

ICT as Generators of a New Paradigm in Architecture – Humanism and Scale

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Abstract. *Despite the global and universal characteristics of nowadays' society, the new information and communication technologies, seem, in paradox, to direct Architecture to growing individualism, shown in the nervous search for each one's form. This path seems to end up in cities filled up with iconic buildings with no respect neither for the consolidated built environment, nor for the human being. Known as an innovation tools, with huge power and able to make all the visionary and utopian projects become real seem to further Architecture away from its humanist basis. The architect, selfish and egocentric, dives deep into his own craziness, in an era where the new technologies allow everything. If boundaries are not established, a new architectural paradigm is anticipated, where all the individualisms live but that the individual cannot inhabit, and where the innovation seems to enter in conflict with built heritage.*

Keywords. *ICT, form, expressionism, individualism, humanism.*

Digital Expressionism

Have a glimpse at the horizon, open a magazine, an architecture book... what do you see? (Fig.1)



Figure 1. 'Architectures', multiplicity of design approaches

Cities filled up with iconic, complex, vainglorious buildings, that move, turn around, flick. 'Wow architectures' (Stanley, 2008), urban sculptures with function, or simply, as Mitchell (2005) refers to them, objects of an architectural fashion. They are plastic, fluid, innovative, outstanding, sensual and almost random, or in other words, simply expressive.

Kolarevic (2003), intentionally uses the plural 'Architectures' to represent the multiplicity of approaches brought out to the mainstream of architectural practice, through this digital revolution. These objects have found their expression on highly complex, curvilinear forms that denote a total absence of style and seem to closer architecture to a pure art, as they put the tonus on formal and individual expressiveness.

The search of form, seems, in fact, to be the modus operandi of these new digital architectures, in a time where the modernist doctrine 'form follows function' has never been so challenged and overruled.

Despite the formal differences, these digital design approaches have the use of ICT in their conception in common. The ICT, here seen as the tool architecture has always dreamed of, and being

obvious that there is a direct relationship between the tools used and the objects produced, seem to push architectural designs to a growing formal expressiveness. Why?

In a recent pre-digital era, architectural drawing (sketches, plans, sections and perspectives) was the only available tool for architects to think and communicate their ideas. It always constituted a fundamental tool for search and information registry, as well as a fantastic mean to invent and think architecturally. However, it would be quite restrictive and inflexible, as far as the representation of more complex ideas and spaces were concerned. The two dimensions, even with tricks to simulate the third and with the great gift of perspective, haven't always been enough to represent the reveries of the most brilliant minds. Rafael Moneo even speaks about forgotten geometries lost to us because of the difficulties of their representation. (Kolarevic (ed), 2003) Plans and sections are deterministic and only act as representations of the thought object, not positively contributing to its conceptual development. Furthermore, technical drawing is an elite language, not perceived by everyone and therefore a poor generic communicator. Adding to this we might bring the famous Mitchell (2001) sentence 'Architects build what they could draw' which clearly identifies that architecture had always been restricted to what could be represented from the mind to the hand, to what was possible to draw.

Despite the fact that the first CAD programs have already contributed enormously to the architectural processes, they could have been compared to electronic pens or sophisticated typewriters, working in the same way as the tradition drawing techniques, as mere representations of the thought object. (Schmitt, 1999)

The big innovation comes with programs that simulate the thought reality and were the architect can visualize his ideas and concepts in real time, instead of only serving to represent ideas previously thought with pen and paper. The architectural object is tested in 3D from the first minute.

In this way, the ICT, instead of being mere representative tools, introduce two new concepts to the traditional design process: simulation and manipulation

Simulation here understood as the act of representing an idea, a space, a volume, or an object on a computational surface, where it will be seen, in three dimensions, by the designer, the client or the user. Almost like a real model, but without the scale issue, since a real scale physical model would be needed to simulate the actual space.

The ICT's three dimensional models also introduce the concept of interactivity between the designer and his idea. Therefore, they are no longer a mere representational tool but actually a part of the design process, through which the designer can see, feel, and live his idealized space in the computer screen.

The manipulation is just the next step of this real time simulation. This concept comes with the transformative capacities of the ICT and the computer, that allow designers to change, model and alter the architectural objects according to their formal judgments towards the visualization their perceiving. All the transformations made, can as well be acknowledged in real time, giving the designer a greater control towards his ideas, only stopping when the object works like he wants it to.

In this sense, there is a shift from a linear process where the spaces are merely represented and can only be experienced after they are built; to a cyclic process where the designer lives the space interactively and models it consecutively according to his ideas. Instead of only being possible to experience a determined space after it is built, the designer automatically inhabits his projected reality through the screen.

Despite being visual and representative tools, the ICT are, at the same time, truly transformative tools that invoke the constant experimentalism in architecture. As well as responding to the problems in representation left by the traditional design techniques, where designers had sometimes to use unusual modes of representation (paintings, collages, photomontages, trompe l'oeil, etc) to visualize and validate their ideas, the ICT allow an enormous and endless range of rapid transformations. Their flexibility allows the representation and simulation of the most complex forms and shapes as well as the constant conceptual innovation.

Thus, and through the cyclic process they enable, the ICT can, in fact, act as catalysts of new ideas (which would be of very hard attainment if the traditional processes were used) and be held responsible for the nowadays architectural expressionist panorama.

Their transformative capacities allow a break towards all the previous limitations, being that, for the first time, we are supplied with a tool that permits all the representations, simulations and manipulations. Designers can today visualize their reveries and the sentence 'what if?' becomes a constant in the design process.

Ideas generate ideas, and the mere graphic representation of architectural objects, associated with traditional design techniques, becomes a fallacy.

To sum up, architecture has today at its disposal, the tool that enhances the arousal of new ideas, that enables the overcome of all the established boundaries and that seems to open a new world to architectural design. Architects are no longer restricted to what they can draw, to what they can think, to what they can visualize only with their masterminds or to what they can build, since the construction technologies have accompanied these evolution of design and thought. It is now possible, for the first time, to question everything and to ignore all the previous conventions associated with the traditional modus operandi of architecture. The architectural concepts evolve through constant interpretations and manipulations made by the architect or technician, on the computer screen. The constant visualization of

the made transformations activates creativity and allows the architectural object to surpass itself constantly, based on the original concept and on the aesthetic decisions made by the architect. 'A "self-reflexive" discourse in which graphics actively shape the designers' thinking process'. (Kolarevic,(Ed),2003)

From these constant manipulations and creative inputs, it might be the case where ICT even generate "alone" random and unexpected forms, to be then judged by the designers' perceptual and cognitive abilities. The unpredictable and unexpected is today allowed by ICT's generative capacities. Moreover, it is admitted and intentionally sought out as a way to poetic invention.

This experimentalist and 'speculative' path seems to bring up a new form of architectural thought that ignores all the constraints and previous conventions, in favor of constant conceptual innovation. The constant conceptual innovation seems to be translated in formal, expressive, fluid spatiality. (Kolarevic,(Ed),2003)

'Siteless' and 'Humanless'?

Architecture was in time reflected in equations like 'firmitas,utilitas,venustas', 'form follows function' or 'program plus site equals form'.

Today, and as previously exposed, these tendencies are completely inverted, being manipulated by the ICT and thrived by constant individualism and aesthetization through the constant experimentalism in the quest for form.

Blanciak (2008), in his book "1001 building forms" rises the scary question: 'What would happen if architects liberated their minds from the constraints of site, program and budget?'

The answer is more lurid than the question. One hundred and fifteen pages filled up with shapes, for buildings. As if nothing mattered, the shapes come upon, page after page, round, sharp, concave, convex, curvilinear, perforated, with neither idea nor context, with neither program nor function. It is appalling to think that you open a book, pick a shape, put a function on it, and voilà! architecture. (Fig.2)

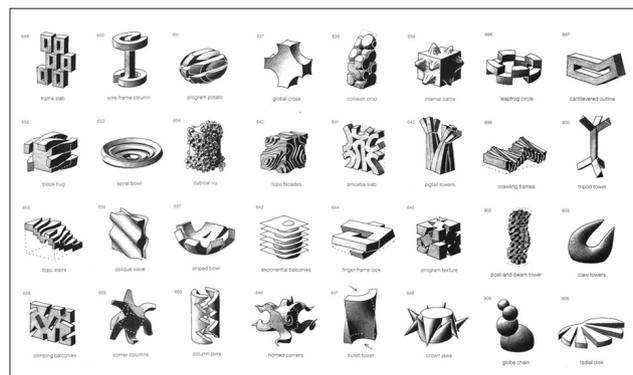


Figure 2. 'Siteless' and 'humanless' shapes for buildings

Even more appalling for this book to be called the first manifesto of XXI century architecture.

Excluding the radicalism of what Blanciak (2008) defends, as well as the reduction he makes of what architecture is, these pages clearly reflect the importance of form, its randomness and its individualism, brought up by ICT's architectural evolution of thought. They clearly portrait the architectures for the sake of form.

Today, everything is reduced to formal expressiveness in a constant quest for originality that marks the death of the universalism present on the modernist principles.

The possibility given by the ICT to concretize all these formal objects and its virtual existence on the screen, make the architect dive deep into his formal egocentrism. He becomes grander in his interventions, seduced by his image on the computer screen. Being the external limitations tenuous, the technological restrictions null, the architect, selfish, inebriated and seduced by his visual and aesthetic impulses, becomes slave of his own tests, intrigues and constant manipulations.

All the approaches are so different because they are individual, fact that translates itself into different architectures that come out only of the pure aesthetic judgment of the images they create.

Architecture today is image, and the images seduce on the screen, making architects fall in love with it, almost in an alienation and abstraction of the real.

As Leach (1999) defends, the screen and the images distance architects from the real as all the aesthetization keeps them anesthetized and kept in aesthetic cocoons.

These architectures are vain, mirror of a narcissistic architect, translated into seductive and complex images. The forms and images are fluid, appealing to the feeling and sensorial distraction. The spaces are complex, sometimes uncharacteristic and inhuman. They are architectures for architects, being the future inhabitants of the spaces the great absence in this problematic.

Leach even defends that the architectural design is being reduced to the superficial play of empty seductive forms, and, furthermore, that this art of imposition of architects towards the built environment might content fascist impulses. They do, in fact, impose (to the built environment and to the human being) their seductive, narcissistic objects, as if they were Gulliver. (Leach, 1999)

They assume an authoritarian position towards their digital model, only based on aesthetic judgments and then impose the result of their formal quest to the inhabitants of the spaces. The result? Cities filled up with iconic buildings, to be looked from the sky and not to be walked through, at a human scale. Instead of designing architectural qualified spaces that promote a rewarding and pleasant experience to the user, designers are making sculptural landmarks rise everywhere.

It is, in fact, a power game that architectures seem to be winning in favor of the other constraints like function, site, urban fabric or simply the needs of the human being.

For the future's sake, architects should remember that 'with great power comes great responsibility'. (Parker, 2001)

The social concern inherent to architecture seems to be incompatible with the world of ICT and complex images.

The comfort and the life if the characters that play in the built environment seem to have lost importance, being these forced to inhabit uncharacteristic and expressive spaces, that most of the times don't even accomplish the function, or in this case, the excuse, for which they were built.

Conclusion

Despite all the technological evolutions, the alterations in the daily life, the growing interactivity, mobility, globalization, leds and cell-phones, individuals are still individuals, and their needs haven't actually changed that much.

No one will want to dress metallic suits and feel sick on a round complex confusing building. No one should be forced to do so, since today's society doesn't allow fascisms, not even architectural ones.

If the baseline principles, intrinsic to the great art of architecture are forgotten, we might all ended up designing spaces for

computer games. Not because they are impossible to build, but because they are impossible to inhabit.

Architecture should continue to be an art, that through innovation responds to a specific problem, has a specific function and that arouses from a determined and unique concept and that reacts to a determined site.

Being a humanism discipline, it should continue to respect the life and the people that inhabit it, instead of only being a mere formal and personal exercise.

ICT's contributions to design are undeniable. Nevertheless, they shouldn't be the only goal and method of architecture as a humanist discipline. There is a lot more to it. Let's hope for the end of unlimited excesses.

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