

Ronchamp, South Wall

Keywords

– Le Corbusier, Ronchamp Chapel, Design Process, Analogy, Archaic

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The Ronchamp Chapel was conceived under the sign of the metamorphoses of memory, appearing as a particular case of memorabilia. Among the memory objects produced by L-C, a plaster model of the first version of the south wall remains as a fragment. Produced through sculpture molding techniques, the perforated surface opens up new possibilities of interpretation of the chapel's analogical design process.

The design method of Ronchamp moves between emotional, unconscious images, in search of an architectural experience in response to the “archaisms surviving in man.” The experience of an architectural journey is no longer the promenade architecturale, determined by visual

compositions, but the anthropological experience of contact with surfaces, the recognition of the object by the circumscription, the crossing of the threshold, the spatial compression, the illumination of the concave surface of the apse, and of the dazzling by the backlight, expanding the unconscious archaic.

- 1 Le Corbusier is the artistic name of Charles-Edouard Jeanneret-Gris (1887–1965), an architect of Swiss origin, naturalized French.
- 2 Burriel Bielitz, “Le Corbusier’s Postcard Collection: Poetical Assemblage as “Porous” Classification System,” *Artifact*, vol. iv, no. 1 (2016): 3.1–3.18; Tim Benton, *LC FOTO. Le Corbusier Secret Photographer* (Zurich: Lars Müller Publisher, 2013). We are referring to the *carnets de voyage*, and to the publications of the 1920s and 30s, *Une maison – un palais* (Paris: Crès, 1928), and also to the unpublished editorial project *La pierre amie de l’homme*.
- 3 In *Textes et dessins pour Ronchamp*, ed., Jean Petit (Paris: Forces Vives, 1965), published ten years after the inauguration of the work, L-C: “Lorsqu’une tâche m’est confiée, j’ai pour habitude de la mettre au-dedans de ma mémoire, c’est-à-dire de ne permettre aucun croquis pendant des mois. La tête humaine est ainsi faite qu’elle possède une certaine indépendance: c’est une boîte dans laquelle on peut verser en vrac les éléments d’un problème. On laisse alors “flotter, “mijoter”, “fermenter”. Puis un jour, une initiative spontanée de l’être intérieur, le déclic, se produit ; on prend un crayon, un fusain, des crayons couleur (la couleur est la clef de la démarche) et on accouche sur le papier : l’idée sort, – l’enfant sort, il est venu au monde, il est né.” See also Danièle Pauly, *Ronchamp, lecture d’une architecture* (Paris: Ed. Ophrys, 1980). A literary model for the statement can be: Raymond Roussel, *Comment j’ai écrit certains de mes livres* (Paris: Alphonse Lemerre, 1935).

“Analogic thinking is archaic”

CARL JUNG, letter to Sigmund Freud, March 2, 1910

1 Memorabilia

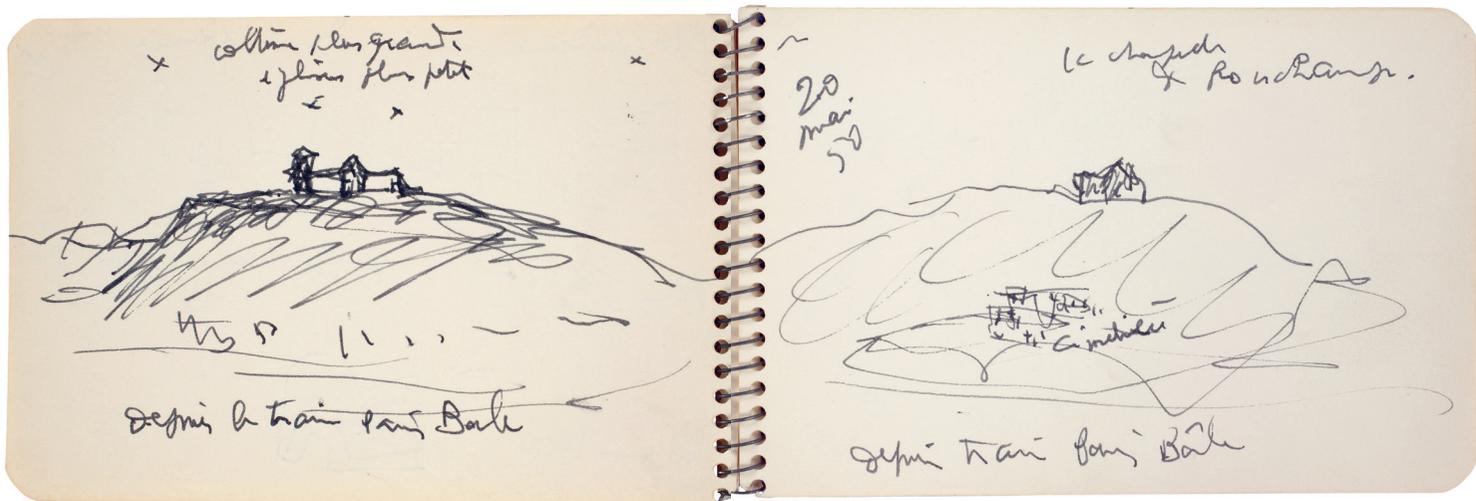
The Ronchamp Chapel is a mature work by Le Corbusier (L-C) designed and built between 1950 and 1955 on the hill of Bourlémont, Ronchamp, in the transition from the Swiss Alps to the French Vosges. It was conceived under the sign of metamorphoses of memory and appears as a particular case of objects of memory, *memorabilia*, as a resource in the design process.¹ For L-C, a collector and persistent producer of memories associated with his experience, these objects take on various shapes and configurations. *Objets trouvés*, with a strong surrealist connotation, *trouvailles*, in a more mundane sense, *objets à réaction poétique*, considering the plastic potential they trigger, or even, like an 18th-century cabinet of curiosities, elements of his *collection particulière*. To these physical objects, be they a collection of pipes or stones, we will have to add the visual elements and notes produced by the architect himself, such as journal annotations, collected postcards, photographic records of travels or plastic experiments, architectural design drawings or constructed models. They are referred to in previous narratives or incorporated in the publications made, extending the concept of memory object to all objects built by the architect himself.²

The rich criss-crossing of these various forms of *memorabilia* recalls to us their role in the emergence of ideas, associations and analogies, and thus in the “fermentation” of the design project, a process described by L-C. In *Textes et dessins*, published ten years after the conclusion of the Ronchamp Chapel, in the exact year of his death, he describes the design procedure as an artistic testament: “the human head is a box in which to place, in bulk, the elements of a problem; you leave it to ‘ferment’, and one day, in a spontaneous initiative of the inner being, there is a click; you pick up paper and pencil and the idea comes out, the child was born.”³

What analogies can we establish between visual images, memorabilia and design drawings? Are we able to assign a specific role to each element, each image, each annotation, in the torrent of produced project drawings? Are these intimate elements of design, protected from the view of outsiders, the raw material of the unconscious metamorphoses of personal memory, and therefore, of the project? In this article, we will penetrate the inner world of L-C’s architectural narratives in the design process of the Ronchamp Chapel, by resorting to constantly changing memories and communicative intelligibility, with oneself and with others.

Notes on the Train

The hill of Bourlémont in Ronchamp is a prominent place in the landscape, testimony of ancient religious cults and persistent pagan pilgrimages, certainly long before any processes of Christianization. Resulting from



4 See Pauly, *Ronchamp, lecture d'une architecture*, 3.

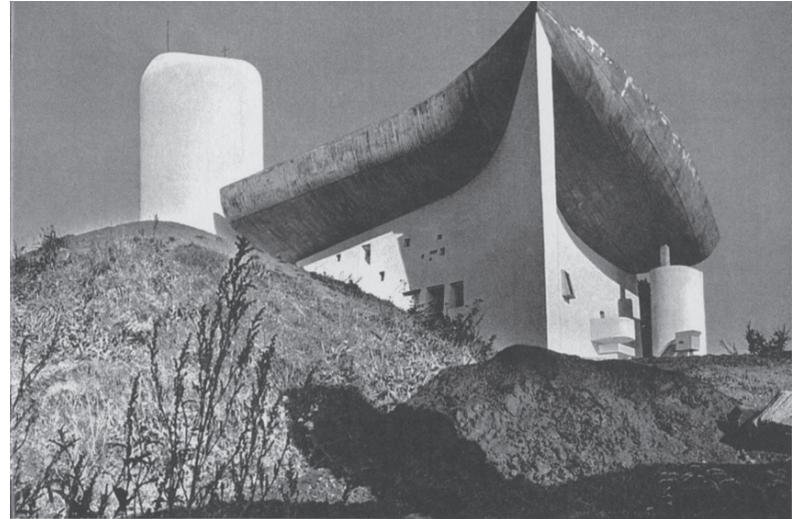
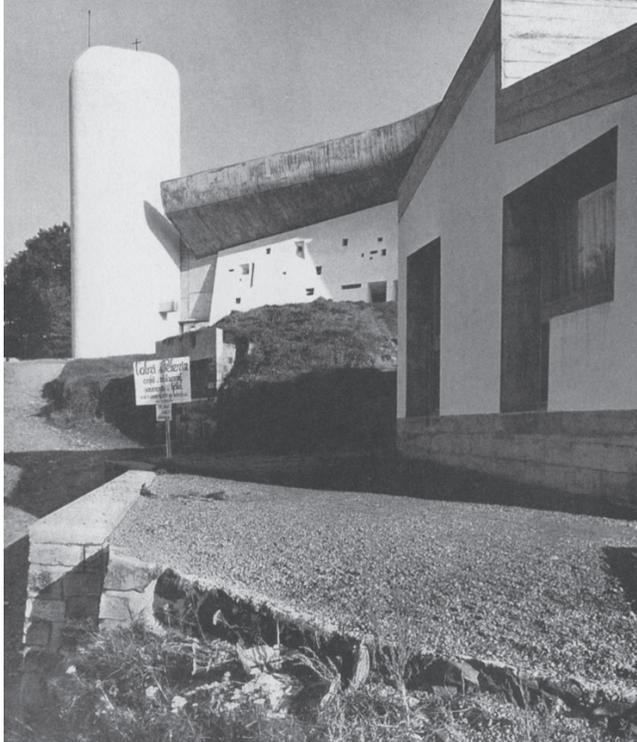
5 This means the *pré-limines*, *limines*, and *post-limines*, as in *The Rites of Passage* by Arnold van Gennep, that L-C would surely have known; as for the "experience of pilgrimage" see Victor Turner, "Pilgrimages as social processes," in Victor Turner, *Dramas, Fields and Metaphors – Symbolic Action in Human Society* (Ithaca, NY: Cornell University Press, 1974), 166–230.

the presence of this remarkable landscape, the location was subjected to successive attacks over time, bombings and respective demolitions. The placement of the volume of the chapel on the hill is illustrated in a comparative drawing between the project and the existing one, carried out on May 20, 1950, suggesting the predominance of the project's landscape (figure 1).⁴ The "accidental" passage through the place, on the train from Paris to Basel, anticipates the start date of the project, attributed to the visit carried out on Sunday, June 4, 1950, and makes us think of the design "fermentation" that was taking place at that time.

A pilgrimage chapel programme, emerging shortly after the traumatic project for Sainte-Baume, gives rise to an approach where this particular programme is the challenge: we know the extent to which the pilgrimage sanctuary is built by the access route, and even more so in a sanctuary built on a hill or mountain. In this case, the *liminal* character of the religious experience is accompanied by the physical effort of the ascending routes, going around the chapel, visiting the interior space through the injunction door, and returning to the origins, recalling the experience carried out.⁵

For L-C, the Chapel of Notre Dame du Haut de Ronchamp begins on the access route, starting from the path that connects the hill of

fig. 1 Le Corbusier, hill of Ronchamp, Carnet D17, 1950.
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6 As for the various versions of the project until the execution drawings, see Paulo David Santos de Carvalho, “Capela de Notre Dame-Du-Haut em Ronchamp,” master’s thesis, University of Coimbra, 2009. Also, Josep Quetglas, *Breviario de Ronchamp* (Madrid: Ediciones Asimétricas, 2017).

Bourlémont to the village of Ronchamp, preparation for the *revelation of the place*. This route, the sequence of images that the visitor would perceive on the way up to the sacred site, is documented by the photographs that Lucien Hervé (Lázló Elkán) took and L-C selected for the first publication dedicated to Ronchamp, a true sequence of cinematographic plans (figure 2). The arrival at the implantation platform is made through an inflection in the path, an inflection in the connection to the south door, directed towards the periscope tower, reinforcing the path that surrounds the chapel. Going around the building allows you to discover the gargoyle that conducts rainwater and its collection on the pavement, the north door of the chapel, and the ziggurat that incorporates the stones left over from the demolition of the old chapel that were not incorporated into the new construction.⁶

Delphi Drawings

The ascending path is not strange to the architect whose youth was indelibly marked by the journey to the East. Among the places visited on that initiatory journey, Delphi is perhaps closer to the rite of ascent to the sacred site than the Acropolis of Athens, considering the access from the sea, and the strong scenic presence of the Gulf of Corinth.

fig. 2 Lucien Hervé, photographs of the ascending path to the chapel. Published in Le Corbusier, *Ronchamp* (1957).
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L-C visited Delphi in September 1911. The ascension route of the sacred precinct appears through several drawings, representing the monuments in the inflection of the route, such as the Treasure of Athens, inserted in the zigzag that leads to the Stoa of the Athenians and the Temple of Apollo. Upon arrival at the temple's esplanade, L-C documents the detailed ex-votos inscriptions on the stone walls of Stoa, the temple's supporting wall and cornerstone (figure 3). These inscriptions, sometimes made overlaying the very thin joints of prepared stone, organized by stains, fill in the entire surface.

An ascending route punctuated by architectural events within the sacred precinct, Delphi is, above all, another event in the landscape, which necessarily includes its connection with the coast and the sea; the distant presence of the sea, appearing in the curves of the road and visible from the Tholos of Athena Pronaia, 800 metres from the main enclosure, marks the main access in antiquity, and brings to the mountainous landscape of Mount Parnassus the presence of the coast, the port of Kirra, and from the connection to Athens, Corinth, Eleusis, and other places in classical Greece. It is still possible to guess the route of the pilgrims who, leaving the port and going up the valley and the dense olive grove, reached Delphi.

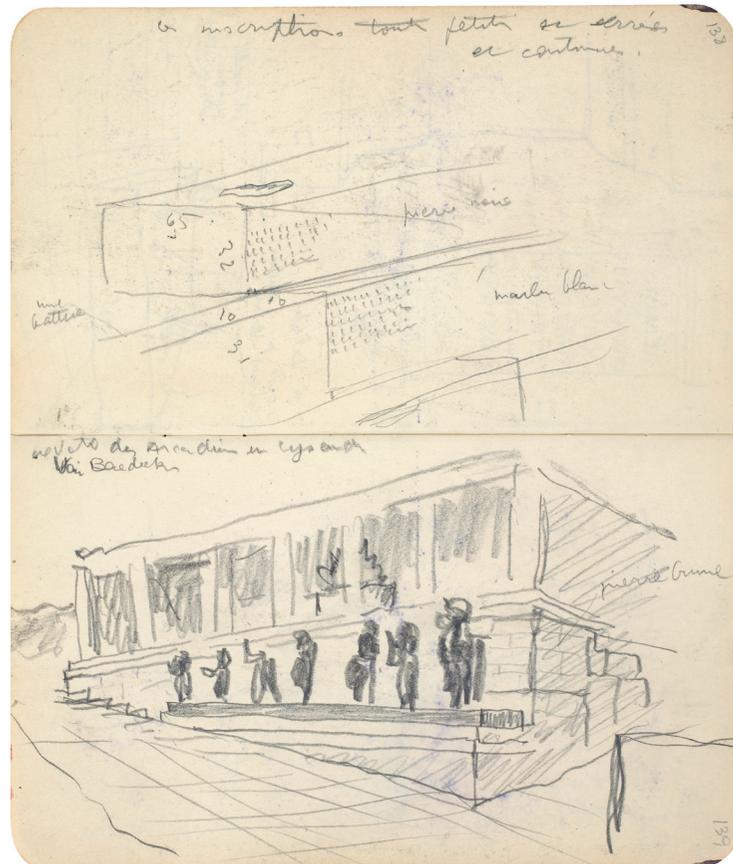


fig. 3 Le Corbusier, south wall of the Stoa, at the base of the Temple of Apollo, Delphi, Carnet C3, 138, 139. ©FLC 2022.

But what relationship can we establish between Delphi and Ronchamp? A visual analogy relationship. The analogy between a high mountain landscape, with “liquid” fog covering valleys, and maritime images, with rocks emerging from the sea. An analogy illustrated in the publication *Une maison – un palais*, from 1928, between an image of a seaside in Brittany, with its emerging rocks like menhirs, and the image of the Swiss Alps, with the peaks emerging from the mountains, *et par magie des rapports, nous voici au pays des songes* (figure 4), writes L-C – the large and the small can be equated, just keep the proportions between the elements of a visual image. A poetic statement about the analogical power of images, the recurring theme of the seascape of Brittany and its analogy with the mountainous landscape of the Vosges allows us to think about the visual transposition of menhirs and dolmens, between one landscape and another.

However, the analogy can still have other readings. The correspondence between the human constructions of menhirs (and also

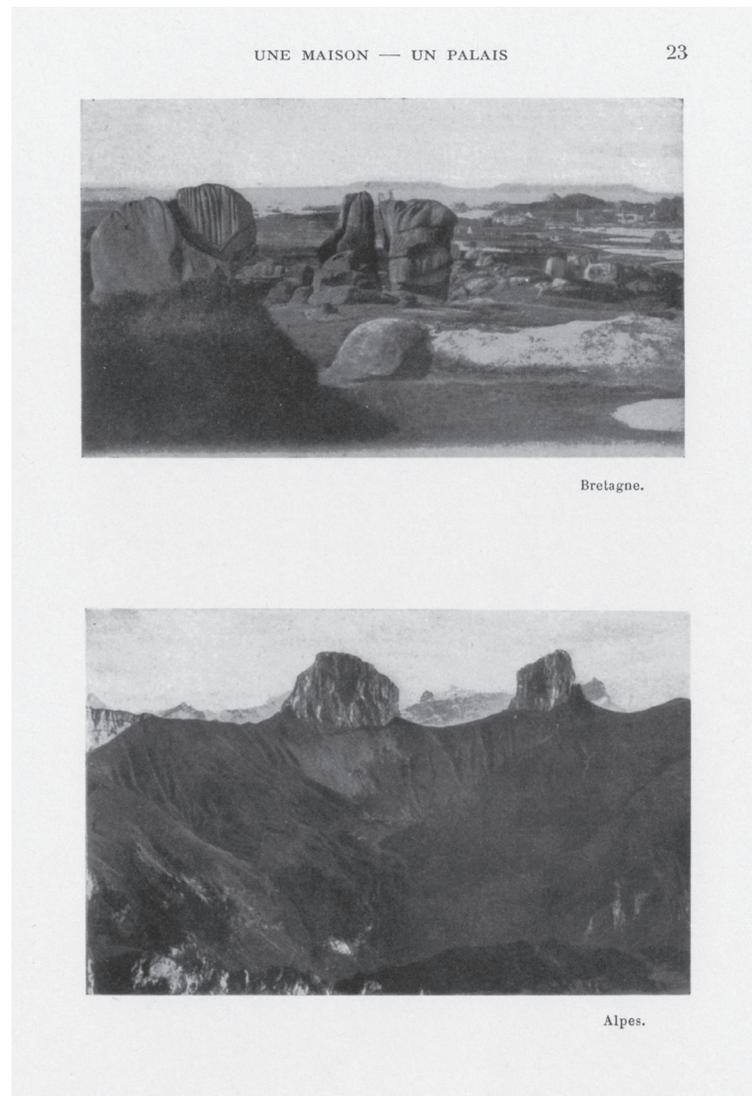


fig. 4 Analogy between a mountain landscape of Switzerland and the seaside of Brittany, published by Le Corbusier in *Une maison — un palais*.

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- 7 “La nature des formes était une réponse à une psychophysiologie de la sensation.” W. Boesiger, ed., *Le Corbusier et Pierre Jeanneret. Œuvre Complete 1946–1952*, vol. 5 (Zurich: Les Éditions d’Architecture de Zurich, 1953), 72. “La physiologie des sensations, c’est la réaction de nos sens devant un phénomène optique.” L-C quoted by Benton, *Le Corbusier Conférencier* (Paris : Moniteur, 2008), 80. Also: “‘Physiologie’ rappelle les théories d’empathie chères à Le Corbusier et à Ozenfant à l’époque (24 February 1926). Selon eux, les lignes et les formes agissent sur les émotions.” Ibid.
- 8 On the drawing see: Zuzanna Karczewska, “Research into drawing and building,” *ARCC 2011, Considering Research: Reflecting upon current themes in Architecture Research* (2014): 159–167. DOI: <https://doi.org/10.17831/rep:arcc%25y328>.
- 9 Le Corbusier, *Ronchamp* (Zürich: Les Editions Girsberger, 1957), 90; Quetglas, *Breviario de Ronchamp*, 139. We suppose that the “fragment-of-the-model-relic” in the archives of Neill Hobhouse is, precisely, a fragment of the first model.

of dolmens) and the geological peaks of the Swiss Alps can be interpreted as matching the most archaic manifestations of human constructions, those that mark the territory through a planted stone of large dimensions, or the elementary construction of the first forms dedicated to inhumation – culture as nature. Archaic cultural manifestations are nature, the background on which human culture is inscribed.

But are the visual analogies of L-C from the 1920s and 1930s, based on the recognition of shapes and proportions, still the analogies that run through Ronchamp Chapel, a work from the 1950s?

2

A Charcoal Sketch

The description of the dazzling design moment on June 6, 7 and 8, 1950, after the visit to Ronchamp on Sunday, June 4, is a good illustration of the narratives about the architect’s creative impulse – conceiving the project in a hectic moment of design, generated by crossing local intentions and readings with ancestral memories. The narrative of the spontaneous “fermentation” of the project can be seen as an alternative path to the functionalism of the modern movement in architecture and the concomitant affirmation of the architectural project as an artistic practice, or the creation of a nature of forms in response to a *psychophysiology of sensation*.⁷

The initial design of the project, a drawing of plastic search for form through expressive lines in charcoal on heavy tracing paper, with dimensions of 76.5 cm by 120.1 cm, seeks to register the centripetal movements of walls, the discontinuities caused by lines of smoke or rubber opening passages, and translates the physical movement of the plastic execution of a drawing that involves the body in movement.⁸ This drawing organizes the project; four walls oriented to the cardinal points, affirmation of two concave and two convex spaces. Topology of spatial organization, with the charcoal traces oriented to delimit the reception of pilgrims in open air masses to the east on pilgrimage days (as, in fact, it happened in the previous chapel), and to receive pilgrims on the welcoming south wall where the entrance door is located, after the ascending path (figure 5) – although the expressiveness of the traces suggests forms more than it claims, looking for the archaic gesture of building the shelter.

Mock-Up Fragment

The first architectural element seen on arrival at the chapel is the south façade, and its iconic importance is pursued throughout the project.

In the sketches of June 9, 1950, in *carnet* E18, a set of random perforations appear on the south façade, confirming the continuity and mass of the wall surface (figure 6).⁹ A rigorous drawing of the façade is shown to Maurice-Louis Dubourg, Archbishop of Besançon, in November 1950, accompanied by a plaster model, photographed for the publication *Ronchamp*, printed in 1957 (figure 7).

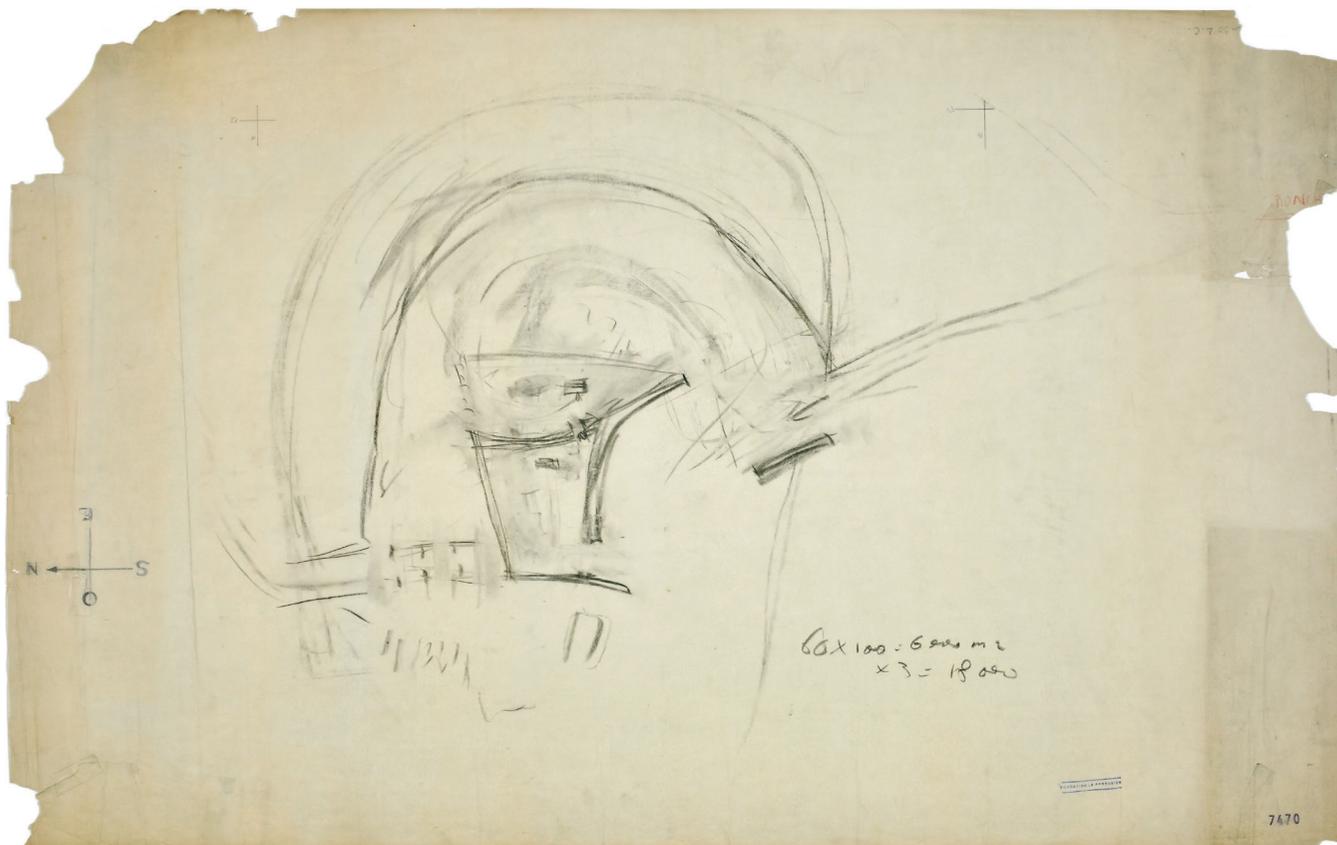


fig. 5 Le Corbusier, sketch of Ronchamp, 6 June,
1950. FLC 7470.
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fig. 6 Le Corbusier, sketches of the south façade of Ronchamp, annotated “9 June, 1950,” Carnet E18, 2, 3.
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fig. 7 Photograph of the plaster model of Ronchamp standing in front of the painting *La Menace*, 1938. FLC L3(3)122–35.
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- 10 On Nivola and L-C see Maddalena Mameli, *Le Corbusier and Costantino Nivola – New York 1946–1965* (Milan: Franco Angelli Edizione, 2018). Miguel Ángel de la Cova Morillo-Velarde, in his thesis *Maquetas de Le Corbusier – Técnicas, Objetos y Sujetos* (Editora Universidad de Sevilla, 2016), proposes as the execution technique a rough plaster form that would be latter ground: sanded, drilled or profiled (p. 64); however, in the fragment in possession of Niall Hobhouse, we can't see any "mounting base", and the wall appears as an autonomous sculpted surface, to be added to other elements. Miguel Ángel refers to the education of Maisonnier in sculpture (p. 62).
- 11 The first version of the south wall is a memory of the traumatic and abortive project for Sainte-Baume, evoking the great wall of the massif where the Mary Magdalene grotto was located. On page 36 of the *Breviario de Ronchamp*, Quetglas places an image of Puig de la Bauma, Saint Llaurenç del Munt National Park, alongside an image of the southern wall of Ronchamp. It is not just about the analogy between the small openings, placed at random, and the strong mass of the construction, but also the presence of the rock-cover which, as in Ronchamp, is projected beyond the plane of the wall.
- 12 On projecting with models and the archaic, see Christel Marchiaro, "Projeter em Maquette: les gestes et la matière comme Arkhé," in Stéphane Bonzani, *L'archaïque et ses possibles – architecture et philosophie* (Geneve: Métis Press 2020), 95-106.
- 13 See Stanislaus von Moos, "CIAM's Ghosts. Le Corbusier, Art, and World War II," in Armando Rabaça, ed., *Le Corbusier. History and Tradition* (Coimbra: University of Coimbra Press, 2017). The association of this model with the painting *La menace*, from 1938, a reference to *Guernica* by Picasso, precisely before the outbreak of the Second World War, appears in an image captured in LC's studio and home, and suggests the association between the theme of the painting and Ronchamp's design as a war memorial.
- 14 See Pauly, *Ronchamp lecture d'une architecture*; Idem., *Le Corbusier Albums d'Afrique du Nord – Voyages au M'Zab en 1931 et 1933* (Paris: AAM éditions, 2013).
- 15 Tumulus of Dario and Xerxes, in Le Corbusier, *Une maison – un palais*, 43.

The moulding of the plaster wall would have been carried out from a clay prototype, according to the *lost form technique*; a clay ballast generates a plaster countermould, which in turn generates the final plaster model. The realization of Ronchamp's initial model by André Maisonnier, who was educated as a sculptor, in addition to the plastic value of moulding the surface that L-C intended to print on it, refers to the experiences carried out a few years before, with sand moldings, during his intermittent stays in New York, and to his friendship with the Sardinian artist Costantino Nivola.¹⁰

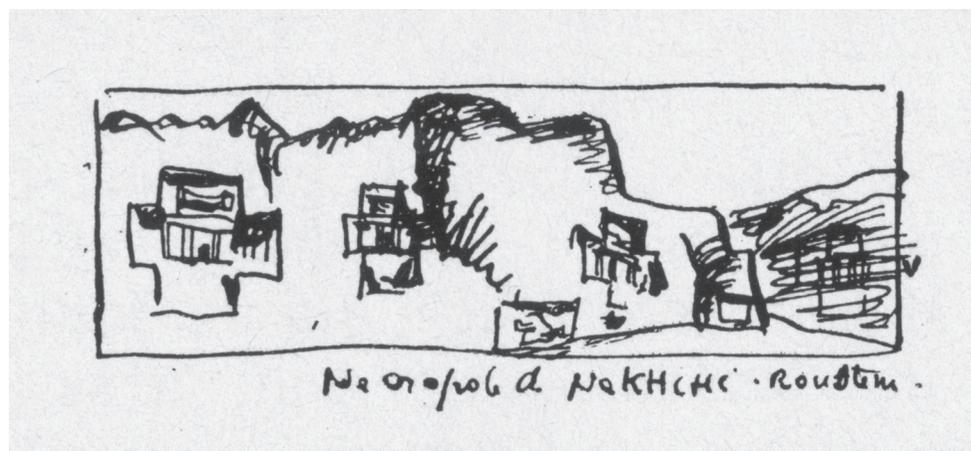
From the 1/100 scale plaster model, a fragment remains, the south wall, measuring 12.7 × 21.6 × 3.8 cm, part of "Drawing Matter Collection, UK." A true *memorabilia* object, a precious fragment because it was carefully executed, a unique element of a dismembered object, it now has the appearance of a relic (figure 8).

A set of perforations, distributed over five spots, organize the surface of the wall. The abstract mass of the wall prevails, accentuated by the small size and random distribution of the perforations, simulating a process of accumulated inscription of graphic signs carried out over centuries or millennia, seeming to evoke "perforated" stones, "dimpled" stones, stones "drawn," dolmens, menhirs.¹¹ The plasticity and spontaneity of the perforations executed on the plaster surface raise doubts about the translation between model and elevation drawing, considering the difficulty of imitating the physical gesture of the action on matter in drawing, subverting the methodological precedence between conception and representation resulting from the search for the archaic gesture in the form.¹²

Ovoid perforations (22), alternating with deep-placed square (5), rectangular (2), cross (2), triangular (2) perforations, and finally a paschal lamb-shaped perforation (Agnus Dei), with the respective cross and banner symbolizing the resurrection, make up the openings in the wall. The distribution shows the predominance of ovoid perforations at the western and eastern ends, as if caused by the German shells that attacked the chapel in 1944, reinforcing the chapel as a "war memorial";¹³ the triangular perforations seem to refer to vernacular architectures of North Africa, small openings in the mud and adobe constructions of that region, of which the M'Zab, in Algeria, a place visited and designed by L-C in 1931 and 1933, would be an example;¹⁴ the curious cruciform perforations recall the tombs carved into the great wall of the Naqsh-i-Rustam necropolis in Iran, illustrated by the drawings of them made by L-C for the publication *Une maison – un palais* (figure 9);¹⁵ finally, the perforation in the form of Agnus Dei seems to represent, in a universe of diverse historical marks, as if witnessing the cultural interpretations of the place, referring to the final form of the Western, Christian pilgrimage chapel. From the inside, and taking into account both the plan representation of the wall and the elevation, the small perforations become openings, composing a random

fig. 8 Fragment of the plaster Model of Ronchamp.
Drawing Matter Collection, UK.

fig. 9 Le Corbusier, drawing of the necropolis
of Naqsh-i-Rustam in Iran, in *Une maison*
— *un palais*.
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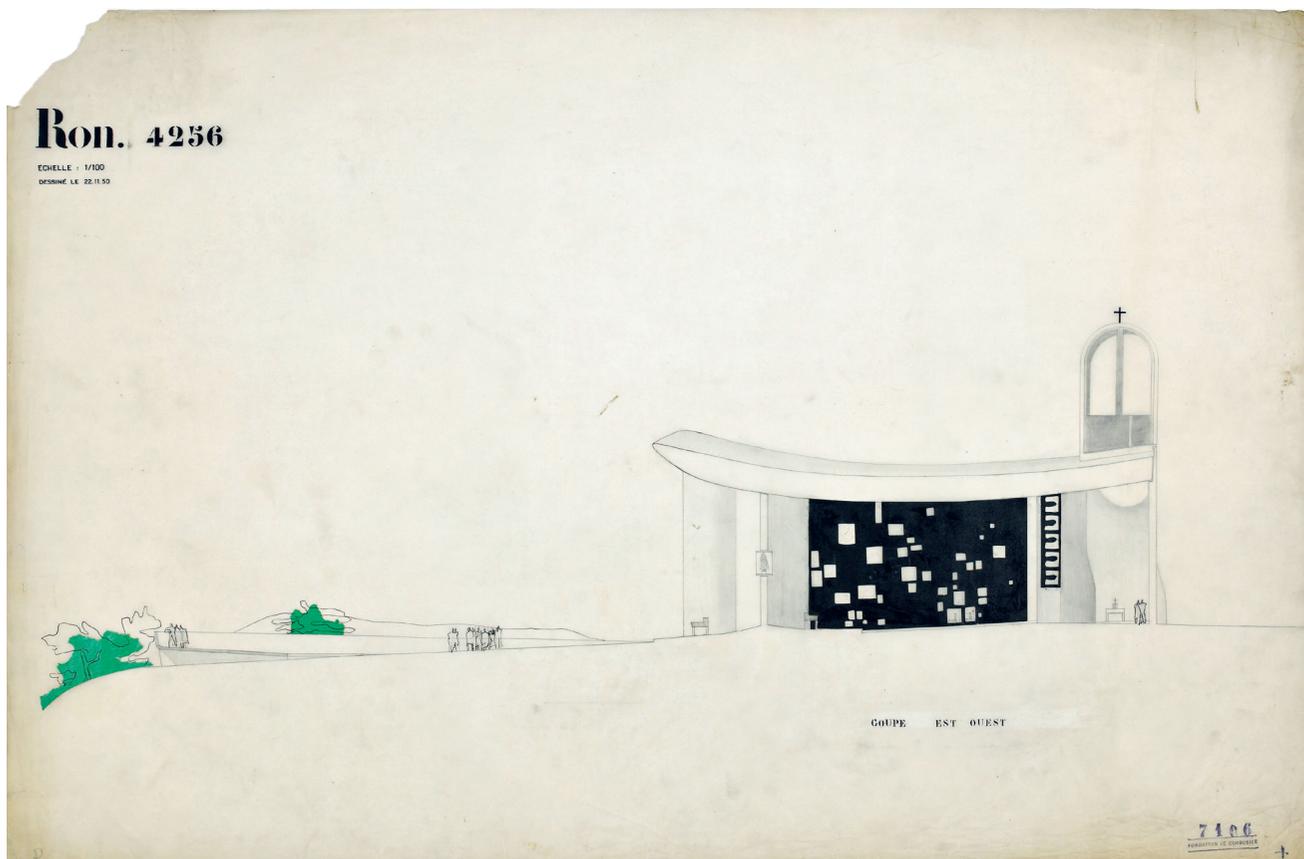


fig. 10 Le Corbusier, interior façade of the south wall of Ronchamp, FLC 7106.
 ©FLC 2022

fig. 11 [opposite page]
 Le Corbusier drawing at the beach of Long Island, 1951. Nivola archive, New York.

fig. 12 [opposite page]
 Crab Shell, photograph published in Le Corbusier, *Ronchamp* (1957).

- 16 The themes of the bas-reliefs of Nivola, based on the ancestral art of Sardinia, refer to archaic graphics, and may be related either to the excavated cave or to the periscope towers, as first identified by S. Giedion, *Architecture You and Me. The Diary of a Development* (Cambridge, Mass.: Harvard Univ. Press, 1958).
- 17 To these objects, mostly collected on walks along the sands of Le Piquey beach, in Arcachon, or Trégard beach, in Brittany, and which L-C collected under the name “Objects of Poetic Reaction,” can be added the crab shell, collected in Long Island in 1946, and object placed on the table when designing Ronchamp’s penthouse. On the “objets à réaction poétique,” see: Benton “‘I am attracted to the natural order of things’: Le Corbusier’s rejection of the machine,” in Bud, Greenhalgh and Shiach, eds., *Being Modern* (London: UCL Press, 2018), 376–381. On the film record, see Benton, *Secret Photographer*.

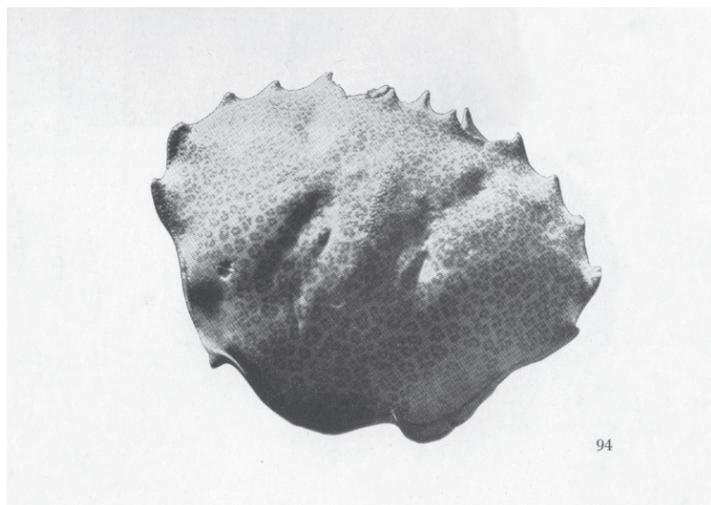
pattern, subtly illuminating the chapel’s nave (figure 10). “Mur constellé de trous qui s’ouvrent largement à l’intérieur en diffuseur,” reads the caption of the *Œuvre complète*, accentuating the sense of intentional constellation of the exterior perforations and corresponding openings for diffusion inside.

Two Photographs on Long Island

Between the participation meetings in the United Nations Building project held between 1946 and 1948, and the beginning of Ronchamp’s project, L-C became friend with the Sardinian artist Costantino Nivola, a refugee from the war in New York. Nivola began the investigation of bas-reliefs using lost sand moulds, in his Long Island home. In a photograph by L-C, he shows the piece he performs there, and which he offers to his friend Nivola – drawing in the sand is an elementary way of sculpting (figure 11).¹⁶

The drawings in the sand and the marks caused by the footprints on the sand of the beaches of Long Island recall the walks on the beaches of Brittany, opposing the verticality of stones, menhirs, or dolmens to the maritime horizon line. Perhaps Long Island reminds him of Le Piquey beach, the filmic recording that he made in the early 1930s, or the collection of objects found in the sand, such as strangely shaped stones, twisted pieces of wood, animal bones, or a crab shell (figure 12).¹⁷

Although the appreciation of Ronchamp’s project by the Sacred Art Commission in January 1951 was largely favourable, the expression of the perforations in the south wall was criticized: “La paroi du mur sud est percée d’ouvertures éparées et fantaisistes, jetées comme un poignée



- 18 Pauly, *Ronchamp, lecture d'une architecture*, 44.
 19 Francesco Passanti, "The Vernacular, Modernism and Le Corbusier," *Journal of the Society of Architectural Historians*, vol. 56, no. 4 (Dec., 1997): 438–451.
 20 See Jacques Lucan, "Archaïsme et Manierisme," in Bonzani, *L'archaïque et ses*, 65–72.

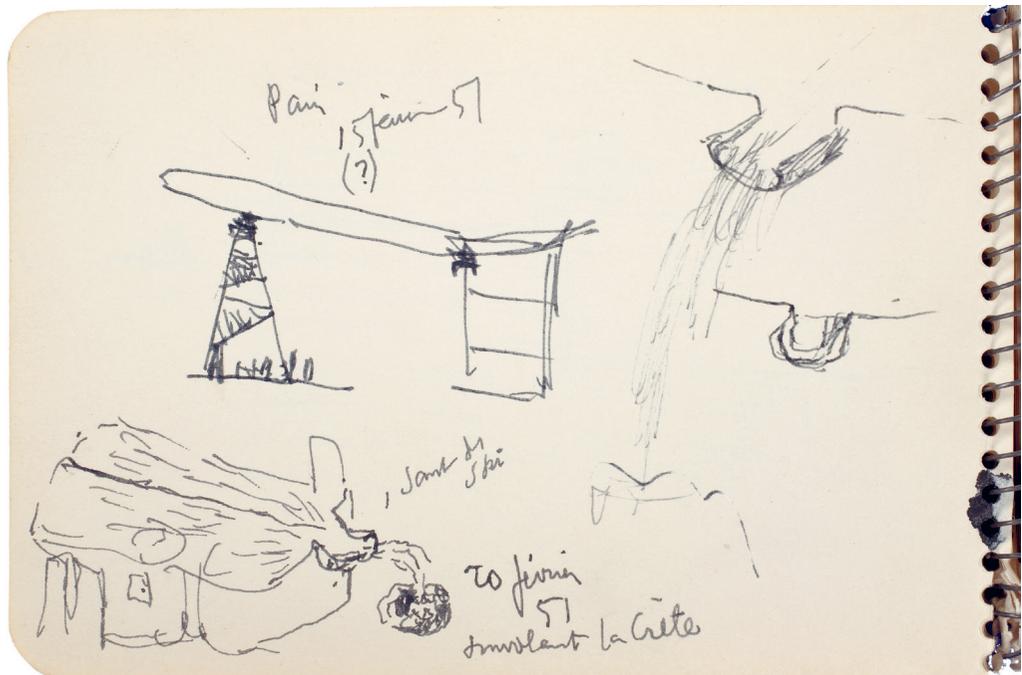
de sable," would be the reference made by Canon Ledeur in an interview with Danièle Pauly; this repair would be communicated to L-C by the Sacred Art Commission of Besançon, in a letter dated January 14, 1951, leading to the alteration of the design for the constructed solution.¹⁸ The new design, the second project, implied a different structural solution, a subtle reinforced concrete structure covered with metallic meshes on which a thin layer of concrete 6 cm thick is projected. The final expression of the wall resembles Swiss vernacular architecture, an outcropping of local "folklore" that L-C had studied.¹⁹

The first gesture, marked by a performative gesture, is followed by a meticulous lacework that emulates the timelessness of the popular constructions of the Swiss Grisons, anticipating in a decade the incorporation of studies on the vernacular, another form of archaic, as Jacques Lucan tells us.²⁰

Journal Clipping

In the second version of the project and the south wall, it is the entire wall plane that is moulded through an inclined plane, both from the inside and from the outside. The triangular configuration of the wall section, as it appears in an expressive design sketch, accentuates the delicate point

fig. 13 Le Corbusier, sketches of Ronchamp, annotated "15th February 1951," Carnet E18, 16.
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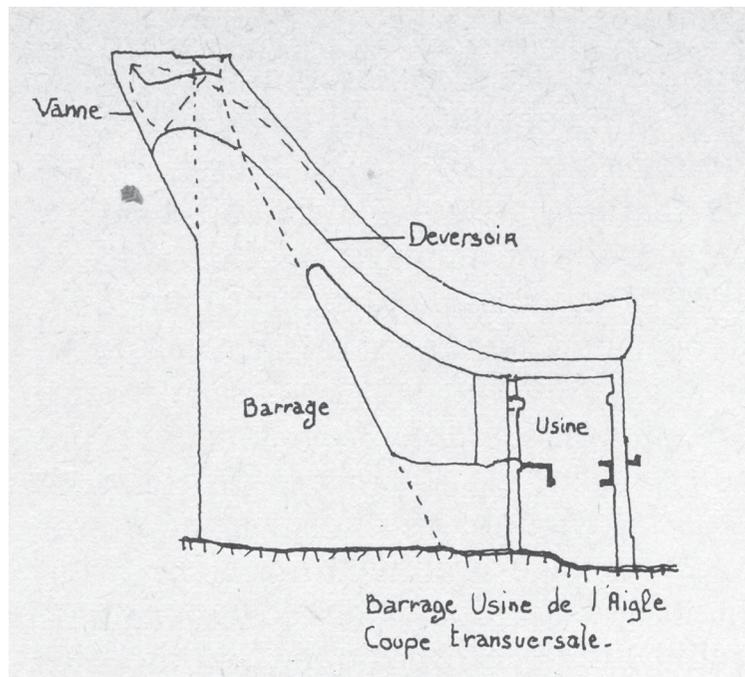


fig. 14 Clipping of the Journal “Reconstruction”, about the Dam of l’Aigle. Published in Pauly, Ronchamp – lecture d’une architecture (1980).

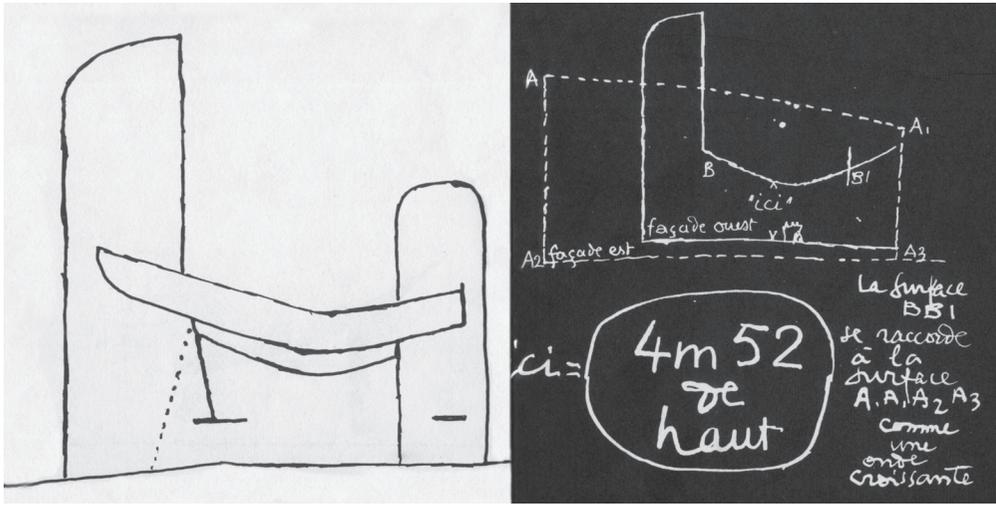
21 According to Pauly, the section evokes the dam of l’Aigle, published in the journal *Reconstruction*, (October 1948), 12, fig. 4 / *Barrage-usine de l’Aigle. Coupe transversale*, estaria numa caixa de arquivo com a indicação “documents préparatoires Ronchamp,” 52.

of contact with the roof through a narrow horizontal opening, through which the outside light propagates under the slab (figure 13).

According to Pauly, in the dossier preceding the FLC’s Documents préparatoires Ronchamp project, there is a clipping of the October 1948 issue of *Reconstruction* magazine, illustrating the section of the dam-mill at l’Aigle; the graphic analogy with the sketch is evident (figure 14).²¹

Reinforcing the analogy between the section of the dam wall and the south wall of Ronchamp is the design of the movement of the roof’s gargoyle in a *ski jump*, sketched in the design with the note *Paris 15 février 51 (?)* (figure 13). Also in this section, it is possible to observe the conduction of rainwater towards the north façade, through the affirmation of an expressive gargoyle, which would conduct the water to a set of volumes on the pavement; this part of the sketch is dated *20 février 51, survolant la Crête*.

The second drawing corresponds to a different orientation of the roof: the gargoyle is located on the west wall and not on the north wall. This means that between the 15th and 20th of February 1951, the direction of collection of rainwater on the roof undergoes a 90° rotation, turning to the west. This rotation will provide one of the fundamental elements of the project, the compression on the south entrance.



22 Exoskeleton with morphological identity
(Une coque de crabe ramassée à Long-Island près New York, en 1946, est posée sur la table à dessin. Elle deviendra le toit de la Chapelle : deux membranes de béton de six centimètres d'épaisseur maintenues entre elles à une distance de 2 m 26. La coque posera sur les murs de vieilles pierres de récupération...). Le Corbusier, *Textes et dessins pour Ronchamp*, n.p.

South Entrance Section

Perhaps the most significant difference in the second version of the project is the compression generated in the interior of the chapel – the roof, like a screen suspended laterally, progressively acquires the shape of a belly, from the east wall to the chapels and confessionals to the west. The movement of compression over the entrance is “discovered” by the realization of the section, and in turn, the redesign of the section finds the “true” compression using the Modulor, giving metric rigour to the spatial topology.

The design of the spatial compression in the interior is documented in a section made through the two entrances to the chapel, south and north. This spatial compression reinforces the interior presence of the south and north walls, where the roof-covering is supported by small point supports. From the outside, it reinforces the autonomy of the south periscope skylight in relation to the periscope skylights on the north façade, due to the movement of the catenary and gargoyle on the outside of the west wall (figure 15).

The considerable increase in the thickness of the roof with the double slab system (6 cm thick each, 2.26 m apart) and beams is offset by the progressive decrease in the height of the south wall, towards the south-west entrance. The roof-cover takes on a spatial and constructive role that it did not have in the first version of the project, due to the shape, analogous to the crab shell.²²

Objet trouvé

Right after the presentation of the project and plaster model, a new approach to the project, of a structural nature, takes place. Based on an analogy with

fig. 15 Le Corbusier, section through the south entrance showing the ceiling compressing of the entrance; double page in Le Corbusier, *Textes et dessins pour Ronchamp* (1966).

- 23 “The initial structural idea of outlining the form by a tubular metal frame wrapped over with wire-meshing on to which concrete was to be sprayed for some reason was not carried out.” James Stirling, “Ronchamp Chapel in France by Le Corbusier,” *The Architectural Review* (March 1958): 155–161. In *Œuvre Complète, vol. V*, there are photographs of the model *en fil de fer*, before and after being dressed with paper (*la maquette habillé de papier*), documenting in detail the metallic mesh of the beams and the armature of the concrete shell. The diagram of execution of the structure is illustrated in the sketch of 15 December 1951, where the support on the south wall (A) and on the set of north walls (B, in the sketch) becomes clear. On the wire models, see Miguel Ángel de la Cova Morillo-Velarde, *Maquetas de Le Corbusier – Técnicas, Objetos Y Sujetos*.
- 24 Polarities or pairs of opposites will be the result of readings of youth, especially Nietzsche; but also a theme by Charles Blanc in the *Grammaire des Arts Décoratifs*, a work that L-C knew so well.

a crab carapace collected in Long Island in 1946, the cover is conceived as a double shell with connecting elements between the two surfaces and supported by specific elements hidden in the wall facings (figure 16).

In order to clarify the implicit structural solution – a design based on a modular metallic structure to be filled with stone materials from the demolitions of the old chapel – there is a drawing illustrating this new structural concept. The plan, dated December 16, 1950, will perhaps be the initial illustration of this solution, which highlights the possibility of aligning metal trusses, supported by portico-pillars on the south and north walls. This structural hypothesis is documented by a second model, made of iron wire (*fil-de-fer*), covered with waxed paper (figure 17), on 1/100 scale, and complemented by another model, only for the roof, on 1/20 scale.²³

The effort to make opposites coincide – subjecting the organic moulding of the walls and roof to the structured and modulated discipline of the structure – implies the adoption of an unconventional structural model, which associates active surfaces with reinforcements perpendicular to the planes of the surfaces.²⁴ Hence the crab carapace, and the reinforcement beams, executed by carrying out sequences of parallel sections decomposing the convex surface. The beams made on the wire model are radiographs of the structure, whose transparency is transmitted by the translucency of the waxed paper.

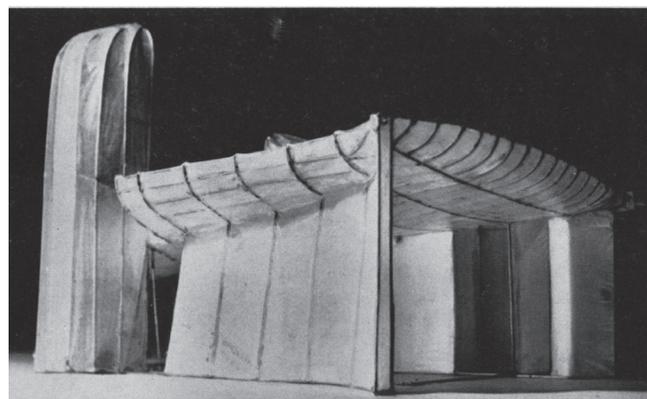
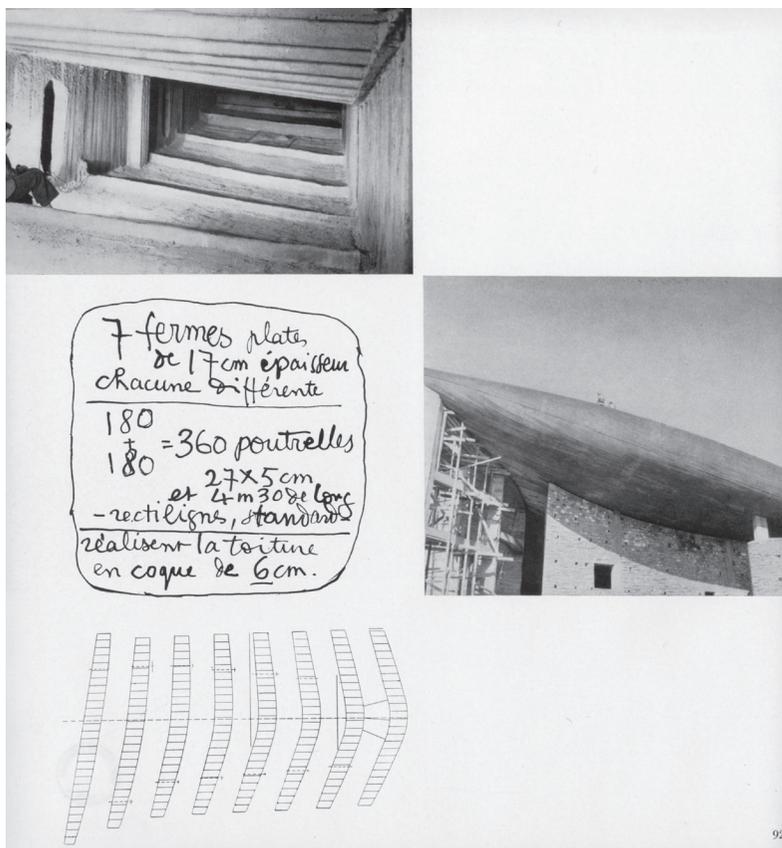


fig. 16 Photographs and drawing of the roof, published in Le Corbusier, *Ronchamp* (1957). ©FLC 2022

fig. 17 *Fil-de-fer* model.

- 25 As with the publication *Modulor I*, edited in 1950, where metric survey drawings of various buildings in Pompeii (figs. 82, 83 and 84) or the Church of the Monastery of Philotheus (fig. 81) are used.

Carnet de voyage

Among the various memory elements produced by L-C, the youth travel *carnets* stand out, the small pocket notebooks where he wrote down, as in a graphic diary, his observations – the travel *carnets* are his external memory, the “box” where the record of personal experiences is preserved. At any time when preparing a conference or publication, consulting the *carnets* allows access to the graphic record or annotations of a certain architectural element or observation, to its insertion in the landscape, in proportion, to measures, to names, dates or facts, to the summary of learning.²⁵

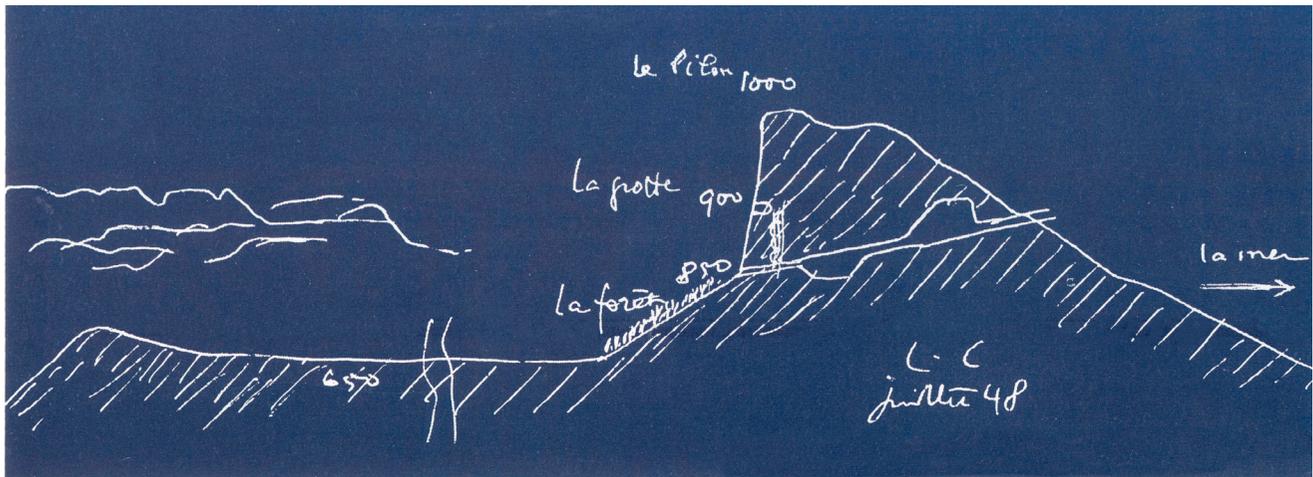
We can follow the way in which the *Serapium* of Villa Adriana, in Tivoli, Rome, registered on pages 68 and 69 of notebook 5 of the journey to the east, appears as an architectural reference, first in the project for Sainte-Baume, and later as a fundamental reference for the periscopes of Ronchamp.

Sainte-Baume is a vast natural area with a mountainous wall, and on the south side, a landscape to the sea, the place inhabited by Mary Magdalene in her escape from Palestine. In this magnificent mountainous landscape, the possibility of building an internal route through the mountain, accessing the caves where she once lived, required a sophisticated system for capturing natural light, bringing it to the depths of the earth – and this is where the analogy to the device capturing the sunlight into the cavernous interior appears, analogous to the artificial cave that is the Canopy of Vila Adriana. The path, the shadowed areas in the access, would reinforce the subtle presence of the conducted light, generating amazement by the glow that appears in the depths of the cave (figure 18).

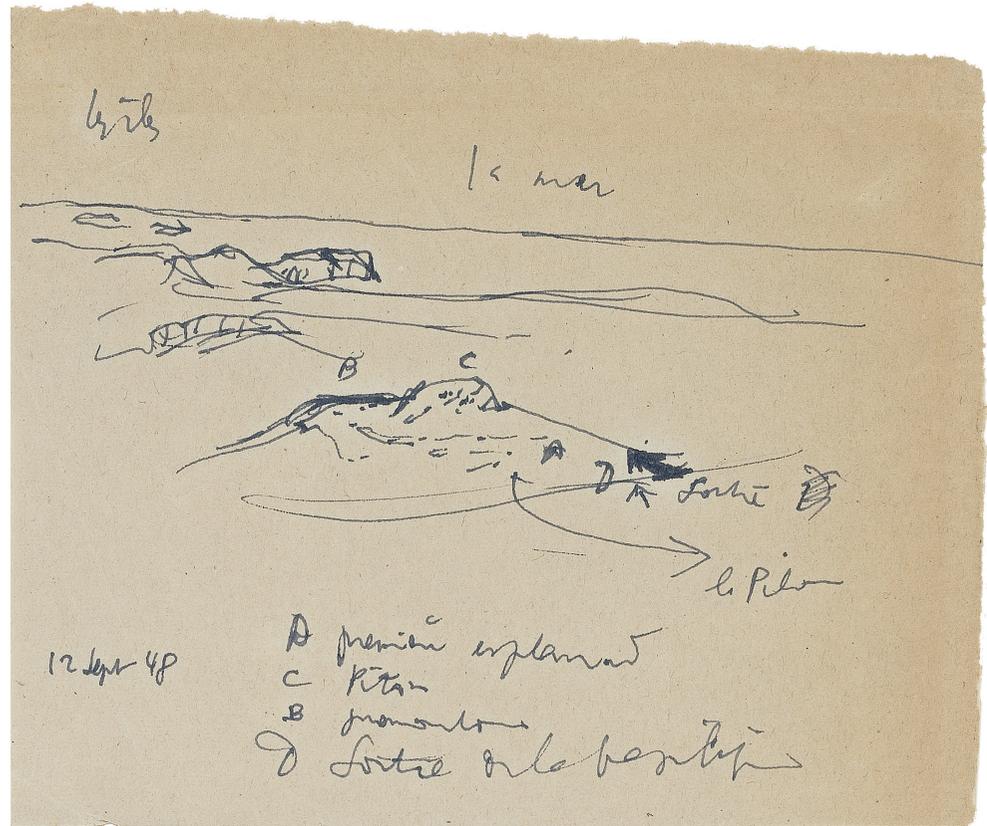
fig. 18 Le Corbusier, profile of Sainte-Baume, published in *œuvre Complete*, vol. 5, 1946–1952. ©FLC 2022

fig. 19 [opposite page] Lucien Hervé, photograph of the stained glass, published in *Le Corbusier, Ronchamp* (1957).

fig. 20 [opposite page] Le Corbusier, view from Sainte-Baume towards the Mediterranean, 1948. FLC 5045. ©FLC 2022



La Basilique ne sera pas extérieure: le paysage demeurera intact



26 On Ronchamp as excavated architecture, see Mario Algarín Comin, *Arquitecturas excavadas. El proyecto frente a la construcción de espacio* (Barcelona: Fundación Caja de Arquitectos, 2006), 21.

27 The association between sea and mother, in French *mer* and *mère*, evocation of the maternal Our Lady of Ronchamp and the amniotic fluid where life originates, is mentioned not only by poets; Tim Benton links this reference to L-C in *Le Corbusier Conferencier*, 120; and again in Benton “I am attracted to the natural order of things’: Le Corbusier’s rejection of the machine”, (London: UCL Press, 2018) 38; on the Ronchamp stained glass window referring to the opening at the end of the Sainte-Baume route, see Luis Moreno Mansilla, *Apuntes de viaje al interior del tiempo*, (Barcelona: Fundación Caja de Arquitectos, 2002).

After the publication of the design of the *Serapium* in the *Œuvre Complète* by Willy Boesiger, regarding the design of Sainte-Baume, the same reference appears for the periscope towers for illuminating the altars of Ronchamp in the 1966 publication, and later still in the L-C pocket book of 1976. The canopy as an architectural model refers to the idea of the interior of Ronchamp’s chapel as an excavated grotto, an interior of the depths, with subtle illuminations by punctual perforations, a set of asymmetrical walls, and backlit light entrances.²⁶ In this case, the opening in the south wall of Ronchamp, which incorporates the stained-glass window where the sea appears, and the legend *mer* (figure 19), could refer to the passage, through the cavernous path of the cathedral carved into the rock of Sainte-Baume, and the final emergence of the Mediterranean Sea, represented by L-C on September 2, 1948 (figure 20).²⁷

- 28 This continues “The initial structural idea of outlining the form by a tubular metal frame wrapped over with wire-meshing on to which concrete was to be sprayed for some reason was not carried out.” [...] “With the loss of direction in modern painting, European architects have been looking to popular art and folk architecture, mainly of an indigenous character, from which to extend their vocabulary.” [...] “*objets trouvés* of considerable picturesqueness.” [...] “View from the foot of the ziggurat marking the site of the previous chapel destroyed during the war, when it was used as an observation post.” Stirling, “Ronchamp. Le Corbusier’s Chapel and the Crisis of Rationalism,” *The Architectural Review*, no. 711 (March 1956): 155–161.
- 29 John Alford, “Creativity and Legibility in Le Corbusier’s Chapel at Ronchamp”, *The Journal of Aesthetics and Art Criticism*, vol. 16, no. 2 (1958): 293–305.
- 30 Quetglas, *Breviario de Ronchamp*, and the Conference Álvaro Siza of 2018, promoted by Fundação de Serralves.

Postcards

There are, however, aspects of Ronchamp that refer to another, and perhaps complementary, reading; I refer specifically to the idea of a dolmen, or tumulus, as a spatial model of that architecture. A continuous surface cover, camouflaging a space chamber; a belly-shaped roof, compressing the interior space; a joint separating roof and wall; massive expression of the claddings, and their joining at the back, maintaining their autonomy; a punctual element to support the roof, on the east-south limit of the building, like a menhir; an interior pavement moulded to the topography, like compacted earth.

This hypothesis, in addition to the more or less convincing visual analogies, allows for different readings of the chapel. First, the archaic, foundational meaning that these funerary monuments have for Western culture. James Stirling, in his article from March 1956, published in no. 711 of the *Architectural Review*, associates the Ronchamp chapel with megalithic constructions, or even with dolmens: “The immediate impression is of a sudden encounter with an unnatural configuration of natural elements such as the granite rings at Stonehenge or the dolmens in Brittany.”²⁸ And in the same sense, the important article by J. Alford refers to a strong analogy with the dolmens he visited in the United Kingdom, specifically Trevethy Quoit, shortly after his visit to Ronchamp (figure 21).²⁹

Ronchamp’s archaic drive, revealed in its association with a megalithic dolmen, is also explored by Josep Quetglas.³⁰ The week before his visit to Ronchamp, L-C was preparing the edition of *La pierre amie de l’homme*, in which the collection of postcards *Dolmens bretons et*

fig. 21 J. Alford, Trevethy Quoit, inverted photograph.



- 31 See Fondation Le-Corbusier, the folder of postcards and journal clippings collected by L-C: “149–171 Documentation; cartes postales (ruines du château Gaillard, dolmens bretons et pierres levées)”.
- 32 Quetglas, *Breviário*; according to Quetglas, the dolmen suffered transformations by some “enlightened archaeologists.”
- 33 See Jacques Lucan “Archaïsme et Maniérisme.”
- 34 Rabaça, “Architecture as a Work of Art and the Sense of Historic Whole. An Introduction to Le Corbusier, History and Tradition,” in *Le Corbusier – History and Tradition*, 16. On the Vernacular, see: Passanti, “The Vernacular, Modernism and Le Corbusier.”

pièrres levées showed a plastic interest in the dolmens and menhirs, or the isolated rock formations that assume a particular presence in the landscape of the Atlantic coast of Brittany.³¹ Resting firmly on the stones that delimit the entrance and subtly on a stone with a sharp point, the capping stone in the shape of a boat’s keel by dolmen *Tables des Marchands* presents strong formal resemblance with Ronchamp, in its final, constructed version.³²

The Ronchamp project aims to reach the anthropological experience of the archaic, the deep and original motivations of the architectural gesture, through the use of analogical thinking, in drawings, postcards and clippings, manipulating dream images accessible through a phenomenological method, that is, the approach to “things themselves.”³³

L-C’s growing post-war interest in the mythopoetic qualities of architecture, and the passion for the primitive, the archaic and the mythical, present in the work of Ronchamp Chapel, pursue the modern search for the timeless, in a renewed response to the human condition, and they are not foreign to the architect’s interests in vernacular architecture, in the popular production of objects, and in plastic and artistic practices.³⁴

3

Logical and Analogical Thinking

In a letter dated March 2, 1910 addressed to Sigmund Freud, Carl Jung considers analogical thinking archaic: “logical thinking is thinking in words, which like discourse is directed outwards. ‘Analogical’ or fantasy thinking is emotionally toned, pictorial and wordless, not discourse but an inner-directed rumination on materials belonging to the past. Logical thinking is verbal thinking. Analogical thinking is archaic, unconscious, not put into words and hardly formulable in words.”

Thought through images, rumination on materials or past experience, and difficult to formulate in words – analogical thinking appears as associative thinking, close to the act of plastic creation whose motivation comes from an interior movement that cannot be translated into words or a discursive logic. For the author of the seminal 1930 text “The Archaic Man,” contemporary man has something archaic, which is revealed in acts commanded by the unconscious.

The conception of Ronchamp Chapel by L-C between 1950 and 1955 is aligned with a design method that moves between emotional, unconscious images, in search of an architectural experience – spatial, material, sensorial, haptic – in response to the “archaisms surviving in man.” In a very different sense from the plastic approaches to the “primitive art” of the modernist purism of the 1920s and 1930s, in Ronchamp L-C tries a phenomenological approach to architectural conception and fruition in response to a purely religious programme,

- 35 This event was recorded and internally broadcast at Casa da Música, and it is available at <https://vimeo.com/17982158#>.
- 36 “When I started working, in my fourth year of architecture, therefore in 1954, Ronchamp had appeared shortly before, which was built between 1951 and 1953. And Ronchamp had stunned, and at times angered, some of Corbusier’s faithful followers. Apparently it contradicted everything he had published, which is not quite the case. I was very impressed by this image [projects image of Ronchamp’s north façade], and I believe that at the time, still very attached to the idea of ‘I want to be a sculptor’, I thought as in relation to Gaudi – this is sculpture. And it is not surprising that there is this proximity, because it is known that Corbusier greatly appreciated Gaudi’s work on one of his trips to Barcelona. And although it seems a contradiction, at the root of some of the modernist works of both, like the Sagrada Família and Ronchamp, is a long cultural tradition, like that of North Africa, for example. These Ronchamp light intakes, and those towers, are an evocation of the air intakes of traditional North African building. There is, moreover, a sketch of Corbusier with a construction in North Africa, very similar. [image of the interior of the south wall of Ronchamp]. I also realized the need to evoke, to see what was happening in other places, and in other times as well; this kind of continuous line, no matter how many breaks there are, and for very strong reasons.” Álvaro Siza, “O que aprendi com a arquitectura?”
- 37 See Pedro Vieira de Almeida, *Ensaio Sobre o Espaço da Arquitectura*. CODA (Porto: ESAP, 1963).

a programme that allows him to explore the mythical imaginary, the pilgrimage, the ascent route to the sacred place, the religious syncretism between elementary forms of megalithic construction and the pilgrimage chapel, the experiences of fascination with light (backlight, stained glass in a wall perforation, diffused light in an apse), and the liturgical space. The experience of an architectural journey is no longer the *promenade architecturale*, but a journey that uses the anthropological experience of contact with surfaces, the recognition of the object by the circumscription, the crossing of the threshold, the spatial compression, the illumination of the concave surface of the apse, and of the dazzling by the backlight. And the method to reach the archaic unconscious of the architectural experience makes use of the objects of memory, *memorabilia*, through analogies of difficult verbal translation, or intelligibility.

Actuality of the Archaic

We can now ask about the actuality of Ronchamp. At the conference “O que aprendi com a arquitectura?” (*What have I learned from architecture?*), on April 23, 2009, 10 pm at Sala Suggia of Casa da Música in Porto, Álvaro Siza referred to the Ronchamp Chapel at the beginning of the conference, through a set of images from the north elevation.³⁵ The temporal proximity between Ronchamp’s design and the project for Quatro Casas de Matosinhos (project 1954–1955, execution 1956–1957), associated with the perforations on the wall making visible to the outside the staircase inside, an oculus, or others elements, make the references to Ronchamp evident in Siza’s work, that is, the visual analogy between different elements.³⁶

But perhaps in a non-direct way, the tidal pool of Leça de Palmeira, a work by Siza between 1962 and 1966, based on the experience of the architectural journey as studied by Pedro Vieira de Almeida, is closer to the spatial anthropological experience explored by L-C in Ronchamp – experience of the initial course of crossing the facility, reaching the seascape, the horizon line, the containment of the ocean.³⁷

And conversely, in a profound incorporation of L-C’s work, could we not see in the chapel built by Eduardo Souto de Moura for the 2018 Venice Architecture Biennale, a dolmen–chapel syncretism, such as Ronchamp (figure 22)? Each era dreams of its own archaic, and the archaic in Souto Moura’s work has its origins in the typological elementality interpreted through the minimalist art of a Richard Serra or a Donald Judd: large monoliths, designed with notches for locking, define a peripheral wall where a large slab rests, also in stone, sheltering the place where the sacrificial altar is placed; peripherally, the wall defines a continuous bench, indicating that the space should be observed while sitting, that it is a space for rest and contemplation (figure 23). Non-axial access, as in Ronchamp and so many pre-Romanesque and Islamic churches, requires a 90-degree rotation, directing the gaze to the covered space.

38 Eduardo Souto de Moura, “No, non é...”, in Francesco Dal Co, ed., *Vatican Chapels – padiglione della Santa Sede*. Partecipazioni Nazionali de Vaticano, La Biennale di Venezia, 16. Mostra Internazionale di Architettura (Milan: Electa, 2018), 307.

Souto de Moura (ESM), like L-C, pursues the timelessness that is revealed in the archaic, through the use of an analogical thought-process, resulting from the metamorphosis of the records of the experience of inhabiting the world; but what for L-C is a creative narrative experience of mythical construction, for ESM is a manifestation of the emptying of form, anthropological nihilism, the impossibility of the promised redemption. Archaic, yes, but demonstrating the radical impossibility of promise, that is, the return to the most elementary of the material, or as he says “No, it is not a chapel, it is not a sanctuary, nor in any case, a tomb. It is just a place enclosed between four stone walls, while another stone in the centre could be an altar. The inner walls have a ledge on which we can sit and wait... wait with our feet on the ground and our heads in our hands.”³⁸

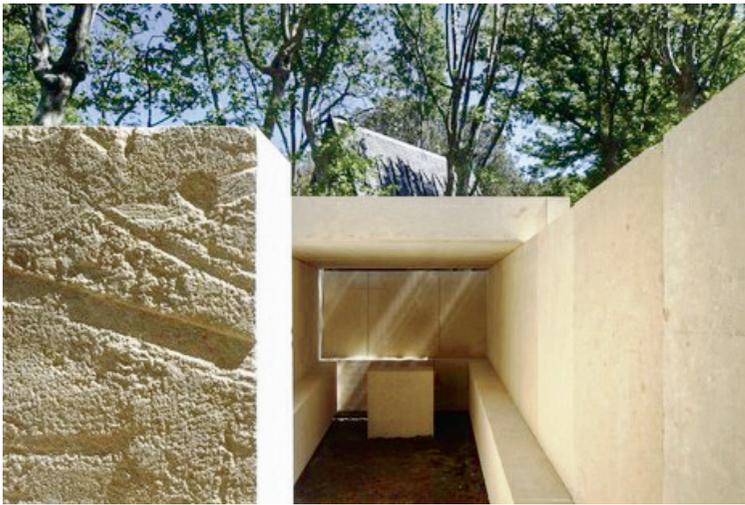


fig. 23 Eduardo Souto de Moura, Venice Biennale 2018, Chapel at San Giorgio, Photograph.