The Architectural Idea and the three dimensional Computer Model

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The presentation is part of an investigation engaged in the analysis of form in some master building or landmark of the modern age. This institution is going to set up a file system available for students and the teachers.

The VILLA SAVOYE of Le Corbusier, built in 1930 at Poissy, France, is one of the most important files in the system because it has an enormous amount of documents that explain the architectural context and meaning.

The presentation deals with a three-dimensional model of the Architectural idea.

Le Corbusier and the history of architecture say that the fundamental idea is the "Promenade Architecturale": the path that connects the street with the top of the volume passing through the villa. The analysis deals with the part of the promenade located inside the building: the ramp and the staircase.

Besides this idea we know, thanks to historical information, that the author had in mind the journey and the passages to reach the top of the Acropolis in Athens-Greece and he reproposed it in the project of the villa with the "promenade" as a metaphorical journey.

The "promenade" can be described through the architectural components, more than through statements. The components are portions of the building, that combined together, determine the final shape. Under this point of view they are not just construction elements.

The famous components called the "five points", known as the basic elements of Lecorbuserian language are different from the "architectural components", the ones connected with the "promenade".

They originate in the analysis of the documents and are divided into groups: the Structural System, Empty Surfaces, and the internal Connection System.
The Structural one is organized with a frame of columns and beams of concrete that wraps up the volume of the ramp and the staircase located in the geometrical center of the villa.

The frame were thought by Le Corbusier to be very regular; but because of the ramp has deep irregularity between the perimetral and the internal zone. The perimeter is organized on the some dimensions 4.75 mt by 4.75 mt and the internal is regulated on distances based on the ramp of 12,12 mt by 2,72 mt. The internal components are not equal:they are without the same structural section and, often, also located randomly around the ramp or the staircase. As three-dimensional elements, as the computer model shows, they are elements that emphasize the entire volume of the ramp.
At this moment, then, the **structural system** becomes part of the architectural **idea as a metaphor**.

The structural system by itself can't be exhaustive of the complex volumetric idea of the promenade. The two **Empty Surfaces** of the terraces located in the first floor are the architectural components that help the general result.

The surfaces work as elements to specify the geometrical and central position of the ramp: they are not equal because one is small and square and the second is large and irregular. Both located among the rooms, they don't organize a surface as a linear configuration but as a space articulation around the ramp and the staircase.

For this reason one side of the terrace overlaps with the side of the ramp, and it helps to understand its unusual dimension.
In the same time through the perimeter the natural light penetrates and lights up the space and every single element. Their shape come out as the spatial organization is readable as the volumes on the top of the Acropoli.

The **Internal Connections** observing the three-dimensional model, can be considered the last of the elements dedicated to the final architectural result.

Very small surfaces, compared with the dimension of the villa and settle down around the ramp and the staircase, are made as an extension of the vertical connections. They guide the steps; are not, any more, corridors but surfaces where it is possible to chat, look around, stay and read the differences between the levels of the house. They are the horizontal part of a promenade that leads to the top of the house and toward the "roof garden". Because of these particular functions assumed as part of an **Idea** they can remind one of the similar situation along the journey to the top of the Acropoli, with the stops and the attentions to the panorama. Then the **Internal Connections** are part of the metaphor.

The experience showed with the animated three-dimensional computer model is more than a simple reconstruction of the original building of Le Corbusier. It helps to understand the shape of the space and the relation among elements, often, not naturally interconnected. It helps also to know how to connect the bidimensional drawings to penetrate in an alternative dimension not far from the final result.

We are thinking of going further in the analysis representing the real situation compared with the computer one.