Eduardo Prieto
ETSAM, UPM, Madrid, Spain

The Environmental Paradigms of Architecture

A Critical Approach

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Far from constituting a specialization, and far from being reduced to the principles of simple 'sustainability', the environmental approach to architecture has a long history that can be traced back to Vitruvius and has passed through various treatises until reaching modernity. Architecture manipulates form, matter and energy to shape environments with a certain cultural imprint — it is both matter and environment as well as form and symbol — and this definition not only enlarges the heart of the discipline, but also enriches it with its own values but also with its own contradictions. These values and contradictions must be taken into account when understanding the complexity of the architecture of the last hundred years, determined by the succession, conjunction and mixture of a series of environmental paradigms that are still largely in force: the hygienic, technocratic, bioclimatic, thermodynamic and sustainable paradigms.

That the climate determines architecture and that architecture builds a climate is something that has always been known. The wise men of antiquity knew this, such as the poet Hesiod, who warned that, since "it will not always be summer," we must "find cabins." Vitruvius knew this, when he associated the origin of architecture with the crystallization of social ties and made these depend on the affinity of those who, approaching the fire, discovered comfort. Alberti knew it, when he established a parallel between the parts of architecture and protection against the cold, the sun and the rain. Scamozzi knew it, asking that architects be "also meteorologists." Philibert de l'Orme knew this, declaring that "it would be better for the architect to make a mistake regarding ornaments than to know the beautiful rules of nature, for the benefit of health." Semper knew it, as he associated the quintessence of architecture with the classic quaternary of water, earth, air and fire. Le Corbusier knew this, he whose notorious failures in artificial air conditioning — the exact breathing that he could not breathe — led him to bioclimatism. And, of course, the vernacular builders always knew this, skilled in erecting architectures that were as precarious as they were effective, validating that other truthful cliché that says that architecture is, in essence, refuge.

These precedents — and those that are easy to find as soon as one looks at the history of architecture with different eyes — show that the climate problem is not something new. However, when facing environmental challenges, architects today continue to profess faith in amnesia, the love for starting from scratch, for that naive faith in the tabula rasa that is sustained by the conviction that times we live in are fundamentally original. "To new times, new solutions; to a new Zeitgeist, a new architecture!", they seem to proclaim, as if they were still living in the 1920s.

That we cannot continue acting as modern "heroes" was taught to us in the past by Tafuri and Rossi. And that our times, although turbulent, are not so original, can be shown to us today by the examination of the architecture with which we still compare ourselves, that of the last hundred years. This was an architecture that, far from sticking to simplistic schemes, was very complex, and that, with regard to its relationship with climate, environment or ecology, was handled in a plural way, as shown by the brief taxonomy that we are going to rehearse here: the taxonomy of the paradigms that architects have used to understand their relationship with the environment.

The first paradigm would be the 'hygienist' of the early twentieth century, heir to the old Hippocratic tradition that prevailed in the West for two millennia, and who trusted in the healing powers of architecture, as beneficial channels of that air and that sun that it was intended to "take everyone." The hygienist is the paradigm of that Walter Gropius dressed in a bathing suit who lay on the terrace of his villa in Dessau, or that of Le Corbusier who placed children's games on the roof of his vertical city

of Marseille, or that of those architects of the *siedlungen* who, with splendid stubbornness, oriented the rows of houses towards the sun.

The second paradigm, which we can call "technocratic," was just as "modern" as the previous one, but relied less on "natural" air and sun than on their artificial equivalents: heating and air conditioning. The hypothesis here was that the powerful machinery of the twentieth century was, for the first time in history, going to break the forced dependence that architecture had had on the climate, so that the forms could return to themselves, become "pure." In their metamorphosis they could give rise to a language that, as Le Corbusier wrote in *Précisions*, would be the same both in the poles and in the tropics: the universal language of the Modern Movement.[1] The traces left by this improbable endeavour are many: they range from the wild visions of futurism to the also wild utopias of Archigram that Reyner Banham liked so much, and after them they include the more serious modes of high-tech of that Foster who, as a young man, had no qualms about wasting energy.

Hygienism and technophilia were the two predominant paradigms in the Modern Movement, but it did not fail to contain other trends that, although they were repressed for a time, ended up emerging during times of renewal. Renovating was, in truth, the bioclimatic paradigm, which was built by both those who had renounced machinism and those who had allowed themselves to be fascinated by vernacular architecture by virtue of its wise and economical way of relating to the environment. This new sensitivity for context, for orientation, and for materials was expressed in the fruitful readings of popular architecture by Sybil Moholy Nagy, Bernard Rudofsky, or Hassan Fathy, and in the deterministic but undoubtedly creative ways with which Victor Olgyay — through his never sufficiently considered *Design with Climate* — interpreted in a modern key the lessons of biologists, meteorologists and builders "without pedigree."[2]

The ecological paradigm of the 1970s was the greatest corollary of bioclimatic sensitivity, which had to mutate to face the first energy crises. He did so by first taking advantage of the potential of new technologies, to later enrich himself with the contributions of the biological sciences, and continue to be soaked, at all times, in the naive but no less influential ideology of hippyism in its many versions, from neo-agrarianism to the new age.

Although the return of cheap energy deflated the ecological bubble for almost two decades, the new crises that the millennium brought with it inflated it again, albeit with different technological and ideological airs. The paradigm derived from this process had a double condition. It was, on the one hand, thermodynamic, to the extent that it aimed to become more scientific, investigating the heat transfer processes that occur in human bodies and in body-buildings, and recognizing — problematically — the renovating, aesthetic side that thermodynamics could have. On the other hand, it was also a sustainable paradigm, since it echoed the dogmas that, in all instances, sought to respond to the challenges of climate change.

1 Le Corbusier, *Précisions Sur Un État Présent de l'architecture et de l'urbanisme* (Paris: G. Crès, 1930).

2 Victor Olgyay, Design with Climate. Bioclimatic Approach to Architectural Regionalism. New York: Princeton Architectural Press, 2015.

Complementary in principle, this double condition has only separated over time: if those who support sustainability have prioritized the quantitative sides of the problem to the point of promoting a kind of new functionalism — environmental functionalism — the champions of "thermodynamics" have attempted a difficult conciliation between the technical and the aesthetic. They have even aspired to a new type of beauty, "thermodynamic beauty."

Marked by ecological, health and geopolitical crises of uncertain outcome, our times are — it is true — facing new challenges. But this does not mean that, fundamentally, the ways in which we approach the problem of the environment continue to adhere to one of the aforementioned paradigms: hygienist, machinist, bioclimatic, ecological, thermodynamic or sustainable. In fact, rather than following a single scheme, our approach is now fruitfully hybrid, or eclectic: it takes from one paradigm or another what is of interest for it. From the hygienist, the obsession with ventilation — it is not in vain that we have lived in times of masks — from the machinist, the persistent technological confidence; from the bioclimatic, the learning of "architecture without architects" and the regionalism derived from it; from the ecological, the assumption of the complex and interdependent dimension of the processes that make up buildings and cities, and of the perceptive mechanisms that alter our behaviour through the environment; from thermodynamics, the knowledge of the heat exchange processes that regulate daily life and the conviction that it is possible to play aesthetically with them; and from the sustainable paradigm, the desire for quantification and the regulatory impulse, with all its techno-bureaucratic illusions and its economic opportunities.

As it was in the heroic times of "modernity," architecture continues to be the best laboratory to test these paradigms or call them into question. Not only because the supposedly modest scope of the buildings determines people's lives in many ways; but also because these people, through architecture, are forced into first-hand confrontation with their environment, opening or closing windows, extending or retracting awnings and blinds, turning the heating off or on, until they internalize the mechanisms again — today fundamentally forgotten — of common sense.

A place where climates and microclimates, techniques and ideologies come together, architecture — and especially architecture in minor tone — can become a true field of technical, compositional and pedagogical experimentation on our environmental practices. Some practices we already know have less to do with technical, sociological and political discourses foreign to architecture, or with the technocratic regulations and economic impositions of "sustainability," than with the essential, "internal" problems of the discipline. The same ones, to a large extent, that a Vitruvius, an Alberti, a Scamozzi or a Semper already had to deal with. Climate is not something different from architecture; climate and architecture are simply two ways of saying the same thing: "architecture."