AN ESSAY ON ARCHITECTURE

by
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Preface

There are several treatises on architecture which explain measures and proportions with reasonable accuracy, enter into the details of the different Orders and furnish models for all manner of buildings. There is no work as yet that firmly establishes the principles of architecture, explains its true spirit and proposes rules for guiding talent and defining taste. It seems to me that in those arts which are not purely mechanical it is not sufficient to know how to work; it is above all important to learn to think. An artist should be able to explain to himself everything he does, and for this he needs firm principles to determine his judgments and justify his choice so that he can tell whether a thing is good or bad, not simply by instinct but by reasoning and as a man experienced in the way of beauty.

Knowledge is far advanced in almost all liberal arts. A great many talented people have applied themselves to make us sensitive to all refinements. They have written with great learning on poetry, painting, and music. The mystery of these ingenious arts has been so thoroughly explored that in this field little is left to be discovered. We have well considered precepts and judicious criticisms which determine their true beauty. Imagination has guidelines which lead it in
the right direction and has restraints to curb it. We can accurately assess both the excellence of brilliant traits and the disorder caused by faults. Should there be lack of good poets, painters or musicians, it would not be the fault of theory, but the default of talent.

Only architecture has until now been left to the capricious whim of the artists who have offered precepts indiscriminately. They fixed rules at random, based only on the inspection of ancient buildings. They copied the faults as scrupulously as the beauty; lacking principles which would make them see the difference, they were bound to confound the two. Being servile imitators, they declared as legitimate everything which has been authorized by examples. They always confined their studies to fact and deduced from them, erroneously, the law: thus, their teaching has been nothing but a source of error.

Vitruvius has in effect taught us only what was practiced in his time. Although brilliant flashes herald a genius able to penetrate into the true mystery of his art, he does not make an attempt to tear away the veil which covers it. Always avoiding the depths of theory, he takes us along the road of practice and more than once we go astray. All modern authors, with the exception of M. de Cordemoy, give no more than commentaries on Vitruvius, following him uncritically in all his errors. I say with the exception of M. de Cordemoy, for this author, being more profound than most of the others, saw the truth that was hidden from them. His treatise on architecture is extremely short but contains excellent principles and well-considered notions. If he had developed them further, and drawn from them the right conclusions, he could have shed great light on the obscurity of the art he was writing about and he could have banished the annoying uncertainty that renders rules arbitrary.

Therefore it is to be hoped that some great architect will undertake to save architecture from eccentric opinions by disclosing its fixed and unchangeable laws. All art and all science have a definite objective, but not every road can be equally good to reach it. There is only one that leads directly to that end and it is this unique road which one must know. In all things there is only one way of doing it well. What is art, if not that mode of expression (manière) which is based on clear principles and is carried out with the help of unchanging precepts?

Awaiting someone more capable than I am to disentangle the chaotic state of architectural rules, so that from then on there is not a single rule that cannot be clearly explained, I shall try and throw some ray of light on it. Whenever I have looked at our greatest and finest buildings, my soul has been aroused. At times the spell was so strong that it gave rise to pleasure mingled with rapture and enthusiasm. At other times I was not so passionately carried away. I reacted favorably, though to a lesser degree: nevertheless my delight was real. Often I remained entirely indifferent; just as often I was disgusted, shocked and repelled. I have thought a long time about these different reactions. I repeated my observations until I was sure that the same monuments impressed me always in the same way. I sounded the taste of others and, by submitting them to a similar experiment, found that all my own impressions were felt by them more or less vividly according to the different temperament that nature had given them. I then drew these conclusions: (1) that absolute beauty (beautés essentielles) is inherent in architecture independent of mental habit and human prejudice; (2) that the composition of a piece of architecture is, like all creative work, susceptible to dullness and liveliness, to propriety and disorder; (3) that there is necessary for this as for any other art talent which cannot be acquired, a measure of inborn genius, and that this talent, this genius, must nevertheless be subject to and governed by laws.

I thought more and more about the diverse impressions
which different architectural works made upon me because I wanted to penetrate to the cause of these effects. I asked myself how to account for my own feelings and wanted to know why one thing delighted me and another only pleased me, why I found one disagreeable, another unbearable. At first, this search led only to obscurity and uncertainty. Yet I was not discouraged; I sounded the abyss until I thought I had discovered the bottom and did not cease to ask my soul until it had given me a satisfying answer. Suddenly a bright light appeared before my eyes. I saw objects distinctly where before I had only caught a glimpse of haze and clouds. I took hold of these objects eagerly and saw by their lights my uncertainties gradually disappear and my difficulties vanish. Finally, I reached the stage where I could, through principles and conclusions, prove to myself the inevitability of these effects without knowing the cause.

This is the road which I followed in order to satisfy myself. It seems to me that it would be useful to let the public know of the success I had had from my efforts. If I could induce my readers to make sure that I have not deceived them, to criticize my conclusions severely and to try themselves to penetrate further into the same abyss, then architecture will have gained infinitely. I can truly say that my main intention is to suggest to the public, especially to the artists, that they should doubt, should make conjectures, and should never be easily satisfied. If, spurred on by me to do their own research, they are led to find me wrong, to correct my inaccuracies, and to improve my reasoning, I shall be only too pleased.

This book is just an essay in which I really give no more than indications and clear the way. The task of applying my principles extensively I leave to others who may use a keen intelligence which I would not have. I say enough about this to give architects firm working rules and infallible means to reach perfection. I have tried as much as I could to make myself intelligible. Often I could not avoid using terms of art; nearly all of them are quite well known and there are also dictionaries to explain their true meaning. Since my main purpose is to form the taste of the architects, I leave out those details which can be found elsewhere; nor do I need to burden this little work with drawings which may be irritating and tiring to the reader.¹

¹In the second edition the sentence after "elsewhere" is replaced by: "and to make this work more instructive I have added to this second edition a number of plates sufficient to put before the reader all those objects of which a simple description would give him only an imperfect idea."
Introduction

Of all the useful arts, architecture demands the most accomplished talent and the most extensive knowledge. It needs perhaps as much genius, esprit and taste to become a great architect as is needed for a first-rate painter or poet. It would be a great mistake to believe that in architecture only mechanics are involved, that it is confined to digging out foundations and raising walls, all according to rules which, becoming a routine, only require eyes accustomed to judge a plumbline and hands fit to handle a trowel.

When one speaks of the art of building, the chaotic mess of clumsy debris, immense piles of shapeless materials, a dreadful noise of hammers, perilous scaffolding, a fearful grinding of machines and an army of dirty and mudcovered workmen—all this comes to the mind of ordinary people, the unpleasant outer cover of an art whose intriguing mysteries, noticed by few people, excite the admiration of all those who penetrate them. There they discover inventions of a boldness that proclaims a great and fertile genius, proportions of a stringency that indicates severe and systematic precision, and ornaments of an elegance that tells of a delicate and exquisite feeling. Whoever is able to grasp true beauty to this extent will, far from confounding architecture with the lesser arts,
be inclined to range it among the more profound sciences. The sight of a building, perfect as a work of art, causes a delightful pleasure which is irresistible. It stirs in us noble and moving ideas and that sweet emotion and enchantment which works of art carrying the imprint of a superior mind arouse in us. A beautiful building speaks eloquently for its architect. In his writings M. Perrault is at most a scholar; the Colonnade of the Louvre makes him a great man.

Architecture owes all that is perfect to the Greeks, a nation privileged to have known everything regarding science and to have invented everything connected with the arts. The Romans, able to admire and capable of copying the excellent models which the Greeks had left them, wished to add something of their own and thereby only taught the world that when the stage of perfection is reached there is no other way than to imitate or decline. The barbarism of succeeding centuries, having buried the fine arts under the ruins of the only empire that had preserved taste and principles, called forth a new system of architecture in which neglected proportion and ornament childishy crowded produced nothing but stones in fretwork, shapeless masses and a grotesque extravagance—a new architecture which for too long has been the delight of Europe. Unfortunately, most of our cathedrals are fated to preserve the remains of this style for generations to come. Let us admit, however, that in spite of innumerable faults this architecture had its beauty. Although its most spectacular creations show a coarseness and clumsiness in feeling and spirit that is altogether shocking, we cannot but admire the bold outline, the delicate chiseling and the untrammeled grandeur of some buildings which through these qualities display a kind of inimitable recklessness. But in the end some men of genius, more fortunate, were able to discover in the ancient monuments proof of the universal aberration and the means of reversing the process. Capable of appreciating the marvels which had been on view for so many centuries in vain, they closely observed the proportions and imitated the accomplished workmanship. Through their thorough investigations and experiments they revived the study of sound rules and re-established architecture in all its ancient authority. They gave up the absurd fancy ornaments of the Gothic and Arabesque styles and put in their place the virile and elegant adornment of the Doric, Ionic and the Corinthian. Frenchmen, slow to invent but quick to adopt successful inventions, envied the Italians the glory of having revived the splendid creations of Greece. Many monuments around us are witness to the fact that our forefathers eagerly and successfully competed. We have had our Bramantes, our Michelangelos, our Vignolas. The last century produced masterpieces in architecture worthy of the best ages because at that time nature almost spent itself by lavishing upon us a gift of talent. But at the very moment when we were approaching perfection, as if barbarism had not lost all its claim on us, we fall back into a low and faulty taste. Everything now seems to threaten us with a complete decadence.

This danger, which comes closer every day but can still be averted, prompts me to offer here in all modesty my thoughts on an art that I have always greatly loved. In this I am not motivated by an ambition to criticize, an ambition I detest, nor by any desire to say something new, a desire I believe to be at least futile. Full of respect for our artists, many of whom are renowned for their skill, I confine myself to informing them of my ideas and doubts, which I ask them to scrutinize thoroughly. If I decry as an abuse a number of customary features, universally accepted by architects, I do not expect them to accede to my personal opinion which I gladly submit to their intelligent criticism. I only ask them to give up willingly some prejudices which, though common, are yet detrimental to the progress of art.

Do not let it be said that, because I am not a professional
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architect, I cannot speak with sufficient knowledge. This, surely, is the least of all difficulties; every time we watch a tragedy, we judge it without ever having written a single word. Nobody is barred from knowing the rules, although to apply them is given only to a few. One should not cite respectable but by no means infallible authorities as evidence against me, since to judge what should be by what is would spoil everything. The greatest men have sometimes gone astray—to take their example always as a rule is therefore not a safe way to avoid errors. No one should try to check me in my course on the pretense of fancied difficulties; idleness finds many, where reason sees none. I am convinced that those of our architects who are genuinely eager to bring their art to perfection will be grateful for my good intentions. They may find in this essay thoughts that had not occurred to them before; if they consider them to be sound, they should not be too proud to make use of them; this is all I ask.

[Therefore to see only with regret that an alien hand carries the torch of truth into mysteries not yet penetrated, to reject out of repugnance to the source from which it comes a light which is offered, to meet with blind contempt an amateur eager to try and find routes leading to the goal missed by other routes, to be passionately against the success which his efforts could attain out of fear of finding thereafter critics more attentive and judges more severe, such a frame of mind is merely that of artists devoid of talent and feeling.]

1 Passages set in italics and enclosed in brackets are additions made by Laugier for the second edition of 1765.

Chapter I
General Principles of Architecture

It is the same in architecture as in all other arts: its principles are founded on simple nature, and nature’s process clearly indicates its rules. Let us look at man in his primitive state without any aid or guidance other than his natural instincts. He is in need of a place to rest. On the banks of a quietly flowing brook he notices a stretch of grass; its fresh greenness is pleasing to his eyes, its tender down invites him; he is drawn there and, stretched out at leisure on this sparkling carpet, he thinks of nothing else but enjoying the gift of nature; he lacks nothing, he does not wish for anything. But soon the scorching heat of the sun forces him to look for shelter. A nearby forest draws him to its cooling shade; he runs to find a refuge in its depth, and there he is content. But suddenly mists are rising, swirling round and growing denser, until thick clouds cover the skies; soon, torrential rain pours down on this delightful forest. The savage, in his leafy shelter, does not know how to protect himself from the uncomfortable damp that penetrates everywhere; he creeps into a nearby cave and, finding it dry, he praises himself for his discovery. But soon the darkness and foul air surrounding him make his stay unbearable again. He leaves and is resolved to make good by his ingenuity the careless neglect of nature. He wants to make himself a dwelling that protects
but does not bury him. Some fallen branches in the forest are
the right material for his purpose; he chooses four of the
strongest, raises them upright and arranges them in a square;
across their top he lays four other branches; on these he hoists
from two sides yet another row of branches which, inclining
towards each other, meet at their highest point. He then
covers this kind of roof with leaves so closely packed that
neither sun nor rain can penetrate. Thus, man is housed.
Admittedly, the cold and heat will make him feel uncomfort-
able in this house which is open on all sides but soon he will
fill in the space between two posts and feel secure.

Such is the course of simple nature; by imitating the
natural process, art was born. All the splendors of architec-
ture ever conceived have been modeled on the little rustic hut
I have just described. It is by approaching the simplicity of
this first model that fundamental mistakes are avoided and
true perfection is achieved. The pieces of wood set upright
have given us the idea of the column, the pieces placed
horizontally on top of them the idea of the entablature, the
inclining pieces forming the roof the idea of the pediment.
This is what all masters of art have recognized. But take note
of this: never has a principle been more fertile in its effect.
From now on it is easy to distinguish between the parts which
are essential to the composition of an architectural Order and
those which have been introduced by necessity or have been
added by caprice. The parts that are essential are the cause of
beauty, the parts introduced by necessity cause every license,
the parts added by caprice cause every fault. This calls for an
explanation; I shall try to be as clear as possible.

Let us never lose sight of our little rustic hut. I can only see
columns, a ceiling or entablature and a pointed roof forming
at both ends what is called a pediment. So far there is no
vault, still less an arch, no pedestals, no attic, not even a door
or a window. I therefore come to this conclusion: in an
architectural Order only the column, the entablature and the
pediment may form an essential part of its composition. If
each of these parts is suitably placed and suitably formed,
nothing else need be added to make the work perfect.

We still have in France a beautiful ancient monument,
which in Nimes is called the Maison Carrée. Everybody,
connoisseur or not, admires its beauty. Why? Because every-
thing here accords with the true principles of architecture: a
rectangle where thirty columns support an entablature and a
roof—closed at both ends by a pediment—that is all; the
combination is of a simplicity and a nobility which strikes
everybody. [The author of the Examen¹ disapproves of my
intention to establish a strict relation between all parts of our
buildings and those of the rustic hut. He should have ex-
plained to us in detail the laws which make this relation
faulty because if it is based on solid grounds, as I maintain
and as all masters of the art have suggested, then no way
exists any longer of attacking the rules which I establish in
the articles that follow. They are all necessary consequences
of this simple principle. If I am to be refuted, the whole line
of action amounts to this: either show that the principle is
wrong or that the conclusion does not follow from it. One
will strike in vain as long as one does not use one or the other
of these two weapons against me. All declamations, even all
insults will be to no purpose. The judicious reader will always
come back to this question: is the principle wrong or the
conclusion? The only reason brought up against the proved
relation between our buildings and the rustic hut is that we
should be allowed to move a little away from this coarse and
shapeless invention. We have, indeed, moved far away from
it through the grand gout of the decoration which we have
put in place of the careless faults of such crude composition,
but the essential must remain—the rough sketch which na-
ture offers us. Art must only make use of its resources to

¹Examen d’un essai sur l’architecture, Paris, 1753. See p. 148. (Transla-
tor’s note.)
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embellish, smoothe and polish the work without touching the substance of the plan.]

Let us now consider in detail the essential parts of an architectural Order.

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ing strength. The Ionic keeps to the middle. It is neither as solid as the Doric nor as delicate as the Corinthian; it partakes of one and the other. The three Orders, understood in this way, appear to cover the whole range of art, satisfying all needs and tastes. The Doric and the Corinthian are two extremes beyond which one cannot go without falling into either a clumsy or a fragile style. The Ionic gives us, between these two extremes, the proper and happy medium. There, ingeniously accomplished, is the whole graduation from solid to delicate. It will, therefore, always be extremely difficult to add something new to such a fortunate discovery.

Article I

What All Orders Have in Common

In all Orders the column is composed of three parts: base, shaft, and capital. The pedestals have been proscribed in the last chapter; their fate has been decided once and for all: they will be used for carrying statues, never for carrying columns. It is not the same with the base which must not be left out of any Order because it gives strength to the column from below, increases its solidity and makes the beautiful effect of the diminution and the neck-molding (conge) of the column more perceptible. There is no longer any excuse for using a base arbitrarily, once constructional and aesthetic reasons warrant its application. The Doric Order is the only one which originally had columns without base. In the Marcellus Theater, where this Order has been applied, there is no base, and Vitruvius himself does not give a base to the Doric column: These are rather weak authorities to oppose the grounds which make the base a necessary part of all Orders, grounds which are backed by the almost universal practice of ancient and modern architects who adopted the
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attic base for the Doric Order, just as the other two Orders each have a base of their own.

The entablature is divided in all Orders into architrave, frieze and cornice. Of these three parts only the architrave could and should be used singly whenever there are several stories. The frieze and the cornice can only be used jointly and with the architrave, that is to say that every time a frieze and cornice is applied the whole entablature is needed. Many architects, finding themselves in trouble over the elevation, have taken the liberty to suppress the frieze and to join the cornice to the architrave. This error has been committed unashamedly at the immense building of the Abbey of Prémontré which has to its credit only its vast size, being otherwise a masterpiece of bad taste. This, in my opinion, is a serious fault because without the frieze which has been introduced in a natural way to indicate the space between the components that make up the ceiling and those that form the timberwork, the entablature loses its proportions. Therefore, it is not possible to suppress the frieze without sinning against the rules. This suppression certainly makes a very bad impression and only suggests an architect who has handled dimensions badly. We are faced here with another question which many people do not dare to decide, namely whether the entablature underneath the pediment must be left as a whole. I see that in practice architects follow with indifference one way or the other. According to the true principles, the cornice, which essentially belongs to the roof, must always be eliminated from an entablature which lies under the pediment. Hence the following good effects: (1) The roof will be represented only where the actual roof is; (2) the tympanon of the pediment will no longer be concealed by the great projection of the lower cornice; (3) it will avoid the two cornices meeting in a sharp, acute angle at each end of the pediment, an altogether disagreeable conjunction.

In all Orders, there are two kinds of moldings which are

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used for all ornaments, the square and the round. The former are by themselves somewhat harsh and stiff, while the latter are soft and graceful. These moldings, when matched and blended in good taste, give great pleasure. Which then is the right taste for this blending and matching? I venture to make a comparison which is going to clear up this mystery. Round moldings are to architecture what consonances are to musical harmony, whereas square moldings correspond to dissonances. The blending of moldings and of sounds has the same aim and must follow the same rules. The harshness of the dissonances is an artistic device which the judicious composer must use in order to intensify by contrast the charming impression of the consonance. A piece of music would become dull and insipid without the dissonance making itself felt from time to time, though it would grate on the ear if it were too frequent. Hence the rule never to use a dissonance which is not prepared and resolved by a consonance. Let us apply this to architecture where ornaments have a harmony of their own. The round moldings produce softness, the square ones harshness. In order therefore to create perfect harmony, the harshness of the square moldings must from time to time interrupt the softness of the round moldings which could decline into insipid dullness; but it is even more essential that the softness of the latter always corrects the harshness of the former. We should prepare and resolve the dissonance, that is to say every square molding should always be preceded and be followed by a round molding. Then, the work will have nothing of dryness and the whole composition will be an enchanting sight.

In all Orders each single part presents a background on which sculpture can be applied. But here, as anywhere else, confusion and excess must be avoided. Sculpture is to buildings what embroidery is to dresses. When the embroidery is fine and allows enough ground to show through, it adds lustre to the dress and makes it truly stately because it
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preserves simplicity. When, on the contrary, the embroidery is overloaded and confused, its only merit is richness and labor. Seeing a dress in this way bedecked with embroidery one says: "Here is something which must have cost an immense sum, but is not at all beautiful." Sculpture on buildings demands the same moderation. If care is not taken to distribute it sparingly and in orderly fashion, a great amount will have been spent without achieving anything of value. Architects must therefore beware of covering indiscriminately all parts of an Order with sculpture; restful intervals are needed. If they wish to embellish a work and embellish it judiciously, they should never have two consecutive parts carved; there should always be a plain part to serve as background for a sculptured one. Those who do not keep within these justified bounds will fall into a frivolous, petty style (colifichet).

Article II
The Doric Order