

Width between stone jambs: 7'8½". (Photo by Alinari.)

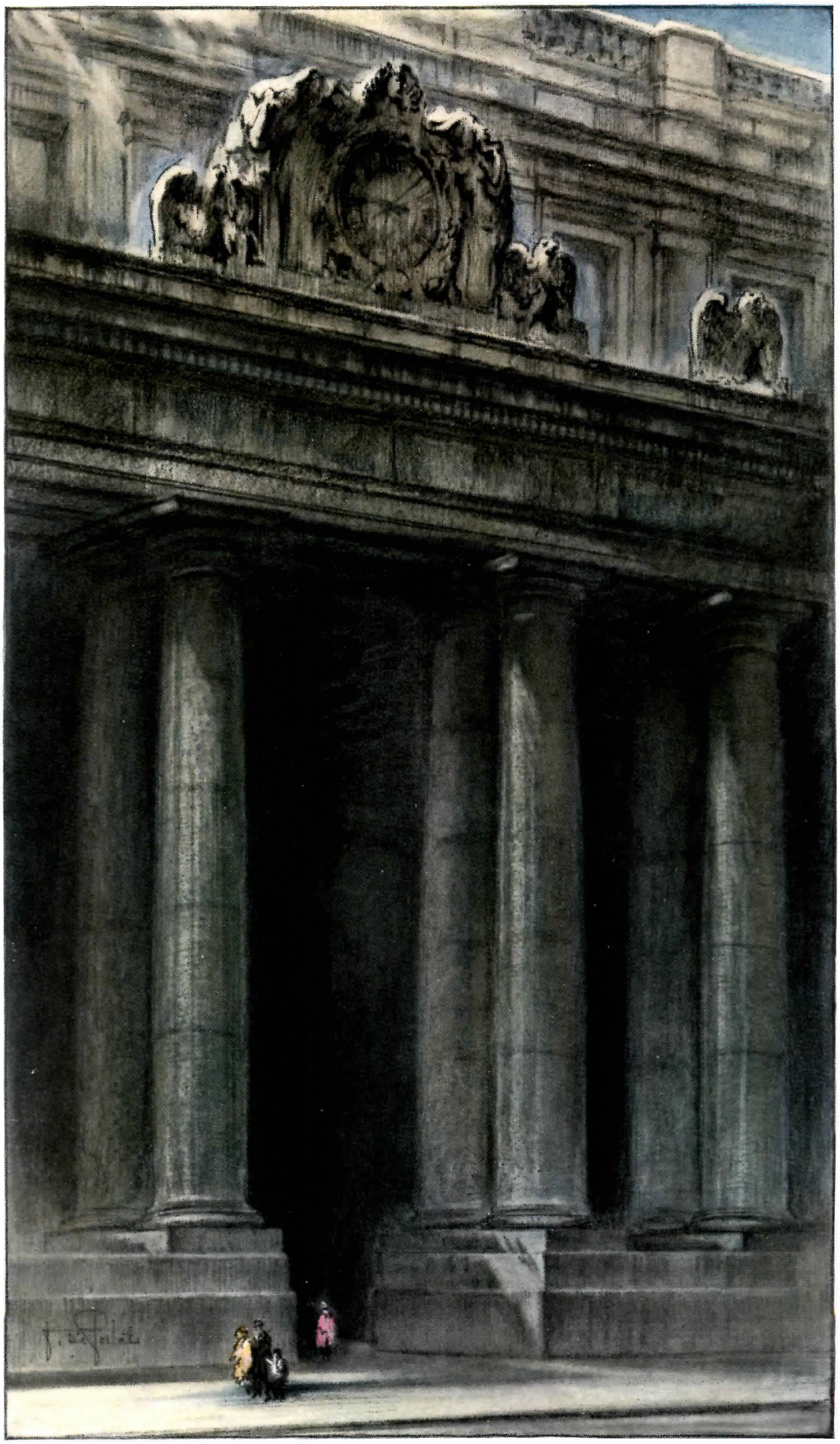
PENCIL POINTS SERIES *of* RENDERINGS IN COLOR

RENDERING IN WASH BY J. FLOYD YEWELL

Size of Original 21⅜" x 29¾"

New York County Court House, New York

Alfred Hopkins, Architect



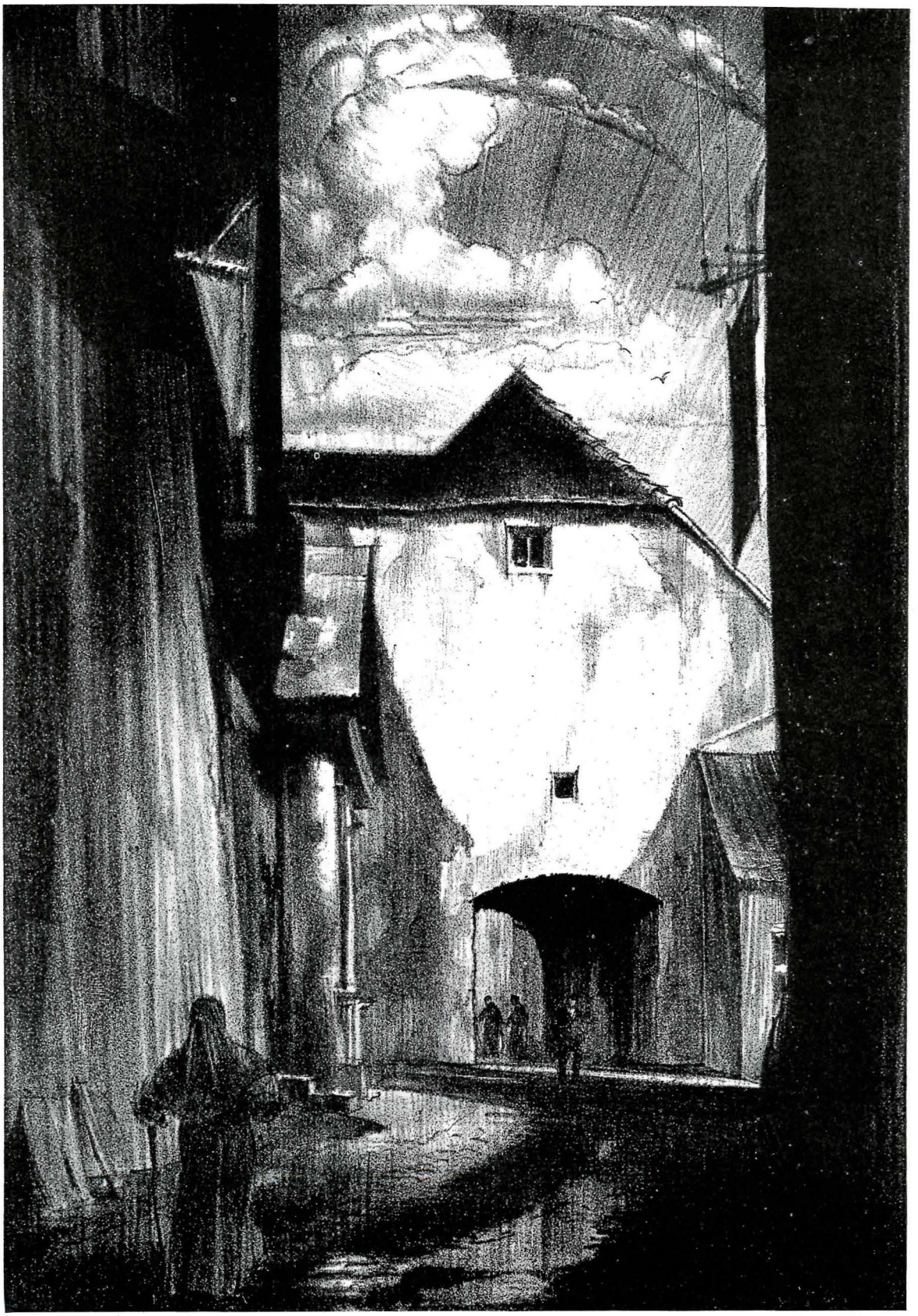
RENDERING IN PASTEL AND CRAYON BY THEODORE DE POSTELS

Size of Original 10½" x 18"

Pennsylvania Station, New York

McKim, Mead & White, Architects

PENCIL POINTS SERIES *of* RENDERINGS IN COLOR



LITHOGRAPH BY C. O. WOODBURY
STREET SCENE, INNSBRUCK, AUSTRIA

PLATE XXII

VOLUME VII NUMBER 7

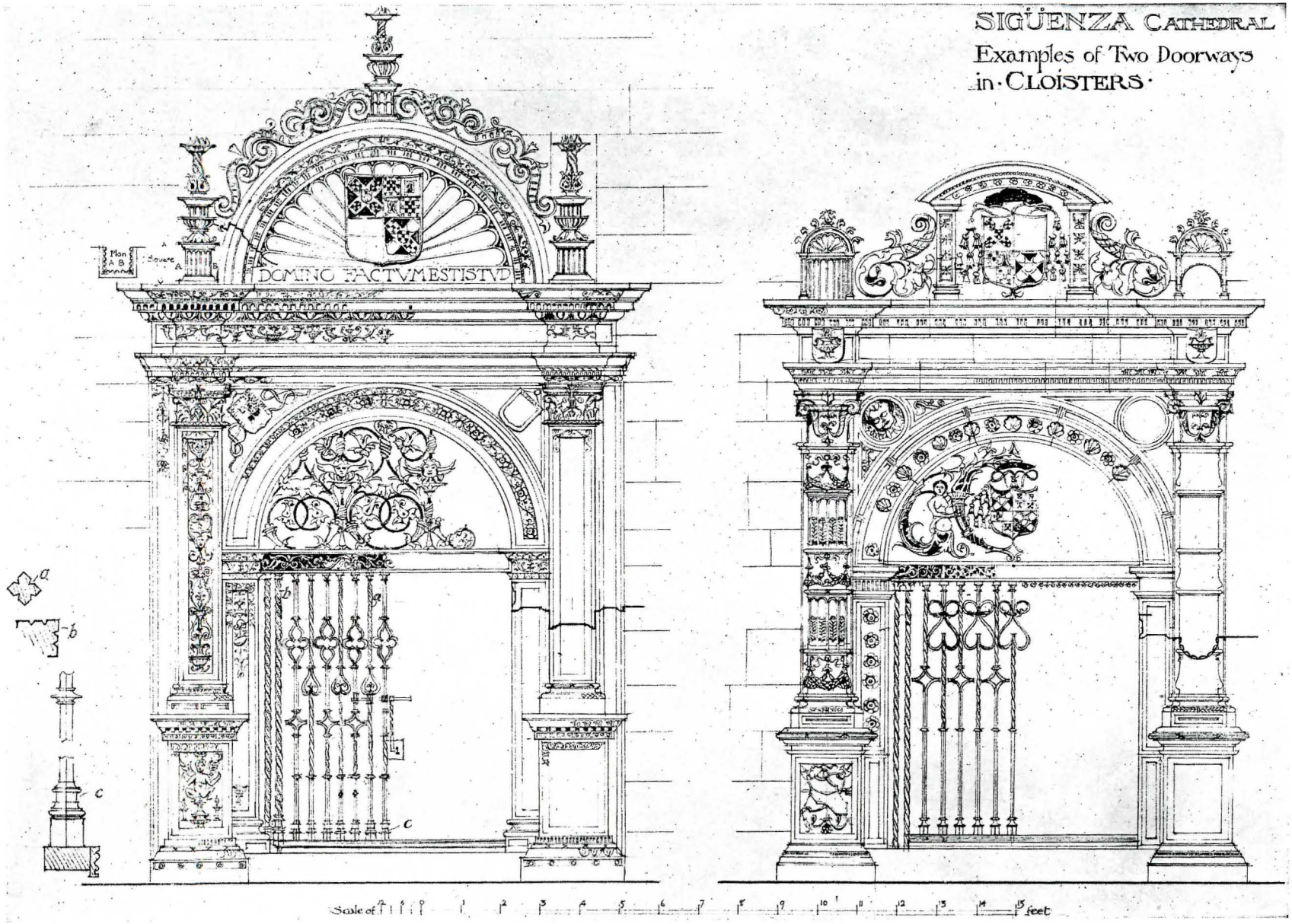
C. O. Woodbury, whose lithograph is reproduced in this plate, is one of the best known American workers in the Graphic Arts. This particular print shows clearly his exquisite technique which is exactly suited to the medium.

PAINTING IN OIL BY CARLO CIAMPAGLIA

DESIGN FOR AN OVERMANTLE

PLATE XXIII

This painting, by Carlo Ciampaglia, represents a conventionalized Italian landscape in which huge golden-green trees set against a blue sky and purple hills combine with a rich green foreground, enlivened by bright spots of color in the figures, to produce a most agreeable ensemble.



"RENAISSANCE ARCHITECTURE AND ORNAMENT IN SPAIN"

A PLATE FROM THE WORK BY ANDREW N. PRENTICE

PLATE XXIV

VOLUME VII NUMBER 7

This plate shows examples of two doorways in the Cloisters of the Cathedral, Sigüenza, which was founded by Cardinal Carvagal in 1507. They are built of a fine cream colored stone, and bear the arms of Don Fadrique of Portugal, who was bishop of Sigüenza in 1530. Their appearance is greatly enriched by the ornament and moulding being gilded. The iron screens, standing out against the dark recess of the doorway, greatly enhance the effect.

STATUETTE BY EDWARD McCARTAN

GIRL WITH GOAT

PLATE XXV

VOLUME VII NUMBER 7

We reproduce on this plate one of Edward McCartan's most delightful garden sculptures. This artist is now engaged upon a new group which we shall hope to present to our readers in an early issue.

BE YOUR OWN BRICK SCHEDULE

By J. Woolson Brooks

THERE IS SOMETHING sinister about a schedule that disturbs the poise of any human being. A time table, an income tax blank or even a bill of fare confronts one as an invention of the Devil for humiliating one's intelligence. Fortunately, brick schedules have always been a very mild form of this pest, and of late years, the standardizing of brick and of joints has eliminated all of them but the one captioned "2¾".

Now a brick schedule is simple, chaste and refined in itself, but it is not always present when duty calls; in fact, it is one of the most easily mislaid tools the draftsman uses. Here is a completely painless and foolproof method of eliminating the 2¾" schedule. That is practically the only coursing used today, since it employs the standard 2¼" brick and the usual ½" joint.

The most common use of a brick schedule is to check a given vertical dimension to determine if it will span an exact number of courses, and if not, to find the nearest figure which will "work" brick. To check a certain figure without a schedule, *add the number representing inches to the number representing feet as if they were both inches.* If the sum arrived at works brick, the original dimension is all right. This sum will usually be one of the first six or eight steps of the table, which automatically linger in your mind. Even if they don't, it is the work of a moment to add them: 2¾", 5½", 8¼", 11", 13¾", 16½", 17¼". If the sum is a higher figure, subtract 11 from it, or 22, 33, or any other multiple of 11 to reduce it to recognizable size.

If, however, the sum falls short or is too much, you must correct the inches column in the original figure by the same amount that it takes to fix the doctored figure.

As an example, suppose you have a dimension of 18'-4". Add 18" plus 4" equals 22", since 11" works brick, and also do all multiples of it, therefore the figure 22, or its component, 18'-4" will work. If the dimension were 18'-6", the sum would be 24, which doesn't come out to an even joint. Therefore, you must subtract 2" or add ¾" to make the 24 work. This would alter the original dimension to 18'-4" or 18'-6¾". In the same way 2'-0¾" works because 2¾" does, or 5'-0½", etc., etc.

Now suppose you want to find the height of a given number of courses. Let us attack it algebraically:

$$2\tfrac{3}{4}'' = \frac{11''}{4}$$

This can be written $\frac{(12 - 1'')}{(\ 4\ )}$

Or this way $\frac{(1'\text{–}0'') - 1''}{4}$

Wishing to know the height of X courses, $X\ \frac{(1'\text{–}0'') - 1''}{4} = \frac{X'}{4} - \frac{X''}{4}$ or what that amounts to is to *divide the number of courses by four and subtract the quotient written as inches from the quotient written as feet.*

If we wanted to know how high 80 courses were, we would divide 80 by 4, giving 20. We next subtract 20" from 20',

or 20'–0" minus 1'–8" equals 18'–4".

Suppose we wanted to know the height of 37 courses:

$$37 \div 4 = 9\tfrac{1}{4}$$

Then 9¼ feet minus 9¼ inches is the same thing as 9'-3" minus 9¼" which gives us 8'-5¾", the answer.

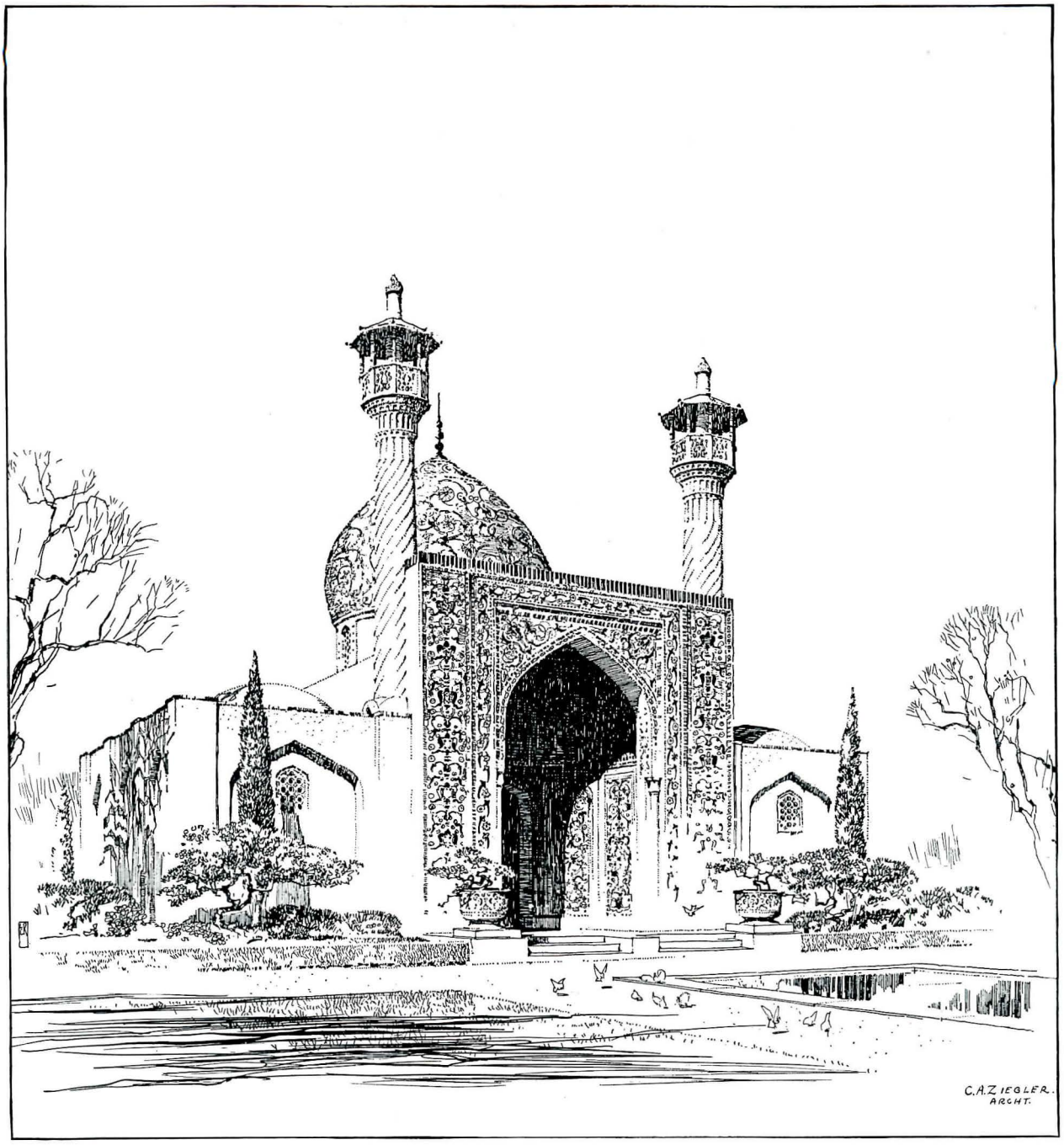
To reverse this process, and determine the number of courses in a given height, divide the figure into its two separate parts, feet and inches. Multiply the foot column by four and at the same time add the number representing feet to the number representing inches, making a total representing inches. Determine by inspection the number of courses in this sum, remembering that there are 4 courses in 11 inches, and add that number to the product first obtained by multiplying the foot column by four. An example will show that this apparently complicated rule is in reality very simple. To find the number of courses in 17'-5":

17	5"	
x 4	+17"	
68 courses	22"	There are 8 courses in 22"
+ 8 courses		
Total 76 courses – Answer.		

Or try 8'–5¾"

8	5¾"	
x4	+8"	
32 courses	13¾"	or 5 courses
+ 5		
37 courses – Answer.		

Perhaps the last two formulae will be burdensome to remember, but the first rule of thumb given, the method of determining whether or not a given dimension works to a brick joint, fits all cases and all weathers, and will not tax the lightest head.



PEN AND INK RENDERING BY LOUIS C. ROSENBERG

PERSIAN BUILDING AT THE SESQUICENTENNIAL INTERNATIONAL EXPOSITION, PHILADELPHIA, PA.

WHITTLINGS

THE SESQUICENTENNIAL EXPOSITION

THE SESQUICENTENNIAL INTERNATIONAL EXPOSITION had its formal opening on May 31st, in Philadelphia. The main buildings are of stucco with decorations in pastel shades. Exposition artists have adopted a modification of the modern trend of public buildings, using the "set-back" principle and adapting it to the comparatively low structures of the Exposition. Fine landscape decorations and sculptural work add to the whole.

At the main portal of the Exposition grounds are two pylons 55 feet high, surmounted by colossal figures called "Heralds of the New Dawn", emblematic of the story of American freedom. At the head of the Court of Honor, between the Place of Liberal Arts and the Palace of Agriculture, rises the impressive Tower of Liberty, more than 200 feet high, surmounted by the Light of Independence, commemorating the inspired vision of the Signers of the Declaration of Independence. This Tower of Light can be seen from all parts of the city and forms the central unit in the elaborate lighting scheme of the Exposition.

In the great Court below, named the Forum of the Founders, are memorial shafts to the Signers. The great Stairway of Nations nearby leads down into the Grand Plaza where stand the two heroic lions of Courage and Peace. Other decorative groups form an important part of the Stairway and the Colonnade of States is the feature of the background to the great exhibit of American sculpture.

Contemporary art, examples of work done within the past fifty years, the first showing of work of many European artists, paintings made by early American artists, etchings, wood carvings, engravings, lithographs and drawings are features of the Art Exhibits.

The lighting of the Exhibition is on a strikingly elaborate scale. The Tower of Light is surmounted by two 62-inch search-lights, the largest ever built. A battery of fourteen super-power searchlights will be used in a remarkable auroral display, representing the greatest concentration of light ever seen in one spot in the history of the world. The combined searchlights total 6,300,000,000 candle-power and the radiance from it can be seen as far away as New York and many miles out to sea.

Twenty-five thousand 100-watt lights cover the surface of the gigantic Liberty Bell at the entrance to the Exposition grounds. The bell itself weighs 42 tons and is suspended from supports 70 feet high, with a road clearance of 20 feet 6 inches. Ornamental standard and flood lights illuminate the Grand Court and bring out the towers of the exhibition palaces in a blaze of color. The Gladway, which adjoins the Grand Court on the west, has brilliant illumination, and its lagoons are swept by vari-colored floods of light.

Hon. W. Freeland Kendrick, Mayor of Philadelphia, is president of the Exposition. On the administrative staff are John Molitor, supervising architect; F. A. Robinson, landscape architect; Charles E. Tefft, chief of the Sculpture Division; W. DeL. Dodge, Chief of Color; and L. C. Darrin, Chief of the Electrical Division. R. J. Pearse is Director of Works and W. P. Wetzel, Assistant Director.

Louis R. Barras is the architect in charge of the construction of the two buildings which represent New York State. One building is a replica of old Federal Hall in old New York where Washington was inaugurated as first president of the United States. The second is a replica of Washington's headquarters at Newburgh on the Hudson where Washington refused to accept the crown as King of America.

Women of the nation are represented, through the Women's Board of the Sesquicentennial, by a reproduction of historic old High Street, now Market Street, in Philadelphia, with the replicas of famous places including the Town Hall, Market-place, homes of Washington and of Robert Morris, and Benjamin Franklin's printing-shop. The architects for the High Street Committee are R. Brognard Okie, E. P. Bissell, and John P. B. Sinkler.

Two notable structures of the Exposition are the $3,000,000 concrete Stadium accommodating 100,000 and the Auditorium seating 20,000. The great exhibition halls include the Palace of Agriculture and Food Products, the Palace of Liberal Arts and Manufactures, the Palace of Machinery, Transportation, Mines and Metallurgy, the Palace of Education and Social Economy, Palace of Fashion and Palace of Fine Arts. More than twenty-five foreign countries are participating in the Exposition either officially through their governments or unofficially through industrial groups.

AN OPEN LETTER TO PRATT ARCHITECTS

"SINCE OUR LAST Club dinner, which was indeed an outstanding success, nothing further was accomplished in the way of gastronomical pastiming, but the Board of Governors did actually meet and carry on.

"Committees were formed to cover our various activities. We might add right here that due to a Publicity Committee we are breaking forth in print so that we can report progress to our President, he being extremely inquisitive on matters of this kind.

"At the last Board meeting it was decided to stage a Smoker at the Pratt Club in Brooklyn, N. Y., and have as our guests the Graduating Class of Architects. We are divulging no secrets when we inform you that the vote to hold the Smoker was unanimous, even after considering the grave question involving the brand of the tobacco we should provide.

"So the Smoker happened, as before predicted, and, what a Smoker that was! There were about seventy-five smokers, not counting the guests and non-smokers. We believe we noticed several gas masks and consider the wearers used infallible judgment.

"The boys were provided with tobacco of a well known brand. (We personally refused a large piece of change when we declined to mention the name of the tobacco in this letter) Missouri-Meerschaums were many as were various grades of cigars and cigarettes. The cigars were purchased by one of the boys who does not smoke and they were good, we aver.

"Our speakers were: Mr. William H. Gompert, Architect for the Board of Education of the City of New York, Mr. William T. Bannister, Secretary, State Board of Registration of Architects, N. Y., and Mr. Franklin C. Edminster, Professor in Charge of the Architectural Department of Pratt Institute.

"Mr. Gompert explained in detail the workings of the 'greatest Architect's office in the world' while Mr. Bannister advised the Graduates on many interesting questions. Mr. Edminster, as usual, had cheerful and encouraging remarks to make. We cannot offer enough praise and thanks to our speakers and they will be prevailed upon to return and tell us more.

"Then followed a most surprising surprise. Our guests, the newly grads, informed us through their President (he can speech) that they had a modest program arranged for our entertainment. We will not mention the performers by name as we feel they will be lost to Architecture should Jolson or Hammerstein hear of this. We take this time to sincerely thank the Class of 1926 for their very fine offering, the applause from the older men (Classes 1925 and down) indicating how we appreciated the program.

"This was followed by Community Singing and food. Last but in no way least, the Smoker Committee must be congratulated for to them must be ascribed the success of the affair.

"Addenda I. Membership now totals seventy-five men and is growing slowly. You want us and we want you so fall in Grads and join. Advise Harlow C. Jones, Secretary, Pratt Architectural Club, 22 East 38 St., N. Y. City.

"Addenda II. If you eat on Tuesdays, drop over and have lunch with us. Every Tuesday at 12:30 P. M., Fraternity Clubs, 22 East 38 St., N. Y. City.

"Addenda III. Best wishes to all."

(*Signed*) BOARD OF GOVERNORS,
PRATT ARCHITECTURAL COMMITTEE.

CLARENCE DALE BADGELEY

CLARENCE DALE BADGELEY, winner of the Prix de Rome for 1926, was born in Warren County, Ohio. He attended school in Springfield, Ohio, and took a four year course in architecture at Ohio State University where he received instruction from Professor St. John Chubb, Jr., and, later, practical experience in the office of Howard Dwight Smith. A scholarship brought him to Columbia University where he received the degree of B. Arch., in 1925. Experience in various New York offices supplemented his school training. in the field of design he owes much to the training received under Mr. Frederic C. Hirons, Mr. Harvey W. Corbett and Mr. Raymond M. Hood.

Mr. Badgeley is a member of The Architectural League of New York and, while in college, he was elected into Alpha Rho Chi Fraternity and two honorary fraternities: Tau Beta Pi and Tau Sigma Delta.

He will go to Rome to take up his studies at the end of the summer.

PRIX DE ROME IN ARCHITECTURE

THE FINAL CONTESTANTS in the competition for the Fellowship in Architecture, American Academy in Rome, selected from a large number of applicants as the result of a ten-day preliminary competition, were, C. D. Badgeley of Columbia, D. V. Freret of Cornell, H. F. Pfeiffer of Yale, P. F. Taylor of Princeton, Vincent Viscariello of Armour Institute, and J. W. Wood, Jr., of Harvard.

The problem on which these men worked in the final competition for four weeks was the designing of a Monumental Treatment for a Reservoir and Fountain Terminal to a Parkway Vista in a large city.

The members of the jury were: Wm. Mitchell Kendall, *Chairman,* Louis Ayres, Wm. Adams Delano, Charles A. Platt, and John Russell Pope.

The winner of the prize, Clarence Dale Badgeley, is appointed for three years beginning October first. The prize pays $1,300 a year in cash, and is the equivalent of over $2,000 a year, since the recipient is provided with residence and studio free at the Academy.

This year the award is the Wm. Rutherford Mead Fellowship, which was won three years ago by A. F. Deam of Columbia University.

Mr. Badgeley's drawings, and those of Mr. H. F. Pfeiffer which were placed second, are reproduced on pages 437 through 440 of this issue.

AMERICAN ACADEMY IN ROME

ON APRIL 2ND DIRECTOR and Mrs. Stevens left Rome for Athens on their way to the Archaeological Congress in Syria.

Mr. Mead has been in Rome for about ten days, coming to the Academy each day. Mr. Samuel Parrish, founder of the Parrish Museum Fellowship for Sculpture at the Academy, was in Rome at the same time and Mr. Mead had the pleasure of showing him the Academy and its adjacent properties.

Senator Phelan of California, one of the Academy's councilors, paid us a brief visit and purchased one of the works of Mr. Proctor.

One of the Guggenheim Fellowships has been awarded to Frank Schwarz, former Fellow in painting at the Academy. He has in view an extensive program of travel and technical study. In February he plans to reach Rome and retire to Anticoli Corrado to execute some tempera projects.

We have just received news of this year's collaborative award to the team composed of A. F. Deam, 3rd year architect, H. P. Camden, 2nd year sculptor, and M. J. Mueller, 1st year painter. The subject of the competition was a Monumental Staircase for a Navy Department.

A. F. Deam is finishing his required work, a series of drawings of the Campidoglio in anticipation of an early departure from the Academy. Norman T. Newton, landscape architect, and George Fraser, 1st year architect, have returned from a six weeks' tour of Spain. Fraser is beginning a reconstruction of a site at Hadrian's Villa.

Bradford's eyes are improving and he is progressing with his painting. Finley, 2nd year painter, is in Florence working on his required copy. The first year painter, Mueller, is beginning a new figure composition, with his original canvas almost completed.

The sculptors are all active. Meyer is carrying several things at once. His well-head is about completed. Camden and Hancock are both using models and progressing satisfactorily with their work.

SAN FRANCISCO ARCHITECTURAL CLUB

THE SAN FRANCISCO ARCHITECTURAL CLUB is now nearing the end of the season. With the good work of this season we have hopes to begin the fall term with a lot of pep and vigor.

A hearty welcome will be extended to any desiring to enter the Atelier for the Beaux-Arts season. Our Class A group is gradually growing. K. E. Ponsford was awarded a mention on his Class A Project.

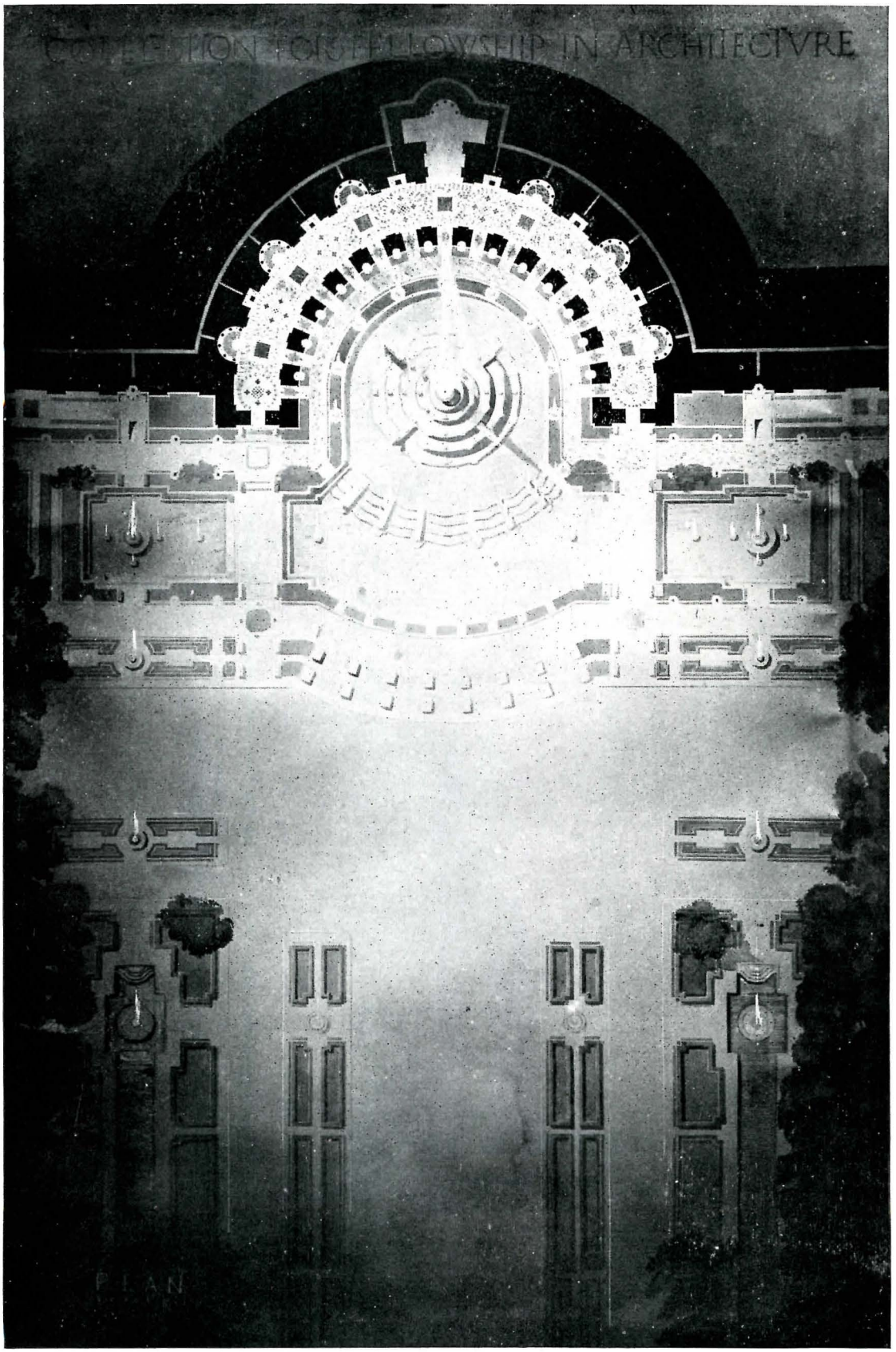
The character of the club is attested to this year by the fact that two of its members have won distinction. R. J. Blas, our Sous Massier, just won a special student scholarship to Harvard and will leave this fall. Orin Bullock, having received last year's scholarship given by the Harvard Alumni of San Francisco, won his second for another term as a special student at Harvard. George Travis, also representing our club at Harvard, has received a similar scholarship in the past.

An interesting collection of pencil and water colored sketchings of old Mexico by H. A. Schary, a graduate of the University of California, were appreciated by all those who visited the exhibit at our quarters last month.

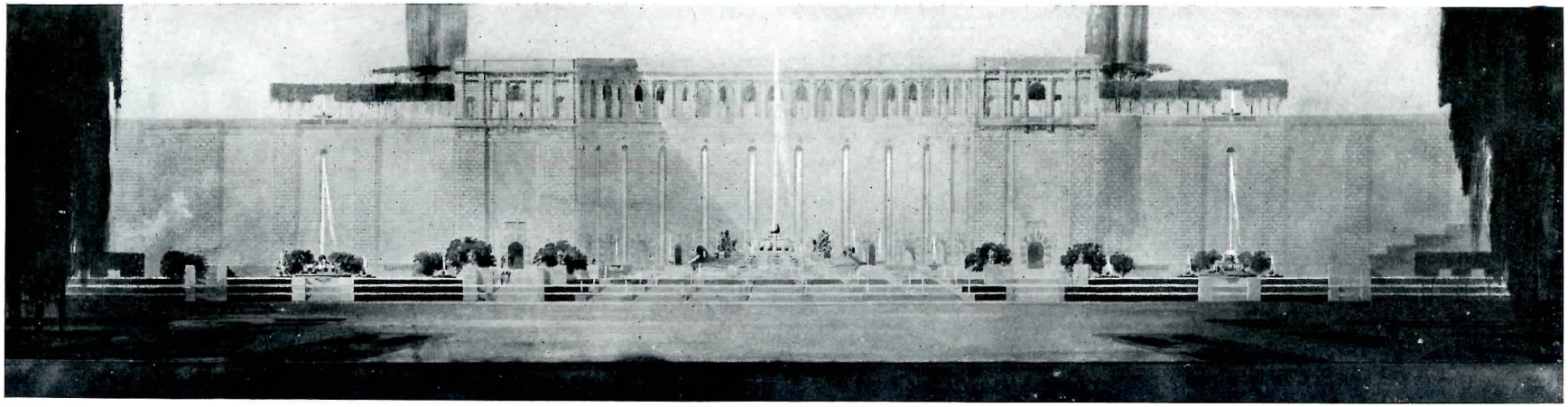
Through the generosity of Mr. Ralph Wyckoff, an old club member, the club has offered a prize of $20.00 for the best cartoon representing Club Life. The jury will consist of the patrons of the atelier.

We are contemplating an Engineering Class to begin this fall with the hope of securing a large attendance.

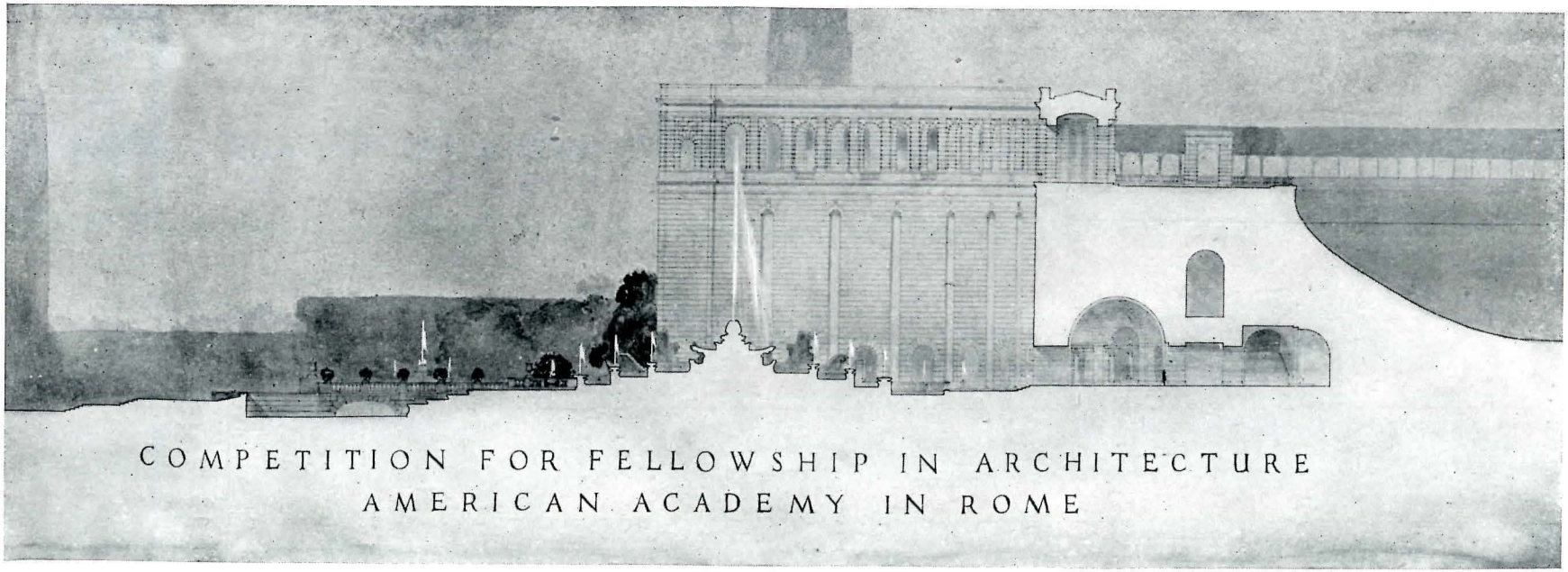
J. H. DEVITT, *Secretary*



PLAN OF WINNING DESIGN BY CLARENCE DALE BADGELEY
COMPETITION FOR FELLOWSHIP IN ARCHITECTURE FOR 1926, AMERICAN ACADEMY IN ROME

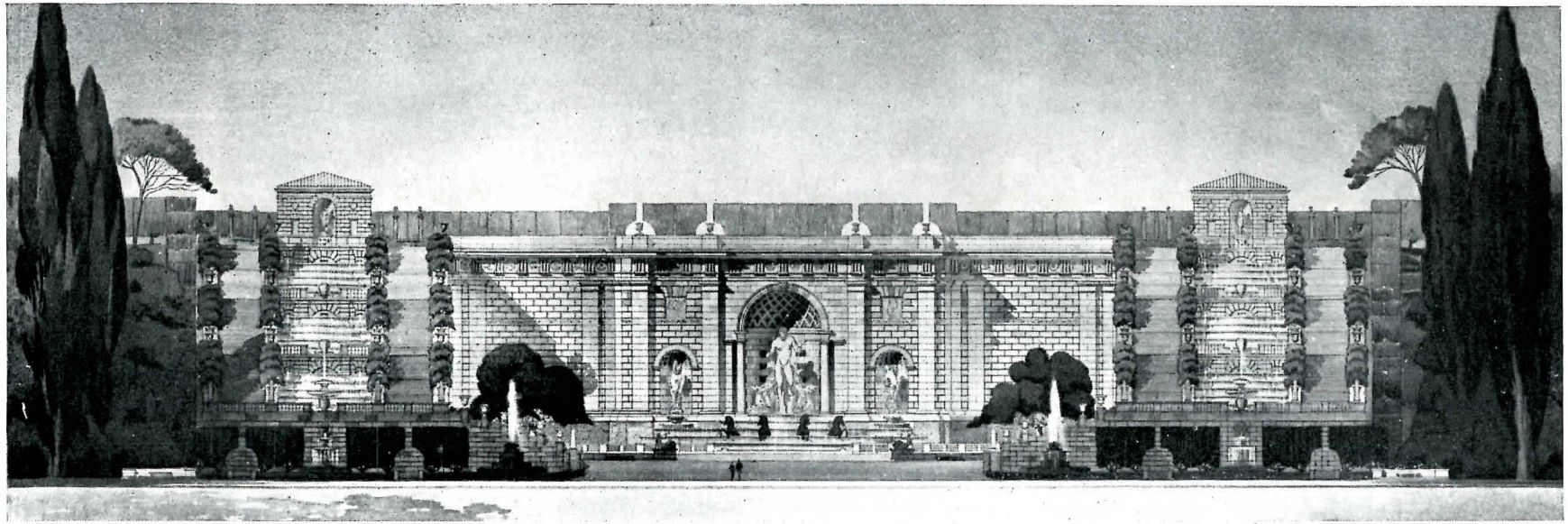


ELEVATION

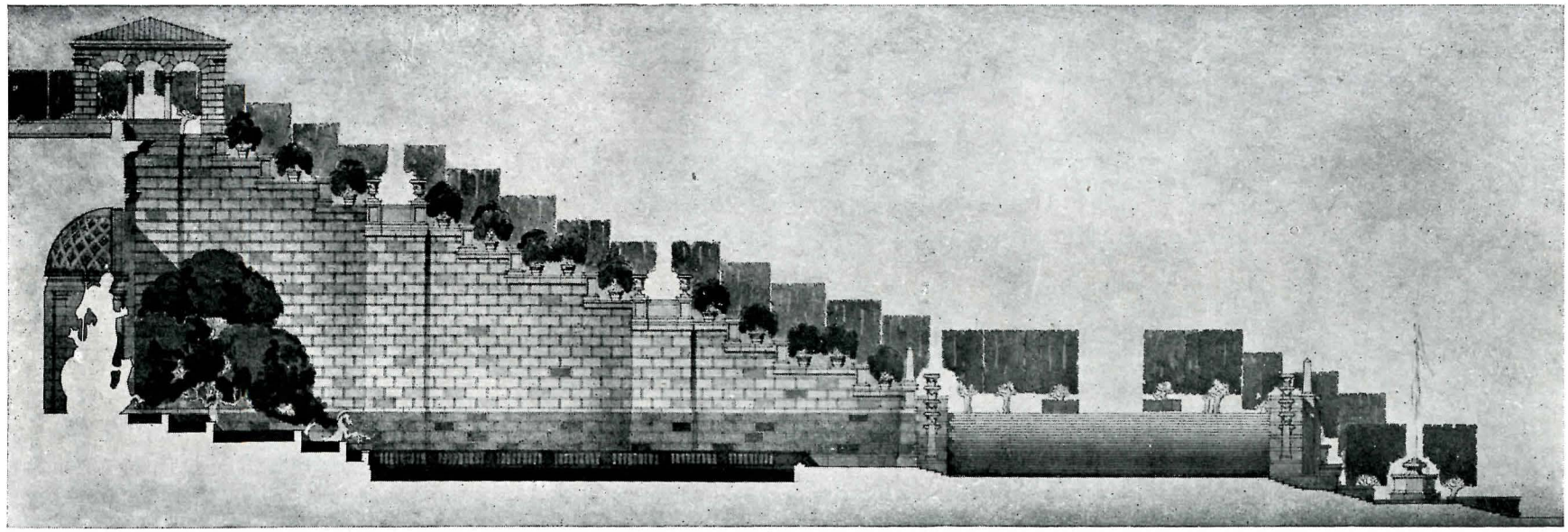


SECTION

WINNING DESIGN BY C. D. BADGELEY, COMPETITION FOR FELLOWSHIP IN ARCHITECTURE, AMERICAN ACADEMY IN ROME

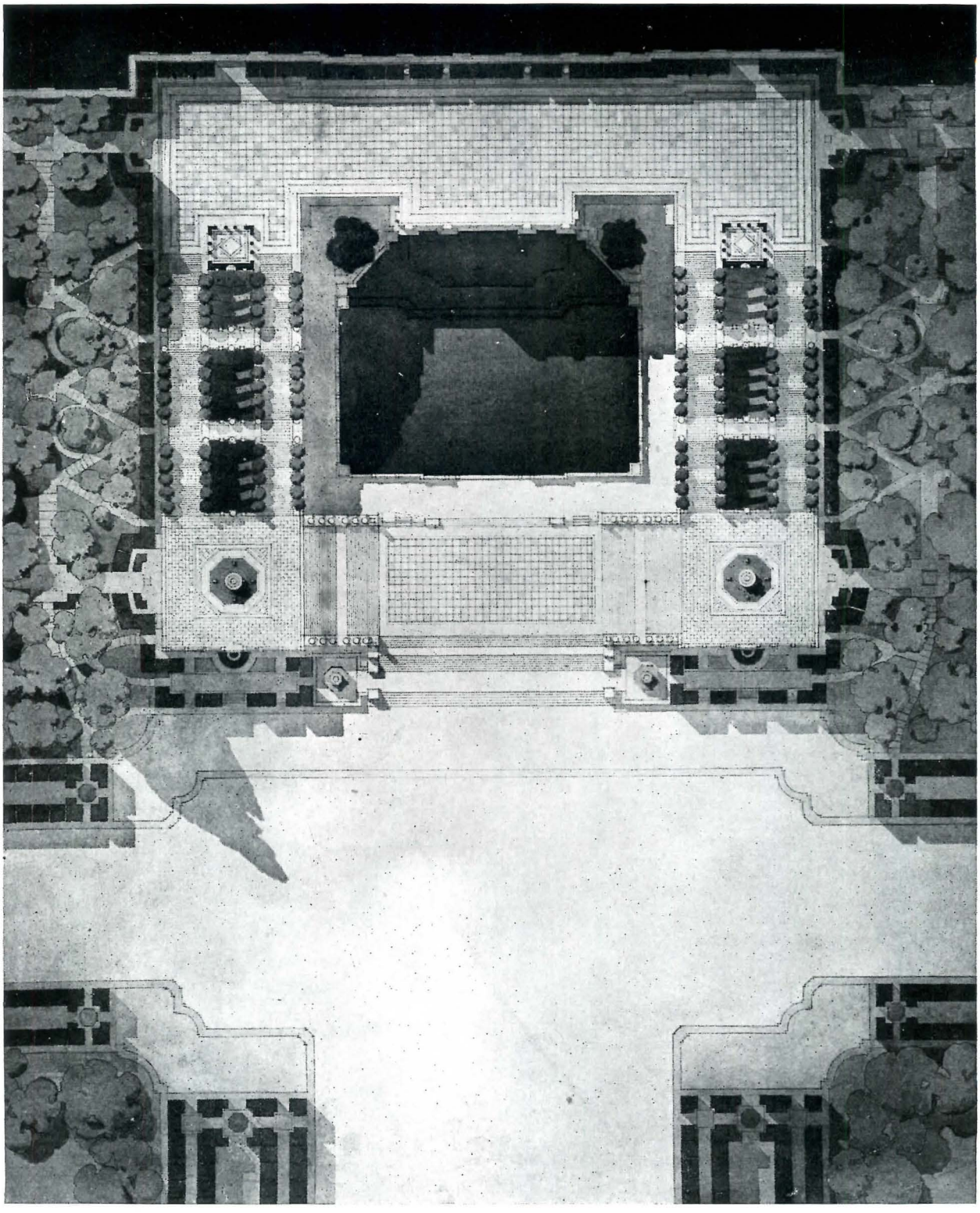


ELEVATION



SECTION

DESIGN PLACED SECOND, BY H. F. PFEIFFER, COMPETITION FOR FELLOWSHIP IN ARCHITECTURE, AMERICAN ACADEMY IN ROME



PLAN OF DESIGN PLACED SECOND, BY HOMER F. PFEIFFER

COMPETITION FOR FELLOWSHIP IN ARCHITECTURE FOR 1926, AMERICAN ACADEMY IN ROME

THE NEW YORK ARCHITECTURAL CLUB, INC.

118 EAST 42ND ST., N. Y. C.

WE DON'T KNOW exactly whether it's writer's cramps, draftsman's elbow, or just plain Spring fever that is the cause of it, but we must shamelessly admit that we could readily think of three hundred and eighty seven other things that we would do more willingly than this. We done our darndest to convince the powers that be, that balmy June weather is no time at all to nail a fellow down to invent mental torture. We went so far as to argue most eloquently that nobody gives a continental whether this appears or not, in fact would much prefer that it did not. However, when the most translucent piece of crystal, in the form of a tall slender glass, that we ever had the happy opportunity of glimpsing was brought before our vision, we began to feel weak. This particular piece of crystal was filled with "lemonade". The most luscious sort of lemonade of a warmish brownish color, all a-tinkle with pieces of ice, and, strange to say, a piece of orange, that somehow found its way into it, looking for all the world like some ill-fated ship in miniature form, wrecked among miniature icebergs. We reached out our hand in as hearty a welcome as we could have extended to any long lost friend, only to see it withdrawn, to the tune of the fiendish laugh of our tormentor, who offered it as a bribe, to break down our will. Well, much to our disgust, we gave in, and so here we are at work.

We will try to be as lenient as possible with our kind reader's patience, and make this as short as possible, mentioning just a few little points, regarding our club.

To begin with, the new quarters are not quite completed, due to some unforseen labor difficulties, which have held up progress considerably, but these are now fairly well straightened out, and we look forward to the swift completion of the "job".

The Atelier however, was a very busy place, as a bunch of the boys were on their June Beaux-Arts problem, in an honest to goodness charette, some of the boys working for the last fifty hours almost without a break.

The results, however, were very gratifying indeed, both to the club and to the boys themselves. For instance, Cornelius C. Nissen, received 1st Mention, placed in Class B, Analytique, and N. Frank Bader, Jr., received 1st Mention also in the same class. The boys have been working under the very valuable criticism of Mr. A. D. Seymour, the Patron of this particular division, and it is very interesting to note that these were the first problems that either of these youngsters had ever turned in, in Beaux-Arts studies. We may be, therefore, tolerated to some extent for taking pride in the good beginning of our Atelier.

At this writing, arrangements are being completed to hold two sessions per week in drawing from life, and by the time that this number is issued, there is no question but that everything will be going strong.

Some of the boys are taking the Summer problem, so that things will be stirring even during the unbearable months. There still are several vacancies in both the Atelier and the life class, for the right sort of fellows, and those desiring admission can get in touch either with the writer, or with Mr. W. E. Herrick, the Massier of the Atelier at the Club Rooms.

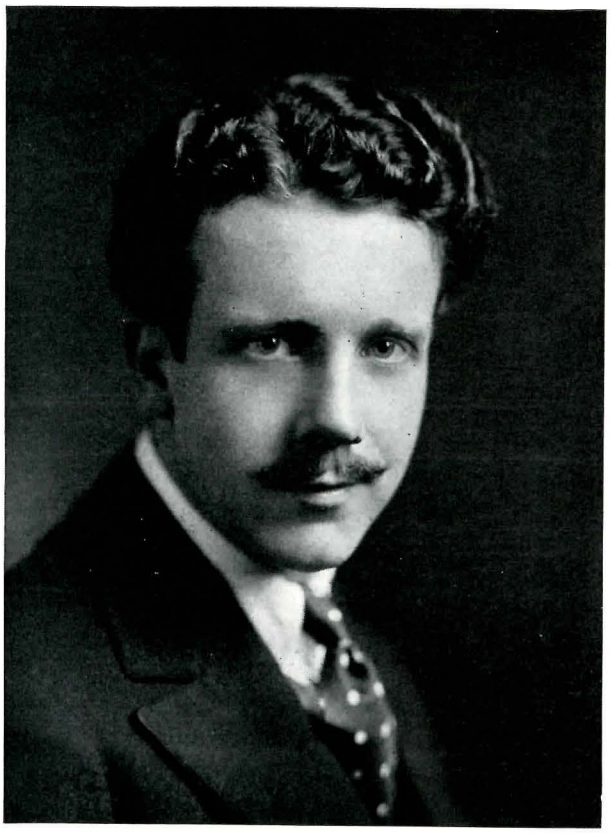
HENRY SASCH, *Secretary*

A FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

(Other items on page 74 of the Advertising)

Young man wishes position in architect's office. Some experience in tracing. Good drawer. Start at the bottom. Box 320 care of Pencil Points.

An Architect, university graduate and member A.I.A., wishes a connection with an architect doing high class work, one who prefers designing and drafting. He will assume the estimating, construction, supervision, specification writing and interviewing clients. Box 329 care of Pencil Points.



RUSSELL M. KROB

RUSSELL M. KROB was recently awarded the McKim Traveling Fellowship of the School of Architecture, Columbia University. He was graduated from Ohio State University in 1923 with the degrees of B. Arch. and B. Arch. Eng. The following year he worked in the office of Howard Dwight Smith at Columbus, Ohio, coming to New York in the fall of 1924 to continue his studies in the School of Architecture at Columbia University. During his course there he worked a large part of the time in the office of Dennison and Hirons, Architects.

Mr. Krob received his B. Arch. degree from Columbia on June 1st. He plans to sail for Europe the latter part of August and will travel for at least a year studying and sketching the architecture of England, France, Italy, Spain, and Greece.

PERSONALS

THEODORE H. SKINNER, ARCHITECT, has opened a branch of his New York office at Dunedin, Florida.

MATTHEWS M. SIMPSON has opened an office for the practice of architecture at 400 Presbyterian Building, Nashville, Tenn.

LAWRENCE RAYMOND WHITE AND LOUIS W. SIMSON have opened an office for the practice of architecture in the First National Bank Bldg., Monterey, Calif.

JACOB JOHN SPOON, LANDSCAPE ARCHITECT, has opened an office at Two Cleveland Street, White Plains, New York.

ELLERBE & COMPANY, ARCHITECTS, 692 Endicott Bldg., St. Paul, Minn., have opened a branch office at Rochester, Minn.

WILLIAM GREGORY RAMMELL, formerly of Garriott & Rammell, Architects and Engineers, has opened an office for the practice of architecture at 208 Fourth St., Logansport, Indiana.

HARRY KIRSHBAUM, ARCHITECT, has removed his offices to the Candler Building, 220 West 42nd St., New York.

BENJ. FRANKLIN OLSON, ARCHITECT, has removed his offices to 19 So. La Salle St., Chicago, Ill.

HERMAN M. SOHN, ARCHITECT, has removed his offices to The Farmers Loan and Trust Company Building, New York City.

THE ORGANIZATION OF CROSS & CROSS, ARCHITECTS, NEW YORK.

1. *Frederick Kayser;* 2. *George J. Maguolo;* 3. *Henry J. Herrell;* 4. *Nicholas R. Zummo;* 5. *Lawrence K. Morrissey;* 6. *James A. Harris;* 7. *W. W. Ellison;* 8. *W. W. Baggesen;* 9. *Rosamond Wolcott;* 10. *Emily P. Stickney;* 11. *C. E. Fest;* 12. *Norman D. Taylor;* 13. *Alexander H. Anderson;* 14. *George W. Adams;* 15. *Henry Rausch;* 16. *James F. Hayes;* 17. *Florence M. Moray;* 18. *Joseph W. Davis, Jr.;* 19. *Dorothy Fox;* 20. *Alfred C. Dalmas;* 21. *A. W. Sheffield;* 22. *William I. Bell;* 23. *Rhys H. North;* 24. *Paul K. Fisher;* 25. *Thomas Bell;* 26. *M. Beeman Stout;* 27. *Charles A. Forstbauer;* 28. *Russell A. Beale;* 29. *John W. Ingle, Jr.;* 30. *David A. Clous;* 31. *Henry W. Bossert;* 32. *Marion Walsh;* 33. *Blanche V. Maroldy;* 34. *Arvid Hallstrom;* 35. *William Phillip.*

YES, WE ARE JUST as anxious (perhaps a little more so) to publish the sketches and other material submitted by those who have never before had any of their work reproduced as to show the work of those better known. It has been our pleasure during the past six years to bring many newcomers to the notice of our large family of readers and many of these men and women are now occupying responsible positions in good offices throughout the country. We do not mean by this that we are willing to publish work lacking merit, but those comparatively unknown are just as welcome here as those with reputations. So you novices need have no hesitation in contributing to this department, nor need you feel that your efforts will in any sense be discriminated against when the various items are selected for reproduction each month.

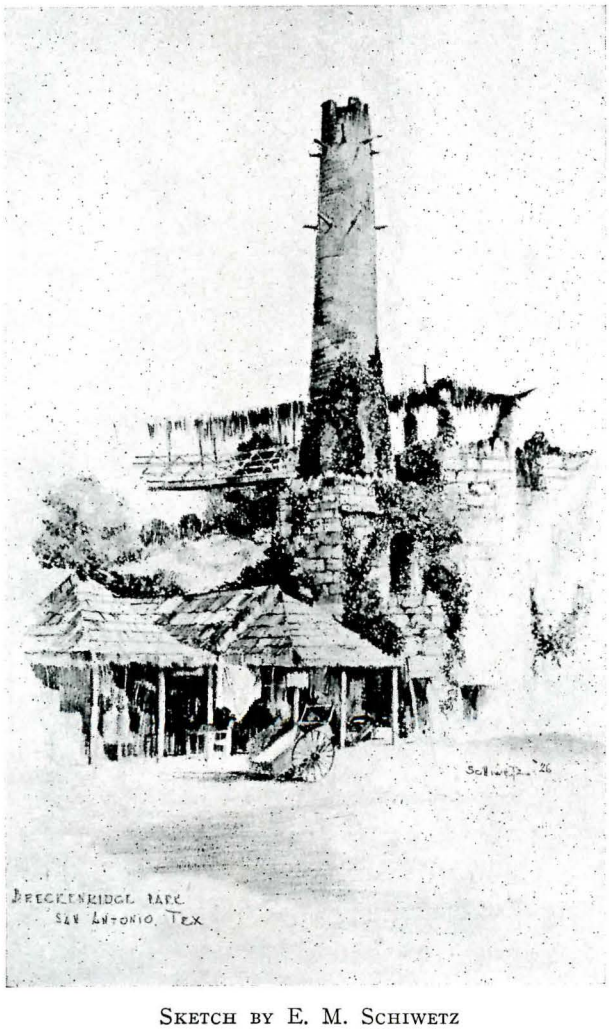
The winners of the prizes for June are:

Class one, E. M. Schiwetz
Class two, Myrtle Dyke
Class three, Adam M. Petrie
Class four, Jeannette C. Shirk

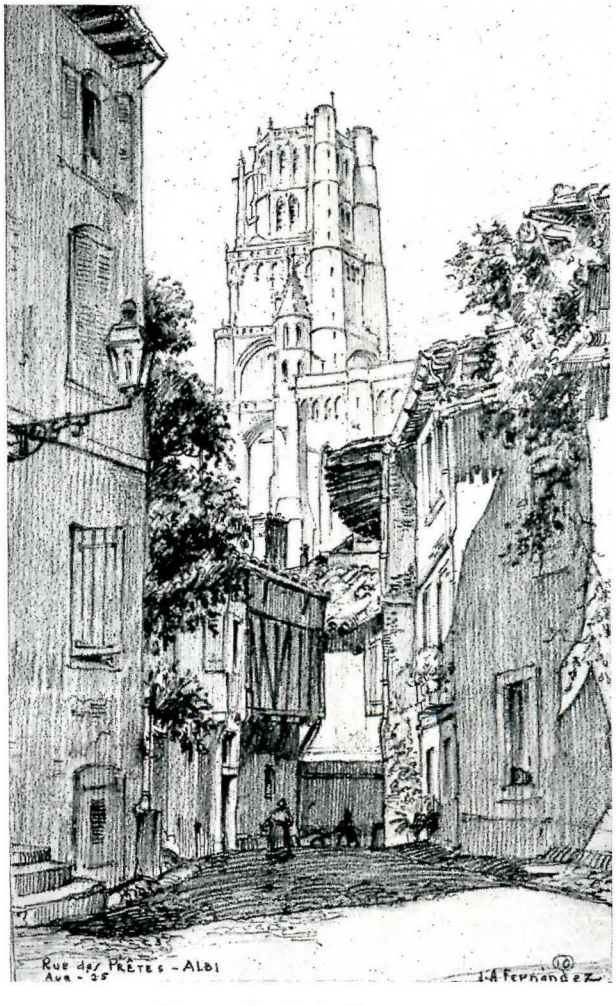
Howard D. Clary has sent us a copy of his poem, awarded the prize in Class Two of the May competition, which we have printed on the next page.

We should like to have letters from our readers expressing some opinion of the Piranesi plate published at full size in our June issue. This is Plate XXXVI of the Campus Martius series by G. B. Piranesi. We are now considering the advisability of publishing some of these plates in book form as well as running them occasionally in PENCIL POINTS. So please let us know how you like the work of this master.

We had a letter a while ago from one of our readers complaining that PENCIL POINTS is "too good" for the average draftsman and for the average drafting-room. This gave us quite a shock. It has been our feeling that there should be no place in our editorial program for the commonplace, the mediocre; that we should constantly strive to improve our own standards, thereby being of the greatest help and inspiration to those endeavoring to broaden their own knowledge, improve their technique and to learn by the examples of those who are regarded as leaders in their various chosen branches. Now if there is one thing we are anxious to do around here it is to give to our readers that which they most need in a journal for the drafting-room. Are we too highbrow and if so in what particular? Are we neglecting anything which you would like to see included in the paper, and if so what? We are always open for suggestions, we are not sensitive to criticism and regard those who make constructive suggestions as the best friends we have.



SKETCH BY E. M. SCHIWETZ
(PRIZE—*Class One—June Competition*)



SKETCH BY J. A. FERNANDEZ
Rue des Prêtes, Albi

THE SONG OF THE CATALOGUE

(PRIZE—*Class Two—May Competition*)

When a catalogue comes in the mail
We try and file it. Yeah. Try and file it.
And when I want to use the dope
I try and find it. Yeah. Try and find it.

This is the song of the catalogue,
The big "Horse-Blanket" catalogue,
With seven headlines and fourteen cuts
And no information. They sure got guts
When the file's only eight by eleven.
The medium-sized swellish-like catalogue
That tries to put on a lot of dog,
With pictures of seventeen buildings up,
And not a spec in the outfit. Nup,
They don't give no details neither.
The little memo size info book
For your vest pocket. They done took
And sent sixty-eight of 'em up to date.
I just got twelve pockets, I'm no heavyweight,
And I ain't got no brief case neither.
If they're anxious to have us use their dope,
They ought to make them the right size, but nope,
They put in the pictures, they put in the salve,
They leave out the dope that we ought to have,
And expect us to put in their product.
When a catalogue comes in the mail,
We try and file it. Yeah. Try and file it.

And when I want to use the dope,
I try and find it. Yeah. Try and find it.

Paperweight.

DESIGN VERSUS COST.

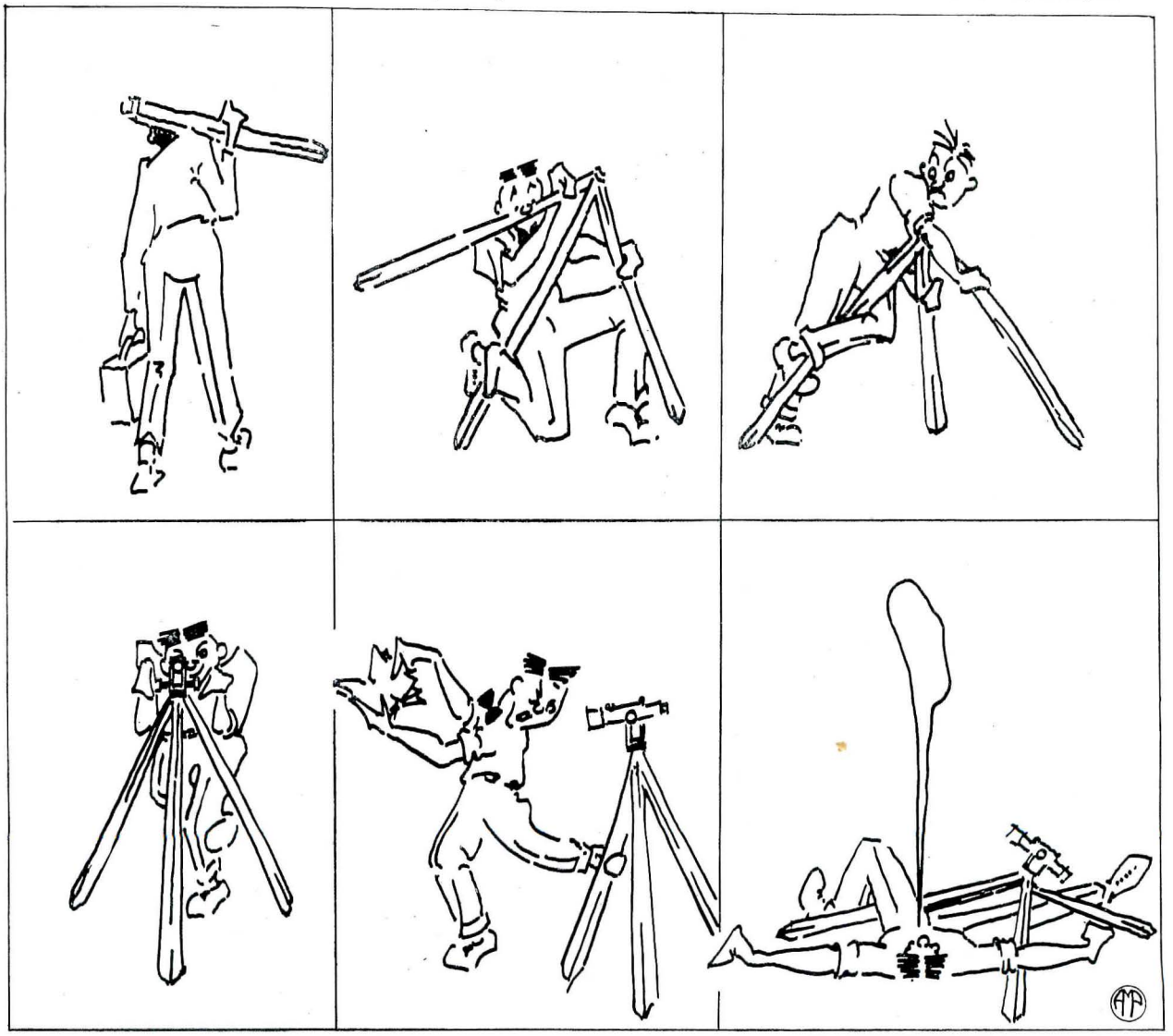
I designed me a residence once on a time,
A study in stonework and brickwork and lime,
A Senior-Euclidean, Junior Numidian, almost an impurely Phidian Pile,
In an early Illyrian, later Sumerian, modernized Modern Assyrian style.

I lettered and cleaned it and put on some crayon,
And laid it away for its owner next day,
A Super-superior-swellish-exterior, pretty-interior Builder they say,
With a poorly-directive, flimsy-erective, hard-to collective sort of a way.

He looked at the plan and he looked at the front,
And he said, with a sneer and a snort and a grunt,
THA'S TOO DAMN EXPENSIVE:
CUT OUT THE GINGERBREAD:
TAKE OFF SOME OF THAT ROCK:
THAT TERRACE IS TOO HIGH:
I CAN'T AFFORD ANY IRONWORK:
ETC., ETC., ETC., ETC., ETC., ETC., ETC.

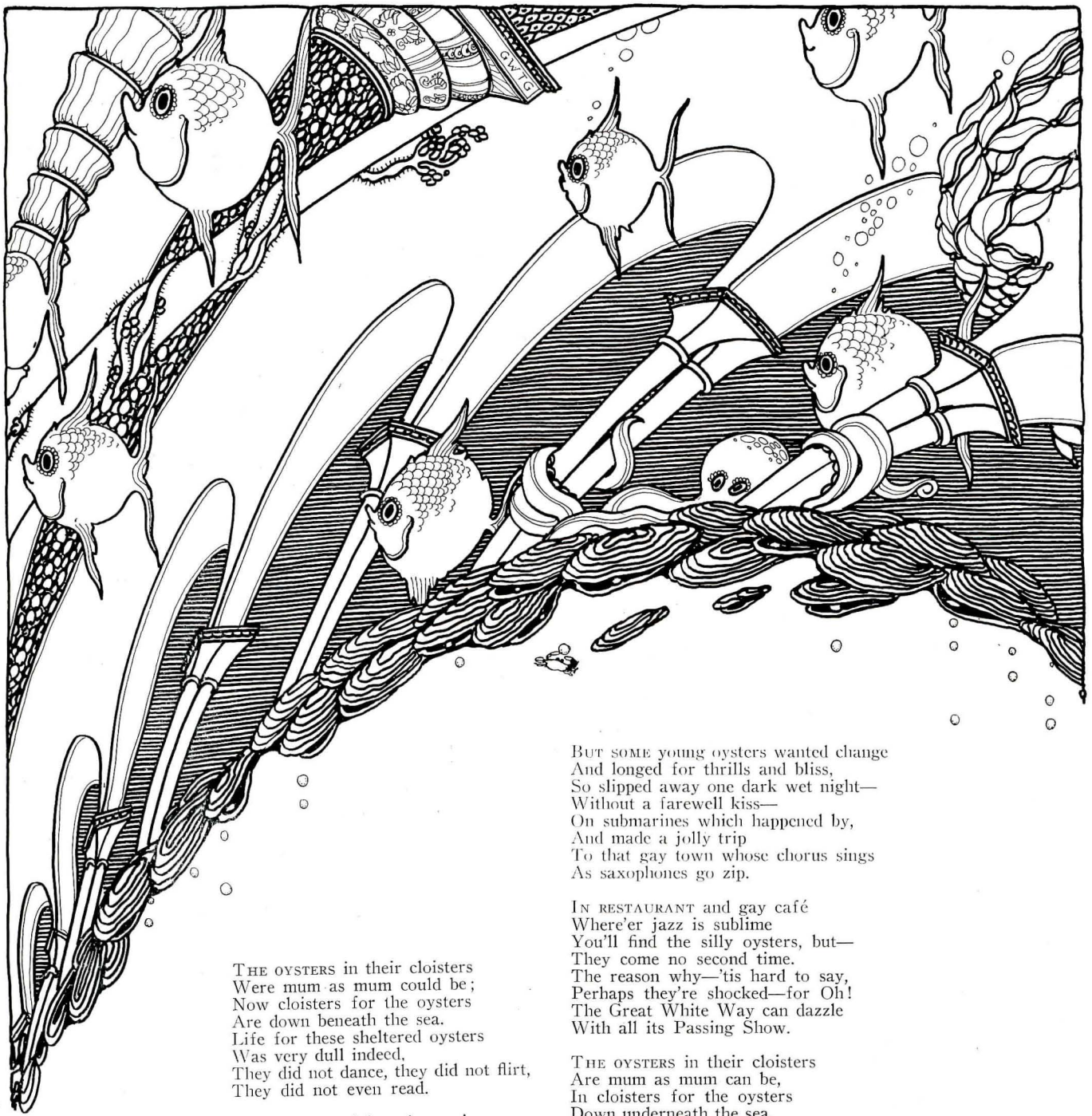
A delightful experience, just to let go,
And put on the trim without counting the dough,
A greatly intrigueing, not so fatigueing, absorbing, inveigling task, as you know.
With an almost didactical, half fermillactical, wholly impractical product to show.

The Paperweight.



"SETH THE LEVELLER," BY ADAM M. PETRIE, FORFARSHIRE, SCOTLAND

(PRIZE—*Class Three—June Competition*)



THE OYSTERS in their cloisters
Were mum as mum could be;
Now cloisters for the oysters
Are down beneath the sea.
Life for these sheltered oysters
Was very dull indeed,
They did not dance, they did not flirt,
They did not even read.

WITH CUTTLE fish and octopi
Contented each to dwell,
All snuggled up within the walls
Of his secluded cell.
As old men have their rheumatiz
To fill the passing day,
Old oysters have their pesky pearls
Forever in the way.

BUT SOME young oysters wanted change
And longed for thrills and bliss,
So slipped away one dark wet night—
Without a farewell kiss—
On submarines which happened by,
And made a jolly trip
To that gay town whose chorus sings
As saxophones go zip.

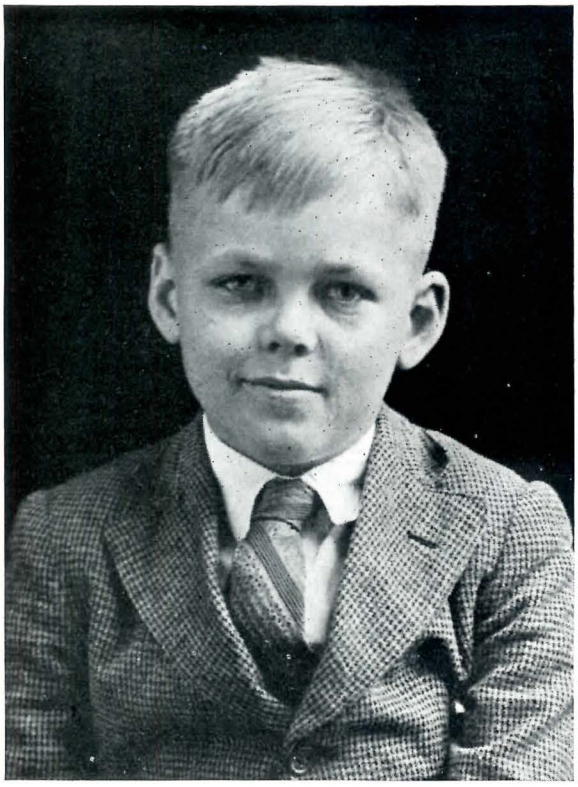
IN RESTAURANT and gay café
Where'er jazz is sublime
You'll find the silly oysters, but—
They come no second time.
The reason why—'tis hard to say,
Perhaps they're shocked—for Oh!
The Great White Way can dazzle
With all its Passing Show.

THE OYSTERS in their cloisters
Are mum as mum can be,
In cloisters for the oysters
Down underneath the sea.
But they are safe from Worcestershire
Or being served up hot,
So let us hope they realize
How blessed is their lot.

Myrtle Parke Dyke

(PRIZE—*Class Two—June Competition*)

DRAWINGS BY GEORGE GILLETTE
(*Courtesy of "Columbia Jester"*)



RALPH

MARY

THESE CHILDREN WANT HOMES

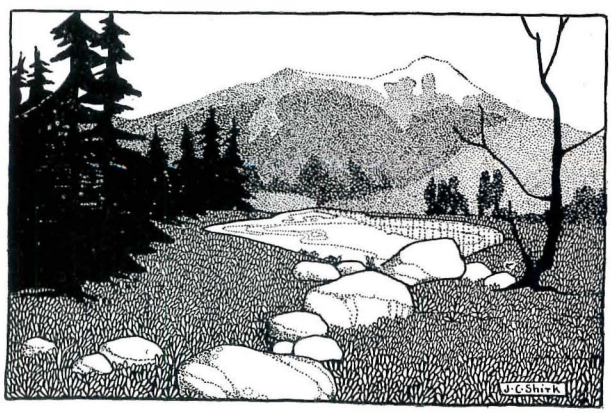
Ralph is ten years old, born of American parents and a half orphan. His coloring is blond with blue eyes. Excellent physical condition and a pleasing, amiable, bright boy. He stands well in school and is popular with other children.

Mary is eleven years old, half orphan, American ancestry. Dark brown eyes and brown hair. She is strong and well, has a vivid imagination and stands well in school.

Anyone interested in considering these children for adoption can secure complete information by addressing Sophie Van S. Theis, State Charities Aid Association, 22nd Street and Fourth Avenue, New York.

Pencil Pointer Truman R. Hart of Astabula, Ohio, sends in this odd bit:

An eccentric old man had a piece of land on which he decided to erect an odd shaped building. His hobby was to use odd numbers in all things, and he considered thirteen to be his luckiest number; so he requested his architect to draw plans for the building, stating at the time, that he wanted only thirteen piers used, and these must be placed three in a row, but there must be twenty-one rows. Odd as the order was, the architect drew the plans to the entire satisfaction of his client. Try sketching an outline of the building, showing the location of each of the thirteen piers.



BY JEANNETTE C. SHIRK, GLENSHAW, PA.
(PRIZE—*Class Four—June Competition*)

COPIES OF PENCIL POINTS

WANTED AND FOR SALE

J. W. Buchanan, 104 Altmore Avenue, East Ham, E. 6, London, England, wants March, 1926.

George F. Schreiber, Architect, 914 Merchants Bank Bldg., Indianapolis, Indiana, wants copies of May to December, 1921, inclusive.

Miss Thelma Silcock, The Cross, Huyton, Lancashire, England, wants January to April, 1921, inclusive.

L. J. T. Decary, 268 West 44th Street, New York City wants March, 1922.

Paul Whitney Rhoades, 123 North Avenue, Washington, Pa., wants October, 1925.

Schmidt, Garden & Erikson, 104 South Michigan Avenue, Chicago, Illinois, want January, February, November, 1921, and June, 1922.

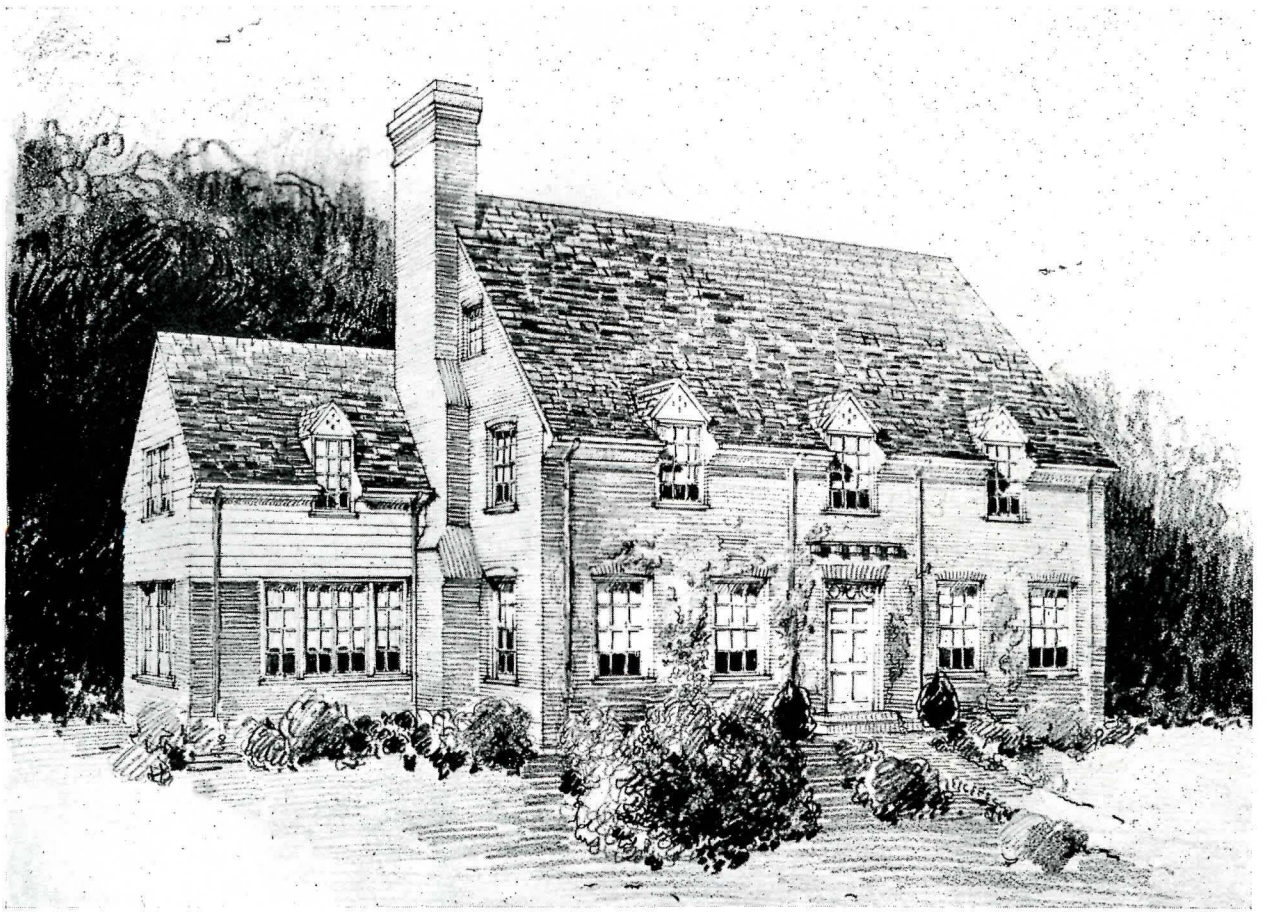
The Library of the Department of Architecture, The Clemson Agricultural College, Clemson College, S. C., burned and the department wishes to secure all back copies of PENCIL POINTS, particularly the special numbers.

A. Lawrence Kocher, 357 East Prospect Avenue, State College, Pa., wants January and March, 1921.

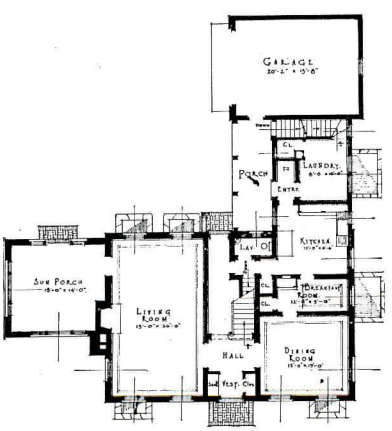
B. C. Holland, P. O. Box 186, Dublin, Georgia, will sell the following copies of PENCIL POINTS, (all in good condition), at twenty-five cents a copy: 1923—April, June, July, August; 1924—January, February, March, April, May, June, September, October, November, December; 1925—January, February, March, April.

A draftsman's equipment is just 'bout the same
As it was long before King Solomon's reign
Compasses, dividers, scales and pens,
Triangles and T-squares 'most like they had then
Some changes have come with slight variation
But the new to the old, still bears close relation
The Classical Temples and Gothic so fine
Were probably built from a ruling pen's line
And plans for sky-scrapers so high in the air
Are still being drawn with triangle and square
It's hard to conceive of a possible change
As these old tools of ours, have such a flexible range.
But some genius head with our blessings we'll annoint
Who invents a sharp pencil with unbreakable point
And he too will be hailed with immortal men
Who creates a self sharpening and self cleaning pen.

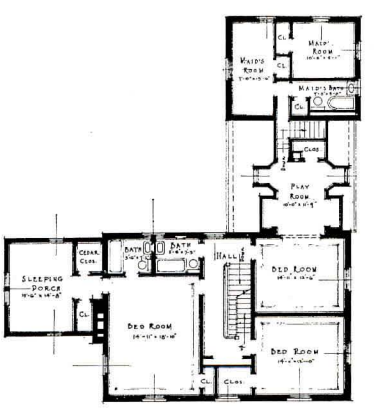
Rudolph L. Wilson



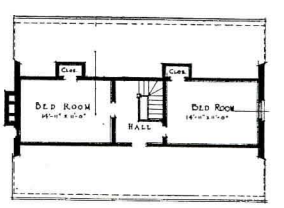
Pencil Rendering by Ely Jacques Kahn



First Floor Plan

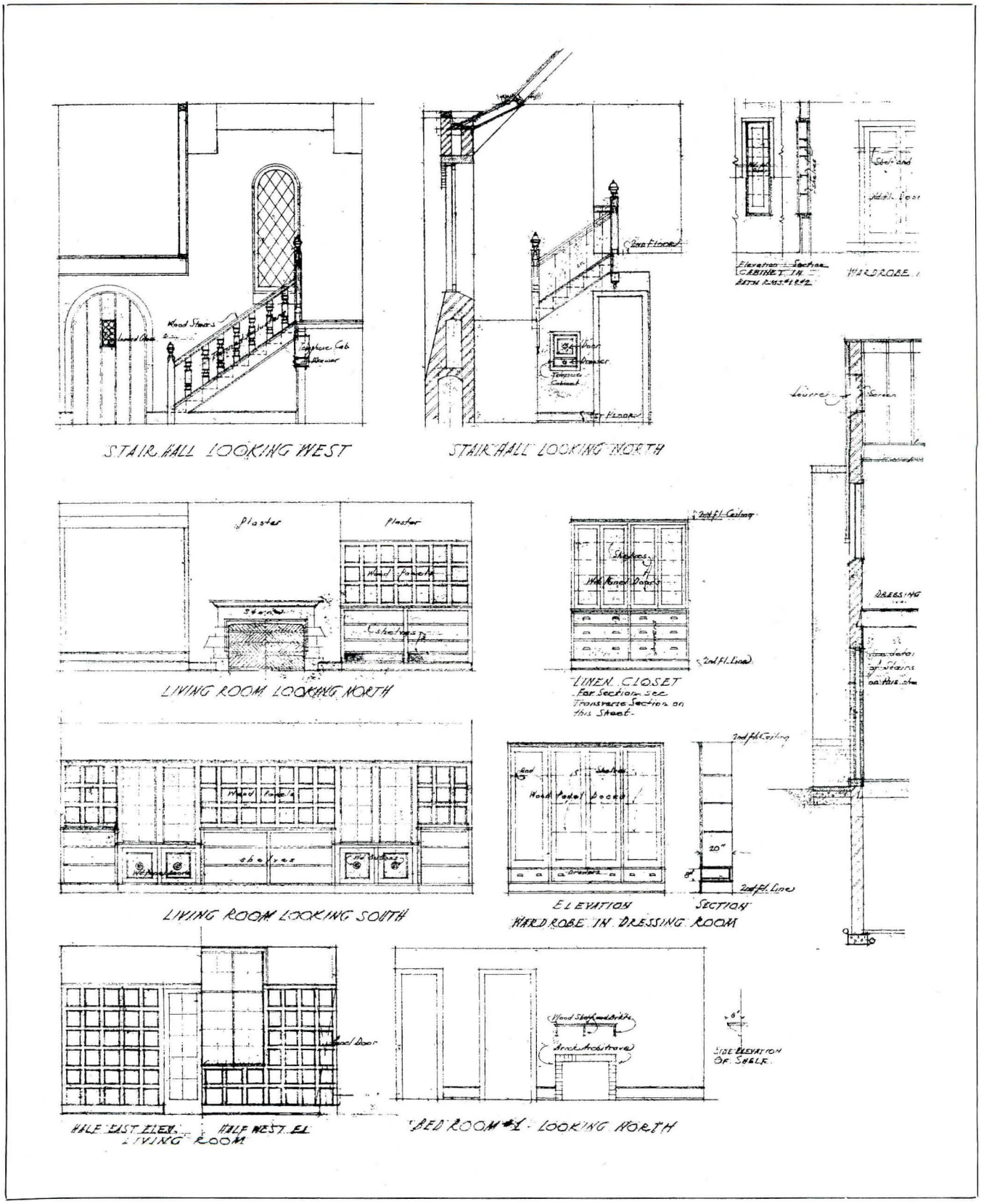


Second Floor Plan



Third Floor Plan

HOUSE FOR A. E. WHEELER BUILDING CORPORATION,
JULIUS GREGORY, Architect



DETAILS OF CONSTRUCTION FOR SMALL HOUSE

DISE AND DITCHY, Architects

THE SPECIFICATION DESK

A Department for the Specification Writer

SPECIFICATIONS

By W. W. BEACH

PLUMBING AND DRAINAGE, PART XX. *(Continued)*

MATERIALS

ARTICLE 6. *Piping in building.*

(A) ALL CAST IRON PIPE shall be of close-grained, tar-coated, grey iron of uniform thickness, sound, cylindrical, free from defects, and with Maker's name plainly cast on each piece. It shall be of approved standard make and shall weigh, per lineal foot, not less than the following (fittings in proportion):

3″	pipe,	9½ lbs.
4″	"	13 lbs.
5″	"	17 lbs.
6″	"	20 lbs.
8″	"	33½ lbs.

(B) ALL WROUGHT IRON PIPE for water and gas supply and stand-pipes shall be genuine wrought, lap-welded pipe of standard weight and approved make, heavily galvanized for water, and black iron for gas. Fittings shall be galvanized malleable iron, flat-band for gas and cast-iron steam pattern for water.

(C) LEAD PIPE shall be 8 lb., commercially known as "D" weight; shall be best quality and of approved make.

(D) COPPER PIPE shall be semi-annealed, seamless drawn tubing, iron-pipe sizes, of approved make and containing not less than 70 per cent. copper alloyed with zinc and tin. Fittings shall be cast, of same proportion copper and alloy, and of extra-heavy, cast-iron steam pattern.

(E) ALL VALVES, except those directly at fixtures, shall be all brass, of approved type and Make. All shall be full-way, gate or check, built to withstand steam pressure of 125 lbs.

(F) HANGERS shall be cast iron, of approved make and proper size and length for each location. Gang hangers may be used where practicable. Wrought iron pipe clamps, of proper size, shall be used to support vertical runs.

(G) SLEEVES or thimbles shall be provided, of proper diameter and length, where pipes pass through floors, walls and partitions; all to be of No. 20 gage galvanized iron, except in exposed places where they shall be of wrought iron pipe, smoothly finished.

(H) LEAD AND PICKED OAKUM for calking shall each be of best grade, suitable for the purpose.

(I) SHEET LEAD for flashing shall be best grade, weighing 4 lbs. per sq. ft. That under showers shall weigh 6 lbs. per sq. ft.

ARTICLE 7. *Plumbing and Water-supply Fixtures.*

(A) HOT WATER HEATER shall be a 2-grate cast iron sectional heater, similar to No. 2 made by ——— Co., suitable for burning any kind of coal, wood or rubbish.

(B) HOT WATER TANK shall be an extra-heavy galvanized range boiler, 2′6″ in diameter and 10′0″ long, tested to 125 lbs. pressure. It shall be fitted with concave riveted ends manhole and all necessary 1½″ tapping for hot and cold water connections; also steel hangers to suspend from boiler room ceiling.

(C) WATER CLOSETS throughout shall be ——— No. — vitreous-china, extended-lip, syphon-jet with side inlet, fitted with ——— flush valve with stop, open-front, birch-mahogany seat, all complete, with cast brass floor flange.

(D) URINALS shall be ——— No. —, 18″, with automatic flush tanks with control-cocks, otherwise complete as shown.

(E) LAVATORIES shall be ——— No.—, all 18″ x 21″ enameled outside and fitted with ——— self-closing bibbs, supplies, wastes and vents, all as shown, except that lavatories in gangs may have continuous wastes with single vents.

(F) SLOP-SINKS shall be ——— No.—, 20″ x 22″, complete as shown, with hot and cold water supplies through compression faucets; hose threads on cold water faucets. Sinks in laboratory tables shall be ——— No. —, with No.— traps and with hot and cold water supplies through pantry basin cocks No. —, arranged to turn down and be concealed under table lids; and provided with drum traps and wastes.

(G) SINKS in kitchen and domestic science room shall be ——— No. —, 22″ x 36″, complete as shown, except that each shall be provided with a No. — grease trap located on floor as directed. Sinks in dark-room and in laboratories (except in demonstration tables) shall be ——— No. —, complete as shown, except that cold water supplies shall be through compression hose-bibbs.

(H) DRINKING FOUNTAINS shall be ——— No. —, complete as shown, except that each shall have a No. — self-closing bubbling valve. Each shall be 36″ high.

(I) DENTAL LAVATORY shall be ——— No. —, complete as shown.

(J) SHOWERS shall be ——— No. — shower-heads, with ½″ galvanized supplies controlled by regulating valves, complete as shown. Lead pans shall be provided in floor construction under all shower stalls above basement.

(K) FLOOR-DRAINS shall be ——— No. —, set over 3″ ½-S traps. Drain under refrigerator shall be ——— No. —.

(L) SILL COCKS shall be ——— No. —, with loose keys, which shall be delivered to the Superintendent.

(M) HOSE-REEL CABINETS shall be ——— No. —, complete as shown, each fitted with 100′ of 1½″ unlined linen hose, brass valve on stand-pipe connection, brass nozzle, heavy fire axe and ——— No. — fire extinguisher.

WORKMANSHIP

ARTICLE 8. *Trenches.*

(A) EXCAVATING shall be made to carefully follow lines shown on drawings, with bottoms of all trenches and manhole pits carried to exact depths required, so that all pipes etc. shall lie on natural earth beds.

(B) BACK-FILL shall be carefully done in layers, thoroughly tamped or flooded as directed. Special care shall be used in making solid-refill over all work under concrete floors and walks. Just before acceptance of contract, all trenches shall be refilled as directed and left neatly mounded to satisfaction of Superintendent.

(C) CUTTING OF PAVING, where necessary for this work, may only be done by special permit of the Street Department. Such cutting and all repairs to paving on account of these and other damages due to work under this contract are included in the contract and shall be done as directed by said Department and subject to the approval of the Official in charge.

ARTICLE 9. *Outside Sewers.*

(A) MANHOLES shall be of required diameter and depth, with 13″ walls of common brick in 1:3 cement mortar, with full ½″ shoved joints. Walls shall start on 2-course footings, 17″ wide, and shall be carried up true and straight 6′0″ above floor, then evenly domed to a 24″ diameter neck, which shall be extended up to street level with 8″ brick walls, over which shall be built into the paving the cast iron manhole frames with 20″ covers as specified. Floors of manholes shall be of brick on edge, laid in mortar as specified for walls; or floors may be of 1: 2½:5 concrete, 4″ thick, if approved by the Superintendent. Over the brick or concrete floor slab shall be laid ¾″ of 1:2 cement mortar, smoothly troweled. Walls shall be carefully plastered inside with ¼″ of same material. Inlet and outlet pipes shall be carefully built in with cement mortar at proper heights. Ladders shall be built into the walls as shown and shall consist of ⅝″ round rungs, 14″ o. c., riveted into ⅜″ x 1½″ stiles, 15″ o. c., with ends turned and se-

curely anchored into floor and walls. Ladders and cast iron work shall be thoroughly coated with asphaltum paint.
(B) TILE DRAINS shall be of size and locations shown and shall be laid with even and proper fall and with full 1:1 Portland cement joints, each joint finished smooth inside and out before next tile is laid. All changes of direction shall be with 45° ells. Both the storm-water and sanitary lines shall extend from outlet of cast iron sewer outside of basement wall to manhole as above specified and thence to connect into City sewers at street manholes. These latter connections shall be made as directed by the City Sewer Inspector and subject to his approval.

ARTICLE 10. *Cast Iron Piping.*

(A) SOIL, WASTE, DRAIN PIPES ETC. Wastes, properly connected with sewer, shall be provided for all fixtures. All soil pipe shall be laid with even and proper fall and all that above basement floor shall be rigidly supported on hangers spaced about 5'0" o. c. Pipe vents through roof and all other soil pipes, unless otherwise marked, shall be 4"; waste pipes 2". Main sewer shall extend under basement floor as shown and to point about 3'0" outside of wall of building and there connect into tile sewer above specified, with tight cement joint. All joints in cast iron pipe shall be made tight with oakum and melted lead, tamped down hard and filled flush. Pipe vents shall extend at least 2'0" above roof and be flashed with 4 lb. sheet lead 30" square, laid flat on roof between plies of roofing and guaranteed water-tight. Cleanouts shall be inserted where shown and at feet of stacks and in other necessary places, with Y-branches and brass screw-caps easily accessible. All cleanout caps in floors shall be flush with same, in perfect plane, and shall be full size of pipe, except that pipes larger than 4" may have 4" cleanouts.
(B) ROOF DRAINS shall be of cast iron pipe, same as in preceding paragraph, provided with cleanouts in same manner. Drains shall extend to leaders from roof connections (provided and installed by Roofer) which leaders shall be properly connected into drain pipe hubs by Plumber. Drains shall be brought together under basement floor as shown and extended thence to point outside of wall and there connected into tile drain as above provided for sanitary line. (If required by local ordinance, both sanitary and storm-water lines shall be equipped with extra-heavy cast iron running-trap and cleanout, with fresh-air intake, extended above grade and fitted with approved cast iron cowl. These traps shall be installed just outside building wall and the outlets from same calked into bells of tile drain as above provided. If found necessary, approved back-water traps and shut-off valves shall also be installed in these sewer lines in location and manner directed, neither the running traps, back-water traps nor shut-off valves are included in the contract, but either or all will be made subject of an extra-order if so determined by the Architect.)
(E) VENT PIPES AND TRAPS. Vent pipes for the back-venting of all traps of all fixtures shall be taken from standing pipes at least 30" above highest fixture on that line. Each trap shall (unless otherwise specified) be back-vented with vent-pipe of same size as trap which it vents. Vent pipes from traps to stacks shall be run with as much upward incline as possible and, in no case, to run level or to slope in the wrong direction. Each fixture, unless otherwise specified, shall have lead waste and trap, with trap-screw placed where convenient for cleaning. All traps shall be perfectly smooth.

ARTICLE 11. *Hot and Cold Water Supplies.*

(A) STREET CONNECTION shall be made with City water main in front of building where indicated, same to be a 2" tap, from which there shall be run a 2" extension, of material purchased from the City Water Department and installed under direction of its Representative, to meter located as shown in meter closet in basement.
(B) METER, provided free of charge by the City Water Department, shall be installed by this Contractor in meter closet. Main on each side of meter shall be provided with 2" shut-off valve and right-and-left couplings so that meter can be readily disconnected and removed. These couplings shall be located a sufficient distance from meter to permit installation of by-pass around meter. By-pass shall be provided with a 2" valve with seal to be obtained from the City Water Inspector and installed under his direction. Shut-off valve on house side of meter shall have waste, controlled by pet-cock, for draining the entire system and to which all piping shall be sloped, unless otherwise provided. Meter and all piping outside of this pet-cock which cannot be drained shall be thoroughly frost-proofed.
(B) STAND-PIPES. A 2" stand-pipe supply shall be taken off of main supply back of outer control valve of meter and shall be provided with a 2" valve with seal, same as specified in preceding paragraph. From this there shall be run, exposed under basement ceiling a 2" main supply, from which shall be taken off a 1½" branch for each stand-pipe, which shall be located as shown and fitted with 1½" outlets in each story (including attic) for hose connections. One stand-pipe shall be extended through roof and hose and reel for same located near roof-scuttle, convenient for attachment. Valves controlling attic and roof outlets shall be located in third story and shall be provided with drips with pet-cocks for emptying pipes above valves. All valves shall be conveniently located in positions approved by the Fire Chief. Cabinets for hose and fire equipment shall also be installed under his supervision.
(C) COLD WATER PIPING. A 2" main shall be extended. from shut-off at meter, to basement ceiling and thereon to convenient point, from which there shall be taken off a 1½" branch riser to each toilet room tier and to each basement bath room; 1½" branch to hot water tank; 1" branch to boiler room, kitchen, domestic science room and to each toilet room group; ¾" extension to each sill-cock and slop-sink hose-bibb and ½" supply to each other fixture. Branch to boiler room shall be properly valved and capped, ready for steam-fitter to extend to boilers. Supply pipes to drinking fountains shall be kept well away from hot water and steam pipes. No water or waste pipes may be exposed to freezing conditions, but shall be well insulated wherever any danger of frost would otherwise exist. Supply pipes on basement ceiling shall be neatly arranged in straight lines and shall be strongly secured in such manner as to be perfectly rigid. Adequate precautions shall be taken to guaranty the entire installation against water-hammer and the work will not be accepted until demonstrated noiseless in this respect. All piping shall slope and drain to drainage cocks. If any piping is too low to drain to pet-cock at meter, an additional pet-cock shall be located at low point, over a floor-drain, to complete the drainage. No piping shall be permitted to trap.
(D) HOT WATER SYSTEM. Hot water storage tank shall be rigidly suspended from ceiling of boiler room as shown and properly interconnected with the tank heater which shall be installed on boiler room floor and fitted with smoke breeching of 6" black-iron pipe, with cleanout and shut-off damper, and connection into boiler breeching or flue. All hot and cold water connections shall be 1½" and shall be valved and equipped with by-pass, so that tank and heater can be disconnected and removed without interrupting the service. A 1½" hot water supply main shall be extended from tank, on basement ceiling, with 1" branch to each basement bath room and to each toilet room tier; ¾" branch to kitchen, domestic science room and to each toilet room group; and ½" supply to each fixture for which hot water is intended. Each hot water riser shall have a ½" return pipe from highest point to insure circulation. These shall unite into a ¾" return main on basement ceiling and extend thence to tank supply. In all other respects the hot water system shall be installed in same manner as provided for cold water in preceding paragraph.
(E) VALVES shall be provided in all locations shown and specified. In addition to control valves above called for, each sill-cock branch and each riser shall be provided with check-and-waste valves located conveniently, near floor-drains in basement. Each valve shall have a 1¼" diameter brass tag attached by brass chain, on which tag the function of valve shall be plainly stated, in deep-stamped letters filled with black enamel. Separate control cock shall be provided for each fixture supply, whether called for in plate description or not. These need not be tagged. All valves and cocks on N. P. lines shall be N. P.

ARTICLE 12. *Fixtures.*

(A) IN GENERAL. Each fixture shall be installed in best manner and in location exactly as shown. Plumbing Contractor shall give the General Contractor definite information for the placement of all grounds, etc., to which fixtures are to be connected and shall inspect same before they are covered and report to the Superintendent all that are not in proper condition to afford adequate support for this equipment, as this Contractor will be held solely responsible for all such supporting members. All fixtures shall be rigidly fixed in place, on standards, brackets or their own bases, as case may be, and shall have all necessary supply, vent and waste connections, as provided by Maker or otherwise.

(B) WATER CLOSETS shall be installed as shown in each toilet room. Closets and tanks in gangs shall be perfectly aligned, and have proper cold water supplies. Marble Contractor will install marble template under each closet, placed and drilled as directed by Plumber.
(C) URINALS shall be set before toilet room floors are laid, so that same can be properly finished around urinal bases. Each gang shall have single tank, with cold water supply and control valve for regulating discharge. No marble work in connection with urinals is included in Plumbing.
(D) LAVATORIES shall be set at standard height and shall have hot and cold water supplies and wastes through vented traps. Dental lavatory shall have cold water supply only.
(E) SINKS shall be set at standard height and shall have hot and cold water supplies and wastes through vented traps or special grease traps, as case may be. Slop sinks shall rest on floor or be supported in laboratory tables, as case may be. The latter shall have anti-syphon traps, but all others shall waste through vented traps.
(F) ALL OTHER FIXTURES of every description shall be installed as called for, either in standard manner or as directed by the Superintendent, at no greater expense than that of best standard practice. Lead pans under shower stalls shall be placed in accordance with details, with edges turned up all round and outlet flashed into flange of floor-drain, all to be in perfect condition to absolutely guarantee against seepage appearing in ceiling underneath. Pans will be built into terrazzo by another Contractor.

ARTICLE 13. *Gas Piping.*

(A) IN GENERAL. The local Gas Company will bring its supply into the building and connect same with meter, which they will also provide, in meter closet, fitted with control cock and threaded connection, ready for house main. This main will be 1½" and shall be extended on basement ceiling and a 1¼" branch run thence to domestic science room, where plug shall be left in convenient location, where directed, for extensions to gas stoves. A similar 1¼" branch shall be run to kitchen and plugged for later extensions to stoves and cookers. Extensions shall also be made to each emergency gas bracket. These shall be ⅜" pipe for single outlets; ½" pipe for two to four outlets and ¾" pipe serving five or more outlets. All gas piping shall be installed in strict accordance with printed rules of the Gas Company and subject to its inspection and approval before lathing is begun. This Contractor shall pay for the removal and replacement of all lathing and plastering which he permits to be placed, without protest to the Superintendent, over gas piping not approved.
(B) EMERGENCY OUTLETS shall be located as indicated, at height directed and shall each be fitted with a 4" horizontal nipple, brass cock, pillar and approved tip and shade-holder. Each shall be in good condition when accepted, with good flame and free from leakage.

ARTICLE 14. *Protection, Cleaning and Guaranty.*

(A) PROTECTION AND CLEANING. In addition to the adequate protection of his own and adjoining work as specified in the General Conditions, this Contractor shall keep all pipe and sewer openings plugged (when not in work) and shall so protect all fixtures that they will neither be used or otherwise injured before acceptance. Special care shall be used in protecting floor-drains and other drainage outlets. All fixtures shall be carefully cleaned before being offered for acceptance. None will be accepted that show the slightest defects, whether from usage or other cause, or that are not in perfect working order.
(B) GUARANTY. This Contractor, in undertaking the work of this contract, hereby guarantees all portions of same and pledges himself to make good, as part of his contract cost, any and all defects which may appear in said work within one year after its final acceptance, which defects may be, in the judgment of the Architect, due to the use of improper material or workmanship.

ARTICLE 15. *Alternatives.*

(A) ALTERNATIVE NO. 1. Each Bidder is requested to state in his bid the amount to be added thereto in case all hot water piping, including the recirculating system, is seamless drawn copper tubing, iron pipe size, in place of the wrought iron pipe specified.
(B) ALTERNATIVE NO. 2. Each Bidder is requested to state in his bid the amount to be added thereto in case all hot and cold water piping, either concealed or exposed (but not including stand-pipe system or supplies at fixtures) is covered with an approved anti-sweat sectional pipe covering, properly applied.

ELECTRICAL WORK, PART XXI

THIS CONSTITUTES THE FINAL Division of our complete specifications for a consolidated district school building, the general conditions of which were published in PENCIL POINTS many months ago, followed by the General Contract divisions, then the Heating and Ventilating and, last preceding, the Plumbing and Drainage.

The explanatory remarks introductory to the specifications for Plumbing and Drainage apply in general to the Electrical Work as well; from which it will be noted that we are pursuing the policy of specifying catalog items wherever same will serve in lieu of bulky description; also that contractors are not only permitted to substitute under the "or equal" provisions of the General Conditions, but are actually invited to suggest substitutions.

As is the case with specifications for other mechanical branches, we are merely publishing an architect's version of same for a typical job. This does not mean an elimination of the mechanical engineer as such. If the architect is enough of an engineer to prepare such specifications, well and good. If he is not, he can hire the work done, either in his own office or by a professional outsider; or he can revamp an old specification to the best of his ability.

In any event, it is well to have any mechanical specification gone over in detail by one or more of the contractors who are going to figure the work and secure a criticism of same before putting it out for bids. This is vastly different, however, from permitting an engineering contractor to actually prepare such specifications, merely having same copied in the architect's office. Anything of the sort which places an architect, in any degree whatsoever, under an obligation to a man or concern that may later be executing a contract out of the architect's office is vicious practice, utterly unethical.

DIVISION O. ELECTRICAL WORK

Note. The Contract and General Conditions of these Specifications, including the Supplementary General Conditions, govern all parts of the Work and are parts of and apply in full force to these Specifications for Electric Work. The Contractor shall refer thereto as forming integral parts of his Contract.

ARTICLE 1. *Scope of Work.*

(A) THE ITEMS under this Division include:
(1) ALL ELECTRIC WIRING for Lighting and Power.
(2) ALL CONDUIT for Light, Power and Telephone Wiring.
(3) ALL FITTINGS AND EQUIPMENT in connection with Wiring and Conduit.
(4) ALL LIGHTING FIXTURES, completely installed.
(5) ALL PROGRAM CLOCKS and Wiring incidental to Same.
(6) ALL TELEPHONE AND BUZZER WIRING, complete.
(7) SUCH OTHER WORK as is herein set forth.

ARTICLE 2. *General Description.*

Note. Under the headings of this Article, there is given for convenience of Contractors a brief mention, not necessarily complete, of the work included in this Division, full description of which will be found in the following Specifications beginning with Art. 3.

(A) THE INSTALLATION OF ALL WIRING, CONDUIT and fittings and equipment in connection therewith shall be in strict accordance with all local regulations and the requirements of the local Electric Company, as well as in conformity with the latest rules of the National Board of Fire Underwriters applicable thereto.

(B) WIRING PERMIT shall be secured from the proper City Official by this Contractor and the cost of same included as part of the contract price. The Contractor shall also attend to all subsequent dealings with the City Department and the local Electric Company, including all notifications to Inspectors in connection with this work.

(C) TESTS. Upon completion of this work, all parts of same shall be proven to be in perfect operating condition, in the presence of the Superintendent and Representatives of the City Department and the Local Electric Company, from each of which the Contractor shall secure and pay for certificates of approval and deliver same to the Architect. The contract price shall include all costs of tests and corrections necessary to secure such certificates and to put the entire work in condition to meet the approval of the Architect.

(D) SHOP DRAWINGS AND SCHEDULES covering every feature of the work included in this Division shall be submitted for approval as specified under General Conditions. Wiring plans shall show all sizes of wire and conduit, with special indications of all variations from Architect's drawings. With schedules of fixtures, there shall also be submitted Maker's illustrations and descriptions of all items differing from those specified.

(E) CONDUIT shall be installed for all light, power and telephone wiring, but is not required for buzzer and clock wiring.

(F) LIGHT AND POWER WIRING. The Electric Service Company's mains will enter the building through the outer wall at an agreed location, approximately as indicated, where this Contractor shall provide inlet conduits, enclosed main-line switch and fuse and 3-wire connections for meter. Meter will be supplied and installed by Service Company. From same the Contractor shall extend the wiring to main panel-board and thence to each branch panel-board, and from these to each light, power, switch and receptacle outlet in the building.

(G) PANEL-BOARDS AND CABINETS shall be provided complete in locations shown, with all switches, fuses and connections as described. These shall be indicated on Contractor's shop drawings for each panel-board.

(H) SWITCHES shall be provided on panel-boards and in all other locations called for.

(I) FLOOR AND WALL RECEPTACLES shall be provided as indicated for plugs for extension cords.

(J) WIRES FOR MOTORS, not less than 20'0" long, shall be left in all locations called for, ready for connections by others. No motors are included in this contract, but this Contractor shall supervise the installation of all for which sizes are given on plans, as his certificates of approval must include all motor wiring. He shall report to the Architect all motors which are not properly connected.

(K) LIGHTING FIXTURES shall be complete as catalogued, with all glassware and lamps of the stipulated wattage. Fixtures of special design, including exterior lanterns at entrances, shall also be supplied and installed complete under this contract. Proper fixture supports and studs shall be provided for all fixtures. Cord drops, with sockets and lamps, shall be provided wherever other fixtures are not specified for light outlets indicated.

(L) PROGRAM CLOCK shall be provided in Principal's office and secondary clocks in each of 28 other locations as indicated, all with proper wiring and all necessary connections and appurtenances.

(M) TELEPHONE WIRING. Provision shall be made by this Contractor for the introduction through conduit of telephone wires into Principal's office in location directed. This includes conduit only, acceptable to the Telephone Co., which will provide the wiring.

(N) BUZZER SYSTEM shall include a push-button panel-board in the Principal's office with wire extensions to buzzers in 30 locations shown.

MATERIALS

ARTICLE 4. *Conduit.*

(A) ALL CONDUIT shall be New Code, standard weight, mild-steel pipe of best quality, galv. outside and enameled inside, neither of which treatments shall, under test, crack or flake when conduit is bent at right angles on a radius equal to 8 internal diameters. Coatings shall be smooth, hard and flexible and the interior of all pipe shall be thoroughly cleaned by approved method. All pipe shall have full standard internal diameter and wall thickness, and shall be made by ——— or other approved Maker.

(B) OUTLETS AND TERMINALS. Knockout Outlet boxes shall be "———" or other approved type, pressed out of single pieces of steel, galvanized inside and out, and installed at each light, power, switch and receptacle outlet. Ceiling outlets shall, unless otherwise specified, be 4" in diameter and 1½" deep inside, with knockouts as required, drilled and tapped for fixture studs. Covers shall be raised type, with approximately 3" opening and set flush with face of plaster. Boxes for more than 4 splice connections shall be 2⅛" deep inside. All boxes shall have lugs drilled and tapped for securing covers. Boxes shall be single or for gangs, as required. Those for floors shall be of cast iron as catalogued. Conduits terminating in panel or other steel outlet boxes shall be secured by galvanized steel lock-nuts and rounded terminal bushings. Conduit at outlets to motors shall be fitted with approved "———" fittings. Junction boxes shall be similar to outlet boxes and shall be fitted with flat screwed covers. Contractor shall be responsible for the building-in of boxes in proper locations and in correct relation to finished adjoining surfaces.

(C) OUTLET AND FIXTURE SUPPORTS. ½" fixture studs shall be installed for all ceiling and bracket lighting outlets; those in floor-slab construction to be "———" or other approved hangers. Ceiling outlets in furred plaster ceilings shall have boxes with studs supported on 1" steel channels, rigidly attached to at least two furring bars. Channels shall extend well over same and shall be coated with asphalt paint.

THE PRODUCERS' RESEARCH COUNCIL

Some of the Remarks of Mr. O. C. Harn, *Chairman*, Made Before the Annual Convention of THE AMERICAN INSTITUTE OF ARCHITECTS

I hardly think it is necessary, in view of the fact that the special committee of the Institute on which the Producers' Research Council was represented has been successful in presenting to you what looks to you and to us a practical solution of our problem, to go into anything like detail. But since I have been called to the platform, it perhaps might be well just to tell you a little about the Producers' Research Council from the standpoint of the manufacturers.

Information about materials is necessary to the proper conduct of any profession, any art.

The Scientific Research Department is a body which concentrates all that information in one place for you.

But there is another source which is quite as important, and that source is the knowledge which manufacturers themselves have about their own materials. Nobody knows as much about a material as the man who makes it. But there are at least two defects in this source of information.

In the first place, it is the most natural thing in the world for that information to be prejudiced.

There is another possible defect and that is that the manufacturer may not know how to make a selection from that mass of information to present to the man who does not know anything about it.

It is fairly well illustrated by a story I heard the other day of a motorist who was some miles from Johnstown, Pennsylvania, and wanted to get to that town. Why, I don't know. (Laughter). It happened that he asked a man who had full and complete information.

He answered him by saying, "Yes. Go to the first cross road, turn to the left, go on down until you see a fork in the road; take the right-hand fork. A little beyond you will find a road that looks like a main road, but that is not a main road—," and so on giving a description of nearly every foot of the road.

The information was perfect and complete, but there was such a mass of it that by the time the motorist got to the first turn he had forgotten which way to turn. There was nobody to ask but a small boy.

The boy turned from his play, and said, "Yes. Just follow the newer set of telegraph poles."

It was perfect—he had complete information about the road to town also but he selected only the essential information which that motorist should have.

Now the manufacturer in full possession of the complete information, does not always know how to tell you what you would like to know.

Now the evident way for you to get the information you want about materials is to ask the manufacturer to tell you the way you would like to have it; but it is manifestly impractical. But it is practical for you en masse to ask us en masse and instruct us as to what you want to know.

Now you, as a body, have it in your power to tell us wherein we are making our mistakes in telling you about our materials, whether en masse as a council or as individual members of the Council.

Now just a word as to what we get out of that contact as manufacturers. In numberless instances in the last three or four years, the members of the Council have gone to your Scientific Research Department, when our plans were in embryo, and we have said, "Here is what we propose to issue to architects for their information about our materials. Are we on the right track?" The answer comes back, "Yes, you are on the right line." Then we work it out in more detail and say, "Is this in good taste and good form? Is it likely to make the good impression upon the architect which we want it to make?" Then comes back the criticism, "Very good on the whole, but we advise you to elaborate this point a little bit more," or "We believe you need not say that. We think it would make a bad impression."

That part comes out. Then we get it into printed form and say, "Is this form all right?" They may say, "No, that is too small. Architects like to have something large enough so that it won't get lost in the files", or they may say it is too large to file, or that it has stiff covers and takes up unnecessary room. And so on.

When we get through with that piece of information, it is in the form which will best serve your purposes and it will best serve our selfish purposes, because if we don't get a thing the way you want it, it is a waste of money and valuable time. Printed matter is not advertising until it meets the minds of the people at whom it is aimed.

Now I want to say one word more and I am through. The question is raised in the report as to the feeling of some of the members that the Institute should not accept money from manufacturers for any purpose. This work, gentlemen, is not charity on the part of manufacturers, I assure you. We are not likely to pay out good money for something that we do not think valuable. So far the Producers' Research Council members have received value for every cent that we have paid, and we are willing to pay more on the basis of value received if this work is expanded so that we can get greater value out of it. I believe that if this work is carried out in the way that it was outlined by your Special Committee this morning, the work can be expanded so that it will not only be more valuable to you who seek authoritative information, but also to the manufacturers who have ideals high enough to work not only for the present but for the future.

We are all—manufacturers as well as architects—working for the same client, the public. Our success depends upon our serving the public. It seems to me that we can all work together on this thing without any unethical objections or charges, and it seems to me that this is one of the greatest things that has been organized for service to the public, our common clients. (Applause)

PUBLICATIONS

OF INTEREST TO THE SPECIFICATION WRITER

Publications mentioned here will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm using them. When writing for these items please mention* PENCIL POINTS.

Standard Specification for the use of White-Lead Paint.—A.I.A. File No. 25a21 or 25c.—A carefully indexed and complete document covering the subject indicated for all classes of work, methods of application, formulas. Also specifications for turpentine, drier and linseed oil. Standard filing size, 32 pp. National Lead Company, 111 Broadway, New York City.

Published by the same firm, Standard Specification for the use of Red-Lead Paint, A. I. A. File No. 25a23 or 25c3. Companion of the above covering, in a similar manner, the use of Red-Lead Paint.

Benjamin-Starrett Panel Boards and Cabinets.—Catalog S-4 A.I.A. File No. 31-c-3 (just off the press) illustrates and describes this type of panel board and cabinet for every lighting requirement. Tables, directions for wiring, numerical index drilling form, etc. 8 x 10½. 34 pp. Benjamin Electric Co., 120 S. Sangamon St., Chicago, Ill.

Broomell System of Vapor Heating.—Booklet describing this type of heating. Fully illustrated. Containing, diagrams, cross sections, connections and piping, typical installations. 44 pp. 7 x 10. Vapor Heating Co., York, Pa.

Published by the same firm, Buildings Broomell Heated with Vapor, Information, Directions, Hints, Helps for the Installation and Operation of the Broomell System.

The Care and Cleaning of Building Marble.—Just off the press, new booklet on this interesting subject. Contains illustrations of marble taken before and after the work of cleaning was done. 18 pp. 3½ x 6. Vermont Marble Co., Proctor, Vt.

The Stedman Floor.—Leaflet describing this flooring for the home, hospitals, hotels, business offices, etc. The Stedman Products Co., South Braintree, Mass.

Panelboards—Steel Cabinets.—Catalog No. 35 illustrates and describes sectionally built panelboards, an important line of steel cabinets, and the fittings that go with them. 64 pp. 7¾ x 10½. Frank Adam Electric Co., St. Louis, Mo.

Aluminum Paint.—A treatise on the physical properties of Aluminum Paint and its uses in modern industry by Junius D. Edwards, Asst. Dir. of Research. Aluminum Co. of America, Pittsburgh, Pa.

Brass Pipe for Water Service.—Bulletin B-1, Monograph on the subject. Typical layouts and valuable engineering data for architects, engineers, and contractors. 8½ x 11. 32 p. American Brass Co., Waterbury, Conn.

Art Ecclesiastic.—Brochure showing a large number of examples of wood carving as applied to church furniture and embellishment. 48 plates. 8½ x 11. American Seating Co., 14 E. Jackson Blvd., Chicago, Ill.

Window Glass Specifications.—Document prepared in cooperation with the U. S. Bureau of Standards. Grades and quantities of glass. Definitions of terms used. 8½ x 11. American Window Glass Co., Farmers Bank Bldg., Pittsburgh, Pa.

Fences, Gates and Railings.—Manual No. 60 contains complete specifications, scale drawings, details and dimensions and much other useful data on the subject. Standard filing size and form, 8½ x 11. 94 pp. Anchor Post Iron Works, 9 East 38th St., New York.

Andersen Window Frames.—Illustrated booklet with drawings covering design and construction of window frames. 24 pp. 8 x 11. Andersen Lumber Co., Dept. L-5, Bayport, Minn.

Ankyra.—Booklet showing application of this type of anchor in building construction. Sectional drawings showing details of application. 32 pp. Ankyra Mfg. Co., 149 Berkley St., Philadelphia, Pa.

Arkansas Soft Pine Handbook.—Text and moulding designs, grading rules, diagrams and much useful data. 62 pp. 8½ x 11. Arkansas Soft Pine Bureau, Boyle Bldg. Little Rock, Ark.

Acousti-Celotex.—Folder describing this product for churches and public building. List of installations. The Celotex Co. Acoustical Division. 645 No. Michigan Ave., Chicago, Ill.

Metal Weatherstrip Details.—Looseleaf portfolio with strong binder containing 48 pages of drawings and specification data on weatherstrips for all types of service. 8½ x 11. Chamberlain Metal Weatherstrip Co., Detroit, Mich.

Quality Centrifugal Pumps.—Specification folder, looseleaf, containing complete data on all types of pumps for building use, diagrams, layouts, etc. 9 x 12. Chicago Pump Co., 2320 Wolfram St., Chicago, Ill.

The Linoleum Data Book.—A. I. A. Classification 28-i-1. Looseleaf portfolio containing specifications for linoleum floors, together with inserts showing colors and other useful data. Standard filing size 8½ x 11. Congoleum-Nairn Inc., 1421 Chestnut St., Philadelphia, Pa.

Fireplace and Flue Construction.—The Covery system with diagrams, sections and details. Specialties. Also includes data on sidewalk doors and wind-proof scupper. 16 pp. 8½ x 11. The H. W. Covert Co., 137 East 46th St., New York City.

Craftex.—Folder illustrated with color plates, showing methods of applying this modern material on interior wall surfaces. Textures and colors illustrated and described. Specifications. Standard filing size. The Craftex Co., 146 Summer St., Boston, Mass.

Solid Steel Reversible Windows.—Illustrated booklet No. 1-24 covering equipment for office buildings, schools, hospitals and other structures. Sectional drawings and details. 20 pp. 9 x 12. Crittall Casement Window Co., 10959 Hearn Ave., Detroit, Mich.

Dahlstrom Standard Construction.—Illustrated booklet covering metal doors and trim, elevator enclosures, partitions, conduo-base, etc. Sectional drawings and specifications. 30 pp. Standard filing size. Dahlstrom Metallic Door Co., Jamestown, N. Y.

The New Window Vogue for the Home Beautiful.—Folder showing application of casements adaptable to all styles of architecture and all sizes of buildings and openings. Detroit Steel Products Co., Detroit, Mich.

Economical Buildings for Farm and City.—Catalog containing full information on the subject of Dickey Glazed Hollow Building Blocks. Contains many illustrations cross sections, floor plans, elevations, etc. 7¾ x 10¼. 42 pp. W. S. Dickey Clay Mfg. Co., Kansas City, Mo.

Book of Fireplaces.—3rd Edition. Very attractive and practical book covering fireplace construction, flues, etc., as well as presenting designs of the fireplaces themselves. 24 pp. 8½ x 11. The Donley Bros. Co., 13933 Miles Ave., Cleveland, Ohio.

Ebco.—Bulletin "I" illustrates and describes ventilated toilet fixtures for schools, comfort stations, public institutions and factories. Full size illustrations of the new design of the Ebeco Circular Wash Sink. D. A. Ebinger Sanitary Mfg. Co., Columbus, Ohio.

Pumps for Buildings.—Catalog No. H-301 covers subject indicated for the information of architects, engineers and specification writers. All suitable types of pumps are described together with their capacities for all building uses. 48 pp. 8½ x 11 Fairbanks, Morse & Co., 900 S. Wabash Ave., Chicago, Ill.

Sylphon Thermostatic Water Mixer.—Bulletin W-100 is devoted to this type of water mixer for automatically and accurately regulating temperature of mixing waters. Contains illustrations, details, tables of capacities, list prices and shipping weights, also charts showing probable consumption of hot water at 150 degrees FAHR. per hour for different fixtures in different types of buildings. 8½ x 11. The Fulton Co., Knoxville, Tenn.

Hard-n-tyte Engineering Service.—Booklet on the subject of floor construction and maintenance with especial reference to industrial conditions. 16 pp. 8 x 11. General Chemical Co., 40 Rector St., New York.

GF Fireproofing Handbook.—8th Edition. As its name implies this work covers a wide range of fireproofing materials, their uses and application. Specifications, detail drawings, tables, types of construction, etc. 72 pp. 8½ x 11. The General Fireproofing Building Products Co., Youngstown, Ohio, Dept. LJ.

Examples of Work in Georgia Marble.—Looseleaf portfolio containing 36 full page plates of exterior and interior details on heavy plate paper. Georgia Marble Co., Tate, Ga.

G. & G. Atlas Systems.—Catalog No. 1755 A.I.A. File No. 25-h-21 illustrates and describes Atlas Pneumatic Tube System and supplies with details as to saving in floor space, personnel power and maintenance and time. 8 pp. Gillis & Geoghegan, 548 West Broadway, N. Y. C.

Forge Craft.—Catalog 16, A.I.A. File 31-f-23. Attractive catalog illustrating and describing luminaries and wall brackets, giving dimensions and prices. 16 pp. 8½ x 11. The Edwin F. Guth Co., St. Louis, Mo.

The Evanston Sound-Proof Door.—Data sheets covering sound-proof doors, folding partitions and other similar equipment. Standard Filling size. Irving Hamlin, 1504 Lincoln St., Evanston, Ill.

Blue Printing Machinery and Drafting Room Supplies, Catalog G.—Handsome catalog containing complete line of drafting room supplies and blue printing machinery. Thumb indexed. Embossed leather binding. A most attractive and valuable addition to the architect's library. 6 x 9¼. 371 pp. C. F. Pease Co., 813 N. Franklin St., Chicago, Ill.

Struco Slate.—Booklet, just off the press, containing new data on structural slate in white or color. Illustrations in color of recent Struco installations, specifications. 8½ x 11. 12 pp. Structural Slate Co., Pen Argyl, Pa.

Atlantic Terra Cotta.—Monthly magazine for architects and draftsmen. Vol. 8 No. 8 considers terra cotta in relation to the zoning restrictions. The new Evening Post Building, New York, designed by Horace Trumbauer, is illustrated in a very interesting way. Atlantic Terra Cotta Co., 19 West 44th St., New York.

The Attractive Home—How to Plan Its Decoration.—Handsome booklet with text by Hazel Dell Brown, profusely illustrated, containing 8 color plates and patterns in Armstrong's Linoleum Floors in color, also colored illustrations of Armstrong's Genuine Cork Linoleum Rugs. 24 pp. 6½ x 9½. Armstrong Cork Co., Linoleum Division Lancaster, Pa.

Austral Windows.—A.I.A. File 27-c1 Catalog No. 26 illustrates complete line with detail drawings, specifications, weather strip details, etc. 48 pp. 8½ x 11. Austral Window Co., 101 Park Ave., New York City.

Best Bros. Keene's Cement.—Booklet on the subject of this material containing much information, together with specifications covering all kinds of plastering, both plain and ornamental, artificial marble, etc. 24 pp. The Best Bros. Keene's Cement Co., 1040 West 2nd St., Medicine Lodge, Kansas.

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Ready Reference Folder No. 2.—Illustrating and describing a Josam drain for every purpose, tables, price lists, cross sections. Josam Mfg. Co., Michigan City, Indiana.

Published by the same firm, Josam Roof Drains and Accessories for Every Roof.

Equipment, Furnishings and supplies for Hotels, Restaurants, Clubs and Institutions.—Catalog E-28. Complete catalog (1926 edition) illustrating and describing fully everything needed in the above establishments. Illustrated in color, price lists, freight classification and general information for shipping, also graduated table of express charges. A very complete and valuable book. 370 pp. 8½ x 11. Albert Pick & Co., 208 West Randolph Street, Chicago, Ill.

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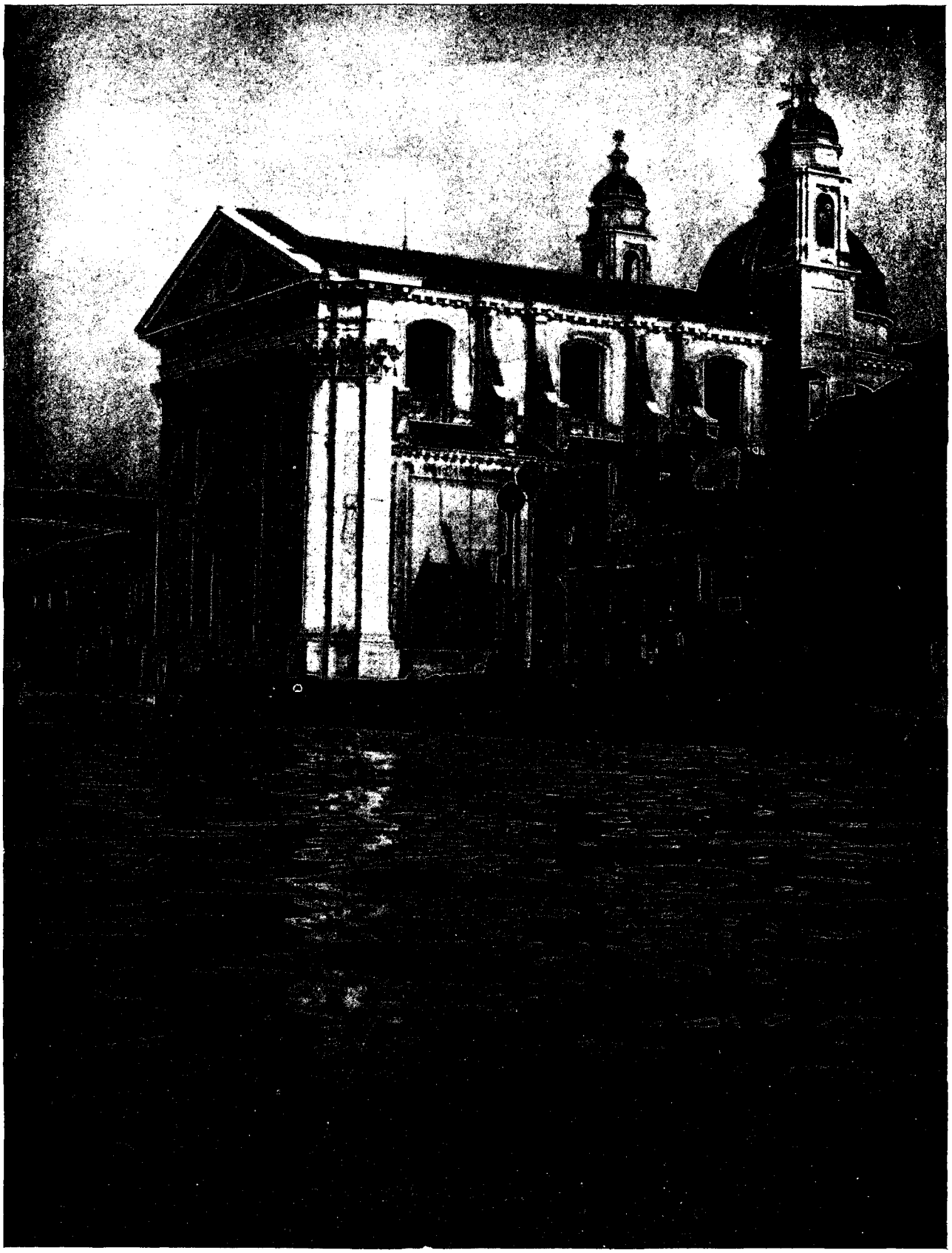

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