

To Men who cultivate the Arts

Dominated by an excessive love for my profession, I have surrendered myself to it completely. But although I have yielded to this overweening passion, I have made it a rule that I shall work for the benefit of society and thus merit public esteem.

I should confess straightaway that I have refused to confine myself to the exclusive study of our ancient masters and have instead tried, through the study of Nature to broaden my ideas on my profession which, after much thought, I consider to be still in its infancy.

What little attention has been paid in the past to the poetry of architecture, which is a sure means of adding to man's enjoyment and of bestowing on artists the fame they deserve!

That is my belief. Our buildings—and our public buildings in particular—should be to some extent poems. The impression they make on us should arouse in us sensations that correspond to the function of the building in question. It seemed to me that if I was to incorporate in my Architecture all the poetry of which it was capable, then I should study the theory of volumes and analyse them, at the same time seeking to understand their properties, the power

they have on our senses, their similarities to the human organism. I flattered myself that if I went back to the source of all the fine arts I should find new ideas and thus establish principles that would be all the more certain for having their source in nature.

You who are fascinated by the fine arts, surrender yourselves completely to all the pleasure than this sublime passion can procure! No other pleasure is so pure. It is this passion that makes us love to study, that transforms our pain into pleasure and, with its divine flame, forces genius to yield up its oracles. In short, it is this passion that summons us to immortality.

It is to you who cultivate the arts that I dedicate the fruits of my long vigils; to you who, with all your learning, are persuaded—and doubtless rightly so—that we must not presume that all we have left is to imitate the ancients! Judge for yourselves whether I have understood what no one before me, to my knowledge, has attempted to understand.

“Amis éclairés des arts!

Si de vous agréer je n'emporte le prix,
j'aurai du moins l'honneur de l'avoir entrepris”²
La Fontaine*

* Friends enlightened by the arts!
If I have not won the prize for pleasing you
I shall at least have the honour of having tried

Introduction

What is architecture? Shall I join Vitruvius in defining it as the art of building? Indeed, no, for there is a flagrant error in this definition. Vitruvius mistakes the effect for the cause.

In order to execute, it is first necessary to conceive. Our earliest ancestors built their huts only when they had a picture of them in their minds. It is this product of the mind, this process of creation, that constitutes architecture and which can consequently be defined as the art of designing and bringing to perfection any building whatsoever. Thus, the art of construction is merely an auxiliary art which, in our opinion, could appropriately be called the scientific side of architecture.

Art, in the true sense of the word, and science, these we believe have their place in architecture.

The majority of Authors writing on this subject confine themselves to discussing the technical side. That is natural if we think about it a little. It was necessary to study safe building methods before attempting to build attractively. And since the technical side is of paramount importance and consequently the most essential, it was natural that this aspect should be dealt with first.

Moreover, it must be admitted that the beauty of art cannot be demonstrated like a mathematical truth; although this beauty is derived from nature, to sense it and apply it fruitfully certain qualities are necessary and nature is not very generous with them.

What do we find in Books on architecture? Ruins of ancient temples that we know were excavated in Greece. However perfect these examples may be, they are not sufficient to provide a complete treatise on art.

Vitruvius's commentator lists for us everything an architect should know. According to the commentator, his knowledge must be universal.

In François Blondel's pompous preface we find a description of the excellence of architecture. The author informs us that *to punish his people God threatened them with taking away their architects*. I have heard wits exclaim, "You must be among the chosen few to dare to take up that profession!"

Reader, you will be astonished to learn that neither in this pompous preface nor in Vitruvius's commentator do I find any indication of the meaning of architecture. What is more, neither of these authors has any notion of the basic principles on which their profession is based. My opinion may offend some people to begin with; but it is easily justifiable for my suggestion is in fact taken from one of the two authors just quoted.

You are familiar with the famous quarrel between Pérault, the architect of the Peristyle of the Louvre and François Blondel, the architect of the Porte St. Denis. The former denied that architecture had its source in nature; he called it fantastic art that was pure invention. When François Blondel tried to refute Pérault's opinion, the arguments he used were so weak that the question remained unsolved. When I raised it again, I did not get any satisfactory answer. On the contrary, I soon became aware that

most educated men shared Pérault's opinion.³

And now Reader, let me ask you, "Am I not to some extent justified in maintaining that architecture is still in its infancy, for we have no clear notion of its basic principles?"

In common with all educated men, I admit that tact and sensibility can result in excellent work. I admit that even artists who have not acquired sufficient knowledge to search out the basic principles at the root of their art will nevertheless be competent, provided they are guided by that gift of Nature that permits men to choose wisely.

But it is nonetheless true that there are few authors who have considered architecture from the artistic point of view; what I mean is that few authors have attempted to study in depth that side of architecture that I term art, in the strict sense of the word. We have some precepts based on good examples but these are few and far between.

Vitruvius's commentator⁴ does inform us that a prerequisite of architecture is a knowledge of those sciences related to geometry, such as Mechanics, hydraulics and astronomy, and also Physics, Medicine, etc. He concludes by asking for some knowledge of the fine arts. But, if we consider that science and the fine arts both have their place in architecture considered as art, and since, moreover, Pérault defines his architecture as "fantastic", François Blondel in his rebuttal has not proved the contrary, and nor has anyone else up to the present; if we succeed in discovering that basic principles of architecture and what is their source, then I believe that, without rashness, we can conclude that these principles have remained unknown or at least have been neglected by those who have discovered them.

I have met competent men who have objected that since the discussion between Pérault and François Blondel had degenerated into a quarrel and that they were therefore overcome by anger and a spirit of rivalry, no conclusion should, under the circumstances, be based on their pronouncements for Pérault's true opinions were certainly very different from those he professed.⁵ However, one of those who had spoken thus confessed that the question was difficult to solve. At the Academy, I heard him read a memorandum debating this question without coming any closer to a solution.

When contemplating the Peristyle of the Louvre in the company of other Architects, I have on occasion chosen the moment when they were lost in admiration at its beauty to declare a completely opposite opinion. As you can well imagine, they asked me to explain myself. Then I reminded them of Pérault's opinion. I said to them, "You admire this work of art but the architect himself has admitted that it is based on pure fantasy and owes nothing whatsoever to nature. Your admiration is therefore the result of a particular point of view and you should not be surprised to hear it criticized, for the so-called beauty that you find in it has no connexion with nature, which is the source of all true beauty." I added, "You may admire the techniques used in its construction and I admit that it is a competent construction, even one of Genius, but in view of the architect's own

ARCHITECTURE, ESSAY ON ART

admission, I believe that when you think you are admiring what you call the beauty of its architecture, you are in fact admiring what your eye is accustomed to in something that has no true beauty." My colleagues stammered a few words without giving me an answer. I was not surprised for it is not easy to explain what the beauty of the Peristyle of the Louvre or of any other monument has to do with Nature, if one has not given deep thought to the matter. What does surprise me is that no one has tried to elucidate an objection of such importance.

What, then, has impeded the progress of that part of architecture concerned with art in the strict sense of the word? This is clear to me.

For an art to attain perfection, it is not sufficient that the men who practise it love it passionately. It is also vital that there be no impediment to the studies they must undertake. Their genius must be able to spread its wings freely and they must be encouraged by the expectation that their efforts will be rewarded.

Let us imagine now that a young Architect makes some progress and begins to make a name for himself and to win the confidence of the Public. He will be overburdened with a stack of requests and details of all kinds and forced to devote all his time to the contracts which are given him. Because he is continually busy with the procedures made necessary by the confidence shown in him, the artist can no longer contribute to the progress of his art and consequently cannot hope to win the true glory to which he could have aspired. He cannot give sufficient time to the study of his art and thus finds himself forced to abandon it. You will say that the architect should refuse lucrative business so as to be able to pursue his purely theoretical studies. Alas! Who would willingly sacrifice a fortune that is offered him and which, in many cases, he desperately needs? You will say that such a sacrifice should be easy in view of the expectation that he will one day be commissioned to build several great buildings. But how can he really believe in such expectations? The opportunities are so few. How can he be sure ten or fifteen years in advance that his services will be used by those in power at the time. You will perhaps reply that a worthy man has the right to expect just that. And I would answer you, "Will justice be done? Can he really expect to be given preference?" I credit patrons with the utmost honesty and the purest intentions and yet I am forced to admit that their lack of knowledge often leads them to act blindly, and that it is a lucky chance when they choose a competent man. How many times preference has been given to ignorant schemers at the expense of worthy men who spend their time working and do not scheme!

How preferable is the fate of Painters and men of letters!¹⁶ They are free and independent; they can choose their subjects and follow the bent of their genius. Their reputation depends on no one but themselves. They have exceptional talent? Then no human force can prevent it flowering. Whether they distinguish themselves in the way of all great men who arouse our admiration; whether they fill our hearts with voluptuous pleasure as Lucretius did with heady words or whether they say with Correggio, "I too am a painter", they enchant us with the grace of their inimitable pictures. Whether, by vying with the genius of Raphael who gave us the sublime image of the Creator unravelling chaos, they hold all our faculties in suspense and, in imitation of the im-

mortal statuary of Greece, offer us gods that incorporate all the majestic beauty of the human race; whether they succeed in gathering a rich harvest from the vast store that Nature has provided for them and their names are handed down gloriously to posterity, they can procure pure happiness by themselves and every one of them is justified in saying, "All my fame I owe to myself alone."

These are the incomparable joys and incalculable advantages of which the young Architect is deprived for his talents would remain buried if he devoted all his time to Study. He is obliged to sacrifice the latter if he is to become well known to those in power, without whose goodwill he cannot develop his talent.

This is without doubt an abundant source of acute pain and bitter regret to those who care passionately about their profession; and so I was not surprised when I heard tell that a very competent man, who had suffered the privations I have described, was in the throes of the deepest despair. I would not be surprised either if some architects thought I was exaggerating. But I am sure that such men would be architects in name only and that joy to them would mean wealth.

However, suppose we assume for a moment that my opinions are in some respects false. Suppose we assume that an architect is in the most advantageous position possible, i.e. he has talent, money and patrons. Such advantages are extremely difficult to come by all together and where will they lead him?

It is a fact that when the most straightforward individual starts to build, he sorely tries the patience of his architect, with whose decisions he rarely concurs.

It is also a fact that those in high places who give contracts for public monuments are not in general any more amenable than private individuals. And so what happens? What happens is that the architect finds that he is obliged to obey orders from above and abandon his best ideas. What is more, if the architect is very gifted, his projects will be even less acceptable to his judges who will not be sufficiently enlightened to either understand or appreciate the beauty of his designs.

The gifted architect will not be understood and this will cause him a thousand irksome setbacks; and if he wants to keep his position, then he must refrain from any resistance; he must not listen to the voice of his genius but descend to the level of those he must please. It is evident that this flexibility is difficult to find in an exceptional man; and since in architecture, there is often a curb on genius, as we have demonstrated, it is consequently very difficult to find a gifted architect in a position where he can produce good architecture.

An architect can never be sure that he will be given the opportunity to develop his truly superior genius by being made responsible for one of those public buildings that should bring glory to the country that has ordered them and should arouse the admiration of all connoisseurs.

If he succeeds in being chosen to begin such a project, will he be permitted to complete it? What a sorry example we have before us in the heart of our capital city. How many centuries ago did work begin on the Palace of the Louvre! For example, the façade giving onto the Tuileries Gardens, what a rhapsody! The centre front projection is by different hands whose individual styles are easily recognizable. The

back projection and the corner pavilions are also by different architects. It seems to me that this Palace can be compared to a poem, each part of which is composed by a different poet.

But, you will say, in spite of all these impediments to progress, we do have masterpieces that are evidence of the beauty of architecture and demonstrate the perfection it has attained. My own views on this will be revealed later and, meanwhile, I will merely state that if architecture had acquired the perfection attained by the other arts, and if there were as beautiful examples, we would not today be reduced to trying to establish whether architecture has its source in nature or whether it is pure invention. I can certainly maintain, without fear of shocking anyone, that a demonstration is clearly needed since the architect of the Peristyle of the Louvre considers that all famous monuments are merely products of the imagination.

I feel I must confess straightaway that I myself believe that there is a great difference between architectural masterpieces and those which arouse our admiration in Painting, sculpture and Poetry.⁷ This is a consequence of the observations I have made above on the advantages of the Poet and the Painter. The latter have not been hampered in their choice of subject; they have exhausted every subject, whereas in the whole of Europe we can find very few examples of beautiful architecture. And so, if we want to affirm that architecture is the equal of the other arts; what proof do we have? It is certain that for the purposes of comparison there are nowhere near as many masterpieces in architecture as in the other arts and that it is only possible to measure the success of an art through the plethora of experiments of all kinds.

I am reminded of a rather curious conversation. I was in the country with an art lover and a young Painter. We were taking a walk together while discussing painting⁸ and I was speaking to the art lover. I extolled one of the most [beautiful] pictures of Vovhemens that we had seen together. As this picture had given me enormous pleasure, I was praising it passionately. The art lover remained unmoved. No one is more exacting than a man who is not conversant with a given art for he is unable to imagine all the difficulties the artist has had to overcome. He has no pity for him and believes that everything is possible. The art lover pointed to nature and said ironically, "Vovhermens has forgotten so much." I quickly replied, "You are paying Vovhermens a greater tribute than you realize when you compare the works of that great master to nature. Do you really think that the work of humble mortals can withstand

the comparison you are suggesting?" "What! They are comparable with the creations of the Divine Being . . . the Divine Being!" cried the young painter. "If he would come down to earth and deign to stoop so low as to use only the means at our disposal, then, Sir, you would have a fair appreciation of our great men." We could not but perceive the truth in the young man's outburst. Supposing that we had no knowledge of an artist's techniques and had never seen anyone paint. If we were handed a palette after seeing a picture that was so true to life that we could not believe it to be real—such pictures do exist—we would not believe that it was possible to create with so little, something that had made such a vivid impression on us. How is it possible to imagine that with five or six different colours, the multitude of colours, the nuances, all the effects of nature can be reproduced! How is that man can convey the warmth and freshness of the air, can reproduce the effects of light? How can he have succeeded in drawing the passions that move us and by revealing them to us alive on the canvas, make us feel them in our very being?

Perhaps, you will object, that if indeed architects have not acquired the high degree of perfection that other artists appear to have attained, this may be because the latter have the advantage that their art is close to nature and consequently more likely to move us.

I would reply that this is the very question I am trying to answer; that what I understand by art is everything that aims at imitating nature; that no architect has attempted the task I have undertaken; and that if I succeed, as I dare hope I shall, in proving that architecture, as far as its relations with nature are concerned, has perhaps an even greater advantage than the other arts—then you will have to admit that if architecture has not made as many advances as the other arts, the blame does not lie with Architects alone, for, I consider, they have an excuse on the grounds of the obstacles listed which have hampered and continue to hamper architecture in its progress towards perfection.

God forbid that it is my intention to offend the distinguished Architects of this age. I respect and love them and the high esteem in which I hold them leads me to believe that they will listen, without displeasure, to the words of a man whose sole aim is to contribute to the advancement of his profession. If I am mistaken, my ideas will hurt no one but myself; I should not be suspected of bad intentions. If, on the contrary, I have understood certain truths, then I shall certainly not upset distinguished men, who have always considered truth with love and respect.

Consideration

of the discussion that occurred between P  rault, architect of the Peristyle of the Louvre, and Fran  ois Blondel, architect of the Monument at the Porte St. Denis

The Present Problem

Is architecture merely fantastic art belonging to the realm of pure invention or are its basic principles derived from Nature?

Allow me first of all to challenge the existence of any art

form that is pure invention.

If by the strength of his mind and the techniques it devises, a man could arouse in us with his art those sensations we experience when we look at nature, such art would be far superior to anything that we possess, for we are

To Newton⁷⁰

Sublime mind! Prodigious and profound genius! Divine being! Newton! Deign to accept the homage of my feeble talents! Ah! If I dare to make it public, it is because I am persuaded that I have surpassed myself in the project which I shall discuss.

O Newton! With the range of your intelligence and the sublime nature of your Genius, you have defined the shape of the earth; I have conceived the idea of enveloping you with your discovery. That is as it were to envelop you in your own self. How can I find outside you anything worthy of you? It was these ideas that made me want to make the sepulchre in the shape of the earth. In imitation of the ancients and to pay homage to you I have surrounded it with flowers and cypress trees.

The conception of the interior of this tomb is in the same spirit. By using your divine system, Newton, to create the sepulchral lamp that lights thy tomb, it seems that I have made myself sublime. It is only decoration I felt I should use. I would have felt I was committing sacrilege if I had used any other decoration for this monument.

When I had completed this project, I must confess that I experienced a certain dissatisfaction that made me want to include inside the tomb ideas that I thought it would be impossible to include, because I could scarcely glimpse how it could be possible. We shall see what study and the perseverance of a man who loves his profession can do.

I turned over in my imagination all the magnificence of nature. I groaned at not being able to reproduce it. I wanted to give Newton that immortal resting place, the Heavens.

If you have the drawing in front of you, you will see what could have been considered impossible. You will see a monument in which the onlooker finds himself as if by magic floating in the air, borne in the wake of images in the immensity of space. Since the effect of this extraordinary image can be only imperfectly represented by the drawing which can give only a notion of shape, I will attempt to supplement it with the following description.

The form of the interior of this monument is, as you can see, that of a vast sphere. The centre of gravity is reached by an opening in the base on which the Tomb is placed. The unique advantage of this form is that from whichever side we look at it (as in nature) we see only a continuous surface which has neither beginning nor end and the more we look at it, the larger it appears. This form has never been utilized and it is the only one appropriate to this monument, for its curve ensures that the onlooker cannot approach what he is looking at; he is forced as if by one hundred different cir-

cumstances outside his control, to remain in the place assigned to him and which, since it occupies the centre, keeps him at a sufficient distance to contribute to the illusion. He delights in it, without being able to destroy the effect by wanting to come too close in order to satisfy his empty curiosity. He stands alone and his eyes can behold nothing but the immensity of the sky. The tomb is the only material object.

The lighting of this monument, which should resemble that on a clear night, is provided by the planets and the stars that decorate the vault of the sky. The arrangement of the planets corresponds to nature. These planets are in the shape of and resemble funnel-like openings which transpierce the vaulting and once inside assume their form. The daylight outside filters through these apertures into the gloom of the interior and outlines all the objects in the vault with bright, sparkling light. This form of lighting the monument is a perfect reproduction and the effect of the stars could not be more brilliant.

It is easy to imagine the natural effect that would result from the possibility of increasing or decreasing the daylight inside the monument according to the number of stars. It is also easy to imagine how the sombre light that would prevail in this place would favour the illusion.

The effect of this magnificent composition is, as we can see, produced by nature. One could not arrive at the same result with the usual techniques of art. It would be impossible to depict in a painting the azure of a clear night sky with no cloud, its colour scarcely distinguishable for it lacks any nuance, any graduation, the brilliant light of the stars standing out garishly, brilliantly from its darkened tone.

In order to obtain the natural tone and effect which are possible in this monument it was necessary to have recourse to all the magic of art and to paint with nature, i.e. to put nature to work; and I can say that this discovery belongs to me. Someone will object that he has seen more or less similar things, will give examples of places lit by means of apertures. I know all about that, as we all do. But what was the effect in these places? It is not, in fact, the means which I am contesting but the result. And if it is assumed that I am not suggesting anything new, which belongs to me alone, then I would observe that apples fell before Newton and I would ask what was the result of it before this divine intelligence...? Doubtless I could also add that the palette of a dauber contains the same colours as those used by a gifted artist and isn't the ink that an idiot writes with the same as the ink used by a man of genius, etc., etc., etc.

Military Architecture

I have already explained what part of Architecture belongs to science and what part to art. In the strict meaning of the word, Military architecture is concerned with fortifications for the purposes of defence. Everything beyond

that is part of civil architecture, and that alone should arouse in us the sensations that we should experience at the sight of the Entrance to a City, the gate of a fortified city, an arsenal, a Fort, etc., etc. These monuments each have their own in-