

"Architecture is a hazardous mixture of omnipotence and impotence. Ostensibly involved in 'shaping' the world, for their thoughts to be mobilized architects depend on the provocations of others – clients, individual or institutional. Therefore, incoherence, or more precisely, randomness, is the underlying structure of all architects' careers: they are confronted with an arbitrary sequence of demands, with parameters they did not establish, in countries they hardly know, about issues they are only dimly aware of, expected to deal with problems that have proved intractable to brains vastly superior to their own. Architecture is by definition a *chaotic adventure*.<sup>1</sup>....

Architecture is a very bizarre profession in the sense that it is a poisonous mixture of omnipotence and impotence. It is obviously true that our dreams and fantasies are megalomaniac, and we are doomed to wait passively for occasions where we can realize fragments of that **megalomania**."<sup>2</sup>

Rem Koolhaas

Architecture's need to cope with the contemporary requirements and the continual up-growth and evolution of technology and in general of our current lifestyle, set the designing process and techniques on a new trajectory.

### **Redefine architecture**

In the year of 2000, the end of the 20th century and the beginning of the 21st century, the applications of computer had already changed the design method, especially the technology like the virtual reality, CAD/CAM technology, and Internet.

The computer programs became the new tools of the design process; through them we can track down the existent relations, create diagrams (as relations-decoders, and "compressions of information") in relation with the parameter of time and finally implement them in the form.

The rapid evolution set up new intensions, new theories and design approaches, which declines the concept of architecture, as an individual figure, embodies it as a continuance and as an assemble piece of the total.

Many of the architectural elements had been redefined, such as function, form, volume and space. The debate of the computerization has been shifted from the more technical issues into the issues related to the digitality of architecture. Architecture now does not just "come up". This "new architecture" is generated from researches, reason, and continuation.

The place-ground is transformed from a simple background into a dynamic field. The surface of the ground is released from its static and non-active role in order to contribute in the generation of the "new architecture".

Peter Eisenman proposes that architecture is always framed by the ground it occupies: it the ground in its broader sense that allows us to recognize the traits of architecture as a figure. "Places have energy of their own, built up throughout their history by physical or spiritual phenomena. Any human action should amplify the energy of a place, give the place energy, never detract from it."<sup>3</sup>

Building projects may be, like nature, developed and realised in real time, but the rules that guide their developments exist outside real time. The entire conception of architecture is based upon events which, it is assumed, will take place. Events being to some degree unpredictable, architecture projects are, unlike nature, essentially speculative. Computers conceal a whole eschatology of creation. They lead us into conceiving spaces, which are no longer homogeneous but are, like nature, continuous, coherent and differentiated.

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<sup>1</sup> **S, M, L, XL\_OMA**, Rem Koolhaas and Bruce Mau\_The Monacelli Press, USA, New York\_1995

<sup>2</sup> **S, M, L, XL\_OMA**, Rem Koolhaas and Bruce Mau\_The Monacelli Press, USA, New York\_1995, pg.926

<sup>3</sup>VG: Energy as an impulse, M.Gausa, V.Guallart, W.Müller, F.Soriano, F.Porras, J.Morales, **The Metapolis Dictionary of Advanced Architecture**, city, technology and society in the information age, Barcelona, ACTAR, 2003, pg.194

## Complexity

To continue, Christopher Alexander develops a comprehensive theory of how matter comes together to form coherent structures. Paralleling, but not copying, recent results from complexity theory, he argues that the same laws apply to all structures in the universe; from atoms, to crystals, to living forms, to galaxies. Human beings have a built-in (though subconscious) understanding of these laws. Man's creations have the option of following the same laws, or violating them and result either as artefacts, as buildings, or as cities. *"The greatest architecture is complex and coherent; but neither random, nor simplistic. By understanding how to generate "life" in built structures, we can drastically improve the way buildings and cities relate to people."*<sup>4</sup>

For him, the building design is attached to the existing urban fabric. The new building should blend seamlessly into the existing complexity of nature, built form, and human activity in the immediate region.

*"The structure of life I have described in buildings -- the structure which I believe to be objective -- is deeply and inextricably connected with the human person, and with the innermost nature of human feeling... the inner feeling in a building, where there is a kind of personal thickness -- a source, or ground, something almost occult -- in which we find that the ultimate questions of architecture and art concern some connection of incalculable depth, between the made work (building, painting, ornament, street) and the inner "I" which each of us experiences.*

*What I call "the I" is that interior element in a work of art, which makes one feel related to it. It may occur in a leaf, or in a picture, in a house, in a wave, even in a grain of sand, or in an ornament. It is not ego. It is not me. It is not individual at all, having to do with me, or you. It is humble, and enormous: that thing in common which each one of us has in us. It is the spirit which animates each living center.*

*I believe that the ultimate effort of all serious art, is to be making things which connect with this I of the person. This "I," not normally available, is dredged up, forced to the light, forced into the light of day, by the work of art.*

My hypothesis is this. That all value depends on a structure in which each center, the life of each center, approaches this simple, forgotten, remembered, unremembered "I." That in the living work, each living center really is a connection to this "I." . . .

*the I, which lies at the core of our experience, is a real thing, existing in all matter, beyond ourselves, and that we must understand it this way in order to make sense of living structure, of buildings, of art, and of our place in the world.*

*That very difficult intellectual path, is the path which lies before me.  
I shall try to persuade the reader that this is literally true".*

*Christopher Alexander*

## Intelligence

Intelligence distinguishes human beings from all other life forms. Much of our intelligence results from (or is manifested in) our ability to construct artefacts. A central component of the human intellect is devoted to establishing connections, such as those between elements in a design that leads to an artistic advance; or those between cause and effect that leads to scientific understanding; or between ideas and applications that leads to a technological advance. Human beings are the best information processors among all the animals. They are unique in that they merge their physical and psychological needs. This is accomplished through culturally-conceived expressions that stem from innate urges to make objects ranging from hand-held artefacts and ornament, to buildings and cities. More than just seeking to provide basic shelter, architecture throughout the ages has found expression in the application of these life affirming urges through human intelligence.

Innate intelligence represents the deepest type of information processing, common to all people, and thus is not the exclusive domain of architects. An engagement with the material

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<sup>4</sup> Christopher Alexander\_ <http://math.utsa.edu/~salingar/contr.arch.html>

world generates meaning and awareness for everyday human beings, but it takes training, practice, and discipline to understand the process by which this interaction occurs. This knowledge is essential for architects if we are to conceive the built environment in a way that connects to humans on this level. Architects can employ this process to re-create built environments that utilize patterns, spaces, and textures in an effective manner to nourish human existence.

The same intelligence produces all cultural elements: dance, music, song, sculpture, and painting. Trying to separate artefacts from the greater context of culture — defined by religion, mythology, and social patterns — goes against the nature of humanity. These complex forms are part of a larger, all-encompassing matrix extending human intelligence.

Intelligent architecture is responsive to human needs and sensibilities through adaptation to existing buildings and nature. This is a new way of viewing the world a way of connecting to it, and to ourselves — yet it is very much the same as the most ancient ways of connecting (Alexander, 2002-2005). It provides a way of judging whether a building or piece of urban environment is good or bad for our emotional health. Yes, a building can be either good or bad, to different degrees (Salingaros, 2006). Every piece belongs exactly in its place, and has exactly the right shape and materials to reinforce the overall coherence of the whole. It contributes to unity and adaptivity.

The overall form of the building arises out of basic human concerns, and becomes clear only towards the end of the design process. Starting with a pre-conceived form is working from a conditioned response, not an intelligent response. The design procedure starts with no preconceptions of form, but instead generates a physiologically nourishing vision of the building from the viewpoint of the user. It conceives an organized whole whose interior and exterior are revealed simultaneously. This vision should include portions of the building at different scales, including very small details.

The key to a new architectural form resides in the knowledge of how physical/ biological structure evolves and holds together; knowledge of complex interacting systems; knowledge of the adaptivity of forms to forces and changing conditions; and knowledge of how our intelligence binds us with the physical world.

### **Culture**

It is a fact that there is a continuous interaction between space and human, that is expressed in different ways. Every architectural project, like any object, becomes comprehensible through the process of perception, that changes the messages of senses in individual experience and knowledge. But, during this process the exterior stimulus is degraded; the conceivable picture of the building is never identified with the real picture of building. The internal picture is charged with various types of meanings that are automatically given by the individual, meanings that are related with his cultural particularity, his education, his mental outlook, and even his disposal.

The symbiotic relationship between ideas, images, texts, and biological forms helps to explain how human culture, consisting of created objects as information, essentially extends our biological bodies into our environment (Alexander, 2002-2005).

The problem with this occurrence is that any cultural element separated from its human connection becomes vulnerable to loss of meaning and relevance. Once removed from its cultural context, there is no real (that is, an obviously practical) reason for its survival, or even for its existence as an isolated entity. In this condition of “not belonging”, the anchor points of human culture seem out-of-place, and are all too often replaced by meaningless images of industrial consumption.

Creativity, driven by human intelligence, has been the source of the incredible richness of cultures throughout history. Human beings ceaselessly strive to give form to their advancing intelligence in the complexity and organization of their greatest cultural expressions.

Architecture can be analyzed in two components, art and technique. The first is unspecified, altered and un-comparable, contrary to the second one that can be characterized considerable, foreseeable and valuable. As Alan Colquhoun points out: “From all the arts, architecture is the one that is offered more for use of rationalism. A building has to satisfy real

and constructional criteria that bound, or even more determine the field in which the imagination of architect acts". However, even through the experiences of the most rationalist architect, who deals with the most restrictive program, exists the moment where he creates a generic form as an expression of the concept.

*"You employ stone, wood, and concrete, and with these materials you build houses and palaces: that is construction. Ingenuity is at work. But suddenly you touch my heart, you do me good. I am happy and I say: This is beautiful. That is Architecture. "*

Le Corbisier

### **Bibliography:**

1. **S, M, L, XL**\_OMA, Rem Koolhaas and Bruce Mau\_The Monacelli Press, USA, New York\_1995
2. **The Metapolis Dictionary of Advanced Architecture**, city, technology and society in the information age, Barcelona, ACTAR, 2003

### **Internet:**

3. <http://math.utsa.edu/~salingar/NatureofOrder.html>
4. <http://math.utsa.edu/~salingar/contr.arch.html>
5. <http://math.utsa.edu/~salingar/memes-english.html>
6. [www.cicaarchitecture.org/texts/is\\_yok.htm](http://www.cicaarchitecture.org/texts/is_yok.htm)