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THE RELATIONSHIP BETWEEN THE ARCHITECT AND THE DRAFTSMAN

By R. Clipston Sturgis

AS THE SUCCESS OF AN Architect who has passed the early stage of doing most of the work with his own hand depends very largely on the ability, faithfulness and intelligence of his draftsmen, his relations with them are of prime importance.

One may put these relations under six heads. In the office:

- (1) Teaching the fundamentals of plan and of design.
- (2) Teaching the fundamentals of construction.
- (3) Teaching the fundamentals of the drawings as the guide for work in the field.
- (4) In all this establishing a spirit of friendly co-operation.

Outside the office:

- (5) Encouraging and aiding reading, study and a love of the arts.

These five subjects will be taken in more detail.

(1) The fundamentals of plan and design. However thorough the training of a student in the schools, actual office practice is a new field and must be learned. The plan is no longer a school problem, but is to become the definite material which will enable estimators to understand clearly what construction, material and workmanship is called for, and which will enable mechanics to know with certainty just what the Architect desires, and requires, and what the Owner has agreed to pay for. This needs clear thinking on the part of the draftsman. He must for the time completely subordinate

draftsmanship as an art to draftsmanship as a business proposition. The result is to be, not a poetical effusion, nor a burst of oratory, but a legal document which will stand the test of use. The Archi-

tect can be of great use to the draftsman here in teaching him to look at the drawing from the point of view of the estimator, the contractor and the mechanic. There should be no unnecessary lines added, and there should be no essential lines omitted. Detail, once drawn carefully and completely, should not again be drawn where it is repeated; the time which would be spent in this is better spent in drawing the one example as completely and perfectly as the scale permits. The places where it is repeated should be so clearly marked as to be unmistakable. This one thing is used as an example. It is typical of many others marking the workmanlike, businesslike character of what are properly called "working" drawings. The Architect's own drawings should illustrate this, for the draftsman.



R. CLIPSTON STURGIS

Under this first heading comes design and here the Architect can help the draftsman best by encouraging him to develop sketches in the spirit of the design and giving him time for study in the library, with books and photographs.

(2) The fundamentals of construction. The plan for a modern building is a complicated balancing and reconciling of a great many factors, and those major trades which influence the construction should be embodied in the original drawings, and

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must never be lost sight of as the drawings are developed. Masonry, steel work, carpentry, roofing, plumbing, heating and power, all require consideration in planning the structure. Here again the student will have acquired but little to help him in the schools, and must depend on the architect to learn to handle all these intelligently.

His drawing must be of the head as well as of the hand, and he must remember, points of support, spans, the bearings for loads, the spaces necessary for plumbing and heating pipes, shafts for various purposes, and never lose sight of these as he works from small scale to large, and from large to full size. The architect who has been through the mill, and made for himself all the usual mistakes, can help the draftsman to avoid some, and should not be over-harsh with the draftsman for the mistakes he inevitably makes. It is one of the most amazing things in the profession that just when you and your trained draftsman have got to the point when you do not make the common mistakes, new draftsmen come in and the old mistakes again creep into the working drawings. Some architects have devised elaborate systems to help their draftsmen to avoid the most obvious and common ones, but with no great success. The architect must teach the draftsman to think.

(3) Teaching the fundamental of the drawings as the guide for work in the field. The architect can help the draftsman most by giving him the opportunity so see work in the field and understand the significance of lines and figures, and their interpretation. Under our conditions it is not easy to do this. To take a draftsman from his board where he is earning his salary and send him to the job, not to inspect, but to study and learn, is obviously something that cannot be done except at someone's expense. A young draftsman, earnest and eager to learn would need only encouragement from the archi-

tect to make such visits in his own time, or to get time off with out pay for the purpose. It is a valuable and indeed almost necessary experience and the architect owes it to his draftsmen to see that they get it.

(5) Outside the Office. The architect may well guide and encourage the draftsman's study and reading and above all free-hand drawing. The latter is a very valuable asset and one which everybody can acquire, as easily as he learns how to write. Facility in free-hand drawing is much more common than it was forty years ago, but even now the value of rapid and accurate draftsmanship is not valued as highly as it should be and the architect can do much in helping his draftsmen to obtain that.

One cannot do more than suggest, in a broad way, what the relations should be between architect and draftsman and one has not so far touched on the reverse side, the draftsman's obligations toward the architect. This is partly because draftsmen as I have known them have shown a very high standard of appreciation of their work, and of the obligations of service. The draftsman generally has a whole souled interest in his work, and his failures are largely those which are the result of inexperience, or of failure to remember that he is working for the eyes and head of a mechanic and not for those of a school professor.

What has been said, however, will apply very differently in practice in offices of different sizes, but the end that every architect has in view is to have a drafting room that will turn out drawings as well or better than he could himself, as fast or faster, and without any of the mistakes which even he makes at times. The hardest architect to work under is the man who never draws, therefore never makes mistakes, and the best is the one who draws, works with and among his men, and is in constant touch with the drawing-boards. Example and encouragement are better stimulants than abuse.

The subject of the relationship between the architect and the draftsman is one which directly concerns the readers of PENCIL POINTS. We have arranged for a series of discussions of this subject by a number of America's leading architects and will present a paper in each issue until further notice. Contributions to the discussion will appear by the following:—J. Monroe Hewlett of New York, Walter W. Judell of Milwaukee, Albert Kahn of Detroit, Edwin H. Hewitt of Minneapolis, H. Van Buren Magonigle of New York, F. R. Walker of Cleveland, Charles D. Maginnis of Boston, Myron Hunt of Los Angeles, Leon C. Weiss of New Orleans, William A. Boring of New York, William Leslie Welton of Birmingham, William Emerson of Boston, and Irving K. Pond of Chicago.

THE DESIGN AND CONSTRUCTION OF STAINED GLASS WINDOWS

By Alfred E. Floegel

EDITOR'S NOTE: *The author of this article was a Fellow in Painting of The American Academy in Rome during 1922-1925, and while in Europe made a special study of Stained Glass, Mosaic, and Fresco. He is, therefore, well qualified to write on this subject. In future issues of Pencil Points he will take up Fresco and Mosaic Decoration with special reference to the importance of Co-operation between the Architect and the Painter.*

MANY BOOKS HAVE BEEN written on the subject of stained or painted glass, in which the history of its development as an art and the technical aspects of its manufacture have been covered very thoroughly. The subject is a vast one and it is obviously not within the province of this short article to attempt to cover the whole field. There are, however, some features relating to the design and construction of stained glass windows which may be advantageously described in brief for the benefit of architectural draftsmen. It is the author's modest hope that the information here set down may be of assistance to them when they are faced with this special architectural problem which is likely to occur in any architect's life.

When we think of stained glass we are prone to conceive of it as altogether ecclesiastical in its uses. True, it was developed by the mediaeval church builders to solve a part of their particular problem of decoration, and was brought by them to a glory of perfection exemplified in the great cathedrals of Europe. Though the greater number and the most beautiful windows, however, belong to the church, there is no logical reason why we should confine the application of this highly decorative art entirely to churches today. Indeed we do not, for we find stained glass, more or less excellent, used increasingly in public buildings, libraries, schools, and even residences.

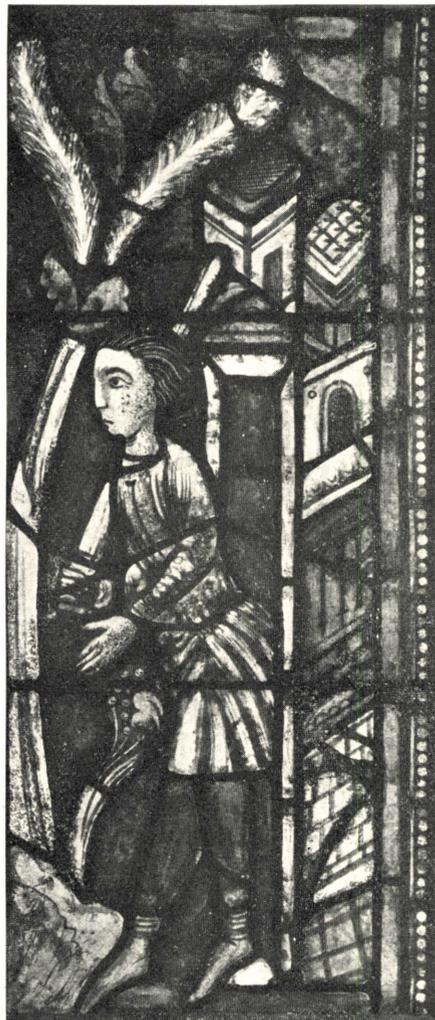
Although it is popularly supposed that the secrets of the mediaeval stained glass workers are lost to us, the fact is that the craft is at present flourishing, in this and other countries, maintained by an appreciable number of shops working under the direction of master craftsmen and artists who are endowed with the true love of their art. They can turn out glass, moreover, which has all the quality of the old glass. If our

modern windows are inferior to the mediaeval product it is not the fault of the glass makers or craftsmen but that of the artists, who are trained mostly to work in other media and who have, except in isolated instances, paid little attention to stained glass as a means of artistic expression. Public taste has also played its part in holding down the art, but happily conditions in that respect are improving.

It may be asked, "Where are stained glass windows to be appropriately used?" History and tradition find a place for them in churches but as I have stated above, there is no real reason why they may not be used in many other types of buildings. The art is an exceedingly decorative one, very closely allied with that of mural painting. It has individual decorative characteristics, which can be used to enhance the beauties of architecture or conversely abused to produce incongruity and ugliness. Wherever we have a room in which it is considered desirable to introduce color decoration and where at the same time we can afford to allow a more or less subdued light, stained glass may be used as the color feature. It must not, however, be allowed to clash with other color which may be in the room. Color wall decoration, juxtaposed to a stained glass window should be broadly treated so that it will not compete with the glass for attention.

Several principal factors influence the design of any particular window. First and most important is the surrounding architecture, which sets the period and determines the shape of the win-

dow. Gothic, Romanesque, and Renaissance windows are familiar and obviously should be used where the architecture is of like character. There are, however, possibilities in "modern" architecture for the development of "modern" design in stained glass, just as such men as Edgar Brandt have de-



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