From Le Corbusier’s box to Villanueva’s cube.
The pavilion of Venezuela, in Montreal, 1967.
José Javier Alyón González

Anyone who knows the Boîte à Miracles, before knowing the tales that arise that suggest Le Corbusier’s drawing as an inspiration for Villanueva, at once... magic box, beyond the simple drawing and its architectural sensation, the geometric thing that the Swiss architect defined. Villanueva’s interpretation becomes even more faithful to the original idea of a box of miracles, than that developed by the inventor himself in his various versions, a recurring idea in evolution from the beginning of his career. The tendency towards what is simple is an inclination of the spirit, it is “the sign of command” explained Le Corbusier. A tendency that would be translated into one of the four types of the modern house, represented by the Villa Stein.

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From the box to the cube

From the boîte to the cube

They do not worry us. What does interest us is to present, with precision, the need that design systems should also be altered, to convert them into efficient instruments, gradual and self-regulated, even admitting experimental verification. It will therefore open a vast field of experience and research. Many of them, of course, are not new, nor original, but we have our conviction intact and firm that others newer and more advanced will help us, if not to discover a new architecture, which would be a miracle or something absolutely disproportionate with our efforts, values and knowledge, yes to go on resolving, with the powerful tools of reason and method, each time with more serenity and security, the many problems that face this tormented world and yet extremely live. From Le Corbusier’s boîte to Villanueva’s cube.

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The land conceded to Venezuela, approximately 2508 m² and almost rectangular, was located on the island of Notre Dame, on a narrow strip of land reclaimed from the St. Lawrence River. In the design process, which can be reconstructed through his sketches and drawings, from the beginning the architect opts for an implementation of the volumes distant from its borders, seeking a tension between them, independent of the site’s geometry. With this decision Villanueva seeks to widen the perspective of the volumetric set, liberating their environment to enhance their formal apprehension and their visibility from a distance. The process would be developed on variations of an idea. Different sizes would be tried for the volumes, their grouping, location on the plot, but always on the basis of cubic and opaqueness tides. The idea of the cube as the only formal answer to the need to accommodate a content, capable of standing out in the “variation of forms” typical of an event of this type, which seems to be the genesis of this election. This strategy would allow a progressive adaptation in the evolution of the content of the pavilion, the suppression, enlargement or addition of one of these does not affect the configuration of the other bodies. Thus, his quest was double, that which would externally behave like a unit and that internally would work autonomously. To understand this pavilion as a sculptural piece is not an unfounded hypothesis, since the architect himself came to define it this way. When he said that: “To freely choose the forms, concerns sculpture, but not necessarily architecture”, he was referring to the pavilion. This geometric topography never ceases to be a foundation halfway between the crepidoma of the Greek temple and a hermetic and abstract box is developed for some real projects. The concept evolves and it tests new theatrical configurations and expositions achieving richer formal results, but yet very different from the original concept. Le Corbusier claimed the status of the architect and his knowledge of the volumes to justify the given “cube”, would be able to satisfy everyone. A basic form for multiple readings, “perhaps pleasure of the spirit”. The first Boîte is not a machine à habiter, it does not have to be functional, nor practical in the sense that modern logic established. Its sole function is to fulfill the dreams of its visitors and ensure the technical conditions to make it feasible. Consequently, the boîte will also oppose its constructive prototype par excellence, the rational maison dom-ino. The horizontal spatiality of this is exceeded by the need for a void without a defined directionality. Structurally, this opposition is obvious. Compared to the dom-ino constructive framework, which independence allows it to establish indoor-outdoor relationships without any structural commitment to the facade, the boîte makes its enclosure load bearing. The floor plan goes from being an overlayable two dimensional ‘free’ concept, to a single cubic space. The box structure which is supposed to be epidemic – as in its interior everything is empty -, reverses the idea of an independent enclosure to that of the structure. The façade will be structural, unique and continuous. It will not be a plane, it will be a volume. The box is a body that settles outright on the ground, therefore pilots and terraces, spaces below and above the dom-ino model are annulled. The building no longer floats on the ground, it sits on it. Nevertheless, the most relevant for our case is the idea of space and its relationship with the exterior. The boîte, in its initial framework, is understood as a void, the opposite would be to imagine it as a solid. Its exterior does not reveal anything; a tiny door indicates the access to a space that is immeasurably foreseen, magic. In the interior everything is dark; there is no relation with the physical beyond. In the exterior everything is opaque, there are no intuitions about the inside, and it is known that everything fits in but not how. Light, environment and reality, are not necessary, they do not appear. Its interior is only a representation, a pure theatrical artifact. In another way, the plane colour square of the modern artistic avant-garde and the basic forms of the Bauhaus complete the references that we consider as within the conception base of this unique project by Villanueva. Although there have been since ancient times innumerable works created from pure basic volumes, up to the convergence of several of these artists in the German school, the purification strategy of the form developed by the modern movement, did not reach the parsimony of their students and teachers projects. From a chess game up to buildings, passing through clothing, furniture, sculptures, etc., everything was likely to be reduced to the basics. Always aware of his time, a good part of the art works that Villanueva gathered in his house Caoma are direct products or hairs of the suprematist culture. Paintings of Lazarlo Moholy-Nagy, Van Doesburg, Sophie Taeuber-Arp, share walls with Venezuelan artists of subsequent generations such as Alejandro Otero and Jesús Soto, in line with these European avant-gardes. A collection in which spatiality is pursued through geometries of plane colours or of colour in itself. 3 cubes on a geometric hillock...
-replacing steps with ramps- and the classical foundation of a sculpture. However, although his objective is to subliminate the trio of cubes, it does not interpose an impediment between the "work" and the visiting "spectator", on the contrary, it facilitates his approach.

Furthermore, with its elevation it forces a perspective somewhat inclined over the complex, amplifying its vanishing point and avoiding a flat reading. At the end of 1966 the programme was defined by three cubes of 13 meters on each side that would contain: the first: an audiovisual projection; the second, a representation of the rainforest and the third, the area of restoration and artistic representations, with a second floor for administrative and other facilities. The technical and budgetary complexity to reproduce a natural habitat within an opaque cube in Montreal eliminated that idea and months before the inauguration, the second cube is emptied of content. Reluctantly, Villanueva would propose the participation of the plastic artist Jesús Soto with a great sculpture. A sketch by the architect insists on a combination of vegetation (“Tropical plants”) and a “flying” sculpture. Mirrors and background music would amplify the abstract - a natural installation. For his part, the work of the kinetic artist experimented with the use of materials that were producing illusory optical movements, seeking -in his own words-, to explore links with the Art Informel.

3 cubes of colour
Although the power of the shape is crucial for this project, colour is no less important. Since the University Hospital of the UCV (1945), Villanueva used it extensively. However, his favourite was always that of natural material; and his ideal material: concrete. Therefore, the applied colour, as an architectural element, would always be used with very precise criteria and, as is logical, independent from those of art and its integration in architecture. Although, in order to achieve integration, the colour as a common ground must satisfy both, the subjective plastic requirements and the physical objectives of their application. In this case, not having an evident structure and interstitial spaces susceptible to chromatic intervention, the colour would have to be "structural". The planes that form the cube do not touch each other. All of the vertices are solved with open joints creating a shadow that disarms the cube in floating planes. Planes of colours and not the aluminium that supports it. Colour converts into matter, it stops being an adjective, to become subject. It is a plastic and physical resource, and above all symbolic, representative of a Caribbean culture.

The first cube, dedicated to audiovisual projection and black on the inside, was painted with the three basic colours: yellow, blue and red, the same colours of the Venezuelan flag. That decision, which could be labelled as folkloric, even naive, is a detail that goes unnoticed in the dynamic reading of the Pavilion. The impossibility of seeing three vertical faces simultaneously in a cube, does not permit the appreciation of the tricolour of the flag. The arrangement of the colours must have been studied in relation to the adjacent face of the same cube, with which it makes the exterior corner and, very important, where it is reflected creating a third colour. The cube of Soto's installation, originally designed with its three outer faces in orange and the remaining in blue and red, finally would alternate these two colours to avoid a flat view of the volume from a distance. The third cube would have three black faces and the outermost, at the edge of the street, would be green.

This disposition would assure that in three of the four possible perspectives, there would be a black surface in the forefront or as a reflecting surface. Black would neutralize or enhance the adjacent colours. Finally, although the sky train did not exceed the height of the building allowing a view of their roofs, Villanueva did not leave these faces untreated, aware of the photographs, films and videos that would take place in the exhibition by aerial means. Thus, in the fifth perspective possible, the faces of the roofs, besides being painted, also included the sign of “Venezuela”, which was printed in white on the black and blue faces, and in black on the orange and White ones.

3 metal cubes
The construction of a pure shape led Villanueva to deal with the relation structure-enclosure in a unique way in his career. The structure of metal sections, Bloyd beams and aluminium plates, allowed a quick and economical execution of the pavilion, with perfect finishes and glossy surfaces. As in the Botte, interior and exterior are unconnected and the structure disappears embedded in a chamber in the transit of a sculptural exterior to that of an interior, let us call it architectural -spaces with functions-, but alien to external reality.

In Soto's cube, he had to internally amplify and modulate the vibrations of colour of the artist's “string-instrument” and the sound of the sonorous installation that accompanied it, a fully fledged “resonance box”. For that purpose, its interior is as smooth as the outside, but matt and absorbent. A background that provides the neutrality required for the kinetic work. The beams are hidden in a false ceiling that covers the machinery that makes the sculpture turn and that does not touch the walls, enhancing the sense of vertically and suspension of Soto's sculpture.

The audiovisual cube was an obscure chamber, a real Boîte à Miracles, in which the projection screens floated. A platform with perimeter ramps elevated the spectator and brought the viewer closer to the height of sones. This movement allowed for the discrimination of the entry and exit circuits for each audiovisual pass. A little perimeter gutter on the roofs, embedded in the width of the wall, allowed for the collection and drainage of rainwater, without altering the sharp edges of the volume. At the base, another channel surrounds the three cubes allowing the installation of a tangent lighting. This small pit, together with a small projection of the enclosure, creates a shadow, which replaces the direct encounter of the materials, typical of the architect. This same thin shade raises the cubes from their basement creating, also a levitation effect, a precise boundary of the volume, a black line in contrast with the clear concrete of the hibock. A line that being at the visual height of the visitors (1.50 m), had to be treated with great precision. Any imperfections in the finish of the...
Towards objectivity in art. He stated "I do not see art as a free invention, but as the intellectual development of man in history". His intense research made him... way of doing things.

"The introduction of plexiglas only interested me as a means to draw the space". And to be liberated of he invented the way of overlaying the frames by means of metal rods welded together, without the addition that the Plexiglas represented. Towards 1957 he designed the first "evolving work" which he titled "pre-penetrable". It is a new achievement in the way of fully creating the total integration of the spectator by turning him/her into an actor "for me a work of art does not exist independently of the spectator". The important thing about the "penetrables" is to demonstrate that the space is fluid and full. The elements do not matter, since they are only there to make the relationships evident, the density of space. When you are in a penetrable you feel that this is another space. One of play and movement. Soto considered that "the penetrable is not even a work, it is an idea of space that can be materialized in any situation and at any scale, if it were possible; to do so covering the whole planet."

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