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PROCESS OF ABSTRACTION AND NATURE

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From Neo-plastic Invariants to the Exclusive Variety of the Age of Electronics: The Process of Abstraction and Nature

The Electronic Age is a time of discursiveness of forms of knowledge, the problematization of knowledge, rather than their fixation in definitive, conclusive terms. To understand this, it is sufficient to consider the thought of Pierre Lévy, one of the most important contemporary scholars of the new electronic technologies, when he states that “virtualizing” any entity consists of discovering a general problematic to which it relates, shifting the entity in the direction of this question, thus “redefining” the initial activity as a response to a specific request, an answer to a precise question.

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In other words, passing by way of the virtual, I look at reality not as something already given but as an ongoing process, which adumbrates several solutions and re-solutions of the sphere of the real (therefore the virtual broadens the field of action of the real): solutions and re-solutions that can assume, at a certain point in their process, an "actuality" of their own.

Indeed, according to Lévy, the *virtual* is opposed to the *actual*, not the *real*. The real, in fact, is opposed to the *possible*.

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In particular, we are interested, as Gilles Deleuze writes, in "the relation between the actual and the virtual." The virtual "forms an acting individuation or a highly specific and remarkable singularization which needs to be determined case by case."

The more the actuality of solutions found is "perverse" (that is to say, capable of upsetting the order of things, surprising in them new points of view), the more they adhere, that is to say, singularize the events, making them appear in their singularity.

Coming now to the field of architectural design, it will be easy to see how the medium of the computer has acted in the direction of a real strengthening of the activity of creation, especially with regard to the moment of working out ideas, all the way up to the questioning of accepted methods and theories.

Leaving aside the aspects concerning simple speculation on form (a topic that I feel to be one of the least interesting from the standpoint of innovations it has brought about), I should like instead to highlight the kind of "problems" that today can be carved out around the concept of abstraction – one of the operations most in harmony with the act of designing, since it has always served to distance the specifically human activity of creation from the various forms of spontaneous creativity existing in nature, from sensible experience properly speaking. As we shall see shortly, thanks to the use of the computer the process of abstraction can lead to forms of real reconciliation with certain intrinsic pulsations of the natural environment. Therefore, it is possible to "redefine" once again the sense of the activities of abstraction, to widen the type of action on the reality of things.

Historically, the most interesting results in this regard are represented by the thought worked out by some well-known avant-garde movements that arose in the early decades of the last century, such as Neo-plasticism (or De Stijl) in Holland, and Constructivism and Suprematism in Russia, with unique repercussions on the activity of design. The interesting thing to consider is certainly the connection existing at the time between the development of the principles of mechanization and the shaping of reality itself, in which mechanization represented a sort of accelerator and key conductor of the afore-mentioned processes of abstraction. All things considered, looking at reality through the filter of a reigning mechanization would enable the refinement of the various processes of abstraction of reality, making them ever more powerful from an "objective" standpoint in their disarming simplicity, their obsessively serial nature, their blinding purity, and in this, as a result, ever more distant from the natural universe, the discursiveness of the natural world, and in particular from their eternal slipping into the meanders of improvisation and chance.

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According to Filiberto Menna, for the proponents of Neo-plasticism the term “abstract” essentially meant the “inventions of a system of art made up of constant basic units and of precise rules of grammar and syntax which made its functioning possible in different contexts. The abstraction of De Stijl has precisely this essential meaning: reducing the endless variety of the universe of phenomena to limited, constant elements, that is to say to real and proper invariants.”

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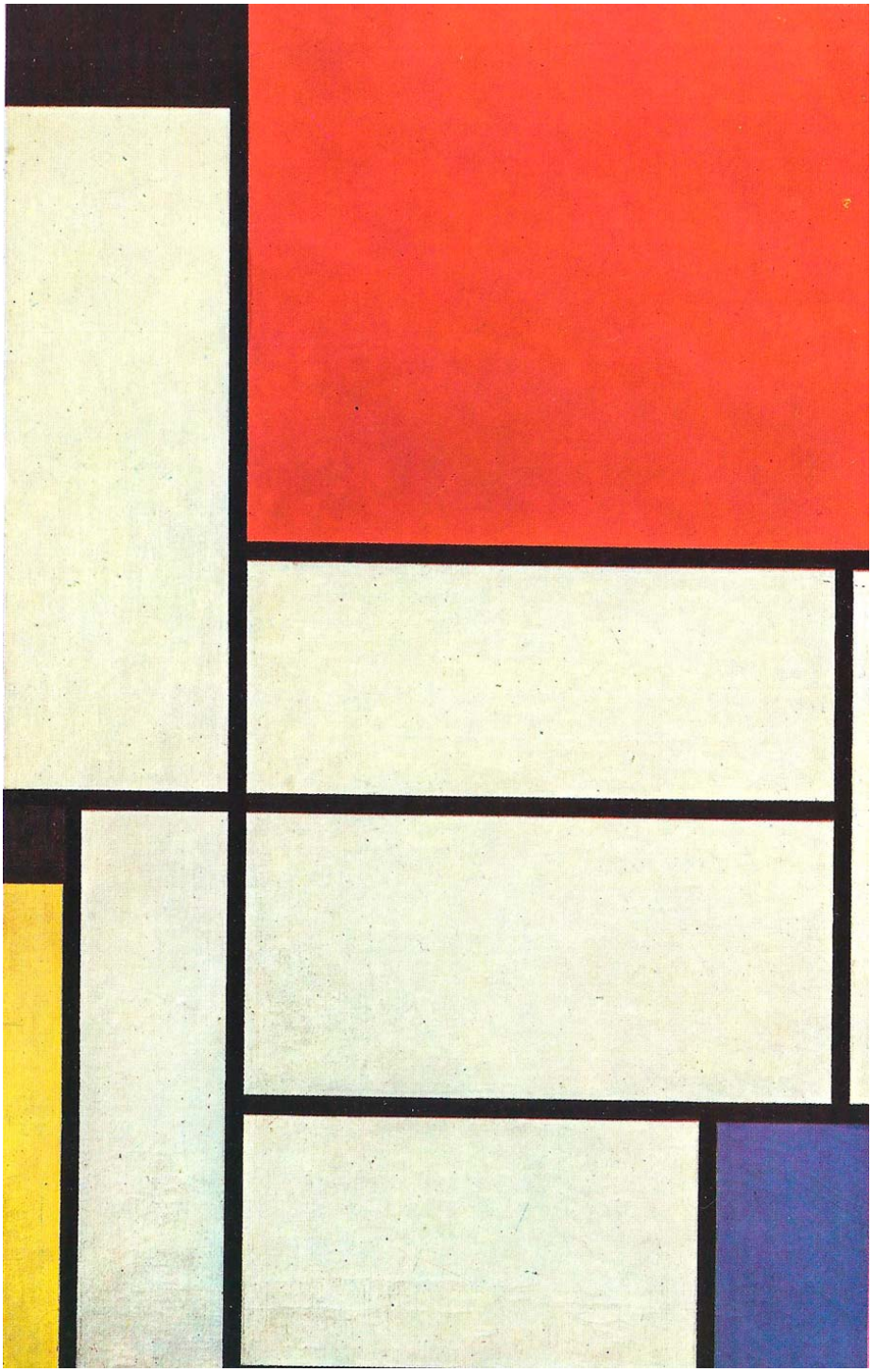

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Piet Mondrian's main objective was in fact to create an "anti-naturalistic" balance by means of a dense system of horizontal and vertical lines and right angles which clearly left no room for the transversal nature of events, for what Mondrian himself called "the tragic," i.e., that which could ruffle events and make them appear in all their dramatic fatefulness.

It is a matter, then, of linguistic "invariants" (something that does not exist in nature, where everything is in flux and indefinite), like the primary colors that are associated with them: red, blue, yellow (which equally do not exist in nature, since in nature everything is shaded, nuanced, sketchy).

Man, in short, had to find his own schemes for the construction of the real, which must not contain anything mysterious, anything that could not be grasped at first glance. Of course, all one has to do is think about it for a second. It is all too easy to get lost in the unexplainable beauty of a sunset, a rocky landscape, a pulsating ocean. In this the lesson of Neo-plasticism is outstanding for the lucidity with which it intellectualizes the vision of the real and puts an end to easy sentimentality, to forms of predictable wonder, since nature, we know, is an object of giddiness for the senses, of the loss of self-control.

The artist, instead, according to the principles of Neo-plasticism, has to retrace – find the trace of – a creative tension of the parallel world, where man is the creator and nature a memory to be kept, if anything, in the background.

Thus it is that, on a more constructed plane, properly speaking, the Neo-plastic visions have nourished the development of rationalist thought in architecture, indicating the optimal use of the principles of mechanization in view of the creation of an urban environment that can organize human functions, in which these appear above all determined, organized and handled rationally in environments squared off by time, rigorous in their orthogonal structure, practical, veritable "machines for living," set up according to principles of serial production and the standardization of behavior.

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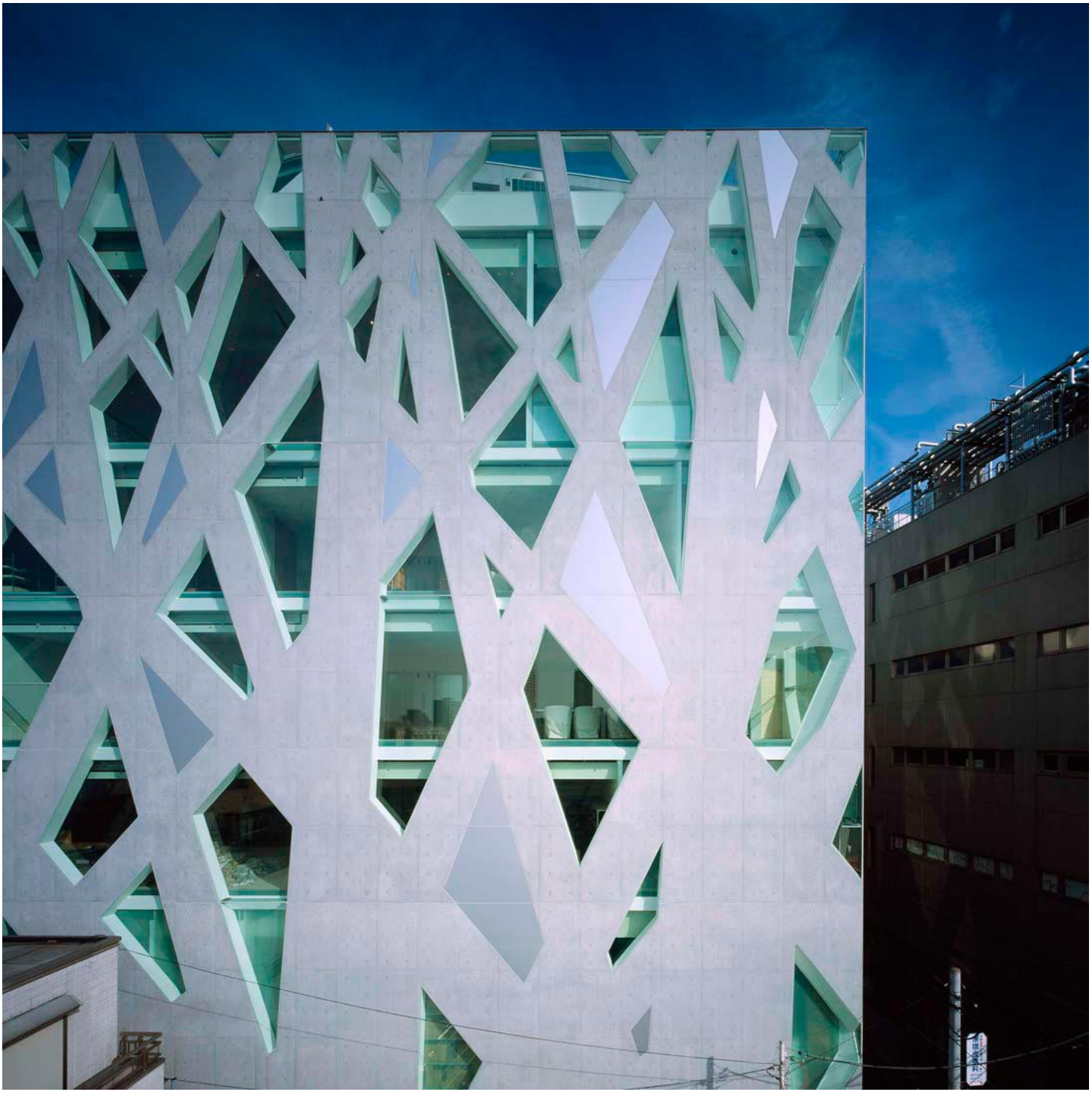

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But let us look instead at what is entailed today in the emergence of electronics in relation to the topic of abstraction. In particular, I would like to do this with reference to the design method of Toyo Ito, one of the contemporary architects who to my mind is, better than many others, experimenting with and making the best use of computers in drawing up his plans.

After starting from almost "mystical" positions with regard to the universe of information technology – his *Tarzans in the Media Forests* (1997) is exemplary– Ito today has reached the point of thinking of the universe of the media as that best-suited to rediscovering the meaning of material at a moment in history when everything seems to go in the opposite direction. Especially interesting in this regard is his position on the subject of "the organic as a working method," since thanks to the use of the computer it is possible to rethink the concept of "abstraction." Even if it is evident that Ito certainly does not intend to allude to a recovery of the organic forms typical of Expressionism, his reference to the natural world appear predictable. "I want to achieve organic as a working method," he says. "A little while ago, I spoke about an area where man is merged with nature. When this is paraphrased, it is area where generated dynamics and abstraction are synthesized."

Following the thread of these statements, in my opinion, the use of the computer now entails a type of abstraction no longer guided by the desire to clean up the vision of the real, freeing it – as we have seen – from any emotional cracks or rifts, but to enrich it through the possibility of abstracting its most expressive signs, now given value by the processes of erudite translation which the computer enables with digitalization, making them available as an artificial universe (spaces that can be inhabited and traversed by human beings) and yet still pulsating with their original vitality.

To summarize, for Ito the goal seems to be that of "holding together," not of "distinguishing" during the phase of working out his plans, starting first and foremost from the possibility of joining together the form and structure of the buildings in one surprising unicum, since it is not possible to distinguish the prevalence of one over the other on the basis of the results achieved, to the point that, in some of his plans, it is as though the *immediate* universe of nature and the *mediated* digital universe merge together in the production of the "new real."

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A very good example is the building designed by Ito several years ago in Tokyo for Tod's. In that case it was as though the silhouette of a row of trees, once digitalized, appeared for the first time, making it possible for the first time to explore its intimate makeup and the relations existing between it and the birth of an inhabited space, with all the overtones of visual secrecy, of mystery (interwoven branches, effects of transparency, picturesque angles, etc.) that the perception of a tree brings with it. Thus the silhouette of the trees became the skin of the building, defining at the same time its structure of concrete, roof, openings, and decoration in accordance with the principles of what can be called a "structural surface" capable of taking the place of the old concept of a "wall surface." This was made possible by the structural analysis carried out by the engineer Araya, who studied how the static stress could flow into a complex network of intersecting branches like this one. Not to mention the positive repercussions of this from the seismic standpoint, since it already contained within itself the possibility of a diffuse distribution of seismic shocks, rather than concentrating them in one point, as shown by the diagrams accompanying the plans of its possibilities of deformation in case of an earthquake.

As Ito stated, "All the branching shapes were immediately digitized to create a simulation, which was then repeatedly amended and adjusted toward an equilibrium within the chosen parameters; each partial change in the shape of a single branch would affect the equilibrium of all the other branches, hence the permeations were potentially limitless.

Araya's efforts at analyzing complex stress flows would have been next to impossible a decade ago. Computer technology has revolutionized our ability to dissect structural forms – columns, beams, braces, walls."

Ito imagines that a design like this must envelop space like a thin film, expanded in the form of material energy so as to make perceptible a certain difference between being inside such a life system or, on the contrary, observing its development from the outside.

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In this sense, our relationship with the natural element, through the medium of the computer, changes completely. This is because the computer enables us to work creatively on the natural element, and there is no longer a need to demonize its sign. In this way, it is therefore possible to re-establish a proactive relationship with nature, certainly not out of a form of new sentimentalism, but in order to try to evolve in the direction of a meaningful, elastic sense of the material, at least as much as the certain richness of details and dynamism of vision that the natural universe unquestionably contains.

This is certainly an interesting way to recover and to value our relationship with the natural

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environment.

So, it is not the case here of banal operations by which buildings, thanks to the computer, end up taking on a formal complexity similar to that of nature, but of studying this complexity thanks to the means offered today by electronics and utilizing this complexity in a new and newly performative way.

If before nature was a backdrop, today it acts as an imprint.

But it is not a mere imprint. Through it, in fact, we can rediscover the pleasure of material things, "a new real" material power in architecture, as Ito has said, up to the configuration of spaces which, even while being designed at the computer, contain the pulsating universe of a world that seemed forgotten, faraway. Thus, "organic as a working method" ends up involving the entire conception of the building. In this regard, Ito sums up his two main objectives as follows:

1) Liberate architecture from staid prevailing forms via dynamic stress flows. 2) Transform Modernist "less-is-more" minimal spaces into primal "real places" in tune with nature.

In this sense, then, it is not a matter of rejoining oneself to the natural universe by falling back on the element of so-called "sustainability," today more fashionable than ever, which in many cases does not go beyond the use of ecologically correct materials and other similar stratagems to claim a harmony between architecture and nature, but of rediscovering through the computer the interrupted tie with nature on a deep level, the level of experienced sensations. As proof of the fact that "sustainability" must exist above all in thought and cannot certainly be reduced to a sort of "taking refuge" without in the meantime setting in motion a serious program of research to rethink design in relation to "ecological" functioning, take, for example, the birth of new architectural forms capable of making optimal use of materials like solar cells and the like.

To sum up, the computer does not create distance but intimacy, mutual accord.

Just as the World Wide Web has enabled the birth of virtual communities, many of them actively taking part in the shape of everyday life, in its politicization, thus the working out of ideas at the computer can contribute in an effective, intelligent way, alternative in the true meaning of the word, to the rediscovery of pleasures and sensations which we had thought were lost in the extreme uniformity of the built environments, but now are reactivated and in circulation once again.

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More generally, we could say that the changes of course brought on by the Information Revolution concern a self that is no longer *introverted* but *extroverted* and therefore capable of a free and freeing confrontation with the context surrounding it and thus also with the natural universe.

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