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Iteration, repetition and internal coherence within Le Corbusier's creative process

Abstract:

Architectural practice is without any doubt based in a constant enquiry over the project. Even more important would be the fact that this process bounces off in two opposite directions: from the context onto the project and from the building onto the surrounding frame of reference. Both these two extremes are confronted in an active dialogue and to a certain extent, they both perform as “mirrors”. However, in the case of Le Corbusier, these questions do not only revolve around these two poles but even further, they do so in relation to his whole career. If we look closely at his works, we will find out that several ideas, concepts and strategies are transferred from one project to another as a tool able to trigger the creative process, thus unfolding through subsequent iterations. As part of this method, his own experiences and education during travels and visits help him to conform a synthesizing regard over the world.

Keywords: Le Corbusier, process, Firminy, Chandigarh, design strategy

Profiles

"Watching the dome from the Piazza del Duomo where we are constantly dancing on one leg over the other to avoid a tram, a cab, a bike, or a funeral, and watching the dome when arriving to Florence, watching it just as the foreigners from the Middle Ages did so, when they reached the top of a hill and suddenly in the blue morning mist a monster stone arouse, larger than those nearby hills because it had an internal order of his own, are two singularly different things. [...] I saw it that way from the train, for a long period, four times and those four times in the loving early mist, I should have been certainly dumb not to understand it!"¹



FIG.1. Le Corbusier. Sketch of Santa Maria del Fiore, 1911. FLC_D_1979-R

These are the words Le Corbusier addressed to his master, Charles l'Eplattenier right

¹ Le Corbusier, letter to Charles l'Eplattenier, Venice, 28th October 1907

after his visit to Santa Maria del Fiore on his first trip to Italy, in 1907. Cutout against the sky, it expressed human will and power against the forces of nature, the creation of a domesticated landscape engaging into a fruitful and moving dialogue with the surrounding topography. In fact, this characteristic urban profile would soon be enriched with some others, each one depicting the true spirit of a specific city, mainly discovered through his Trip to the East in 1911². This experience in Florence must have been crucial for the architect as he took the time to sketch up this magical encounter (Fig.01), where the ethereal atmosphere is masterfully achieved. It certainly conveys the subjective impression of the beholder through an active manipulation of the real image in order to reinforce his point of view. Even further, he acquired a postcard to be found in his personal collection portraying the Dome as seen from the Boboli Gardens (to the southwest of the city) (Fig.02) pretty much following the way in which he has imagined the arrival to Florence during the Middle Ages.



FIG.2. Postcard of the Dome from Le Corbusier collection.

The same feeling pervades his account of the city of Rome, again nestled between hills with the stark silhouette of Saint-Peter marking the right angle. In one of the

² FLC C-B2 20 648. These were published in the first volume of his *Oeuvre Complète*.

pages of his notebook, he wrote down: "What I would like to show is this long horizontal line denounced by this accident in the middle, and this end by 1 great geometrical form, simple but rich in itself, aristocratic"³. The subject in question is the urban scenario of the Vatican Gardens. To the left, the enormous cupola of St. Peter's Basilica. The complex of the Vatican museums extends throughout the whole composition; to the right, the patio of Bramante's Belvedere. This reflection will be repeated in the following page, a constant, a mechanism that Le Corbusier gathers and verifies all over the classical city: "*An urban landscape to compose// vertical / horizontal*"⁴ (Fig.03).

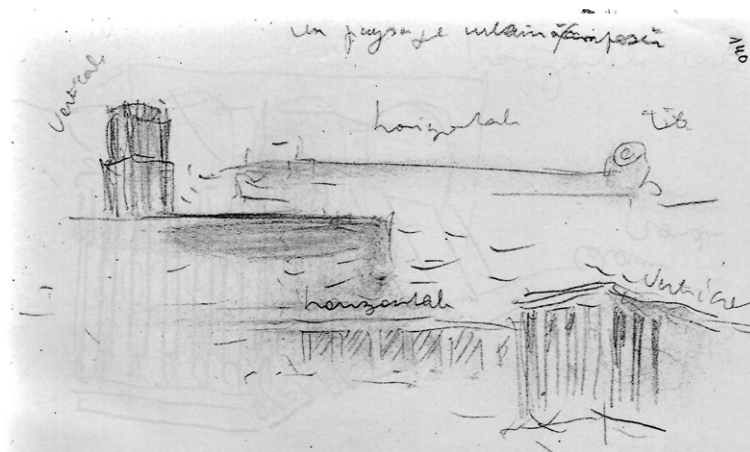


FIG.3. Le Corbusier, sketch of the urban scenario of Vatican Gardens.

In 1933, when talking about the project for a new urban extension in Stockholm, he stated: "Modern city planning "sculpts" the site, making the outline and the modelling of the landscape appear. Silhouettes are eloquent and ever varied. Sculptural "volume" has seized the city. A (reduced) prototype of these plastic events already exists: the Vatican in Rome, particularly as seen from the Castel Sant' Angelo"⁵. Quite surprisingly, that first drawing made in Florence bears and extraordinary resemblance with this other from Sugar Loaf Mountain in Rio de Janeiro

³ (Le Corbusier, 1987, 134). A later version of this drawing is used to illustrate the chapter "Classement et choix" in Ozenfant/Le Corbusier (1924), *L'Esprit Nouveau. Revue internationale illustrée de l'activité contemporaine*, n°22. avril

⁴ Le Corbusier, *Les carnets du Voyage d'Orient*, op. cit.

⁵ (Le Corbusier, 1935, 298)

(Fig.04) taken in 1929 during his South American tour. He must have found it quite appealing, there is another similar sketch further reinforced by the presence of a photograph of himself, where this huge mass stands up in the background. As it happened in Italy, two specific ideas were here found once again: the vertical against the horizontal composing the figure of the right angle and its profile providing the specific character and atmosphere for an urban settlement.

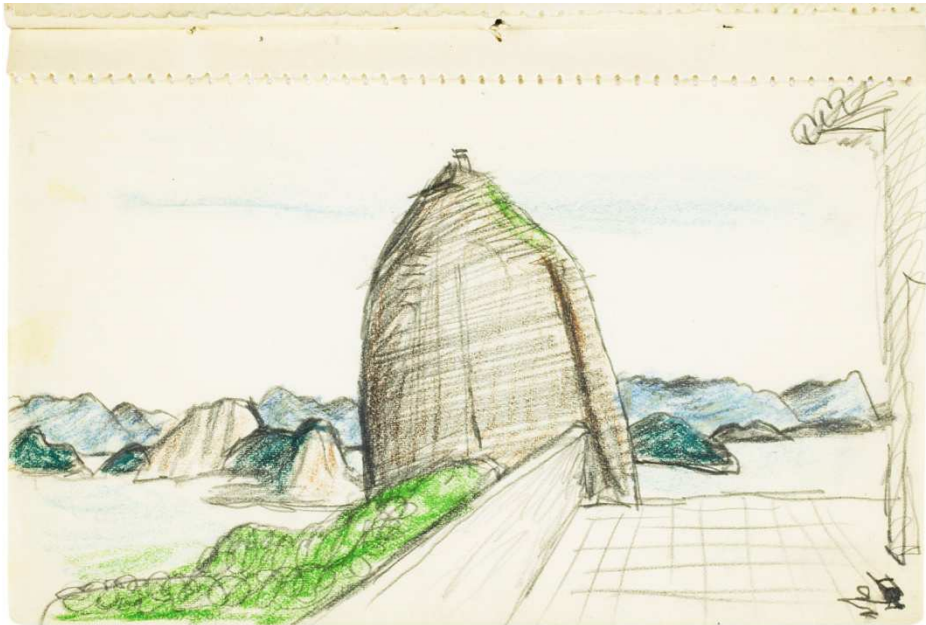


FIG.4. Le Corbusier. Sketch of Sugar Loaf Mountain in Rio de Janeiro. FLC_Carnet B4_279(1929)

Both of them were in mind, many years later, when designing the Capitol complex in Chandigarh. In fact, the dialogue established between the Secretariat and the Assembly Palace exactly follows this urban strategy. Not too much attention has been given to the first original basic design, where we are already able to find this relation. At the beginning, The Assembly Palace was a horizontal volume accompanied by the Secretariat envisaged as a slender tower (Fig.05).

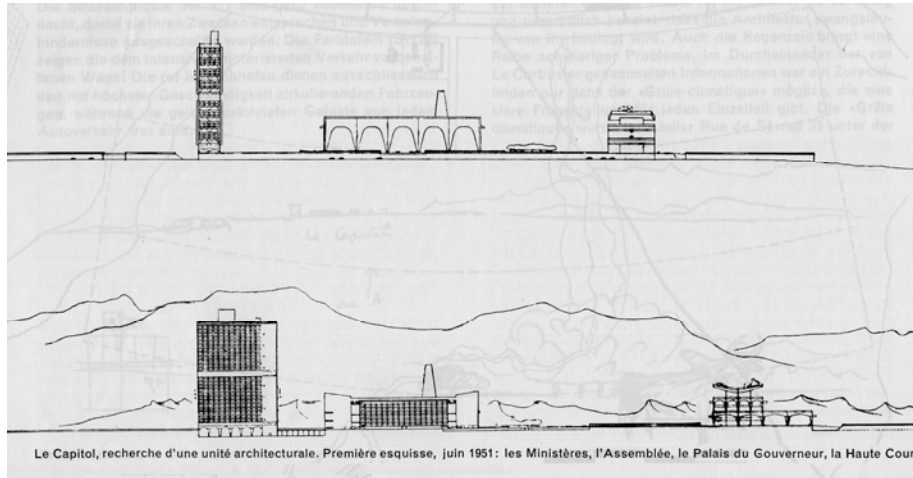


FIG.5. Le Corbusier drawing of Capitol complex in Chandigarh

Reasons are not clear, but probably due to the inherent technological issues regarding its construction in such local circumstances, Le Corbusier inverts the layout using the High Chamber to provide the vertical counterpart of the composition, while the Secretariat turned into an elongated low volume. ¿How can we so surely relate the final solution certainly inspired by the cooling towers with the cupola idea learned in Florence and Rome, being both so different in formal terms? Because it is the architect himself who invokes this source in one of the design sketches for the High Chamber (Fig.06). It's there, on the right hand side of this piece of paper; besides the section, a clear parallel between both projects is brought up. The symbolic dimension of the cupola clearly stands out, a believe which is fully understood when reading some of the notes Le Corbusier wrote down on the urban extension planned for Bogota, planned in 1950: "In our plan for Bogota there is nothing more than squared rooms because there is nothing else than enterprises, business and homes. We are missing the dome in its various forms that marks the seat of the spirit or the gods"⁶. While undoubtedly this vertical-horizontal dialogue is less powerful in the finished building, this other photograph taken by René Burri during construction stages and stocked in the archives of FLC (Fig.07) powerfully conveys the true sense behind this arrangement of volumes.

⁶ Le Corbusier's Sketchbooks, FLC W1-2-82

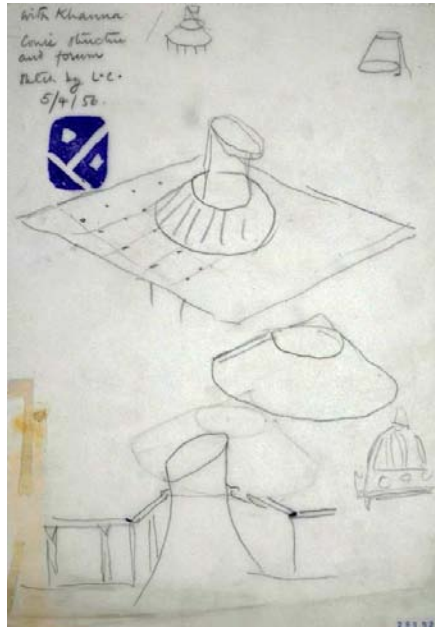


FIG.6. Le Corbusier sketch for the Assembly Palace in Chandigarh. FLC-28992

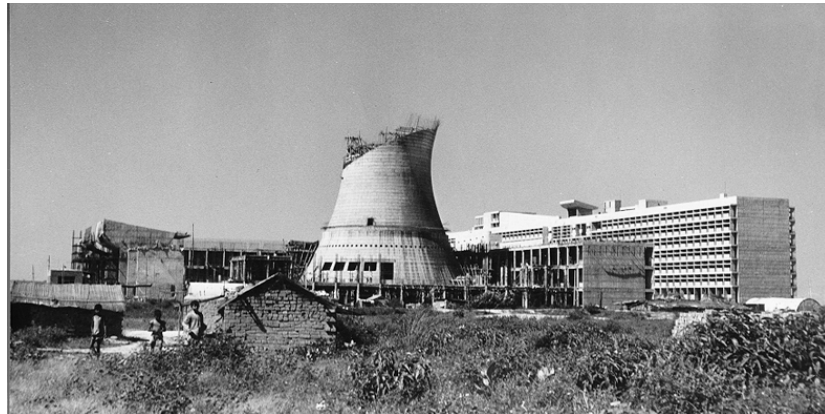


FIG.7. Le Corbusier sketch for the Assembly Palace in Chandigarh.

The role of the profile in the definition of the urban character was first discovered by Le Corbusier in his 1907 trip to Italy and in 1924, he explicitly addresses this question through nature itself, thereby presenting his subsequent works of architecture as

man-made organisms directly rooted to natural laws. Upon observing a leaf in his hands against the sun, he will say: "one becomes aware of what is a clear organization, of what harmoniously, without clash nor rupture, is born from the inside, spreads out, clearly runs and stops in an edge, this limit of contour which is a character, this contour which creates a visage completely full with its concentration vis-a-vis the external events"⁷. This contour is the measurement of its character. Even more, we can translate this same feature from a plant onto specific buildings like the Parthenon or the Breton houses, whose volume is synthesized and understood with just a few strokes (Fig.08).

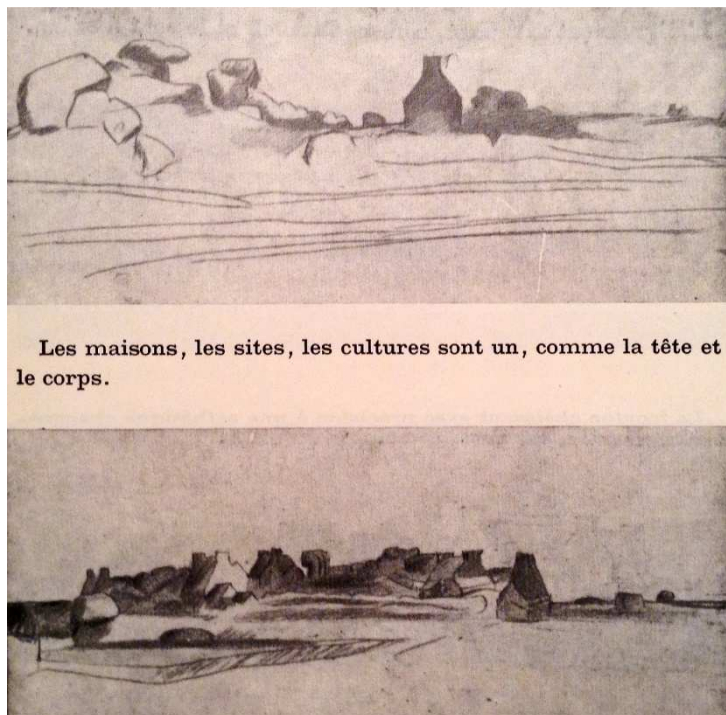


FIG.8. Le Corbusier sketch's of Breton houses. AAM-85

In Chandigarh, Le Corbusier traces the long complete elevations of the Capitol complex, where the profile of each building is filled with a grey shade, offering a range of masses against the white backdrop of the sky and the silhouette of the

⁷ (Le Corbusier, 1924)

Himalaya. In the Assembly Palace, he had imagined people ascending through a long ramp up to the roof level, where the sloped profile of the High Chamber would shine under the sun. It is quite amazing to see he had even planned to settle up paths and specific areas in order to reveal particular locations: “on the roof = grass with some paving stones 5cm laid on the grass (japan-like) = paths for photographers, at the culminating points” (Fig.09).

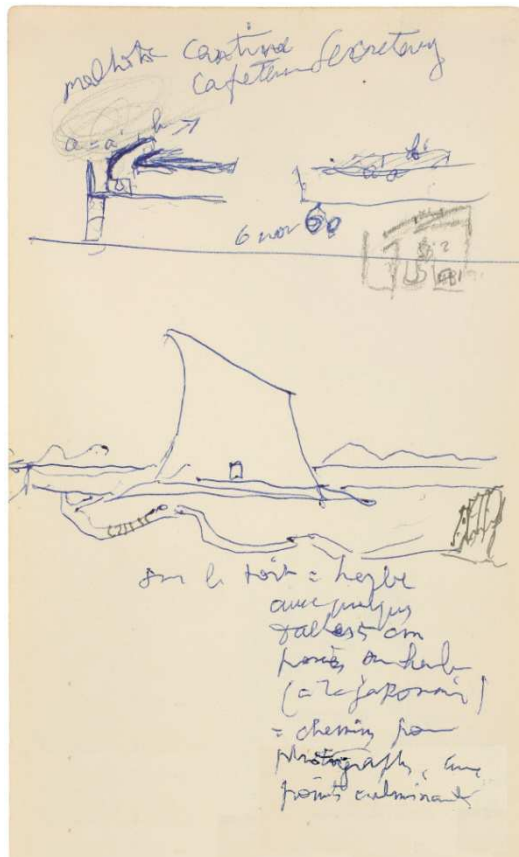


FIG.9. Le Corbusier sketch's of the Assembly Palace. FLC-Carnet P60_P620.

This taste for conducting people and controlling accesses in order to enhance certain qualities of his own works is clearly found in the Marseilles Unité (1945-52), where the elevator hall, the position of the stairs and ventilation shafts are determined to

highlight once again the profile of these elements under the sun (Fig.10): “Roof, it is necessary that upon arriving from the elevator hall to the summit, we must see stair A”⁸. As in his purist paintings, the different architectural constituents are arranged and placed so as to compose a specific scenario.

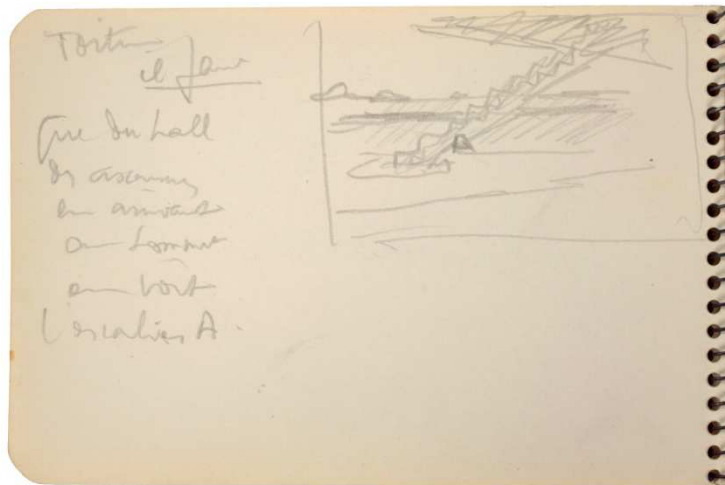


FIG.10. Le Corbusier sketch's for Marseilles Unité. FLC_Carnet D17_297 (11.1950)

Once again, these two ideas are present in one of his latest projects, the parish church of Saint-Pierre of Firminy⁹. While working on my PhD research specifically based on this design¹⁰, I had the chance to prove that it was possible to find traces of the church in several of Le Corbusier's former projects and conversely, that the opposite direction was also a way to understand Saint-Pierre. At Firminy, the complex will be built in different stages, but the culminating point arrives with the commission for the church, made in 1960 by the town major, a close friend of the architect: Eugène-Claudius Petit, also a key person for the Marseilles Unité. Here, the main public buildings are placed right at the spot where the old mining town and the new green extension meet. The area is charged with a deep meaning for the community, because it stands in the crater left by an abandoned strip mining. The vertical/horizontal dialogue is assured by the presence of two different volumes: the

⁸ Le Corbusier's Sketchbooks, FLC W1-2-297 (11.11.1950)

⁹ Church of Saint-Pierre of Firminy; designed by Le Corbusier, architect, Jose Oubrierie, assistant (1960-1965); realization by Jose Oubrierie, architect (1970-2006).

¹⁰ (Bielza, 2010)

Parish Church and the House of Culture (Fig.11). The cone of the church raising up to 33 meters strives to mark the place of the spirit and the gods but also, reinforcing and establishing an active dialogue with the inherent qualities of the site, a valley nestled up in hills.



FIG.11. Le Corbusier. Parish Church and the House of Culture

On August 16th 1961, with the church still in its first mumblings, an west-east section through the whole complex reveals the will to establish a dialogue between the different pieces in order to propose a completely fixed urban landscape (Fig.12).

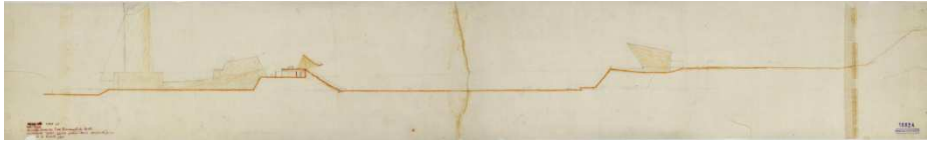


FIG.12. Le Corbusier sketch's of Parish Church and the House of Culture. EGFY 16824

At the bottom, we read the following handwritten sentence: "New section on transverse axis through Stadium/SILHOUETTE church swimming pool, benches stadium youth house". The silhouette of the South facade begins to find its appropriate shape. At first, it was conceived as an inflexible cylinder, the one whose perfection already incarnated the church of Le Tremblay. Later, a tenuous inclined line shows an advance towards the final definition of its future geometry. The play of diagonals in the church responds to the limits of the site as well to the inclined surface of the House of Culture on the opposite side. It is important to notice this first approach, because the slopes that define the limits of the West and East facades are drawn exactly opposite to those seen on the 1963 final project. Another hint on the usual way of working on the Sèvres Studio through opposite movements, until he's able to find the perfect equilibrium¹¹. During the first stages of the project, particular attention is put onto the West façade silhouette. Under a series of sketches like this one (Fig.13) we can study operations to "unveil" the character of the church through its pointed profile, in order to establish the necessary height in a balance of masses: concrete and sky. No attention is given to the small openings of the shell, to abstract the plastic quality where voids and solids play together. Quite a surprising decision, in a volume so powerful and difficult to understand in its spatial complexity without the rest of the elevations. It is clear that reducing the building to its contour becomes a tool of analysis against the surrounding area of Firminy, a tool that works as an interface. The upper part will be sliced by an oblique surface and Le Corbusier will later explain this decision as the right solution so as to collect and drain rainwater from the top. This oblique plane was also to be found in the High Chamber of the Assembly Palace. However, in 1964 he will also offer a second and most important relation: "Mount Dent du Midi et mount Catogne in the Rhône Valley of Valais (canton of Valais at the end of Lake Léman) give us the energy for the play of diagonals"¹². This profile recreates the contours of the mountains in front of her mother's house, relating the design of this church with them, thus invoking the

¹¹ For a precise account on the meaning of final slopes of the concrete shell, see (Oubrière, 1999)

¹² See (Le Corbusier, 1964)

forces of nature and his own past. A few pages afterwards, he will reinforce this idea: “First inspiration of the church: its form within the landscape”¹³



FIG.13. Le Corbusier collage of the West façade silhouette of the church of Le Tremblay

This same play of built masses would be later used for the unbuilt Bagdad Stadium (Fig.14) where radial walls supporting the seating will be analyzed as timber ribs from a ship. This “Marriage of Contours” technique was initially developed in his secret laboratory: painting. In the “Poem of the Right Angle” (1955), paper cutouts of different contours and sizes are used throughout: moving, transforming and relating to others through superposition.

¹³ Le Corbusier, *The development by Le Corbusier of the Design for l'Eglise de Firminy a church in France*



FIG.14. Le Corbusier collage of the unbuilt Bagdad Stadium

This *modus operandi* by means of background-figure contrast is especially intense and visible in the last years of his career, as research work carried in the Atelier shows through the use of scale models. These series of pictures were taken by Lucien Hervé in the Atelier Rue de Sèvres 35. I want to bring them up here, because they perfectly illustrate a technique that freely moves between three completely different projects: the church of Firminy-Vert (1960-07) (Fig.15), the Visual Arts Center in Harvard University (1961-65) (Fig.16) and the unbuilt French Embassy in Brasilia (1964-65) (Fig.17). The image of a cloudy sky is used as a background against which the volumes of each proposal stand out. A wooden easel allows to support the photography, while the white scale model moves and turns to show the complexity of each elevation. In the case of the church, all the façades of the plaster scale model are captured. We are surprised to see how this technique might be applied in so different situations, and most of it, in a project like the Visual Arts Center in Harvard, a building fitted within a completely built context where this type of connotations is strongly minimized because of the visual integration within the surroundings. These photographs had never been shown to the public, revealing therefore its experimental role as a working and inspirational tool. Only the church of Firminy will do so in the magazine “Progressive Architecture” of February, 1965, but the images will be edited so as to eliminate the wooden easel, thus proposing the notion of a photomontage. In spite of this apparently particular late experience, the concept that underlies behind this technique has important precedents, like other photos Lucien Hervé took for the plaster scale model of the Chapel of Ronchamp right on top of the vaults of Le

Corbusier's own apartment¹⁴, cut up against the blue sky.



FIG.15. Le Corbusier model for the church of Firminy-Vert (1960-07)

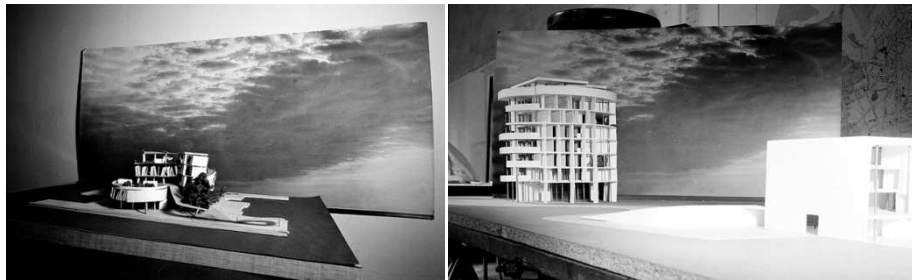


FIG.16 and 17. Le Corbusier models for the Visual Arts Center in Harvard University (1961-65) and the unbuilt French Embassy in Brasilia (1964-65)

RULED SURFACES

Working with ruled surfaces was another strategy to crystallize the space created in the transition between two planar figures held in parallel planes. It is widely known that the church of Saint-Pierre was based on an older project sketched in June 1929 for the parish church of Le Tremblay, in the outskirts of Paris. It is Le Corbusier himself who quotes this direct filiation when explaining the main concepts behind the

¹⁴ For example, picture R-22258-2002-r41b21-erl-10. Lucien Herve's photographic archive currently held at the J. Paul Getty Museum Research Institute, Los Angeles, CA (USA), which I had the opportunity to study in May 2009 with the help of a Library Research Grant.

1960 project¹⁵. A perfect square-based prism, the formal basis for Le Tremblay was linked with the platonic solids appearing in the chapter of "Rome's lesson": the cylinder, the pyramid, the cube, the rectangular prism and the sphere. However, in the case of Firminy, a new volume is composed, synthesizing two planar figures: the square and the circle. They are deeply rooted upon the symbolic tradition: the square belongs to the earth, the tangible, the static; the circle is connected with heaven, spirits, and gods. It is a fusion raising along the vertical axis and uniting both worlds. Those two figures appear in Le Corbusier's painting *Swastika*¹⁶, from 1930 (Fig.18).



FIG.18. Le Corbusier painting "Swastika"

To the left, a distorted circle, to the right, a square; right between them, a swastika

¹⁵ See Le Corbusier, *The development by Le Corbusier of the Design for l'Eglise de Firminy a church in France*

¹⁶ FLC 240

whose vertical and horizontal sections are marked with black lines. This painting, read from left to right, reflects the foundation rite of a temple: a circle is drawn with a rod stuck in the ground. Following the position of the sun and its shadow, we can determine the *Cardo* (north-south) and the *Decumanus* (East-West) axis. The figure corresponds to a cross, which reveals a special relationship with the Christian temple: "this term stems from the root *tem-* (divide). Etruscan soothsayers divided the sky by two straight lines cut at an angle above their heads [...] Therefore, the earthly temple is an image of the heavenly temple and the first lines which dominate its construction are those of order and orientation"¹⁷. From the cross, we get the base of the square. This is how squaring of the circle is produced. "The man, the center of creation, synthesizes and establishes a link between the High (Essence-Sky) and the Low (Substance-Earth); and this relationship is symbolized precisely by the sign of the cross"¹⁸.

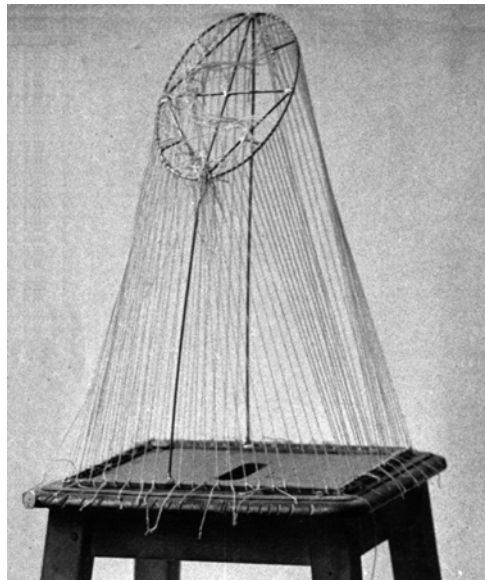


FIG.19. Le Corbusier model of the geometrical transformation between the square and the circle.

¹⁷ (Ciriot, 2005)

¹⁸ (Hani, 2004) Le Corbusier will quote this link between Earth and Sky at the consecration ceremony for the church of the monastery of Sainte-Marie de La Tourette: "We have made a house, where, I think, up and down, Earth and Sky join together", Le Corbusier, interviewed on the journal "Le Progrès: le journal de Lyon", dated October, 20th, 1960.

Thus, by incorporating oriented axes, the building plan is connected with the cosmos. When studying the geometry, this model expresses like no other else this true transition between both figures (Fig.19). A simple stool, some thick wire and a string help to unravel this connection. In the past, this transition between a square base and a circular figure at the top has been solved through pendentives, but here, this element has been dissolved in order to produce a volume whose boundaries, whose transition between two elements wishes to vanish in the air. Right there, between these two opposed surfaces, ineffable space opens up.

Le Corbusier is fully aware of the use of ruled surfaces, which are in the base of Antoine Pevsner's artworks. For his exhibition in New York in 1947, the architect will write quite an interesting presentation dealing with the Synthesis of Major Arts. Among some other issues, he mentions: "large shapes made of ruled surfaces of an intelligent geometry [...] I have looked after the man who, like the former builder of cathedrals, will put up and join the frames and the planks to construct formworks in which the concrete of unexpected statues will be poured"¹⁹. Antoine Pevsner's sculptures made in copper, bronze, brass and plastic unfold within the gallery space generating sensitive, permeable and open bodies whose different sections morph in a continuous movement of translation. These ruled surfaces are quite appealing to Le Corbusier not only because of its spatial properties but because of their possibility to be composed through straight lines able to be constructed with wooden formworks. Another appealing fact comes from this approach: these ruled surfaces are intimately connected with the new material, concrete, whose plasticity and malleability open up unexpected ways to construct volumes that we were only able to make before with our hands. In his very beginnings, the architect was wondering about the new formal system attached to this material, but he was certainly tied up to the beam and post system that he will get rid of in projects such as the Philips Pavilion or the Firminy church. In an interview held in 1962, he stated: "When you get a new resource, a tool that produces new things, curved surfaces, ruled surfaces etc., that you could not do in stone or wood or in any other material you wanted to, but which reinforced concrete allows you to do with planks, which obeys to free forms, conoids, etc.. All those things that the wooden formwork or steel formwork allows you, I went with it! I used those formworks! Instead of staying closely attached to concrete buildings at right angles, well, I did all sorts of things, when the project was favorable, and it worked exclusively in Ronchamp"²⁰.

¹⁹ (Dreier, et all. 1947)

²⁰ (Le Corbusier, 2007)

It is not quite surprising the fact that he mentions Ronchamp when dealing with ruled surfaces. We all remember these wonderful axonometric views drawn by André Maissonnier for the roof beam system. But a new reading brought up by Le Corbusier himself changes our point of view regarding the spatial mechanism for this project. At Firminy we were talking about two sections which are confronted in order to find a connection able to put them in harmony. This intermediary space is exactly the same used in the Ronchamp chapel, but here produced along a horizontal line. We are used to understand this project through two complementary but independent masses: the base, conceived as walls following a complex geometry responding to the surrounding context, conceptually built with the stones and rubble for the original chapel; the roof, this crab shell, this dark grey cloud hovering over the latter. This approach also seems to be reinforced by the construction system, superposing both masses. However, the architect brings up a new way of looking at it. In a book published in 1957, he draws this cryptic design where two trapezoidal forms are joined through an intermediate space, just as he indicates with his own handwriting: "The surface BB1 joins the surface A, A1, A2, A3 like a rising wave" ²¹ (Fig.20)

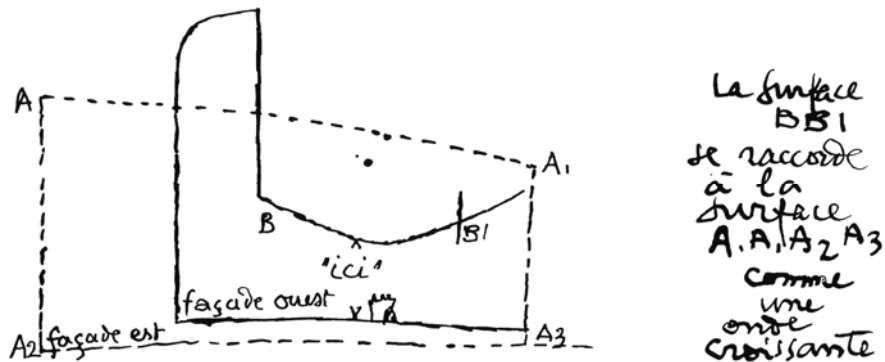


FIG.20 Le Corbusier studie for Ronchamp

Of course, when dealing with this translation between two planar figures and the use of ruled surfaces, the shell of the High Chamber of the Assembly at Chandigarh remains the most direct referent. Inevitably, behind this powerful geometry, the discourse of the engineer Iannis Xénakis is quite present, because of his crucial

²¹ (Le Corbusier, 1957)

contribution to its geometric definition. The imposing cooling towers of the electric power plant close to Sabarmati river, near Ahmedabad, are the main source for this decision, although he had already seen this typology in an article from the Dominican magazine *L'Art Sacré*, appealingly titled “New forms”²² and written in 1950 by his friend father Marie-Alain Couturier, where a couple of cooling towers appeared along with his Marseilles Unité. At Firminy, the original form is further manipulated and warped following an equilibrium of forces between the different pieces of the complex and the inner space. Chandigarh proposed a much more straightforward reading of the hyperboloid surface. The subsequent beheading of the upper part might be confusing in order to understand the original source, but the strict geometrical construction prevails over any modification. The huge wooden lattice model of the High Chamber will remain at the Atelier for many years, appearing in the pages of the *Oeuvre Complète*. On one hand, as a mute reminder of the efforts of the Greek engineer, on the other, as an *objet-à-réaction-poétique* to be manipulated under the creative genius of Le Corbusier.

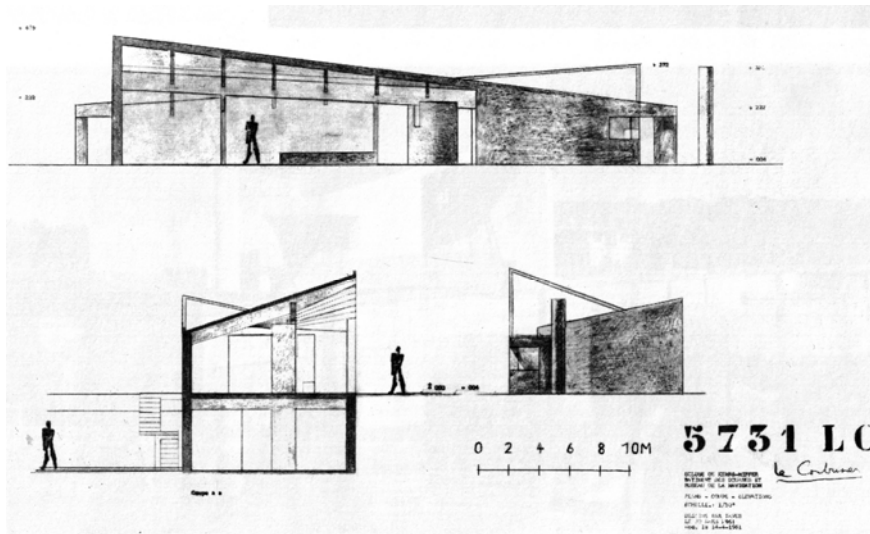


FIG.21. Le Corbusier drawings for The facilities building for the lock at Kembs-Kniffer

This transition between two flat surfaces will be repeated in two subsequent projects. This and other episodes developed in this text reveal how Le Corbusier transferred

²² (Couturier, 1950, 23).

strategies from one project to another with completely different scales. The facilities building for the lock at Kembs-Kniffer (Fig.21), designed and completed between 1959-1962. It is a small complex made up with two pieces. Again, the right angle shown in the Capitol and Firminy is found within the dialogue between two contrasting volumes. The first one is a guard tower overlooking the river area, while the second one comprises a small service building located on one side of the channel. A horizontal prism with a waving roof is formed within the transition established between two side trapezoidal walls of similar proportions. Cross sections taken every meter fully convey the shipbuilding system analogy, where a continuous sequence of frames builds up the final volume. It is important to emphasize that the main purpose behind this geometrical form is to design a roof projected as a giant funnel, able to collect rainwater, the same idea behind the cutout of the upper part of the Firminy church. We could certainly unravel a new approach of Le Corbusier's architecture following the shape and purpose of his roofs, another research which would provide further evidence for this internal coherence we are here presenting. The second example is the Congress Palace in Strasbourg, unbuilt design developed in 1964 (Fig22), where this roof solution is transferred onto a much larger building, a true container, following a homothetic transformation.

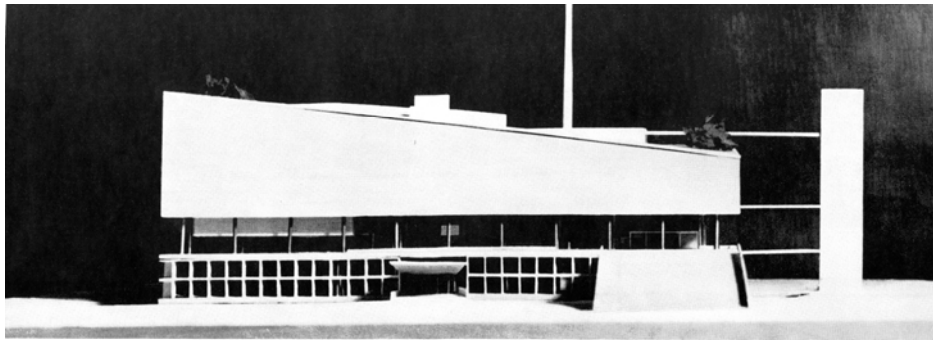


FIG.22. Le Corbusier model of the Congress Palace in Strasbourg

Of course, this attention to ruled surfaces was first triggered and inspired in Antonio Gaudí's architecture but he continued to study their formal possibilities, because of their possibility to cover large spaces. This is deeply connected with the umbrella-type building, thoroughly developed during many years in some of the following works: the French Pavilion for the Water Exhibition at Liège (1937), the demountable exhibition building at Porte Maillot (1950), the Ahrenberg Palace in Stockholm (1962) and the

Heidi-Weber Pavilion (1960-1967). A more tangible proof is to be found in his personal library, whose contents are now being fully revealed, uncovering the architect's wide range of interests. The book "Structures of Warped Surfaces, Combinations of Units of Hyperbolic Paraboloids"²³, from the Argentinian architect Eduardo F. Catalano clearly stands out. In a very straightforward and pedagogical style, it portrays a catalog of different roofing solutions using hyperbolic modules, a classification of different examples, all fully represented by photographs of wooden models. It was published by the Raleigh School of Design, exactly the same editor which four years later would launch the first book based on the Firminy church. Even though Catalano's publication was dated 15/7/1963 by the architect himself, its pages offer very valuable hints regarding possible solutions for the Strasbourg Congress Palace already included here.

Form

As it happens in the case of the fountain designed for the chapel at Ronchamp, the High Court at Chandigarh and the monastery of Sainte-Marie de La Tourette at Eveux-sur-l'Abresle (Fig.23), some of these transfers between different projects are formal resolutions which are cut and pasted with absolute freedom. We do know that the *Oeuvre Complète* was one of the few books with open access at the Atelier Rue de Sèvres, a source of inspiration which presented in the most compact way the findings of a whole life. As we have proved before, in some cases, the original model comes from within the tradition, as it happens in the case of the pulpit placed in the outside area of Ronchamp (Fig.24). Surprisingly enough, it happens to be based on another one appearing in the pages of the Dominican magazine *L'Art Sacré*, a wooden version found in an abandoned unidentified church in the surrounding area of Lartigues, Lot-et-Garonne²⁴. The similarities are striking, the different elements composing the pulpit are recognizable entities, each one portraying its own identity, all assembled like a collage: stair, cube and pillar, nearly platonic solids. Eventually, this same idea would later be incorporated inside the nave of the parish church of Saint-Pierre.

²³ (Catalano, 1960) FLC Z 043. Mr. Catalano was a practicing architect and professor at the Technological Institute of Massachusetts,

²⁴ (Couturier, 1950)

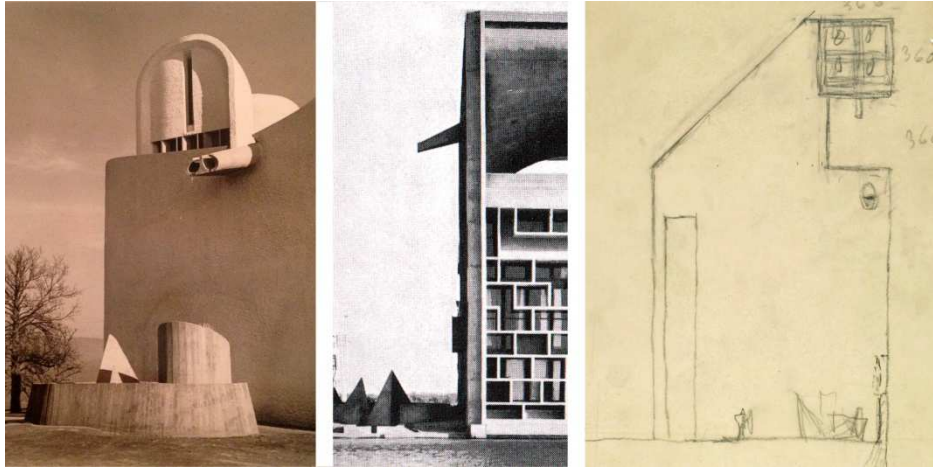


FIG.23 Le Corbusier transfers of the fountain designed in the chapel at Ronchamp, the High Court at Chandigarh and the monastery of Sainte-Marie de La Tourette at Eveux-sur-l'Abresle



FIG.24. Le Corbusier. The original model case of the pulpit placed in the outside area of Ronchamp comes from within the tradition.

We have mentioned the transition from the square to the circle when dealing with conceptual and formal basis behind the parish church, but in the final years of his life, we are able to find a profile which goes between both figures, a square with rounded edges. Any detached vertical shaft related to fluids such as water, smoke or heat follows this shape (Fig.25). We find it in the Brazilian Pavilion at the University in Paris: the steel covered column at ground level; also in the Jaoul houses: in the chimney air intake appearing right in front of the entrance door to the main bedroom;

later on, in the Chandigarh Assembly: the two massive rain pipes carrying all the water from the roof; (Fig.26) in 1961, in the monastery of La Tourette: the shaft coming from the heating system installed under the church; in 1962, the initial stages of the Firminy church: acting as a draining system and structural support for the stairs leading up to the choir and finally, split up in half showing its inner shape, in the already mentioned lock at Kembs-Kniffer, also taking the rainwater to the ground.

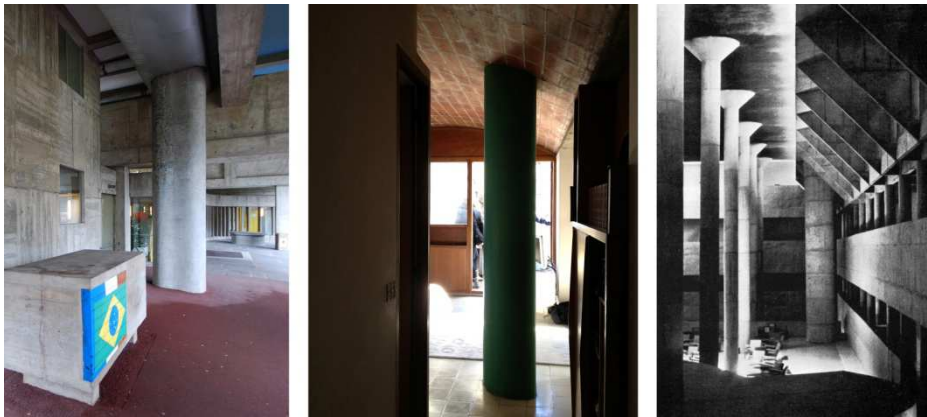


FIG.25. Le Corbusier. Profiles which go between both figures, a square with rounded edges. Brazilian Pavilion at the University; Jaoul houses; and Chandigarh Assembly

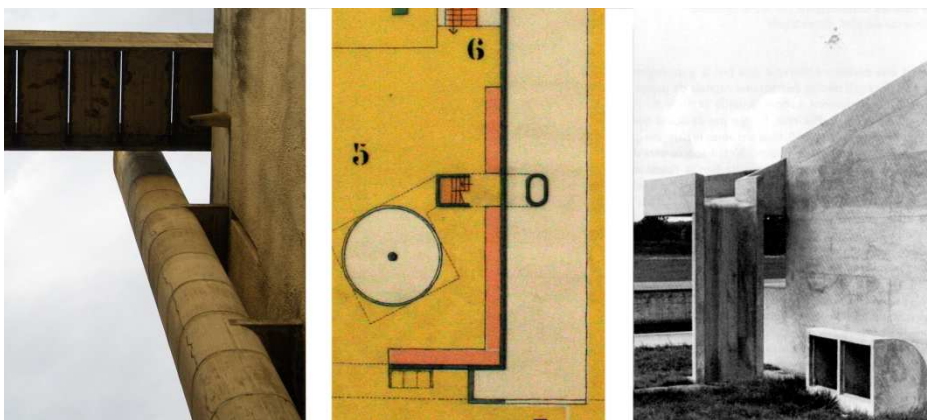


FIG.26. Le Corbusier. which go between both figures, a square with rounded edges. Monastery of La Tourette; Firminy church; and Kembs-Kniffer

All of them transform this air-ground connection into a formal event of its own. This man-made frame highlights and makes visible this transition between the sky and the earth. It draws our attention to a meaningful phenomenon which happens to re-establish the natural balance. I have introduced this meaningful term, *balance*, because it is behind another explanation for this choice, this time given by one of his closest collaborators, André Wogenscky: "One day his hand draws a square, but rounded. It is a kind of intermediary between a square and a circle. A square whose corners are curved. A circle where some opposing arches flatten. He says he loves this shape and that he finds it beautiful following the precision we want to give it. [...] It is a precise dosage related to a hand gesture, a kind of *balance* found in the swing which goes from the square to the circle and comes back"²⁵.

As we have seen in these case studies, some design strategies and obsessions are transferred from one project to the other. What's most appealing of all, is precisely this inner coherence which allows us to discover hidden relations between projects set apart in time and space. Key "solutions" are reworked over and over. Of course, merged with changing contextual conditions and program requirements, they might arrive to design stage, to execution project stage or to the built oeuvre. Several strategies and tools find themselves intermingled in different projects. As part of this process, his own experiences and education during travels and visits help him to conform a synthesizing regard over the world. His architecture unfolds through different associative layers able to evoke history, emerging as a result of this equilibrium of forces, in fact "re-creation" rather than "creation" *ex nihilo*. Iteration and repeated testing of similar ideas are in the base of his working process. This inner coherence performs as a powerful conceptual substratum which will also endue his works with a double dimension: on one hand, they are perfectly able to suit XXth century man's needs but also, they become fully immersed within the tradition. All these examples are here presented willing to prove that this hypothesis might stand out as a valuable tool which should serve to other researchers in order to find hidden connections between the many designs accomplished during his life. Most of the documents produced during the different design stages are nowadays stocked in the archives of La Fondation Le Corbusier and this fact shall be crucial so as to evaluate this approach, unfolding this strategy at all levels.

²⁵ (Wogenscky, 2006)

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