

Architecture of emptiness: Human flows as generators of shapes in future architecture

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Abstract

In this article we will try to discuss the existence of a series of haptic and perceptual indicators that allow us to correlate certain spaces as the most adequate for determined activities in an almost unconscious manner. These 'potential' or 'aprioristic' spaces would be nodes or intersections of a map of invisible flows that would demonstrate an underpinning in which future cities could be established upon. Diminishing the contemporary architecture's mass would be a way through which the above mentioned flows could be materialized. We are not suggesting an 'organic' shaped architecture, only an architecture that is free from its Cartesian bonds, allowed to express itself an ordered recreation of the chaos that is hidden below the corseted geometric systems that define today's architecture and urban planning. The human body would no longer be defined in its movements by architecture. By the contrary, architecture would be moulded, in its form and logic, by the human reason and shape.

Keywords: *architecture, mass, flows/shape, perception, potential spaces.*

1. The architectural object's mass historical evolution:

There are many parameters considered by historians and theorists when it comes to analyse architecture's evolution process since its first manifestations till nowadays. There is, however, an indicator that has been disregarded and that is the architectural object's mass and its variations through time, which can offer additional information in architecture analysis. Knowing its evolving process might become very useful when conjecturing future scenarios of our built environment. In order to understand this process it is necessary to historically contextualize certain periods, although we are fully aware that history is made of parallel flows that evolve discontinuously according, for instance, to its geographical location. Therefore, it is not accurate to bound history to a chronological scheme, as each historical flow as its own rhythm and braking points, but still we felt the need to simplify some historical moments in order to make it easier to clarify the purpose of this article.

Some architecture scholars and critics consider the appropriation of pre-existing natural structures as the first architectural manifestations. Even if in these actions there is no actual physical manipulation of the environment, it is undeniable that the cave's occupation and adaptation could be the first signs of a rational spatial appropriation and therefore, the prelude of architecture itself¹. With the cave as a starting point (whose mass would be equal to zero), there is a process taking place by man where technical progress would determine different turning points in the history of construction. After the cave the Neolithic hut would be the first 'artificial' manifestations of man's territorial appropriation. We can say that in this stage architectural mass makes its appearance as an architecture intrinsic element, even if its amount it is almost negligible². With earthen and stone construction processes appears a fundamental element: thickness. Cities like Catal Huyuk (7500BC), located in what is now Turkey's territory, are

¹ PEREIRA Alonso, José Ramón (2008), 'Introducción a la historia de la arquitectura' Editorial Reverté, Barcelona, p. 19.

² PEREIRA Alonso, José Ramón (2008), 'Introducción a la historia de la arquitectura' Editorial Reverté, Barcelona, p. 23.

considered the first (among the ones that are known) to use stone and clay as supporting structures. Therefore, mass is no longer a circumstantial element, but part of the technical solution³. From Egyptian architecture, that represented a great step forward in the use as mass as a constructive element, until the Baroque architectural style, monumentality was searched through the use of stone as its main building material. Like Sigfried Giedion said '...there is a direct tradition (...), that relates art of our time with the Nile Valley from 5000 years ago, as Greek artists made their learning from Egyptians, and all of us learned from the Greeks'⁴. Being aware of Giedion's statement and the historic correlation between classical culture and the Egyptian civilization, it is easy to understand why monumentality which is associated with mass and volume has been a common association among Egypt, Classic Greece and the Roman Empire.

Since these three stages and until Gothic, the building's mass or volume, mainly religious, military and those of the elites and leaders, was based in construction processes where stone and its heaviness were fundamental structural elements, necessary for an efficient structural behaviour of these types of buildings. Therefore, in most cases, mass was a need, not a porpoise, to achieve the intended monumentality. Yet, in those examples, when it was intended to lighten the mass of the building, limitations were imposed by constructive solutions that had hardly evolved since the introduction of the arch and the vault by the Romans. But mass, an active element until the Romanic style is converted in a three-dimensional vector system in the Gothic style, where this scheme obtained its major expression⁵. But the Renaissance, since it was based upon the interpretation of classical Greek and Roman orders, gave back to mass and volume the lost role in the Gothic architectural style⁶. Baroque, based upon a scenographic character and the pursuit of movement, manages to propose new shapes, but these were still bonded by the imposed structural needs⁷.

The 19th century and the industrial revolution would be the turning point where new materials (iron, steel, glass and concrete) and new construction techniques managed to reduce the building's mass through the use of lighter structures. That meant, in time, a cheaper and faster construction⁸. In a first phase these materials and building methods were still 'hidden', as it was intended to keep the classical features, in terms of mass and volume, throughout an optical 'illusion': iron and steel lightweight structures, for instance, were concealed under mouldings and claddings that would recreate typical classical orders, even if these new materials manage to achieve dimensions and proportions unknown till then⁹.

With the Modern Movement and its followers as its main promoters, the 20th century architecture employed 'curtain walls' where huge surfaces of glass over metallic structures marked the decisive loss of mass than began with the industrial revolution, but now in an intentional and well defined manner. Mies van der Rohe's motto 'less is more', is the main symbol of the architectural object's lightening.

The Consumer or Technologic Society of the 21st century is reaching a point of paroxysm, experimenting radical formulas of dematerialization: Virtual Architecture. 'All indicates that the architectural experience is changing from a material form to a visualization experience, reinterpreting the concepts of space and place'¹⁰.

³ TRACHTENBERG, Hyman (1986), 'Architecture, from prehistory to post-modernism', Academy Editions, London, p. 47.

⁴ GIEDION, Sigfried (1969), 'La arquitectura, fenómeno de transición', Gustavo Gili, Barcelona, p. 39.

⁵ PEREIRA Alonso, José Ramón (2008), 'Introducción a la historia de la arquitectura' Editorial Reverté, Barcelona, p. 113.

⁶ PEREIRA Alonso, José Ramón (2008), 'Introducción a la historia de la arquitectura' Editorial Reverté, Barcelona, p. 129.

⁷ PEREIRA Alonso, José Ramón (2008), 'Introducción a la historia de la arquitectura' Editorial Reverté, Barcelona, p. 157.

⁸ VALDEARCOS, Enrique, 'Arquitectura y urbanismo en los ss. XIX y XX', *Clio* 33 (2007).

⁹ TRACHTENBERG, Hyman (1986), 'Architecture, from prehistory to post-modernism', Academy Editions, London, p. 496.

¹⁰ NOVILLO, M^a Alejandra, 'Presencia y cambio en el concepto de límite' [Tesis Facultad de Arquitectura y Urbanismo]. Buenos Aires: Departamento de investigación, Universidad de Belgrano; 2003.

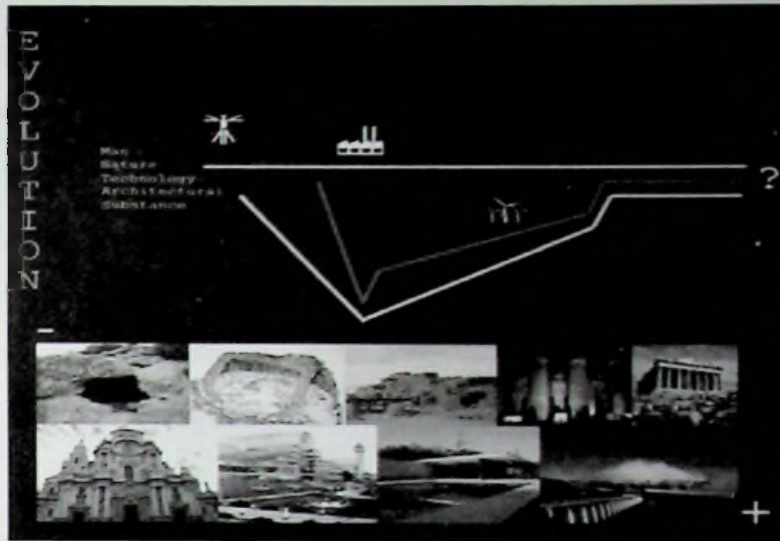


Fig. 1. Scheme comparing: the architectural mass, the available technology and the acceptance or rejection of man's natural environment evolving process throughout history.

2. Architectural mass in its simplest form. The Japanese School:

If architecture is the physical manifestation of Man's historical, social and economic moment¹¹, perhaps the latest generation of Japanese architects is the one closer to understand a new architectural expression connected to the Information Society: a social balanced environment amid the materiality of its contiguous surroundings and the virtual borderless world that new technologies have made possible. There is a return to past ideologies where there was a constant balance between Man and Nature. According to Norberg-Schulz 'Man yearn for their hometowns' narrow streets and irregular squares or try to escape seeking Nature'¹².

2.1 Toyo Ito. Diffuse boundaries architecture:

One of the first architects to be sensible to the drastic changes technology was imposing society was Toyo Ito. In the mid 80's the Japanese architect started to question himself how architecture could respond to the new social requirements.

To question the traditional definition of 'boundary' was the starting point of his investigation, since it no longer was adjusted to the Japanese society ephemeral and circumstantial everyday life. Opposing the concept of *conclusive architecture*, according to Otto Friedrich Bollnow '...to build a house is to raise an ordered space in the existing chaos...'¹³, Toyo Ito argues that the definition of 'boundary' should be revised in order to describe something more diffuse and ethereal than the traditional wall with occasional voids. Toyo Ito refers that '...as long as we continue to separate the inside from the outside (...), nature will remain an outsider for architecture (...). It seems impossible to me to create an architecture well fitted in its surroundings, as long as we visualise the human body and architecture separately and unrelated with the external world'. New materials and building processes made possible experimental proposals where mass is practically non-existent, allowing an architecture translated into flows through the city, like in the 'Pao for the Tokyo nomadic girls' (fig. 2). At this point not only Man was nomad, but also 'his' architecture could be it.

¹¹ ITO, Toyo, (2000), 'Escritos' Ed. COAT Murcia, Murcia, p. 24.

¹² NORBERG-SCHULZ, Christian, 'La significación en la arquitectura', en: 'La significación del entorno', ed. SUST, Xavier (1972), Barcelona, p.21.

¹³ O.F. Bollnow, 'La morada del hombre', traducción de Takehido Kojima, Ed. Universidad Meisei (Departamento de publicaciones).

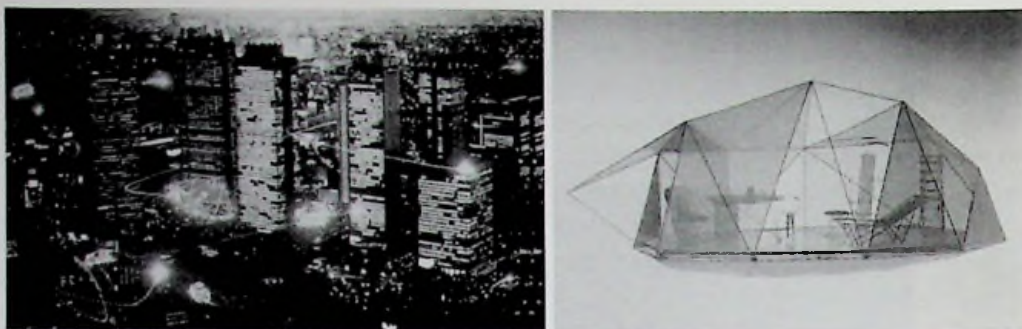


Fig. 2. Pao for the Tokyo nomadic girls. Toyo Ito, (1985).

2.2 Kazuyo Sejima y Ryue Nishizawa, towards an evanescent architecture:

Clearly influenced by Toyo Ito's new theories (Kazuyo Sejima herself worked for him between 1981 and 1987), SANAA architecture studio has experimented lightness and transparency formulas in order to define an architecture that dilutes itself in its own physical expression, being its dematerialization one of its fundamental points of research. This dematerialization is used to integrate their proposals like a 'collage' in its surroundings, using its reflection as a way of being assimilated in urban settings, or through the ubiquitous presence of green elements inside and outside the building diluting its limits in natural environments thus allowing a great level of liberty in the user's movements. One of Ito's main ideas is therefore attained: '...architecture that does not make us senses its shape is the least repressive in everyday life'¹⁴.

Another question aroused by the team's projectual efforts is the creation of artificial topographies in a way that natural and unconscious behaviours are encouraged while using them¹⁵. One of the more paradigmatic proposals regarding this question is their EPFL Rolex University Centre, designed for Lausanne, Switzerland, in 2005 and finished in 2010.



Fig. 3. EPFL Rolex University Centre. Art.



Fig. 4. Glass Pavillion in the Toledo Museum of Art.

2.3 Sou Fujimoto and the primitive architecture:

Among this group of Japanese architects, influenced by the ideas of Toyo Ito, besides other lines of investigation, we can mention Sou Fujimoto. His work tries to reattach the lost primitive interactions between Man and Nature¹⁶, since in his opinion connections or links are the elements that define space. According to him and his proposals space isn't defined or even divided, but

¹⁴ ITO, Toyo, (2000), 'Escritos' Ed. COAT Murcia, Murcia, p. 38.

¹⁵ MOSTAFAVI, Mohsen, 'Una conversación con Kazuyo Sejima y Ryue Nishizawa', El Croquis. 2011; N°155 : 6-16 [Traducción de Albert Fuentes].

¹⁶ TOYO Ito, Julian Worrall, 'Arquitectura teórica y sensorial: los experimentos radicales de Sou Fujimoto', 2G, N°50 : 4-23

intensified and with undefined limits, giving path to fluidic inhabiting experiences, instead of giving a specific function to every individualized space. This spatial concept's theoretical basis is the same that three decades ago led Toyo Ito to design the 'Pao for the Tokyo nomadic girls', where although every architectural element consists in an autonomous component it can't avoid to be connected to its environment even with itself. The study of boundaries that nourish the interaction between inside and outside is therefore one of the major obsessions of his career¹⁷. This primitive relation between Man and Nature is materialized in two of its most important works: the 'Final Wooden House' is a modern metaphor of the primitive cave, and the 'NA House' uses a typological system that makes its spatial appropriation similar to the one of a tree. To a system until nowadays majorly Cartesian is now given a three-dimensional character that makes way to a new line of investigation: an intuitive spatial appropriation opposed to functionalist architecture where every space has a pre-defined use.



Fig. 5. Final Wooden House.



Fig. 6. NA House.

2.4 Junya Ishigami, architecture is air:

This young architect has been the latest to use the decrease of mass in architecture and artwork as a strategy to achieve a closer relation between surroundings and proposed object. At the same time, through the analysis of the users' circulation flows, who appropriate his pieces, conceived as artificial structures cloistered by natural surroundings, it's possible to define a capillary symbiosis among Nature, Architecture and Man¹⁸.

With his project 'Architecture as air, study for château la coste', with which he was awarded with the 2008 Golden Lion for best project at the Venice Biennale, he manages to merge natural and artificial spaces in an almost mass-free architecture. He organizes part of a garden through a modular scheme composed by slender columns that mimics the trees around it. Tension between natural and artificial becomes a unified spatial perception where architecture offers the user what nature cannot offer by itself. Without a noticeable intervention in order not to betray nature's character, the architect manages to promote an honest interaction between pre-existing nature and the built proposal.

Another Project deserving some attention, through the use of the opposite strategy is the 'Kanagawa Institute of Technology Workshop'. Here, in a 2000 m² diaphanous space, the architect proposes the creation of a multitude of spaces through the strategic arrangement of 350 small section pillars. Their implantation manages to define different kinds of the space's visual perception, like those one would find in a wood. Open areas are therefore appropriated like 'glades', and circulation spaces are used as 'trails'¹⁹. The theories of Toyo Ito and its diaphanous limits, the austere lightness of the SANAA studio and the return to the primeval in the work of Sou Fujimoto's proposals are brought together in these Ishigami's two proposals.

¹⁷ FUJIMOTO, Sou, 'Fuuro Primitivo', 2G, N°50: 130-143

¹⁸ Serie de conferencias: 'A New Innocence: Emerging Trends in Japanese Architecture', Junya Ishigami lecture, 'Recent Work', Cambridge 2011, Harvard Graduate School of Design, 2012.

¹⁹ FERNÁNDEZ-GALLIANO, Luis, 'Dossier Junya Ishigami: Minimalism and Nature', AV Proyectos, 2013; N°055: 6-16.



Fig. 7. 'Japanese Pavilion Venice Biennale 2008' Fig. 8. 'Kanagawa Institute of Technology'

3. Potential or aprioristic spaces theory. The Unsubstantial Architecture:

Spaces that we can assume as even or similar to voids are, according to Martin Heidegger, inexistent in common situations, either in natural or built environments. This supposes the presence of an invisible structure behind every space we see, but perceivable through a haptic point of view. Space is inevitably appropriated, later in a physical and plastic manner²⁰. This is the idea behind the understanding of 'meaning through our corporeal status, questioning construction through judgement'²¹.

American writer Marshall Berman shows that 'being modern is part of a universe in which, like Marx said, 'everything physical vanishes into air'²², and that is why being sensible to that 'air' becomes a stimulus to its use and appropriation, important as it is nowadays. The Japanese traditional perception of space, though the *Ma* (and the way it is perceived by contemporary architects) allows a more precise perception of this structure hidden behind the apparent space²³. Sou Fujimoto's definition of space is the one closer to this reality: 'A place is something that could be inhabited by a person. Nevertheless, it isn't something prepared to be inhabited. It's a place full of opportunities for a person to discover special places²⁴', based upon the idea of a void as subjective space, rather than an absence, as it is defended by the Japanese concept of *Ma*. According to Günter Nitschke, when Japanese architects were to build a construction, they would go with their tea set to the chosen site, and would remain there all day.

By this mean they tried to capture the void, the absence of a house, as the first step in order to design it. The site's void, its empty space, was the first step to inspire the architect to create the thing-oeuvre-building²⁵. Therefore, it was a search of the surrounding potential spaces (an invisible scaffolding, Fig. 9) in order to latter be occupied by his architecture. Architect Tetsuo Kondo exploited his technic in his ephemeral installation "A Path in the Forest" (Fig. 10) for the 2011 Tallin Festival in Estonia. He claimed that "walking along this path will give a slightly different sense of the forest. Instead of looking up at the trees from the ground, people will be strolling near the leaves, making their way between the branches. A structure made for the forest, a forest that exists for the structure: with no change in the shape of the forest, it will seem that the structure and the forest are one"²⁶.

²⁰ HEIDEGGER, Martin, 'Construir, habitar, pensar', (1954). Conferencias y artículos, Barcelona, Ods, 1994.

²¹ MERLEAU-PONTY, Maurice, 'Fenomenología de la percepción'. Editorial Planeta - Agostini. Edición 1993, p.45.

²² BERMAN, Marshall, (1988), "Todo lo sólido se desvanece en el aire. La experiencia de la modernidad", Editorial Siglo Veintiuno, Madrid, p. 81.

²³ NITSCHKE, Günter, 'Ma. El sentido japonés de 'lugar' tal como se refleja en la confirmación espacial de la arquitectura y el diseño urbano tradicional y moderno' en AA. VV. JAPON. UNA NUEVA PERSPECTIVA, Cuadernos Summa-Nueva Visión, N°26-27, JUNIO, 1969, P. 48-49.

²⁴ FUJIMOTO, Sou, 'Futuro Primitivo', 2G, N°50 : 136.

²⁵ NITSCHKE, Günter, 'Ma. El sentido japonés de 'lugar' tal como se refleja en la confirmación espacial de la arquitectura y el diseño urbano tradicional y moderno' (1969), op. cit. p.50.

²⁶ Tetsuo Kondo Architects: A Path in 'The Forest' | Kadriorg Park . Tallinn", última modificación el 30 de Abril de 2013. <http://afasiaarqu.blogspot.com/2013/04/tetsuo-kondo-architects.html>



Fig. 9. Right. Jose Manuel Ballester, (Untitled), Yellow River (China), 2005.

Fig. 10. Left. Tetsuo Kondo Architects, "A Path in The Forest", Tallinn (Estonia), 2011.

4. The space's intuitive appropriation. Feeling without knowing:

Generally, the main idea behind space appropriation in architecture is based upon direct appropriation of built space, in which its function is defined previously. A standard house is its paradigmatic example, where we recognise immediately the use predicted for each room: which are the bedrooms, which is the kitchen, the living room... Somehow the design process should follow the opposite procedure. That would mean that there shouldn't be specific spaces for specific uses, but rather to give path to the dweller to recognize in each one of them their function according to his needs. This is a strategy used in primitive architecture, as it has been defined by philosopher Kurt Koffka: 'For the primitive man each object communicates what it is, and what is for... a fruit says 'eat me', water says 'drink me', the thunder says 'fear me'²⁷. Even if nowadays making use of this ideas, even if simplified', would make no sense, we can use them as manifesto to defend the idea that the complex logic used to create our built surrounding is not enough or adapted to satisfy entirely our physical or psychological needs. Following this line of thought, Sou Fujimoto argues: "The cave's occupants adapt themselves to their environment, improvising and discovering latent and multiple possibilities in a defined context. This is an unconscious and unplanned appropriation process, born in our primitive and animal essence. In these environments we search for a more comfortable location, like cats in a meadow"²⁸.

This intuitive spatial appropriation corresponds to the phase that Nitschke defines as 'unconscious stage', where the apparent nature's disorder is in fact the basis of every organization system. It's saying that man accepts nature and acts like its extension. A stage of intuitive and unconscious performance where there is a casual and accidental, but identifiable order (*Arare*, in Japanese culture) where the whole system's natural and geographical characteristics are emphasized²⁹. This potential spaces' selection process in our surroundings, with the help of new construction techniques, could lead architecture through something like a positive involution, in which the haptic sense has a role when it's time to choose the volume which will be cloistered by a solid casing (architecture). The ideal circumstances are therefore provided to make use of this space through its initial characteristics and qualities, to whose we can have the inherent qualities of our own architecture intervention, necessary to make them liveable.

An interesting experience should be to ask a group a person's to enter a wood and request each one separately to choose different spaces for different uses: one for sleeping, other for reading, another to eat, etc. By confronting the results gathered from a large group of individuals we would come to the conclusion that the choices would be mainly the same, knowing for sure which would be the most suitable spaces for which use. The same experience, carried out in an

²⁷ KOFFKA, K. 'Principles of Gestalt psychology' (1935), Nueva York, Harcourt Brace, p. 7.

²⁸ ITO, Toyo, WORRALI, Julian, 'Arquitectura teórica y sensorial: los experimentos radicales de Sou Fujimoto', 2G, N°50: 18.

²⁹ NITSCHKE, Günter, 'Ma. El sentido japonés de 'lugar' tal como se refleja en la confirmación espacial de la arquitectura y el diseño urbano tradicional y moderno' (1969), op. cit. p.10.

urban scale, could be used as a reference in an urban planning process without previous prejudice. As Edmund Husserl would say, 'meeting the reality of things'³⁰.

5. The spatial perception phenomenology. Explaining the unexplainable:

As a way to obtain knowledge, phenomenology can contribute with philosophical bases in order to overcome simple theories of perception, and obtain, with the help of psychological analysis, a complete sensorial spatial experience. This philosophical process completes the laws of perception and physiology, when it comes to study the entire process of physical and psychological of recognition by individuals certain characteristics in their surrounding spaces. Philosopher Maurice Merleau-Ponty thought that phenomenology the recognition of the human capacity of perceiving symbols through their corporeal status, questioning their human environment through its use and trial. Merleau-Ponty postulated 'the body, not just as a standing object in the world but as a mean of communication with it, and the world not as a sum of objects but as a hidden horizon in our incessant current experience that has no end, previous to any determinant decision'³¹.

Experiencing phenomena – experiences in time and space which are different from object's perception – comes from a distinct method of thinking architecture. Phenomenology, as a question of perception, leads us to experience architecture walking through it, feeling it, listening to it, pulling us into a new underworld of sensations even before architecture is made. All of this to allow the empathy of the places' essence and build in them, giving it a corporeal and significant shape, in order not to invade the natural context in its whole. It makes easy an architecture-nature symbiosis throughout the single occupation of the aprioristic areas that are identified and marked off through this process of knowledge. Even over the already built urban environment 'there is another superimposed city that has its origin in phenomena like sound, light, images, etc. (...). Can't we find the inner structure and historic and natural flows inside the constructions of the mechanical age, superimposing them the electronic age networks, making it all revive again as a phenomenological space?'³² It's to manage that architecture and nature start to generate a feedback process.



Fig. 11. Left. Tomás Sarraceno's 'in orbit' installation.

Fig. 12. Right. Frank Lloyd Wright's 'Falling water', examples of spatial, appropriations according to the local phenomenological characteristics. Sarraceno in a built environment, Wright is a natural one.

6. Symbiotic architecture. Architectonic capillary in nature:

'I believe that my architecture's meaning is like a metaphor: architecture was already here, but we couldn't see it, so we had to search for the little pieces that compose it and search for as process of combine them in order to solve problems that arouse during the process. This process

³⁰ HUSSERL., Edmund 'Investigaciones Lógicas' (2005), Ed. Alianza, Buenos Aires. p. 217.

³¹ MERLEAU-PONTY, Maurice, 'Fenomenología de la percepción'. Editorial Planeta - Agostini. Edición 1993, p.32.

³² ITO, Toyo, (2000), 'Escritos' Ed. COAT Murcia, Murcia, p. 141.

requires the creative ability to think. That's why I think about this kind of interaction: interaction with oneself, interaction with the environment, with the place, with people, all very exciting...³³ This Sou Fujimoto's statement describes so far this article's theoretical development. The analysis of the correlation between built mass, available technology and occasional ecological conscience (the each moment's natural surroundings rejection level) makes us believe that future architecture will make use of technique to create 'membranes' that will wrap the so-called potential spaces found all around us. Appropriating space will no longer begin in a blank sheet, but as a reciprocal process with the natural environment, its physical support, and with which man will have a more straight relation, as it has been requiring for ages. Antonio Saggio said 'a building is no longer praiseworthy because it's functional (...). We are aware that this metaphorical process influences a great part of contemporary architecture, and that its fundamental aim is to bring inside the landscape and the relation between man and nature'³⁴.

We can define symbiotic architecture as the one that adapts itself to its site, respecting its fundamental features, boosting its most remarkable properties in order to respond to man's needs. Just when ecological conscience and sustainability are becoming increasingly important, this kind of approach when designing is what will bring back the equilibrium between architecture and nature that has been lost since our primitive past, but with all the commodities required by modern society. Sou Fujimoto's definition of 'Primitive Future' as part of his theoretical architectural approach can resume this approach.



Fig. 13. Conceptual mock-ups that can illustrate the symbiotic architecture theory. 'Futuropective architecture: Sou Fujimoto', September 10, 2013. Centro Cultural de Belém, Lisboa.



FIG. 14. The "Tree in the House" Project, designed by A.Masow Design Studio, is a glass house located in the Almaty city (Kazajstán) that sacrifices intimacy privacy in favour of a unique experience in harmony with nature.

³³ SOU FUJIMOTO. Conferencia inaugural de la exposición 'Futuropective architecture', 10 sep 2013. Centro Cultural de Belém, Lisboa. Respuesta a una pregunta en el turno de intervenciones del autor de este artículo. [Traducción Joanna Vieira Vasconcelos].

³⁴ PRESTINENZA PUGLISI, Luigi, 'Hyperarchitecture Spaces in the Electronic Age', Epílogo de Antonio Saggio. Ed. Birkhäuser. Turin, 1998, p.95. [Traducción al inglés Lucinda Byatt].

7. Flows as creatures of shape. The fourth dimension physical expression in the urban fabric:

Toyo Ito discovered what he has defined as 'flow areas', or *ryūiki*, a fluid vision, subtly ambiguous, of internal space. At the same time Arata Isozaki, Kazuo Shinozaki and the following generation of architects like Tadao Ando kept using minimalistic rhetoric, achieving an architectonic expression easily identifiable as 'Japanese' (although it has remained solely applied to architecture's outer shell), Toyo Ito submerged himself researching something that orthodox architectural investigation had left behind: the environmental, the fluidic and the consciousness of inhabiting³⁵.

Taking into account the 'nomadic' character of the today's citizen we shouldn't see life as taking place in specific spaces, but rather taking place in in-between (crossing) places. Human beings inhabit the world as travellers, not as occupiers of a specific space³⁶.

Defining space as a path implies the necessary use of 'time' as a dimension that can help us to understand the importance of these 'flows' in our society. Once these paths are freed from the dictatorship of rational urbanism, it will be possible to observe the path of human flows. A person's routes from one point to the other, if not conditioned by artificial external elements, are the expression itself of one's core in a chronological perspective. It's to understand one's core not as geometric concept but as reference to the muscular apparatus with kinesthetic and orientation properties derived from the force of gravity and an inner sense³⁷. This fingerprint will remain and can be read by current technologies.

Visualizing and analysing real time urban flows has become a powerful tool whose final purpose is to help citizens and urban planners to make informed decisions, and in a nearby future to reduce inefficient transportation in order to reduce our environmental footprint and time waste. But the analysis of this kind of mappings can lead us to the following question: is urban space connected in a natural way to our flows, or are these dependent from it?

Throughout the investigating work of the MIT's SENSEable City Lab, directed by the architect Carlo Ratti³⁸, we can see some disagreements between the urban fabric and human flow charts (Fig. 8). This means that the use of this kind of maps can improve the quality of city life by adapting urban paths to those of people, as long as possible and taking into account not only a person's movements but also the time they spend in a specific place. This way future planning would have to take into account these kinds of studies to create its new infrastructures, making them more efficient at every level.

³⁵ ITO, Toyo, (2005), 'Toyo Ito, Conversaciones con estudiantes' Ed. Gustavo Gili, Barcelona, p. 88.

³⁶ MASSEY, D.B (2005), 'For Space' Sage Publications, London, p.55.

³⁷ BLOMMER, C. Kent, MOORE, Charles W, (1982), 'Cuerpo, memoria y arquitectura' H. Blume Ediciones, Madrid, p.71.

³⁸ REAL TIME ROME [internet]. Massachusetts: Massachusetts Institute of Technology MIT, c2003 [Consultado 2013 Sep 14]. Disponible en: <http://senseable.mit.edu/realtimerome/>

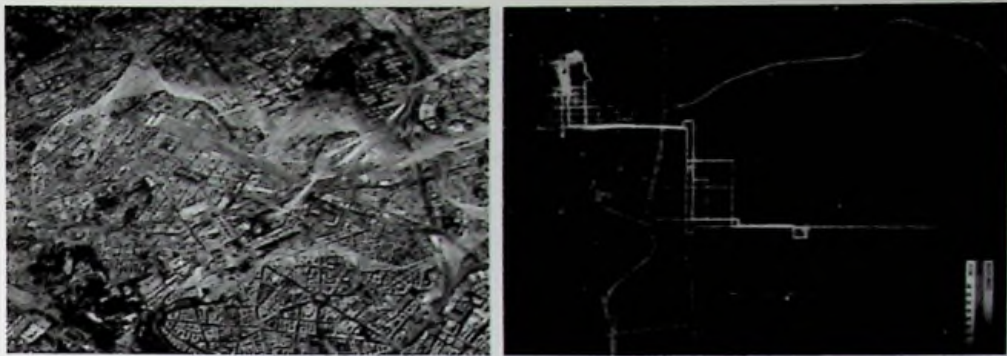


Fig. 15. Left. Real-Time Roma combines different data in a single interface: SIG data, real time data and raster images. In this picture the relives highlight time spent in each space (May 2006).

Fig. 16. Right. Chart created by Aaron Parecki through a three year period compilation of ge-positioning data from his GPS device superimposed over a Portland city map, his hometown. Different colours correspond to different years, and we can see how a person adapts himself to the urban fabric. If we introduce the 'time' factor, we managed to understand how the urban fabric is completely insensible to our routes and daily habits.

8. Flows in natural environments. Synapses between potential spaces:

If in an urban context we start upon a predefined network, in naturally preserved environments the design of such a mesh can be the result of the potential spaces' study and its connections. Toyo Ito said that '...man's actions are complicated and we shouldn't limit any action to any given space...'³⁹. We can deduce from this notion that if it's the action itself that generates space, then space will not be restricted to its physical expression (architecture) but beyond this wrapping to ensure human wellbeing. Local connexions of this kind would generate a dynamic but gracious network. The resulting architecture would be something fluid, avoiding forced actions, in which the kinesthetic logic is bindings' free. This kind of space wouldn't need to be cloistered to be apprehended, just to be liveable for Man, who has a body and a life. In other words, this space's understanding is only possible once it is produced⁴⁰. It's a closed mutual circle, where flow creates space and it is lived again through its own flow, not in a prosthetic mode. Human character is, by nature, wonderer, divergent and adventurous and it requires an environment that allows and nourishes the practice and development of such behaviour⁴¹.

If in the design process we manage to obtain interaction between built object and its natural environment, we are promoting a man-nature relation without losing the architecture's character as shelter and protection. Architecture would be able to be a true vessel of our lives, our desires and hopes, and not a mere object, significant by itself (although this is a legitimate aim as a collateral reaction to the architect's good practice).

³⁹ TAKI, Koji, 'Una conversación con Toyo Ito', *El Croquis*. 2004; Nº123 : 6-43 [Traducción de Albert Fuentes].

⁴⁰ LEFEBVRE, Henri, (1988). 'The production of space' Ed. Universidad de Sussex, Brighton. p.168.

⁴¹ DATTNER, Richard (1969), 'design for a play', Van Nostrand Reinhold, Nueva York, p.44.

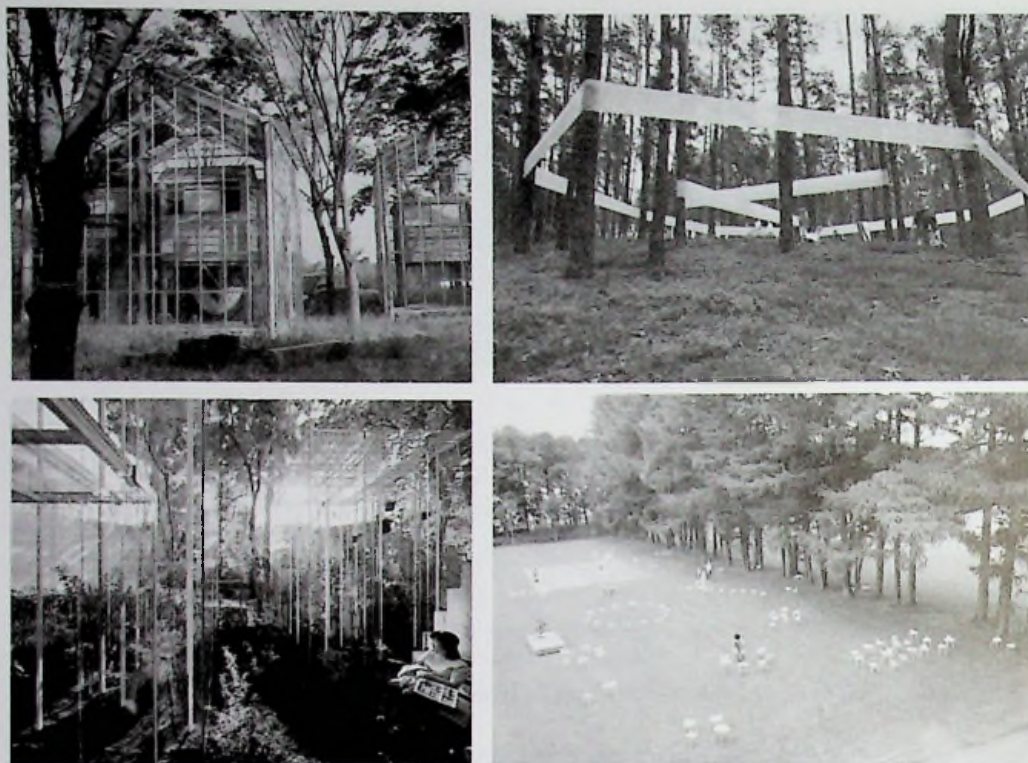


Fig. 17. From above to bottom, and left to right: 'Kurimoto Millenium City' – Japan;
Fig.18. 137 kilo studio 'Cross Country House', spatial appropriation, prior to the house's construction;
Fig. 19. Junya Ishigami´s 'Japanese Pavilion', Venice Biennale 2008;
Fig. 20. Tetsuo Kondo Architects' 'Landscape with Chair'.

9. A new architecture for a new society. The digital condition as a disruptive element between architecture and society:

The digital society is living an historic moment that has just begun, and that has imposed huge changes in the way knowledge is communicated, the productive system and even in social relations. Along history there weren't many relevant technologies: the development of lithic technology, agriculture, industrialization and electricity have been so far disruptive technologies, which have imposed significant changes in society, and consequently in the architecture representing that same society.

According to polish sociologist Zygmunt Bauman and his 'liquid modernity identity' theory, if in the 18th century society was marked by well-defined social stratus according to which each individual was strictly classified, nowadays, with the social network's boom and the ICTs (information and communication technologies) global identities become fickle, volatile and fragile, and change according to consumer influenced identities. However, these elusive identities make us increasingly dependent of each other, and here is where we can find hope to establish the necessary conditions for growth in terms of humanity, collective consciousness focused on the individual wellbeing, and harmony towards nature⁴².

For these reasons, sooner or later, architecture will have to adapt to this new 'liquid society' in such a way that man is allowed to move from its selfish 'me', and the ecosystem's symbiotic, non-pyramidal hybridization. Adapting to new requirements, and a, more than ever, necessity for

⁴² PAI.OMAR VEREÑA, Cristina (2007). 'Reseña de 'Identidad' de Sygmunt Bauman'. Espiral VOL. XIII (Nº. 38) p. 205-214.

environmental sustainability, become the only ways to assure our species survival in a medium and long term.

10. Discussion and conclusions:

According to the theoretical character of this article, it is always possible to make use of subjective ideas that, however, could be the basis of future discussions for those who are willing to consult this text and investigate similar themes. Methodologically the article's characteristics lead to a solution where we tried to create a strong line of argument in order to support the presented theoretical ideas and concepts, rather than to follow a traditional research process (although those same ideas were strongly supported by a deep investigation and the Japanese School's case studies. The aim of the carried out investigation, more than to give concrete answers, was to stimulate the discussion over the subject and to promote interest on a different approach of designing architecture. Undoubtedly, the use, in the future, of quantitative studies that offer concrete data can corroborate some of the referred assumptions presently achieved through theoretical approach by the architects, sociologists, psychologists and academic researchers used as references. To study more thoroughly some of the article's specific themes would also be useful, even to gathered them in some sort of compendium that would allow the use of the collected subjects to research further in architecture and other fields of knowledge.

According to the theoretical approaches presented, we can conclude that there are no precedents in the architecture design process where the usable potential spaces are first identified followed by the generated flows connecting these spaces and even inside them. Nevertheless it seems to have the possibility to become a very effective process of approaching architectural design giving a response to the needs of those bound to occupy the generated spaces. Their own bodies and movements will generate the foundation of what later will become the object's spatial occupation and use, which, thanks to today's building techniques (and the loss of mass in architecture) will be confined in a natural way, allowing a clear dialogue with the surroundings of every project. It also seems that this process of generating spaces benefits some degree of interaction with the natural environment, one of the mantras of present-day architecture: a stable and egalitarian equilibrium between natural and artificial, while helping to construct the longed ecological sustainability and reducing the social, environmental and economic costs at medium and long term.

For future researches it is recommended that the work and theories of the four above mentioned studios will be profoundly studied in order to create a personal philosophy when approaching new projects and challenges.

Thus, it is our desire that the presented research can cooperate in the search of new horizons in future architectural practice, opening new debates about the need and convenience to rethink approaching architecture's traditional methods, leading those to more correlated conclusions related to the changes that the digital age is operating in present and future society.

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Images:

Figure 1: Image taken from the Panel 1 'MNT Project' - Virtual Context International Desing Competition 2013.

Figure 2: Extracted from the internet:

<http://estructurassensitivas.blogspot.com.es/2011/03/el-pao-de-la-muchachas-nomadas-de-tokio.html>

Figure 3: Extracted from the internet:

http://covarios.com/2010/02/25/rolex-learning-center_sanaa/

Figure 4: Extracted from the internet:

Basulto, David. 'Glass Pavilion at the Toledo Museum of Art / SANAA' 28 Mar 2010. ArchDaily. Accessed 16 Sep 2013. <<http://www.archdaily.com/54199>>

Figure 5: Extracted from the internet:

'Final Wooden House / Sou Fujimoto' 23 Oct 2008. ArchDaily. Accessed 16 Sep 2013. <<http://www.archdaily.com/7638>>

Figure 6: Extracted from the internet:

'House NA / Sou Fujimoto Architects' 30 Apr 2012. ArchDaily. Accessed 16 Sep 2013. <<http://www.archdaily.com/230533>>

Figures 7 y 8: Extracted from the internet:

<http://tomo.com.mx/2011/12/09/la-escala-transparente-de-junya-ishigami/>

Figure 9: Extracted from the internet:

<http://www.josemanuelballester.com/>

Figure 10: Extracted from the internet:

<http://afasiaarq.blogspot.com/2013/04/tetsuo-kondo-architects.html>

Figure 11: Extracted from the internet:

<http://www.archilovers.com/s3253/the-gigantic-suspended-net-construction-by-tom%C3%A1s-saraceno>

Figure 12: Extracted from the internet:

<http://arte-historia.com/arquitectura-siglo-xx-organicismo>

Figure 13: Photos taken by Alexandre Mourinho.

'Futuropective architecture: Sou Fujimoto', September 10, 2013. Centro Cultural de Belém, Lisboa.

Figure 14: Extracted from the internet:
<http://amasow.com/tree-in-the-house/>

Figure 15: Extracted from the internet:
http://nomada.blogs.com/jfreire/2006/07/visualizacin_y_.html

Figure 16: Extracted from the internet:
<http://www.microsiervos.com/archivo/arte-y-diseno/gps-mapa-personal.html>

Figure 17: Extracted from the internet:
<http://www.whatvedoissecret.org/madebyblog/2009/01/fifth-world/>

Figure 18: Extracted from the internet:
<http://afasiaarq.blogspot.com/2012/11/137-kilo.html>

Figure 19: Extracted from the internet:
<http://inkedinblack.wordpress.com/tag/japanese-pavilion-venice-biennale-2008/>

Figure 20: Extracted from the internet:
<http://www.tetsuokondo.jp/project/fieldchair.html>