

## *Machine à Habiter* or *Œuvre Plastique*? The Color Concept of the Villa Savoye

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"I want a poem made of solid words with defined meanings and clear syntax"<sup>1</sup>

The result of 10 years of "patient research", during which his buildings and paintings served as a laboratory to develop the fundamentals of his architectural language, Villa Savoye marks the end of the Purist phase of Le Corbusier's work. The Villa not only became the climax of previously collected experiences and "certainties", but also became the built manifesto of Le Corbusier's ideas for a new architecture of the machine age. He described the Villa Savoye in a drawing as "A pure type, very generous, full of resources, too."<sup>2</sup> Here in the Villa Savoye we see the collaboration of his *tracés régulateurs*, his 5 points in architecture, the architectural promenade and a matured *polychromie architecturale* [architectural polychromy] culminating in the idealized *type pure*.

In 1930, during the final stages of the construction of the Villa Savoye, Le Corbusier received the commission to design a wallpaper collection for the Swiss wallpaper manufacturer *Salubra*.<sup>3</sup> A *Salubra* advertisement, published in September of 1931,<sup>4</sup> shows Le Corbusier calling the new wallpaper "Oil paint on rolls", offering the architect the opportunity to be "less dependent on the eventualities of the painting job". The user selected from 43 different tones and, by employing the 12 provided color keyboards, created color combinations assigned to a specific desired spatial atmosphere.

Le Corbusier's selection of colors for the *Salubra* collection is based on a clearly defined range of 12 natural color pigments and their tints and tones, restricting the range to a very limited color family. The spatial impact and "constructive quality" of each color is critical for its use in both paintings and architecture. All of the colors belong to one strictly restricted family called *la grande gamme* [grand series] as described by Ozenfant and Le Corbusier in their article "Le Purisme":<sup>5</sup>

"One can determine a hierarchically ordered grand series of colors consisting of yellow-ochre, red, brown, white, black, ultra-marine and their mixed colors. This series is a strong, stable series forming one unit, since the colors are, concerning their individual characters, related. With that, these colors have "constructive qualities". These colors have been used during all important epochs. These are the colors of those who want to paint volumes and therefore need stable colors."<sup>6</sup>

Parallel with the development of the *Salubra* wallpaper collection and its color keyboards, which entered the market in fall 1931, Le Corbusier wrote his article "Polychromie architecturale—Étude faite par un architecte (mêlé d'ailleurs à l'aventure de la peinture contemporaine) pour les architectes".<sup>7</sup> The text is to be understood as procedural instruction for a purist *polychromie architecturale*, which he developed from the onset of construction of maison La Roche/Jeanneret in 1923/24.<sup>8</sup>

As mature tools for color design, both the color keyboards and his article *Polychromie architecturale* together provide one of the standard solutions required by Le Corbusier in his book *Vers une architecture*.<sup>9</sup> The color scheme of the Villa Savoye became the last built demonstration of his purist use of color. The color usage then moved away from dematerialization through color and toward an acknowledgement of material values in the forthcoming Villa de Mandrot and the Pavillon Suisse.

The Savoyes first occupied the Villa Savoye in July of 1930,<sup>10</sup> therefore the assumption can be made that the interior painting was complete at that time. Due to the time overlap between the construction and painting of the Villa Savoye and the creation of the wallpaper collection, the color design of the Villa Savoye raises new questions. To what extent can the Villa Savoye, which can be seen in many regards as the idealized type pure of the *machine à habiter*, be understood as a built postulate of his now standardized *polychromie architecturale*? In the Villa

Savoye, Le Corbusier's most complete Purist work, what role does color play in relation to space?

The remaining documents at the *Fondation Le Corbusier* in Paris provide very little information concerning the original color concept of the Villa Savoye. Consequently the latest restoration<sup>11</sup> (based on the 1931 status of the house) relied upon color probes, the color swatches of the first Salubra collection of 1931, the purist color palette and color swatches for the Villa Baizeau, dated December 30, 1930.<sup>12</sup> In the absence of comprehensive probes for evidence of previous color usage, the decision was made to paint large areas of the exterior walls white, a color that was believed to be neutral.

However correct from the point of view of historic preservation, this repainting contributes more to a misinterpretation than to a comprehension of the original polychromy. It is very possible that in 1931 some of the exterior walls were colored, even if the color examination cannot provide evidence of remaining traces of color. In contrast to its image as an icon of white modernism, the Villa Savoye may have possessed a highly polychromatic presence. Available documents are not comprehensive and it is difficult to achieve a definitive version of an entire executed color scheme or schemes, however, there is evidence that rebukes the generic treatment employed in the current restoration.<sup>14</sup>

Correspondences between the Savoyes and Le Corbusier as well as bills sent out by the contractors reveal the sequence and timing of the construction and finishing work. Le Corbusier declared the construction work to be finished on June 15, 1930<sup>15</sup> and in July 1930<sup>16</sup> the Savoyes occupied the house. However, bills from the painter Celio prove that paintwork was still underway, even though most of the interior spaces appear complete. It is not until July 1931 that we can consider the paintwork of the interior and exterior to be finished for the first time.<sup>17</sup>

In this regard, we must consider the color scheme shown on the model built for the 1931 exhibition of Johnson and Hitchcock at the Museum of Modern Art in New York as a potential reality, although the 1997 restoration of the Villa Savoye doesn't include the colors for the walls of the solarium represented in the model. A letter from the makers of the exhibition to Pissarro dated July 7, 1931,<sup>18</sup> regarding the execution of the model, clearly demands the model to be built exactly as a representation of the executed villa.<sup>19</sup>

Two articles also describe the walls of the solarium as colored. Julius Posener gives a detailed description in "La maison Savoye à Poissy" published in December of 1930: "The upper parts are painted in very light colors: blue, rose and yellow. The ground floor . . . is painted in dark green, which underlines the impression of lightness created through the square floor on his slim columns."<sup>20</sup> Together with an article published in the

October issue of 1930 of *Baumeister*<sup>21</sup> it becomes obvious, that at this point the walls on the roof were multicolored and were meant to merge with the colors of the sky.

A comparable coloring concept occurs on the wall surfaces of the roof garden at the Beistegui apartment constructed during the same period in Paris, where the exterior surfaces are painted an "outside white" and "inside in a light blue".<sup>22</sup> Evident in both articles and confirmed through Celio's *mémoire* of October 1930,<sup>23</sup> the curved walls on the ground level were painted English green. Celio clearly states that he had to repaint the walls of the ground floor in green, which had been first painted red. The same *mémoire* also confirms the execution of a gray wall in Mme Savoye's bedroom, blue walls in the main living room and that, in all interior spaces, distemper was exchanged for higher quality oil paints.<sup>24</sup>

Both Rüegg and Benton conclude, based on an estimate by the contractor Cormier of 1929 (?) for the treatment of the main façade, that Le Corbusier probably replaced the whitewash with a special "*jurassite*" plaster, "*parfaitement dressé, gresé, de teinte pierre très claire (légèrement crème)*".<sup>25</sup> In a later letter dated January 24, 1931,<sup>26</sup> Le Corbusier wrote Mme Savoye, that the painting of the exterior was assigned in the initial bid to the mason. Now he indispensably recommended the use of a special oil paint for the exterior, which should be executed by the painter. It not only shows, that during the construction of the villa Le Corbusier opted for higher quality building materials, but also reveals a vacillation between the dematerialization through color and acknowledgement of material values. The letter proves, that at that point Le Corbusier favored due to the increased construction costs, the cheaper version of oil paint tinted over plaster, which yet was better than whitewash.

We do not know whether the last finish was executed in a slightly off-white "*jurassite*" plaster or white oil paint. But similar to the Villa Baizeau, where Le Corbusier wrote: "All walls should be white" ["*Tous le murs extérieurs seront blancs*"]<sup>27</sup> the important factor seemed to be the image of a white cube on white *pilotis*, which stood out from a strong *architectural polychromie* of the interior spaces penetrating through the white cube into the exterior.

A sketch for the *pavillon du jardinière*<sup>28</sup> still exists, which Pierre Jeanneret sketched for Celio, with clear instructions for the color distribution of the exterior walls of the lodge. It is the strongest proof of a purist color scheme in relation with the construction of the Villa Savoye. The sketch shows *gris foncé* [dark gray], *vert pale anglais N.2* [light English green N.2], *vert pale* [light green] and *vert foncé* [dark green] for the exterior walls. In the purist sense of the *polychromie architecturale*, comparable to the color distribution of the housing development Frugès in Pessac of 1925, the colors were chosen to disassemble the volume of the building to planes and to camouflage it with the landscape. In contrast with the Savoye

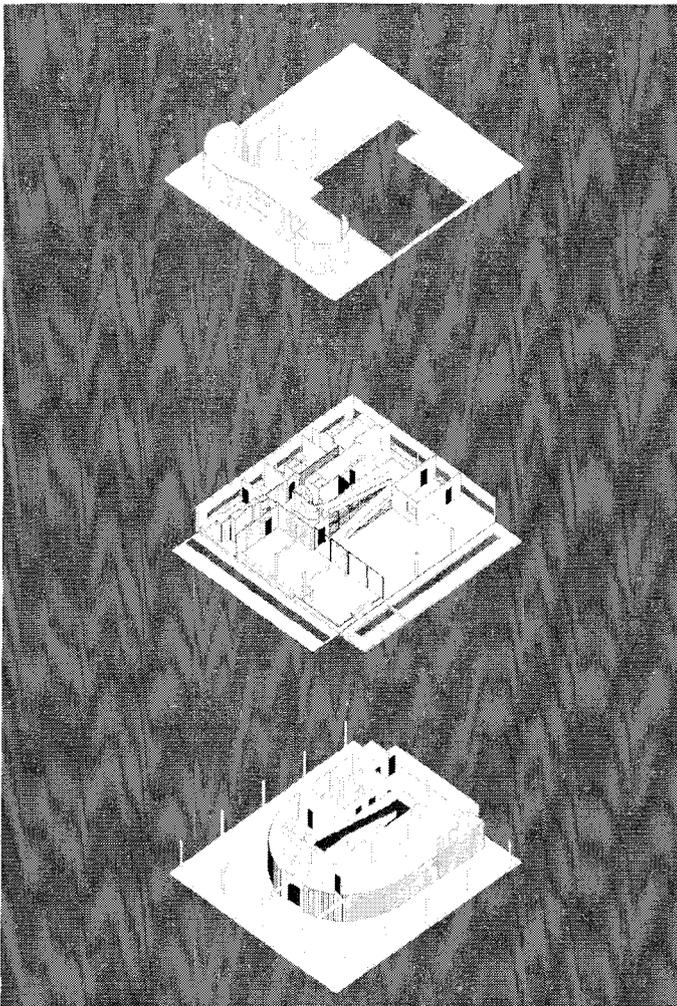


Fig. 1. Instructions for painter Celio, dated May 27, 1930.

restoration of 1997 if this color scheme was executed, than both, “the villa and the lodge shared the rooted colors of vegetation, the colors of the prairie and the orchard”.<sup>29</sup>

The Villa Savoye is a prime example of the effects of the *camouflage architecturale*, described by Le Corbusier as an “affirmation of certain volumes or, on the contrary, their effacement”.<sup>30</sup> Through color he “kills parasitic volumes” and transforms the Villa Savoye visually into a clear prismatic volume, a favored ideal previously described as an architectural goal in *Vers une architecture*.<sup>31</sup> He also emphasizes the horizontality of the white planes, leading to a more elegant and floating expression of the building as a whole. “The simple columns of the ground floor divide the landscape into regular sectors in such a way, that terms like ‘in front of’, ‘behind’ or ‘next to the house’ do not exist anymore.”<sup>32</sup> The Villa Savoye functions as a clear example of this perceptual experience; landscape seems to continue seamlessly under the structure. The dark green of the ground floor recessed interior walls merges this large volume with the surrounding landscape and

strengthens the impression of the floating white box supported by slim, white columns.

A strong polychromy, which today remains only partially visible, originally supported the subtle play of symmetry and asymmetry determining the architectural expression of the Villa Savoye. The “white box” served as a frame for the architectural composition and beyond the glazing of its long windows, colored planes and volumes were visible. After the strong frontal effect of the white wall surfaces, the tender colors of the purist palette begin to play in subtle variations.

Even with the current scheme, color constantly creates new spatial relationships between the architectural elements. Depending on one’s viewpoint, color corrects, positions, modifies and articulates the building causing it to constantly appear in a different light. The front elevation appears as a classic front façade, built up along an axial symmetry, with the hint of a white base, visually linking building and ground. This is the only moment, when the building does not appear to float over the landscape.

Le Corbusier stresses the notion of an unexpected, almost classic frontal view through the creation of the “front yard”, redesigned during the schematic process to reinforce this idea. Le Corbusier, through a series of perspective sketches, placed the villa so that it would be approached off axis, via a moving car. This sequence provides a fleeting moment of symmetry in terms of an idealized frontal view. He then dissolves the symmetry on the three remaining sides, and together with the polychromatic volumes of the ground floor and those of the roof solarium creates an asymmetrical composition. A deeply layered composition resembling a purist sculpture more than a building reveals itself when viewed together with the white cubic volume of the main living level. Moving around the building, the white base, which first appears to be a volume, is perceived simultaneously as a plane, an impression evoked by the change in hue from white to green. The confrontation and oscillation between symmetry and asymmetry, floating and grounding, volume and plane, monochromatic white and colored surfaces, announced from exterior, act as the determining characteristics of the overall composition of the villa.

Color reinforces the “principle of interpenetration of interior and exterior spaces” and the simultaneous perception of both, as described by Siegfried Giedion in his book “Space, Time and Architecture”.<sup>33</sup> The colors on volumes and planes, growing out of the white cube, associate the structure with its surroundings. “The exterior is always an interior.”<sup>34</sup> This statement by Le Corbusier reveals that for him, the separation between interior and exterior no longer exists; he understands the building as an *espace continué* [continued space] where a flowing transition to the exterior occurs, fusing the interior and exterior conditions both spatially and via color. This allows us to understand the curved walls of the solarium, painted in its original version

alternating in rose and light blue, as the spatial and three-dimensional idea of the *espace continué*, visible from the outside.

At the occasion of the conference *Rapporti dell'architettura con le arte figurative* in Rome 1936 Le Corbusier gave a presentation on "The tendencies of rational architecture in relation to the collaboration of painting and sculpture". He stated:

"Architecture depends on the plan and the section. The whole play is registered in these two material means – one horizontal, the other vertical – to express the volume and the space. [...] The polychromy is an equally powerful means of architecture as the plan and the section. Better than that: the polychromy, an element even of the plan and the section."<sup>35</sup>

The importance of polychromy in his architecture of the *Temps Nouveaux* as an essential element of spatial definition is readily apparent in this piece. Space and form are no longer determined solely through the classic tools plan and section; they are now integrated with color as an equal means of spatial definition. Plan and section determine the three-dimensional framework, whereas color creates the final expression of space.

The sculptural works Le Corbusier produced in close cooperation with the sculptor and carpenter Joseph Savina also reflect this sensibility. Savina built the sculptures based on the sketches of Le Corbusier and then Le Corbusier painted the sculptures. These reveal color choice and application as the last step of the design process as well as the significance of the process of coloring as a last artistic act of form giving.

The technique of the purist paintings by Le Corbusier – a superimposition of the contours of the represented *objets types* [type objects] as a line drawing and the *mariage de contours* [marriage of contours] as a means of spatial illusion – is repeated in the design of the Villa Savoye. The five points of architecture, of which the *plan libre* is the most influential on spatial definition, are executed in the Villa Savoye in the purest form. The independence of each floor plan and of the building components, is expressed outside through a strong tripartite of the overall volume of the building. The ramp and the spiral staircase are the only elements, which connect all three independent floor levels.

The prerequisite for the purist sensibility in built form is the *plan libre* and the independence created through the use of pilotis. Ramp, pilotis and floor slabs form the framework, around which the space can be freely developed. Comparable to the frame of a painting, suspended wall planes define the space as independent membranes. Through the horizontal windows, whose size and form are independent of the function of the spaces behind, the interior space pulsates into the exterior space and vice versa. The superimposed plans of the Villa Savoye not only show how architectural composition is related

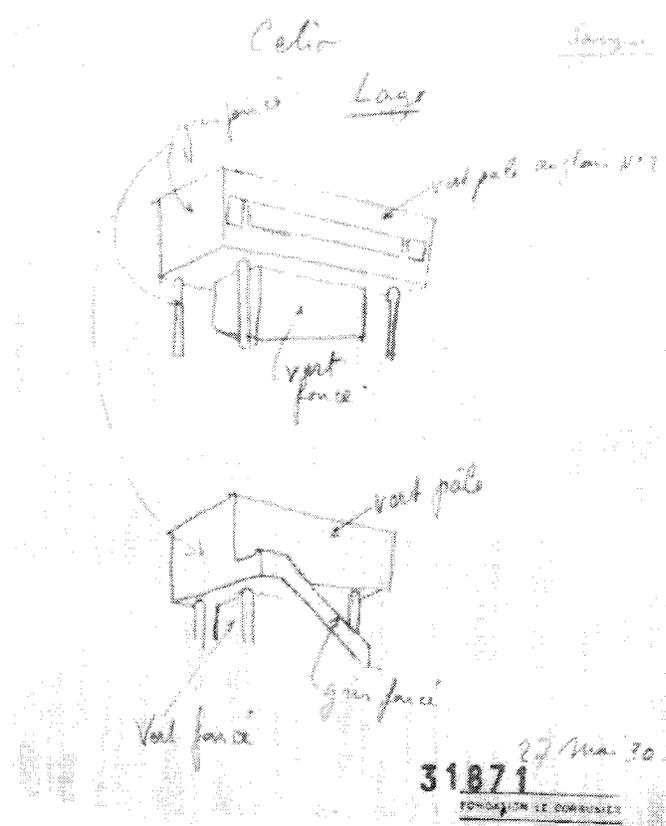


Fig. 2. Superimposed plans of Villa Savoye.

to his drawings, but also how the increased degree of complexity at the end of his purist phase is transferred to architecture through the rigorous use of *pilotis* and *plan libre*.

With one exception in the two pilotis in Mme Savoye's bedroom, which were painted gray in the restoration, the following color concept can be seen to emerge: Invariable spatial elements, such as pilotis, ramp, stair and ceiling planes are painted white, thus creating the background for an architectural polychromy, carefully demarcating the function and sculptural expression of each wall. Hence Le Corbusier's comment: "Completely white the house would be a pot of crème . . ." Space defining planes become lines in the plan, recalling the *objet types* of the purist paintings. Color, initially used in painting to create the effect of a surreal spatial transparency now becomes the catalyst of the *espace continué* in architecture. Siegfried Giedion writes:

"The floating transparency achieved in the works of modern painters finds its echo in Le Corbusier's own paintings. [...] He sees in it preference for floating transparent objects whose mass and outlines flow into each other in a *mariage de contours* that leads us from Le Corbusier's pictures to his architecture."<sup>36</sup>

Interlocking, independent spatial volumes of the Villa Savoye flow into each other in a *mariage de contour*, and through

color, which appears through architectural openings, new spatial relationships are constantly created.

The increased complexity of spatial superimposition position becomes clear when we compare two of Le Corbusier's paintings, one from the beginning of purism and the second from the time when purism had reached its peak with concurrently created architecture. Developments in Le Corbusier's artistic work reveal themselves first in his paintings, and then are later transferred into architecture. Comparison of paintings and architecture exposes how he first developed spatial transparency in painting. In the case of the maison La Roche of 1924, spatial transparency can be perceived as a layered composition of spaces. Since the possibilities of variations embedded in the *plan libre* are missing, the spatial complexity perceived in reality is unreadable in plan.

The purist paintings show color applied flatly to the areas of the line drawing created through the techniques of superimposition. Color creates new spatial relations between the remaining shapes of the represented *objets types*, now deprived of their physicality. The newly created spatial system, no longer represents a captured moment, instead it seeks to illustrate the representation of a presence changing over time. This aspect of time and motion is transferred into the creation of space in the Villa Savoye.

In his paintings, Le Corbusier superimposes *objets types* – typical objects of daily living. Consequently, in architecture he superimposes spatial volumes. Interior space and exterior space overlap one another and interpenetrate to create a new sculptural whole. Color is applied flatly to the walls, identifying each wall as a unit according to the purist principles. This “floating transparency” becomes the determining factor of spatial definition.

The purist heart of the Villa Savoye (Where the master bedroom of Mme. Savoye is understood as the interior architectural climax of the Villa) shows how color dissolves the boundaries of the spatial volumes into planes. Through “specific interactions of the colors” he creates constantly renewed spatial relations and questions the presence of the space as a predetermined unit. The *rectangle élastique*, created in painting and defined by Le Corbusier's friend the painter Fernand Léger, turns into the *espace continué* of his architecture.

In his book *Vers une architecture* Le Corbusier included numerous photographs of cars, airplanes and ships, testifying to his fascination with machines of movement expanding the radius of spatial perception. We not only observe him being occupied with a modern expression of form, opposing the “bazaar of historical styles” of the academies and his search for a “type”, but we also can see him searching for new possibilities

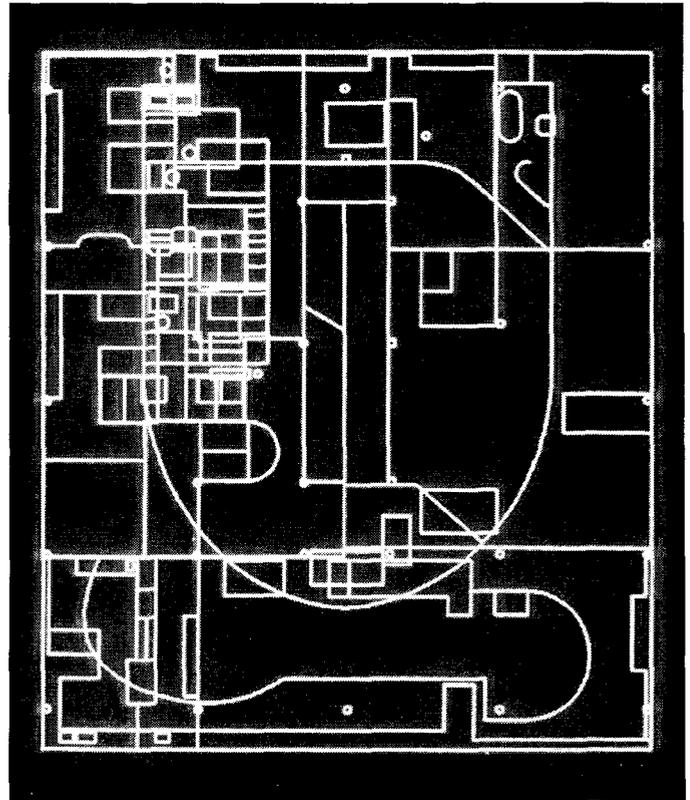


Fig. 3. Mme Savoye's bedroom.

of movement through the urban and architectural space. In *L'Œuvre complète* Le Corbusier states:

“Arab architecture teaches us something very valuable. It is appreciated by walking, with the foot. While walking, while we move from place to place we experience the ordinances of architecture. This is a principle contrary to Baroque architecture, which is conceived on paper around a theoretical fix point. I prefer, what Arab architecture teaches us.”<sup>37</sup>

In the maison La Roche/Jeanneret he introduced, at a very early planning stage, the motive of the ramp as a “principle of decelerated spatial perception”.<sup>38</sup> The movement through the space is staged and composed along an architectural promenade, which demonstrates in a masterly way the different tones and variations of human movement, providing a new means of perceiving space. Before the Villa Savoye commission only a few buildings offered the possibility to integrate the ramp into the architectural concept. The second design for the Villa Meyer in Paris, a non-realized project by Le Corbusier, shows many parallels with the spatial disposition of the Villa Savoye and can be named a precursor of the latter. For the second time after maison La Roche he tried to introduce the ramp as an additional element of movement. Unlike the later design for the Villa Savoye, the ramp, squeezed in a corner, doesn't yet play an important role spatially.

With the design for the Villa Savoye the ramp emerged again and became the dominant architectural element from the very beginning of design. His book *Precisions*<sup>39</sup> includes a sketch that shows a car used as a symbol for the new and fast movement of the modern human being of the machine age, next to a ramp, which is sketched in a way to exaggerate its slow inclination, leading from the ground to the volume of *habitation*. In addition a spiral stair directly connects *cave* and *solarium*. We see horizontal and vertical movement and fast and slow movement staged next to one another. The ramp becomes a paradigm for the movement of the human body and a “. . . procession through the space, while we see the plan of the architecture unfold”. The space of the ramp, which becomes the backbone of the composition, is positioned symmetrically on a middle axis and divides the building into exterior and interior spaces. As a strongly controlled path, the ramp becomes the main director of spatial perception.

The ramps spatial volume is painted only in white (walls and ceilings) and black (floor and subdivision of the window plane). Views from the ramp include colored walls seen through various openings and cutouts.

The polychrome final chord of this *symphonie architecturale* was created through the rose and light blue planes of the volume of the solarium, an open space to the sky, neither interior nor exterior space, neither volume nor plane, in which the ramp is directed to end in a small window, opening the view back into the landscape. Along the ramp the spectator views the constantly changing polychromy from a distance.

The disposition of the ramp in the center becomes a fixed reference in a system of interpenetrating spaces, whose spatial volumes seem to vibrate through the implementation of color. The ramp becomes an orientation device in a constantly changing spatial system and the counterpoint of the *polychromie architecturale*. Together with the white frame of the surrounding façade<sup>40</sup> the space of the ramp is the necessary constant factor to counteract the spatial dissolution through color.

“. . . It (architectural polychromie) calls special attention to designated volumes or, on the contrary causes their spatial dissolution. Interior spaces of a building should be white. But to experience the white, a polychromy has to confront with the white.”<sup>41</sup>

Leaving the ramp, we dive into the multicolored spaces of the *corps d'habitation*: previously only glimpses were available through the large window of the main living room. With the exception of the curved walls of the roof, which were likely to have been painted as a continuation of the *jardin suspendu* alternating in light rose and light blue, inside polychromy was restricted only to the interior and exterior spaces of the *corps d'habitation*.

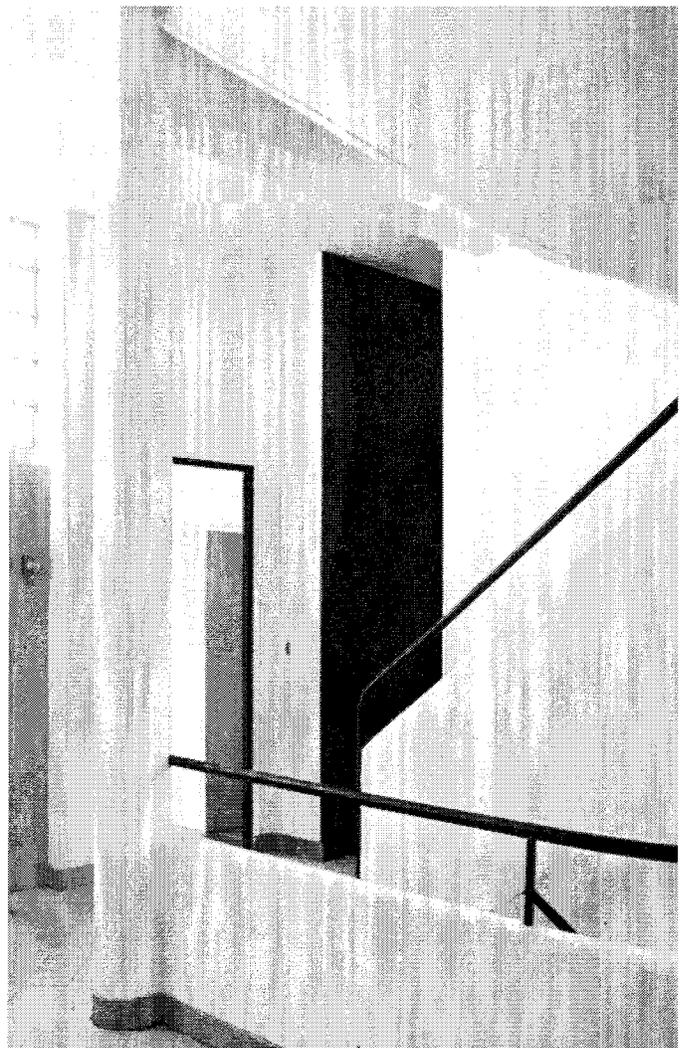


Fig. 4. Hallway.

As expressed in his article “Polychromie architecturale”, color modifies the spaces, classifies objects and determines the ambiance of the space. Each space, both interior and exterior, become a part of the whole, therefore they can only be understood in this context. As Siegfried Giedion states “It is impossible to comprehend the Savoye house by a view from a single point: quite literally, it is a construction in space-time.”<sup>42</sup> Each change of point of view is connected with a new spatial perception and only by moving through the space can we experience the principle of simultaneous perception transferred from purist and cubist painting into the built space of architecture.

The purist *polychromie architecturale* can be seen as the polychromatic counterpart to the concept of spatial transparency, developed in painting and transferred into architecture. Its inception in prior projects and later integration with the developing concept of the *espace continué* finds its climax in the construction of the Villa Savoye. The architectural prome-

nade experienced as a principle of “decelerated spatial perception” of constantly changing relationships between planes, volumes, and colors leads us towards a new “construction in space-time”. Between the poles of space creation and space dissolution, color becomes the catalyst of the perception of the spaces.

“I want a poem made of solid words with defined meanings and clear syntax.” (43) stated Le Corbusier in reference to his architecture. The *polychromie architecturale* developed through a series of built projects, which turned, with the advent of the color keyboards, into a standardized tool to design the *machine à habiter*. As a manifestation of this ideology, the Villa Savoye and its *polychromie architecturale* exists as “solid words” in the creation of the *poème d'architecture*.

## NOTES

<sup>1</sup> Le Corbusier and Pierre Jeanneret. “Ou en est l'Architecture?”, *L'Architecture Vivante* 1 serie. (Paris: Editions Albert Morancé)

<sup>2</sup> Le Corbusier, *1929 Feststellungen*, *Bauwelt* Fundamente 12, (Braunschweig/Wiesbaden: Vieweg & Sohn, 1987) 130

<sup>3</sup> See Arthur Rüegg, ed., *Le Corbusier – Polychromie architecturale. Le Corbusier's Color Keyboards of 1931 and 1959*, (Basel: Boston: Berlin: Birkhäuser, 1997)

<sup>4</sup> Salubra, advertisement. *Werk* 9, 1931: XI

<sup>5</sup> Amedée Ozenfant and Charles-Edouard Jeanneret. “Le Purisme,” *L'Esprit Nouveau* 4 (1921): 369-386

<sup>6</sup> “On peut, hiérarchiquement, déterminer la grande gamme, formée des ocres jaunes, rouges, des terres, de blanc, du noir, du bleu outremer, et, bien entendu, certains de leurs dérivés par mélange: cette gamme est une gamme forte, stable, donnant de l'unité, tenant le plan de la toile, car ces couleurs se tiennent mutuellement entre elles. Ce sont donc les couleurs essentiellement constructives; ce sont celles qu'ont employées toutes les grandes époques; ce sont celles dont doit se servir celui qui veut peindre en volume, puisqu'il emploie des éléments colorés statiques.” Amedée Ozenfant and Charles-Edouard Jeanneret, “Le Purisme,” *L'Esprit Nouveau* 4 (1921): 382

<sup>7</sup> “Architectural polychromy – Study made by an architect (who is by the way also involved in the adventures of contemporary painting)” FLC B1-1895. No date. Rüegg dates the text 1931 (?). The text however was never published by Le Corbusier. Transcript published in French, English and German in Arthur Rüegg, ed., *Le Corbusier – Polychromie architecturale. Le Corbusier's Color-Keyboards of 1931 and 1959*, (Basel: Boston: Berlin: Birkhäuser, 1997)

<sup>8</sup> Le Corbusier stated in his *Œuvre Complète*, vol. 1, p.60, that here at the maison La Roche he tried for the very first time his newly developed *polychromie architecturale*. However Rüegg mentions that, there is evidence of earlier polychromatic treatment of the interior spaces at the atelier Ozenfant and the maison à Vaucresson.

<sup>9</sup> Le Corbusier, *Vers une architecture*, (Paris: Editions Crés, 1923)

<sup>10</sup> Qtd. in Tim Benton, “Villa Savoye and the Architects' Practice”, *The Le Corbusier Archive. Vol. 7. Villa Savoye and Other Buildings, 1929-1930*, (New York, London: Garland Publishing, 1984) XIX

<sup>11</sup> For more information on the restoration see Bruno Chauffert-Yvart, “Die Sanierung der Villa Savoye”, *Bauwelt* 42 (1997): 2380 – 2383. The architect Laurence Razy from September 1996 through May 1997 executed the restoration work. Project management: Bruno Chauffert-Yvart, Architecte urbaniste en chef de l'Etat bei Service Départemental de l'Architecture et du Patrimoine in Versailles.

<sup>12</sup> See Jaques Sbriglio, *Le Corbusier. La Villa Savoye. The Villa Savoye. Paris*, (Basel, Boston, Berlin: Fondation Le Corbusier, Birkhäuser, 1999) 94

<sup>13</sup> Sbriglio mentions this problem. The architects investigated existing paint layers. However, probes are only capable of identifying the color of the specific test area rather than the color or colors present over an entire surface, which may vary according to the area tested. The very weathered walls before the first restoration may also not have allowed for an exact identification of color usage.

<sup>14</sup> For a detailed criticism of the color restoration also see Arthur Rüegg, “Zur Farbrestaurierung”, *Bauwelt* 42 (1997): 2384-2385.

<sup>15</sup> FLC H1-13 139T, letter from Le Corbusier to Monsieur Savoye, dated 6. Sept. 1930, where he declared his work as an architect to be finished since June 15 (1930). Also see FLC H1-13 132T.

<sup>16</sup> *Ibid* Footnote 10

<sup>17</sup> Water damage, which according to Tim Benton might have left the house “permanently uninhabitable before the spring of 1931” created the necessity for repainting of some interior surfaces. A letter dated March 31, 1931 doesn't show an increase in the final amount for the paint work. (FLC H1-12-125: Letter from Le Corbusier to Mme Savoye, in which Le Corbusier negotiated an advance payment of 30000 frs. for Celio and informed Mme Savoye about a verbal agreement with the painting firm to pay a final sum of 98000 frs. This amount almost equals the estimated amount of 96338 frs. from October 1930.) Therefore it is unlikely that the water damage affected the previously executed color scheme in a dramatic way. The documents prove that the final paintwork began during the finishing of the Villa Savoye in 1929, discontinued on March 1, 1929 (FLC H1-12-78 Celio's Mémoire of 1930: «Travaux de peinture, vitrerie exécutés suivant devis descriptif arrêté le 1 Mars 1929 . . .») for the remainder of the year and then slowly progressed during 1930 until July 1931 (Celio's bill July 10, 1931, see Benton “Villa Savoye and the Architect's Practice”, XIX). Most photographs, taken around this time and published in various journals, such as the “Cahiers d'art”, show the main façade of the cube with a cloudy texture, which indicates that the last finish of the building was yet to come. Based on these facts, I think that only one color scheme was executed, which was not completed until July 1931.

<sup>18</sup> FLC H1-12 144, Letter to Pissaro dated July 7, 1931

<sup>19</sup> FLC H1-12-144 “Pour moi, j'attache une grosse importance à ce que la maquette soit effectuée d'après ce que sera la villa terminée, et non pas d'après les plans.» Also, compare Hitchcock's and Johnson's description of the Villa Savoye in their book *The International Style: Architecture since 1922* (New York: Norton & Company 1932) 119: “The white second story appears weightless on its round posts. Its severe symmetry is a foil to the brilliant study in abstract form, unrestricted by structure, of the blue and rose windshelter above.”

<sup>20</sup> “Ces parties supérieures sont de couleurs très claires: bleu, rose et jaune. Le rez-de-chaussée . . . peint vert foncé, souligne énergiquement l'impression de légèreté, que fait l'étage carré sur ses colonnes minces.” And furthermore he wrote concerning the *boudoir*: “Dans la partie Sud de ce jardin intérieur, une petite chambre bleue sert de pavillon de jardin.» Julius Posener, “La maison Savoye à Poissy”, *L'Architecture d'Aujourd'hui* 2, Dec. (1930): 20-21

<sup>21</sup> Harbers, “Neue Innenarchitektur in Paris”, *Baumeister* Oct. (1930): 412-420

<sup>22</sup> Alexander Watt, “Fantasy on the Roofs of Paris”, *The Architectural Review* April (1936): 155-159

<sup>23</sup> FLC H1-13-142 Celio's Mémoire, X, 1930, N. d'Enregist. 833

<sup>24</sup> FLC H1-12-78. Celio's Mémoire, X, 1930, N. d'Enregist. 832

<sup>25</sup> Qtd. in Arthur Rüegg, “Zur Farbrestaurierung”, *Bauwelt* 42 (1997): 2384-2385.

<sup>26</sup> FLC H1-12-855, Letter from Le Corbusier to Mme Savoye, January 24, 1931

<sup>27</sup> Letter dated Jan. 10, 1930 to M. Baizeau, published in Jaques Sbriglio, *Le Corbusier. La Villa Savoye. The Villa Savoye. Paris*, (Basel, Boston, Berlin: Fondation Le Corbusier, Birkhäuser, 1999) 98-99

<sup>28</sup> FLC H1-12 124, dated May 27, 1930

<sup>29</sup> Tim Benton, “Villa Savoye and the Architects' Practice”, *The Le Corbusier Archive. Vol. 7. Villa Savoye and Other Buildings, 1929-1930*, (New York, London: Garland Publishing, 1984) XVIII

<sup>30</sup> Le Corbusier et Pierre Jeanneret, *Œuvre complète*, ed. Willy Boesinger vol. 1 1910-1929, 13th ed. (1964; Zurich: Artemis, Edition Girsberger, 1995) 60

<sup>31</sup> *Ibid* Footnote 9

<sup>32</sup> Le Corbusier, *1929 Feststellungen*, *Bauwelt Fundamente* 12. (Braunschweig/Wiesbaden: Vieweg & Sohn, 1987) 132

<sup>33</sup> Siegfried Giedion, *Space, Time and Architecture*, (Cambridge: Harvard University Press, 1952) 432

<sup>34</sup> *Ibid* Footnote 30

<sup>35</sup> Le Corbusier, "Les tendances de l'architecture rationaliste en rapport avec la collaboration de la peinture et de la sculpture" Conference, Reale Accademia d'Italia, Rome 25-31 Oct 1936

<sup>36</sup> *Ibid* Footnote 33

<sup>37</sup> "L'architecture arabe nous donne un enseignement précieux. Elle apprécie à la marche, avec le pied ; c'est en marchant, en se déplaçant, que l'on voit se développer les ordonnances de l'architecture. C'est un principe contraire à l'architecture baroque qui est conçue sur le papier, autour d'un point fixe théorique. Je préfère l'enseignement de l'architecture arabe." Le Corbusier et

Pierre Jeanneret, *Œuvre complète*, ed. Willy Boesinger vol. 1 1910-1929, 13th ed. (1964; Zurich: Artemis, Edition Girsberger, 1995)

<sup>38</sup> Elisabeth Blum, *Le Corbusiers Wege. Wie das Zauberwerk in Gang gesetzt wird* (Braunschweig: Bauwelt Fundamente, 1988) 33

<sup>39</sup> *Ibid* Footnote 2

<sup>40</sup> With the exception of the wall of the *salon*, painted rose, and a possible painted wall of the *jardin suspendu* (see Rüegg, "Zur Farbrestaurierung") all exterior walls of the *corps d'habitation* were painted white (inside and outside).

<sup>41</sup> Le Corbusier et Pierre Jeanneret, *Œuvre complète*, ed. Willy Boesinger vol. 1 1910-1929, 13th ed. (1964; Zurich: Artemis, Edition Girsberger, 1995) 60

<sup>42</sup> Siegfried Giedion, *Space, Time and Architecture*, 9 Cambridge: Harvard University Press, 19520 440

<sup>43</sup> *Ibid* Footnote 1