Architecture, Essay on Art

by Etienne-Louis Boullée

Part of MS Françai's 9153 Bibliothèque Nationale, Paris

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Architecture, Essai sur l'art forms part of the Boullée papers and notes. These are bound in one volume, preceded by an inventory, obituary notice, notes on architecture and art and reports on competitions in MS and in print. There are also drafts of letters and several notes in Boullée's own hand. From page 40 to page 65 in the MS is found the draft of the *Essai,* which begins on page 69. Particularly revealing is the description of a young man, destined to be an architect, whom Boullée sent on to David in order to study painting. It corroborates the generous and unembittered attitude which Boullée displayed up to his death (MS Français 9153 p. 38v). In addition to a new translation of Boullée's *Essai,* its first appearance in English, the original French text has been included in this book. In order to preserve its character, the authentic eighteenth century spelling has been maintained, although misleading errors have been corrected. The accents and punctuation have been adapted to present use in order to facilitate reading. It is to be noted that Boullée's spelling is idiosyncratic, even for the eighteenth century. *Effet* he spells with an *accent aigu* on the first "e", *Gots* and *Goths* are both found in his text, and his capital "S" is sometimes almost indistinguishable from the small one. The great number of erasures make it certain that the text is in the master's own hand. It reveals the interest in minute detail coupled with philosophical thought so characteristic of his drawings. The original pagination of volume 9153 is here shown in the inside margins of the original French version.

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 overweaning 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 moin 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 commentator[4] 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

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![6] 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 immortal 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 painting[8] 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 Pérault, architect of the Peristyle of the Louvre, and François 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

limited to more or less imperfect limitations. But there is no art that we can create alone, for if such art existed it would mean that the Divine Being, the creator of Nature, had endowed us with a quality that is part of His own essential being.

What, therefore, could Pérault have meant by a purely inventive art? Don't we derive all our ideas from nature? And does not genius for us lie in the forceful manner in which our senses are reminded of nature?

I cannot think of any form of fantastic art without imagining aimless, unconnected ideas scattered here and there in no order, aberrations of the mind, in short, dreams. The Architect and engraver Piranesi was responsible for some such follies. Caricatures were invented by Italian painters. The famous engraver Callot has done many grotesque figures. The ancients created chimeras, etc., etc., etc.[9]

All these creations of the imagination are misleading. what do we perceive in such works but natural objects —exaggerated and disfigured it is true—but natural objects all the same. Does that prove the existence of an art based on pure invention? To have the right to advance this alleged possibility, it would be necessary to prove that men could conceive of images that bore no relation to natural objects. But it is beyond all question that no idea exists that does not derive from nature.

Let us listen to a modern Philosopher who tells us, "All our ideas, all our perceptions come to us via external objects. External objects make different impressions on us according to whether they are more or less analogous with the human organism."[10] I should add that we consider "*beautiful*" those objects that most resemble the human organism and that we reject those which, lacking this resemblance, do not correspond to the human condition.

On the Essential Quality of Volumes. On their properties. On their analogy with the human organism[11]

In my search to discover the properties of volumes and their analogy with the human organism, I began by studying the nature of some irregular volumes.

What I saw were masses with convex, concave, angular or planimetric planes, etc., etc. Next I realized that the various contours of the planes of these volumes defined their shape and determined their form. I also perceived in them the confusion (I cannot say variety) engendered by the number and complexity of their irregular planes.

Weary of the mute sterility of irregular volumes, I proceeded to study regular volumes. What I first noted was their regularity, their symmetry and their variety; and I perceived that that was what constituted their shape and their form. What is more, I realized that regularity alone had given man a clear conception of the shape of volumes, and so he gave them a definition which, as we shall see, resulted not only from their regularity and symmetry but also from their variety.

An irregular volume is composed of a multitude of planes, each of them different and, as I have observed above, it lies beyond our grasp. The number and complexity of the planes have nothing distinct about them and give a confused impression.

How is it that we can recognize the shape of a regular volume at a glance? It is because it is simple in form, its planes are regular and it repeats itself. But since we gauge the impression that objects make on us by their clarity, what makes us single out regular volumes in particular is the fact that their regularity and their symmetry represent order, and order is clarity.

It is obvious from the above remarks that man had no clear idea of the shape of volumes before he discovered the concept of regularity.[12]

Once I had observed that the shape of a regular volume is determined by regularity, symmetry and variety, then I understood that proportion is the combination of these properties.

By the proportion of a volume, I mean the effect produced by its regularity, its symmetry and its variety. Regularity gives it a beautiful shape, symmetry gives it order and proportion, variety gives it planes that diversify as we look at them. Thus the combination and the respective concord which are the result of all these properties, give rise to volumetric harmony.

For example, a sphere can be considered as incorporating all the properties of volumes. Every point on its surface is equidistant from its centre. The result of this unique advantage is that from whatever angle we look at it, no optical effect can ever spoil the magnificent beauty of its shape which, to our eyes, will always be perfect.

The sphere provides the solution to a problem which might be considered a paradox, if it had not been geometrically proved that a sphere is an undefinable polyhedron. This paradox is that the most infinite variety is derived from the most perfect symmetry. For if we assume that the surface of our globe is divided into different points, only one of these points will appear perpendicular to it and the rest will be at a multitude of different angles.

The sphere has other advantages: it offers the greatest possible surface to the eye and this lends it majesty. It has the simplest possible form, the beauty of which derives from its uninterrupted surface; and, in addition to all these qualities, it has grace for its outline and is as smooth and flowing as it could possibly be.

The conclusion of all these observations is that a sphere is, in all respects, the image of perfection. It combines strict symmetry with the most perfect regularity and the greatest possible variety; its form is developed to the fullest extent and is the simplest that exists; its shape is outlined by the most agreeable contour and, finally, the light effects that it produces are so beautifully graduated that they could not possibly be softer, more agreeable or more varied. These unique advantages, which the sphere derives from nature, have an immeasurable hold over our senses.

A great man (Montesquieu) once said, "Symmetry is pleasing because it is the image of clarity and because the mind, which is always seeking understanding, easily accepts and grasps all that is symmetrical."[13] I would add that symmetry is pleasing because it is the image of order and perfection.

Variety, is pleasing because it satisfied a spiritual need which, by its very nature, likes to be stimulated and sustained by what is new. And it is variety that makes things appear new to us. It therefore follows that variety puts new life into our faculties by offering us new pleasures and it is as pleasing to us in the objects that are part of any given volume, as it is in the light effects so produced.

Grandeur, too, always pleases us whatever form it takes

for we are ever eager to increase our pleasure and would like to embrace the Universe.

Finally, the image of Grace is one which, deep in our hearts, is the most pleasing of all.

Now we have proved that the proportions and harmony of any given volume have their source in nature, we shall return to our consideration of Pérault's assertion as to what constitute the basic principles of architecture.

Examination of the Thesis of Pérault on the basic Principles of architecture

Pérault compares the principles of architecture with those of music; he suggests that the beauty of both lies in correct proportions, and goes on to concede that music is an art because harmony has its source in nature. But he claims that it would be vain to try and prove that there are in architecture in proportions that also have their source in nature and it is for this reason that he considers himself justified in maintaining that architecture is fantastic art based on pure invention.

If Pérault had admitted that harmony was derived nature and had for this reason suggested that music was not fantastic art before the discovery that harmony had its source in nature—a discovery we owe to the sciences—then he would have said about music exactly what he has said about architecture. But he would have been mistaken. For the sensibility of man produced harmony before this discovery was made. Musicians did not know that harmony had its source in nature. Even today many excellent musicians pay scarcely any attention to this question; but their indifference is in no way prejudicial to the development of their talents.

It is obvious that Pérault's assertion was made without due consideration. As I have already stated, artists can produce excellent works of art guided only by their sensibility without any studies to determine the basic principles of their art (by going back to its very roots) Pérault and François Blondel prove my point. They were doubtless competent architects, and yet they falsely applied the principles of music to architecture; they did not realize that these arts bear no relation to one another and have no analogy and that their basic principles are thus totally different.

Consideration of how we can with certitude define the basic principles of an art and of architecture in particular

What constitute to perfection the principles of any given art are those principles from which no deviation is possible.

For example, in music no harmony is possible if the rules are not followed. For it is impossible to produce any chord at all without following the correct progression of notes. It would be vain to try and produce a chord of a third, or fourth or fifth, etc., without adhering to the rules governing chords. It is just the same when they are combined to create greater harmony: whether these Laws are the result of an analogy with the human organism or whether they have their source in nature, the ensuing sounds have made us realize that it is impossible to deviate from them without the result grating on our ears. This proves that the harmonic ratio is the primary law governing the basic principles of the art of music, for it provides the sole means of producing harmony.

What then is the primary law on which architectural principles are based?

Let us consider an example of Architecture that has been imperfectly observed and lacks proportion. This will certainly be a defect but the defect will not necessarily be such an eyesore that we cannot bear to look at the Building; and nor will it necessarily have the same effect on our eyes that a discord has on our ears.

In architecture a lack of proportion is not generally very obvious except to the eye of the connoisseur. It is thus evident that although proportion is one of the most important elements constituting beauty in architecture, it is not the primary law from which its basic principles derive. Let us try, therefore, to discover what it is impossible not to admit in architecture, and that from which there can be no deviation without creating a real eyesore.

Let us imagine a man with a nose that is not in the middle of his face, with eyes that are not equidistant, one being higher than the other, and whose limbs are also ill-matched. It is certain that we would consider such a man hideous. Here we have an example that can readily be applied to the subject under discussion. If we imagine a Palace with an off-centre front projection, with no symmetry and with windows set at varying intervals and different heights, the overall impression would be one of confusion and it is certain that to our eyes such a building would be both hideous and intolerable.

It is easy for the reader to surmise that the basic rule and the one that governs the principles of architecture, originates in regularity and also that any deviation from symmetry in architecture is as inconceivable as failing to observe the rules of harmony in music.

There is no doubt that any disparity in an art based on the principles of Parity is repugnant. Symmetrical compositions are true and pure. The slightest disorder, the slightest confusion becomes intolerable. Order must be in evidence and paramount in any composition based on symmetry. In short, the wheel of reason should never desert an architect's genius for he should always make a rule of the excellent maxim, "Nothing is beautiful if all is not judicious."

Programmes intended to establish that the Study of Nature is necessary to architecture

Monument for the celebration of Corpus-Christi

The aim of religious ceremonies is to induce a state of profound reverence. It is therefore necessary to use every possible means of inducing grandeur and majesty.

Since the feast of Corpus-Christi, as celebrated by the Christians, can be more magnificent than any other feast, it seems to me that we should ensure that it is as splendid as possible by making it a truly unique celebration. I believe

that there should be a place and a monument specifically assigned to the celebration of this feast and yet, even with all the resources of art and genius, it will never attain the magnificence that such a subject calls for. In order to give the monument that I am describing the requisite dignity, I would first choose for it a high place dominating a city: Mount Valerius, for example, or Montmartre near Paris.[14] There I would instal a general seminary; and in this holy place inhabited by the most worthy ministers of Religion, who lead pure, innocent young souls to heaven, here, I repeat, would be the most suitable location for the monument for the celebration of Corpus-Christi. If all the arrangements were suitably impressive, the celebration would be both splendid and magnificent; the whole would be decorated with all that is most beautiful in nature; the buildings would be mere accessories, the base of the repository formed by a superb open-sided Temple crowning the mountain top. The Temple precincts would consist of fields of flowers exuding their sweet smell like incense offered to the Divine Being. Magnificent avenues of trees would line paths laid out in such a way that processions and ceremonies would everywhere be perfectly visible. These avenues would not only connect all the buildings and serve as decoration but also shelter the procession of ministers during the ceremony. These avenues would lead to fertile fields where all the earth's useful crops would be found. In the midst of these auspicious fields nature's first crops would be offered to God and thus thanks would be given to the Supreme Being for his blessings. It is from here that the singing of Hymns giving thanks would bear to the Heavens the adoration and vows of virtuous mortals.

This beautiful place would be the image of all that ensures our well-being; it would fill our hearts with a sense of joy and would be for us a true earthly Paradise.

The beauty of the place and the large throng in attendance would also serve to make the celebration even more impressive! Religious ministers, pure and innocent youth, a gathering of a multitude of men all filled with joy—all these would make this celebration not only moving in its magnificence but truly heavenly.

Monument of public gratitude

If I imagine a nation that is both sensitive and generous, and governed by men who truly merit the title guardians of the fatherland, I must also assume that such a nation will be eager to demonstrate its love and gratitude towards its benefactors. I dare say such a nation will want to convey these feelings in the form of a monument that will bear witness to them for Posterity. How easy it is to understand but how difficult to describe all that we expect when we hear the resplendent title *Monument of public gratitude.*

It seems to me that this monument should be located in a place endowed with all the beauties of nature, with all that serves to preserve life, so that it will seem to say to all who visit it, *"Here before you are all the riches with which the Nation would like to prolong and brighten the days left to its benefactors."*

Where can such ideas be put into effect? To whom can such a noble, such a worthy task be entrusted? To architecture. It is a task for an architect to choose a place where he can make a museum that incorporates all the scattered beauties of nature and where, in addition, we find all that is useful to life and thus all that can serve to prolong life. Finally, the architect of this beautiful place would demonstrate the command of his art, which lies in the use he makes of nature. Here in this place he would, so to speak, give birth to new delights at every step. We would experience the most profound pleasure at the sight of these charming gardens that resemble the Elysian Fields described by the Poets of antiquity and now brought into being through architecture. The charm of these beautiful Lakes mirroring nature and multiplying our pleasure and all the vistas that they offer us give infinite variety to all before us. The tragic appearance of thick woods and gloomy forests, where the lack of light gives us the impression that nature is in mourning and where the unpleasant noise of a stream surging from the depths of the earth makes us think that what we hear are groans, gives us the opposite sensation and makes what is agreeable seem ever more delightful. Moreover, sombre scenes do not always make us sad. The grandeur of Nature raises our spirits and always gives us pleasure. When man is looking down on the earth from a great height and sees it elude his gaze, he is dazzled by the brilliance and beauty of all before him and, rejoicing in its vastness, he is in ecstasy. Finally, everything in nature would be lavished and, so to speak, exhausted in this delightful place made by man, who found nothing but pleasure in the hardest toil.

On the basis of the various scenes that we have attempted to describe and which are an integral part of the monuments described above, it is easy to conclude that when Vitruvius's commentator[15] defines architecture as *the art of building*, he is speaking like a workman, not an Artist well versed in his calling; it is as if a player of music compared his talent with that of the composer of the music.

It is obvious that Vitruvius was familiar only with the technical side of architecture. That at least is what his definition proves; if I confined myself to considering architecture only in the light of Vitruvius's tenets, I believe a more valid definition would be the art of creating perspectives through the arrangement of volumes. But when we consider the scope of architecture, we perceive that it is not only the art of creating perspectives through the arrangement of volumes but that it also comprises a knowledge of how to combine all the scattered beauties of nature and to make them effective. I cannot repeat too often that an architect must make effective nature.

It is impossible to create architectural imagery without a profound knowledge of nature: the Poetry of architecture lies in natural effects. That is what makes architecture an art and that art sublime. Architectural imagery is created when a project has a specific character which generates the required impact.

Character

Let us consider an object. Our first reaction is, of course, the result of how the object affects us. And what I call character is the effect of the object which makes some kind of impression on us.

To give a building character is to make judicial use of every means of producing no other sensations than those related to the subject. In order to understand what I mean by the character or expected effect of different objects, let us take a look at some of the beauties of nature and we shall see that we are forced to express ourselves in accordance with the effect they have on our senses.

What a charming spectacle delights our eyes! What an agreeable day! How pleasant it is! The image of a good life extends over the whole Earth! Nature is bedecked with the charms of youth and is a work of love! Sweet harmony reigns over all our impressions on such a delightful day; and its charm intensifies the colours and our senses are drunk with their freshness, their delicate nuances, their smooth, rich tones. What a pleasure it is to run our eyes over all these things and how agreeable they are; their adolescent forms have a *je ne sais quoi* that emphasizes the smooth flowing curves that barely indicate their presence and adds new charms. The beauty of their elegant proportions lends them grace and unites in them all things that have the gift of pleasing us!

But summer comes and forces a change of mood. The glorious light makes us drunk with joy and our sense of wonder has no limits. This pleasure is truly divine! What pure happiness we feel in the bottom of our hearts at this spectacle! What ecstasy! No, we cannot possibly give expression to it!

At this season nature's work is done; everything is the image of perfection; everything has acquired a clearly defined form that is full-blown, accurate and pure. Outlines are clear and distinct; their maturity gives them noble, majestic proportions; their bright, vivid colours have acquired all their brilliance. The earth is decked out with all its riches and lavishes[16] them on our gaze. The depth of the light enhances our impressions; its effects are both vivid and dazzling. All is radiant! The God of day seems to inhabit the earth. Nature is adorned with a multitude of beautiful things and offers us a splendid vista of magnificence.

But autumn has already taken the place of summer and raises our spirits with new pleasures; it is a time of fulfilment; spring had already awakened our desire for it. The earth, still adorned with Flora's dazzling gifts, is now covered with Pomona's treasures. How varied are the images! How gay and smiling! Bacchus and the gentle Goddess of Folly have taken over the earth. The God of mirth, the spirit of our pleasures, makes our hearts drunk with joy! It is as if the Goddess wanted to give pleasure to the God by disguising the earth. Colours are mixed, variegated, mottled. Forms are picturesque and have the appealing attraction of novelty; variety had added to their spice and the play of light and shadow produces countless surprise effects which are all delightful.[17]

But fine days are superseded by the dark winter season. What a sad time! The torch of heaven has disappeared! Darkness is all around us! Hideous winter comes and chills our hearts! It is brought by the weather! Night follows in its wake, unfurls her sombre shades over the earth and spreads darkness everywhere. The shining crystal of the ocean is already tarnished by the blast of the north wind. What remains of the pleasant forest are no more than skeletons and nature is in mourning. The image of the good life has faded to be succeeded by that of death! Everything has lost its brilliance and colour, forms sag, outlines are hard and angular and to our eyes the denuded earth resembles an all-embracing tomb!

Oh, Nature! How true it is that you are the book of books, universal knowledge! No, we can do nothing without you! But although each year you begin again the most interesting and instructing course of study that exists, how few men pay attention to your lessons and know how to benefit from them!

It follows from these remarks occasioned by the seasons of the year that to create something beautiful we must, as in nature, ensure that the general impression given is gentle; colours must be soft and muted, their shades delicate; shapes must be flowing with light, elegant proportions.

The art of making things agreeable stems from Good Taste.

Good Taste is a delicate, aesthetic discernment with regard to objects that arouse our pleasure. It is not enough to simply put before us objects that give us pleasure. It is when we choose among them that our pleasure is aroused and we feel delight in the depths of our being.

Let us concentrate on architecture and we shall see that here Good Taste consists of providing more delicacy than opulence, more subtlety than strength, more elegance than ostentation. Thus it is grace that is indicative of Good Taste.

We have observed that during the summer season the whole of nature is bathed in light which produces the most magnificent effects; that this life-giving light was diffused over an extraordinary multitude of objects all with the most beautiful forms, all shining with the brilliance of the brightest colours, all of them developed to the full; and that the result of this beautiful assembly was a vista of magnificent splendour.

As in nature, the art of giving an impression of grandeur in architecture lies in the disposition of the volumes that form the whole in such a way that there is a great deal of play among them, that their masses have a noble, majestic movement and that they have the fullest possible development. The arrangement should be such that we can absorb at a glance the multiplicity of the separate elements that constitute the whole. The play of light on this arrangement of volumes should produce the most widespread, striking and varied effects that are all multiplied to the maximum. In a large ensemble, the secondary components must be skilfully combined to give the greatest possible opulence to the whole; and it is the auspicious distribution of this opulence that produces splendour and magnificence.

It is just such expanded images that I have tried to

produce in several of my projects, notably the Palace at St. Germain-en-Laye, the Metropolis and Newton's Cenotaph. I have tried to avail myself of all the means put at my disposal by nature and to convey with my architecture the image of grandeur. I would suggest that the reader consult my plans in place of all possible explanations, for I am persuaded that what should be required of an Artist above all is not that he explain well but that he execute well.

We have observed that the smiling images of autumn were produced by great variety, by the play of light and shadow, by picturesque forms and their lack of similitude, by the unique and bizarre nature of their variegated, mottled colours.

It follows from these remarks that if we are to produce gay, smiling images, it is necessary to be familiar with the art of diversification; for this one must depend on flashes of inspiration for they make objects new, different and more stimulating, and diversify design. They utilize picturesque forms so as to disguise and individualize them. They make light play on shadow to produce stimulating effects that by skilful mixing produce mottled colours; through fortunate, reasoned analogy, through slender, graceful proportions, they give architecture an aspect of lightness. By ingenious combination and unexpected progressions they create unexpected vistas that proffer the stimulating attraction of novelty.

This type of architecture would be suitable for Vauxhalls,[18] fairs and health spas which almost always have picturesque locations, for a Theatre with pleasant surroundings, or agreeable public promenades, such as Boulevards, etc., etc.

We have observed that during the winter season, the light is sad and gloomy, that everything has lost its brilliance and its colour, that outlines are hard and angular and that the denuded earth has the appearance of an all-embracing tomb.

It follows from these observations that to produce a sad, sombre impression, it is necessary to try to present, as I did in my funerary monuments, an architectural skeleton through the use of an absolutely bare wall[19] and to convey an impression of buried architecture by using only low, sagging proportions buried in the earth; and, finally, by using light-absorbing materials, to create a black image of an architecture of shadows outlined by even darker shadows.

This type of architecture based on shadows is my own artistic discovery. It is a new road that I have opened and, if I am not mistaken, Artists will not refrain from following it.[20]

I will add one last observation to those I have already made—one that seems to me of great importance. It is that nature never deviates in its forward march, and everything in nature is striving towards the goal of perfection. Does Nature offer us agreeable images, noble images, pleasant images, sad images? In all its different images nature retains the individual character of things in such a way that nothing is in contradiction, neither impressions, nor forms, nor colours; and all things in all respects have a perfect relationship, perfect analogy and harmony.

This is, for me, a critical moment: I am going to put my case before the Reader by describing my own work. He cannot accuse me of trying to force it on him to make my case seem favourable, for I shall strongly criticize some famous monuments and in so doing I shall provide weapons against myself which he can easily use to destroy my own work utterly. I am aware of it but I am writing to further the advancement of the arts and I cannot make an effective contribution if I do not tell the truth, even against myself. What author is not aware of his weakness? Who does not desire to go beyond his capabilities? All able men are tormented by a sense of their own inadequacy. They cannot hide it from themselves. The more knowledge they have, the more dissatisfied they are with their own work and the more often they find they are at war with themselves.[21]

Basilicas

When an Architect intends to begin work on a project, he should first of all concentrate on understanding its every essential aspect. Once he has fully grasped such aspects, then he will perhaps succeed in giving the appropriate character to his subject; and further study and speculation will enable him to grasp the fundamentals of the problem he has set himself.[22]

An edifice for the worship of the Supreme Being! That is indeed a subject that calls for sublime ideas and to which architecture must give character. But to give character to one's work, it is necessary to study the subject in depth, to rise to the level of the ideas it is destined to put into effect and to imbue oneself with them to such an extent that they are, so to speak, one's sole inspiration and guide. But what Artist having tried to rise to the contemplation of the Creator, will dare to design a Temple for him!

Here the limitations of art correspond to those of the human mind; and no one can flatter himself that he is able to go beyond them. Man gives homage to the infinite Being in vain; for such homage is, inevitably, in proportion to the weakness of those who offer it; with such a subject all man can do is to fulfil his religious duty as best he can—and that alone is a tremendous task.

I do not know whether the architects of our modern temples had these thoughts in mind. From their designs, it is clear that they have tried to incorporate nobility, splendour and opulence. We should doubtless be grateful to them for the order and proportions of their architecture. But does their art go so far as to induce a sense of veneration at the mere sight of their Temples? Are we afraid of desecrating them by recklessly setting foot there? Do they inspire the profound respect that results from religious belief? Do they have that quality of grandeur belonging to genius that surges forth and imposes itself on the onlooker, filling him with

astonishment and wonder? Is the general impression that they surpass human capacities and are, so to speak, inconceivable? And, finally, have all the resources that nature has to offer art been tapped to endow the subject with the majesty it calls for? Such were my first thoughts on Temples.

Greek architecture is recognized as being so superior that to-day its precedents are laws. Let me tell you that the Greeks decorated their temples with magnificent colonnades and it must be admitted that architecture possesses no other more majestic or more agreeable technique. It was therefore to be expected that there would be imitations of such beautiful examples handed down to us by our famous architects. Why then have our modern Architects in their Temples substituted for the noble opulence of architecture a form of decoration that consists of cumbersome arcades, with straight, massive bases decorated with nothing more than a coat of plaster a few centimetres thick that we architects call a pilaster!

This unweildy, ignoble order is crowned with vaulting pierced by lunettes resembling cellar skylights. The sharp, unpleasant angles of the lumettes make the vault appear horrifically heavy.

The unsuitable ornamentation only exacerbates the defects we have just described by drawing attention to them.

And do not imagine that these observations apply only to a few monuments that are not worth mentioning. Consider the vast Basilica of St. Peter in Rome, St. Paul's in London, and the church of the Invalides in Paris or the one at Val-de-Grâce, the Sorbonne, etc., etc., and you will see that all are decorated in the manner described.

Since man is always impressed by size, it is certain that a Temple built in honour of the Divinity should always be immense. Such a temple must be the most striking and the largest image of all that exists; it should, if that were possible, appear to be the universe. To be reduced to what is called necessity when designing a temple is to forget one's subject.

Why then does St. Peter's in Rome appear much smaller than it is? This intolerable defect is due to the fact that the Architect has not given an impression of space by the mere presence of the numerous objects a large space should naturally contain but instead has reduced the overall effect by making each object of colossal proportions; and thus, instead of building *big*, as artists say, what he has built is *gigantic*.

When I observed that a Temple should appear large, I was not referring only to its size. I meant to include the use of that ingenious technique which makes it possible to extend and enlarge the impression we have; this is done by juxtaposing objects in such a way that their overall effect is fully developed as we look at them, and by arranging them in such a way that we appreciate their multiplicity, the successive aspects in which they are revealed to us are removed continuously until we can no longer count them. Such an effect is produced, for example, by the regular, symmetrical arrangement of a quincunx. If we stand outside, near one of the angles, the overall effect is developed to a maximum, for we can observe two of its surfaces at once.[23]

Thus the objects are arranged in such a way that all contribute to our enjoyment. Their multiplicity gives the effect of Opulence. The greatest magnificence and the most perfect symmetry, that is what results from the order that extends in every direction and multiplies them at our glance until we can no longer count them. By extending the sweep of an avenue so that its end is out of sight, the laws of optics and the effects of perspective give an impression of immensity; at each step, the objects appear in a new guise and our pleasure is renewed by a succession of different vistas. Finally, by some miracle which in fact is the result of our own movement but which we attribute to the objects around us, the latter seem to move with us, as if we had imparted Life to them.[24]

Allow us to make some further observations on St. Peter's. Suppose, for example, that in the nave and side-aisles of this Temple, the straight, unweildy bases, which destroy the overall effect of the Temple with their size and thickness, were replaced by pleasing, delicate volumes and immense rows of peripheral columns in the Greek style; each one is separated from the next in such a way that our eye can wander over the whole expanse and absorb this multitude of forms, in the opulence of which the onlooker can lose himself, for their attractiveness always leads him to believe that they are even more numerous. Who can doubt but that this temple, the dimensions of which are reduced by the order of gigantic arcades that extend everywhere, would then appear infinitely larger, for the methods which we have just described (as we know) far from reducing its size, greatly help to make it appear much larger.

In the light of these remarks, which are based only on known facts, I consider that I am entitled to suggest that there is a serious defect in a work of architecture when the overall effect reduces its size.

And all St. Peter's apologists were wrong when they claimed to have proved that this defect was a source of beauty!

An impression of size has such power over our senses that even assuming that it is repulsive, it still arouses our admiration. A Volcano breathing fire and death has a repulsive beauty!

It is therefore true that size is inevitably allied with beauty and that, in different acceptations, i.e. whether we find objects pleasing or whether we find them repulsive, the fact that they appear large, in any respect whatsoever, is indicative of superior qualities.

A poetic impression of grandeur has sometimes led us to confuse grandeur and immensity. If man is depicted at sea with only sky and water around him, this spectacle is for man one of true immensity. In such a situation, everything is beyond our understanding. We have no means of making comparisons. It is the same on a Balloon floating in the heavens, having lost sight of everything on earth and seeing nothing of nature but the sky.[25] Wandering thus in immensity, in this abysmal expanse, Man is overwhelmed by the extraordinary spectacle of inconceivable space.

Let us now broach the pleasure we gain on earth from the great vistas of nature. It is these that will allow us to make comparisons and calculations and which will give us a clear idea of what we should understand by grandeur in order to apply it specifically to art.

Who of us has not on a mountain top enjoyed the pleasure of discovering all that the eye can take in? What do we see there? A vast expanse containing a large number of different objects, too numerous to be counted. Now, in architecture,

do we want to give an impression of grandeur? In a large project, we must use the ingenious techniques we have described to multiply objects to the greatest possible extent, but in the exact proportion to the whole that we find in Greek temples, so that the objects are neither multiplied to excess as in our Gothic churches, nor do they have such colossal proportions that they are gigantic, like St. Peter's in Rome.[26]

The most famous Architects have realized that nothing in architecture is more magnificent than colonnades. Why is it then that modern Architects have not used them in our temples where all the resources of art should be lavished? I believe that I have understood the reason.

Ancient Temples, in the strict sense of the word, were merely sanctuaries where the priests carried out the duties of thier ministry without any communication with the people; this did not require a large space nor, in consequence, an ingenious arrangement. But our modern Basilicas are destined to hold a congregation as well as the priests. The most solemn ceremonies are frequently held there in the presence of a very large congregation and these Basilicas therefore had to be spacious and in proportion to the number of people in attendance.[27] Our architects had to solve a thousand difficulties. They had to find a means of supporting the immense vaulting of the main naves, the side-aisles and the chapels; and it is doubtless for this reason that they did not dare to decorate their temples with colonnades which would not provide sufficient support for the Enromous weight of the vaulting. They had to find a means of reconciling this delicate, elegant decoration with the necessary resistance. Time and study procure all.

Greek temples were decorated both outside and in with colonnades which surrounded the whole building. A magnificent Porch, with a double row of columns formed the entrance; the Temple stood alone, rising majestically in the middle of its vast precincts.

Our temples are far from having such a noble and consequently such an appropriate aspect. The entrance is rarely adorned with a porch and even the most opulent have at most one row of columns. As for their portals, they almost all consist of two or three orders of architecture, one on top of another, as if the Temple were built on several floors. When discussing the St. Gervais portal, Voltaire was not afraid to praise it.[28]

Far from being surrounded by colonnades, our churches are enclosed by walls with buttresses that resemble fortification walls. Our temples do not stand apart and nor do they have precincts; and not only do we not prevent their being profaned by the proximity of private homes, we allow the people to build against them hovels that house the most vile establishments.

The Porch of the Rotunda in Rome is considered to be an architectural masterpiece. We admire the noble order and proportions of its architecture. It is cited by all our famous writers. Is it not extraordinary that a model that has been the subject of so much admiration has not yet been imitated in our capital?

I have now made all the criticisms I considered necessary and will now pay homage to modern architecture. I am going to discuss Domes.

Michelangelo, a gifted Painter, Sculptor and Architect astonished everyone when he was making the plans for St. Peter's basilica. He wanted to improve on the most beautiful monuments in Rome, notably the Rotunda which he had always heard praised. He proposed building one as large and added that he would support this immense mass on the vaulting of the temple he had designed, in such a way that it merely reposed on it like a crown. The idea was so grandiose, so bold, so astonishing that if it had not already been executed, its feasibility would surely be questioned if it were proposed to-day.[29]

It must be admitted that the idea for this Dome is not generally attributed to Michelangelo. What is certain is that Bramante, a gifted architect, had done some of the plans for the construction of St. Peter's before Michelangelo. There is a Dome in the plan that we know was done by Bramante. Bramante's project appears preferable to Michelangelo's in many respects and it was followed in part by the latter.

Although the Goths built at a time when the arts were not very advanced and although they do not seem to have been familiar with any good architecture, they nevertheless managed to confer on their temples a character of grandeur. We are amazed by their extraordinary height which seems to surge up into the clouds. They introduced magic into art by concealing the supporting structure of their temples in such a way that they appeared to be supported by some supernatural power. The Goths succeeded in many respects because they followed the bent of their genius for man is always something when he uses the resources given him by nature whereas ape man becomes depraved and is absolutely nothing.[30]

It is evident from these observations on modern temples that they are still far from the perfection to which they could be brought and that is why I felt I should enter the fray. I was well aware (as I have already remarked) that the elucidations I was offering my critics would not be to my advantage, but I was concerned with the advancement of the arts; and I shall have my consolation in advance for having provided weapons against myself if my remarks, which are prejudicial to my own work, are of some use.

When I plunged into my subject, I was immediately halted by difficulties which I thought insuperable. At the beginning I asked myself how I was going to be able to give my temple the required character? Did architecture have the technical possibilities necessary to inspire all the religious feeling appropriate to the worship of the Supreme Being. I must confess that these questions overwhelmed me and the more I thought about them, the more discouraged I became. It was at this point that my love for my profession caused me incalculable anguish.

I say it openly. I do not know of any modern temple where there is any evidence that the architect applied himself to, or ["even" erased] thought about introducing character. In spite of all their efforts, modern Architects give us the impression of being men who are engaged in architecture but who have simply adopted the ideas of their predecessors and slavishly copied them.

I pondered for a long time without any success. But I grew accustomed to bracing myself against obstacles and continued my ponderings without becoming discouraged. And finally there was a ray of hope when I recalled the sombre or mysterious effects that I had observed in the forest and the various impressions they had made on me. I perceived that if any means existed of putting the ideas that

preoccupied me into effect, it must lie in the way light was filtered into the Temple. That was how I reasoned.

It is light that produces impressions which arouse in us various contradictory sensations depending on whether they are brilliant or sombre. If I could manage to diffuse in my temple magnificent light effects I would fill the onlooker with joy; but if, on the contrary, my temple had only sombre effects, I would fill him with sadness. If I could avoid direct light and arrange for its presence without the onlooker being aware of its source, the ensuing effect of mysterious daylight would produce inconceivable impressions and, in a sense, a truly enchanting magic quality. Once I could control the amount of light at will, I would be able to reduce it to inspire in our souls composure, compunction, and even religious dread, particularly if for mournful ceremonies tending to arouse such sentiments, I was careful to decorate the church in a similar vein. If, on the contrary, for joyful ceremonies, the light effects were brilliant and the temple strewn with flowers—which are all that is most pleasant in nature—the result would be a majestic, moving spectacle that would fill our hearts with delight.

These reflexions restored my courage. Now, I thought only of how to avail myself of all that nature had to offer. I then said to myself—and I am proud to confess it—"Your profession will make you master of these resources; and you too will be able to say '*fiat lux*'; at your wish the temple will be filled with light, or it will be no more than the dwelling place of shadows." And soon I no longer thought of anything but architecture.

I believed that the only way of ensuring that the temple had an imposing appearance would be through a grand and noble order of architecture. I made every effort to achieve this in the exterior decoration. I have learned by experience that man generally measures himself against the space around him and, in addition, I wanted to suggest the majesty of the place by an extremely imposing Entrance. I therefore thought that I could not do better than to concentrate on designing an entrance to the Temple that would completely overwhelm the onlooker. And so I dared to raise the height of the entrance up to the top of the vaulting and to make it as wide as the nave.

Some time previously I had had the idea of combining the beauties of Greek architecture with—I cannot say the beauty of Gothic architecture—but with the techniques known and used only by the Goths. The latter, as I have already remarked, knew how to conceal cleverly the supporting structure of their temples with delicate workmanship, with the result that their buildings seemed to stand by some miracle. I tried to decide on the interior arrangement of my temple in accordance with these tenets. Once I had devised the supporting structure and had reinforced it with the number of engaged piers necessary to carry the Dome and support the vaulting of the nave, the side-aisles and the chapels, I then surrounded all these massive volumes with rows of columns in every direction; and I thus managed to draw the eye of the onlooker away from these massive volumes by means of all that is most agreeable in architecture.

The result of this Gothic arrangement is that the supporting structure is screened and the temple too will seem to stand by some miracle; and, in addition, it will be decorated, in imitation of the Greeks, with all the opulence that architecture has to offer. The columns in the foreground facilitate the mysterious diffusion of daylight, for they jut out and prevent our seeing how the light enters the temple.[31] The latter arrangement has many advantages. In the first place, the number of casements can be increased to the desired extent without worrying about their form since they cannot be seen.

In addition, it facilitates both the construction and decoration: the construction in that the vaulting is supported by the engaged piers in the background and thus it is possible to multiply or reinforce them as necessary and at will; the decoration in that the casements situated in the attic below the vaulting no longer require those lunettes resembling cellar skylights that have a very ugly effect; in that the vaulting can be decorated in any way, either with painting or sculpture; in that the vaulting extends beyond the colonnades and into the background and its ["large" erased] diameter necessarily enlarges the whole and crowns the colonnade in most majestic fashion; in that the columns are not overloaded by the massive vaulting above them and thus preserve their dignity and characteristic grace; finally, in that the architecture would have the most stimulating effect on the onlooker at every step—the stimulating effect that stems from the fact that our glance cannot wander over isolated objects arranged symmetrically in every direction without our forming the impression that the objects move with us and without it appearing that we have imparted life to them.

Through an extension of this arrangement, the resting points of my Dome are placed in a way that enabled me to enhance my Cupola with a double colonnade outside and another one inside. I have benefited from this advantage both to add immensity to the tower of the Dome and to isolate the temple which adorns the inside of the Cupola. The painting on the vaulting extends right down onto the rear wall from which the columns jut out, with the result that the expanse of the Heavens and of glory that adorns the vaulting and cupola become immense, thus, in addition, they contribute to make the architecture of this dome as light and airy as it could possibly be. The Dome is placed in the centre of the monument and is designed to impress immediately anyone who enters the temple and to hold his gaze with its brilliant effect, its opulence and its size. This temple would be rid of those massive pillars that in our modern Churches, obstruct and deplete the main section; the columns in its aisles would join up with those of the Dome, thus conferring on it all the riches of architecture; immense rows of columns in the arrangement of the quincunx would be multiplied to such a degree that the eye would lose itself in the opulence; and the optical effects and those of perspective would prolong the columns, thus giving us, as we have already observed, a glimpse of immensity.

This enclosure, which as I have stated above is destined for the Ministers of Religion is crowned by an open-sided temple with an aerial effect. This temple would appear to be the sanctuary of the Divine Being, whose presence would be indicated by its glorious magnificence. Triple rows of casements, set in such a way as not to be visible, would diffuse in the cupola the brightest possible light. Hidden from the eyes of the onlooker, with a quality of mystery, the effects produced by the light trained only on the vaulting would be both brilliant and surprising. The brilliant shades

of the painting would be seen to advantage and the eye would have difficulty in supporting the brilliance of these magical effects. The celestial vista would derive its sublime character solely from natural sources and would thus bear witness to the fact that if there is an art which enables us to avail ourselves of nature, then it is unquestionably the most worthy of all the arts.

In view of the reflexions I have made on the impotence of men who dare to erect temples to the Divinity, you will not imagine that I am satisfied with my work. No, that I am certainly not. My pretensions (if, that is, an artist can permit himself to have any in such circumstances) would be confined to allowing me to assume that the arrangement of my temple comprises some techniques which had not been obvious up to now, and which will enable my successors to benefit from the advantage I am giving them, as I have benefited from those given to me by our forebears. What I find satisfying [an additional "satisfying" erased] at present is that I believe that I was the first to devise this way of introducing light into a temple and that my views on this subject seem to me both new and philosophical.

Uneducated arguers or those given to dishonesty will perhaps exclaim, "What is this innovation that the author claims he is offering us? Is it not a fact that part of the Dome of the Invalides is lit, as he wants to light his temple, and that the source of the light in the upper vaulting is invisible?" A frivolous objection. What a difference there is between the aims of that architecture and those that I am professing! Is it not obvious that the sole intention of that architect was simply to introduce daylight into that large vaulting to illuminate the Painting. With no other intention? This is so true that if he had any special aims similar to the one I am suggesting, he would certainly have camouflaged the main apertures which are located in his cupola. These apertures are so detrimental to the decoration of that part of the Dome, and are in such contradiction to it, that it is impossible to look at the painting here or anywhere else without finding a solid mass blocking one's view. Isn't there direct lighting in the chapels and the main temple? Doesn't the light enter here in the same way as in all our modern Churches, where the light, *because it is not devised for the objects*, is detrimental to them instead of setting them off to advantage? Isn't is cause for lamentation that in the Invalides and elsewhere, the main figures which decorate the chapels are placed above the altars and lit from behind?

These facts prove that the aims of this Architect[32] have no connexion with the philosophical aims that guided me when I was searching for a means of arousing in men's souls feelings in keeping with religious ceremonies. This was not, however, the only reason that I considered. Of this, too, I must give an explanation.

When light enters a temple directly, art is pitted against nature, especially if there is also Painting. The light is reflected in those places where it falls directly and hurts the eyes; or else the objects are absorbed in the contrasting light. My system is in total opposition to usual practice. I am extremely careful to avoid any conflict between art and nature. I borrow the valuable effects of the latter, I adapt them to art, and it is these gifts of nature that enable me to raise art to the sublime.

Theatre

A theatre is a monument to pleasure; what delicacy and what good taste must preside over its construction!

The public attending our entertainments can, it seems to me, be compared with the Gnidian festivals so agreeably described by Montesquieu. I see the members of the more attractive sex enter our places of entertainment, giving the impression that they are gathered there only to vie with each other's charms, to delight our hearts, to demonstrate their power and also to receive the respects of the presiding Genius which, inspired by love and the Graces, often takes pleasure in celebrating the attractions of this enchanting sex. How true it is that a place of entertainment should be thought of as a temple to Good Taste. In this beautiful temple I can see Genius and Good Taste combine to erect a magnificent amphitheatre where brilliant rivals make their appearance. I see the latter raised on a superb throne from which they enjoy the effect of their charms and from which they spread that delightful confusion aroused by an abundance of pleasure and force man to exclaim, "My soul is not equal to it."

I can also see the decoration in the interior of the temple offering in its most pleasant guise all that is attractive and pleasing; everywhere there is a festive spirit that heralds and induces pleasure; that it has its abode and refuge here is evident from the temple's aspect.

It was during these moments of reflexion and insight that I conceived the project for my Theatre. When I made it public it was rather successful; I had reason to suppose that I would be able to execute it in the centre of the Garden of the Revolution (formerly the Palais-Royal) where the large lake was previously located.[33] This idea impressed me and I tried to design my Theatre so that it would take advantage of all its attractions.

Surrounding walls contribute more than a little to enhancing monuments; thus the Ancients were careful to set them apart to give them dignity, and to surround them in order to multiply the sources of character.

It is easy to imagine the overall effect of an auditorium placed in a pleasant garden surrounded by a Palace and imposing buildings adorned with rows of columns and Arcades. The Public would arrive from all sides drawn either by the lure of the performance or by that of a walk, or perhaps by the desire to enjoy the sight of this large gathering which, with its festive aspect, would embellish the location and make it seem most agreeable. There is nothing more attractive than the image this auditorium would have

offered in the middle of all that beauty.

Determined to refuse all these advantages, I rejected this site in favour of the Carrousel, which has a magnificent location.[34] There I designed an auditorium standing free on all sides. Bordered by the quays and the adjacent streets, this vast site possesses all that one could desire for easy access. One of the Palaces—the most impressive on account of its size and opulence—already decorates this superb setting. One can circulate freely there during the performance, since the Palace courtyards would more than suffice for all the carriages. The isolation of the auditorium would mean that there would be no danger to the neighbouring houses. The most suitable site for this monument would naturally be this large area which does not have the inconvenience of all other sites, where the purchase price would exceed the construction expenses. The auditorium would also be in the neighbourhood of the Theatre warehouse, and would thus be convenient for the running of the theatre. Nothing would be simpler than to connect the auditorium with the warehouse by means of a covered underground passage. Thus the transport of scenery and costumes would cost almost nothing and could be carried out with the utmost speed; and, what is an even greater advantage, it could be done without fear of the ruinous damage which could inevitably result from transporting them in the open.

Attracted by the advantages of this place and thoroughly absorbed in my project, I concentrated on grasping all the fundamentals of it.

I first pondered on the fatal events that have occurred in almost all the large cities of Europe, and which were caused solely by the manner in which our auditoria are built.

A glance at our Theatres is sufficient to convince us that they are gruesome funeral piles and that a spark is sufficient to set them on fire and see them burnt out in an instant.[35] The proof exists in the fires at the two Theatres on the site of the former Palais Royal.

Should the Public fear for its life in a place devoted to its pleasure?

What dreadful confusion, what dire calamities when panic takes hold of people because they apprehend some catastrophe, as happened in the old Italian Theatre!

Such thoughts made me shudder and I told myself that I would not build a Theatre unless I could find a way to make it fireproof.

I thought that I should first arrange for the Public the fastest possible escape, and I think I have succeeded.

At the side of the main entrance to my Theatre is a vast perron climbing the whole height of the substructure and more than 200 feet in width. On the platform of this perron, i.e. on the peristyle of the auditorium, I have placed forty-two French windows that are separated from the boxes only by a corridor and the foyer, so that everyone on this floor can leave almost all abreast at the same time; to be outside the building, that is in safety, they have only to cross the corridor. Nine large doors which open onto the three groundfloor vestibules give the same advantage to those sitting in the pit and the small boxes behind it. The exits do not communicate with those on the first floor. The upper balconies would, in addition, have to descend their respective staircases down to the first level and from there go to the main perron. This would be the shortest possible distance for them to cover. It is essential to note that the forty-two doors opening onto the peristyle would be arranged in such a way that at the slightest alarm, a simple pull on a cord would suffice to open them all at the same time so that the whole auditorium would be nothing but open doors. I have already successfully tried this mechanism at the Ecole Militaire;[36] it consists of a dented pinion to activate the serrated racks which in turn raise the catches of the locks.

It is certain that the mass of exits and their proximity to the façade of my Theatre would be reassuring in moments of danger, but that would not forestall the danger; and I had to try and avoid even the possibility of such an appalling danger.

Fire is dangerous only when it is fed. To avoid feeding it I make no use at all of wood but build with stone and bricks right up to the balconies. Thus the only inflammable parts of the building would be the floor of the Theatre and the scenery. If a disaster did occur, these would burn, but without any unfortunate consequences.[37] But to parry all objections and to reassure the public and the Government that I had taken every precaution, I placed under the whole length of the Theatre a large reservoir of water into which all the wood would fall and be extinguished as the fire consumed the structure.

Moreover, it would be possible to arrange for the floor structure of which I have spoken above to fall all at once in a single piece. Do we not have the proof that much more extensive demolition can be carried out in the removal of the centrepiece of the Neuilly bridge?[38]

I have already stated that I would not use wood in my construction: in fact, since the auditorium of the Theatre would be vaulted, the high runners on top of the Theatre would be of sheet metal, resting on iron rods supported by large, strong hooks; all the service ropes would be of brass wire and enough crampirons to bear their weight would be distributed over the whole curve of the Vaulting and arranged so as to facilitate all the changes and meet all operational needs. These precautions would mean that even if the whole Theatre burned, neither spectators nor the main structure of the building would be in any danger; and in addition there would be no need to fear that the Vaulting of the Theatre would be damaged. I am so sure of this that if I had built this Theatre, as I was given reason to suppose I would, I had decided to sacrifice at my own risk a floor and a set of scenery which I would have set alight to to prove to the Public the effectiveness of my methods.[39]

The problem of ensuring the greatest possible safety was thus solved and it remained for me to turn my attention to the layout and decoration of this monument.

Four large outer Vestibules indicate the main groundfloor entrances. Two of these vestibules are meant for the lower baleonies and, on the main entrance side, they are placed in front of the main double staircases that lead to them. Three inside Vestibules lead to the staircases for the other three rows of balconies. By increasing the number of these staircases and vestibules and by dividing them so that none of them communicates with any other, I can forestall the turmoil, panic and confusion of the audience which, until now was inevitable at the exit after any performance.

A vast arcade at ground level surrounds the whole circumference of the building. It communicates with every part of the building and thus relieves congestion. But its main purpose would be to accommodate the servants waiting for

the end of the performance, and to protect them from exposure to the elements. It is arranged in such a way that the servants could arrive everywhere rapidly and without the least confusion.

The staircases leading to the first floor balconies are large with free, simple, easy access. They lead to an extended public foyer which could be agreeably decorated, and located to ensure a most interesting glimpse of it to those entering or leaving the performance.

I have surrounded my auditorium with a fairly solid structure that will completely exclude all outside noise. I have placed my corridors in such a way that they prevent the outside air from directly penetrating straight into the auditorium; for we are well aware of the number of dangerous illnesses and fatal diseases that are caused by neglecting this precaution.

The actors' dressing rooms are on the promenade and directly accessible from the Theatre. The principal actors would only have to cross the corridors and the proximity of the others would be related to the requirements of their work. By this means the Directors could, without leaving the Theatre where their presence is required, give their orders, have the actors called as necessary and keep an eye on everything with unequalled ease. It is easy to understand how such an arrangement would facilitate good servicing.

It is with the same intentions that I have located on top of the Theatre two green rooms, one for the singers and one for the dancers.[40] These would ensure them all the practice they might need without disturbing each other, even during the performance.

A Theatre is destined to create all the scenes that the imagination can conceive and thus cannot offer too large a space to the stage designer. But this space must be in proportion to the size of the auditorium, which is itself restricted by the limits of our vision and hearing and by the number of spectators who can attend the performance. It is doubtless necessary to take account of these indispensable limitations. But the Theatre must nevertheless be as large as possible. Space is also necessary for easy handling of the scenery. It is, moreover, essential to note that depth is more important than width.

In crowd scenes with many actors on stage, the action that takes place at the back of the Theatre perpendicular to the front stage is not very apparent: the actors in the foreground hide those in the second row and so on. The action can only take place and be completely effective diagonally or parallel to the scenery. What is more, the depth of the Theatre, far from increasing the impact of the scenery, can possible destroy it. The multiplicity of the successive frames forces the designer to go into too much detail for them to be perceptible and harmonious; the effect is inevitably monotonous and the piled up sets, far from enhancing the whole, singularly destroy it.

It is by pronounced contrasts that one succeeds: contrasts need hardly more than two or three separate frames on a backdrop. This is the secret of the magnificent scenery that we have often admired at our Italian Theatres, and we would be able to achieve again this beautiful style in the grand manner if the administration devoted to this sector the attention it deserved and entrusted its supervision and execution only to first rate Artists. This interesting aspect has up to now been open to many deserved gibes, which various authors have heaped upon it; and it is about time that we concerned ourselves with the methods most likely to preserve the theatrical illusion.

It is doubtless equally difficult to conceal both the imperfect state of this aspect of our Theatres and the sublime perfection they could attain. There have been smiles and laughter on more than one occasion at the sight of those mobile lines of washing[41] that separate the transverse ribs of the vaulting from their supports; or that move the sky as if it were an image. No method has yet been discovered for making skies and ceilings; I will not describe here ideas that still require exceptionally careful study to be fully perfected. My desire is to see competent artists apply themselves to this aspect and make it the object of their speculations.

There is another aspect that has received even less attention; a mass of observations about it have enabled me to deal with it. It concerns methods of lighting an auditorium according to the effect the work should have presented on the audience. If the title of a play has induced gloomy thoughts, no one seated in a brightly lit auditorium, will not experience some difficulty in tearing himself away from the sensations induced by the brightness of the lighting when the curtain rises and suddenly reveals a sombre scene. The effort he is obliged to make to put himself in the right mood destroys the illusion; the destructive effect on the performance is unknown.

The same process occurs when we are seated in an ill-lit auditorium and are suddenly confronted with festive brilliance. It is true that sometimes these sudden contrasts are preparatory to the auction and serve the ends of the poet who may need instant surprise or a sudden commotion. But that is even more reason for trying to master the creation or prevention of such affects at will; and it is difficult to imagine how many unknown, powerful resources this method can add to the illusion and physical impression made by the entertainment. We saw at the beginning of this section the ideas behind the decoration of the auditorium. As far as possible, I was aiming at the stimulating effect of variety. That is why I surrounded my auditorium with buildings with porticos creating a kind of fairground. I placed a ballroom and concert hall in the middle of these buildings for I considered that I must advertise the pleasures by concentrating them. I found this a pleasing and picturesque way to surround an auditorium and in addition it would be a stimulating contrast to the effect of the Palace opposite.

My Theatre was to be a Rotunda surrounded by a corinthian order. I thought that by using the most pleasing of shapes and the most elegant order, I would ensure that it had appropriate character.

The four principal Vestibules form on the outside four large pedestals destined to support the Famous who were to accompany the muses to the temple of Good Taste. These pedestals mark the limits of the perron which forms the base of the whole building. It is easy to imagine the effect of this perron on a beautiful day, full of elegantly dressed women, embellished in particular by those charms that belong only to French women.[42]

I have made the inside of my auditorium in the shape of a semicircle—undoubtedly one of the most beautiful shapes—for in architecture it is an axion that beautiful shapes are the necessary basis of a beautiful decor. Moreover, this is the only shape suitable for a Theatre. It is

necessary to be able to see and hear perfectly and what shape fulfils these two requirements better than the one whose exactly equal radii give the ear and eye the greatest and most equitably distributed freedom; where no point hides another and where, for this reason, all spectators on the same level can see and hear equally well. Moreover, this shape enabled me to enclose my auditorium with spherical vaulting which not only has the advantage of being a simple form of decoration in good taste, but which is also the most favourable from an acoustic point of view.

I have decorated the inside of my auditorium and I was not afraid to use all the riches of architecture to adorn it by incorporating columns. The proportions and layout I used made me certain that it would be appropriate, agreeable and adequate; I did not want to debase art by calculating the number of extra seats I could make room for. I have enough to meet requirements; and all of them are good. Now that I had satisfied these two needs I could and doubtless even should think about how to give my auditorium a pleasing overall appearance corresponding to its function. I believed that the Temple of pleasure should give us pleasure.

Finally, I wanted to give the most pleasing effect possible and thought that I could achieve it by placing the spectators in such a way that they provided the decoration for my auditorium. In fact, I believe that by assembling and grouping the members of the beautiful sex and placing them in such a way that they provide the bas-reliefs of my architecture, I have given my setting the stamp and character of grace.

The Palace of the Sovereign

This project was completed long before there was any question of a revolution in France. The author thought he should retain it, firstly, because he has not worked solely for France and is convinced that an Artist's ideas should be available to all who might find them useful; secondly, because there is good reason to think that the project contains ideas that could be adapted to other monuments not destined to be a Sovereign's residence!

When an Artist builds a residence for a Sovereign, he must incorporate all the opulence of Architecture and make use of all the splendour and magnificence of the fine arts.

We have already noted that the Ancients added to the dignity of their monuments by building walls around them.

But what type of surrounding wall would meet all the requirements and also contribute to improving the overall effect of a Palace? That is what we shall now consider.

The impact of splendour and magnificence has its source in the grouping of objects that arouse our admiration. That is why I decided that the surrounding walls of the Palace of the Sovereign should consist only of the palaces of the court nobles; that was the only form of wall that would be appropriate and that this large, majestic group of buildings would result in the most exquisite effect; for example, its expanse would make an extraordinary impression on us, bringing us closer to infinity; its magnificence would dazzle us with its impact; and, finally, the splendour resulting from the grouping of beautiful objects would arouse in us a sense of wonder.

It was on the basis of these ideas that I wanted to begin work. But when I began to reflect on how to plan this large group of buildings, I found myself at a standstill as I shall now describe. I hope the reader will from time to time allow me to put him in my place.

I said to myself, "The palace of a Sovereign, which would be surrounded by the palaces of all the Princes of the Court, should without doubt be as large as possible. And so, on account of its size, I must vary the effects. But if, in order to preserve an effect of perfect symmetry—which is the most beautiful element in architecture—I decide to decorate all the Palaces in the same manner, won't this repetition make the whole monotonous? If, in order to preserve the not inconsiderable and beautiful effect of elongated lines which results from symmetry combined with regularity, I subjected all the buildings to a common height, would I be able to incorporate variety too? But if, in order to avoid the defect of monotony and in order to introduce variety throughout, I tried to decorate each Palace differently; if I built them at different heights and if I decorated each one individually, the result would be an effect of disparity, not of a single unit, for the combination of all these different buildings would constitute a kind of small town.

The Palaces of the Nobles and the Royal residence should form, on the contrary, a whole.

Such were the remarks I made to myself as I plunged deeper into my subject.

It is evident that with such a vast construction, there is always the fear that the result will be an effect of uniformity if one tries to subject all the Palaces to the same height to preserve regularity and to decorate them all in the same manner to maintain symmetry.[43]

One must know how to avoid this by finding methods of introducing variety without, however, excluding either regularity or symmetry.

I was very conscious of the fact that to construct a group of buildings of this size, I had to choose a favourable site; it is impossible, for example, to create something imposing on a flat site, for when each part is on the same level there is no development: those in the foreground inevitably hide those behind, thus limiting their effect; whereas when the site is amphitheatrical, there is every possibility for developing the effects and introducing movement; the diverse planes can have infinite variations. Is there a single one of us who has not admired cities with such a propitious site, for they offer the most extensive, the most impressive and at the same time most pleasing sight! It was in the light of such striking examples that I decided that I should look for a place that

would give me all the advantages appropriate to my subject, and without which I could not bring it to a successful conclusion.

It seemed to me that the ideal location for such a residence in France would be St. Germain-en-Laye. I was all the more resolved to choose this place, for by giving it preference I was also obeying one of the most essential laws of architecture and one which Vitruvius[44] was right to insist on: I am referring to salubrity. For it is a known fact that in St. Germain the air one breathes is pure. It is also a fact that in this pleasant place one can enjoy all the beauties of nature.

I have therefore set this Palace on the vast, magnificent amphitheatre formed by the mount of St. Germain-en-Laye. I have so placed it that it appeared to form a part of the Heavens. Although the superb surrounding wall formed by the Palaces of the Nobles is very high, it is still dominated by the residence of the Monarch. An onlooker standing at an appropriate distance at a glance can see and take in all the separate buildings that form the whole.

I drew up my plans in such a way that each Palace seen separately presented a pleasing whole.

Thanks to this beautiful setting I was able to arrange the buildings as I had intended so as to preserve perfect symmetry and fine regularity, without, however—or so I believe—falling into the defect of monotony.

Although time is a destroyer of customs it does allow some of them to persist long enough for us to be able to count on their survival. With respect to the household arrangements of a Monarch, the disposition of his Palace is subject to frequent changes for, as with many other things, it is dependent on current fashion. But the general disposition, which concerns the majesty that is due to the Throne, is, so to speak, immutable. It is this disposition that will reveal the talents of the architect. I will not repeat here the explanations I have already given on this subject. My Memorandum on the restoration of the Palace of Versailles can be consulted. There, I have tried to give the explanations necessary to form an opinion of my work.[45]

I decided that I should give my imagination free rein in this project and I have tried to incorporate all that I considered necessary and desirable in the Palace of the Sovereign. Montaigne gave me some ideas of which I took advantage and which enabled me to improve the disposition of my Palace. In his reflexions on education, he prescribes methods for educating children without, so to speak, there being any notion of work. He informs us that he became perfectly familiar with the Latin language, without even being aware of it for all those around him during his childhood spoke to him only in that language. You must admit that it would be possible to impart much knowledge to children by placing them in the company of men who conversed with them only on subjects they wanted to teach them and who would thus inculcate knowledge in them without their applying themselves to the task. Montaigne's views seemed to me to offer many advantages that would facilitate the progress of our education in more ways than one.[46] I said to myself, "Why should we not reap the benefit of the views of this great man if, by following them, we can indeed find methods to facilitate education, especially that of Princes? Why should we not make use of his views which, it cannot be denied, would affect a man's happiness for it is certain that the more educated he is, the happier he will be?"[47]

I should deal here strictly with what concerns Architecture; which is why I will not proceed further with this subject. I will merely observe that on the basis of his observations, I decided that I should locate the Academies within the group of buildings constituting the Palace, not only so that the young Princes can be brought up in this sanctuary of knowledge but also so that those responsible for their education will be able to frequent the most learned men and so that the Monarch himself will be able to enjoy the conversation of the most enlightened men in his Kingdom.

I decided that the dignity of the Sovereign demanded that the throne of justice be in the proximity of his own. In addition, I assumed that it might perhaps be appropriate for the young Princes to complete their education in the Temple of Themis. In accordance with the customs of the Ancients, I have also placed there the buildings destined for the physical training of the young.

In the plan of the general disposition, you will note that I have diverted water from the river in the village of Nanterre in order to create a canal two leagues long which will pass through the Vezinet woods and arrive directly opposite the Palace; this canal will thus constitute a magnificent mirror where all the beauties of nature will be reflected in thousands and thousands of different ways. On the banks of this large Canal I have placed the avenues which will lead to the Palace in the most splendid and agreeable manner possible.

The more I thought about the beauty on the site, the more tempted I was to go into detail. Why is our life so ephemeral!

The Palace of Justice

The decoration of this Palace should be both majestic and impressive. It is the architecture that must produce this effect. But since there is more than one monument that requires a more or less similar character, I decided that I should attempt to define this clearly by means of appropriate methods that were characteristic of this monument alone.

I decided that I could incorporate the Poetry of architecture by placing the entrance to the prisons underneath the Palace.

It seemed to me that if I placed this august Palace above the shadowy lair of Crime, I should not only show to advantage the nobility of the architecture on account of the resulting contrast, but I should also have an impressive metaphorical image of Vice overwhelmed by the weight of Justice.

In order to give this Palace suitable majesty, I have made it dominate all that surrounds it. I have raised it so that it appears to be part of the Heavens, and I have surrounded it with the most brilliant light so that it is resplendent. I decided I would place the entrance to the prisons at ground level, as if they were the precarious tomb of criminals. Since it is a fact that the noble majesty of architecture derives from the simplicity of its masses, I did not accept any division in the Palace façade. It was the majestic order of its decoration that gave this monument all the dignity that should characterize it.

In my plan, the exterior is a perfect square; the buildings inside from a Greek cross. This part of the buildings contains all the royal courts. The Parliamentary courts occupy the centre. The Excise Board and Audit Office are on the sides. The chapel is at the back and the lawyers' chambers in front. Between these buildings and those forming the façades where the separate jurisdictions are placed, there is an intermediate gallery which extends right round the inside periphery. This gallery leads to and from everywhere. It enables the Public to move freely in all parts of the building. Since the disposition is simple, it is also uncomplicated and convenient. The courtyards at the corners let in light and air and make every part of it salubrious.

The low Buildings on the outside are destined for the archives and as prisons. Since their arrangement is of no great interest, I have not gone into detail.

I have made this Palace as large as possible because the dwelling place of the Throne of Justice must be very imposing. If I have achieved the goal I set myself by attempting to give character to this monument, I have accomplished a difficult task.

The National Palace

I have said that Architects should make a point of incorporating Poetry in their architecture, above all when they have been commissioned to build a public monument. I strongly advise them to offer us what are to some extent Poems, etc., etc.

It is useless to insist here on the fact that a National Palace more than any other building should offer us not the silent image of architecture but the most expressive image of art. In accordance with these views I did not condescend to use for this project the sterile opulence of architecture.

After long reflexion as to methods of incorporating in this building the Poetry of Architecture, I decided that nothing would be more striking or more characteristic than building the walls of this Palace with the tables of the Constitutional laws. I said to myself, What image can arouse greater interest than the one that displays the Law, which is loved by all since all desired it!

To embellish the walls of this Palace and present a tableau of contemporary events, I placed at their base two stylobates, on which I placed two rows of figures indicating the number of our provinces, each one holding a book of decrees and thus announcing the assent of the People who have sent them.

I have placed an attic above its walls; it is decorated with a bas-relief (representing our national festivals): finally, I thought I should crown this Building with the greatest victory a nation can desire, that of freedom.

I say this with a kind of confidence; I believe that I have found the appropriate means of characterizing this great subject and the reason is clear: but I am far from believing that a man of genius could not turn it to better account; I invite all artists to enter the fray; may their ideas develop as they strive to elevate them to the heights of such a subject and may they not forget the work of the immortals of the Greek Republic.[48]

I have just one more word to add: when I began this work, I thought it was my duty to try and proceed with economy; consequently, when I chose the convent of the former Capuchin nuns, I drew up a plan limiting myself to the old buildings; you will see that as far as possible I have met all the functional needs of this monument. But my spirit revolted; and desirous of giving my imagination free rein, I drew up a second plan. If they are compared, it will be evident that holding an Artist's Genius in check is to destroy all the gifts that nature has bestowed on him.

Municipal Palace

I was sixty-four years old when I did this project. An author cannot flatter himself that he is at full strength at that age; however, I consider that this construction is perhaps not one of my lesser works. But it is not my opinion that we are discussing here.

When I was working on the design of this building, I tried to be informed on everything that was relevant or essential; I told myself that a municipal Palace was not merely a place destined for the district magistrates, but that it belonged to all. It is in such a place that the citizens give voice to their complaints and where they attend the most important debates.

The outside of this Monument must be dignified: it would be appropriate to surround it with the armed forces.

Next I reflected on the type of decoration that would be appropriate for this monument and I decided that it should have a proud, virile character that would be suitable to Republicans. I therefore attempted to make the whole as imposing as possible; and it was in an attempt to make it stand out as much as I possibly could that I decided to give minor importance only to the architectural orders. In this respect, it was very different from the other palaces I have built, which all demanded what we call magnificence and which I decorated with all the riches of architecture.

In order to proclaim the function of this monument and, as I have stated above, to characterize it as belonging to all, I incorporated connecting galleries everywhere and countless apertures so that a swarm of men could enter and leave freely and without confusion.[49]

With the aim of giving dignity to this monument and to introduce the Poetry of architecture, I placed guard-houses at the four angles of the foundations of the building to proclaim metaphorically that the forces of public order are the basis of society.

Since I have made it my duty to instruct the reader by putting him in my place, I will describe in some detail the difficulties I had to overcome. While reflecting on methods of decorating the monument in a proud, virile fashion, and on the necessity of incorporating many apertures, you may imagine that I found myself brought to a standstill and in the greatest difficulty; if it was to be open to all, it must of necessity resemble a kind of beehive; and a Municipal Palace is indeed a hive of humanity; now, anyone who knows anything about architecture knows how a large number of apertures can diminish a façade; in decoration it is smooth masses that give a virile effect and here, if I may say so, lies the ingenuity of my decoration for the many apertures meant that I could not have smooth surfaces in the width of the building and so I incorporated them in the height. It is for this reason that in the architecture there are large intervals between the stories.

You will observe that in this monument, as in others of a similar type, I have succeeded in introducing movement by using the contrast between the foreground and background, a device which often destroys noble simplicity.

It is not by following in other's footsteps that an Author distinguishes himself in the arts. I should like to take this opportunity to offer the reader the following thought. A very difficult subject is one that is not well defined, or which has never been dealt with before; but if someone succeeds in giving a character to such a subject and all the impact to which it is susceptible, then he reveals his true talents.

There are certain subjects in Poetry and in Painting, as in architecture, which are more or less favourable: in architecture, for example, a Theatre, a Cenotaph or a temple are all well defined subjects that can consequently be easily grasped and characterized by a gifted hand.

Housing projects are sterile subjects: the only way to make them stand out is by making them more or less opulent; it is difficult to introduce the Poetry of architecture.

A Municipal Palace would be easier to describe than to build: one senses what means are available to the orator and not appropriate to architecture; however, even at the risk of being accused of vanity, I consider that the architecture of the Palace I am proposing is appropriate to it alone.

When I prepared the plan of this monument I thought that I should follow the example of various Italian palaces and locate the finest floor at a higher level: necessity and order forced this on me: the whole of the ground floor is intended for the Public: the main hall occupies the centre; it is preceded by the waiting and conference rooms. I have located all the offices on the mezzanine floor, and the whole of the upper floor is intended for the magistrates.

It is only from a certain height that panoramas attain their full scope and that we can enjoy what is called a beautiful view; it is also at a certain height that we breathe pure air. These considerations are important enough to have made me decide that in certain circumstances the ground floor should not always be the most favoured.

Coliseum

The Coliseum in Rome is one of Italy's most beautiful monuments.[50] Its mass forms a majestic and impressive whole.

But its decoration did not seem to me to be in keeping with good architecture and nor did it fulfil its aims.

I therefore decided that an attempt to decorate it more appropriately would be to embark on one of the best possible architectural studies. My intention was to confine myself to simple restoration work; but on further reflexion, I decided that this monument could be adapted to our customs and we shall see, or so it seems to me, that this could be done.

When we consider those public festivals that were held in Paris in the past to proclaim national well being, we are forced to admit that they were rarely held in a place where the citizens could fully enjoy them. And why proclaim national well being by means of an extremely expensive festival which the Public cannot enjoy? It is a decision and such a decision is an insult to the citizens. I wonder if even one hundredth of the inhabitants of Paris were able to enjoy the festivals given at the Hôtel de Ville. Space is so restricted that there could hardly have been room for the carriages of the King and all his retinue.

It seems that those in office in the City thought that they alone should have the satisfaction of receiving the Monarch, and that they would exclude all others.

You will recall the calamities that accompanied the festivals that were held also on the site of the Place Louis Quinze: and you will remember that many people perished there.[51] Is it not appalling that the pleasure of the public should be marred by such happenings? I have not seen any public festival that has not sent gossipmongers to the civic authorities; and we know that the latter have also been sum-

moned by the Parliamentary Court to explain their conduct.

In view of this state of affairs, I considered it my duty as a good citizen to turn my attention to a project that would enable the inhabitants of Paris to enjoy public festivities without having to fear any unfortunate consequences. In addition to the reasons I have just enumerated, there is another, much more important one, which is to bring back morality.

In fact it is not always the fear of punishment that restrains men and keeps them from wrongdoing; it is also possible to keep them from doing wrong by offering them a public entertainment.[52] What form could this entertainment take? National celebrations. Yes, national celebrations. All that plays on our senses is reflected in our souls. It is on this principle that all national celebrations should be based; and if they were all thus, they would doubtless provide an effective means of inciting and preserving morality.

Ancient lawmakers recognized and put into effect this expedient. It was for both political and moral ends that the Romans instituted their festivals. If we look at history, we will be convinced that men change completely according to whether they have good or bad leaders.

National celebrations are both noble and impressive. In full view of all, the citizen's soul is uplifted and purified.

Why don't we take advantage of such methods which, far from demanding sacrifices, reinstate morality through the lure of pleasure!

The plan for a circus, which I am including, is intended to serve both moral and political ends. I have made sure that no other entertainment could be more splendid or more magnificent; and, in view of the motives that inspired me, I dare say that nothing could be more moving or more interesting.

Imagine three hundred thousand people gathered in an amphitheatre where none could escape the eyes of the crowd. The effect produced by this combination of circumstances would be unique. The spectators would be the elements of this surprising spectacle and they alone would be responsible for its beauty. The most glittering celebration would give rise to many different pleasures and would excite new interest among this great assembly. Indeed, what could be more interesting than to see this superb arena filled with glowing youth endeavouring to distinguish itself in sports of every kind; for example, who would prove most agile in the races; who would prove himself most able to defend the Fatherland in the military manoeuvres. It would be in this arena, now a most interesting place, that the prizes won by the different academies would be awarded. The authors who had distinguished themselves by good work would be crowned there. The hardworking farmer would receive there, in the midst of public acclaim, the rewards of his toil and virtue.

There the paintings and models of the structures to be built would be shown to the Public. The citizens' interest could be aroused in so many different ways! Fathers would see their children distinguish themselves; and the joy of the happy fathers would be shared by their friends. The Public would be able to contemplate and single out what would bring honour to the nation and arouse the admiration of Foreigners. Thus, it seems to me, that through such truly national celebrations organized to uplift the soul and put the citizens on their mettle, we would succeed in bringing back a sense of morals.[53]

I will not give a detailed account of this project. A glance at my work will be more instructive than any descriptions I can give;[54] I have located this monument in that place at the top of the Champs Elysées that is called the Etoile so that the Public will have easy access and convenient outlets. It will be seen that the monument is open on all sides to facilitate entry into the arena; that I have incorporated countless staircases leading to the amphitheatre; that everything far beyond all one could desire is provided for unhindered entry and exit; that I have not neglected to provide plenty of cover by placing enough galleries under the amphitheatre to hold all those assembled there, etc., etc.

If I could give credence to what many artists have said to me about this project, I should have good reason to believe that I had succeeded in finding the appropriate character for this type of structure; if that were so, I should have completed a task which, doubtless less on account of my talent than of the patriotic intentions that guided me, would mean that I deserved well of my fellow citizens.

When I had completed this project, I immediately showed it to my friend Mr. Le Roy[55] who is a Professor at the Academy of Architecure; I did not omit to speak to him of the patriotic intentions that had guided me. My friend listened to me attentively and then asked if I was familiar with a memorandum on Circuses by the Abbé Brotier,[56] which he had read to the Academy of Belles Lettres. I replied that I had not heard of this Memorandum and he seemed surprised for he told me that my views had much in common with those expressed in the writings of the Abbé Brotier; he sent these to me for I had lost no time in asking for them. I was delighted to find that the ideas of honest men are almost identical. Since I was also forced to admit that although the Abbé Brotier had had the same ideas as I had, he is a man of letters and had succeeded in presenting them much better than I could. I decided therefore that I should give here an extract from his excellent memorandum. I would have liked to have had the same advantage with regard to all the subjects I have discussed. For if I had managed to dispense with writing, I would have confined myself to showing my drawings to my fellow citizens; but good or bad, I had to make my voice heard.

Extract from a Memorandum on Circuses by the Abbé Brotier,[57] read by him at a public meeting of the Academy of Belles Lettres

The resources of Romulus's genius finally led to the establishment of the Circus Games; the City had been founded; as a result of the protection it offered, a warlike people had come into being. It was successful in war and neighbouring nations formed a league to destroy utterly a people which had made itself feared as soon as it had emerged; but their plan quickly succumbed to the deceptive lure of pleasure. In the specious guise of honouring *Equestrian Neptune*, Romulus had announced some games; the Nations forgot their rivalry: they flocked to them and the rape of the Sabine women ensured the survival and victory of Rome; it was the new wives who disarmed the anger of their Fathers; and so Sabines and Romans now tied by blood no longer conspired except to contribute to the glory of the founder of Rome; and the games became a homage to

the God of Counsel.

The games existed; the Circus not yet. Rome was lacking a genius who would graft onto the wise, proud soul of the Romans the good taste and talent of the Greeks and Tuscans. This was done by the first Tarquin, a native of Corinth brought up in Etruria.[58] From the moment he began to govern Rome, he seemed to anticipate her future grandeur. The laws governing Triumphs, the indestructible arrangement of the canals, the Capitol and the Circus paved the way to glory in a City destined to rule the universe. He was perhaps the first to believe that a King should give pleasure to his people and that a nation's pleasure must breathe grandeur. Full of such ideas, he chose in the Marcian valley a favourable place between the Palatine Hill and the Aventine and soon a Circus large enough to house one hundred and fifty thousand spectators was built. The Prince himself, surrounded by his People, presided over the games; and the right to give the starting signal to the chargers became a royal prerogative.

These games, far from undermining the spirit of the Romans, seemed on the contrary to make them prouder and more formidable when they suffered setbacks. The first seventeen years of the second *Punic War*, the most bloody that the Romans had ever endured, provided the sole alternative to battles or games; battles that were often dire and games that were always political and always religious. In an equally astonishing contrast the Circus games sustained the courage of the Romans and idleness sapped Hannibal's. Why? Because these games were a national celebration and every national celebration uplifts and ennobles the soul. Idelness was merely an individual celebration and almost always had a weakening, emasculating effect.

It was in the Circuses that the greatest Roman warriors received the reward of their victories over the most warlike peoples. *Scylla* brought on one hundred ferocious lions to give a kinglike people the spectacle of an African hunt and to show them that Africa respected their laws; *Pompey* had twenty elephants fight there to show how far he had extended the limits of Roman domination and how great was the ostentation and the power of the Kings of Asia; *Lucullus* decorated Flaminius's Circus with the arms and war machines of defeated Armenia. But a greater man than *Scylla* or *Lucullus* or *Pompey* appeared in Rome. Under such a powerful genius the Republic could no longer exist; it had to have a master. The Circus would now attain the summum of its splendour: it would become the prop of imperial Domination and the People's delight.

It was one of *Julius Caesar*'s coups d'états: the form of Government needed to be changed; as a prelude to this he changed the Circus: he enlarged it, surrounded it with a larger, more magnificent Building which extended the whole length of the three stadia, i.e. 2,087 feet and 4 arpents or 960 feet wide. This monument to magnificence proclaimed to Rome that she would be exalted until she became the equal of or surpassed the most famous Cities. The Senate conferred on Caesar the honour of giving the starting signal for all the Circus games. This step towards the supreme power was supported by the games most likely to make the people drunk with joy. It is at this point that we should enjoy the greatest of spectacles that Roman politics still provided.

Julius Caesar in the Circus in the midst of two hundred and fifty thousand men had around him in the Senate, which still had an aura of freedom, but which, like the people, sensed that feeling of grandeur and majesty that commands wonder and respect. After the majestic pomp of Religion, after the usual songs and sacrifices, the starting signal is given. The brilliant elite of the most noble youth opens the games with a chariot race. They rush forward with an ardour aroused by their long wait, illustrious names and a glorious victory. Seven circuits of the Circus are completed; at lightning speed the fortunate winner skirts the turning post, avoids it and victory is his. The Circus responds with applause. In the middle of these joyful demonstrations, an even livelier and more feverish race begins. Spectators, guides and horses, all are agitated, trembling. From one race to the next the fervour is renewed: it mounts until as many victories are won as the sun takes hours to traverse the sky between rising and setting.

The last day of the games given by *Caesar* was worthy of a warrior people and of the hero who had just celebrated four victories. Caesar had had the turning posts taken out of the Circus to make room for two camps so that Rome could see all the scenes of war. On this martial day, the assembly admired twenty Elephants defeated by Five hundred footsoldiers, and another twenty elephants, their towers on their backs, each carrying sixty soldiers, assaulted and beseiged by five hundred footsoldiers and five hundred cavalry.

Maecenas revealed the secret of the Roman games when he gave *Caesar*'s heir some advice. He said, "Rome must be decorated in the most superb manner and the splendour of all the games must preside there. The exalted position of our Empire demands the greatest magnificence. This is the means of ensuring the respect of our allies and the fear of our enemies. Let other cities have celebrations, but not our Circus games; and ensure that the expenses of the spectacles are burdensome neither for the Public nor for individuals... If I consider that our Circus games should not exist outside Rome it is to prevent ruinous expenditure, to avoid provoking intrigues and factions and above all to arrange excellent horse races for our cavalry.

For these reasons I decided that the Circus games should take place only in Rome. Wherever the other games are held, they should attempt to give pleasure to the eyes and ears at reasonable expense and everywhere a watch should be kept on honesty and public order."

You will perhaps ask what it was that made these Circus games so fascinating. My reply will be, "Did they not have a superb building with magnificent porticos and splendid ornaments: in the middle of the altars were monuments that the Romans appreciated, which reminded them of nature's wonders and most precious creations; in the resplendent opulence of the Arena, which glittered sometimes with silver and sometimes with gold, Races were held in which human skill, combined with the efforts of the most beautiful, the proudest and the most docile animals, executed the fastest, most amazing movements; other races in which man, with no outside help, deployed such strength and skill that even as far as the advantages of the body were concerned, he was assured of superiority over the various creatures which inhabit the universe. It is here that we see men competing in the foot-races endure a course of one hundred and sixty thousand paces or 48 $\frac{1}{2}$ French leagues, each league being 2,500 fathoms. I will not speak of the other spectacles of the Circus, where all that is most rare and unique in the Universe was to be seen.

Let us limit ourselves to the chariot races. Before entering the Arena each team already had its side and faction. At court, in the Senate, among the equestrian order, among the People, cabals had been fixed and bets multiplied on all sides; all speech, all intrigues concerned exclusively the Circus. It opens: everyone takes his place with the interest of people who are about to decide or shape a victory; they look at one another, ask questions; every side is impatient, the shouting begins. The horses are impatient to cross the barriers and stand trembling. All eyes are fixed on the face, the hand that will give the signal. The chariots are off; immediately the shouting doubles; the shouting is followed among the various factions by applause, encouragement, expressions of fear and dread, transports of joy and Victory as the chariots advance, lag behind, collide, lean or are overturned, approach the turning post, slip past it and are crowned with glory. During this race there is not an instant, not a split second, when the interest remains static; there is always hope and fear; everywhere, in every row, in every seat, there is action, agitation. It is as if the two hundred and fifty thousand spectators were driving two hundred and fifty thousand chariots. The horses—those proud, spirited animals, disposed to glory, sensitive to censure, inflamed by the spectacle and by the cries that resound on every side, excited by the reins that their own ardour and the fervour of the public carry forward—make a last effort and struggle against all obstacles. In the continual clash of interest and movement, that alone can absorb and impassion a whole nation, the only reproach that could be made is the short duration of the pleasure; but there are as many as twenty-four races, on certain days up to forty-eight; a unique advantage of the Circus which repeats its pleasures, redoubles our sensations and the acuteness of those sensations.

Mr. *Thornhill*'s famous race has been rightly commended.[59] He rode 215 English Miles (approximately 72 French leagues) in eleven hours and thirty-two minutes. The speed of the Circus chariots is even more astonishing in that, on those days when there were 48 races, the chariots covered in almost the same period of time, two hundred and ninety-four thousand paces or about 88 leagues. Under Domitian we shall see even greater speeds.

When *Caesar*'s successors came to the Throne they did not abandon this policy. Vespasian erected a superb amphitheatre, and the Circus reverted to its first glorious function. *Titus* devoted the most magnificent games solely to chariot racing; he varied them for a hundred days; and he distributed to the immense crowd gathered for the spectacle tessera[60] listing the gifts of food, clothing, gold and silver vases, horses, herds and Slaves that he had donated. How great is the joy of a Nation when its Prince bestows on it pleasure and Riches.

Domitian who was master of an empire where wealth permitted the human spirit to indulge in everything, wanted to erase all that had happened before his reign. He added two new colours to the four already established for distinguishing the reins that guided the chariots, and the colours he chose were two of the richest: *gold* and *Purple*. All his magnificence was deployed for the secular games celebrated in the Year of Rome *841*. The hero could truthfully say that no one had yet seen or would see again such games. Nothing had ever approached, nothing would ever approach this most astonishing and magnificent spectacle.

At the games given by Augustus in 737, twenty-five races in which one hundred chariots representing the years of the reign covered a distance of three hundred thousand paces or approximately ninety leagues, aroused amazement. Under *Domitian* the day was much more splendid. One hundred races represented the armies of the age. But nature has its limits and Domitian could not violate them; he was determined to succeed and eliminated two of the customary seven circuits for each race. After making this wise rule, he provided a good example of speed in movement; and he provided it with the pomp and opulence worthy of the most important sovereign in the world. Six hundred chariots and two *thousand four* hundred horses competed in the hundred races; in fourteen or fifteen hours they covered a distance of four hundred and thirty-six thousand paces or approximately 120 Leagues. We would never have known such prodigious speed and spectacle had there not remained some trace of it in the English racing at Newmarket.[61]

After such a powerful effort, *Trajan*'s genius was necessary to maintain and enhance the splendour of the games. This finest of Princes saw the Circus as *Julius* Caesar had seen it. Rome had grown; Trajan added five thousand seats to the Circus; the traces of the havoc caused by fires disappeared and the magnificence of the huge part of the Circus that he repaired vied with the most beautiful temples. The Box in which the Emperors sat to watch the games was pulled down. *Trajan* preferred to be among his People, to see and be seen, to share their pleasure, to communicate his, to fill all hearts with the joy and satisfaction that he felt. This was a foretaste of that glorious reign, the most brilliant and the happiest that Rome had known and which the whole world still wonders at. It was here that his victories and Triumphs were celebrated. The ambassadors of the Barbarian Nations and India came here to pay homage to his valour and to witness the games that lasted for 123 days.

The Reign of *Trajan* brought to an end the greatest splendour of the Roman Empire and the Circus Games. There was some brilliance under *Hadrian* and under the *Antonines*, but it was closer to singularity than true grandeur.

Public Library[62]

If there is one project that should please an Architect and, at the same time, fire his genius, it is a Public Library. In addition to giving him an opportunity to develop his talent, it has the precious advantage of enabling him to devote it to

the men who have made their age illustrious.

The masterpieces of these great men evoke a desire to follow in their footsteps and inevitably give rise to lofty thoughts: one experiences then those noble transports, that sublime impetus that seem to draw forth soul from body: one believes oneself inspired by the shades of these famous men.

I was deeply impressed by Raphael's sublime design for the School of Athens and I have tried to execute it; doubtless I owe what success I have had to this idea.

Before going into further detail on this project, I think I should discuss the difficulties that I encountered and the obstacles I had to overcome to satisfy the demands of those who commissioned it. The fundamental idea of the Project was that I limit myself to existing buildings by seeking to arrange them suitably; that was already difficult enough; what made it even more so was finding a decoration that would be both noble and impressive. Moreover, the project had to be executed at the least possible expense and I must confess that this seemed impossible to me. My position was particularly critical; and the reflexion that I was plunged in was not conducive to giving me encouragement. The following Memorandum, which accompanied my drawings, will serve as an introduction to my work and will give sufficient clarification to pronounce judgment on this project.

Memorandum

Methods for giving to the Library called the King's Library the advantages appropriate to such a building.

The building that is most precious to a Nation is undoubtedly one which houses all acquired knowledge. An enlightened sovereign will always be in favour of methods that contribute to the progress of the arts and sciences.

During the reign of Louis XIV, the number of books in the library was increased by more than seventy thousand volumes. Under Louis XV it was further increased.

Since then, new acquisitions have been ordered daily. Our literary wealth is increasing prodigiously and it is obvious that the existing buildings are no longer sufficiently large to house it. The necessity of enlarging these buildings has been recognized for so long that successive Ministers have all been concerned with this important subject. Among the various projects that have held the Government's attention was one proposing the construction of a Library on the Capucine site in the rue St. Honoré. Then there was some discussion about transferring this establishment to the Louvre. Finally, suggestions were made in connexion with the present site.

The building project has always caused alarm because of the considerable expense involved. This has always been estimated at between fifteen and eighteen million, with the result that no one has seriously considered executing this project.

The transfer of this establishment to the Louvre has been warmly welcomed and at first sight would appear to be the best choice possible. But attention was paid to certain well-informed persons who demonstrated that in spite of the size, attractiveness and opulence of the buildings of this Palace, it would not be possible to provide there all the advantages demanded by this monument. The reasons given were based on the fact that in the galleries that succeed one another in all directions, not only would the service be slow, but surveillance would be difficult and tiresome. The service would be slow because of the long distances to be covered. The surveillance would be tiresome because it would be impossible to see the public in the galleries which run in all directions. Mention was made of the Rome Library where the galleries lead off from a central point with the result that everyone in the Library can be seen from that central point.[63] With regard to the plan for using the existing buildings, all the proposals revealed a group of unattractive structures, badly and inconveniently arranged with in addition acquisitions to be made that would add to the expense because it would be neccessary to knock down and rebuild the houses that would have to be bought; and so it was obvious (this was the general opinion) that neither the site, nor the arrangement of the buildings would permit the provision of the basic requirements of this monument.

The Minister of Finance has commissioned me to build the new entrance to the Bourse and I was impressed by his opinion of my projects; I redoubled my efforts to comply with his wishes.[64] I thought that if previous Ministers had concerned themselves with the establishment of a suitable Public Library, then he too would make it his concern and the Minister of the Interior [Baron de Breteuil, Minister of the Department of Paris], who also appeared to be interested in the arts, would be equally aware of the great importance of this project.

The Superintendent of Buildings was aware of this need and instructed me to draw up the plans for a Public Library on the Capucine site near the Place Vendôme. After going into all the detail necessary for this work, I myself was forced to conclude that the expense would be excessive.

I therefore made it a rule that for this new attempt I would give up all idea of a completely new project.

I am accustomed to struggling against obstacles and I therefore dared to turn my thoughts to the present location. Perhaps I was more fortunate than others who thought there was no possibility of success there, for it was for this rejected site that I made the present project; and it seems to me that if I had been allowed to plan giving free rein to my ideas, to develop them and to choose a site, it would have been difficult for me to incorporate better all the advantages that this monument demands.

In addition, the cost is so reasonable in comparison with what it would be on any other site, that it is not worthy of our attention. Just the description of this scheme will demonstrate plainly the truth of my proposal. It is not even necessary to have the plan in front of you.

The defects of the Library are: (1) that it has insufficient space to house the books; (2) it has the disadvantage of Galleries running in all directions which, as stated above, makes the service slow and the surveillance tiresome. We shall see whether my Project remedies these inconveniences.

My plan is to transform the courtyard, which is 300 feet long by 90 wide, into a vast Basilica lit from above, which would house not only our literary heritage, but also what we have reason to expect in times to come. To be convinced that this Basilica offers the largest and most striking example of all that exists, it is only necessary to glance at the site I am using, and to imagine the vaulting placed on the top of the existing walls. A cursory examination of the plans will reveal an arrangement that is simpler, nobler and more immense than one could have hoped for. All the existing buildings, with no changes, would serve as repositories for the manuscripts, the print room and the Medals. Geography would be in reach of the place where the magnificent globes are housed. By separating these various repositories, the confusion which would ensue if unrelated objects were mixed there, would be avoided.

By studying my subject in depth I was attempting, as it was my duty, to fulfil the main object to which the monument in question is devoted.

I therefore wanted our literary heritage to be presented in the finest possible building. That is why I decided that nothing could be vaster, more noble, more extraordinary, and make a more magnificent impression than a vast amphitheatre of books. Let us imagine in this vast amphitheatre attendants placed in different rows in such a way they can pass the books from hand to hand. You will agree that the service will be almost as rapid as the spoken word and in addition there will be no fear of the dangers that can result from ladders.

This superb amphitheatre is crowned with an order of architecture so conceived that far from distracting attention from the spectacle of the books, it would offer only that decoration necessary to give yet more brilliance and nobility to this beautiful place. This Basilica has at either end two types of Triumphal Arch, under which there could be two allegorical statues. It would doubtless be appropriate that one of the two should be a statue of Minerva.

If the Peristyle of the Louvre and the Hôtel des Invalides have brought honour to the age that saw them built and to the monarch responsible for their Construction, how greatly would this building devoted to the arts and sciences honour those who commissioned it! For it can be argued that perhaps the spectacle of the most beautiful Monuments does not have such an imposing, extraordinary or novel effect as the effect the Courtyard of the Library will have when it is vaulted. Moreover, if we consider the small cost that the execution of this Project would entail (since it comprises only a new roof for the Library) and the enormous difference in the cost of the monuments we have just mentioned, it is evident from this consideration that this Project combines all sorts of advantages.

One should not assume that the author of this Project intended to speak of the technique he will use for the decoration of this monument when he was describing the sublime impression that will be made by this place.

He can assure you that this will be the result of its immensity. The success he dares to hope for will be due to his good fortune in having discovered how to utilize the existing buildings, and in knowing how to take advantage of premises that it was thought would have to be abandoned because it was assumed that it would not be possible to incorporate there all that is necessary for a Library; finally, in having achieved with twelve or fifteen hundred thousand livres what would have required on another site fifteen to eighteen million.

Some people seem to want the Vaulting which was intended to be Timber to be executed in stonework. Nothing could be simpler. By placing several retaining walls in the surrounding buildings a buttress of more than 36 feet would be formed, with a resistance that would support considerably larger vaulting.

N.B. The extension of the Library is becoming indispensable for it houses nearly three hundred thousand volumes, not counting the manuscripts for which there is no room but which it is thought important to classify since eight members of the Academy of Belles Lettres have been nominated to examine the precious collection of these manuscripts, and to make a list of them which will be published as a sequence of the Memoranda of this Academy.

Funerary Monuments or Cenotaphs

Temple of death! The sight of you chills our hearts. Artist, flee the light of the Heavens! Descend onto the tombs to sketch your ideas in the pale dying Light of the Sepulchral Lamps!

It is obvious that the goal one sets oneself when erecting this kind of Monument, is the perpetuation of the memory of those to whom it is dedicated.

These Monuments should therefore be designed to withstand the ravages of time.

The Egyptians have left us some celebrated examples. Their Pyramids are truly characteristic in that they conjure up the melancholy image of arid mountains and immutability.

This type of building, more than any other, calls for the Poetry of architecture. It is this interesting Poetry that I have especially tried to incorporate in this work. Once I had decided to characterize the resting place of death with a cemetery entrance, an idea came to me that was as new as it was bold; it was to give an illusion of buried architecture.

I will outline for the Reader the sequence of my ideas, for the description of my difficulties will perhaps spare those who follow me in an artistic career.

While reflecting on the means at my disposal for putting my ideas into practice, I realized that I should use only low, sunken lines (if I can put it thus). I said to myself that the basis of architecture is a totally bare, unadorned wall and it

seemed to me that if I was to create sunken architecture I had to ensure that the construction was satisfying as a whole at the same time and make the onlooker realize that a part of it was concealed underground.

It was only after reflecting on such general concepts that seemed to offer me the means of carrying out my project that I took up my pencil. But it is a long trail from the conception of a project to its implementation. There is no doubt that putting one's ideas into practice is often what is most difficult in art.

If the Reader will reflect on the difficulties involved in a composition which is partly buried and which must give satisfaction when only the part above ground is visible: if he will further reflect that for this project we are restricted to a bare, unadorned wall; and if, finally, he will reflect that this type of building is without precedent, he will realize that however good his ideas for the project may appear to the Author, he has taken only the first step towards the finished product, and it is not always easy to proceed promptly to its implementation. I must confess that I sketched for a long time before I was more or less satisfied.

Perhaps those not versed in the arts will be astonished that a construction they considered so simple could cost its author so much effort. Would they like to know why? It is precisely because this construction is simple.

The general plan of the Cenotaphs I wish to discuss here is a surrounding wall with the main monument in the centre. The surrounding wall is formed by charnel houses, among which the chapels destined for the last rites of the dead could be situated. For the sake of perfect symmetry and to preserve the analogy of type and style throughout the whole, I decided to give the charnel houses the same volume as the Entrance Gate. It is none the less true that the decoration of the chapels in no way resembles the entrance gate and that this gate has its own character, as does the decoration of the chapels.

Since the Cenotaph is the principal monument it stands alone in the centre of the precincts in the antique style.

I have assumed that the monument where the pyramid is formed by a quadrilateral has been erected in honour of a Hero who has saved his Country by winning an important battle, during which he has met his death. The glorious death of the Maréchal de Turenne suggested this to me.[65] I felt that in this project I should attempt to combine the palms of victory with cypress trees. That is why I have placed a funerary triumphal arch before the entrance to the Cenotaph.[66] Thus, I consider that by means of these marks of honour bestowed on the Triumphant, I have demonstrated the glory of the hero; I also consider that I have by this very type of monument demonstrated the grief of the Fatherland and the desire to perpetuate the Memory of the hero. Since such a monument should make a melancholy impression, I have avoided any opulence in the architecture. I did not even permit myself to divide up the mass and I thus preserved its character of immutability. I have given the Pyramid the proportions of an equilateral triangle because it is perfect regularity that gives a form its beauty.

Vaulting forms the crown of all the interiors of monuments and always has its base above the architectural order. But here I decided to make it rise up from ground level. This technique is a result of the observations I have made above: these monuments must have low, sunken lines and, although the whole must be satisfying to the onlooker, he must realize that a part is concealed in the earth.

I will not go into detail with regard to the cone-shaped Cenotaph. Its conception is based on these same principles I have just discussed. I would thus be repeating myself. It is for the Public to judge the decoration of the Cenotaphs.

My mind was still preoccupied with this type of architecture and now that I had attempted to give a description of sunken architecture, a new idea came to me, which was to define the architecture of shadows.

Everyone knows the effect of volumes placed against the light: the result, as we know, is that the shadows reproduce these volumes. We owe the birth of the art of painting to this phenomenon. Love, it is said, inspired the beautiful Dibutades.[67] As for me, I owe my inspiration to my love for my profession.

The common man will not be interested in looking at the natural phenomena he sees all the time and which no longer arouse his curiosity since they no longer have the attraction of novelty. This is not true of the artist who is always making discoveries and spends his life observing nature.

I was in the country, on the edge of a wood in the moonlight. My shadow produced by the light caught my eye (it was certainly nothing new to me).[68] Because of my particular mood, the image seemed to me of an extreme melancholy. The shadows of the trees etched on the ground made a most profound impression on me. My imagination exaggerated the scene, and thus I had a glimpse of all that is most sombre in nature. What did I see there? The mass of objects stood out in black against the extreme wanness of the light. Nature offered itself to my gaze in mourning. I was struck by the sensations I was experiencing and immediately began to wonder how to apply this, especially to architecture. I tried to find a composition made up of the effect of shadows. To achieve this, I imagined the light (as I had observed it in nature) giving back to me all that my imagination could think of. That was how I proceeded when I was seeking to discover this new type of architecture.[69]

Perhaps I am mistaken but it seems to me that we can expect from this technique all that will be most effective in giving an appropriate character to funerary monuments. I cannot conceive of anything more melancholy than a monument consisting of a flat surface, bare and unadorned, made of a light-absorbent material, absolutely stripped of detail, its decoration consisting of a play of shadows, outlined by still deeper shadows.

No, no gloomier images exist and if we make abstraction of all the beauty of art, it would be impossible not to appreciate in such a construction the mournful effect of the architecture.

The homage that it pleases us to pay great men has its source in the sensations inspired in us by the high plane on which we place them. We like to find in one of our peers that eminent degree of perfection that deifies, so to speak, our own nature in our own eyes. This pleasure has all the more attraction for us in that our own self-esteem tries in vain to bring us closer to it; at least it flatters us by concealing the immense distance involved.

To Newton[70]

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 circumstances 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-

dividual character, and they should make different impressions on us which can only be made by recourse to the Poetry of art. This comes within the scope of civil architecture; and that is what I have undertaken to deal with in particular in the type of architecture we are discussing here. Besides, I find here a new demonstration of the reasons why the technical side of architecture has made more progress than that which constitutes art properly speaking.[71]

Ever since man has waged war, he has been forced to use every means for his common defence; thus the art of fortification has been carried to an advanced level. With regard to the other monuments I have just listed, which are included under the vague heading of military architecture, the art side has always been neglected. Why? Because necessity, the mother of hard work, has not forced man to turn his attention to it. And moreover—I repeat—advances in science follow one from another and can be communicated for discoveries can be verified, whereas the beauty of art cannot be proved as mathematical truths can, and consequently beauty will always be rare because not everyone has the gift of interpreting nature.

City Entrance

The engineers who have built city entrances were satisfied with walls thick enough to protect the inhabitants from artillery. In so doing they had accomplished their task; but they did not give any impression of strength, as I think they should have done, even though this strictly belongs to civil architecture.

I thought that to give such an impression of strength, it would be appropriate to make a show of everything that would help proclaim the best possible defences, and to incorporate it in the decoration. The entrance gate of which I include a drawing has walls which appear indestructible. On the stylobate which decorates these walls, I have placed a line of warriors who appear to be invincible. I intended the presence of these warriors to recall the heroism of the courage of the Lacedaemonians who, at the sight of a city protected by walls, asked who were these men who were so faint-hearted that they needed such defences. I intended these armed warriors on the walls of the city as a symbol that would say to those looking at them: these walls are nothing, but beware of the courage of the inhabitants.

Inside the City

The interior walls of the City are decorated differently and lead one to suppose the presence of a double wall. I consider that such multiple defences not only make the City appear unassailable, but also give variety to my subject.

Gates of Fortified Cities

My various city gates consist of walls flanked by Towers. The basement of one of them is made of supplies of Cannon Balls under Trophies made of the arms of Giant warriors. The arch, or rather the archivolts, are made of gun barrels.

Fort

The Fort consists of a round tower flanked by square Towers set diagonally within the main Tower. The gaps between these towers are filled with stacks of cannon balls so that they are blocked. The gate protecting them is indicated by the shield of Achilles. Through these enormous piles of war munitions, I have sought both to give character to this monument and at the same time to create art.[72]

My principle is that it is by depicting reality that an architect can hope for success. It is the art of bringing reality to life that will, in my opinion, ensure that he succeeds. What I was afraid of was that the picturesque methods I used would give my architecture what is called a *Theatrical* quality far from the purity it requires and without which all architecture has an intolerable vice, but one which I think I have managed to avoid.[73]

Bridges

The civil engineers in charge of this side of architecture have performed miracles with regard to the technical aspect, but the artistic side has completely escaped them. In general, the decoration of their bridges has no beauty whatsoever.

On the orders of the Minister of Finance, I have worked on improving the decoration of the bridge at the Place Louis XV.[74] I made it a rule that I would strictly follow the engineer's plans for I respect his competence. In spite of the constraints and the obstacles resulting from such a condition, which inevitably curbs genius and puts a rein on it making all its efforts vain,[75] I think that in this project I have made a distinction between what belongs to art and what to science!

I conceived the decoration of this bridge by going back to primary concepts which were to make a passage across the water with boats. In addition, I think that I have carried out the engineer's idea of creating what could be called a flat bridge which is decorated in a manner that, far from being repugnant to our senses, is extremely agreeable; and in addition I have incorporated the arms of the city of Paris in the most ingenious manner.

The simplicity of this design is one of the aspects that I find most admirable. I have dealt very briefly with military architecture because all the art I have applied to it derives from the decoration and so it is obvious that to appreciate it, it is necessary to see it. This is the main reason that I have refrained from describing here two Maritime City Entrance Gates and a Triumphal Arch that form part of my work.[76]

Reflections on Architecture in Particular[77]

The fine arts delight us agreeably. It is evident that architecture adds function to pleasure. Architecture ranges from a country cabin to the general plan for an Empire. I will not attempt to describe the planning for such a vast area; not only because I do not have the strength but also because such an area depends inevitably on natural phenomena.

I will merely cast a rapid glance in a general way at the specific methods that belong to this great art and by means of which it can contribute and add to the glory and prosperity of a great state.

I am assuming a large population which is about to settle in some Country; its most important task will be to purge the land it is going to inhabit of all malignant influences and so preserve the life of each individual.

The second task will be to ensure plenty by setting aside all arable land. Then one would proceed to the founding of cities and one would use every means to make them salubrious. The location of the Capital, the commercial cities and the other towns would be in keeping with their function and they would be distributed in such a way that they can, through their respective connexions, serve and help each other.[78]

All the ports, canals and communications would be established to facilitate business. All human necessities, everything to keep peace in the State by ensuring its defence, and, in the last analysis, everything to ensure the amenities that make life pleasant, should emanate from this plan.

I see this plan as resembling the tree of knowledge. From a central point all the benign branches would stretch out into all parts of the Empire.

This exposé, doubtless too brief, demonstrates that this great art should occupy the faculties of the heart of him who professes it rather than those of his mind.

If the Government found it necessary to consult the educated members of the nation for just one monument (as can be judged by the memorandum of the Academy of Sciences on the subject of hospitals),[79] then the planning of an Empire and all the elements of something so immense would doubtless necessitate the accumulation of all human knowledge.

It seems to me that architecture can be called the Minerva of the fine arts. Its basic principles, as I have shown, derive from order, the symbol of wisdom. It is through order that the fine arts and especially painting and sculpture, become beautiful and acquire brilliance. It is in a temple, it is in the interior vaulting of a Dome that architecture has prepared for painting, that lies the most noble, the most brilliant, the greatest of all tasks. Isn't this also true with regard to sculpture? Isn't a temple arranged so as to bring out all the beauty of sculpture by means of the figures and bas-reliefs which decorate it? And it is certain that in isolation these arts would not be seen in such a favourable light.

The fine arts acquire brilliance when they are combined and above all (I repeat it) by what they borrow from architecture.

Is the effect of music and Poetry not enhanced by the illusion of the Theatre which unquestionably gives such works infinite charm.

It follows from these remarks that to consider architecture is to a certain extent to consider the fine arts.

Architecture is not like the other arts. The latter concern above all their creators. The former, on the contrary, concerns the Government and the Nation. It is a great misfortune when an enormously expensive monument proves to be some kind of blot on the Age that saw it built and a blot that is all the more disastrous to its Age because it will be handed down to posterity.

The Invalides, the Peristyle of the Louvre, the Porte St.

Denis etc., etc.—all these monuments will continue to add glory to the age that saw them built. And it is certain that if this century, which is known as the Century of the fine arts, had been merely the time of their decadence, the famous vaulting of the Invalides, which daily resounds with cries of admiration, would today echo only sad cadences.

I will not repeat here what so many authors have written about the monuments of Greece. No one is unaware that the precious remains of antiquity are worthy of our admiration or of how much we respect them; of how, in short, they perpetuate the glory of that Nation.

I shall now consider architecture, not as an artist but as a citizen.

Part of our education is to study languages, to cultivate letters, drawing, painting, to learn mathematics, to devote ourselves to the theoretical sciences, in short to acquire many talents. By what stroke of fate is the most useful art, and consequently the one most likely to interest us, completely neglected? I am far from claiming that it should take precedence over all the others. But is it conceivable that apart from those who practise architecture no one pays any attention to it? I myself firmly believe that if we do not ensure that citizens who may rise to prominent positions have some knowledge of this art, then it is a vice of our educational system. How can these citizens be expected to pick out the only man of merit worthy of confidence when they find themselves in the situation where they will perhaps have to commission or supervise the construction of some building?

This is a good moment to give an example by noting the precautions that were taken when there was some question of building the façade of the Louvre. Not only were the most gifted artists in France put to work but Bernini, who was famous in the whole of Europe, was summoned from Italy. There was the greatest rivalry between this gifted artist and our national artists. All the various designs were studied and discussed for a long time. Those concerned with the arts were listened to; and it was only after the most profound reflexion, and after Bernini had been thanked and magnificently rewarded,[80] that the designs attributed to Perrault, who had defeated all his rivals, were implemented. It is evident that this competition put everyone on his mettle and there were many bases for comparison without which no true judgment would have been possible. This made the whole of Europe realize that France possessed the most gifted artists.

If it were only a question of beauty I would not insist that men who may rise to prominent positions should concern themselves with architecture. But when one considers that sometimes a saving of 10, 12 or 15 millions depends on the choice of an honest, competent man and when, moreover, one considers that this man (notwithstanding this saving) can alone fulfil all the functional goals that a mediocre man is incapable of grasping, we are without doubt forced to admit that I have some justification for asking that the knowledge of such an important art should not be so neglected.

I have already explained above why up to now progress in architecture has lagged. It is an evil of which I have seen the unfortunate effects and I think I have a remedy to propose. I have revealed that architects are discouraged because they have no hope of being able to develop their talents, that the lack of hope has led them to neglect all detailed study of their art; and that the majority of them confine themselves to looking after their wealth and should therefore be considered as gifted men rather than as artists. If they could be motivated by hope, if they could persuade themselves that by making an effort they would gain the advantage of revealing their talents, I like to think that their excitement would be aroused by such a powerful interest and that architecture would soon attain the perfection of the other arts. It is this belief that has given me the courage to set down the means of encouragement I have conceived.

I think I can assert that in France more buildings than necessary are built to provide [work] for those engaged in architecture; and that if these structures were not commissioned indiscriminately a man of merit would be justified in having the highest hopes.

I consider that it should be possible to proceed in the following manner to put architects on their mettle and thus succeed in recognizing and distinguishing the talents of each one of them.

The academy of architecture, like the academy of Painting, would ask from those it deems worthy to be associated with it, a project that would reveal the talents of the proposed member and contribute to the heritage of the academy. In order to give added interest to these projects, the academy as a body would draw up a master plan for Paris. This plan would include all the projects that would add to the good functioning and beauty of a large city. The sites considered suitable for buildings would be indicated. Programmes would be drawn up which the proposed members would be required to follow. The latter would also be required to include, where applicable, memoranda with their designs. Thus the academy would excite rivalry among the candidates, who would be intent on outdoing their rivals. These designs would be irrefutable evidence of the best efforts the candidates could produce. By comparing these designs, it would be possible to differentiate and judge their various talents; each one would find his own place and would occupy the rank he discovered. The academy would then present the most interesting designs to the Government and they would constitute models that could be consulted. The Public would be drawn to the academy by curiosity and would find there all possible subjects for comparison. It would thus acquire some knowledge of architecture without, so to speak, studying it in depth. And architecture, thus revealed, would be of interest to all.[81]

The academy of architecture in all the large cities of France would be in correspondence with the provincial Architects. They would be required to send to it from time to time some observations on their profession. Why shouldn't the academy insist that its correspondents follow its example? Thus one would find in the academies of all the large cities, as well as in the Paris Academy, designs for improving the functioning and beauty of these various places.[82]

Civil engineers from all over France would make a map showing plans for roads, canals, bridges and other projects that belong to their side of architecture. Whenever a member of this body became a candidate for admission to the academy, he would submit a project in this field to be accepted. The great Blondel was a military engineer and the Dauphin's mathematics teacher.

It would be desirable to have several such members of the

academy so that their projects would offer the most complete museum of all that comes within the field of architecture.

By enumerating the means of making the Academy and its members useful to the State, I have doubtless made it obvious how important it is for the Government to give as much encouragement as possible to this society of Artists. This is why it seems to me that whenever there is any question of building a public monument, there should be a competition which will force comparisons and is the only way to ensure success. And in order to prove that all decisions are unbiased and impartial, it would, I think, be necessary to exhibit the candidates' designs publicly.

The most suitable place for the exhibitions would seem to me to be the premises of the Academy of architecture.[83] The result of these exhibitions would be reasoned censure from some; from others bitter criticism and the venom of anonymous satire; but clashes of opinion reveal the truth. After all these public debates the moment would come when the voice of the academy would be heard. And who could doubt that justice will be done to artists who have given proof of the greatest talent, for the members of the academy will have before them all the public dissertations and moreover, for the sake of the reputation of the profession, will be concerned with satisfying the confidence of the Government and not yield to any outside influence.

I should like to express here the delightful sensations that I experienced each time that I heard the academy reply to the enquiries addressed to it. The facts I am discussing here are to be found in its records which show that on several occasions when members of the academy were competing with their students, the latter were given the vote of the academy when they deserved it. But if this wise conduct did not surprise me, I certainly considered it remarkable that such justice could be meted out without any member of the academy daring to take into consideration anything but the candidates' designs.

Recapitulation

Circumstances govern man's every enterprise. When I was young, I shared the opinions of the general public; I admired the façade of the Peristyle of the Louvre and thought that this design consisted of all that was most beautiful in architecture. I was indignant when I read in the works of him who passes as its architect that he was attempting to degrade the profession which honoured him and that he considered it fantastic art. The fear of devoting my life to the study of a visionary art which would lead me from error to error made me decide to ascertain whether, as Pérault maintained, architecture did not derive from nature; and if, according to his terminology, it was indeed fantastic art.

I felt myself obliged to refute his assertion and I began a detailed examination of what could be meant by fantastic art. When I had completed this, I wanted to go more deeply into the question and began my research into the essence of volumes which made me aware of their properties and then of their harmony and their analogy with our own system.

These discoveries enabled me to prove that architecture derives from volumes and that since all its effects have this same source, it inevitably derives from Nature.

I studied Perault's assertion in which he compares architectural principles with those on which music is based. I uncovered his error and I have proved that there is no analogy between these two art forms and that consequently the principles on which they are based must be totally different.

I have established a method for discerning the basic principles of an art and finally I have proved that in architecture these derive from Regularity.

By observing nature I broadened my conception of my profession and by applying what I had observed and my philosophy, I have suggested techniques that no one had ever grasped before. The merit of this work lies in the fact that I have seen further than my short-sighted predecessors.

In general, those who have written about this subject show no breadth of vision: they confine themselves to putting forward a few examples they have taken from antiquity. They have never proved that man can make no progress in art except through the study of nature; that it is through nature that we can grasp the Poetry of architecture; that this is what constitutes art; and that the only way of arousing a variety of sensations within us is by giving monuments an appropriate character. Writers do not convey any impression of the great images that can be created by assembling all this scattered beauty; they have never made us feel that the greatest task of an architect is to utilize all this; and that by using all the means that nature puts at our disposal, we can achieve the apotheosis of art.

We should be grateful to an Artist who writes about his art; but this is not enough. He develops his talent and proves it in what he builds, for what is expected of an architect is not to write well but to build well.

In my project for a Metropolis, which is the Epic of architecture, I have attempted to develop and combine all that gives Poetry to this art. My new philosophical concepts have enabled me to make use of nature by introducing daylight into the Temple; for now that I could control it, it was capable of brilliant, mysterious, soft and sombre effects: in short, it could arouse in us sensations similar to those of our religious ceremonies and which are necessary to the worship of the Supreme Being.

I planned my funerary monuments to inspire a horror of death and thus to bring man back to morality.

In Newton's Cenotaph I attempted to create the greatest of all effects, that of immensity; for that is what gives us lofty thoughts as we contemplate the Creator and gives us celestial sensations; finally, what I have called the architecture of shadows is my own discovery and one which I bequeath to those who follow me in an artistic career.

I will not bore you by continuing to describe my goals. I would advise those who intend to take up architecture to study attentively what I have to say, to study my designs scrupulously, to ponder on them and on my writings, before coming to any conclusion; then, to do as I have done with regard to the ancients, that is to respect their designs when they are good, but not to follow them slavishly; but to become rather the slave of nature which is an inexhaustible spring where all of us, however many we are, should draw continuously.

I had decided when I was writing the main body of this work to refer the reader to the following notes, but on further reflexion I decided that perhaps it would be more agreeable for him to read them all together and to let him decide for himself how he will apply them.

Notes

If men based their ideas on the study of nature, they would be less likely to fall into all sorts of errors. Each one of us has his own definition of what is beautiful and each one of us believes that he is right: but reason is the fruit of study: thus, before we announce our ideas, we should surely form an opinion by questioning nature and confirming our views with the proofs which derive from it? These proofs emanate from all that does most to arouse our sensibility, so that there can no longer be any doubt. Once this basis is established, we shall be able to come to an agreement. Allow me to question nature with regard to that beauty that our hearts recognize as all powerful.

It seems to me that there exists in what constitutes beauty, in the strict sense of the word, qualities that are so striking and so clear that no one can refuse to accept the evidence and not be moved by them.

For example, I believe that every one will admit that an impression of being alive is indubitably one of nature's greatest gifts: it is a well-known saying that there is no dead beauty: I have never heard anyone say, How beautiful of a blind person![84] The greatest of all forms of beauty is thus the quality of life that comes from an animated air, but where does the animation come from? From the eyes. They are the mirror of the soul and consequently of life. It is in the eyes of the one we adore that we find her and happiness too! It is the eyes that reveal the most beautiful of all beauties, I mean that of the soul.

Isn't freshness one of the main qualities constituting beauty? Does it not herald the beautiful dawn of each day? Isn't it nature's finish that brings out in a young girl's complexion the brilliance of the lily and the pink of the rose?

Doesn't firmness, the pleasing companion of freshness, indicate good health; doesn't it arouse the pleasant desire to touch? Doesn't it preserve a beautiful form which bad health would cause to sag and give beauty an air of listlessness?

Is not Regularity a guarantee of beautiful features, for if they are irregular they are not beautiful. Beautiful forms are well defined and their beauty derives from their full development and perfect symmetry.

If, as I presume, these remarks are neither conventional nor arbitrary, I think I would be right in suggesting that they can establish the foundation on which to base our concepts of beauty.[85]

Symmetry is an impression of order and overall arrangement; we must assume that what is ordered is pleasant for how can we presume to create order out of what we find repulsive? And so, since symmetry is composed of what is pleasant, and since order adds even further to our pleasure, since the analogy, the accord, the harmony of each element must necessarily be assumed to emanate from an impression of order, it follows that a symmetrical composition must consist of all that does most to flatter our senses.

Uniformity, which the vulgar often confuse with symmetry, derives from similarity. The image it has to present offers us only a multitude of elements with the same aspect. What makes this impression sterile and of little interest is its lack of that quality that awakens our soul, I mean variety.

The immediate impression made on us by the sight of an architectural monument is the result of its general plan. What we feel constitutes its character; what I call giving a building character is the art of using in any design all the means appropriate and relevant to the subject; so that the onlooker experiences only those feelings that the subject should arouse, which are essential to it and to which it is susceptible.

The variety of nature is infinite and always different: it follows that no creation of the fine arts should exactly resemble another; and that every subject should be dealt with in an appropriate manner.

Few monuments have a true character of their own and few architects appear to have concerned themselves with giving their architecture character; and yet this is the ideal, the Poetry of art, its most sublime aspect, and the one which makes it true art.

On page 197 of the second volume of Baron de Riebeck's account of his travels in Germany, the author discusses the writers of that country and makes the following observations on art in general.[86]

It is nature that gives us our first concept of the Arts which cannot then be brought to perfection by theory, but only by paying attention to and searching for what is most beautiful and striking in nature. That is what makes original artists! And it is by interpreting, feeling and comparing these original works that imitators can acquire their training. Good taste is not acquired through theoretical studies; and it is generally accepted that those who expound the most

profound theories are those who have met with the least success in their own work and in their criticism of what others have done.

Theory is based on logical conclusions which will always be false as long as the premises are false. But the sensations aroused by perception and a comparison of what is beautiful, and what in fact constitutes Good Taste, can never mislead us. What is certain is that this perception and this sagacity are essentially nature's gift.

By assigning its own individual size to each object, nature has enabled us to exercise our critical faculties on all that we see by means of a thousand different comparisons; it is only the constant size of each object that enables us to judge distances, for what is contained in a certain space enables us to judge what contains it also. Without these individual assignations, how could we make judgments or even comparisons? The laws of optics and the effects of perspective would continually lead us into error, for objects grow smaller in our eyes according to their distance from us. But since we are aware of the size of natural objects, this size becomes a guideline and enables us to judge distances in the light of their reduction. It is a retrogressing scale that enables us to measure everything.

In the Arts, one should never transgress our habitual estimation of objects, unless there is some overriding consideration that makes it absolutely necessary.

Why present a figure larger than life? It is not to be tolerated unless one wants to depict some extraordinary being such as a giant or pagan-style gods which would justify such colossal figures.

In architecture, it is therefore essential to respect our habitual comparisons and to avoid colossal proportions which have the effect of making me assume less not more. It is the art of diminishing the effect not of enhancing it.[87]

I have given a partial definition of architecture as the art of creating perspectives by the arrangement of volumes.

The effect of these volumes is the result of their masses. Yes! It is their masses that play on our senses; it is in them that we distinguish delicate, agreeable forms and heavy, massive forms; noble, majestic, elegant and tenuous forms. The art of giving character to any project lies in the effect of the masses.

The real talent of an architect lies in incorporating in his work the sublime attraction of Poetry. How is that possible? Through the effect of the masses; character derives from them; and the result is that the onlooker experiences only those sensations that truly derive from the subject. It is evident that the mass of a Temple to Venus would not be at all appropriate for a Temple to Jupiter.[88]

I cannot refrain from making here an observation on the architecture of the Greeks. We rightly admire their Temples; the magnificent order of their architecture makes them the most beautiful examples that exist. However, it must be admitted that the Greeks do not appear to have concerned themselves with giving their architecture any individual character. The similarity of their Temples is striking; they all have more or less the same form. How could men of such genius as the Greeks neglect the Poetry of architecture in monuments so adapted to it because of all the different attributions they gave the power of their gods?

Often in architecture there is some confusion between the true meaning of the word colossal and the word gigantic and what artists term grandiose. They are very different things.

A colossal monument should excite our admiration; to be convinced of this truth it is easy enough to say that it is an extraordinary monument. Its proportions should overwhelm all that surrounds it. It should illustrate a great concept and, in a word, be unique of its kind.

The best example I can give is Trajan's column in Rome: this monument excites our admiration;[89] its proportions are extraordinary, its concept astounding; the architecture, the sculpture of the bas-reliefs, the choice of decoration, all are admirable. Gigantic proportions far from enhancing the effect of a building, subdue it. St. Peter's in Rome proves my point. This Basilica, as we know, is the largest that exists in Europe and yet inside the Temple we do not experience any sensation that corresponds to its size.[90]

This is not at all the same impression we have on entering the Rotunda. There the astonished spectator always leaves full of wonder.[91]

The art of greatness in architecture stems from an ingenious combination of the separate parts of the whole. I have developed this idea in the section on Metropolises in which I have tried to enumerate all the methods at the disposal of architecture in the construction of a Temple.

The Egyptians had grandiose ideas: their pyramids are rightly admired; the architectural order of their Temples gives an impression of *greatness*. In the statue of their gods, colossal art reaches its apotheosis.[92]

The best reasoning in the fine arts will never help to form Artists. Why not? Because reasoning can never help us experience sensations and because the art of expressing these sensations, which derives from our sensibility, is the purpose of the fine arts. The way to study the fine arts is to exercise one's sensibility; we must seek the means of developing it in the most beautiful human creations and above all in those of nature. At the sight of nature's sublime vistas a sensitive man is transported and experiences that magnificent ecstasy, that happy enthusiasm, that is evidence of his genius and characterizes it; a divine gift without which a career in the fine arts is impeded.

The creations of a man of genius are always characterized by the way he applies nature in his Art.

In the fine arts it is not always the greatest effort that brings success. All men who cultivate the arts admit it; they will all confess that their most fortunate creations are generally those that caused them the least pain and cost them least; in a word, those which, so to speak, were inspired. What should we understand by inspiration? It is to be moved by such an excess of sensibility at the sight of an object, that all the faculties of our soul are disturbed to such an extent that we feel it is departing from our body.[93]

In this state of excitement we feel superior to ourselves, an exquisite sensation exalts us; a power beyond our control drives us and makes our faculties divine, if I may be allowed to use such an expression.

The only way that artists should communicate among themselves is by recalling forcefully and vividly what has aroused their sensibility; it is this attraction, which belongs to them alone, that will permit them to stimulate the fire of their genius. They should beware of entering into explanations which belong to the realm of reason, for the impression an image makes on our senses is subdued when we dwell on the cause that has produced the effect. To describe one's pleasures is to cease living under their influence, to cease to enjoy them, to cease to exist.

Memorandum concerning the Restoration of the Château of Versailles

It was thought that the simplest way in which an Artist could describe his work was for him to describe the sequence of his ideas.

A design for a Palace is the project that demands the maximum of an Artist's talent and competence, but how much more difficult is it to fulfil this task in the presence of the constraints of harmonizing new buildings with old! Such were my first reflexions on the restoration of the Château of Versailles.

To all these constraints was added that of economy, a consideration that restricts genius, brings it to a halt and prevent it from putting into effect propitious ideas full of nobility and majesty.

These were not the only obstacles. I was inspired by the beautiful examples provided by great men who contributed to the honour of the century of Louis XIV and wanted to surpass these artists, if this were possible. I took advantage of their achievements and putting out of my mind all the ideas that restricted me, I thought only of the glory acquired by the rare geniuses of that century that was so auspicious for the fine arts. I thus sought to plunge myself into my subject and submitted to those conditions it is essential to observe in the construction of a Palace.

The outside decoration of a Palace must be rich, noble, elegant and above all majestic. The Artist should be less concerned with the outline than the impression it makes.

The decoration of the interior must be full of Good Taste, grace and nobility.

The general arrangement calls for grandiose, free and above all noble progression.

The Nobles and the Public must be able to enter and leave freely for festivals and above all their majesties must not be inconvenienced in any way by the arrival of a crowd. The private quarters should be arranged so as to incorporate all essential and agreeable amenities.

Free progression in any arrangement is ensured by avoiding any detours in the main rooms that constitute the Palace so that when traversing it there is no hesitation in one's progress.

Nobility derives first from space, which facilitates access to all parts of the Palace, and next from the impressive succession of suites full of a variety of beautiful things.

Above all nobility has its source in the art of making a grandiose impression.

For example, it is impossible not to be moved by the Gallery of Versailles.

After traversing a multitude of large rooms filled with the most brilliant works of art, the onlooker, who was not expecting anything more beautiful, comes upon a place that is so superior to all that he has seen previously that he stands lost in wonder at its splendour and magnificence.

If we imagine that this superb gallery is nothing more than an intermediate room leading directly to the King's apartments and to those of the Queen, then this vista becomes even more grandiose because of its links with these new objects, and it will become the most grandiose, the noblest and the most striking image of all that exists.

If, on the contrary, we imagine an arrangement that branches off in all directions and is no longer connected with the royal apartments, then the beauty of the gallery will stand in isolation.

It is on the basis of these conditions that I sought to plan the general arrangement.

The vestibule is the perfect precursor of the entrance. It stands in the centre of the façade. From right to left are two large staircases, leading to the King's and Queen's apartments respectively.

After traversing the large number of rooms that already exist, we arrive at the gallery and this magnificent place is the central point from which the Public can see the apartments of their Majesties. All can circulate easily in the whole first section of the Palace until the time when the Monarch leaves his apartments and lets all rejoice in his presence.

The banqueting hall is situated in the main body of the building parallel to the gallery; and when the arcades adjacent to this hall are open, the public in the gallery have the advantage of being able to see their Majesties without causing any obstruction.

Private entrances have been provided to the apartments of the King and Queen for important officials and those on duty.

At the other end of these apartments, it was thought necessary to provide still more entrances for those with whom his Majesty might wish to communicate in private.

Attention was paid above all to the provision of a separate apartment, adjoining their private apartments, where their Majesties could meet in private; these two apartments would be located under the Gallery.

Here we are giving only some indications of the plan, without any details of the layout, for this can only be decided when the wishes of their Majesties are known. This is also true of the private apartments beyond the main apartments, where the wishes of their Majesties cannot be fulfilled until their desires are made known.

I am explaining the most ambitious project in detail because I consider it preferable to the two others, which were made in accordance with suggestions that were put to

me. Although the most ambitious project is the more expensive, I consider it nevertheless the most economical; the explanation is quite simple.

Any change in the quarters of their Majesties would incur great expense. We must also admit that the temporary quarters where His Majesty would be lodged could only fulfil their purpose imperfectly. The inevitable result would be impatience and a desire for a more appropriate residence; a necessity to rush the work; the impossibility of carrying out a large-scale project, for which time is necessary; the difficulty of finishing at some speed, which circumstances might necessitate; and all the annoyances that would follow from this state of affairs, etc., etc., etc.

Such are the inconveniences that would be occasioned by any project necessitating that the King move.

The most ambitious project is in fact more expensive than the two others but it does not have the inconveniences described above; on the contrary, its implementation would present no problems. Neither the King, nor the Queen, nor any member of the Royal Family, nor anyone at Court would have to move; thus it could be carried out right under the King's nose without inconveniencing him in any way. And so he would watch without impatience and even with some satisfaction the construction of a monument that would bring him glory. The work would progress according to the circumstances, with more or less speed. His Majesty could allow the Artists sufficient time to execute all his ideas; he would concern himself with them and improve them with the help of the Minister of the Arts.

Ambitious projects are time-consuming; but if there is plenty of time, then the considerable expenses are no longer an impediment; and the science of economy is based on the principle of incurring only essential expenditure; time alone makes this possible.

In addition to these advantages is the fact that no expense is incurred for a temporary residence for His Majesty (which would be considerable and thus means that the most ambitious project would be less expensive than all those projects to which it would be necessary to add the expenses incurred in moving their Majesties) and thus it is definitely the most economical.[94]

Summary Reflections on the Art of Teaching Architecture

I have long meditated on the profession I teach and I have concentrated on devising methods for accelerating its progress.

It seemed to me that the manner in which architecture was taught was in some respects defective and for this reason I decided to try and find a more suitable method than the usual one.

Man can only learn by proceeding from the simple to the complicated. The first Lesson that painters give their Students is how to draw eyes. Language teachers do not begin their lessons by demonstrating the richness of a language to their students. Why then do Architects make their Students begin by drawing the ['five' erased] orders of Architecture which constitute all the opulence of this art?[95]

Let us proceed with order, so that the methods we are proposing follow from all that can be obtained by a method that will favour the study of this great Art.

Let us first ascertain what we mean and what architecture should incorporate. Let us give a definition! It is the art of bringing any building to perfection. What does this perfection consist of? A building can be considered perfect when its decoration corresponds to the kind of building to which it is applied and when its layout corresponds to its function.

In the light of this explanation, if we want to proceed methodically with our teaching, we should place in front of a new student the most simple building in existence such as the country cabin mentioned by Vitruvius.[96]

Since evidence is based on what strikes us most, we should make the student draw the façade of the cabin, and then make him familiar with a plan by showing him how to draw one. In the same way, the section and cross-section of the Cabin will teach him the art of combining interior and exterior.

After this Cabin he will progress successively to buildings that are a little more complicated and finally to an apartment building. Why? Because the dividing up it necessitates requires special techniques which will teach him good organization and will shape his understanding.

After making a beginning with this practical teaching, it is necessary to develop his concept of the artistic side, properly so called.

The theory of volumes will serve to demonstrate that the basic principles of his art are established in nature. And by applying these volumes to art, he will learn to recognize Poetry.

What does this Poetry consist of? It lies in the art of creating perspectives through the effect of volumes. But what causes the effects of volumes? It is their mass. And so it is the mass of these volumes that gives rise to our sensations. Without doubt. And it is the effect that they have on our senses that has enabled us to give them appropriate names and to distinguish massive forms from delicate ones, etc., etc. Again it is the various sensations that we experience that make us realize that volumes that drag on the ground make us sad; those that surge up into the heavens delight us; that we find gentle volumes pleasant whereas those that are angular and hard we find repugnant.

The examples taken from art that the teacher places before his students will make this even more evident.

As a result of this method the student will become a student of nature for he will be forced to recognize that this is the source of beauty in art.

If there are ways of making man perfect, they can only derive from his study of nature.

Once the teacher has demonstrated to his students that the source of beauty lies in nature and that he must tap this source, then he must make this study as painless as possible.

How can he do this? By placing in front of him the works of great men; the experience they have acquired will teach the Student how to interpret and observe nature; for we cannot deny that we owe much to our Forefathers; indeed, they have handed down to us works of art so beautiful that they are perfect. I would like to discuss now the orders of Architecture. They have become the immutable laws for all men of genius who cannot but look at them with wonder.

We should place these immutable laws before our students; we should make them draw the orders of architecture; we should require them to make a detailed study of them. The following advantages would be the result.

This study will teach them the art of using these orders judiciously and consequently what is called the rules; they will acquire the art of adding to and, if necessary, improving their outlines with the most beautiful ornamentation. The various intercolumniations used in famous monuments will help them recognize good proportions; they will sense in any construction what we mean by a beautiful order and a beautiful style, etc., etc.

Following these remarks on how to teach students about the orders of Architecture, I need no further justification of my reasons for wanting teaching to end where it now begins.

I do not consider it necessary to elaborate further on this important subject, which at first glance I may appear to have only touched on, because it is not possible to follow just one method when teaching the fine arts as is done for the exact sciences. Each individual artist grasps the beauty of nature according to his own faculties. It cannot be said that Michelangelo and Raphael, who both reached the summum of their art, do not reveal in their work a totally different style, even though these two great men both derive their talents from Nature and their studies had the same basis.

The same is true of Poetry; the work of Corneille differs from that of Racine.

It is thus evident that in the fine arts only basic principles can be taught and for the rest we must refer to those who practise them ["with distinction" erased] who cannot and should teach except those subjects in which they excel and their own individual style.

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This new study of the achievement of Etienne-Louis Boullée has grown out of my edition of the master's *Essai*, which was published in 1953. I wish to express my gratitude to those who have made my continued work on the subject not only possible, but also pleasant.

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