

PRINCIPIA ARCHITECTONICA

On ideas

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“It will be convenient to distinguish them into absolute and relative, true and apparent, mathematical and common”. Isaac Newton, 1687.

The above quotation is taken from Isaac Newton’s *Principia Mathematica* whence we borrow our title. Newton pleaded for the capacity of discernment in mathematical work. It is that same discernment that we demand in architectural creation.

When things are seen in the calmness and serenity that full retrospect provides, we architects, who are also professors, feel the obligation to impart the essential core of our ideas to our students, as if it were a matter of distilling the most important aspects of our lives into one testament.

I’ve presented many of the ideas summarized here in other texts published over the course of many years. The first collection of these essays, written in Spanish and titled “La Idea Construida”, (The Built Idea) has already run to over 20 editions. And a second anthology titled “Pensar con las manos” (Thinking with Hands) is now in its fifth edition. And both have been translated into English, French, Portuguese and Japanese with the recent addition of Italian and Chinese. However, with this revised collection of texts I would like here and now to attempt to distill all of them in order to communicate them better.

In the busy waters of Architecture, when one decides to remain on the shore of silence and reflection, far from the media torrent of celebrity, noise and superficiality, choosing to be closer to the philosopher’s and architect’s pursuit of truth, one feels the need to put the foundational principles of one’s work, one’s *Principia*, into writing. This is precisely what Newton did in his *Philosophiae Naturalis Principia Mathematica*, and it is from him that I have dared to borrow the Latin title.

The aim of these *Principia Architectonica* is to provide a basic introduction –a summary and synthesis– of the key themes with which I continue to work and which I increasingly understand to be central to architecture. In that regard, they are not so much personal discoveries as they are essential concepts inherent to architecture itself.

Thus, from the outset, this text also aims to be ever clear, specific, and sharpened, just as the surgeon’s scalpel must be continually sharpened and ready for surgery. Thus with my writings, each time I return to reread and study them, I introduce variations that seek to clarify, ever more precisely, what I have written.

I seek the greatest clarity both in my ideas and in the words that bear their meaning. These ideas must explain why we architects design and build, since architecture must be grounded in reason. That *adecuatio rei et intellectus* so necessary for the philosopher’s pursuit of truth is, in the case of architects, the synonymy between what is thought and what is built. Perhaps Goya expressed best the monstrosity that arrives without such synonymy in the fitting title of his engraving: “The Sleep of Reason

Produces Monsters”. This is more than appropriate when applied to architecture. In my Principia, I would like to underline how basic and fundamental it is for reason in architecture, its fundamental logic, to be permanently wide awake and alert, lest architects be caught napping in the studio or on the construction site.

Some architectural principles may seem obvious: that light needs shade in order to be recognized; that structure, besides bearing weight to the earth, also serves to establish the order of the space, what I have called “the structure of the structure”; that gravity builds space; that light builds time, and so on.

But architecture is like poetry: when one discovers that one can realize seemingly abstract concepts in palpable, understandable, and material sonnets, epics, and hendecasyllables, one has not just become a poet, but also an architect thanks to the mysterious ability human beings have of materializing and building their ideas. Michael Bockemühl expressed this notion so clearly when speaking of Rembrandt and his art: “He makes the intellectual comprehension of the painting into his visual perception.” That same sentiment is expressed with even greater clarity by Stefan Zweig in “The Mystery of the Artistic Creation” where he states that the maximum virtue of the human spirit consists in procuring to render comprehensible to itself what in principle appears incomprehensible.

ARCHITECTURE AS BUILT IDEA.

In these Principia Architectonica I continue my staunch defense of the need for a clear idea before embarking on any architectural creation. Some time ago I wrote that *Architectura sine idea vana Architectura est* when trying to spell out just how much of an utter banality architecture becomes, as any human creation, when it is built without an undergirding idea.

We cannot construct anything if we have not thought of it and conceptualized it first, and we shouldn't conceptualize anything that we cannot build. One must dream, but at the same time be capable of making those dreams a reality. Architecture can mysteriously materialize ideas; it is the “built idea.” Louis Sullivan expressed this so well when he wrote in 1901: “You cannot create unless you think, and you cannot truly think without creating in thought. Judge our present architecture by this standard and you will be amazed at its poverty of thought, its falsity in expression, its absence of manhood.”

While forms decay, passing into oblivion, ideas remain: they are immortal. The history of architecture is a history of ideas, of built ideas –of forms that materialize and put these ideas on solid footing. In short, forms without ideas are vacuous; without ideas architecture would be pure reduction to simulacrum, empty form devoid of any truly useful function.

GRAVITY BUILDS SPACE

These Principia also envisage gravity as a specific constituent element of architecture. The building blocks of poetry or music are not heavy, but those of architecture are inexorably subjected to the laws of gravity. Gravity builds space.

Therefore, when I speak of the structure, I want to underline that the importance of structure lies not merely in its bearing of loads, but also in something much more important, namely in establishing the order of the space. The “structure of the structure” relates to the need to establish an order proper to the structure itself.

LIGHT BUILDS TIME

Similarly in these Principia light emerges as a principal element of architecture. Light that builds time. Without light, architecture is nothing: *Architectura sine luce, nulla Architectura est.*

Natural light illuminates space and empowers the functions that are developed there. On the other hand, we can also control the light within a space thereby tensing it and summoning beauty.

Light, like air in music, goes through the space created by the architect so that it resounds and can be heard, and when light arrives in it, something almost miraculous happens: a power is produced by which time itself is made manifest. Something seemingly ephemeral like time is now within our reach and can deeply move us. The dictum “light builds time” is much more than a stock phrase for a pedagogical text, this spatial miracle is a tangible reality within our practical reach.

ACHIEVING BEAUTY

With these Principia Architectonica we are trying to approach the concept of Beauty in architecture. Because by starting out from ideas guided by reason, and getting them off the ground, materializing them, constructing space with gravity and time with light, we can achieve Beauty. That same Beauty which, in the words of Plato and echoed by Saint Augustine, is the splendor of Truth.