

## CLASSIC ARCHITECTURE IN RELATION TO DETAIL, WITH A FEW NOTES ON CONSTRUCTION IN BUILDING.\*

By ERIC MANN.

The object of this paper is to draw the closer attention of students and assistants in architecture to the necessity of carefully looking into the work of detail in connection with the preparation of working drawings. How often do we see, an otherwise good piece of work spoiled in finish by badly executed detail in the moldings of cornices, string courses, dormer windows, porotics, externally and in paneling, plaster work, and inside finishings generally. In this connection I would strongly recommend the student or pupil to work from the examples of Sir W. Chambers' treatise on the "Decorative Part of Civil Architecture," and the works of Palladio contained therein, and to make drawings of the orders and detail the various members, from the pedestal, with its base, capital and dodo; the column, with its base, shaft, neck and capital; the frieze and entablature with the cornice as given.

The enlarging of the members of the various parts of the five orders, gives a pupil an excellent training in proportion, along with which he learns how to construct the various moldings. Nearly all these moldings enter into the composition of daily practice in stone, wood, plaster or iron work, and it is of the greatest importance that a correct style in forming these moldings, and a sound knowledge with regard to when they are correctly formed and proportioned, should be cultivated, as we see so much bad work done, evidencing a half educated taste in the designs being carried out, no matter how small the scale of the work may be.

As the orders of architecture are the basis from which we chiefly derive the decorative part of our work, a few words on each order in passing will be in place here. As you all know there are five orders. Three, said to be of Grecian origin, are called Grecian, by the names of Doric, Ionic and Corinthian. The remaining two, being of Italian origin, are called Latin orders; they are distinguished by the names of Tuscan and Roman. Little is known as what period the orders were invented, and of their improvement we can only judge by the fragments of antique structures built in different ages, and still to be seen in various parts of Europe, Asia and Africa. The existing specimens of classic often quoted as examples of all that is fine, graceful and beautiful in architecture, may be taken as the Temple of Concord, portico of the Pantheon, and the Temple of Venus in the Capitol, and the Ionic; the Arch of Titus, Interior of Pantheon, Temple of Bacchus, and others, in the Corinthian, not forgetting the great Colosseum in Rome, a specimen of Doric treatment. Besides these, in the sixth, or composite order we have the great Arch of Titus and others.

We find that a great author in classic architecture, named Perrault, has compiled a statement of comparative proportions of the various celebrated buildings, with rather exact figures. His great intelligence and depth of research, has reached upon the pretensions of the great Vitruvius on the diminution of the shafts of columns.

A great deal might be here said on the subject of classic architecture, but the short comments I have made will be sufficient to illustrate the connection between the subject, and the object of my paper.

Following on this, may be mentioned the subject of the pupilage system in the old country. The pupil there is indentured or bound by a deed to be so many years, say five, in the office, and has to pay from three to five hundred dollars for this privilege. During this time he is put through a course of training, but at the same time is subservient to the rules of the office, and has to give all his time and work for the benefit of his employer. I have known pupils who turned out fairly good draughtsmen in two years, and are giving the benefit of their work to the architect whose office they are in.

This practice of working at classic architecture from books and examples is what is generally adopted in training a pupil for the first year, and if he is apt and likely to have a taste for the profession he has chosen, he will find that what I have said in the early part of this paper is not without its weight.

Although this reference to pupilage may appear like a digression from the object of my paper, yet it may serve to show the idea I have in connecting the early training with the successful and unsuccessful draughtsmen.

Again, the careful working out of detailed work is one of the pleasantest parts of the office routine. The plans and elevations require to be well studied. The paper requiring to be enlarged, scale must be correctly and carefully done, every molding and part exact as to size and figure; without this, full sized drawings cannot be correctly turned out. The pupil will find it comparatively easy to make a full sized detail, if he has got a perfectly correct enlarged scale drawing in front of him, and on this principle alone rests the secret of turning out correct detail for construction. It is an evident matter to tell by the general design and detail of a building whether the architect employed has been carefully educated or not. I would like to draw your attention to the front of facade of St. Peter's Cathedral now being erected on Dominion Square. It is supposed to be an example of classical architecture, but if you study the detail after a course of Palladio, you will see how faulty it is. The pilasters, pediments, etc., of the front windows, bases and shafts, moldings, etc., are all out of the proportion laid down by the ancients, and what are accepted and worked upon at the present day. We have but few examples in Montreal of this class of works. The bank of Montreal is one specimen worth looking at, however.

Closely following on "detail," we find one of the most important elements embodied in the work of the architect's profession, namely, construction. By construction we mean the creation in solid materials of what by the architect's conception and designs in a thoroughly practical, sound and workmanlike manner, and this is not, as it may look at first sight, such a simple task; on the contrary, it is the alpha and omega of the whole building, and demands close attention and watchful application on the part of the architect, because we consider that the architect is the creator of the structure as shown in his completed drawings, and the architect's position, granted that he has the genius and judgment necessary to carry to a successful issue the work of his brain and hands. The builder is the instrument set to carry this work on in accordance with the architect's intelligent plans and detail drawings, and under his instructions and directions. At this point, I would like to say, that builders as a general rule, are rather inclined to underestimate the importance and nature of the architect's position, and to relegate to themselves a number of the duties devolving on the architect alone, and do not even stick at offering advice and guidance to the architect's clients or would be clients. This may be another digression, but I think that the profession ought to be upheld and its dignity fully maintained by us all.

The primary duty in construction, is a proper superintendence of the work during its progress. The foundations, on the sufficient construction of which so much rests, ought to be put in on a well levelled bed, free (if on a good earth bottom) from irregularities of surface, round stones, etc. The stones for footings should be large, and as much of a thickness as possible.

\*Paper read at the Third Annual Convention of the Province of Quebec Association of Architects.

The corners in all cases should have large heavy stones, and the joints broken so as to prevent an angle joint.

The building of rubble masonry represents a sort of puzzle, but the best built walls show a fair even surface on both faces, and also show in construction a sufficient number of through or bond stones in the wall. What exactly is a sufficient number, it is rather difficult to say, but an intelligent mason is always ready to do what is right on the architect's direction. Nothing is so miserable in building to look upon as a weakly built wall of small stuff packed full of rubbish and bad mortar from the trowel, and said to be in relation, this work can be seen going on here and there in the city to-day.

Proper external pointing of walls is a very vital matter, and one sometimes neglected, especially late in the season, when the mason is anxious to fill in round the walls; especially strong mortar ought to be used for this work, and the wall plentifully pointed and filled from the footing up as the work advances.

The matter of carpenter and joiner work is what may be termed the "skeleton" of the building, and in its fitness and soundness of construction, lies in a very large measure, the quality of the house after one or two years' occupation. How often do we see houses going sadly to pieces after a year's trial. The heating up begins to try the woodwork sadly. The stuffing, joisting, etc., begin to shrink and go, with the result that the plaster work shows gaps and cracks, notably in angles and staircases. A certain amount of the almost inevitable shrinkage is generally conceded and looked for, but if the timber is well dried and nailed, it is not nearly so marked, as in the case of wet stuff, which does not appear damp when being put up. In arranging the joisting of a building it is a good plan to have all the positions where plumbing work is situated trimmed "clear," with double trimmers, so as to prevent any cutting of joist for bends, etc.; also all openings to staircases, etc., ought to be double trimmed.

To prepare a building for the plasterer requires some thought and care. In the summer season it is not so particular, but in all cases we must see that the rough floors are well laid, and partitions all in place, the door casings all on, the grounds for plaster, carefully and well nailed on, care to be taken that they be left quite level and straight on face, as the neglect of this leads to unevenness in the skirtings, or "chopping," and consequently the loosening and breaking of the bond of the plaster. All roof openings should be attended to, and all necessary beads and casings put in place.

The hanging of the inside doors is another matter for attention. A good joiner will hang a door so that the door when shut appears about the same on both edges, but a badly hung door usually catches on either top or bottom hinge and presses in on the casing, all owing to not having been hung truly plumb; the casings of course must be quite square and true when put up. Locks may also be put on to look very slip-shod like, and not present that level, clean surface which the face plate ought to show on the door rail. The putting on of architraves is also important, especially when the skirtings and architraves are of especial design—the fitting at angles shows at once, and declares itself a poor or a good job.

In the matter of plumbing, gas, etc., a very great deal has been said and written. You are all aware that our plumbers are not plumbers at all, but "sanitary engineers." I would, however, much prefer to deal with a good, sound, practical plumber, and there are many such in our own city. I consider that in all branches in the complex construction of a building, the architect's attention and vigilance are essentially necessary, and the plumber's "man" requires to be directed, however little he may like it, and now and then corrected, even if the improvements made in sanitary ware and the adoption of all iron soil and inside drain pipe, the ventilation of soil pipes, inside closets, etc., has made our houses very superior to what they were some fifteen years ago. I strongly advocate the system of open all ware, w. c. basins set on slate or marble slabs, copper lined casters with self-cleaning, steel sinks, and where it can be afforded, white ware sinks, as for baths; proceed with the w. c. but is exclusive as to cost. Copper lined is a good bath, also, and white ware open basins are to be recommended. For the soil pipes, should they have to pass under the cellar floor, extra heavy iron pipe should be used, enclosed in a trench covered on top with heavy wood covering, so as to be got at the entire length at any time; if possible, soil pipes are as well to be run on the wall, fully exposed to view, and every bend and connection accessible from bottom to top.

A great deal more might be said on this subject—in fact it is almost endless—but as long papers are not necessarily interesting ones, I will conclude by hoping that this one may have been found of some interest to most of you, and to join the President in his hope that my conferees will set their way to giving us papers as the season advances.

## HAMILTON CORRESPONDENCE.

HAMILTON, Sept. 23rd, 1892.

EDITOR CANADIAN ARCHITECT AND BUILDER.

SIR,—In your issue of this month, your youthful correspondent at Hamilton has over-reached himself in his anxiety to belittle the sculptor who executed the carving on the Grand Opera House here, and who is now engaged on Mr. Geo. T. Tuckett's palatial residence. The mean attempt was made because that gentleman laughed at a stupidly crude and utterly impracticable drawing that the youth had made for the sculptor to carve from for Mr. Tuckett's building.

To show the absurdity of this (not to say wilful and malicious) mis-statement, I may state that no carving was done on Mr. Tuckett's residence until the 15th of September, several days after your valuable journal reached me. The sculptor, when I drew his attention to the article, only smiled at the weak attempt of the lad to injure his reputation as an artist, as well he might, a reputation indelibly carved on most of the public and many of the private buildings that adorn, not only Hamilton, but many of the other cities of Canada.

Yours truly,

DORIC.

The life classes in connection with the Toronto Art Students' League have resumed their work, with every prospect of a successful season before them. The numerous sketches adorning the walls of the League rooms in the Imperial Bank Building bear testimony to the industry of the members during the summer months.