villa savoye

le corbusier

form | body | technique | space

evda 621: introduction to design theory

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le corbusier

Born in 1887 in La Chaux-de-Fonds, Switzerland, Charles-Édouard Jeanneret, now known as Le Corbusier, lived through the transformation period of arts and crafts to technology. Originally apprenticing to become a watchmaker, Le Corbusier switched professions and learned from his mentors what is structurally possible for architects.

The pusedo-name of Le Corbusier was created as he was writing multiple articles for the magazine L'Esprit Nouveau and in 1921, he employed a concept from an article within this magazine. The article attacked the Beaux-Arts movement currently underway in France and viewed the house as a 'machine for living'.[1] By the end of the 1920's, Corbusier was playing the role of a crusader for the New Architecture movement.[2] It was during this time period that the Villa Savoye, a summer home commissioned by the Savoye family, was designed and built in Poissy, an area on the periphery of Paris, France.

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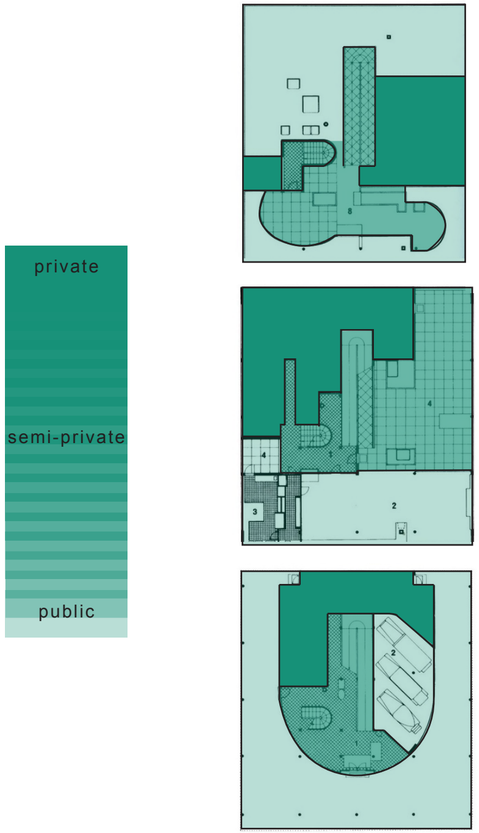


figure 1.0 - public vs. private areas

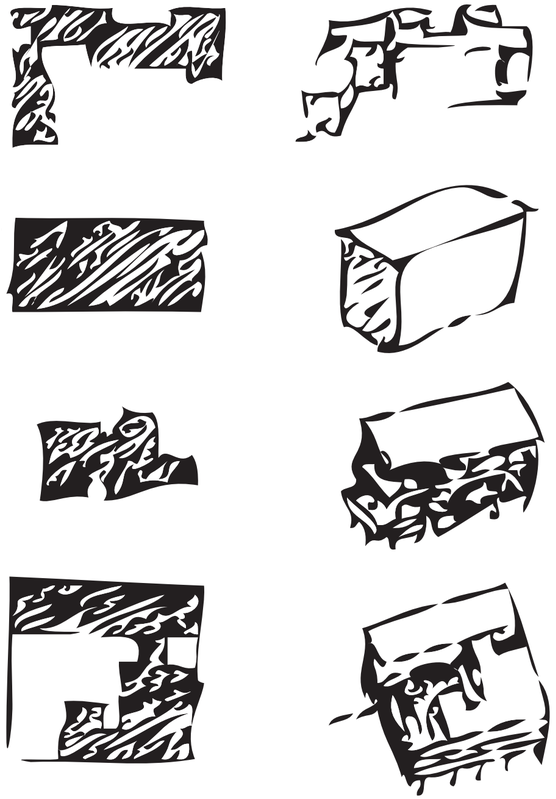


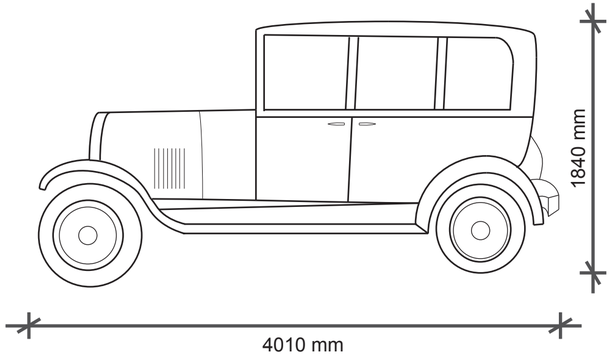
figure 2.0 - Corbusier's 5 points of modern architecture

form

As previously mentioned, Le Corbusier took an approach to house design which applied industrial principles of factory buildings on an individual scale; in sum he was interested in progress and the use of technology.[3] This way of thinking was in line with the current teachings and approach of Walter Gropius and the Bauhaus. The form of an object was to be generated from its natural functions and limitations while the nature of the object is determined by what it does.[4]

Le Corbusier believed that the key to having an architecture respond to precise machinery was geometry and further to that, what he called 'pure volumes'.[5] This mathematical approach of these 'pure volumes' proved that architecture can be more than mechanical stereotype forms.[6] The Villa Savoye employed this logic taking into consideration ideal geometric proportions as well as the ability to direct the visitor in its design.

The building highlights Le Corbusier's five points for a fundamentally new aesthetic: 1) pilotis, 2) roof garden, 3) free plan, 4) strip windows, and 5) free façade composition.[7] A series of sketches were generated to illustrate the incorporation of these points in the Villa Savoye. A grid of supports and load-bearing ceilings were arranged to make up the skeletal frame of the Villa Savoye. The pilotis are placed on consistent intervals rising directly from the ground and elevating the main floor allowing the house to appear as if it is floating. They also channel the movement of the car below and accentuate the main axis of the home; the entrance.[8] The garden area is moved from the typical site to the rooftop terrace or rooftop garden.[9]



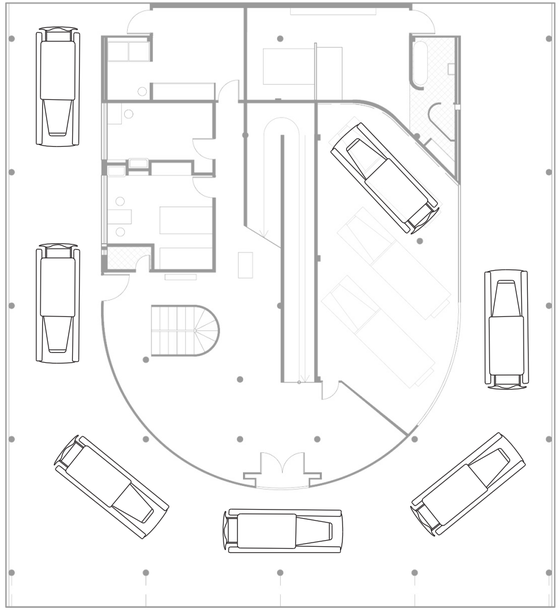


figure 3.0 - form as per 1927 citroen B14 turning radius

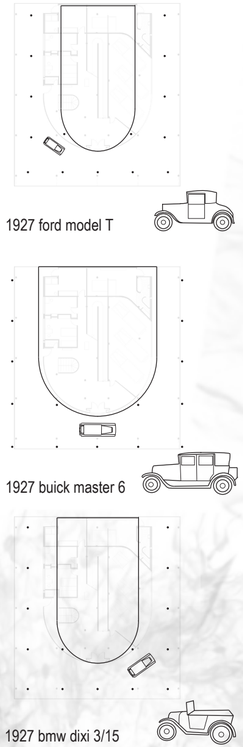


figure 4.0 - potential forms as per other 1927 vehicles

Walls were to be inserted, many or few, providing the ability for countless variations within.[10] This resulted in the role of the exterior wall to change. Now referred to as a membrane in this specific case, the exterior walls have been freed of their load-bearing role allowing freedom of composition further emphasizing the functionality of the building itself.[11]

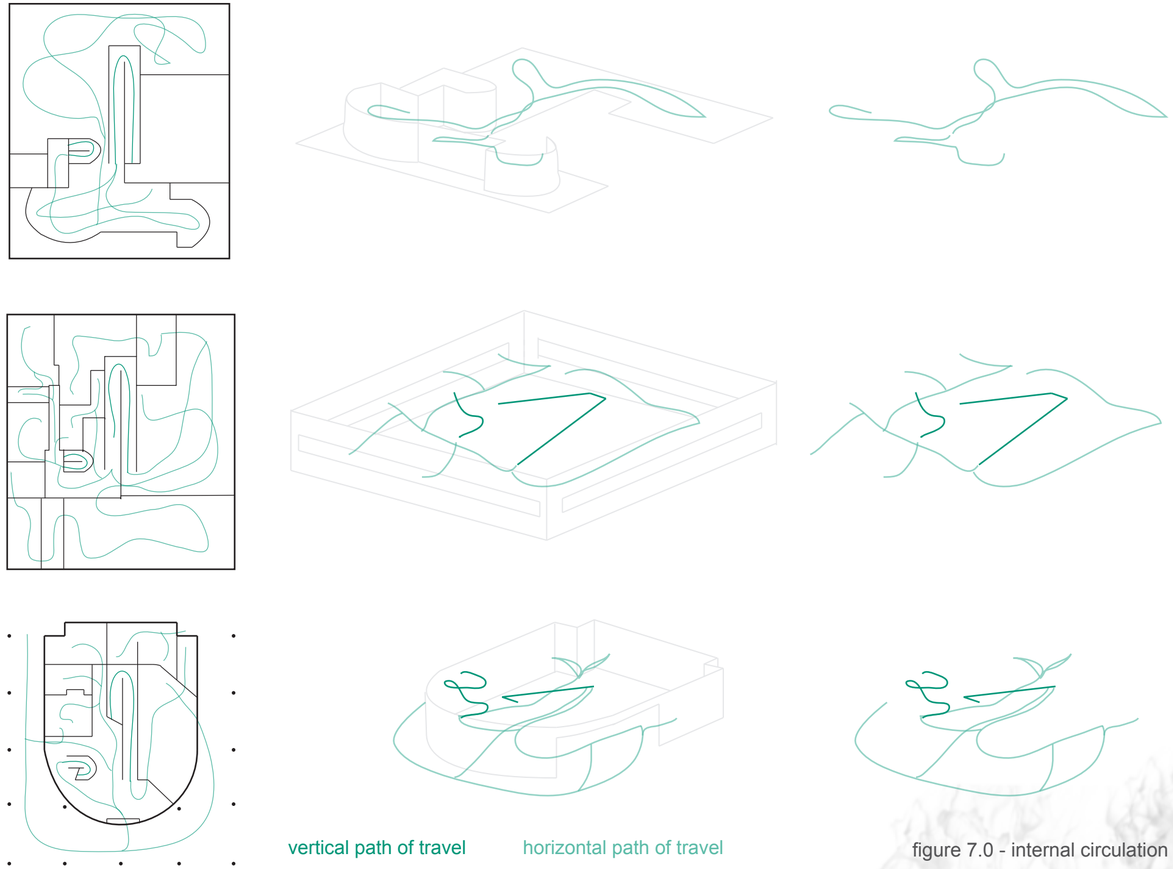
The base form of the home came from the notion of it being automotive dependent. The arc of the minimum turning circle of a vehicle provides the dimensions of the house.[12] The house as an entirety is made up of three differentiating masses: 1) the ground floor containing communal service areas, a small guest apartment, and the garage, 2) the first floor or the house proper containing the dining room, kitchen, bedrooms, bathrooms, and terrace, and finally 3) the roof garden which also serves as a second terrace or solarium.[13] The meticulously defined proportions of these masses is accentuated by an alternating use of textures and materiality; a taut glass membrane at the ground floor, white-washed walls with strip windows at the first floor, and a permeable screen on the roof garden.[14]

figure 5.0 - house plans transitioning

figure 6.0 the villa savoye

The final aspect related to form that Le Corbusier wanted to change was the deletion of the typical 'front' and 'back' notion of a house and replace it through a division of 'top' and 'bottom'. Similar to that of a column, the building would have a base, shaft, and capital. To do this, he revised the plan, fled the street, and strived towards the light.[15] Corbusier kept curvilinear shapes on the roof to further highlight this sectional type: traffic and ground below, living in the middle, and arcadia on the top.[16]

It has been said that all living things in nature have a shape which reflects the quality and inner life of the thing; life and form are one entity.[17] After reviewing the above information, the question of whether or not the Villa Savoye's form reflects the buildings internal logic cannot be disputed. It is manifested through change in materiality, geometric shape, and hierarchal arrangement of inner workings. The form along with its interior, discussed further in the next section, help to illustrate Le Corbusier's notion of a New Architecture and a new aesthetic.



vertical path of travel horizontal path of travel

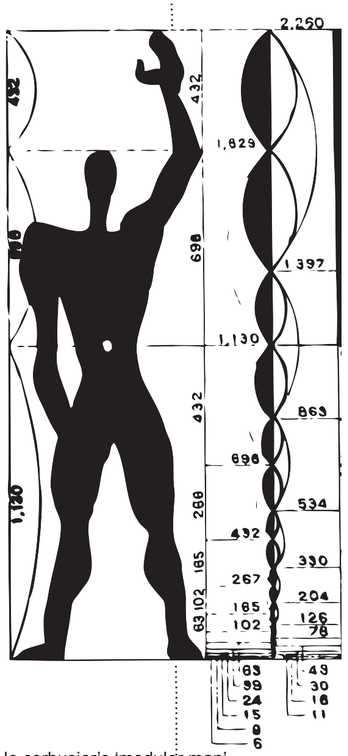
figure 7.0 - internal circulation

body

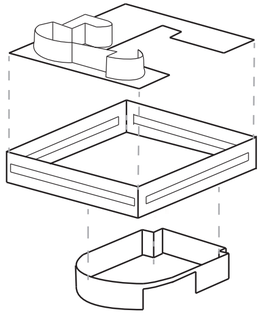
Le Corbusier employed the concept of the house as a 'machine for living' as previously stated. This notion was the fuel Corbusier used towards a new contemporary architecture.[18] In keeping with this concept, the Villa Savoye illustrates a very literal interpretation of the house as a 'machine for living' due to the fact that it is automotive dependent. This point was previously made however, in the context of the body, the vehicle can be interpreted as the heart of the building. Typically this idea of a central entity is used when referencing the hearth of the home however, taking on an industrial and technological view, the home comes to life once the vehicle is driven inside it and parked.[19]

To continue with this theme of architecture personified, upon entrance into the home visitors are greeted by both a spiral staircase and a ramp. These means of vertical circulation is often referred to as the spine of the Villa Savoye.[20] The staircase is viewed as drilling through the centre of the home and is in stark contrast to the overall horizontal and open elements that comprise the building.[21] The twisting flight of stairs bends around itself only to end up where it began.[22] The ramp however, is often referred to more pleasantly as a point of interest because of its gradual and none spastic nature.

The ramp itself is seen as plane of phenomenology which evokes a series of perceptual experiences. Referred to as the promenade architecturale, the ramp and the space it inhabits animates the entire complex by constantly affording changing views of the bodies circulating within the space as they negotiate stair or ramp; the one being able to glimpse at the other throughout the height of the building.[23] When the ramp terminates on a floor, a space opens from opacity to complete transparency providing a sense of continual celebrated spatial movement.[24] The promenade architecturale generates a space where the many layers of the building, both internal, in the sense of the inner components of the home, and external, in the sense of the exterior site and views, are viewable and somewhat habitable.



le corbusier's 'moduler man'



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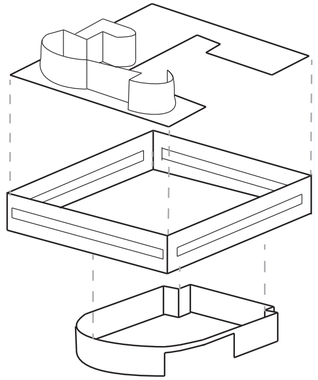
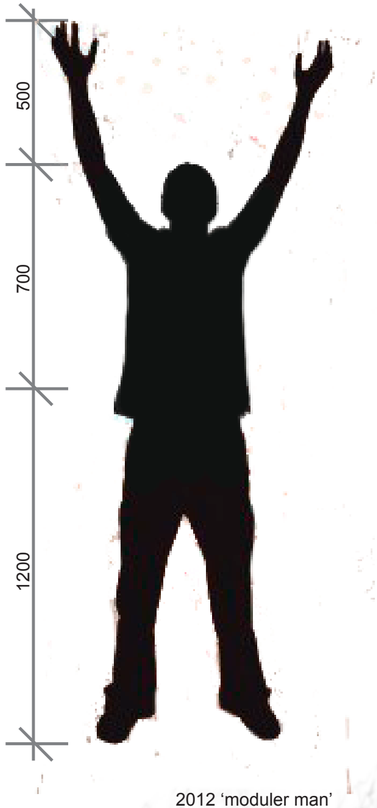


2012 'moduler man'



2012 'moduler man'

figure 8.0 - villa savoye based on today's modular body proportions

Consideration of the sight and a healthy building are components which move towards ecological design; something that is still relevant today and is present in the Villa Savoye.[25] The axial arrangement of the building on the site is further echoed on the interior. The line of the approach from the road corresponds with the long site lines of the land.[26] A north to south axes forms the vertical circulation path of the visitor on the interior as well as access to the building itself with the main entrance located in the south.[27] The rooftop terrace faces south as well breeching a connection to the sky.[28] The building's placement and layout relative to the site ensures visual continuity between the interior and exterior, nature and geometry by allowing visitors to enter the house directly from their car and ascend by foot from the ground floor to the rooftop garden.[29] The use of long, horizontal strip windows on the first floor also aids in this blurring between the interior and exterior spaces.[30] A healthy, open air feeling continues upward to the solarium where curving forms combine with linear planes giving the appearance of a thin volume and therefore, a closer connection to the surrounding natural environment.[31] Minimal detailing around the opening of the final ramp termination on the rooftop level is framed in such a way that it diminishes the barrier between space and roof and building and space beyond.[32]

Finally a ritualistic component exists within the Villa Savoye and for many of Le Corbusier's homes in general. The entrance of the house imparts a ceremonial aura by the placement of a sink. Corbusier believed the house was a sacred space for ritual and he wanted to make people think about their significant daily acts.[33] By placing a sink at the entrance Le Corbusier believed this would promote the act of cleansing, such as at baptism, as well as on the more straightforward level the health benefits of bathing.[34] In this sense, an individual entering the home is to clean themselves before they make the rise to the main floor.

The personification of the body in architecture is not a new concept. From Vitruvius and the building as the body to modern thought and the building as a reflection of bodily states, internal connections and conditions are commonly referred to in this context.[35] In relation to the Villa Savoye, it Le Corbusier effectively demonstrated how to generate specific conditions within the home as its own entity as well as the home in relation to the overall site. Vertical circulation methodology, layering of components, and framed views were all elements taken into account when he conceived this house.

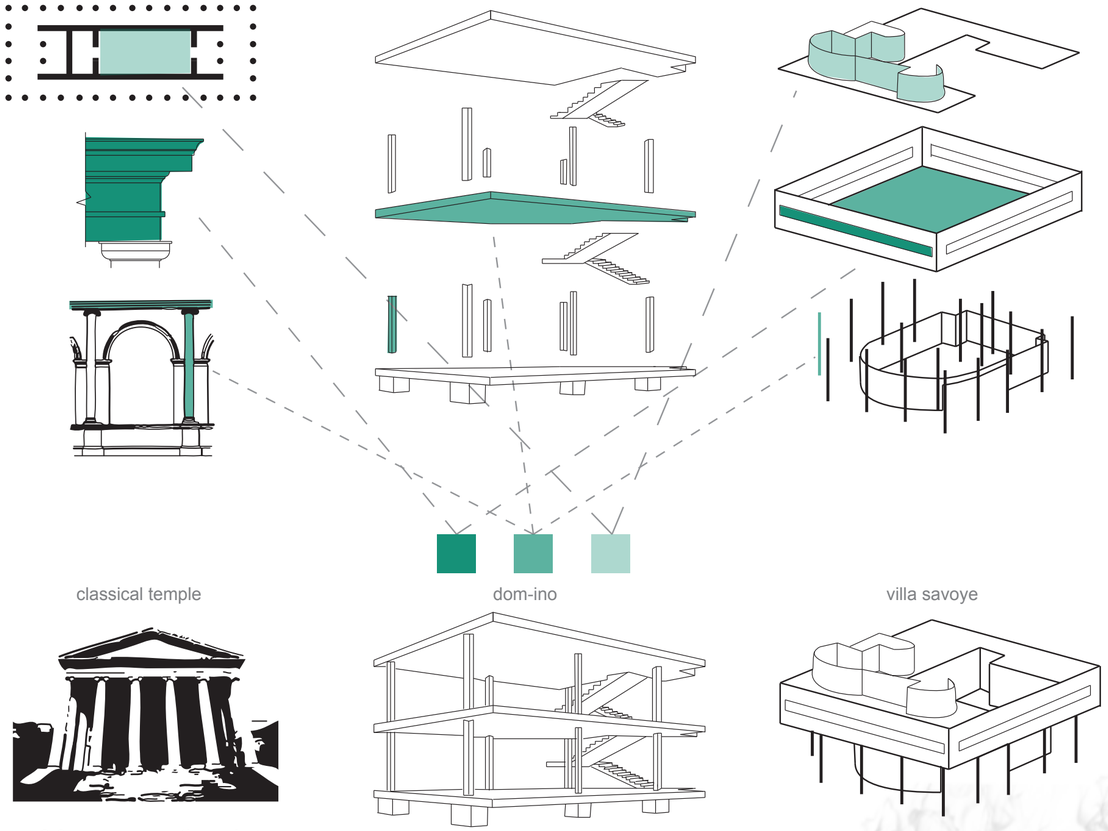


figure 9.0 - connection between technique of the ancient and the modern

technique

It has been said that the Villa Savoye is one of the greatest form-givers of modern architecture.[36] The clean form marked a new beginning for Le Corbusier's followers but an end to him for Corbusier never used pilotis, the white form, and ribbon windows in the same way again.[37]

The home is considered by some to be the last of the so called purist villas; Le Corbusier described his ideals as, "poetry, lyricism brought by techniques."[38] The technique Corbusier is referring to here is his belief in the continuity between the ancient and the modern.[39] He drew on the past for influence and understood that its presence in modern architecture meant something.[40] The Villa Savoye is a statement of this technique. It reflects the machine age standardization applied to classical architecture with only the tools changing.[41] Corbusier's Dom-ino is extracted here as the symbolic transposition of the classical trabeation; the use of horizontal beams and lintels instead of arches.[42] The pilotis are seen as columns which span to support the lintel of the horizontal concrete slabs.[43] The upper portion of the classical building, the entablature, can be defined through the extended strip windows in the Villa which resemble a void metope.[44] Finally, the glass enclosure seems to lend reference to a cella which is now housed within the lintel.[45] This analogy to the temple extends also to the understanding of the house's original and reproducible site and type.[46]

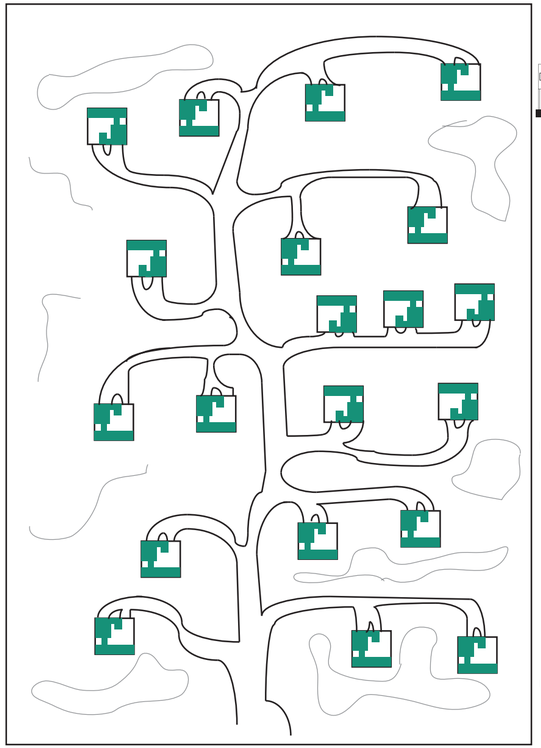


figure 10.0 - repetition of technique; Le Corbusier's Le Vingtième

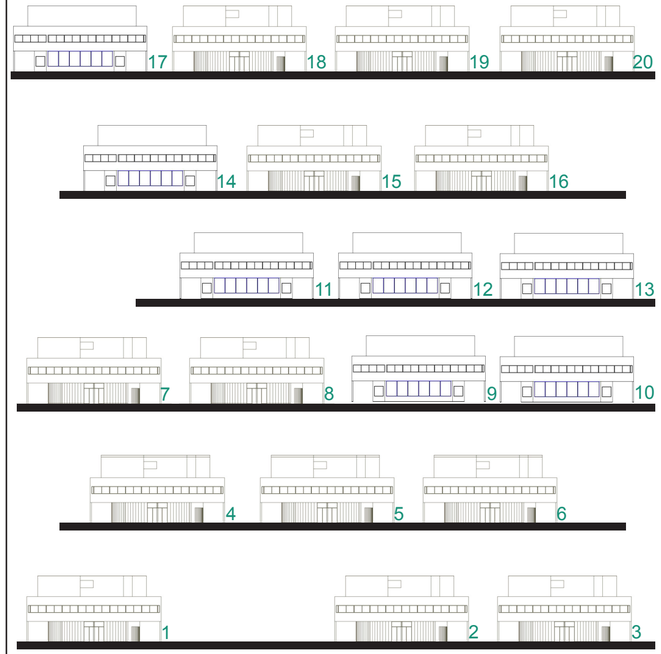
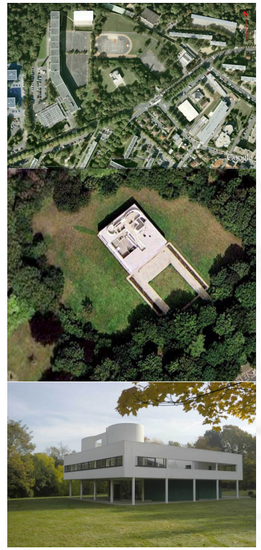


figure 11.0 - potential streetscape; reproduction of the Villa Savoye



Savoye is a cubist home; it is physically disengaged from but optimally observing the suburban farmland.[47] The placement of the Villa Savoye on its site in Poissy was not random but strategic. The landscape begins to uncover the home as the individual drives up the curved driveway. The site was to appear untouched; as if the Villa itself was simply hovering or floating above it. This effect was achieved through what might be referred to as false technology however, it served its purpose. The ground floor is set back for the passage of a vehicle below however, the consequent shadow which is plunged deeper because of the dark paint colour, in stark contrast to the pristine white box above, provides the illusion of a floating building leaving the Virgilian Landscape unharmed.[48]

figure 12.0 - Villa Savoye site

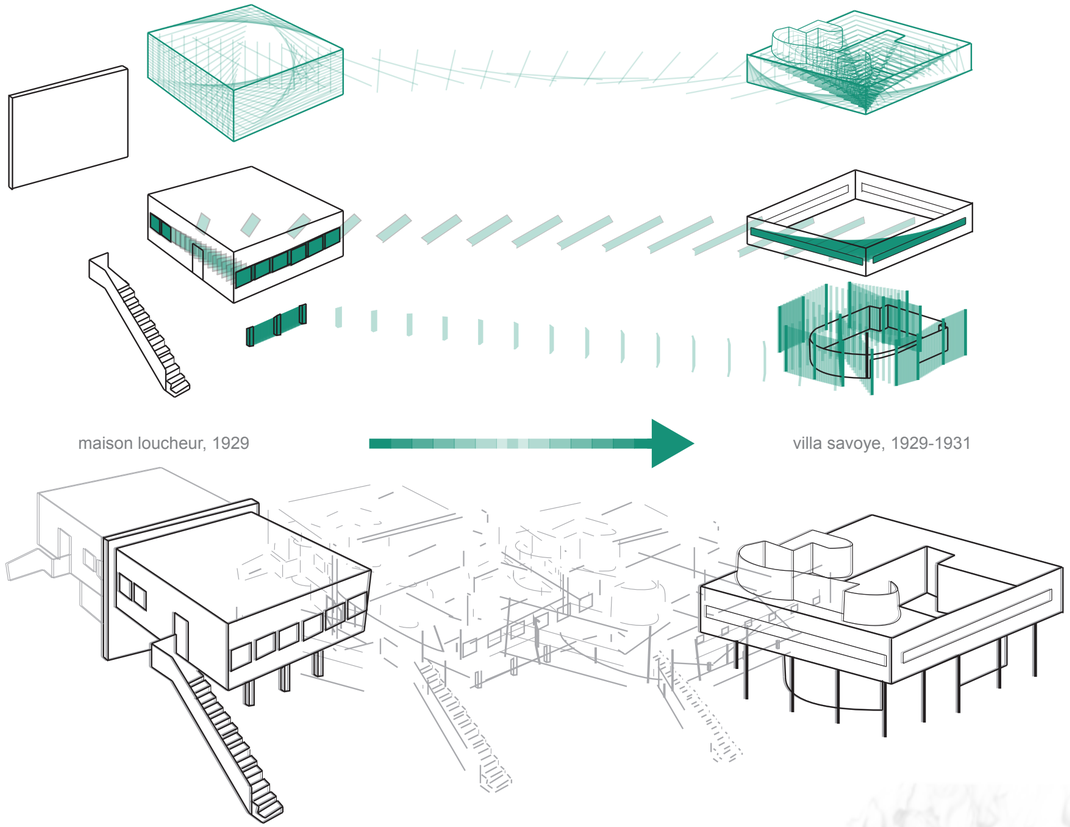


figure 13.0 - Maison Loucheur vs. Villa Savoye; technique translated

Le Corbusier desired to recreate the plastic presence and eloquence of Greece through symbolism and geometry.[49] He viewed the classical temple as a standard international object and wanted the Villa Savoye to be considered the ultimate refined homogeneous dwelling for the elite.[50] To achieve this repetitive notion, in 1929 Corbusier proposed that twenty clones of this Villa be made calling the area Le Vingtième; “The Twentieth”.[51] Each of these homes would have their own individual curved driveway guiding the individual up to the Villa’s entrance.[52] Le Corbusier also advocated the universal application of this pure type and continued to use elements of the home throughout future designs. The Maison Loucheur in a small gatehouse in Poissy possessed some of the standardized themes that the Villa Savoye showcased; it contained strip windows and also appeared as a floating white box.[53]

This notion of repeatability lends to the discussion of authenticity or, what Walter Benjamin refers to as ‘aura’.[54] Architecture can be viewed as an object which can be reproduced either as an entirety or as individual components. If Le Corbusier’s Villa Savoye clones were generated and Le Vingtième was produced, would they possess the same ‘aura’ as the original Villa Savoye? Technique and technology allow for these notions to be questioned. The reproducibility of and object is based on both the technique used in order to generate the original as well as the technology available to replicate it. In this particular case, Le Corbusier drew on the past for influence and as a result, produced a hybrid between modern and ancient architecture forming a new architecture. This is reflected in the Villa Savoye.

figure 14.0 - Villa Savoye master bathroom; how space is used

space

Space can be seen as fundamental to human experience therefore, it is realistic to infer that much of our spatial environment, whether it be a landscape, city, house, room, is designed by people with people in mind.[55] We perceive spaces through our senses individually; form, materiality, light, and colour are all items which have the power to stimulate the individual and aid in the evaluation of space.[56] Ultimately, space is a relationship on the cognitive and sensory level; the individual is between things and bodies which vary in scale from acoustic and visual signals to the phenomenology of a space.[57]

In relation to architecture, space can inform use which is sometimes reflected in the overall form; the intended actions that take place within.[58] The function of a space and its spatial features can influence the user and provide a container for a specific action or interaction to take place.[59] In the case of the Villa Savoye, Le Corbusier chose to blurr the boundary between interior and exterior spaces while determining the public and private areas. The spatial shell of the building communicates a narrative between the interior and exterior of the space through the number of openings and use of materials.[60]

In the residential space, areas are divided into zones based on their function as well as their need for privacy. The ‘publicness’ or ‘privateness’ of a space directly influences and individual’s behavior while engaging with the space.[61] A more private space for example, such as the master bathroom in the Villa Savoye, would be designed at the human scale and provide familiarity, security, intimacy, and a space for reflection.[62] The bathrooms, as well as the bedrooms, are organized in a protective maze of privacy deep inside the house through the use of space and physical boundaries.[63] Doors and walls leading to these areas are painted dark colours so light and attention are not drawn towards them resulting in little encouragement for venture and providing a stark contrast when compared to the welcoming wall of windows leading to the hanging garden.[64] Within the master

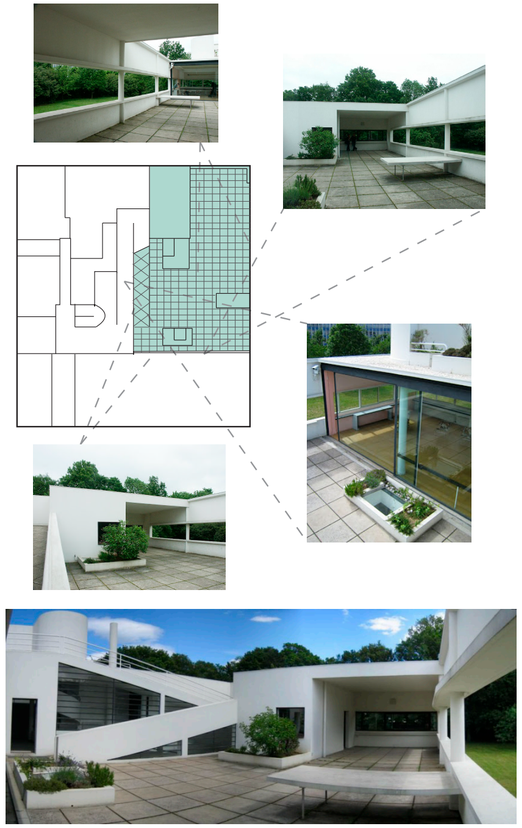
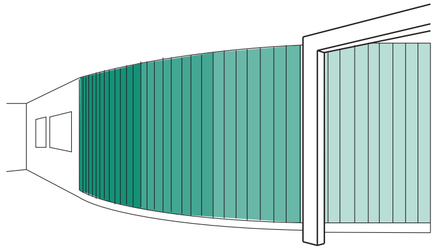
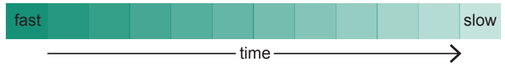
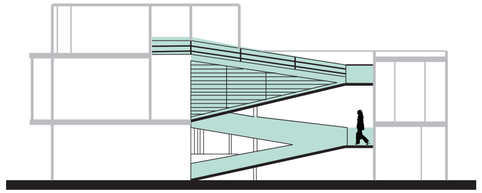


figure 15.0 - Villa Savoye hanging garden; intentional spaces of reflection



ground floor mullion layout





architectural promenade

figure 16.0 - time defining a space; the vehicle entrance vs. the architectural promenade

bathroom itself, a skylight above and tiled chaise lounge attempt to bridge the boundary between inside and outside within the intimate space.[65] The undulating surface of the chaise is intended to mimic the landscape while the skylight provides a direct connection to the outside allowing natural light and sky into the otherwise secluded space reframing the value of the outdoors.[66]

A more public space is designed with the many in mind and attempts to generate an area free of social control; it is a space for movement, activities, and lingering.[67] In terms of a more public space within the Villa, the hanging garden located on the main level provides an open-air region which connects the roof top garden to the remainder of the home. Freedom of movement, inviting views, and permeability of this space presents a welcoming environment guiding the individual towards it and promoting interaction with it. Furniture placement within this space is done with intension to draw the individual to areas the architect has designated as places of activity. In this particular case, alter-like tables are arranged more appropriately at the height for sitting in the hanging garden which signals to the participant to sit at this particular location where a selected view is highlighted.[68]

Walking through a space allows an individual to experience the dimension of time as well; a spatial sequence might be conditional upon the speed of a user.[69] Materiality can also be defined by time as the consistency and colour can change over time as well as the trends and materials available.[70] It can be said however that space changes based on time. Take the architectural promenade for example; the ramp ascends gently to the main level promoting a slow, gradual climb in order to experience the wall of glazing which exposes the hanging garden and therefore, the connection of the Villa's interior space to the exterior.[71] It dignifies the space and evokes the machine age by introducing a ramp-road into the domestic interior drawing upon its current time period. [72]

The concept of space is broad but can be determined as either produced (constructed) or natural (environment). An individual's perception of space, regardless of is generation method, is an experience or interpretation based on sensory stimuli. It is an intense relationship between the user and the building through the act of movement.[73] A steep staircase or narrow corridor produces a different interpretation of a space when compared to an open terrace or well-lite architectural promenade. Space is based on the individual human experience.

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