

**Primitivism, Regionalism, and the Vernacular in
Le Corbusier's middle years, 1929-1945**

Supasai Vongkulbhisal

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Committee:
Brian L. McLaren
Alex T. Anderson

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Supasai Vongkulbhisal

University of Washington

Abstract

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Supasai Vongkulbhisal

Supervisory Committee:
Associate Professor Brian McLaren
Associate Professor Alex T. Anderson
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This thesis examines Le Corbusier's middle years from 1929-1945, a period that is not often a subject of architectural historians' interest. This work is largely overshadowed by the two phases that represent the peak moments of Le Corbusier's career which are: the early years from the Maison Dom-ino (1913) to the Villa Savoye (1929) and the later years from the Marseilles block (1946) to the Capitol of Chandigarh (1952-1965). In studying this phase in Le Corbusier's career, it is fascinating that this connecting period reveals how the characteristics of his design progressed and were altered—from a focus on machine beauty to a humanistic approach.

Three qualities stood out during the investigation of this mediation, which were; the architect's rational understanding of the three terms—primitivism, regionalism, and the vernacular; the architect's study of these three terms through a self-searching experience; and the gradual emergence of the second-phase of his modern architecture. The concrete realization of this process can be explicitly seen in his urban plans for North Africa and South America and his small-scale domestic projects in France starting from the late-1920s onward.

Overall, this thesis attempts to understand the relationship and position of primitivism, regionalism, and the vernacular in modern architectural perceptions through the designs of a leading modernist architect, Le Corbusier and, at the same time, to understand the importance of the study of transitional phases in an individual architect's work.

To my parents and brother.

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Introduction

This thesis began with an interest in a shift in direction during Le Corbusier's middle years, from 1929-1945, when a characteristic aspect his design was transformed—from machine beauty to a humanistic approach. During this interval, Le Corbusier suspended his early modernist principles to search for a new kind of modernist interpretation as opposed to the organic approach he pursued in his later career. Architectural historian Mary McLeod stated in the article “Le Corbusier and Algiers” published in *Opposition* in 1980 that, “architects and historians have traditionally divided Le Corbusier's career into two phases: the early years from Maison Dom-ino (1913) to Villa Savoye (1929) and the later period beginning with the Marseilles block (1946) and culminating with the monuments of Chandigarh (1952-1965).”¹ The architect initially expressed an affinity for the streamlined machine age, and responded to the postwar shortage of urban housing. He created an identity for his architectural design as rational, functional, Cartesian, and abstract. In contrast with this approach, the second phase of his work paid greater attention to the primitive and organic roots of architecture.

By comparison, Le Corbusier's works from the middle years do not have a distinctive identity and perhaps as a result have been largely disregarded by architectural historians of the modern period. Siegfried Giedion, Nikolaus Pevsner, and Henry Russell Hitchcock were perhaps too intent on defining the shared characteristics of the ‘International Style’ to accommodate buildings that deviated from this unified form of whitewash and plastered architecture.² Not only were his transitional-period works lacking a distinct identity, they were overshadowed by the

¹ Mary Caroline McLeod, “Le Corbusier and Algiers,” *Oppositions Reader: Selected Readings from a Journal for Ideas and Criticism in Architecture 1973- 1984*, ed. K. Michael Hays (New York: Princeton Architectural, 1998), 489.

² William J R Curtis, *Le Corbusier: ideas and forms* (New York: Phaidon, 1986), 109.

fame of Villa Savoye in the late-1920s (figure 01) and Ronchamp in mid-1950s (figure 02).

Hence, the critics accused Le Corbusier of having abandoned his position; not producing realistic built works, and focusing only on idealistic utopian schemes. Yet, they might have failed to realize the political and societal conditions that circumscribed Le Corbusier's struggles in the 1930s.

The failure of Capitalism in the late 1920s and early 1930s was manifested in the *Great Depression* which had a profound effect on the building industries, particularly in Germany and France. In 1935, a downturn of French construction industry impacted the flow of commissions into Le Corbusier's atelier. They had been reduced to a trickle. The architect almost closed down his office completely and had to rely exclusively on book publishing, lecture fees, and the sale of his paintings to support himself. This collapse forced Le Corbusier to seek broader and more comprehensive architectural and urban planning solutions to replace his former excessive faith in Capitalism, a means he thought would help France recover from an economic recession due to the World War. He therefore decided to pursue various regionalisms espoused by Syndicalism and neo-Saint-Simonianism since theirs were comprehensive and thereby "organic" in both their approach to settlement patterns and production.³

Another significant impact on the work of Le Corbusier was the turbulent political climate of the 1930s, and in particular the negative reception of modern architecture by totalitarian regimes in Germany and Russia. This issue that was discussed by William J.R. Curtis, who argued:

Nazi criticism treated the modern movement to a string of racist insults and identified it with the corrosive effects of international communism. Italian Fascism was able to tolerate

³ Mary Caroline McLeod, "Le Corbusier and Algiers," 487.

the new architecture so long as it genuflected to nationalism and the classical tradition. Stalinist rejections caricatured the abstract forms as examples of 'bourgeois formalism.' Totalitarianism required the full rhetoric of monumentality for its state institutions, and, in Germany at least, encouraged an obvious regionalism to express the myths of blood and soil.⁴

The changes due to this oppressive political climate effected Le Corbusier's design in many ways. Not only did the architect lose the competition for the Palace of the Soviets in Moscow to a stern classical style, he was criticized by the critic Alexandre von Senger for his relationship to communism since he committed the Centrosoyuz building in Moscow to Fascism (Figure 3). This work was among those that caused him to be branded a communist. Together with the fact that Liberal democracies were in favor of Neo-Classicism, Le Corbusier's chances of obtaining major project commissions were extremely limited.

Another profound impact on Le Corbusier's middle years was the rise of air travel as it became another alternative for international transportation. The interwar period witnessed a rapid growth of aviation that reshaped the perception of the world and of space. In the 1930s, civil airlines began to offer passenger and mail service between London and the Middle East, then on to India and Australia; or between Toulouse and Dakar, and even shorter flights between Paris and Brussels.⁵ The airplane was not only used as a mean to internationalize the population, but also a tool for exploring and exchanging their civilizations. It carried architects, together with their architectural form, to countries as far away from Europe as Mexico, South America, Japan, Finland, the United States and England. As a leading figure of the modern movement, Le

⁴ William J R Curtis, *Le Corbusier: ideas and forms*, 108.

⁵ M. Christine Boyer, "Aviation and the Aerial View: Le Corbusier's Spatial Transformations in the 1930s and 1940s," *Diacritics* 33.3/4 (2003), 94.

Corbusier was constantly invited to give lectures abroad, such as the presentation of his utopian city *La Ville Radieuse* at the Brussels Congress of CIAM in 1930.

The architect's globe-trotting started with his first visit to Moscow in October 1928 and continued almost without a break until 1936—the year of his last travel outside France before the Second World War. During 1929 alone, Le Corbusier flew from one continent to another as he traveled to supervise the plan of the Centrosoyuz project in Moscow in June, and left three months later for South America in order to give lectures in Buenos Aires, Montevideo, and Rio de Janeiro. Even though the South American tour lasted only two months, from late September to early December, it had an enormous impact on Le Corbusier's design perspective, particularly as related to the act of looking from a high altitude (Figure 4).

Beyond the new urban experiences Le Corbusier gathered from his travels to Eastern European and Latin American countries, historians have noted an interest in the female body as another supporting influence that changed the architectural characteristics of his mid-career projects. For example, his association with women such as with Josephine Baker, a black singer whom he had a close relationship with during his return voyage on the S.S. Lutetia (Figure 5), was transformed into the curvilinear structure the architect portrayed and merged with the undulating plain of the Brazilian landscape such as in his drawing of a continuous linear town in his plan for Rio de Janeiro (Figure 6).⁶ It soon after had a profound impact on his later urban planning ideals which were contrasted to his former perspective that exclusively focused on the masculine virtues of the machine. Another significant event that took place in Le Corbusier's life during the 1930s was his marriage to *Yvonne Gallis* in 1930 (Figure 7). Their personal life was

⁶ Kenneth Frampton, *Le Corbusier* (London: Thames and Hudson, 2001), 107.

kept extremely private and was not a part of the presentation of the artist's character, therefore the affect of this attractive Monaco-born fashion-model on Le Corbusier's works was only told through a few sources; scattered sketches, various drawings, and the accounts of his friends and acquaintances. According to this personal evidence, the personality of Yvonne was considered a perfect antidote to Edouard's self-seriousness—she was neither an intellectual nor an architect.^{7 8} Despite the scant evidence, several sketches and records Le Corbusier drew of his wife provide a certain relevance to his architecture and city planning such as some hidden virtues of the female anatomy.

In addition to this indirect influence on his middle years, the lessening of architectural projects in 1930s allowed the architect to spend more time on painting. Increasingly it allowed Le Corbusier to probe forces within himself and to unearth images from his subconscious.⁹ Regarding his Purist works from the 1920s, his interest was in a mathematic beauty found in the machine and the ancient virtues of the Parthenon, and especially its strictness and severity. Architectural historian William J.R. Curtis rephrased Le Corbusier's belief in the objects according to the third chapter "The Laws" of the architect's book titled *The Modern Spirit*. Le Corbusier demonstrated his belief in the objects that he considered appropriate to represent his modern concept:

Purism will recognize subject matter and this not degenerate into decorative formalism as did its processor. They are also led to subject matter because of economic law: the law of natural selection which inevitably produces the pure forms of standardized objects such as the wine bottle, the flask, the pipe, the column. These are the basic 'object types' we find

⁷ William J R Curtis, *Le Corbusier: ideas and forms*, 108.

⁸ Charles Jencks, *Le Corbusier and the Tragic View of Architecture* (Cambridge: Harvard University Press, 1973), 99.

⁹ William J R Curtis, *Le Corbusier: ideas and forms*, 109.

in the Purists' paintings at this time, even those of Fernand Leger and Juan Gris, which celebrate the 'heroism of everyday life.'¹⁰

His paintings from the 1920s, such as *Nature morte au Violon* (Figure 8), were illustrated using the geometric profiles of the object-type. The most important issue was the subject and its function, and secondarily its form. The overall composition was tied together by a 'marriage of contour' and proportionally divided spaces. All of the objects drawn were layered frontally and equally in one picture plane. However, a decade later, these forms turned out to be more complex and elusive. The boundaries and contours took on an importance of their own. A major change that broke through the austerity of early Purism occurred around 1927 when the architect shifted his concern toward organic forms—such as, the human figure, and *objets a reaction poetique* such as bones, shells, and pebbles (Figure 9). These emotive and impulsive objects replaced the 'object-types' of the machine. By the end of the 1920s, the paintings of Le Corbusier were no longer compiled in tight layers of proportionally controlled planes. Instead, all the objects existed in a fuller space and were composed in strange juxtapositions. For instance, in the painting *Sculpture et Vue* of 1929 (Figure 10), a glass, a bone, a matchbox, and a nude figure were aligned with each other in a way so that one could grasp all the objects' connected outlines as a whole, thus focusing the contrast between the mechanical and natural. All the clearly composed object-types paintings of the 1920s had become surrealistic—a combination of unexpected confrontations of functionally and organically unrelated object—by the 1930s.¹¹ This painterly technique was transferred to his architectural elements—as can be seen in the transformation of

¹⁰ Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, 52.

¹¹ Stanislaus Von Moos, *Le Corbusier, Elements of a Synthesis* (Cambridge: The MIT Press, 1979), 307.

the cylindrical pilotis of his Villa Savoye (1929) (Figure 10) into the double-curved profiles of the columns of the Pavillon Suisse (1930-31) (Figure 11).

In addition to all the influences mentioned earlier—the political atmosphere of the times, the introduction of the female body, and the shift from Purism to Cubism and Surrealism—that ran parallel to Le Corbusier’s attempt to develop his new stage of modern architecture, circumstances encouraged him to elaborate a new form of modernism in the countries that Europeans considered to be on the outskirts of civilizations—Argentina, Brazil, and Algeria. By trying to escape from the rise of Fascism in Italy and the existence of National Socialism in Germany, Le Corbusier saw that his travels to South American cities would allow him to freely express his architectural will and social beliefs. He initially intended to shape the society through his modern architecture as announced in the last pages of *Vers un Architecture*, where he stated: “Architecture or revolution. Revolution can be avoided.”¹² In the 1930s he attempted to build a public realm and architecture based on idealized liberal institutions—world government and global culture.¹³ This architectural approach was supported by a shift in his political views, where he moved from advocating managerial capitalism to pursuing Regional-Syndicalism. He thus introduced in those new cities an urban planning based on curvilinear forms and shifted his approach to domestic architecture from one based on a white machine aesthetic to a hybrid between the factory-built system and rough hand-crafted masonry.

This significant shift led to what Stanislaus von Moos has called “a new tradition—a vernacular impact upon the subconscious.” This vernacular dimension was added to the principles

¹² Mary Caroline McLeod, “Le Corbusier and Algiers,” 489.

¹³ Charles Jencks, *Le Corbusier and the Continual Revolution in Architecture* (New York: The Monicelli Press, 2000) 188.

of the Modern Movement discussed in the Fourth CIAM congress, *the Athens Charter*, in 1933 under the theme *The Functional City*.¹⁴ During the discussion, the members of congress analyzed thirty-three great cities on their social progress through a quantitative method that embraced scientific management and large-scale planning. Siegfried Giedion, the general secretary of the CIAM identified the development of these urban studies that they progressed from the purely functional tendencies in architecture to a comprehended integration which included elements such as aesthetic, social, and biological concern. Giedion also mentioned that “the full evaluation of this new, independent platform had been helped immeasurably by the contact with the past and our Hellenic heritage.” Von Moos furthermore mentioned an important issue obtained from the Charter, beyond the need for systematic coordination of the different interests and competences involved (traffic systems, housing, etc.),

... the definition of the ‘functional city’ states that the city has to accommodate four essential functions: ‘Dwelling, working, recreation, and circulation.’ There is nothing wrong with this list as long as it serves as the basis for topographical analysis and surveying. The implication, however, was that - in a new plan - these functions were to be articulated in terms of separate urban units, and it is here that the idea becomes controversial.¹⁵

The new discovery had vastly changed the perspective of architects and urban planners of the 20th century regarding their reaction against the eclecticism and lavish stylistic excesses of the architecture of the former period.¹⁶ Hence, studying this thesis will examine the rationale behind this shift as it has the potential to point out how the unification of modern space and

¹⁴ Stanislaus Von Moos, *Le Corbusier, Elements of a Synthesis*, 211.

¹⁵ *Ibid.*

¹⁶ Robert Venturi and Denise Scott Brown, “The significance of A&P parking lots or Learning from Las Vegas,” *The Urban Design Reader*, eds. Michael Larice and Elizabeth MacDonald (Hoboken: Taylor and Francis, 2012), 170.

environments was employed in modern societies, both in architectural terms and urban studies. It also calls attention to the importance of understanding a complex of related terms that would seem counter to the core values of the modern movement—primitivism, regionalism, and the vernacular—as closely tied to, rather than separate from, modern architecture.

By focusing at the forces that shaped the architecture of Le Corbusier's middle period, this thesis deals with the problematic issues caused by the conventional understanding of Modern Architecture as detached from its society and traditional culture, and also its specific site or region. Modern building is now so universally conditioned by optimized technology that the possibility of creating significant urban form has become extremely limited.¹⁷ The implications of modern architecture are often misinterpreted in its relationship with the surrounding and sometimes ignored, environment. G.E. Kidder Smith who published a series of books during the 1950s titled *Italy Builds*, *Switzerland Builds*, and *Sweden Builds* described the concerns for the particular regionalist identity of the architecture of different countries. In *Brazil Builds* he repeatedly stresses the Brazilian designs of the 1940s and 50s which, as opposed to the architecture of North America, are praised for their successful adaptation to the realities of the region,

North America has blandly ignored the entire question (of climate). Faced with summer's fierce western sun, the average office building is like a hot house, its double hung windows half closed and unprotected. The miserable office workers either roast or hide behind airless awnings or depend on the feeble protection of Venetian blinds...¹⁸

¹⁷ Kenneth Frampton, "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," *The Anti-Aesthetic: essays on postmodern culture*, ed. Hal Foster (Port Townsend: Bay Press, 1983), 17.

¹⁸ Liane Lefalvre, "Critical Regionalism: A Facet of Modern Architecture since 1945," *Critical Regionalism: Architecture and Identity in a Globalized World*, Eds. Liane Lefalvre and Alexander Tzonis (New York: Prestel, 2003), 25.

Le Corbusier's architecture reacted to similar failures such as that flat, Purist architecture did not protect against strong sunlight.¹⁹ Therefore, by the mid-1930s, Le Corbusier developed the *brise-soleil* or *sun breaker* in order to revolutionize to his former modern methods and theories. By focusing only on the simplified appearance of modern architecture—its rational reduction of ornament, and emphasis on geometrical forms—this perception obscures the conceptual truth of modern—which is the relationship between its space and the broader physical and cultural environment. These extended physical environments and buildings that are distant in time or space are often referred to as “vernacular architecture”—which are places that are unfamiliar to modern societies. This distance allows these environments to be invested with idealized social content. Therefore, the close relationship between place and society is intrinsic to the notion of “vernacular,” while at the same time being a unification of modern space and society (Figure 13). The vernacular does not need to be an enemy of modern.

Examining the notion of the vernacular, regionalism, and the primitive in modern architecture is important because it can provide a way to open architecture to a redefinition. Therefore, this thesis argues that the vernacular, the regional, and the primitive persist in modern societies, in particular, in the modern architecture of Le Corbusier, one of our most innovative architects. *Charles-Edouard Jeanneret* or *Le Corbusier* was trained as a regionalist from Swiss art school in the 1910s and he made his voyage d'Orient through the Balkans, Turkey, and the Mediterranean (Figure 14). He paid close attention to the vernacular production of these regions, seeking an essence and evidence of natural man. Nevertheless he discovered that solutions to the issues of modern change were not to be found directly in the vernacular, not even in the

¹⁹ Charles Jencks, *Le Corbusier and the Continual Revolution in Architecture*, 188.

vernacular of places as yet less affected by modern technologies.²⁰ Only the primitive people and their relations to their artifacts will persist in the architectural forms rather than the vernacular forms themselves. This doctrine consequentially effects the changes in Le Corbusier's modernism. However, the shift in his architectural forms had not been exposed concretely until 1929. By that time, Le Corbusier discovered that the formal vocabulary of the Modern Movement had been suspected as a representative style of leftist governments, and was opposed to the academicism of the Beaux Arts. In conjunction with the machine-age forms, white planar surfaces, simple cubic forms, flat roofs, strip windows had not always proved to be the most efficient, economical, or readily adaptable to mass production. Furthermore, their architectural apparatus was limited and hard to illustrate the real essence with a modern poetic expression. This thesis will thus explore Le Corbusier's relationship with these three vocabularies; primitivism, regionalism, and the vernacular during the transitional period from 1929 to 1945. In order to carefully study this period, the thesis is comprised of three different sections ordered in a rough chronology and listed as follows; "Primitivism, regionalism, and the vernacular;" "Architect's travels;" and "Modern vernacular."

The first chapter, "Primitivism, Regionalism, and the Vernacular," analyzes and clarifies the meanings of these three terms connected to Le Corbusier's first-phase modernist architecture, in which they were rooted in Le Corbusier's architectural education and a self-taught experience since the 1910s. Le Corbusier gradually picked up his understanding of these terms through his association with mentors, friends, and colleagues. During these years, there were two major

²⁰ Stanford Anderson, "The Vernacular, Memory, and Architecture," *Vernacular Modernism: Heimat, Globalization, and the Built Environment*, Eds. Maine Umbach and Bernd Huppauf (Stanford: Stanford University Press, 2005), 170.

impacts inspiring his interest in primitivism, regionalism, and the vernacular. First is the process of abstracting the organic elements and interweaving them to create a new geometrical patterns by using a simple combinations, taught by Charles L'Eplattenier. Second is Le Corbusier's intense study of theories, from John Ruskin to Eugene Grasset, Charles Blanc, and Owen Jones. Especially in the writing of Jones', *the Grammar of Ornament*, it was stated "The true basis of architectural forms and decorative motifs lay in the transformation of local, natural features."²¹

The second chapter, "Architect's Travels," discussed the implications of his work, particularly on urban planning, for South American and North African cities. The beginning of Le Corbusier's middle period has been marked by the historians as 1929, a year after he experienced his first flight and the same year that he had an opportunity to acquire peasant cultures from other continents. This thesis will also compare Le Corbusier's urban planning principles and designs; La Ville Contemporaine of 1922, Plan Voisin of 1925, La Ville Radieuse of 1935, together with their implementations in Buenos Aires, Sao Paulo, Montevideo, Rio de Janeiro, and explicitly in Algiers. Hence, this section is trying to illustrate the first attempt by the architect to incorporate his theories with various urban realities.

The third chapter, "Modern Vernacular," will focus on the domestic architectural design by Le Corbusier during this intermediate period. In this discussion it will be seen that his abandonment of the centralized city model in favor of the linear city format in urban planning, was not the only paradigm shift during this middle years. The mixing of industrial technology with pre-industrial building technique, especially in his residential designs, was another dimension to be investigated. This chapter will discuss this issue through a careful examination

²¹ William J R Curtis, *Le Corbusier: ideas and forms*, 21.

of four houses; Maison Loucheur of 1929, Maison Errazuriz of 1930, Petite Maison de Weekend of 1935, and Maisons Jaoul of 1951. The last section will be the conclusion of the overall thesis regarding the importance of modern vernacular in the work of Le Corbusier. It provides a conceptual structure for integrating the new ideas and “facts” into the discipline of architecture, and for broadening its vocabulary and responsibilities relative to modernity.



Figure 01 - Le Corbusier, *Villa Savoye*, 1929: 5 points of architecture.

Figure 02 - Le Corbusier, *Notre Dame-du-Hart, Ronchamp*, 1950-55: view from the south.

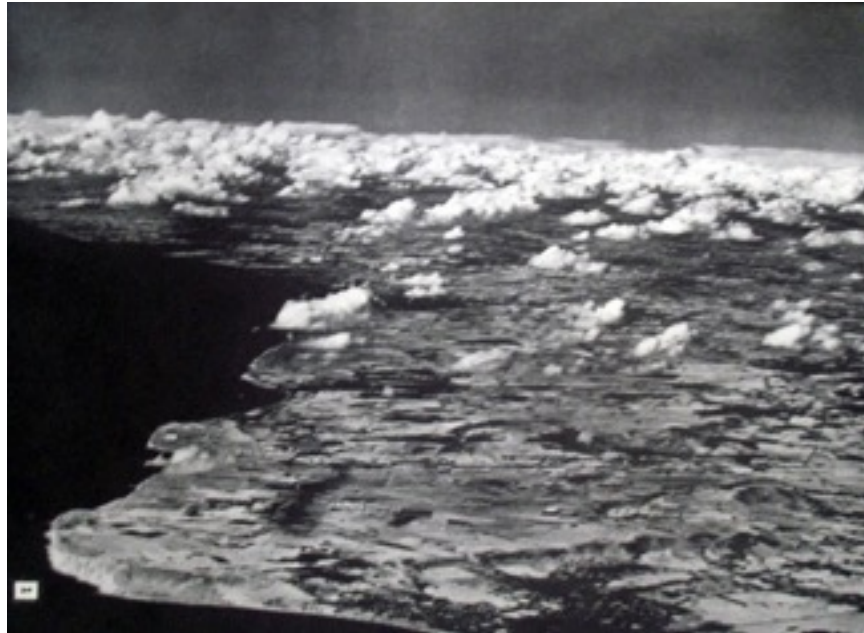


Figure 03 - Le Corbusier, *Centrosoyuz Building*, 1933: in Moscow, Russia.

Figure 04 - Le Corbusier, *Aircraft*, 1935: the act of looking from the high altitude

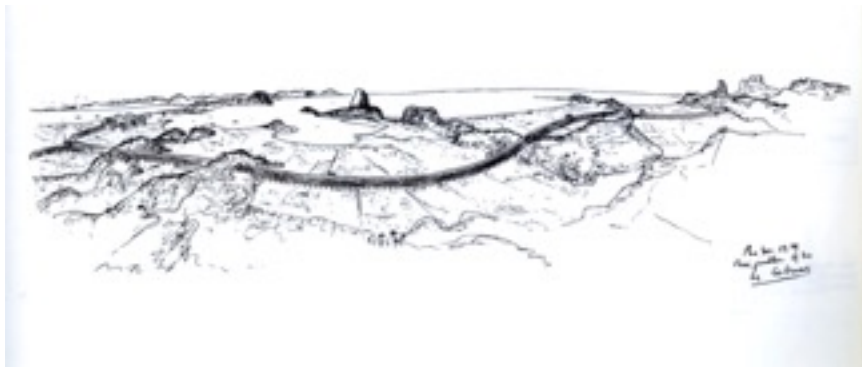


Figure 05 - Le Corbusier, *His associations with Josephine Baker*, 1929: on the S.S.Lutetia.

Figure 06 - Le Corbusier, *Sketch of Rio de Janeiro's landscape*, 1929: the undulating plain.

Figure 07 - Le Corbusier, *His marriage to Yvonne Gallis*, 1930: a Monaco-born fashion model.

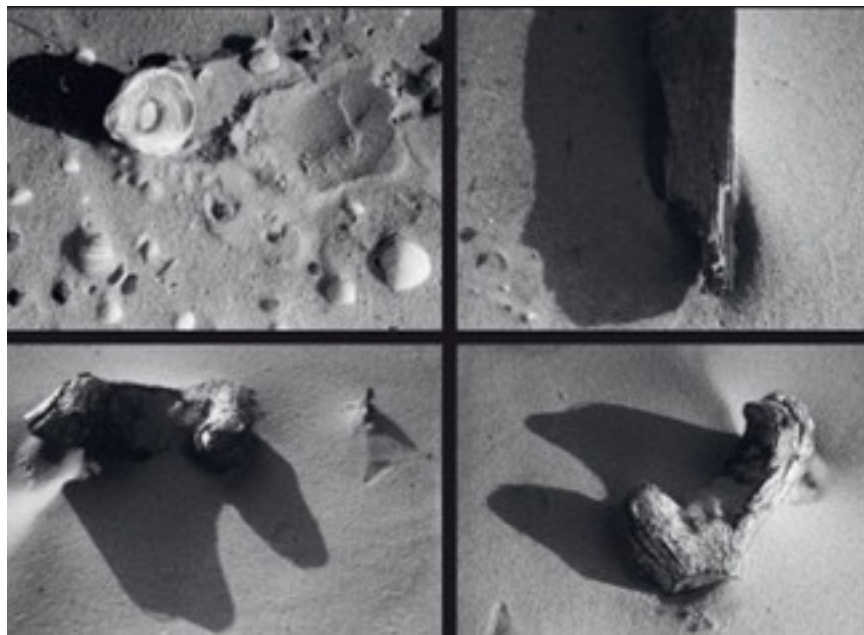


Figure 08 - Le Corbusier, *Nature morte au Violon*, the 1920s: his early-year painting.

Figure 09 - Le Corbusier, *Objets a reaction poetique*, 1927: bones, shells, and pebbles.



Figure 10 - Le Corbusier, *Sculpture et Vue*, 1929: his abstract painting.

Figure 11 - Le Corbusier, *The cylindrical pilotis at Villa Savoye, Poissy, France, 1931.*

Figure 12 - Le Corbusier, *The double-curved columns of the Pavillon Suisse, France, 1930-31.*



Figure 13 - Le Corbusier, *The notion of vernacular*, 1929: Villa Savoye and the Greek Temple.
Figure 14 - Le Corbusier, *Voyage d'Orient*, 1910s: the Balkans, Turkey, and the Mediterranean.

Chapter 1 Primitivism, Regionalism, and the Vernacular

This chapter intends to explain the definitions and connections between these three terms—*Primitivism*, *Regionalism*, and *the Vernacular*—and Le Corbusier’s life and career prior to a shift in his architectural designs in the the modernist architecture of the first-phase of his career. This chapter thus aims to establish a foundation and creates a better understanding for readers of how Le Corbusier’s initial formulations were rationalized in these three terms. Due to the lack of ornament in modern architecture—decorative moldings and elaborate trim are eliminated—the emphasis on rectangular forms and horizontal and vertical lines, and the stress on honesty of materials, this perception obscures the conceptual truth of the modern—which is the use of modern materials and systems creates a relationship between its interior space and the outer world.²² Two of *the Five Points of Architecture*, with which Le Corbusier proposed to devise modern architecture—the free plan and the horizontal ribbon window—are often perceived by architects and scholars through the limited portrayals of how they interact with the outside world by framing (Figure 15).²³ Secondly, because of the limitation of our physical bodies, which are bound to the earth, we cannot perceive natural things holistically. This aspect of seeing merely from a distance limited the ‘synthesis of horizons’ as a mode of perception.²⁴ As a result, most of the scholarship has examined the architectural experience Le Corbusier developed in his projects only through one dimension, through the setting of geometrical forms that border the

²² Greg Jones, “What is modern: characteristics of modern architecture,” *A2modern*, last modified April 9, 2011, <http://a2modern.org/2011/04/characteristics-of-modern-architecture/>. Jones summarizes some of the common characteristics found in modern architecture of the mid-century.

²³ Le Corbusier, “Mass-Production Houses,” *Toward a New Architecture*, trans. Frederick Etchells (New York: Dover Publications, 1986), 225. The Five Points of Architecture were manifested through Le Corbusier’s designs point-by-point in “Mass-Production Houses” section in *Toward a New Architecture*.

²⁴ Jae Young Lee, “Phenomenological interpretation of the experience of nature on the works of Le Corbusier,” *Journal of Asian Architecture and Building Engineering* 13.1 (2013), 38.

surrounding environment, that situate the environment at a further distance from the architecture. This has made the investigation of the interactions between modernist architecture and its users extremely narrow. In order to understand the relationship between modern architecture and the term *Vernacular*, one needs to understand the circumstance and originality which encourage vernacular architecture to occur. According to Francesco Passanti, as stated in “the Vernacular, Modernism, and Le Corbusier,” the term Vernacular embraces ethnic, folk, regionalist, and primitive characteristics in the most generic sense.²⁵

Regionalism

The sense of regionalism engaged Le Corbusier’s attention since 1902. At the age of of fourteen and a half, he was was initially trained as a regionalist while attending Ecole d’Art at La Chaux-de-Fonds under the mentorship of Charles L’Eplattenier, who based his work and teaching on Paris’ Arts Decoratifs and Beaux Arts systems. When L’Eplattenier became a leading member of the faculty, he endowed the limited aims of a provincial art school with an apocalyptic tone in which students were invited to improve the moral tenor of society through the translation of principles learned from God’s creation—nature—into artifacts of high formal quality.²⁶ During his adolescent years, two aspects of his education strongly impacted Le Corbusier’s initial understanding of how nature created the vernacular, to which he often referred in his later publications. In this case, a term vernacular was frequently used to refer to regionally recognizable language patterns that one could pick up from associating with the surrounding

²⁵ Francesco Passanti, “The Vernacular, Modernism, and Le Corbusier,” *Journal of the Society of Architectural Historians* 56.4 (1997), 438.

²⁶ William J R Curtis, *Le Corbusier: ideas and forms*, 18.

nature. The first method Le Corbusier learnt is the process of abstracting the organic elements and interweaving them to create a new geometrical pattern, using simple laws of combination (Figure 16). L'Eplattenier handed down his belief that the most vital aesthetic principles were rooted in an understanding of nature, not at the level of superficial imitation, but at the level of underlying structure.²⁷ The second fundamental approach was Le Corbusier's intense study of many compositional theories of the thinkers that his master admired and introduced to him in courses, for examples: John Ruskin, Eugene Grasset, Charle Blanc, and Owen Jones. Especially in the writing of Jones, *the Grammar of Ornament*, Le Corbusier was affected by a significant statement regarding the translation of nature—that the true basis of architectural forms and decorative motifs lay in the transformation of local, natural features.²⁸ L'Eplattenier, had further expanded upon Jones' description of the Egyptian columns, which imitated the lotus and papyrus of the Nile, with his own analogy by explaining the implication of rock strata and confiner trees, and used them to represent the natural identity of the Jura region (Figure 17). Although Le Corbusier had developed his skills for observing nature by accompanying his father on occasional Sunday trekking trips through the Alpine landscape and following the advice for drawing nature from John Ruskin's book, *Elements of Drawing*, Le Corbusier had not yet reached the point where he could fully integrate the natural elements he had experienced into his own compositions (Figure 18). The art and architectural works he produced during 1902 and 1907, such as a watch case, Maison Fallet, and Maison Jaquemont, still replicated traditional

²⁷ Ibid.

²⁸ Ibid.

Swiss crafts and regionally inspired housing combined with the technique of organic elemental synthesis he learned from L'Eplattenier (Figures 19 and 20).

Folk

Le Corbusier's rejection his own regionalist techniques was lucidly described in *The Decorative Art of Today*, a compilation of his L'Esprit Nouveau articles written prior to 1925. While this book mainly condemned the popularity of *Art Deco* celebrated at the 1925 Exposition des Arts Decoratifs in Paris, his manifesto also revealed the progression and dimensions that he had advanced in understanding nature. It elaborates through chapters on folk culture in "Plagiarism," human scale in "Type-needs Type-furniture," motion in "The Lesson of the Machine," and the rejection of regionalism in "Confession." With the term *plagiarism*, which Le Corbusier gave to one of the essays, he criticized the decorative art products of the day, which the French Government was trying to promote in the international market via copies of traditional antique styles. Le Corbusier considered this to be a disguise for self searching and a distraction in order to avoid the need to create.²⁹ He contrasted this with the creation process of folk cultures:

If we try to imagine how folk cultures are formed, we will grow certain that the folk culture of today is in process of formation, indeed already exists, born of unanimous collaboration. We will be convinced that a work of perfection, of value, of lasting quality,

²⁹ Le Corbusier, "Plagiarism," *The Decorative Art of Today*, trans. James I. Dunnett (London: The Architectural Press, 1987), 31. Le Corbusier gave a demonstrations of what he meant by *Plagiarism*, that "the antiquities of the antiquarian, the glided palaces of the Kings, the museums of peacock's feather, and finally the poetry of folk culture - a ready source of such distraction - all provide an opportunity to avoid confronting oneself, to evade the need to create."

conforming to our needs and reflecting our thoughts, is being built every day from the vigor and powers of invention of us all ...³⁰

Le Corbusier pointed out that the real essence of folk cultural products developed through a process of selection that rationalizes the refinement of objects over time (Figure 21). The relationship between man and environment was also emphasized here, since it influences this process. Natural surroundings, for instance, the climate, the sun, the political regime, the race, everything is classified and shapes this evolutionary process.³¹ Henceforth, Le Corbusier strongly disapproved of decorative art objects invented to respond only to particular individuals because he believed that the considerable benefit of contemporary decorative arts is an ability to function universally or to embody universal design.³² Through a selective operation originating in the distant past, if the products truly become practical to all the users, Le Corbusier reiterates that its formal realization will clearly direct its function, consume human resources efficiently, and respond perfectly to human emotion. Prior to reaching the ultimate level of perfection, folk-cultural products need to be cultivated through a certain length of time, long enough to become unanimous and transmissible. When reaching this stage of superiority, its characteristic will then evidently reflect its own origin as Le Corbusier explains: “at last it became the perfect mirror of its people: an Alp or the sea could see its own image in the eye of a man.”³³

³⁰ Ibid., 32.

³¹ Ibid., 33.

³² Sheryl Burgstahler, “How to apply universal design to any product or environment,” *Universal Design: Process, Principles, and Application*, last modified, 2015, <http://www.washington.edu/doiit/universal-design-process-principles-and-applications>. Universal Design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialization.

³³ Le Corbusier, “Plagiarism,” 33.

Type-needs, Type-furniture

Most of the modernist critics at the time treasured the new typology Le Corbusier assembled in *Type-needs, Type-furniture* because the architect had just given the modern era a brand-new tool that could entirely replace the conventional decorative arts. At the same time, they believed Le Corbusier's propaganda that the new typology belonged to and could fundamentally ground their own folk culture separated from the conventional tradition. Le Corbusier suggested that the relationship between the human body and objects, or the "human scale," was the determinant in the function of the designed object. "To search for the human scale, for human function, is to define human needs,"³⁴ Le Corbusier declared, explaining the relationship between what he called *type-objects and type-needs*. He further suggested that the compatibility between the decorative art according to the type-quality of our needs and the human organs is equivalent to an extension of human limbs; he then simply renamed them "the artificial limbs." Accordingly, he placed these human-limb objects in the category of type-objects because they physically respond to human needs or type-needs. To demonstrate his theory, Le Corbusier raised several examples of type-objects answering to type-needs: "chairs to sit on, tables to work at, devices to give light, machines to write with, racks to file things in."³⁵ As a term, "human-limb object," well represented its corporeal characteristics; it not only precisely conveyed to readers why un-functional decorative arts should be eliminated, but it also exposed the similarity between the movements of humans and the movements of machines, expressed through the form of furniture (Figure 22). A few qualities thoughtfully derived from conventional

³⁴ Le Corbusier, "Type-needs, Type-furniture," *The Decorative Art of Today*, trans. James I. Dunnett (London: The Architectural Press, 1987), 72.

³⁵ *Ibid.*, 69-79.

decorative art—the order, geometry, and calculation that organizes nature—should still apply to human-limb objects.³⁶ According to the typology Le Corbusier established, the correlation between organic matter and machine mechanisms had just been introduced and transformed tangibly in the *Espirit Nouveau* pavilion, although it had not yet been fully integrated since some items in the pavilion were not produced through the industrial system as Le Corbusier expected.

A Confession from the Voyage d’Orient

Only nature can give us inspiration, can be true, can provide a basis for the work of mankind. But don’t treat nature like the landscapists who show us only its appearance. Study its causes, forms, and vital development, and synthesize them in the creation of ornaments.³⁷

Le Corbusier reiterated his master’s comment on the conception of ornament in “Confession,” the last chapter he latest added in *the Decorative Art of Today*. However, after spending almost a decade practicing under this rationalist regime and seeing his pupils, one after another, leave for a voyage, Le Corbusier finally declared in his own writing that he needed to travel. Thus, in 1911, he decided that it was the end to the first chapter of his life. He consequently went on a new exploration by traveling through the Balkans, a trip Francesco Passanti claimed was probably the central experience of the vernacular in Le Corbusier’s youth.³⁸ His main intention for the tour was to look for the substances that could supply him the ideas and energy to produce new subjects eagerly, based on his existing vernacular knowledge.

³⁶ Nancy Troy, “The Decorative Art of Today,” *Design Issues* 6.2 (1990), 89.

³⁷ Le Corbusier, “Confession,” *The Decorative Art of Today*, trans. James I. Dunnett (London: The Architectural Press, 1987), 194.

³⁸ Francesco Passanti, “The Vernacular, Modernism, and Le Corbusier,” 438.

The tour included traveling to the major cities of Vienna, Istanbul, Athens, and Rome. His journey to the East was later published under the name *Voyage d'Orient*. During his search for a new lesson taught outside of the schools, he turned away from the books that he criticized as part of an endless process; he instead tried to acquire certainties from exploring the museums. The subject Le Corbusier paid attention to was not the Great Art, but the art that developed directly from local knowledge, through the selection process. Tapestries, miniatures, Persian plates at the Musee Cluny; Etruscans and Greeks at the gallery of M.Pottier; shells, birds, big pre-historic skeletons, present-day animal skeletons—these were the subjects Le Corbusier closely focused on. The travel gave Le Corbusier an opportunity to work for Auguste Perret who admired the youngster's travel sketches and accepted him immediately. While working as a draftsman for Perret, Auguste told Le Corbusier two things that later impacted him greatly: first was that he should study mathematics if he had the time, since it formed the character of architecture, and second, was “one must build with perfection: decoration generally hides a want of perfection.”³⁹ The combination of the subjects he observed in the museums, the remarks from Auguste Perret, and his own examination of the Gothic form at Notre Dame strongly influenced his later design, which was clearly explained in *The Decorative Arts of Today*. Although he argued that the astonishing climax and primordial plastic character of the Gothic plan and shape was a failure of the engineers because it produced an ingenuity that did not fulfill the test of our eyes, however all these vernacular essences were acknowledged by Le Corbusier and they hid beneath his newly-invented modernist architectural composition developed for the decorative-art objects.

³⁹ Le Corbusier, “Confession,” *The Decorative Art of Today*, 202.

Primitivism

The first part of the Balkan trip was dedicated to a search for first-hand vernacular craftsmanship. During a boat trip from Vienna to Budapest, Le Corbusier at the age of twenty-three asked the boat captain to specify a village un-influenced by Western industrialization and which would be distinctive from where he came. In the town of Baja, he found some traditional pottery that was proficiently sculpted. The potters used their intuition based on experience to form a shape: their fingers do the work, not their minds or their hearts.⁴⁰ The procedure of pottery crafting in the village affirmed the transmissible nature of peasant culture. Le Corbusier was steadily looking for as he elucidated: “the village potter, whose fingers blindly obey the orders of a centuries old traditions;” “It is the fingers of these potters that work, not their spirit, not their heart (Figure 23).”⁴¹ From city to city, Le Corbusier noted the unique characteristics that showed predominantly on each city’s typical local houses, for example, the courtyard centralized the planning space in Hungary, the living room contained windows that were wider than tall, expanding from wall to wall in Tirnovo, people in Tirnovo and Romania repainted the vivid-color of their residential walls twice a year (Figure 24). Passanti pointed out that what Le Corbusier sought among these places were all the vernacular patterns of others, not his own definition of vernacular. In today’s parlance, he sought the other, a pure and natural man, in contrast to a Western man corrupted by the turmoil of the nineteenth century.⁴² What seems to be interesting in Le Corbusier’s search was not only to seek the expertise about actions or

⁴⁰ Le Corbusier, *Journey to the East*, Trans. Ivan Zaknic (Cambridge: The MIT Press, 2007), 18-19.

⁴¹ Francesco Passanti, “The Vernacular, Modernism, and Le Corbusier,” 438.

⁴² *Ibid.*

architectural forms that originated unconsciously from the hands of creators, but it was also to find an argument that explained why popularity among those objects was declining. He saw evidence of value depreciated in Turkey, for example, where he noted that the pottery had fallen out of use: people preferred ten-liter metal cans, which do not break. Despite the rationale of learning from observing and documenting architectural precedents throughout the entire *Voyage d'Orient*, Le Corbusier concluded that “there is nothing left of original things.” He concisely declared that modernization should not be erected on the premodern-cultured foundation since they were even more vulnerable than to build up our own.⁴³

Vernacular Ideology and Adolf Loos

Le Corbusier’s vernacular engagement could be examined using two relative discourses: the first is the concept of *Sachlichkeit* or *Factualness* which Le Corbusier learned from Adolf Loos and Hermann Muthesius during his adolescent years and the second is through the *Phenomenology of Perception* developed by French philosopher, Maurice Merleau-Ponty. During those early years, Le Corbusier’s writings were found comparable to Loos’ principles.⁴⁴ The similarities can be seen in two separated consequences: first was in 1913 following *voyage d'Orient* trip and second in *L'Art Decorative d'aujourd'hui* in 1920. The first connection was found in an article “Le Renouveau dans l’architecture” in the *Revue mensuelle de l'oeuvre* (1914) from which Le Corbusier quoted an anonymous passage, describing the beautiful scenery

⁴³ Francesco Passanti, “The Vernacular, Modernism, and Le Corbusier,” 438.

⁴⁴ Stanislaus Von Moos and Margaret Sobiesky, “Le Corbusier and Loos,” *Assemblage 4* (1987), 31. According to Von Moos’ comment on when Le Corbusier initially learned about Adolf Loos, the author stated: “It is true that for this purpose Jeanneret had spent the winter of 1907-8 in Vienna with his friend Leon Perrin. But there is, however surprising it may seem, not a single indication that he knew the name Loos at the time, not even from hearsay. Only in 1913 did Jeanneret first seem to notice the author of “Ornament and Crime.”

of the Swiss landscape without naming the source. The structure of writing Le Corbusier composed here was found copying a style Loos developed from Alexandre Cingria Vaneyre's book *Les Entretiens de la Villa du Rouet* (1908) in which Loos authored to explain the Alpine building culture using a dialogue based on the cultural autonomy of the French-speaking western part of Switzerland.⁴⁵ However, this analogy barely related Le Corbusier to his architectural establishment, even though it showed his vernacular interest. It was a second linkage that bonded Le Corbusier with Loos' *Sachlichkeit* concept. Le Corbusier responded to Loos movement by similarly attacking the wastefulness of decorative-art ornaments, although he did not entirely agree with Loos' proclamation in *Ornament et crime*,⁴⁶ in particular that Loos accounted a few types of architecture such as tomb and monument as art. For Le Corbusier, he never doubted that architecture has, above all, to be art.⁴⁷ However, there is still much evidence to suggest that the architect absorbed Loos' propositions. In 1908, Adolf Loos initially provoked the cultural concerns that it was a crime and a waste of time to force craftsmen or builders to hurriedly build on ornamentation because its production served to obstruct the advancement of culture—the objects inherited from the past were disconnected from the present.⁴⁸ He furthermore commented that it was pointless for decorators and architects trying to invent an appropriate new style in order to suit current society, since the answer to modern urban life already existed in those use-objects that designers had not touched, such as men's clothing and shoes. Similarly, Le Corbusier

⁴⁵ Ibid.

⁴⁶ See Loos' description of the *Decorative-art ornaments* in his book, "Ornament and crime."

⁴⁷ Stanislaus Von Moos and Margaret Sobiesky, "Le Corbusier and Loos," 35.

⁴⁸ See Loos' description of the *Decorative-art ornaments* in his book, "Ornament and crime."

seemed to perceive Loos' concept and expressed the same admiration for English men's tailoring and the functional aesthetic of the big American working cities writing in his 1925 publication

L'Art decorative d'aujourd'hui (Figure 25):

In those days one decorated his home the way one outfits himself today. We buy our shoes from the shoemaker, coat, pants, and waistcoat from the tailor, collars and cuffs from the tailor, collars and cuffs from the shirtmaker, hats from the hatter, and walking stick from the turner. None of them knows any of the others, and yet everything matches quite nicely.⁴⁹

By capturing this coincidence, Loos equivalently summarized the connection these anonymous crafted object had on urban life with the relationship the unpretentious farm had with rural life, and simply titled it "modern vernacular."⁵⁰ Both Le Corbusier and Adolf Loos had envisioned the same design ideology—to design starting from needs instead of from aesthetic purpose.

Vernacular Ideology and Hermann Muthesius

Together with absorbing the idea of *Typisierung* or *Typization* from Hermann Muthesius when attending a meeting of the Deutsche Werkbund in Cologne in 1914, Le Corbusier discovered that this new rhetoric was compatible with his concern for industrial mass society and mass production building upon Loos' foundation.⁵¹ This newly expected standardization

⁴⁹Stanislaus Von Moos and Margaret Sobiesky, "Le Corbusier and Loos," 28.

⁵⁰ Francesco Passanti, "The Vernacular, Modernism, and Le Corbusier," 442.

⁵¹ Ibid., 442. Passanti provided further information regarding Le Corbusier attending a meeting of the *Deutsche Werkbund* in which he stated: "While building upon Loos's foundation, he was more concerned with industrial mass society and its commodities. Particularly relevant is his (Le Corbusier's) addressing to a meeting of the Deutsche Werkbund, as association of artists and industrialists, held in Cologne in 1914." Additionally, on the effect on Le Corbusier of the 1914 debate, see Winfried Nerdinger, "Standard und Typ. Le Corbusier und Deutschland, 1920-1927," in *Le Corbusier und die Industrie* (see n. 21), 44-53.

proposed by Muthesius supported Le Corbusier's fundamentals due to its sense of material economy and its function that harmonized with modern business culture. This idea would be central to Purism a decade later. The common thought found in both Muthesius' and Le Corbusier's writing was built on their concept of Darwin's law of natural selection applied to commercial and image types.⁵² While a recent definition of *Typ* German society focusing on was the cultural implications of standardization (one dimension of *Typisierung*) and marketing by brands (*Typen*), paying attention to the present situations that conformed the modern life, Muthesius rather chose to rely on the meaning of the older *Typ* discourse that derived from Naumann and Scheffler's ideology.⁵³ The old definition was investigating on a standard vernacular type, in particular on the German farmhouse, which focused on the stable structures founded prior to industrial society (*Typen*) (Figure 26). The significance of these traditional houses—or traditional types—was the process of adapting and retaining the house configurations, not inventing new ones. These local solutions had been passed on from generation to generation without belonging to any specific owner, and were preserved collectively over time. As a consequence, their architectural compositions also genuinely revealed the development of their society, because the anonymously collective identity was embedded in their crafted objects and forms. The archetypal demonstration of the vernacular architecture, the Greek temple, was brought up as the best explicit case by all three architects, Loos, Muthesius, and Le Corbusier. They argued that Greek temples were perfectly refined by

⁵² Stanislaus Von Moos and Margaret Sobiesky, "Le Corbusier and Loos," 26.

⁵³ Francesco Passanti, "The Vernacular, Modernism, and Le Corbusier," 443.

anonymous means for 200 years.⁵⁴⁵⁵ Its case was raised because the Greek temple reflected the discourse of *Sachlichkeit* in which its structure was not primarily driven by a concern on functional rationality purely, nonetheless its appearance was shaped by the regional culture. In addition, to affirm a concordance between two rationales; the Muthesius' *Typisierung* and Le Corbusier's *Type-needs*, one of the evidences Le Corbusier published in his 1923 publication, *Vers une architecture*, showed that he had combined Muthesius' modern vernacular with his interest in industrial technology by juxtaposing the photos of Greek Parthenon side-by-side with two photos of automobiles (Figure 27). The interpretation could not be any other, but to explain the similarity portrayed the underlining selective process, straightforwardness, and practicality of both types.

Objectivity

Sachlichkeit or *Objectivity* is a discourse that characterized design objects in terms of function, local rationale and cultural unselfconsciousness, thereby clearly expressing the group's character and identity. During the 1900s, Le Corbusier's application of vernacular was at novice level, purely following the influences received from L'Eplattenier. However, in June 1910, Le Corbusier was introduced to William Ritter⁵⁶ in Munich, Germany. This Jura-born Nietzschean art critic and writer turned him to another direction of the vernacular experience particularly

⁵⁴ Ibid., 443.

⁵⁵ Stanislaus Von Moos and Margaret Sobiesky, "Le Corbusier and Loos," 28. Both Passanti and Von Moos mention the ideology of Greek engineers incorporated in Le Corbusier's design principles.

⁵⁶ Ibid., 444. See synopsis of background of William Ritter, a French-speaking Swiss writer, art critic, and painter from Neuchatel who was living in Munich.

during the Balkan section of the *voyage d'Orient*. Ritter's criticisms throughout the trip impacted and expanded Le Corbusier's understanding of the vernacular, especially in regard to a bonding between the artist's self-constructed experience and the experience rooted in their hometown. Ritter believed that identity cannot be constructed or willed; it comes from the history and place into which one is born. His anti-semitism was disclosed through his dislike of Americans, urbanized Germans, and Jews, all of them uprooted in his eyes.⁵⁷ The discussions between Ritter and Le Corbusier often started with Ritter's proclamation on the environment into which the artist was born and raised. The argument included an artist's ethnicity and cultural background, which led to a further debate on whether the artist had worked with or against those environment-given manners. As a result, Ritter's attitudes on the refinement of the Orient and the spiritually evocative sites of the Greek world impressed Le Corbusier, and he transferred them into his notes for the *Voyage d'Orient*. Some typical passages include: "the fingers of the potter obey the orders of a centuries old tradition" and "the gypsies let the race speak through their songs." "First and foremost among these men who do not reason is the instinctive appreciation for the organic line, born from the correlation between the most utilitarian line and that which encloses the most expensive volume—thus the most beautiful."⁵⁸

Hence, the sense of the vernacular Le Corbusier gained during the Balkan trip was perceived through cultures grown over years and highlighted in its passive performance: received

⁵⁷ Ibid., 445.

⁵⁸ Joshua Ashimwe, "Le Corbusier: Phenomenological Criticism," *Academia.edu*, last modified, 2016. https://www.academia.edu/9331836/Phenomenology_and_Le_Corbusier. Ashimwe quoted Le Corbusier from *Journey to the East*, 16.

and accepted rather than created and chosen.⁵⁹ Paul Turner also comments on the notion that the real culture was built on and received from previous generations in his observation on *Voyage d'Orient*,

With the exception of the Parthenon and the mosques in Constantinople, everything he admires is anonymous folk-art ... A large part of his account is devoted to descriptions of peasant villages (both in Eastern Europe and Turkey), their houses, their artifacts (pottery, silverwork, costumes, etc.), their rituals and celebrations and their life in general. In many passages, Jeanneret expresses the feeling that this peasant culture is somehow superior to 'civilized' culture because it is universal and fundamental and, we sense, in touch with deep spiritual forces.⁶⁰

Francesco Passanti pointed out the two adverse realizations Le Corbusier acquired from the vernacular of the Balkan trip; first, it was the first time he learnt that the organic cultures were formed by the receiving mode, not the selecting one; second, he saw the experience of the inevitability of Western industrial modernity not as a welcome progress, but as a tragically unavoidable reality.⁶¹ To summarize, the Balkan trip paved Le Corbusier's way to understanding the later *sachlich* theories, while also forming his insistence that identity is destiny.

⁵⁹ Francesco Passanti, "The Vernacular, Modernism, and Le Corbusier," 445.

⁶⁰ Kenneth Frampton, *Le Corbusier* (London: Thames and Hudson, 2001), 15.

⁶¹ Francesco Passanti, "The Vernacular, Modernism, and Le Corbusier," 445.

Vernacular Principles

Common perceptions of “vernacular architecture” often focus only on buildings that fulfill local needs, use local construction materials, and reflect local traditions.⁶² As seen regularly in academia today, the vernacular is often seen to be almost exclusively demonstrated in the traditions and design skills of local builders as manifested in farm houses or adobes. Because the modern movement always positions itself as a revolution and a resolution of the failures of the preceding traditions, vernacular architecture is automatically considered to be moving in the opposite direction to modern societies. However, in “The Vernacular, Memory, and Architecture,” Stanford Anderson argues that the vernacular persists in modern societies, and even the most noted of modern architects have been known to draw upon the vernacular in the best of their works. He furthermore contends that the vernacular need not be the enemy of the modern.⁶³ To further illustrate this point, Anderson divides his understanding of vernacular architecture into two major classes, distinguished by their “embodied memory”—a relationship between vernacular and memory. He develops this idea from an earlier argument on monumental architecture, an attempt to find the distinction between “memory *through* architecture” and “memory *in* architecture;” which results a more clarified version in which a judgment is drawn between “a societal memory carried in architecture or *social memory in architecture*” as opposed to “the operation of memory within the discipline of architecture itself or *disciplinary*

⁶² Ashcan Kumar and Pushplata, “Vernacular practices: as a basis for formulating building regulations for hilly areas,” *International Journal of Sustainable Built Environment* (2013) 2, 183-192.

⁶³ Stanford Anderson, “The Vernacular, Memory, and Architecture,” *Vernacular Modernism: Heimat, Globalization, and the Built Environment*, eds. Maine Umbach and Bernd Huppau (Stanford: Stanford University Press, 2005), 157.

memory.”⁶⁴ *Social memory* is exemplified by an architecture built according to the social norms in which memory dictates the form of the architecture, such as when the expansion of Christianity stimulated the duplications of the medieval European churches that originally reproduced the Holy Sepulcher in Jerusalem (Figure 28). On the other hand, for *disciplinary memory*, Anderson mentions the case of Etienne Boullée’s buildings in which the architect selected only the important architectural elements from the emerging stream, then radically transformed them through scale, organization, and meaning (Figure 29). Due to this differentiation, Anderson questions whether there was (or is) a condition where social and disciplinary memory are not separated. If so under what conditions would social (or collective) memory and disciplinary memory diverge?⁶⁵

In summary, Anderson points out that vernacular architecture was the answer at least to the cohesion of social and disciplinary memory. It is only in terms of writing history that the gap exists between these two memory systems. In order to examine vernacular architecture, Anderson suggests that it is necessary to understand the varying degrees that the relation between social and disciplinary demonstrates. This could be ranked from a tight fusion to a looser, but still identifiable relation. He furthermore indicates that the degrees of relation were dynamic and could weaken in the building’s passage from preliterate to literate societies or from societies dependent on memory alone to those with historical constructions. That is, in various societies, the operation of memory could create levels of distinctions: among vernacular architectures, and between vernacular architecture and architecture that is more self-consciously conceived.

⁶⁴ Ibid., 161. Anderson quoted J. Le Goff from *Storia e memoria* (History and Memory).

⁶⁵ Ibid.

Modern Vernacular

To further understand the vernacular quality in Le Corbusier's modernist architecture, we must recall Hermann Muthesius' study, *Das Englishche Haus* or *the English house*, a three-volume publication in which he provided many samples of his preferable tone of English vernacular architecture: a simple and natural, reasonable way of building.⁶⁶ Muthesius' building intention was to revive Queen-Anne-styled architecture in order to reject the architectural formalism of the time (Figure 30). Muthesius describes his way of building:

[The new English domestic architecture] brought nothing new to such a movement; everything had existed for centuries in the vernacular architecture of the small town and rural landscape ... one found all that one desired and for which one thirsted: adaptation to needs and local conditions, unpretentiousness and honesty of feeling; the utmost coziness and comfort in the layout of rooms, color, an uncommonly attractive and painterly (but also reasonable) design, and an economy in building construction.⁶⁷

Hence, a model of authentic architecture that Muthesius was looking for not only aimed to be new and genuine to society, but also it had to be built from necessity and unpretentiousness. Thus the architect called for the simple *sachlich* burghers' houses to be a role model constructed for contemporary conditions in his own country. Ultimately, as Anderson emphasizes, that for modern architecture, "we may recognize an appreciation for a received vernacular presumed to have the qualities of holding the environment and life itself in a harmonious relationship."⁶⁸

However, when looking back at Le Corbusier's life from the 1910s to 1920s, his understanding of vernacular quality and his skills were not yet developed enough to represent an authentic

⁶⁶ Ibid., 166.

⁶⁷ Ibid.

⁶⁸ Ibid., 168.

vernacular architecture. The travel in his early years only helped him to acquire more knowledge of each region's wisdom, but not its technique. This can be seen in the documentation he recorded during the Balkan trip of which he barely kept the records on the construction of architecture he encountered, though he thoroughly concentrated on the relations built up between humans and their artifacts. Hence, from observing Le Corbusier in his first travels, it was the attraction to societal relations, rather than the vernacular forms themselves, that affected Le Corbusier's modernism.⁶⁹ The application of vernacular knowledge started to become tangible in his later notes and design, such as in his discussion of *Type-needs* or in the *Esprit Nouveau* pavilion at the 1925 Exposition des Arts Decoratifs, where in the objects he displays were not chosen due to their aesthetic purposes, but because they were functionally and societally received through a vernacular tradition.

Vernacular Ideology and Maurice Merleau-Ponty

In Le Corbusier's work it is important to investigate not only the cultural body of modern vernacular, but also the corporeal experience found in the work, since the abstraction of modernity is often mistakenly presumed to be resistant to nature.⁷⁰ Studying the relationships between users of buildings and environmental phenomena through an account of Le Corbusier's architecture will demonstrate the essence of consciousness of our perceptual contact with the world, particularly through modern architecture. With the emergence of modernist architecture,

⁶⁹ Ibid., 170.

⁷⁰ Jae Young Lee, "Phenomenological interpretation of the experience of nature on the works of Le Corbusier," 33.

human experience of both interior and exterior space, was reformed, in part through the creation of wider openings allowed by the use of glass and reinforced concrete. The distance between humans and nature was diminished and replaced with the desire to view nature as an aesthetic object and to possess nature through the visual experience of the landscape.⁷¹ Rene Descartes' theory of *Dualism* - a separating act between mind and body - was challenged by Maurice Merleau-Ponty's *Phenomenology of Perception*, an attempt to regain the concrete and qualitative values of sensory data, which had been reduced and made abstract by the inadequacy of Empiricism and Rationalism.⁷² In regard to Merleau-Ponty's explanation of *perception*, it is not purely sensation, nor is it purely interpretation. Consciousness is a process that includes sensing as well as reasoning.⁷³ The French philosopher furthermore stated " [...] consciousness is being toward the thing through the intermediary of the body. A movement is learned when the body has understood it, that is, when it had incorporated it into its 'world,' and to move one's body to respond to their solicitation."⁷⁴ According to Merleau-Ponty, the body and object are closely tied. Perceptual objects have an inner horizon in consciousness and an outer horizon in the external world.⁷⁵ With this space-time philosophy, the abstractness of modern architecture could be investigated by analyzing the sequential body movement through architectural spaces in order to regain the concreteness of experience.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Alex Scott, "Merleau-Ponty's Phenomenology of Perception," *Queequeg's Crossing*, last modified, 2002. <http://www.angelfire.com/md2/timewarp/merleauponty.html>.

⁷⁴ Jae Young Lee, "Phenomenological interpretation of the experience of nature on the works of Le Corbusier," 33.

⁷⁵ Alex Scott, "Merleau-Ponty's Phenomenology of Perception," *Queequeg's Crossing*.

In order to acknowledge the vernacular sense in Le Corbusier's modernist works, the readers should examine his architecture by using a bodily experience and recording a perception occurring while moving in the space. This methodology would create "physical-body perception," which gives perception a meaning beyond that established simply by thought—for example, analyzing how Le Corbusier's designs fit in the landscape from the internal view. The unique spatial quality discovered in the architect's works was once mentioned by Colin Rowe in his essay on La Tourette Monastery in 1961 (Figure 31),

Thus, the eye which was previously directed towards the left of the church facade, towards the point of entrance, is now violently dragged away towards the right. The movement of the site has changed. The visual magnet is no longer a wall. Now it has become a horizon. And the wall, which previously acted as backdrop to one field of vision, as a perspective transversal, now operates as a side screen to another, as a major orthogonal which directs attention in to the entrails - also serves to instigate an insupportable tension between the local and the remote.⁷⁶

Instead of putting the focus on the architectural elements the designer installed for the building's interior, Le Corbusier rather chose not to create an element that draws the viewer's interest to stop and notice point-by-point although he highlights the viewer's perception as the perceivers walk through the building.⁷⁷ Likewise for Merleau-Ponty's theory, space in Le Corbusier's works is recognized as a form of external experience rather than a physical setting in which external objects are arranged. The relationships between objects in space are revealed by the experience of the perceiving subject. His architectural components were composed and constructed on a perceptual field in which the audiences' perceptions are present in time and space, while at the same time space is modified and restructured by time. The study of physical perception thus

⁷⁶ Colin Rowe, "La Tourette," *The Mathematics of the Ideal Villa and Other Essays* (Cambridge: The MIT Press, 1976), 188.

⁷⁷ Joshua Ashimwe, "Le Corbusier: Phenomenological Criticism," 5.

leads us to understand how to employ the abstractness of modern architecture on existing topographies and carefully express its concern for the site—to become a modern vernacular.

To further consider *the existence of consciousness*⁷⁸ as it appeared in Le Corbusier's projects, his methods are analyzed and laid out according to the reference axes the architect usually uses to sketch his own works, which can be divided into two main categories: approaching the site horizontally and approaching the site vertically. Since his first publication in 1923, Le Corbusier comprehended and has continuously implemented the *horizontality of perception* in many directions. For instance, in *Vers une architecture*, he signified that “man looks at the creation of architecture with his eyes, which are 5 feet 6 inches from the ground. One can only deal with aims which the eyes can appreciate, and intentions which take into account architectural elements.”⁷⁹ Accordingly, he applied this significance with his *Five points of a new architecture* via the employments of pilotis, roof garden, and ramp. What we notice while moving horizontally through Le Corbusier's composition is that our eyes would detect the change of sceneries gradually due to the change of different angles and directions as the visual position is moved.

To give a better demonstration, the ramp in Le Corbusier's best known buildings, such as in Villa Savoye or in Harvard University's Carpenter Center for the Visual Arts, emphasize the alteration of an external perspective—the view of the surrounding landscape—while moving on

⁷⁸ Alex Scott, “Mzerleau-Ponty's Phenomenology of Perception.” Existence is a condition that includes the existence of conscious beings and of nonconscious things. Bodily experience is an ambiguous mode of existence because the idea of body cannot be separated from the experience of the body, and because mind and body cannot be separated as subject and object. The mind and body each have their own being, and the perceptions of the body influence what is perceived by the mind.

⁷⁹ Joshua Ashimwe, “Le Corbusier: Phenomenological Criticism,” 7. Ashimewe quoted Le Corbusier from *Toward an Architecture*, 19.

the ramp (Figure 32). Similar to an explanation given by Merleau-Ponty, the different appearance of each location allows a different synthesis for each location. Therefore, different aspects of the object can be seen. This is called the “synthesis of horizons” or “the presumptive synthesis.”⁸⁰ Moreover, the horizontal window which fully expands from one edge to another does not only equally provide the amount of light shining into the interior, but also highlights the need of the view of scenery through the window. The architect would make sure that even when (the room is) furnished, the background of the interior space was clearly visible and distinct from the furniture (Figure 33).⁸¹ Hence, this action has made it easier for the viewers to engage themselves with the scenery outside. Along with the effect discovered with the application of pilotis when lifting the building with reinforced concrete columns on a grid, it creates the bodily experience of embedding oneself in the situated topography. A combination of the trees, pilotis, and an opening distinguishes and reduces what eyes perceive from many into two differentiated distant panels: the images appearing near the focal point (the eyes) and the images that appear further away from the focal point. This variance, however, connects the viewer, the subject, and the surrounding environment, and help them move toward it. This is expressed as “the living body raising itself toward the world,”⁸² which demonstrates the concept of *perceptual phenomenology* in Merleau-Ponty’s definition. By comprehending each architectural component

⁸⁰ Jae Young Lee, “Phenomenological interpretation of the experience of nature on the works of Le Corbusier,” 36.

⁸¹ Joshua Ashimwe, “Le Corbusier: Phenomenological Criticism,” 9-10. Ashimwe quoted Charles Jencks from *Le Corbusier and the tragic view of architecture*, 93.

⁸² Jae Young Lee, “Phenomenological interpretation of the experience of nature on the works of Le Corbusier,” 35. Lee quoted Merleau-ponty from *Phenomenology of Perception*, 78.

Le Corbusier cautiously inserts in his modern works, it allow us to understand the relationship the designer attempted to create between his modern architecture and specific local site.

Because *perceptual phenomenology* aims to understand the relationship between a single object and its surroundings through a viewer's perception, discerning the object horizontally via an X axis is not enough to explain the entire experience of its space. Therefore, the *verticality of perception* or a perception by way of a Y axis also need to be accounted for, in order to reconceive the nature and the task of designing buildings as if the whole of buildings are a part of the environment. In *Topographical Premises*, David Leatherbarrow suggests that "the two (landscape and architecture) are best understood when seen as parts of something more basic and inclusive: topography."⁸³ This Y axis is often seen in many of Le Corbusier's explorations such as in *Precisions on the present state of architecture and planning*, where the architect articulated his concerns and proposed a design for each city he visited during the South American tour.

Notably in all of these proposals he uses the aerial-viewed perspective:

[W]hen, by plane, everything has become clear, and you have learned this topography, this body so hilly and so complicated; when, having conquered difficulties, you have been seized with enthusiasm, you have felt ideas being born, you have entered into the body and the heart of the city, you have understood part of its destiny ... everything leads to the joy of creation.⁸⁴

When the plane approached Rio de Janeiro, seeing from this height enabled him to notice another dimension of landscape that he considered violent and sublime (Figure 34). The advent of flight ushered in new kinds of visual and spatial perceptions that went far beyond the traditional bird's-

⁸³ David Leatherbarrow, "Topographical Premises," *Journal of Architectural Education* (1984-) 57.3 (2004), 70.

⁸⁴ Adnan Morshed, "The Cultural Politics of Aerial Vision: Le Corbusier in Brazil (1929)," *Journal of Architectural Education* (1984-) 55.4 (2012), 203. Morshed quoted Le Corbusier from *Precisions*, 16-18.

eye views of the post-Renaissance era.⁸⁵ This newly-found vertical approach established an abundance of new architectural theories, together with a new lesson for the urban designers in which they need to re-strategize their city planning and approaches by including all the concerns according to this new aerial view point. Le Corbusier also faced the same situation, as the architect realized that he needed to re-consider his strategy when his aviator friend Durafour flew to the country towns of the M'Zab (Figure 35):

I was able to discover the principle of the towns of the M'Zab. The airplane had revealed everything to us, and what it had revealed provided a great lesson. ... For one day soon the implication of the bird's-eye-view, that nobility, grandeur and style should be brought into the plan of our cities, will be a fact. ... A new scale of grandeur will animate the architecture of the city and the scope of its undertakings.⁸⁶

Another affirmation that Le Corbusier embodied the *verticality of perception* in his designs is found in one of many drawings published in *La Ville Radieuse*. The sketches display an eye located at a high position in which it could watch over the entire landscape; nature, city, and its infrastructure, down below (Figure 36). The eye seeing the city as a whole could indicate Le Corbusier's consideration in engaging all visual dimensions of the city and this could be linked with the meaning of *phenomenology* as the topography is a presence and offers the spatial experience for the object to be located in time. Regarding Merleau-Ponty's synthesis of time, the scholar reiterated the understanding of space-time associating with our body and situation by stating:

I am not in space and in time; nor do I think space and time; rather, I am of space and of time; my body fits itself to them and embraces them. (...) The space and time that I

⁸⁵ Ibid., 201.

⁸⁶ Ibid., 202. Morshed quoted Le Corbusier from *Aircrafts*, 12-13.

inhabit are always surrounded by indeterminate horizons that contain other points of view. The synthesis of time, like of space, is always to be started over again.⁸⁷

Even though the architecture of Le Corbusier represents only a small portion of modernist architecture, it could at least reveal considerable evidences that modern architecture did not intend to separate itself from the topography. The design of modernist architecture was always concerned with its environment. Regarding the theory of Modern dualism, it divides our perception into two parts; the spirit and the body, at the same time, it separates humans from nature by calling them respectively a subject and an object. The body is like a sensing machine, and only the rational mind was thought to be able to see the object objectively. Our perception is subordinate to our mind, and our senses are limited to collecting information about the external world.⁸⁸ In general, the viewers' body only acquires the landscape experience through its five senses. Without incorporating a complete performance of the mind, one would not understand that Le Corbusier tried to establish a connection between viewers and nature outside via his architectural principles. The surrounding nature is intended to be experienced via both a horizontal approach and a vertical approach through his modern subject. Even though the viewers often find Le Corbusier's works abstract and it is not easy to understand all the objectives the architect tried to convey, the architecture itself truly possesses the three qualities that explicate the phenomenological principle: engaging, intrinsic belonging, and astonishing.⁸⁹ In this place, the acknowledgement of Primitivism, Regionalism and the Vernacular found in Le

⁸⁷ Jae Young Lee, "Phenomenological interpretation of the experience of nature on the works of Le Corbusier," 37. Lee quoted Merleau-Ponty from *Phenomenology of Perception*, 141.

⁸⁸ *Ibid.*, 39.

⁸⁹ David Leatherbarrow, "Topographical Premises," 73.

Corbusier's middle years have not only been examined through his engagement with memory, but also through his concern for physical perception.

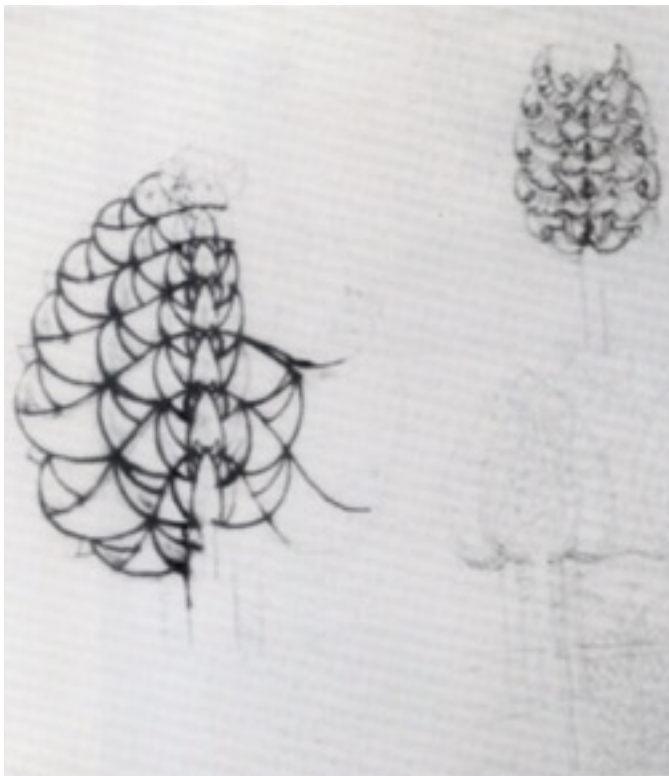


Figure 15 - Le Corbusier, *The Five Points of Architecture*, 1925: Villa Savoye.

Figure 16 - Le Corbusier, *Geometrical pattern from trees*, 1904: La Chaux-de-Fonds.

Figure 17 - Le Corbusier, *Sketches of pine cones and Egyptian columns*, 1904: La Chaux-de-Fonds.



Figure 18 - Le Corbusier, *The Jura landscape*, the 1910s: La Chaux-de-Fonds.

Figure 19 - Le Corbusier, *Watch case*, 1906: studying under Charles l'Eplattenier.



Figure 20 - Charles Edouard Jeanneret, Rene Chapallaz, and colleagues. *Maison Fallet*, 1905-06: La Chaux-de-Fonds.



Figure 21 - Le Corbusier, *Authentic confidential documents relating to the fabrication of false antiques, supposedly for 'lovers of the antique,'* 1925: *The Decorative Art of Today*.

Figure 22 - Le Corbusier, *Cabin in a ship,* 1925: *The Decorative Art of Today*.



Figure 23 - Le Corbusier, *Pottery from the Balkans*, the 1910s: Journey to the east.

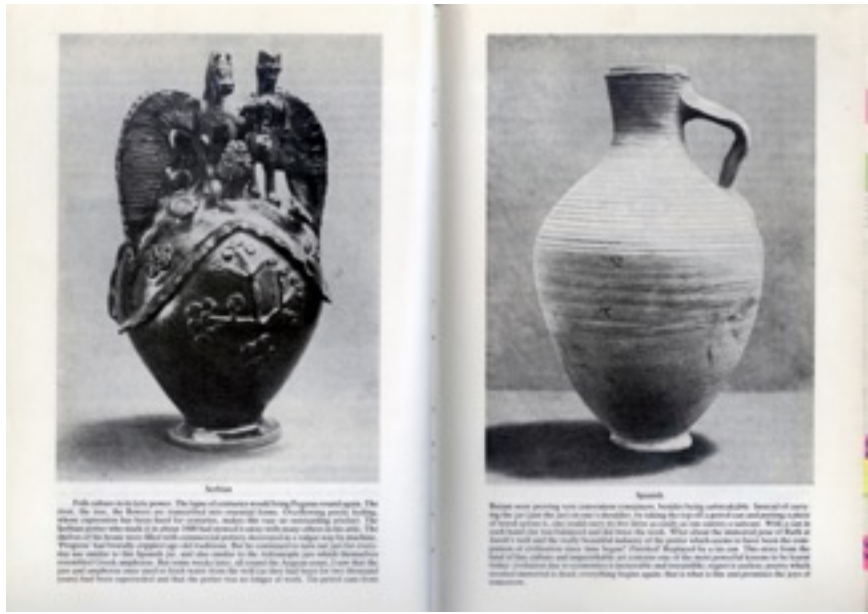


Figure 24 - Le Corbusier, *Folk culture is in its lyric power*, 1925: *The Decorative Art of Today*.

Figure 25 - Adolf Loos, *Advertisement for Goldmann & Salatsch*, 1903: the journal *Das Andere*.

TAILORS AND OUTFITTERS
GOLDMAN & SALATSCH

K. U. K. HOF-
LIEFERANTEN
K. BAYER. HOF-
LIEFERANTEN

KAMMER-
LIEFERANTEN
Sr. k. u. k. Hoheit des
Herrn Erzherzog Josef
etc. etc.

WIEN, I. GRABEN 20.

Figure 26 - William J R Curtis, *Jura farmhouse with stack*, 1979: Le Corbusier ideas and forms.
Figure 27 - Le Corbusier, Greek temples and automobiles, 1922: Towards a new architecture.



Parthénon, de 900 à 850 av. J.-C.

Il faut tendre à l'établissement de standards pour affronter le problème de la perfection.

Le Parthénon est un produit de sélection appliquée à un standard établi. Depuis déjà un siècle le temple grec était organisé dans tous ses éléments.

Lorsqu'un standard est établi, le jeu de la concurrence immédiate et violente s'exerce. C'est le match ; pour gagner, il faut faire mieux que l'adversaire dans toutes les parties, dans la ligne d'ensemble et dans tous les détails. C'est alors l'étude poussée des parties. Progrès.



Cité de La Fir Automobile.

ROBERTS, 1907.



Cité de Albert Moissac.

Parthénon, de 447 à 414 av. J.-C.

Le standard est une nécessité.

Le standard s'établit sur des bases certaines, non pas arbitrairement, mais avec la sécurité des choses motivées et d'une logique contrôlée par l'expérience.

Tous les hommes ont même organisme, mêmes fonctions.

Tous les hommes ont mêmes besoins.

Le contrat social qui évolue à travers les âges détermine des classes, des fonctions, des besoins standards donnant des produits d'usage standard.

La maison est un produit nécessaire à l'homme.



Daimler, Grand Sport 1903.

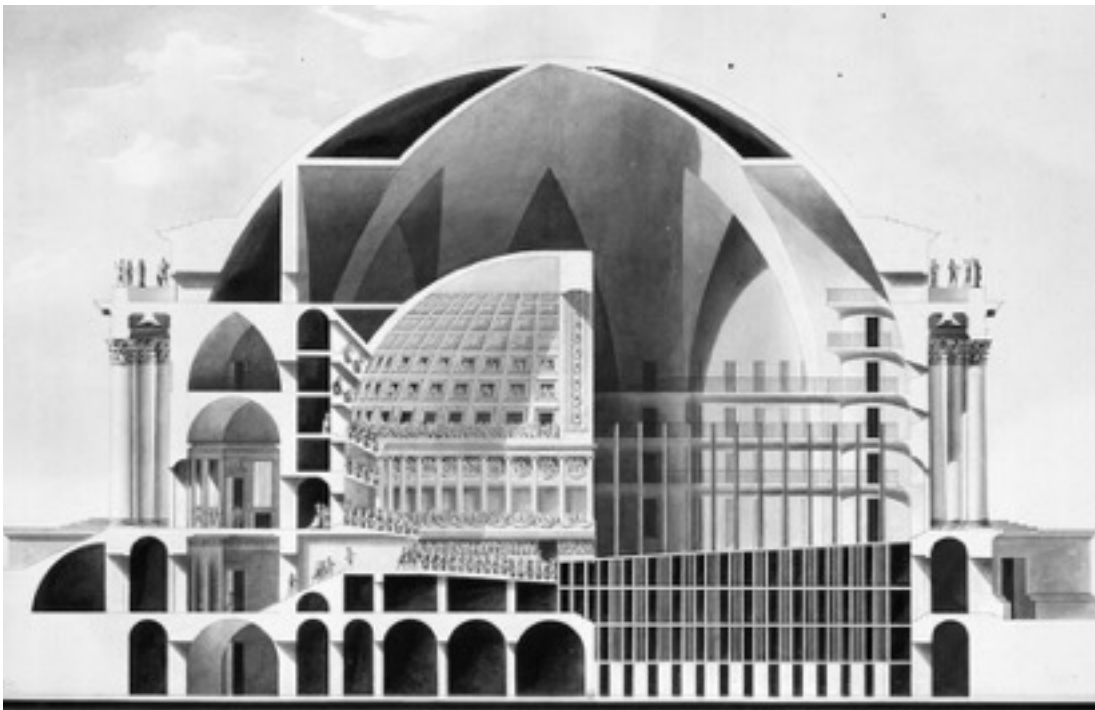


Figure 28 - *Medieval European Churches*, 12th Century: according to Stanford Anderson.
Figure 29 - Etienne Boullée, *Etienne Boullée's building*, 17th Century: according to Stanford Anderson.

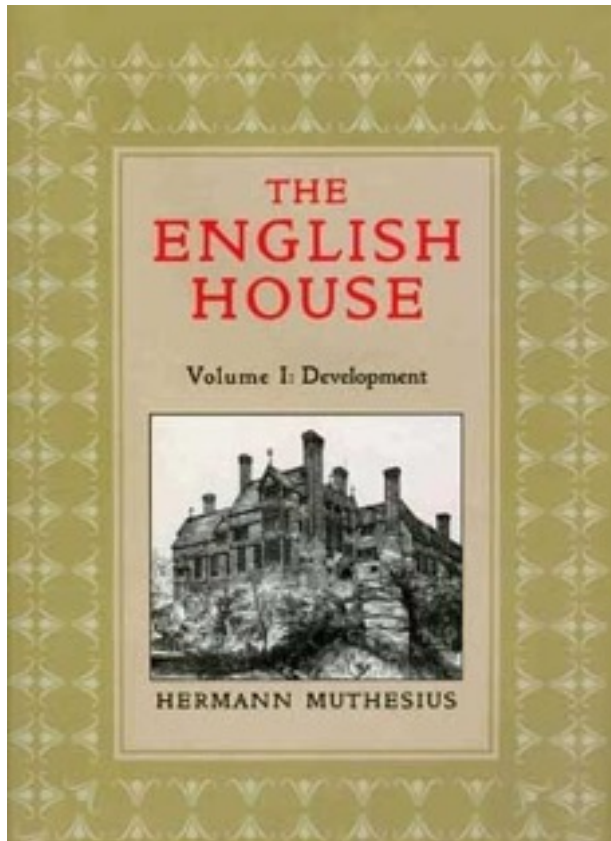


Figure 30 - Hermann Muthesius, *The English House*, 1979.



Figure 31 - Le Corbusier, *La Tourette*, 1960: according to Colin Rowe.
Figure 32 - Le Corbusier, *Harvard's Carpenter Center*, 1963: the ramp.
Figure 33 - Le Corbusier, *Villa Savoye*, 1929: interior of kitchen room.



Figure 34 - Le Corbusier, *Rio de Janeiro's dramatic landscape*, 1936: Guanabara bay.

Figure 35 - Le Corbusier, *Sketch of M'Zab*, 1931: North Africa.

Figure 36 - Le Corbusier, *Aerial vision*, 1929: over Brazilian territory.

Chapter 2 Architect's Travels

Despite the thousands of scholarly studies on Le Corbusier's accomplishments, the interest in his transitional period is rare and commonly left out of investigations due to the decrease in the numbers of architectural commissions he received. Confronted by a poor representation of modern architecture due to the world political turmoil, the crisis urged the architect to fill this lengthy interval the studies of city planning and theoretical urban frameworks.⁹⁰ The new direction of his work starting in the late 1920s could be seen as the only possible reaction to his disappointment with the refusal of the French government to respond to his *Plan Voisin*, a 1925 urban plan for Paris based on a clear division of functions. Le Corbusier's years from 1929 to 1945, can thus be represented as a self-searching period when the architect was looking for new ingredients to establish a better discipline, meanwhile testing the validity of his previous ideology. While he was trying to avoid being criticized as a communist and focusing on looking for a new urban setting in which he could fully develop his utopian ideology, the contacts with the lands he had not seen before such as the USSR, South America, and Africa provided him a new unexpected experience. At the same time, it equipped him with a new vernacular quality he failed to integrate in his earlier theoretical formations. Evidently, Le Corbusier added this vernacular concern which resulted from his attitude toward nature and architecture, in elements such as the *briel-soleil*, in a revised explanation of *Plan Voisin* in 1946 mentioning, "later correction will be introduced (see Antwerp, page 265): henceforth *all* sides of the skyscraper will receive the sun." This approach clearly highlighted the change in perspective

⁹⁰ More information regarding the circumstances that urged Le Corbusier to take this direction, prior to and during the architect's middle years, are mentioned in the Introduction Chapter.

from his first modernist phase to the second; from man ruling over nature to man being a part of nature,⁹¹

[A]ll of these buildings, expressing flawless functions in the purest technicality, rise up in an orderly and purposeful design to compose, with the lake and the mountain peaks, the moving symphony of Nature and Architecture. “Born’ architecture shares the integrity of nature. It exalts each site, opens up the soul of the site to us ...”⁹²

His trajectory in the 1930s was primarily focused on urban planning knowledge being exchanged between cities, particularly between Paris and the African and South American cities. These opportunities were due to the lecture invitations he had been given to promote his modern philosophy. Initially introduced to different continents’ indigenous wisdom and primitive characteristics that were untouched by western civilization, the natural subject matter and biological correlation became the major influences on Le Corbusier’s subsequent planning. They added another layer to his understanding of modernity in support of his earlier ideological position in which the modern products alone had the potential to initiate social reform. Prior to examining the inspirations Le Corbusier discovered during his travels, one needs to understand the broad arguments Le Corbusier developed for his urban theories; from the first proclamation formulated for three million inhabitants in *La Ville Contemporaine* (1922); to its application on an actual site, *Plan Voisin* (1925); his later ideal city, *La Ville Radieuse* (1933); and then a concrete case of Chandigarh (1952-1965). Accordingly, the objective of this chapter is to understand the vernacular influences and motivations in Le Corbusier’s evolving urban principles.

⁹¹ In his publication *The City of To-morrow and Its Planning*, he recommended the designer to use the order to handle the chaotic urban scene.

⁹² Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization* (New York: Orion Press, 1967), 265.

1922: La Ville Contemporaine

Six years before arriving in South America, Le Corbusier exhibited his first drawings on urbanism in order to counteract the disorganization of European cities, to respond to the immediate needs of postwar housing and to counteract the inadequacy of controlling policies that caused slums and tuberculosis. Together with Pierre Jeanneret, he synthesized an image for a reformulated city and published it through his 1922 writing *La Ville Contemporaine* or a contemporary city with 3,000,000 inhabitants (Figure 37). The ideas were represented by the new classified orders: a town, a city, and geometry. Regarding their first attempt with the urban imagery, Le Corbusier explained that *a town* could be no longer used as a tool to achieve new, speedy living conditions since the town lacked order and was ineffectual. *A city*, which Le Corbusier defined as a modern representative of human creation, operated directly against nature in order to protect us and provide us work appropriate for the industrial era. Geometry was the last subject Le Corbusier celebrated. He mentioned that humans used *geometry* as a fundamental to define the surrounding and to ponder the world within. Thus, the age in which we live is essentially oriented to follow the direction of geometry, governing with order and uniformity.⁹³ By mapping his new classifications on the city, Le Corbusier interpreted his three earlier essences; town, city, and geometry, in the forms of the business and working district, the residential area, and the streets performing as the arterial infrastructure. Le Corbusier believed that the city existed for interchange.⁹⁴ Rather than installing the civic monument or town hall, he chose to locate the central terminal and the twenty-four high-rises housing the business center at

⁹³ Le Corbusier, *The City of To-morrow and Its Planning*, trans. Frederick Etchells (New York: Dover Publications, 1987), Forward 2.

⁹⁴ Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier* (Cambridge: The MIT Press, 1982), 191.

the heart of the city claiming that it could well serve the working hours of constant motion. In the surrounding area was placed the mass-produced Villa-Apartment Blocks serving the need for repose of the *industriels* who worked in the city. His city's functional hierarchy and the communal services concept were developed earlier by Ebenezer Howard, a planner who initiated the *Garden City* movement that Le Corbusier studied during his education in La Chaux-de-Fonds. However, Le Corbusier's scheme highlighted the system of transportation in which each street was elaborately designed according to its function; such as superhighways, subways, pedestrian walks; and with concern for public space which left at least 85 percent of the ground free for park and other recreational activities. Even though La Ville Contemporaine was considered as an unreachable utopia during the 1920s, the project was visionary in its outlook and permeated with the idea that in order to change present conditions there must be a clear goal. Le Corbusier insisted that even if the compositions he established were hardly possible in a near future—such as its clear separation between the business district and the residential area, the size of the city park compared to the footprints of the profitable skyscrapers, and the fixed geometric grids overlaying on the natural topography—at least from a technical point of view, the project must be immediately workable.⁹⁵ All of the problematic issues resulting from his urban plan did not occur because of his shifting the scale of projects, from a residential designer to an urban planner, it was because one might still attempt to find a universal solution too quickly and disregard other complexities of the system.

⁹⁵ Stanislaus Von Moos, *Le Corbusier, Elements of a Synthesis*, 188.

1925: Plan Voisin

In 1925, Le Corbusier challenged the validity of his former urban experimentation by tackling the real problems of Paris. With the support of the automobile division of the Voisin Aircraft Company, Le Corbusier's *Plan Voisin* proposed to demolish the two-square-mile core of Paris, which encompasses the Right Bank business district opposite the Cité and the center which he considered the heart of the problem.⁹⁶ Despite the scolding from critics that his plan was going in the wrong direction in destroying the heart of urban street life by eliminating all the archaic alleys, Le Corbusier insisted that he was on the right track. He was well aware of the value of what he called the "Balzacian drama" of urban life. "There is so much to enjoy in the street if we know how to see it; it is better than the theater, better than a novel: the faces and the emotions."⁹⁷ In his opinion, razing of the area between the Seine and Montmartre and leaving only a few significant buildings such as the Louvre, the Palais Royal, and the Place des Vosges were the only way to continue the prosperity of Paris. He described his proposal as similar to an operation by the surgeon, "Only 'urban surgery' can create urban order. Like a surgeon cutting into a patient, the planner violently rends the tissues of urban life. Painfully, he restores the city to health (Figure 38)."⁹⁸ Nevertheless, Le Corbusier saw himself as a "traditionalist." His perspective on the meaning of tradition was that it was a series of revolutionary breaks with custom, similar to the Renaissance revitalization the ruins of the Medieval. For Le Corbusier, being true to the monuments of the past meant continuing their revolutionary spirit.⁹⁹ The city

⁹⁶ Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier*, 207.

⁹⁷ *Ibid.*, 208.

⁹⁸ *Ibid.*, 210.

⁹⁹ *Ibid.* 209.

plan he proposed for modern Paris dramatically emphasized the bold line drawn between its two realities—the modern and the archaic— as his illustrations showed in the later publication *The Radiant City*. It revealed the juxtaposition between the dated city plan of Paris, which he claimed only functioned well for the era of the horse, and his new proposal that suitably handled the era of the automobile. Hence, his proposal led to a question posed by critics about whether he tried to avoid confronting the physical limitations of the site, and especially its actual environment, the terrain. While his prior book, *The Decorative Art of Today* urged the readers to generate products that responded the human symbiosis, his proclamation in this urban implementation was hardly associated with a human scale. Due to his creation of vast empty spaces and the elimination of the old complicated street patterns that provided the civic rich and varied public life, Le Corbusier's modernist plan did not leave any unique characteristic that Paris used to have for the Parisians. Even if the architect might have thought of the way to return Paris' public lifestyle to its citizens; such as providing an elevated pedestrian mall with fountain and sidewalk cafes, or *streets of repose* free from automobile traffic. In reflecting on the beauty that he learned since voyaging to Athens, Le Corbusier stated: “the practice of their art has amassed the experience of generations and their candid works have thus passed beyond the level of superficial observation to that of true re-creation. Integration. The thought of work of human kind!”¹⁰⁰ Unfortunately, this did not continually inform his design for Paris urbanism. This plan thus was obviously made in order to serve the funding company, Voisin automobile, however it finally did not get to be executed or approved by Anatole de Monzie, the Minister of Construction, who also visited the Pavillon. Curtis provided a comment on the plan that was not carried out that,

¹⁰⁰ Le Corbusier, *The Decorative Art of Today*, 120.

Le Corbusier's urban schemes were too authoritarian and class ridden to appeal to the French Left in the 1920s, and too revolutionary to appeal to any other than marginal constituencies of the Right. ... All this attracted to a right-wing group called *Redressement Francais*, but none of the magnates volunteered themselves as patrons.¹⁰¹

Additionally with the 1929 crash, Le Corbusier grew increasingly disappointed with the promises of Capitalism.

1933: La Ville Radieuse

The idealistic changes were found again ten years later in another urbanism doctrine, despite all hours and effort and all the lessons he learned from his former deficiencies. *The Radiant City*, a publication Le Corbusier launched in 1933 was aimed to be a manuscript describing the design elements that should be included as the basis of our machine-age civilization. Due to the rejection of his *Plan Voisin* by the French Government, the architect received one important lesson he had not incorporated it in his earlier urban planning—the power of politics. Hence, he realized that in order to successfully accomplish the task; he either needed to find powerful supporters that saw the potential in his success, or change his ideology to meet their political requirements, or both. If a private enterprise, even with government assistance, was not equal to the task, then it was unworthy of the new era. It must be replaced by a system capable of great works; otherwise, “the lifeblood of the new era will be squandered by obsolete, cruel, and inhuman organizations.”¹⁰²

¹⁰¹ William J R Curtis, *Le Corbusier: Ideas and Forms*, 65.

¹⁰² Robert Fishman, *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier*, 213. Fisherman quoted Le Corbusier from *Vers le Parid de l'epoque machiniste*, supplement to the bulletin of the *Redressment francis*, February 15, 1928, p.13.

Frustrated by the failure he experienced because of the *Great Depression*, Le Corbusier decided to join the Syndicalist movement. Their philosophy was opposed to the form of capitalism Le Corbusier supported in 1930. Undoubtedly, the theories and guidelines of *Syndicalism* were employed in his *La Ville Radieuse*, which required that: “every aspect of productive life is administered from above according to one plan. This plan replaces the marketplace with the total administration; experts match society’s needs to its productive capacities.”¹⁰³ Le Corbusier had no longer concentrated on the design for Capitalists, he, therefore gave less priority to the administration tower and displaced it from the former highest position—at the city center in *the Contemporary City*—and replaced it with his newly found appreciation—the residence for workers’ rights. In exalting the class of *syndicat*—the group of workers, white-collar employees, and engineers who manage the factory—the focal point of Le Corbusier’s city plan became decentralized and shifted away from the elites and their central skyscrapers (Figure 39).

By concentrating on the details of his urban planning composition, the concept that had been carefully maintained since the planning of the *Contemporary City* was “the freedom” that he had elaborated in the residential section. These spaces provided the full range of services and responded to every kind of physical recreation through amenities such as the gymnasia, playing fields, cafes, restaurants, and shops where the sociability could be cultivated. In addition, greater weight was put on the large high-rise apartment blocks where he set up a prototype building unit and named it, “Unites.” The *Unites* were formed on the same housing principle as the *Maison Dom-inos* he established in 1914—by finding the smallest basic unit of the entire structure and

¹⁰³ Ibid., 227.

using it as a primary cell - however, the *Unites* had been developed further, since they represented Le Corbusier's new application that was progressively blended with his mass-production techniques instead of just being only a basic delineated guideline.

With the *Unite*, Le Corbusier restored his missing architectural spirit, *a collective beauty*, a beauty rooted in a relationship with humans and human scale that had been lost during his practice on *the Contemporary City* and *Plan Voisin*. The *Unite* was highly appreciated for its masterful expression of scale, complexity, and sophistication.¹⁰⁴ A synthesis between engineering and the aesthetic mind of Le Corbusier was retrieved in *La Ville Radieuse* in a form of the design related to "human scale," trying to create the proper proportion of every object. For example, the apartments in *the Unite* are not assigned on the basis of a worker's position in the industrial hierarchy, but according to the size of each family and their needs. The significance of it was that the collective serves to provide for all the residents, following the principle that the cooperative sharing of leisure facilities could give to each family a far more varied and beautiful environment than even the richest individual could afford in a single-family house.¹⁰⁵ As stated in the preface of *The Radiant City*:

Plans are not politics. Plans are the rational and poetic monument set up in the midst of contingencies. Contingencies are the environment: places, peoples, cultures, topographies, climates. They are, furthermore, the resources liberated by modern techniques. The latter are universal. Contingencies should only be judged as they relate to the entity - "man" - and in connection with man, in relation to us, to ourselves: a biology, a psychology.¹⁰⁶

¹⁰⁴ Ibid., 231.

¹⁰⁵ Ibid.

¹⁰⁶ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, Preface.

Le Corbusier's returning to biological elements in his urban investigations in the 1930s revived his search for an organic analogy from his earlier years at La Chaux-de-Fonds, thus establishing "a new tradition" by adding to his later Modern Movement's principles that were closer to humans and paying more attention to the environment. This also became a point of discussion in the Fourth CIAM congress, *the Athens Charter*, in 1933. Siegfried Giedion, the general secretary of the CIAM, explained that, in the development of these urban studies, they progressed from the purely functional tendencies in architecture to a comprehended integration of aesthetic, social, and biological elements. Giedion also mentioned that "the full evaluation of this new, independent platform had been helped immeasurably by the contact with the past and our Hellenic heritage."¹⁰⁷ This discovery vastly changed the perspective of architects and urban planners in the 20th century regarding their reaction against the eclecticism and lavish stylistic excesses of the prior architectural movements.¹⁰⁸ The explorations Le Corbusier made during the 1930s especially the contact with South American cities and the Soviet Union not only altered Le Corbusier's designs, but also expanded the understanding of his Modern principles. Hence, studying the projects built during these transformative years; 1929-1945, will reveal all the major influences in Le Corbusier's design transformation, from the rectilinear planning to his later poetic and plastic evocation, particularly of the modern vernacular.

1929 and 1936: Plans for Buenos Aires, Argentina

When you arrive in a city, or a country, or a continent of which you know nothing; when the boat or the plane trust you into a situation strongly makes by architecture and by city

¹⁰⁷ Stanislaus von Moos, *Le Corbusier: Elements of a Synthesis*, 211.

¹⁰⁸ Robert Venturi and Denise Scott Brown, "The significance of A&P parking lots or Learning from Las Vegas," 170.

planning: if your mind is so formed that it rebels against academic classifications and naturally tends towards the construction of harmonious systems, then each sight which you discover and each system which is revealed created a violent commotion within you; abruptly you cut across fine phrases and more or less beclouded explanations to come to the heart of the matter. You feel things accurately and you see clearly.¹⁰⁹ - Le Corbusier, “Plan for South America” in *The Radiant City*, 1933.

Le Corbusier landed in Buenos Aires by air during the night on September 14th, 1929. It was a year after he took his first flight from Paris to Moscow. The business for civil airlines started to become popularized in the 1930s. Two-thirds of all air routes until the late 1930s were modest routes in a certain part of the globe, developed in response to local needs for commercial exchange and serving remote areas such as Siberia, Canada, Central Africa, Brazil, Peru, Colombia, and Argentina.¹¹⁰ Along with the architect’s preceding fondness for *aviation*—which he praised in his publication “Eyes which do not see,” hailing its economized structure and rapid streamline production—he envisioned a bright future for the grandeur of aviation that would officially impact his urban plans.¹¹¹ For Le Corbusier, the definition of aviation was not only limited to the airplane, but also covered all the prodigious phenomena that opened vast new horizons in space and influenced the future of “equipment” in the broadest sense of the word.¹¹² Together with “a hitherto unexplored plain” of Buenos Aires he observed from the bird’s-eye view, Le Corbusier realized that he was able to generate a new kind of visual and spatial

¹⁰⁹ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 220.

¹¹⁰ M. Christine Boyer, “Aviation and the Aerial View: Le Corbusier’s Spatial Transformations in the 1930s and 1940s,” 94.

¹¹¹ “Eyes which do not see” is a title of one chapter in Le Corbusier’s 1922 publication, *Towards an architecture*. For more information see Le Corbusier, *Toward a New Architecture*, trans. Frederick Etchells (New York: Dover Publications, 1986).

¹¹² M. Christine Boyer, “Aviation and the Aerial View: Le Corbusier’s Spatial Transformations in the 1930s and 1940s,” 93.

perception using the geographical knowledge he just gained from this vertical viewpoint.¹¹³ On his first arrival in this South American city (Figure 40), he wrote in *Precisions*:

All of a sudden, beyond the first beacon lights, I saw Buenos Aires. The smooth sea, flat, unlimited to left or right; above, your Argentine sky so full of stars, and Buenos Aires, that phenomenal line of light beginning at the infinite right and escaping to the infinite left at the level of the water ... That is all! Buenos Aires is not picturesque or varied. The simple meeting of the pampas and the ocean, in one line, lit up at night from one end to the other.¹¹⁴

While staying in Buenos Aires, Le Corbusier acknowledged the new forms of urban fabric, the city's rigid and repetitive grid, that resembled depictions of organic fragments through observing the remaining primitive cities via the flight the South American Aviation Company offered him to Asuncion, Paraguay (Figure 41). Seeing the city from a 1,200-meter altitude, he was aware of the huge environmental distinctions between South America and Paris. He noted: "Buenos Aires is for the pioneers."¹¹⁵ He described its image from the village-and-farm components as he perceived the settler's farms in a regular rectilinear checkerboard pattern, the hamlets, villages, small towns, and at last the capital city. All the cities planned prior to the invention of aviation were physically arranged to protect themselves only from the land or sea invasions—from horizontal approaches—using formal devices such as the walls of the medieval

¹¹³ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 4.

¹¹⁴ *Ibid.*, 201.

¹¹⁵ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 211.

city.¹¹⁶ The aerial view set up a new way of looking and defining images of space. The freedom of air travel allowed Le Corbusier to witness the obstacles of land aggregation through scenes of the vast open terrain, the disparity of the land altitude, and unique profile of each area. Noticing the impact of natural configurations on the existing human settlements—the formation of regions, the unity of river valleys, the expansion of farmlands, and the location of the mineral deposits—he realized that Cartesian and radiocentric planning were not enough to cope with the present complexity. In response to the emergence of postwar technology, Le Corbusier listed the elements that he thought would determine the form and location of future settlements. They were the use of machines, new communication devices, information flows, and administrative requirements.¹¹⁷ Hence, he reorganized his radiocentric composition and restored it with the three settlement patterns: the units of agricultural production for food, the linear industrial cities for manufacturing, and the radioconcentric social cities for areas containing government, knowledge, commerce, and distribution.

Despite having a new vision to apply to Buenos Aires, Le Corbusier was still carrying on his initial belief from *The Contemporary City*—that man rules over nature. In *Precisions*, he expressed the grandeur man had brought to the city stating: “Man is here to act, to show himself. So, Buenos Aires, a purely human creation, a pure creation of spirit, an immense mass raised by

¹¹⁶ M. Christine Boyer, “Aviation and the Aerial View: Le Corbusier’s Spatial Transformations in the 1930s and 1940s,” 113. According to Boyer, Le Corbusier reconsidered the reasons for the walled medieval city and why the wall had been abandoned: “In French this [wall] is called *une enceinte*, and *enceinte* means *both* that which encloses and the *pregnant woman* who carries an infant in her womb. From these images we take the principle of a form deliberately shaped with the intention of being the vessel containing a city. Within it, a circulation network feeds the soil protected by the walls. Gated are opened in the enclosing walls from which roads lead away into the countryside. [Looking 83]” “Then came a day when offensive weapons made mock of military enclosures, when the advent of the airplane meant that fortress no longer had ceilings - a recent event, since it dates from the First World War. [Looking 43]” With aerial warfare, new considerations replaced the old set of tools, and new urban form, the linear radiant city, developed for the entire nation.

¹¹⁷ *Ibid.*

the man in the waters of the Rio and upright in the sky of Argentina.”¹¹⁸ However under the light of South America’s realities, the earlier schemes developed for Paris proved to be too rigid and lacking in vitality and flexibility.¹¹⁹ The concrete planning strategy he implemented in his *Plan Voisin* could only be partially applied to South American cities due to the scale and complexity of Buenos Aires’s topography. The two earlier goals set since *La Ville Contemporaine*; to increase the density of the urban fabric and to re-affirm the supremacy of its business core—meanwhile bringing back nature to urban life—were hard to pursue. Only the secondary planning objective captured from his sketch of Buenos Aires’ context—to integrate green spaces into the city—could possibly become tangible. With the political concept Le Corbusier taken from *Syndicalism*, the architect decided to relocate his former interest as well as the business center, which was previously situated at the focal point of the city in *Plan Voisin*, to be on the seashore, as he explained that it could ease the connection between the new seaport and the infrastructure of the old city. The only solution he could manage to carry out at this point, in 1929, was to organize one function by adding a new business district to the city, as it was clear that the architect was not be able to reorder the entire chaotic existing condition of Buenos Aires as he originally wished. However, his effort vividly showed that Le Corbusier broke free from the radiocentric planning. This revolution could be recounted in his earlier visit of the Acropolis of Athens. Using the ancient wisdom, he exemplified in *The Radiant City* that the lawgiver knew how to place the temples as references for the surrounding mountains. It was the lawgiver’s art that enabled him to “discern the spirit of those lines which can fuse the human creation and the natural creation

¹¹⁸ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 205.

¹¹⁹ Stanislaus Von Moos, *Le Corbusier: Elements of a Synthesis*, 201.

into one whole.”¹²⁰ Le Corbusier hence used this analogy by placing the business district at a location where it is considered to be the head of the whole body, the seashore.

When concentrating on his actions through architectural perspective, the aerial experience enabled Le Corbusier to acquaint himself with the dominant landscape of Buenos Aires, “the Barranca,” a narrow gorge positioned inland on the steep slope of Argentina. In order to propose a new mediation between the city’s high-grounded plain and the shore of *Rio*, Le Corbusier proposed a master plan extending the city into the sea and elevating this area above the water using the concrete platform and pilotis (figure 42). This new city center still maintained the initial concept from the *Plan Voisin* in which the footprint of the skyscrapers covered only 5 percent of the total platform area and left the rest for gardens, circulation, and parking lots. According to an ideology focused on the public realm, his architecture, especially the open space provided by the pilotis, allowed any engagement between humans and the surrounding environment to be increased. On the other hand, another important core component of Le Corbusier’s *La Ville Contemporaine*—the central traffic artery—could not be pursued directly. Because the coastal site of Buenos Aires was hilly and undulating, the architect decided to adjust his linear artery by elevating its structure to be located above the ground and connecting it with the most strategical point of the city; the seaport. By this means, Le Corbusier had left the underlying city fabric untouched, which contrasted strongly with the urban destruction of his *Plan Voisin*. Le Corbusier furthermore clarified his viewpoint and plan for the confusing street grids of Buenos Aires in *La Ville Radieuse* in 1933 stating: “Your city is choking? Give it its vital

¹²⁰ M. Christine Boyer, “Aviation and the Aerial View: Le Corbusier’s Spatial Transformations in the 1930s and 1940s,” 110.

axes, of deep and distant origin, in the hinterlands and the provinces.”¹²¹ Indeed, his response was to overlay the two 120-meter-wide diagonal arteries crossing the focal point of the city and connecting them with the existing urban fabric. He stated that by adding these urban spirals, they would bring an end to the confusion of the city (Figure 43).

In summary, his planning for Buenos Aires indicated a big change in his urban planning idea compared to his previous design doctrines; from disconnecting the past and rearranging the entire city system in *Plan Voisin* to adjusting his geometrical order while cultivating the beautiful landscape of Buenos Aires through an engagement between the highland and the boundless seashore. This would have been impossible without the benefit of traveling by air as Le Corbusier expressed:

Rio and its enchanted offshore view! From the house, no one sees it. There is no more land to build upon. Find communications? Open up new ways? Where? There are nearly a dozen bays, closes, isolated. If you walk through the maze of streets, you rapidly lose all sense of the whole. Take a plane and you will see, and you will understand, and you will decide.¹²²

This approach to Buenos Aires founded a new interest in incorporating the natural landscape with his modern architecture and planning studies. Despite adding a new function to Buenos Aires, there was still a bold line that disconnected his rectilinear concrete structure from the irregular city fabric of old Buenos Aires. The additional element looked like an imposition instead of fully becoming a part of a city.¹²³

¹²¹ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 222.

¹²² Le Corbusier. *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*. 223.

¹²³ Ibid.

1929: Plan for Sao Paulo and Rio de Janeiro, Brazil

Le Corbusier's master plans for Sao Paulo and Rio de Janeiro were not undertaken until the second time he visited these two cities. The view of the city from the port of Rio de Janeiro seemed violent and sublime to the architect at first, although his opinion changed two months later following a week he spent in Sao Paulo and another in Rio. With all the means of transportation that he used during his leisure time in these cities—including walking, driving, sailing, and flying—he subsequently, he depicted the image of Sao Paulo plateau similar to the shape of “the human body (Figure 45).” The hilly plains of Sao Paulo were described as nipple-like and the mountain ridges of Rio de Janeiro were compared with finger advanced toward the sea. The analogies the architect used to describe the South American landscape pointed out another significant component that changed in his urban interest. His new enthusiasm for *biology* could be understood more clearly in his black lead paintings of the early 1930s. By the end of the 1920s, Le Corbusier had substituted his common painting objects such as Purist bottles, flasks, and pipes with the more irregular formed objects—shells, rocks, and people.

To interpret the relationship between Le Corbusier's sketches and his travels, Jean-Louis Cohen argued: “the roundness of men and women mirrored that of rocks in his Carioca drawings’ brought the designer’s Cartesian mind another step closer to the humanistic-scaled practice according to the myth of Deucalion (Figure 44).”¹²⁴ In his works of the early 1920s, Le Corbusier paid attention to pure geometrical forms as displayed in his book, *La Ville Contemporaine*, and to the mechanism of the type-object in *The Decorative Art of Today*. A

¹²⁴ Carlos Eduardo Comas, “Sao Paulo, Rio de Janeiro, and Brasilia: Le Corbusier and the Brazilian Landscape,” *Le Corbusier: An Atlas of Modern Landscapes*, ed. Jean-Louis Cohen (New York: The Museum of Modern Art), 324.

decade later, he reached another stage of progress which gave more value to poetic reactions. Beyond his new approach to natural subject matter, Le Corbusier was also attracted to Black music, especially the hot jazz of Louis Armstrong, and its representation of machinery and masculinity.¹²⁵ An introduction to a black female singer *Josephine Baker*—whom he later sketched in a portrait of her singing and dancing—brought out the fetishism, simplicity, and vitality in his works. The shape of the human body, especially the rounded V-forms and broken ellipses of women, was not only conveyed in a form of Le Corbusier's nude drawings and paintings, but also they were incorporated into his architecture and city planning, such as in the long curvilinear form of the viaduct roadway in the mid-1930s (Figure 46).

In discussing Rio de Janeiro, Le Corbusier referred to its beauty as if it universally drew every human's attention. This led him to balance his profound thought of human dignity with the refinement of nature. He illustrated his opinion about the relationship between the two—the human and the natural charm of Rio—that the planner would either need to affirm or to go against. Nevertheless, Le Corbusier faced the same problem in Buenos Aires as in Rio de Janeiro—no more land to build on and traffic that was immobilized due the undulating cliffs. To solve an issue of traffic on these disconnecting bays and hilly figures, Le Corbusier proposed to set up a network of man-made routes hovering over the city using concrete pillars. Here, the viaduct, the 100 meter-high elevated highway was created to link one hill to the next, rising above the undulating parts of the city. Under this highway, the ten floors of the double-height townhouse buildings—*immeuble villas*—would be inserted, raising itself 30 meters higher above the ground. These buildings were described by Le Corbusier:

¹²⁵ Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, 102.

From out at sea, I saw in my mind the ample and magnificent line of buildings, crowned horizontally by the highway striking from hill to hill and stretching hands from one bay to the next. Planes are ready to be jealous; such liberties seemed reserved only for them. The belts of constructions is on the ‘colonnade’ diving down between the roofs of the city.¹²⁶

The fantasy of having an urban super highway running through Rio de Janeiro was not new to his urban planning principles. It was first proposed in 1922 for *La Ville Contemporaine*. One of the sketches of *The Contemporary City* showed the urban high-speed arteries connecting the two triumphal gates outside the city, where highway access would be justified. This urban high-speed channel was slightly adapted to its function for the master plan of Rio de Janeiro, to instead be a simple cross-country road (Figure 48). Though the highway succeeded in shortening the city’s travel time, it conflicted with the suggestion Le Corbusier proposed earlier in *The Contemporary City* regarding *the man’s way* and *the pack-donkey’s way*. The architect himself had brought his old urban planning principle to the ideological challenge. He criticized the *pack-donkey’s way* because of its aimless zigzag movement, in contrast to a straight line chosen by man. By creating this curvilinear earthscraper, he replaced his old manifesto with a new interpretation, “the law of the meander (Figure 47).”¹²⁷ This turning point in his career was not only marked by polemical urban proposals, but also it was grounded in his concern for specific sites.

With a city extension of 45 kilometers radiating rapidly from the center of Sao Paulo, in several years and with its 800-meter height differences between hills and valleys, the city faced the same deadlocked situation within a worm-like street network. According to Le Corbusier’s

¹²⁶ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 244.

¹²⁷ *Ibid.*, 142.

phrasing on Sao Paulo; “You’re completely tangled up in your valleys and your hills, You can’t get across the city any more! Drain off your traffic! But do it from above, from up high, in the air above your city, where you’re free!”¹²⁸ Based on his previous urban design awareness, he suggested that the city congestion could be resolved using his doctrine of *order*. To overcome the undulations of the hilly plateau of Sao Paulo, Le Corbusier recommended that: “one can build a horizontal expressway carried on earthscrapers.”¹²⁹ A cross-shaped expressway comprised of two straight horizontal axes was delineated at the heart of the city (Figure 49). With the aim to control the whole city system, the housing, offices, and infrastructure were again put underneath and aligned with the reinforced concrete *viaduct* structure. He thus related his idea with the classical Pont du Gard’s *aqueduct*, although reiterating that his structure is bigger and there is nothing more elegant than the pure line of a viaduct in an undulating site and more varied than its substructure sinking into the valleys to meet the ground. With the benefit of the bird’s-eye-view approach from the airplane, Le Corbusier discovered a new direction for his urban principles which had previously remained hidden. The distance of height allowed him to notice the dispersed suburban sprawl embedded in-between the ridges and valleys of the mountains. He, therefore, revised his planning methodology by replacing the cooperative ‘Radiant Green Belt’ established since *La Ville Contemporaine* with a linear strip of communal housing along the routes. He also substituted the “Linear Industrial City” with the “Radio-concentric City.” The changes were quite major compared to his previous ideas in which the city was framed by the belt and was not able to be expanded. The new urban planning strategy was more flexible in

¹²⁸ Le Corbusier, *The Radiant City; Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 222.

¹²⁹ Carlos Eduardo Comas, “Sao Paulo, Rio de Janeiro, and Brasilia: Le Corbusier and the Brazilian Landscape,” 326.

terms of preparing for urban sprawl and did not need to be only concentrated in the center area. This newly integrated method was also published in his later publication on Urbanism, *La Ville Radieuse*, in 1933.

When Le Corbusier left Rio de Janeiro by the sea, he explained his proposal for the suspended structure and his design for increasing spaces above the city:

...the whole site began to speak, on the water, on earth, in the air; it spoke of architecture. This discourse was a poem of human geometry and of immense natural fantasy. The eye saw something, two things: nature and the product of the work of men. The city announced itself by the only line that harmonizes with the vehement caprice of the mountains: the horizontal.¹³⁰

His illustration expressed his new understanding of the synthesis man should create between their buildings and the natural landscape. A new vocabulary added in his architectural and planning dictionary was *biology*, as he consequently realized that a plan actually embodied many organs creating *organisms* for the city and was not produced by man alone. However, at this stage of his urban design experience in 1929, the strategy of combining the natural essence with his design methodology, had not yet been fully developed. Le Corbusier's structure was seen partially engaging with the topography, although it retained a formative and rigid character. His design reached its full engagement with nature in the master plan for Algiers in 1933.

1931-1934 and 1942: Plan Obus for Algiers, Algeria, based on Landscape Examination

The Algerian project is recognized by architectural historians as the most prominent and tangible urban development of all Le Corbusier's activities in North Africa and South America. The architect spent a total of 11 years—from 1931 to 1942—resolving the conflict between his

¹³⁰ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 242.

Algiers planning schemes and the French government's conventional plan proposed by Henri Prost. This process evidenced his attempt to address two dilemmas posed by the Modern Movement; to consolidate an aesthetic of lyrical forms from the earlier formal gridiron, and to establish an engagement with regional syndicalism through his design. Many historians interpret the achievement of Le Corbusier in Algiers as an urban planning outcome that resulted from the political opposition between the ideals of Capitalism and his attention to Syndicalism. According to the three stages of the project design and the well-documented process, his visions for the development of Algiers are notable as a reference point to the transformation from the first phase to his second phase as well as being a remarkable adjustment of his entire design career—shifting from a rectilinear plan that focused on machine-age ideology to a curvilinear plan integrating plasticity and poetry in his later works.

Due to the occasion of the centennial celebration of French rule in Algiers in 1931, Le Corbusier was invited to give a lecture on “The architectural revolution achieved by modern techniques” and “How the architectural revolution can solve the problem of urbanization in the big cities.”¹³¹ He saw an opportunity to establish a new direction through his experiment on the African continent, which he considered to be young in civilization, but rich in natural resources. Le Corbusier found an ideal location—which he had been looking for since his youthful voyage to Constantinople and Athens—a white city under the sun, facing the sea.¹³² In order to be engaged in the Algiers planning project, he announced in his talk that the city was destined to become the world capital of Africa, parallel to Barcelona, Marseille, and Rome. This idea would

¹³¹ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 228.

¹³² Stanislaus Von Moos, *Le Corbusier: Elements of a Synthesis*, 202.

complete his four-cardinal point diagram linking all the major cities surrounding the Mediterranean. Without a commission, he devoted himself to design a new plan for the city which he called, “Plan Obus”—a name that emphasized its schematic nature and perhaps its explosive potential. At the same time, it was dedicated to a French automobile manufactured from 1907 until 1908.^{133 134}

Algiers was not only a center of business and trade serving the French mainland, but also it preserved the remnants of the authentic and well maintained centuries-old citadels of the Casbah, a traditional clustered quarter where the indigenous Algerians lived. The peasant culture Le Corbusier experienced while taking a tour around the city was also well documented in *La Ville Radieuse*. His appreciation for the wisdom of Muslim domestic traditions and its architecture can be seen in his statement: “O inspiring image! Arabs, are there no peoples but you who dwell in coolness and quiet, in the enchantment of proportions and the savor of humane architecture (Figure 50).”¹³⁵ The Ottoman houses inspired him with their interior organization around a central hall, their simple living spaces, massing, and the blank street facades. By referencing these new examples, Le Corbusier saw an overt contradiction with his former principles established within the frame of European civilization. He referred those cities to places where civilized people are holed up like rats, meanwhile hailing the architectural stratification of Arabs¹³⁶ as they brilliantly made use of the upper terraces which form the roof of the entire city

¹³³ Mary Caroline McLeod, “Le Corbusier and Algiers,” 493.

¹³⁴ “Obus,” *Wikipedia*, Wikimedia Foundation, last modified 10 September 2015, <https://en.wikipedia.org/wiki/Obus>.

¹³⁵ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 230.

¹³⁶ Zeynep Celik, “Le Corbusier, Orientalism, Colonialism,” *Assemblage* 17 (1992): 59.

—a strategy that helped narrow the corridor streets. He noted: “not an inch is wasted (Figure 51).”¹³⁷ All the realities found unspoiled by nineteenth-century industrialization started to influence Le Corbusier’s thinking regarding the engagement of his idea with regionalism.

Le Corbusier not only paid attention to the labyrinthian alleys and densely packed dwellings of the Muslim city. His concentration was also focused on the elegant topography of Algiers. His first glance from the sea toward Algiers offered a fantastic view of the city set against a spectacular landscape of Mediterranean sea and mountains which he praised as, “the most beautiful in the world.”¹³⁸ He furthermore described that the city stretched ten miles along the western edge of the Baie d’Alger with the Kabylie Hills and Atlas Mountains, opening as a vast white amphitheater to the sea. This fascination formed his later ‘organic’ implementations in the series of *Plan Obus*, as is particularly evident in the curving line of the *Viaduct* structure associated with Algiers’ landform. Another main influence affecting his urban design ideology was portrayed in Le Corbusier’s examination of Eugene Delacroix’s *Les Femmes d’Alger*. This study displayed his interest in Islamic women and their position in the Muslim family, along with the postcards and paintings he collected (Figure 52). In 1929, he was introduced to a woman named Josephine Baker on boarding to South America. He expressed this woman as “the most erotic woman he had ever known.”¹³⁹ Having women as one source of inspiration was revealed through the application of a bowing gesture and the humanistic-scale re-balancing in his design of Fort l’Empereur. In his work representation of the feminine; the thighs, shoulders, and

¹³⁷ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 230.

¹³⁸ Mary Caroline McLeod, “Le Corbusier and Algiers,” 491.

¹³⁹ Brian Ackley, “Blocking the Casbah: Le Corbusier’s Algerian Fantasy,” *Bidoun Projects*, Bidden Magazine, 2006, accessed 20 Mar. 2015, <http://www.bidoun.org/magazine/06-envy/blocking-the-casbah-le-corbusiers-algerian-fantasy-by-brian-ackley/>.

bottoms, became stylized and distorted, for instance, in the rounded V-forms and broken ellipses, in Le Corbusier's planning in the late thirties and beyond.

According to *Plan Obus*, his urban planning for Algiers, could be divided into three major elements (Figure 53). A new business district, *Quartier de la Marine*, was located on the Cape of Algiers and resembled the plan for Rio that was previously slated for demolition. There was also a French residential area, *Redent at Fort-l'Empereur*, that was located further inland at the height of the hills and connected to the central business area with the suspension bridge flying over the historical Casbah. This design element made use of the roof terrace idea of the Muslim dwellings. The last component was two main traffic arteries—"the road-buildings." The first was the *Viaduct*, which at the height of 100 meters he believed would connect Algiers' suburbs with the central area and would eventually be filled in with homes of the working class (Figure 54). The *Viaduct* was believed to be a resolution for the needs of an urban housing situation in the downtown area due to its verticality and a support for a capitalist economy that endorsed automobile highways. The other was the large curved buildings crowning the *Fort l'Empereur* which had their access road in the form of galleries halfway up.¹⁴⁰ With an initial intention in his design, the building of superhighways on their caps would not reduce, the rather multiply the built-up surface for the city. Le Corbusier expected that the population of the overcrowded area would gradually move into the levels provided underneath the *Viaduct*. The sociopolitical concept of Le Corbusier was shown in the communal participation in the *Viaduct* structural system—the artificial building site where every individual can build his own villa in

¹⁴⁰ Stanislaus Von Moos, *Le Corbusier: Elements of a Synthesis*, 203.

whatever way or style he wants.¹⁴¹ The scheme for Algiers itself still lacked a real public-realm space such a public forum. The four functions of living, working, circulating, recreating were regularly used by the designer to differentiate the space, which truly became real in the plan for Chandigarh of 1965.

In summary, *Plan Obus* was conceived as a collision between the idealized dwelling, mythic feminine ideologies and the romantic landscape offered by modern technology, and the integration of culture and vernacular concerns (Figure 55). Le Corbusier's encounter with Algiers was a turning point for his practice that shook his faith in the power of modern architecture to initiate and activate large-scale social reform. It also deepened his longing for a poetic primitivism, a desire to escape the industrial world that was quickly heading toward World War II. In 1942, Le Corbusier was forced to finally abandon his plans for Algiers, which was clearly for the best.

Even though Le Corbusier believed that he could account for his social responsibility simply through the practice of his craft, many refusals he received for his projects during these middle years proved that his large-scaled urban renewals were still considered to be idealistic and contained basic flaws.¹⁴² His one and only tangible urban plan; a design for the city of Chandigarh in India completed in 1960, likewise did not prove that his philosophy could change the way politics approached human living conditions, especially with the social structure and the class struggles of India. The only segment from his master plan that had been developed successfully and subsequently passed along from *La Ville Contemporaine* to Chandigarh was 'a

¹⁴¹ Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, 123.

¹⁴² William J R Curtis, *Le Corbusiers: ideas and forms*, 66.

system of the main arteries.’ In every urban planning scheme, Le Corbusier proposed a system of rectilinear axes linking the major districts of the city together and added the lateral streets cut across. Nonetheless, his architectural progression from 1929 to 1945, including the plans for South American and North African cities, marked the other two significant achievements for modern architecture.

First, the architecture should be constituted by the technology of time and use that advanced to present the responses to contemporary society. By seeking the new architectural tool for the modern age, Le Corbusier’s vision captured the purity of automobiles and airplanes. He applied them and the physical landscapes he depicted from these vehicles to create a new architecture and urban planning that could link between terrains, nations, and buildings. By taking the airplane, it helped him imagine how to connect different parts and different topographies with each other. The outcome was a big shift for his city planning ideas. It replaced his resistance to dispersal and concentric rings of city growth with a new strategy that responded to a dispersed suburban sprawl with a design application such as the *Viaduct*.

Second, he established a new tradition that architecture and urban planning should incorporate not only the landscape topography, but also the *genius loci*. Le Corbusier believed that it was vital to return to the ‘origins’ to counteract ‘the disturbance created by machines:’

My task ... concerns especially re-establishing or establishing harmony between man and their environment. A live organism (man) and nature (the environment), this immense vase containing the sun, the moon, the stars, indefinable unknowns, waves, the round earth with its axis inclined on the ecliptic producing the seasons, the temperature of the body, the circulation of blood, the nervous system, the respiratory system, the digestive system, the day, the night, the solar cycle of twenty-four hours, its implacable but varied and beneficent alteration, etc.¹⁴³

¹⁴³ Sarah Menin and Flora Samuel, *Nature and Space: Aalto and Le Corbusier*, (New York: Routledge, 2003), 64.

Only paying attention to issues of space, light, and air was not sufficient to pursue regional success and gain international acceptance. The forms of his architecture that came out during the 1930s and 1940s thus incorporate the organic and plastic quality in order to comprehend the landscape topography and the beauty of the peninsula. The result of Le Corbusier's architecture became obvious in the late 1940s with his material experimentation — using the raw concrete—leading to the creation of a very poetic and organic form on site. This not only responded to the goal he set in 1923, “the business of Architecture is to establish emotional relationships by means of brutal materials,” but also it paved the way for his subsequent period—an age of Brutalism. This move was prompted in the deepest sense by a rediscovery of natural orders, primitive societies, and a sexual relation with women unconstrained by conventional etiquette, sophistication, or snobbism.¹⁴⁴

The lessons he learnt from his attempt to introduce international style modern architecture to the South American and African continent had provided him with new experiences, which he argued;

when one sees the world from up high, most high, stretched out wide - and everything gives one this possibility - one realizes then that architecture is something new, at its beginnings, that it will be immense and coherent, under a single sign on seas and continents. The wave of architecture like a wave of electricity surrounds the earth and there are antennas everywhere.¹⁴⁵

Since Le Corbusier's ideas on urbanism was written contemporarily, the reactions to his urban planning might not be accepted right away, however, his underlying arguments, such as to

¹⁴⁴ Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, 110.

¹⁴⁵ Le Corbusier, *Precisions: on the Present State of Architecture and City Planning*, 17.

incorporate the aerial viewpoint or to integrate local culture and environment in urban planning, became a basic criteria that was accepted in the industrialized world twenty-five years later.

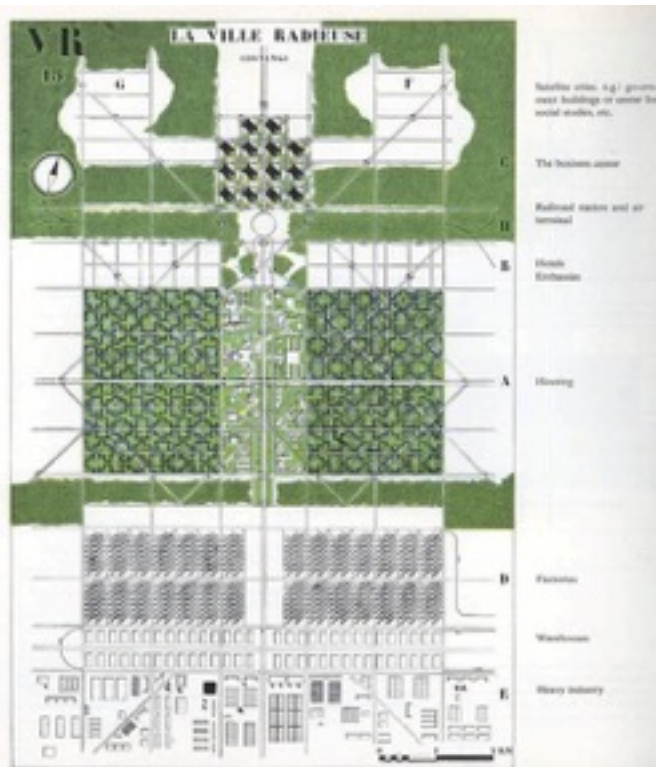
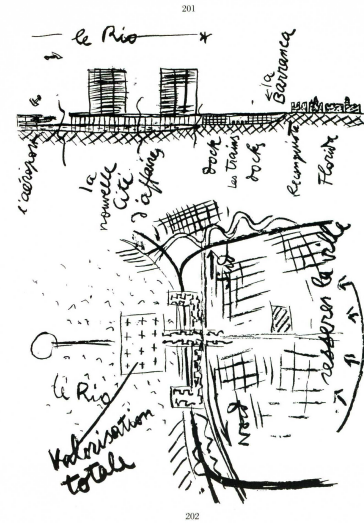
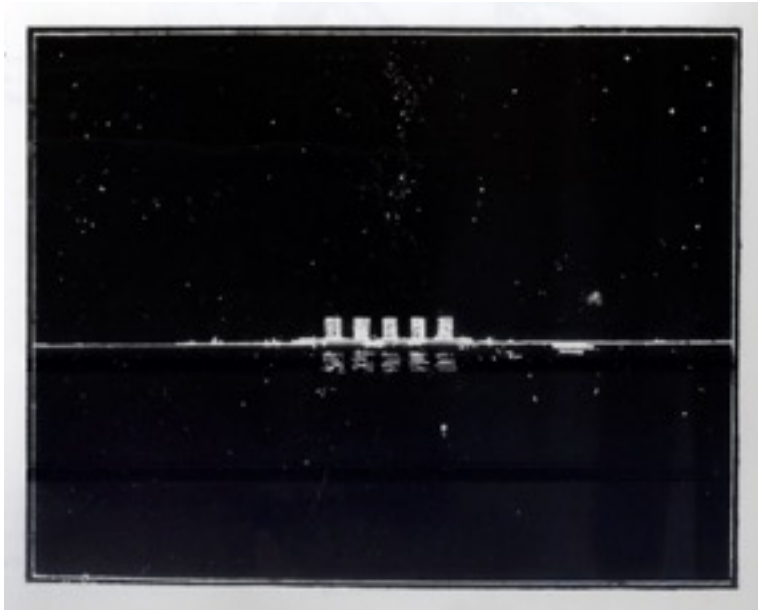


Figure 38 - Le Corbusier, *Plan Voisin*, 1925: physical model.

Figure 39 - Le Corbusier, *Synthesis: The Radiant City*, 1933: the biological development of the city can also extend laterally from the vertical axis on one side only (a question of topography, presence of a river, etc.).



201 le Rio/the Rio // l'aéroport/the airport // la nouvelle cité d'affaires/the new business district // dock, les trains, docks/dock, trains, docks // la Barranca/the Barranca // Reconquista // Florida // 202 le Rio/the Rio // valorisation totale/complete valorization // nord/north // resserrer la ville/contract the city

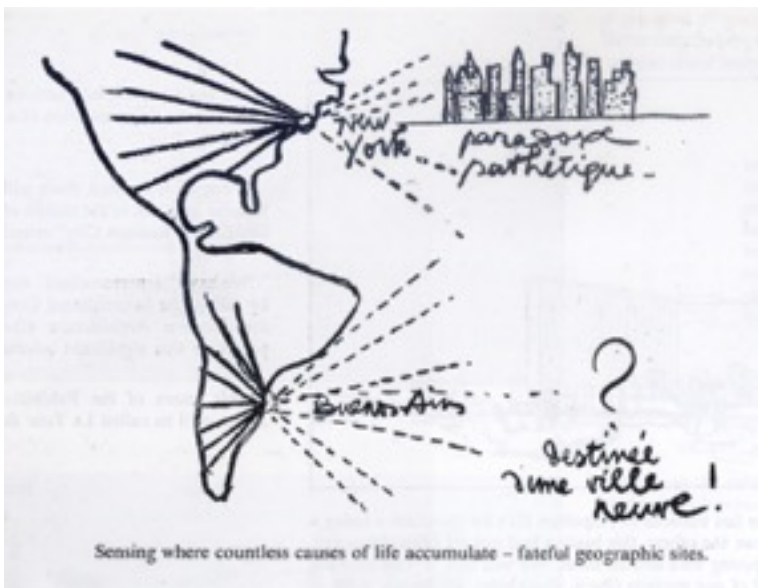
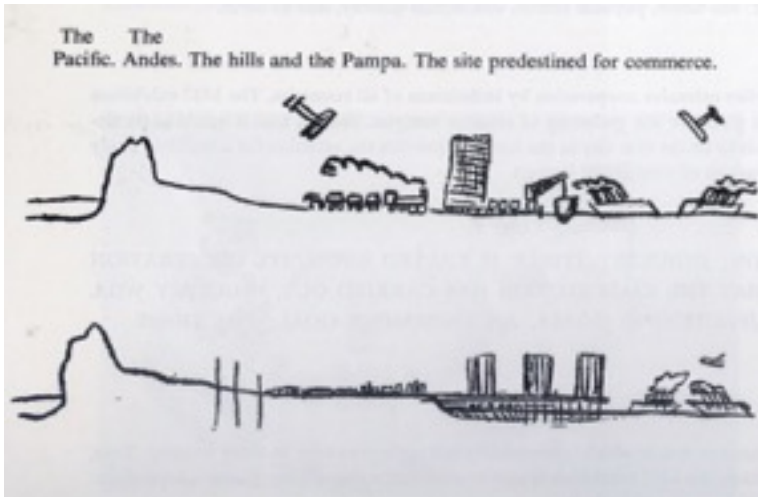


Figure 40 - Le Corbusier, *Plan for Buenos Aires, 1929*: night view from the Rio de la Plata.

Figure 41 - Le Corbusier, *Plan for Buenos Aires, 1929*: grid patterns of the primitive cities.

Figure 42 - Le Corbusier, *Plan for Buenos Aires, 1929*: concrete platform and pilotis.

Figure 43 - Le Corbusier, *Plan for Buenos Aires, 1929*: city that was destined.

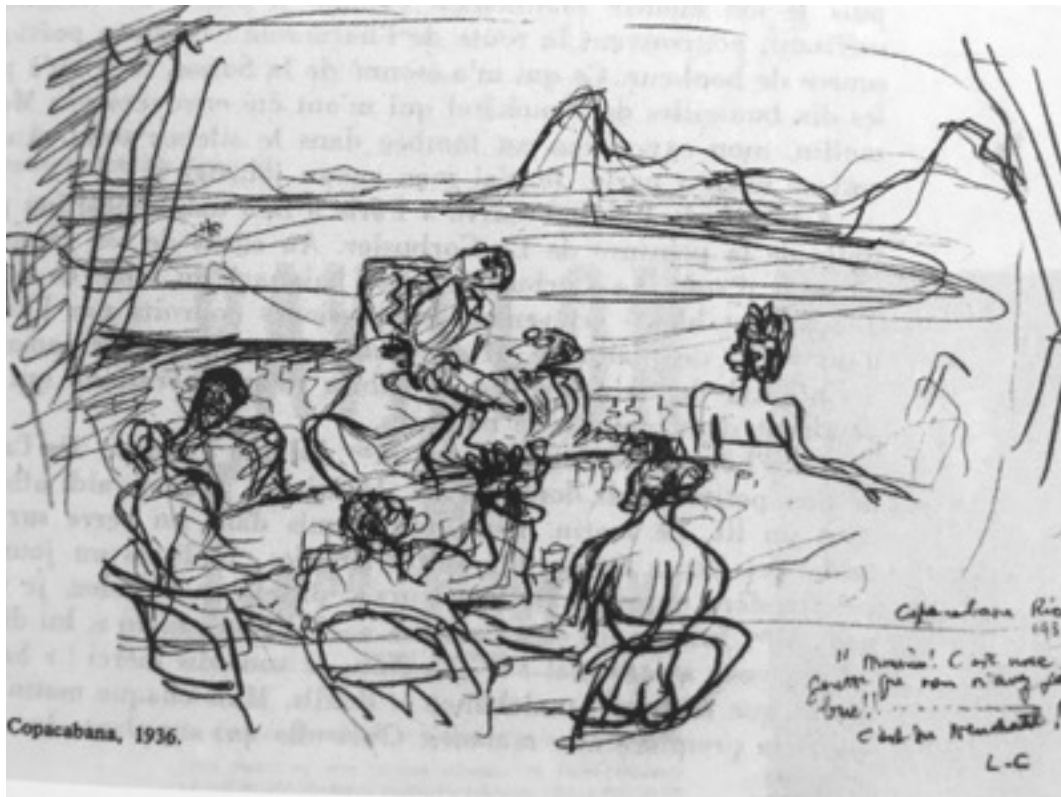


Figure 44 - Le Corbusier, *Sketches of people in Rio*, 1936: Copacabana beach.

Figure 45 - Le Corbusier, *Le Corbusier and A. Monteiro de Cavalho*, 1929: in Rio.

Figure 46 - Le Corbusier, *Nude sketch*, the 1930s.



Figure 47 - Le Corbusier, *Plan for Rio de Janeiro*, 1929: Law of meander.

Figure 48 - Le Corbusier, *Plan for Rio de Janeiro*, 1929: the cross country road, viaduct.

Figure 49 - Le Corbusier, *Plan for Sao Paulo*, 1929: a christ-cross viaducts.

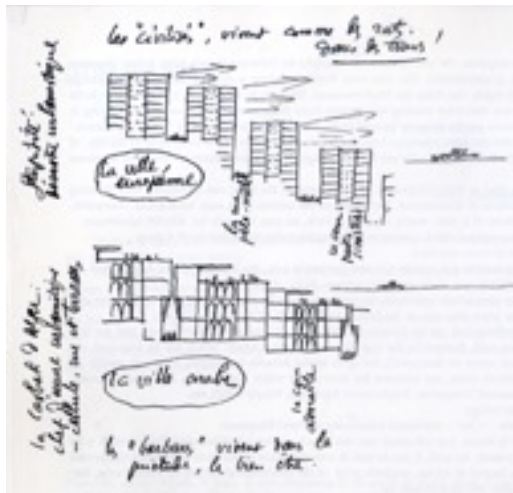


Figure 50 - Le Corbusier, *Plan for Algiers*, 1931-34: Arab living.

Figure 51 - Le Corbusier, *Plan for Algiers*, 1931-34: uses of rooftop.

Figure 52 - Le Corbusier, *Plan for Algiers*, 1931-34: Arab women.



Figure 53 - Le Corbusier, *Plan for Algiers*, 1931-34: physical model.

Figure 54 - Le Corbusier, *Plan for Algiers*, 1931-34: sketch of viaduct.

Figure 55 - Le Corbusier, *Plan for Algiers*, 1931-34: viaduct.



Chapter 3 Modern Vernacular

Le Corbusier's middle years, from 1929 to 1945, have received less attention from the scholarship of the modernist architecture historians than other parts of his career. This is not only because most of his projects at the time remained unbuilt because of political and economical circumstances during World War II, but also it is because of the characteristics of the built projects were not fully understood. During the 1930s and 1940s, Le Corbusier's architectural style was inconsistent when compared to the vision conveyed in the manifestoes he regularly pronounced during the 1920s and 1950s. His architecture during the intermediate years was overshadowed by the sleek and white machine-like rigor of the 1920s, such as in *Villa Savoye*, and by the straightforward use of *beton brut*, raw concrete, and its sculptural expression in the 1950s, such as in *Ronchamp* and *Unite d'Habitation*. One could either dismiss the importance of the 1930s or the other ways around, choose to examine the shift in his rationales that caused the stylistic change during this intermediate period. Le Corbusier expressed the principles he held during these years in *La Ville Radieuse* published in 1935, which he begins with a confession,

... I am attracted to a natural order of things. I don't like parties and it is years since I set foot in one. And I have noticed that in my flight from city living I end up in places where society is in the process of organization. I look for primitive men, not for their barbarity but for their wisdom.¹⁴⁶

During this interval, Le Corbusier's income came mostly from giving lectures on his urban concepts and proposing city revitalization plans to city governments around the world; however, a small part of his income came from designing residential projects. His domestic designs demonstrate a dramatical shift, particularly between 1929 and 1930. Le Corbusier's best known building, the *Villa Savoye*, broke the ground in 1929. It directly addressed the principles

¹⁴⁶ Charles Jencks, *Le Corbusier and the Tragic View of Architecture*, 109.

of his *Five Points*; pilotis, roof garden, free floor plan, horizontal windows, and free facades. The success of this project made him to be a well-known leader of the international modern movement—a new type of architecture detached from a traditional building systems and regional concerns. However, by analyzing Le Corbusier’s projects closely, the architect never left the environmental setting unconsidered, no matter how small the project. Moreover, he even did careful research on how he could adopt the essence of local motifs and combine them with his earlier modernist architectural theory. He cultivated an interest in primitive societies and culture and built a series of constructions that reflected aspects of modern folk vernacular. This evidence was found in a residential project, Maison Loucheur (1929), which he designed later in the same year as Villa Savoye, where he incorporated primitive materials and craftsmanship with his earlier prefabrication techniques. This same combination of modern technology and the primitive appeared in many of subsequent projects from 1930s to 1950s, such as, Maison Errazuriz (1930), Maison de Weekend (1935), and Maisons Jaoul (1952-54).

The main inspiration found from studying Le Corbusier’s projects during his middle period was his intention to create a very simplistic poetic architecture from various ‘as found’ coarse materials that evoke a poetic reaction in the projects—an intention that stayed in his mind since the 1920s. Le Corbusier once made a definition for architecture in 1923, “the business of architecture is to establish emotional relationships by means of brutal materials.”¹⁴⁷ Therefore, studying this middle-year period could clarify his move to the *Brutalism* of the 50s. In the 1950s, two of Le Corbusier’s buildings, the Unité at Marseille and the Chapel of Notre Dame du Haut at Ronchamp, were interpreted almost universally as a dramatic rejection of the sleek, white

¹⁴⁷ Ibid., 110.

machine aesthetic, but in retrospect it is now clear that Le Corbusier had already evolved his own form of Brutalism by the 30s.¹⁴⁸ Therefore, the study in this chapter will focus on the connections the architect tried to establish between natural orders, primitive societies, and localization—synthesizing an architecture that contributes a sense of the spiritual, while at the same time being humanistic.

1929: Maison Loucheur and 1930: Maison Errazuriz, Chile

1929 was not only a year when Le Corbusier firstly took a voyage to South America and North Africa, but also it was a time when the architect started to incorporate the vernacular elements in his architectural compositions. The building technology and methods such as the use of whitewashed walls and prefabricated structure had always been the architects' idiom since the early 1920s according to his faith in machinery and ornament reduction—thus revealing a rationale of an anonymous craftsmanship. The combination of time-honored building techniques and prefabricated light-weight technology evidently became an essential core in one of Le Corbusier's domestic works completed in 1929 known as the Maison Loucheur (Figure 56). This was the first time the architect decided to engage a local rubble-stone wall with his industrialized fabricated productions, the exposed steel-frame construction and the light-weight components. *Maison a sec* or *a dry-processed housing* was the name for the first version of Le Corbusier's experimentation with a low-cost housing, representing an assemblage of the industrially produced prefabricated components such as the exterior panelling, the interior fittings, and a

¹⁴⁸ Ibid., 109.

single sanitary unit comprised of a WC, a shower, and a wash-hand basin¹⁴⁹ transported to be assembled on the site. The idea of prefabricated housing was originally led by the *Loi Loucheur*;¹⁵⁰ an opportunity to participate in the reconstruction of devastated areas of France—which drew the attention of socially concerned architects, including Le Corbusier. Because the law had provided a possibility to establish a cheap house with easily available finances availability, Le Corbusier took this chance to utilize his industrialized concept of the house type, and the steel and the cement gun he used at Pessac. In order to solve the issue regarding a failure of communication between the architects and the builders on site, Le Corbusier realized that it was best way to rely on a mass-producible and a dry assembly system that could combine with materials found close to a site.¹⁵¹ A rubble-stone party wall was inserted in between two housing units providing a main structural support—along with the free-understanding pilotis—and preserving privacy between the two units. The concept of *Maison Loucheur* was idealistically created to imitate a ship's cabin¹⁵² by minimizing the use of space and the timeframe of construction. Providing only 44 square meters (490 square feet) to accommodate two adults and four children, the spaces separated each function and created privacy by the calculating

¹⁴⁹ Kenneth Frampton, *Le Corbusier*, 131.

¹⁵⁰ In order to understand the *Loi Loucheur*, one should understand the circumstance of this law announced on July, 13th, 1928: “Employees, administrators, workers, artisans: you have been forced to accommodate your families in uncomfortable dwelling, sometimes in squalid slums, which are a disgrace to our great cities. But now, almost without desiring it, you yourselves will be able to out a stop to this distressing situation. For the State has ingeniously found a way to associate you with its effort. You, who were luckless tenants yesterday, will become tomorrow the proud owners of your own home. What magic wand will bring this transformation about?” Timothy Benton quoted Paul Beghin, ‘Comment devenir propriétaire avec la *Loi Loucheur*,’ 1928. This leaflet was also published in article form by several newspapers, including many of those owned by Louis Loucheur himself.

¹⁵¹ William J R Curtis, *Le Corbusier: ideas and forms*, 111.

¹⁵² *Ibid.*, 111-112.

management of the sliding partitions and the foldable beds during daytime and night time similarly to the living quarters of a ship.

By engaging an on-site native stone, Frampton pointed out that it was envisaged not only as mediating universal civilization through local culture, but also providing continual employment for local craftsmen and builders.¹⁵³ The other significance found in Le Corbusier's employment of natural authenticity was the way the architect interpreted the use of local materials utilizing his own modernist architectural language. The emerging result, through the integrity of the rubble-stone wall, recalled the genuine process of local craftsmanship passing down their wisdom generation-by-generation. It manifested what he learned at young age—the strong relationship between people and their artifacts. In this case, Le Corbusier brought back his former investigation of *sachlich*, the closeness of people and their artifacts in this societal condition, although he had not yet reached the point where he could implement the vernacular quality in his design fully—to generate a form that was not chosen, but received.¹⁵⁴

Maison Errazuriz, a residence Le Corbusier designed for a wealthy Chilean diplomat Matias Errazuriz a year after Maison Loucheur, was also recognized as an experimentation with agrarian syntax. A contract was signed during Le Corbusier's trip to South America in the autumn of 1929 with regard to constructing a vacation house on an extremely remote site in Zapallar, north of Valparaiso, Chile. The landscape of Zapallar provided a challenge to both Le Corbusier and his machine-aged dogma, due to the impossibility to transport modern materials to the site. Working with a site he had never visited, the architect found a remedy to mitigate the

¹⁵³ Kenneth Frampton, *Le Corbusier*, 131.

¹⁵⁴ Stanford Anderson, "The Vernacular, Memory, and Architecture," 170.

situation by making a site analysis through the maps and pictures that were sent to him. The location of the land plot on a ledge alongside a peninsula and mountains, overlooking the Pacific, forced Le Corbusier to think of the best solution that suited the nature of the site; landscape, climate, and local materials. Therefore, local stone and timber were the main materials, integrated together with Le Corbusier's modernist language. This two-story house was organized on a longitudinal floor plan, with the longer sides aligning with the contour of the landscape (Figure 57). The application of rough-cut load-bearing stonework was expanded in this project compared to the previous Maison Loucheur. It was meant to be the major supporting structure of the house, combining with the minor support of the pilotis made from thick logs and stone piers. The roughness and solidity of the Chilean region was eminently communicated through the composition of the living room in which Le Corbusier placed his signature ramp, together with the fireplace and inner walls built out of the rubble stonework. Another configuration the designer intended to expose in this room was the stripped tree-trunk beams buttressing the roof and the sleeping-loft mezzanine. This rusticity obtained through the material selections magnified the primitive characteristics in Le Corbusier's design, however the architect still did not forget to translate them into his own dialect as he insistently explained in his *Oeuvre Complete*, "the rusticity of the materials is in no way a hindrance to the expression of a clear plan and a modern aesthetic."¹⁵⁵

The most dominant structure first appearing to the eyes of the architectural readers is obviously the two mono pitch roofs covered with Spanish tiles. This sloping roof was previously seen as Le Corbusier's choice in his days at La Chaux-de-Fonds. Until the end of 1920s, Le

¹⁵⁵ Kenneth Frampton, *Le Corbusier*; 133. Frampton quoted Le Corbusier from *Oeuvre Complete* 1929-1934, 48.

Corbusier's prior obsession with the horizontal line of the machine—the flat roof—was replaced by the V-shaped roof. He indicated that its shape was postulated to reflect the mountainous atmosphere of the site's surroundings viewed from the beach.¹⁵⁶ By having four big unframed windows installed in the living room—the space he considered as the only luxurious spot of the house—and through a strong determination not to create an “arranged” garden, the interpretation could not be anything, other than the unification of the house with the silhouette of the surrounding natural landscape. According to Le Corbusier's conversation with the residence's owner regarding how to determine the location of the building without a site visit, he was conveying that his job was to capture the fundamental elements of landscape and construction, and that therefore he did not need to “sniff out” the site himself.¹⁵⁷ At the end, his design for Maison Errazuriz did not turn into reality and was replaced by the domestic scheme of architect Carlos de Landa on the same site. However, the concept and planning of Maison Errazuriz was delivered and made possible in 1933, though the hands of the Czech-American emigre architect Antonin Raymond.

Even though a new synthesis between primitive building techniques and the modernist architectural expectations of Le Corbusier emerged in order to solve the problematic issues between the off-site and on-site construction, this approach also expressed a neo-vernacular manner displaying a mixture of archaic and modern construction methods.¹⁵⁸ Le Corbusier,

¹⁵⁶ Jean-Louis Cohen, “Zapallar, Chile: Maison Errazuriz, 1930,” *Le Corbusier: An Atlas of Modern Landscapes*, ed. Jean-Louis Cohen (New York: The Museum of Modern Art), 342.

¹⁵⁷ *Ibid.*

¹⁵⁸ Kenneth Frampton, *Le Corbusier*, 133.

furthermore, remarked in his *Oeuvre Complete* on regional construction skill when seeing the illustrations of Mr. Raymond's project near Tokyo that,

A digression is in order here; it is certain that the art of architecture in Japan is better prepared than our western counterpart to exploit successfully the modern architectural thesis. Japan possesses an admirable tradition of dwelling. It has at its disposal an exceptionally refined and spiritual craftsmanship. The old Japanese tea houses are adorable works of art.

Moreover, the Japanese have adopted the principles of modern architecture. They have applied them with undeniable flair. They are capable of endowing modern architecture with discernible refinements.¹⁵⁹

The words, refinement and spiritual craftsmanship, were always the elements Le Corbusier hoped to see in modern architectural theory. When recalling his notes in *The Decorative Art of Today*, he often referred to Loos' statements such as "It seems justified to affirm: The more cultivated a people becomes, the more decoration disappears."¹⁶⁰ He also made several notations in the *Voyage d'Orient's* map noting the relative interplay between the dominant cultural values of each country that coexisted at the time, for instance,

Thus where Berlin and the Ruhr were perceived as being the province of I (industry) with the addition of some C (culture), Paris, Rome, and Athens were seen as being totally permeated by C, and the Balkans largely dominated by F (Folklore).¹⁶¹

Not only were all of his concerns concordant with Loos' ideas in *Ornament and Crime*, but also they showed that Le Corbusier did not forget to carry on the idea of vernacular in his statements. The concept of folklore and culture were as important as the works of industry itself. They remained and constantly appeared in Le Corbusier's modern planning and doctrines.

¹⁵⁹ Ibid., 135.

¹⁶⁰ Ibid., 60.

¹⁶¹ Ibid.

1935: Maison de Weekend

A number of events between 1929 and 1935 influenced the changes in Le Corbusier's architectural style in his second machine age. These included three CIAM conferences, travel to new places, and a number of publications and lectures that heavily relied on political and societal urban planning, and especially the results of the interwar and Vichy periods. Despite the fact that Le Corbusier focused on solutions for civic projects, particularly on sites in Spain, Sweden, Switzerland, South America, and North Africa, he never neglected to pursue residential designs, which were the part that stimulated Le Corbusier's holistic ideas. What can be understood from this consistency is that Le Corbusier was never reluctant to bring back new attitudes he learnt from other civilizations and immediately apply them to his own designs. Because he had access to reliable construction workers in France, Le Corbusier was able to integrate his prefabricated-housing concepts with pre-industrial building techniques. In 1935, Le Corbusier received a commission from a wealthy bachelor, M. Felix, who was director of the Bank Society Henfel. The house was built to respond to Felix's needs and for his private use, although it belonged to the company.¹⁶² The client wanted the house to be relaxed and prudent. These objectives enabled Le Corbusier to test his ideas about the meaning of peasant materials. Both, Frampton and Curtis agreed that in the Maison de Weekend Le Corbusier created a new a combination of industrial technology and Arts and Crafts applications—thus reflecting he paradigm shift in his overall career. In *Le Corbusier: Ideas and Forms*, Curtis explained,

¹⁶² Rudy Godinez, "Le Corbusier, Le Petite Maison de Weekend (Villa Henfel), (1935)," *RUDY/GODINEZ*, last modified, November 24, 2015, <http://rudygodinez.tumblr.com/post/67998611454/le-corbusier-le-petite-maison-de-weekend-villa-henfel-19>

Le Corbusier's 'patient search' was a gradual experimentation with well-trying forms. Some levels in his language altered, others remained much the same, and on occasion he even looped back to his earlier phases to reconsider old types, devices or elements in quite a different context. In the translation from one setting to the other, the 'substructure' of the idea would be given new levels of meaning and new possibilities for future use.¹⁶³

By resurrecting the employment of primitive, solid walls in the Maison de Weekend instead of only counting on the pilotis, Le Corbusier was forced to expand his thinking about construction and how to demonstrate the honest and conscientious attitudes of the primitive materials that he utilized, while at the same time elaborating them in his modernist definition.¹⁶⁴

Le Corbusier's understanding of Ruskinian principles was also recovered through this project. During his travel in Venice in his earlier days, Le Corbusier had studied the city through the views of Ruskin. However, an interest that attracted the young architect when reading Ruskin's commentaries was not the prosperity of Classical or Renaissance Venice architecture. Young Le Corbusier observed them in terms of gorgeous polychrome ornament; light, shade, and texture on cracked stones; fragments oozing with nostalgia.¹⁶⁵ His examination on the Doge's Palace primarily considered the underlying joints of the masonry: how the designer situated an aesthetic and abstract quality in the architecture's constructional twigs and branches. Later, this similar perspective was brought back to be utilized in Maison de Weekend. The detailing Le Corbusier once employed through a combination of timber and rusticated walls in his first residential designs at La Chaux-de-Fonds was now repeated and refined to directly show the honest implications of materials. When the result of making the solid walls became tangible, it

¹⁶³ William J R Curtis, *Le Corbusier: ideas and forms*, 114.

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*, 22.

also proved a theoretical principle he wrote in *Plagiarism* by giving the concrete example of what the architectural (decorative) art of today should be.¹⁶⁶

For Maison de Weekend, Le Corbusier designed an open-floor plan based on a structural module consistent with the shell vaults of the roof. He also brought together archaic and modern materials, such as a thick turf roof, rough brick stacks, a neolithic stone circle in the garden, plain wooden interior partitions, along with a modernist concrete structure and glass bricks (Figure 58). Another hybridization captured in Maison de Weekend was the change of the roof forms. Transforming his signature flat roof slab to a thick turf vault was not new to Le Corbusier's designs. This cave-liked dwelling at St-Cloud, Maison de Weekend, recalled Le Corbusier's design for Maison Monol in 1919 as well as the vaulted Mediterranean megaron from which it was derived.¹⁶⁷ With all of these as evidence, Maison de Weekend shifted Le Corbusier's architectural work from the sculptural ethos of Platonic form to the tectonic articulation of the construction itself (Figure 59).¹⁶⁸

The distinction of the residences' locations is also worth to mentioning. The relationships the two earlier houses established with their sites are not clear, since Maison Loucheur was a prototype designed without a specific site and Maison Errazuriz was produced without a site visit. The relationship of Maison de Weekend to its site therefore becomes very important. Celle-St-Cloud is on the outskirts of Paris, so its atmosphere helped carry out the architect's intention to make the house as invisible as possible. He placed it at the corner of the plot behind a curtain

¹⁶⁶ "Plagiarism" is a title of one chapter in Le Corbusier, *The Decorative Art of Today*, trans. James I. Dunnett (London: The Architectural Press, 1987) Print.

¹⁶⁷ Kenneth Frampton, *Le Corbusier*, 137.

¹⁶⁸ Ibid.

of trees. Le Corbusier also designed the house to minimize its height as much as possible, to be a maximum of 2.60 meters. By hiding away the building in the natural landscape, the architect chose to camouflage Maison de Weekend with the grass roof and traditional material. As a result, the housing plan and composition revealed the architect's understanding of a topographical situation in which the residence and the place exhibited "its intentions"—to be a weekend house—through its physical form embedding in the local landscape. According to David Leatherbarrow's explanation on the relationship between architecture and topography in "Topographical Premises,"

We tend to assume that the place exhibits "its intentions" the way designs present theirs; in both, intentions are shown, and givenness we believe offers expressive display. But this again confuses the standing of a figure with that of the ground, for topography is not composed of objects in the same sense. It does not expose the grounds (intentionally) of its formation, but serves as the grounds for that formation.¹⁶⁹

Hence, the physical form of Le Corbusier's architecture not only resembled the topography, but also it paid respect to the site's vernacular conditions.

1952-1954: Maisons Jaoul, Neuilly, Paris

Maisons Jaoul was constructed from 1952 to 1954, while Le Corbusier was preoccupied with many important large-scaled projects such as the Unite d'Habitation in Marseilles (1945-52) and the Indian projects in Ahmedabad and Chandigarh.¹⁷⁰ Meanwhile the major focus was on the new representation of concrete technique Le Corbusier created for these mega urban projects,

¹⁶⁹ David Leatherbarrow, "Topographical Premises," *Journal of Architectural Education* (1984-) 57.3, (2004), 71.

¹⁷⁰ Caroline Maniaque Benton, *Le Corbusier and the Maisons Jaoul* (New York: Princeton Architectural Press, 2009), 39. Regarding the Indian projects where Le Corbusier was in collaboration with Pierre Jeanneret, Maxwell Fry, and Jane Drew, the architect had accepted to direct a team to design the capital of the Punjab (a city of 500,000 inhabitants) and to execute the main urban infrastructure.

Maisons Jaoul was considered to be the antithesis of his expected vocabulary. These two single-family houses were placed on the same plot and designed to serve the Jaoul Family; one for Andre Jaoul, his wife, and the younger son; the other for their older son Michel Jaoul with his wife and their three children (Figure 60). The villa was built in contrast to the general Brutalist trend of the 1950s, an architectural movement that typically was massive in character with a predominance of *beton brut*, or raw concrete, as a choice of material. These projects had exposed concrete and brick for the exterior walls and smooth-finished vividly painted surfaces for the interior walls. They also had a variety of evocative textures ranging from varnished wood, painted concrete, and ceramic kitchen tiles (Figure 61).

In July 1926, Le Corbusier first visited Neuilly-sur-Seine, a suburb of Paris where Maisons Jaoul would be located, and carefully documented the environmental setting—including the location of neighboring houses, trees, and the views in each direction.¹⁷¹ The interest Le Corbusier had in the conditions of the Paris suburb was in contradiction with his earlier urban viewpoint of *La Ville Contemporaine* (1925), where he tried to eliminate the ‘suburban’ areas from his new city planning. At that time, the destruction of Le Corbusier’s plan was proposed in order to promote his radiocentric planning. To erase the suburb was equated with leaving the countryside untouched and shortening the traveling time between city and nature. It was, after all, the suburban territory that provided Le Corbusier with the available plots and a freedom from overly burdensome regulation that allowed for experimentation.¹⁷² When the architect had a chance to design this house, the first thing he would like to do was to retain the house’s privacy

¹⁷¹ Tim Benton, *The Villas of Le Corbusier and Pierre Jeanneret, 1920-1930* (Boston: Birkhauser, 2007), 217.

¹⁷² Jean-Louis Cohen, “Paris: Ilot Insoluble no. 6, 1935-36,” *Le Corbusier: An Atlas of Modern Landscapes*, ed. Jean-Louis Cohen (New York: The Museum of Modern Art), 292.

from the traffic noises on rue de Longchamp. Le Corbusier set the villas well back from the street and buffered them with a curtain of poplars (Figure 62). Meanwhile, he superimposed the housing functions on each other and installed a turf roof to blend the buildings with the grove of trees. He also recorded the sun orientations by casting shadows on the site in different seasons in the pages of his sketchbook. The drawings consequently dictated the future plans and sections of the villa, as he noted, when the sun's curve was at its lowest during the winter months, the (neighboring) south party wall would act as a screen casting a shadow across the Jaoul property.¹⁷³

Le Corbusier's concept of sun's trajectory was shifted from the first device he used to interact with natural daylight—from using *a fenetre en longueur* or a horizontal ribbon window that runs continuously across an entire space and aims to transmit the most sunlight, as he suggested in *Vers une architecture* (1923), to focusing on a combination of sunlight penetration and a sun breaker *brise-soleil*, that he introduced in the forth scheme of *Plan Obus* for the municipal building of Algiers (1928-1936). Moreover, the architect realized that his former designation of being anti-regional, employing a thin-walled, tightly-stretched International Style, needed to be rethought when facing the overheated climate and the protective masonry screens of the vernacular buildings of North Africa.¹⁷⁴ As a consequence, Le Corbusier combined the experience he acquired from his travels with the advantage of site. This resulted in vertical strip windows placed on the building's facade, which could provide plentiful light and transparency without compromising the dwellers' privacy. Apart from a concern for the sun's trajectory, other

¹⁷³ Caroline Maniaque Benton, *Le Corbusier and the Maisons Jaoul*, 45.

¹⁷⁴ Harris J. Sobin, "The role of regional vernacular traditions in the genesis of Le Corbusier's Brise-soleil sun-shading techniques," *Traditional Dwellings and Settlements Review* 6.1. (1994), 188.

architectural components that reflect the wisdom of Arabs were found in this house, such as the internal courtyard space, the use of the rooftop, and house's orientation away from the neighborhood.

After he proposed the Dom-ino system introduced in 1914, Le Corbusier spent less time on structural theories and more time on larger-scaled projects. This was until the 1930s, when he founded his new fascination with the concrete system used by the Romans and that of the Catalan vault.¹⁷⁵ In response to Maisons Jaoul's technical and economic criteria, and to reduce the scale for domestic living, Le Corbusier selected the vault structure (Figure 63). Maniaque Benton points out that these vaults evoked primitive dwellings, "the vaults in this case implied a symbolic space connoting the image of the first human habitation within a rocky crevice, the very essence of a shelter."¹⁷⁶ The vaults also derived from a very different source, the low barrel-arch railroad freight cars. Le Corbusier was always fascinated with the economic efficiency of vehicles ranging from automobiles to aircraft, to trains. In 1929, the architect had asked the young Catalan architect Domenec Escorsa, who had once worked for him, to prepare some measured drawings of a sleeping car and restaurant carriage.¹⁷⁷ The success he saw in *Pullman or sleeping cars* and *couchettes* was an ability to accommodate maximum overlapping activities, similar to a house. The value Le Corbusier derived from vaults had two distinct dimensions, as indicated by Stanislaus von Moos,

¹⁷⁵ Salvatore Benfratello, Giovanna Caiozzo, Marta D'Avenia, and Luigi Palizzolo, "Tradition and Modernity of Catalan Vaults: Historical and Structural Analysis," *Meccina dei Materiali e delle Strutture* 3 (2012), 49. Web. 20 Jan. 2016.

¹⁷⁶ Caroline Maniaque Benton, *Le Corbusier and the Maisons Jaoul*, 40.

¹⁷⁷ *Ibid.*, 41.

The vault encompasses two of Le Corbusier's dominant themes. On the one hand, he admired the industrial vault: the Hennebique or Freyssinet shed-type, the Auguste Perret thin concrete shell (used on the Casablanca docklands, familiar to the young Charles-Edouard Jeanneret) and the Monol-type (for family to the young Jeanneret-Le Corbusier had applied for a patent in 1919). On the other hand, he was fascinated by the warmth of the welcoming arch, a receptacle of light, like those he designed for his atelier on the rue Nungesser-et-Coli (1931-34), and Petite Maison de Week-end (or Villa Felix) at La Celle-Saint-Cloud (1935). Considered as an ensemble, these vaults symbolize the artist's atelier.¹⁷⁸

The idea of choosing the vault as the main supporting structure was also to reflect the expansion of two families' functions on one site. For the Jaoul families, therefore, he immediately proposed a new design of two *unités d'habitation* or juxtaposed dwelling units under one vault roof, which represented a strange and enhancing characteristic—the leitmotiv of the composition.¹⁷⁹

Another advantage of the vault in the Maisons Jaoul, beyond its spatial arrangement and the structural performance was its ability to integrate lighting. Natural light became another substance Le Corbusier started to carefully apprehend after acknowledging the primitive cultures from abroad. Le Corbusier distinguished the architectural tools that could bring in the light such as the shed vault from those that demarcated a space, for example, the nave of the Weekend house.¹⁸⁰ The vaults and bay windows inserted in the Maisons Jaoul amplified the amount of daylight and accentuated the warm materials, multicolored wall surfaces, and beautiful fireplace surrounded by niches for cherished works of art and crafts (Figure 64). The vault enabled Le Corbusier to reappraise the fundamental basis of the art of living—the house's warmth—which

¹⁷⁸ Ibid., 42.

¹⁷⁹ Ibid., 41.

¹⁸⁰ Ibid., 42.

did not exist in his earlier designs such as the Villa Stein at Garches (1927) and the Villa Savoye at Poissy (1928-31).

The decision to come back to re-examine and apply the peasant structure with his modern ideology was reasons by Le Corbusier in relation to the vault, which imposed itself as the ubiquitous module for every house type from peasant to upper-middle class. The image of the vault for Le Corbusier represented natural elements that complemented the landscape and incorporated the cellular unit at a human scale.¹⁸¹ The construction of these vaulted houses signals a new trend in Le Corbusier's work, and the Maisons Jaoul can be considered his first "New Brutalist" work according to Frampton (Figure 65):

“... Shallow concrete vaults cast against a permanent framework of thin bricks set in place without the use of centering. These brick spans served as permanent molds for the shell concrete vaults cast in place on top of them. Tied with transverse steel rods, the vaults bear on continuous concrete beams that extend the length of each house at every floor. These beams in turn transfer the weight to load-bearing brick walls that enclose the houses on every side.”¹⁸²

With the limitation of the space that could be created underneath the vault form, Le Corbusier was compelled to essentially study of the vault bays and their relationship with the human body. Maisons Jaoul could be seen as one of the first projects he associated a *Modulor* system with his design as Le Corbusier made notes on the proportional measurement, “... used to determine the principle dimensions, spans of 3.66 m (12 feet) and 2.26 m (7.4 feet) and a height to the soffit of the vault-carrying lintels of 2.26 m (7.4 feet).”¹⁸³ Here once again the two major notions

¹⁸¹ Ibid., 43.

¹⁸² Kenneth Frampton and Roberto Schezen, *Le Corbusier: architect of the twentieth century* (New York: H.N. Abrams, 2002), 14.153.

¹⁸³ “Modulor,” *Wikipedia*, Wikimedia Foundation, 17 June 2016, Web. 22 June 2016, <https://en.wikipedia.org/wiki/Modulor>. Modulor is an anthropometric scale of proportions devised by Le Corbusier. It was developed as a visual bridge between two incompatible scales, the imperial and the metric system. It is based on the height of a man with his arm raised.

explored by Le Corbusier, on how to be modern and how to be sensitive to the human scale, are implicit in his Modulor system.¹⁸⁴ Furthermore, there was an evidence that Le Corbusier asked the Catalan vault experts to finish the roof. This affirmed his attitude that he truly sought to express the spirit of craftsmanship made from the human refinement process, “the human hand,” rather than relying only on the machine, hence recognizing the human metaphor in his later residential projects. The residential projects from his middle years could thus be explained as the antithesis of those of the twenties. Instead of being an ideal, flat plane, where even the glass line and the facade are on the same level with no projections such as cornice, or mullion, or drip-moulding, these houses were sculptural in their depth and spiritual.

Since starting his continental travels in the 1930s, Le Corbusier was attracted to primitive and vernacular architecture, and continuously expressed his experimentation of space through the utilization of diverse natural materials, such as rough stone, plywood facing, and exposed brick, as seen at the Villa de Mandrots (1931) and at Petite Maison de Weekend in La Celle-Saint-Cloud (1935).¹⁸⁵ Compared to a period of invention in the early 1920s when Le Corbusier laid down many of the principles, types, and elements that would guide his life’s work, the 1930s was a period of transition in which he submitted these earlier architectural discoveries to a rigorous assessment.¹⁸⁶ A decade of mixed fortune gave Le Corbusier an opportunity for both rejection and a modification. When his devices were found lacking, the architect rather chose to found a new one to substitute and prolong his determination. The new architectural and urban inventions

¹⁸⁴ Caroline Maniaque Benton, *Le Corbusier and the Maisons Jaoul*, 51.

¹⁸⁵ Francesco Passanti, “The Skyscrapers of the Ville Contemporaine,” 438-451.

¹⁸⁶ William J R Curtis, *Le Corbusier: ideas and forms*, 117.

he established during his middle years were blended conceptually and formally with the basic grammar Le Corbusier acquired at young age, particularly in regards to primitivism, regionalism, and the vernacular. His work during these years started to have its own individual characteristics and architectural language that reflected the Le Corbusier's internal rules. They also affirmed that even though the modernist architectural society recognized him as a leader of the rationalist machine-age movement, Le Corbusier still did not label himself as an architect of the international style. He constantly affirmed his previous proclamations through the employment of peasant wisdom that addressed the specific place and level of craftsmanship, and created a personal statement of humanism. In James Stirling's article published in *The Architectural Review* (1955), Stirling mentioned, "frequently accused of being 'internationalist,' Le Corbusier was, in fact, the most regional of architects."¹⁸⁷

The combination of the architecture of the 1920s and the experience Le Corbusier learned during the intermediate years can be analyzed as a biological metaphor—an evolving set of species adapting to the demands of a changing environment—as when the brise-soleil was invented to make the principle of the free facade tenable in a hot climate.¹⁸⁸ The 1930s could also be seen as a crucial step for the works yet to come. The surreal paintings and doodle sketches obviously passed their shapes and forms to Ronchamp. The unexecuted facades of the Algiers' tower was the key to the postwar brise-soleil facade at Marseilles and Chandigarh. The key element above all during this intervening period was the architect's concern for environmental adjustment.

¹⁸⁷ Caroline Maniaque Benton, *Le Corbusier and the Maisons Jaoul*, 10.

¹⁸⁸ William J R Curtis, *Le Corbusier: ideas and forms*, 117.

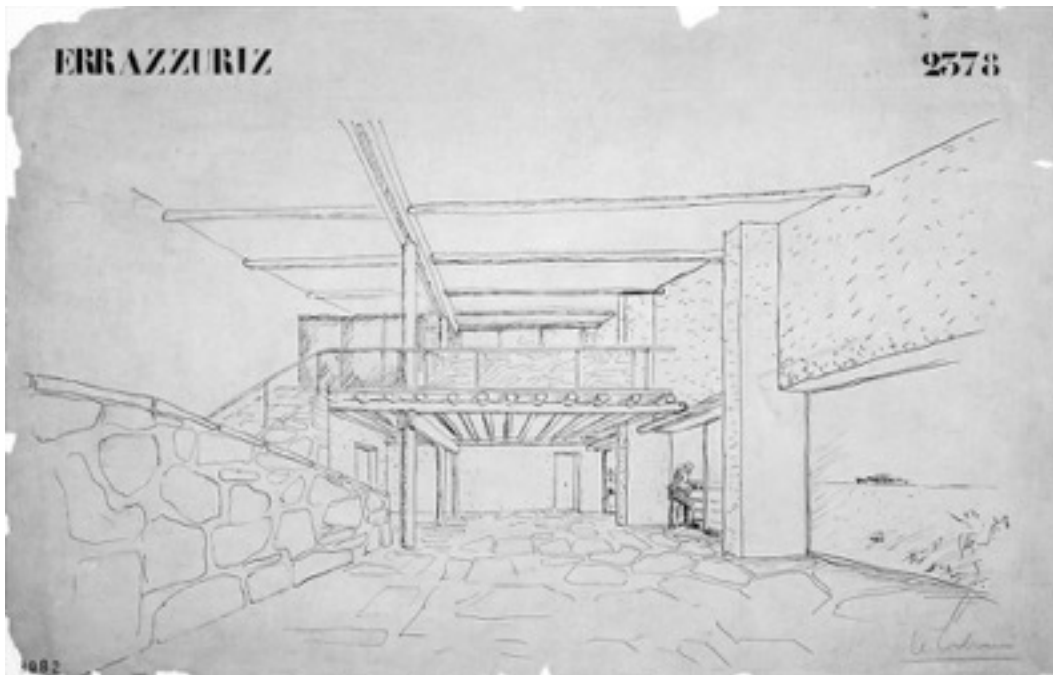
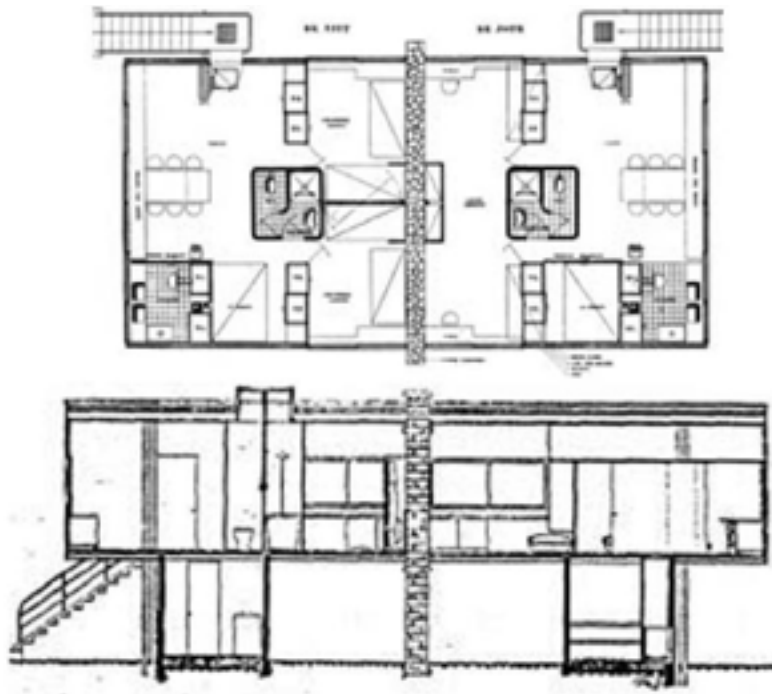


Figure 56 - Le Corbusier, *Maison Loucheur*, 1929: exterior perspective, plan, and section.
Figure 57 - Le Corbusier and Pierre Jeanneret, *Maison Errazuriz*, 1930: model and interior.

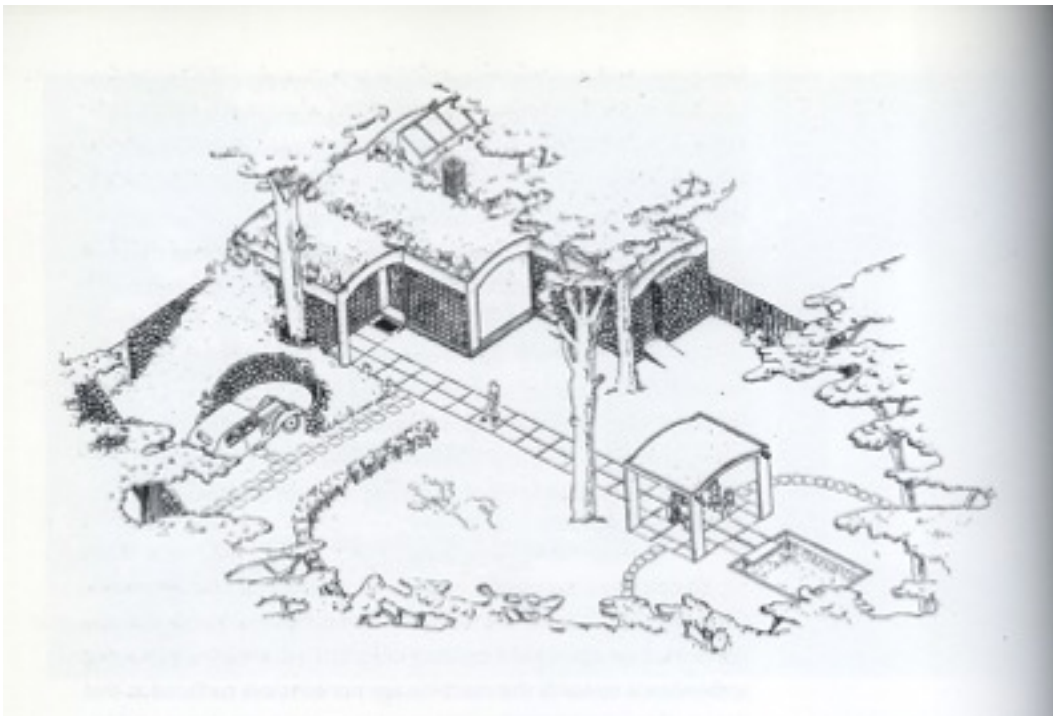


Figure 58 - Le Corbusier and Pierre Jeanneret, *Maison de Week-end*, 1935: interior photograph.
Figure 59 - Le Corbusier and Pierre Jeanneret, *Maison de Week-end*, 1935: exterior perspective.

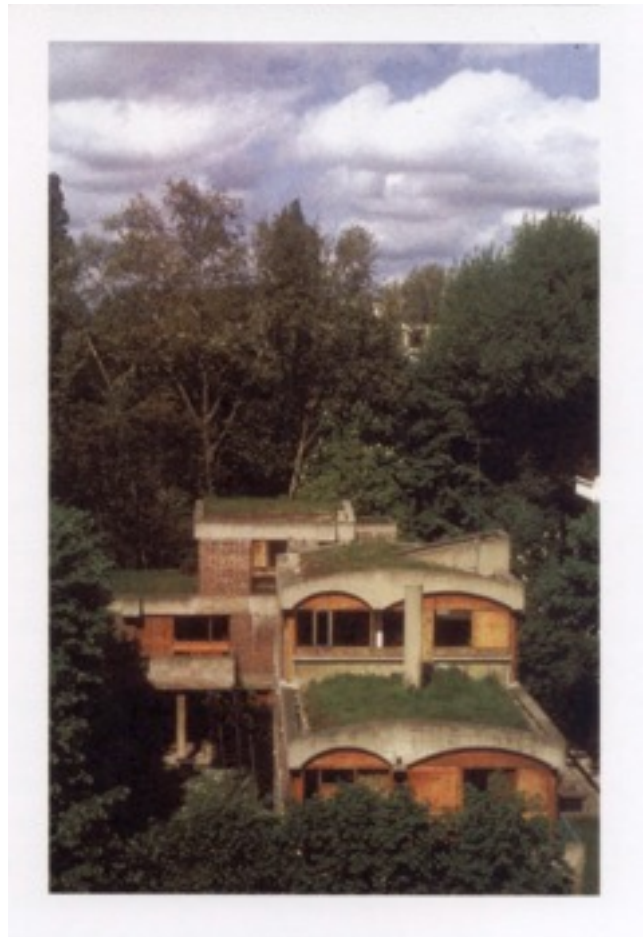
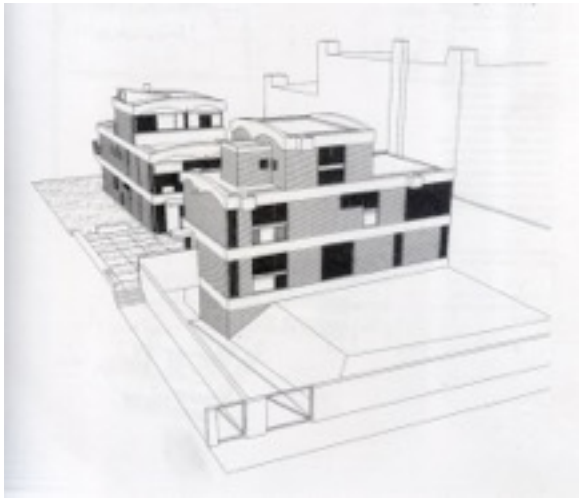


Figure 60 - Le Corbusier, *Maisons Jaoul*, 1951: perspective drawing of the two houses on the lot, as seen from the street.

Figure 61 - Le Corbusier *Maisons Jaoul*, 1951: House A, the large living room.

Figure 62 - Le Corbusier, *Maisons Jaoul*, 1951: bird's-eye-view over the two houses' turf roofs.

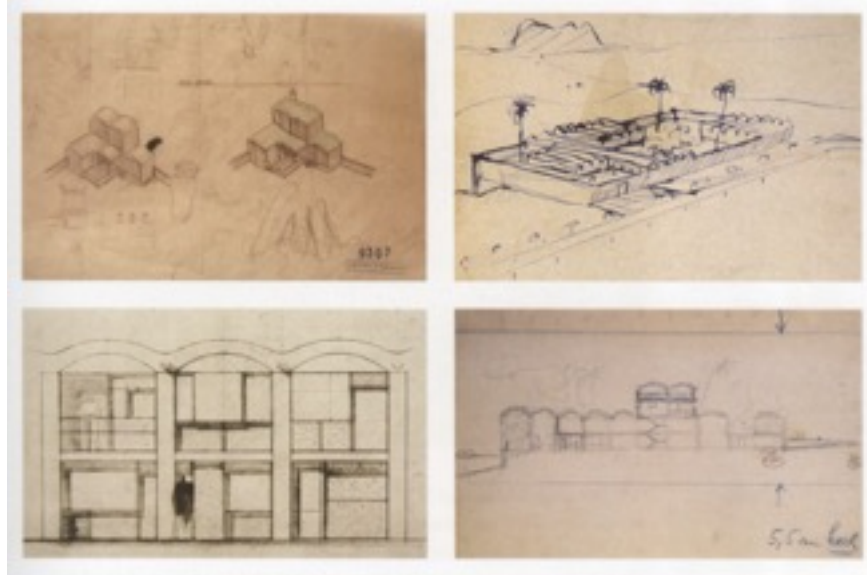


Figure 63 - Le Corbusier, *Maisons Jaoul*, 1951: the railway freight car might also have served as a source of inspiration for the longitudinal arched module in the Maisons Jaoul.



Figure 64 - Le Corbusier, *Maisons Jaoul*, 1951: the chapel in House A, first floor.

Figure 65 - Le Corbusier, *Maisons Jaoul*, 1951: House B, detail of the 'bird-nesting' boxes.

Conclusions

“... I am attracted to a natural order of things. I don't like parties and it is years since I set foot in one. And I have noticed that in my flight from city living I end up in places where society is in the process of organization. I look for primitive men, not for their barbarity but for their wisdom.”¹⁸⁹ - Le Corbusier, *La Ville Radieuse*, 1935

If we divide Le Corbusier's work into two phases; the first with an affection for mass-production (1900-1928) and the second with a new plastic language (1946-1965), then the middle, transitional phase of his career was one where he sought a new solution for the past failures and disappointments that were a product of the problematic circumstances of the interwar period. Due to these historical factors, he attempted to revitalize vernacular culture and integrate it with his fascination with modern technology. He chose to return to primitive constructional methods in the mid-1930s, based upon his experience of craftsmanship since his adolescent years. Le Corbusier's projects and buildings from the 1930s onward can thus be seen as attempting to reconcile the split between modernization and local building culture; be it in Latin America, India, or his beloved Mediterranean. This view is confirmed by Kenneth Frampton who stated that: “In the last twenty years of his life this caused him to embrace a pantheistic spirituality seemingly capable of overcoming the confrontation between traditional cultural form and the relentless onslaught of ever more volatile technology.”¹⁹⁰

By focusing at Le Corbusier's attempts to understand a new tradition, we can better comprehend his appreciation of primitivism, regionalism, and the vernacular during this time. While in his early years he was exposed to these influences they were not fully absorbed into his

¹⁸⁹ Le Corbusier, *The Radiant City: Elements of a Doctrine of Urbanism to Be Used as the Basis of Our Machine-age Civilization*, 6.

¹⁹⁰ Kenneth Frampton, *Le Corbusier*, 7.

work, as in seen in the difference between his early houses and his design of the Villa Savoye (1929). In his middle years, he was able to synthesize these seemingly opposing forces. He produced work like the Maison Loucheur (1929), which was the first residence that combined pre-fabricated housing technology with an appreciation of local craftsmanship he gained from his travels to the Latin countries. The utilization of large stone patterns and barrel vaults represented a departure from Le Corbusier's traditional concept of the facade, for these developments evolved according to the dictates of location, use, and time.¹⁹¹ The urban planning the architect proposed during this period also reflects the integration of his personal interests—based on the socioeconomic forces, institution patterns, and ideology of the 1920s—and the conditions of the land that exhibited both the universal and natural laws.

Hence, Le Corbusier arrived at another step in which he was able to comprehend works that diverged from the normal pattern. At this level, he could deal with complex situations holistically and could make a decision with more confidence. However, even though Le Corbusier had a depth of understanding in his own discipline, it had not fully merged in the outcomes of his architecture. It was still possible to understand the difference between the characteristics Le Corbusier derived from nature and his bold urbanist doctrines that were rooted in Cartesian philosophy. For example, the forms of the megastructure in Algiers' urban plan could be separated in two different categories: one is the bridge built strongly hovering above the entire city detached from the old city fabric and the other is the compound of curvilinear residential apartments embedded on the high hilly site.

¹⁹¹ Stanislaus Von Moos, *Le Corbusier: Elements of a Synthesis*, 96.

It was not until the 1950s that Le Corbusier became an expert in harmonizing his machine aesthetic with natural elements. The evolution of Le Corbusier's works could be indicated from the progression in his residential designs, in particular, with Maisons Jaoul (1956) that marked the arrival of his mature works. The designer had constantly integrated the conventional roofs such as higher-pitched roof, undulating mono roof, mono-pitched roof, and barrel vault in his luxurious domestic designs. Jencks stressed Le Corbusier's series of residential models that were opposite to the large urban planning commissions the architect received during the 1950s,

A series of primitivist buildings are generated from this first lesson in regionalism - the 'female' Maisons Monol with their flat Catalan vaults, the Weekend House of 1935 with its thick turf roof, and the Maisons Jaoul in Paris designed at the same time as the Sarabhai House, also with heavy brick vaults and tiles. Shallow vaults, held by walls and piers, generate an interesting grammar quite opposite that of the Citrohan House. In effect, these solutions are all variations on a set of fundamentalist themes of going back to nature and building with handcrafts. It is the greenery, concrete forms, and voids that dominate.¹⁹²

Hence, Primitivism, Regionalism, and the Vernacular were already underlined in all Le Corbusier's work, although sometimes they were suppressed by other more dominant concerns. As this thesis has argued, rather than see this as a product of a lack of expertise, that expertise was just waiting for the right time and place to be introduced. Another architectural tool that supported Le Corbusier's use of vernacular wisdom to respond to the modern environment is his design of *briel-soleil*. The sunshade performs in reaction to the sun and wind, and the size of a room. It was pulled away from the facade, standing as an independent structure, to create an experience of architectural pleasure. Therefore, by the second phase of Le Corbusier's career, he reached the level at which he could apply authoritative knowledge of his own discipline and

¹⁹² Charles Jencks, *Le Corbusier and the Continual Revolution in Architecture*, 307-308.

obtain a deep understanding by skillful hybridizing vernacular culture with his modernist doctrines of architecture. Le Corbusier's projects of the 1950s onward, such as, the city planning for Chandigarh, La Tourette, and the Chapel of Notre Dame du Haut at Ronchamp, explicitly clarified that the architect could successfully combine traditional wisdom with new technology.

Secondly, this thesis generated an argument regarding the relationship between a vernacular selection process and the establishment of modern architecture, especially during the post-World War II era. Accordingly, it can be argued that Le Corbusier paid close attention to the vernacular production of region since his young age. However, in order to determine whether his architecture could be called "vernacular" it must not only be considered under the term vernacular architecture. In this movement away from a literal understanding of the term we reach a point where one no longer speaks of a vernacular architecture, but one still recognizes something indigenous to the place, and an underlying "vernacular usage."¹⁹³

The memories of vernacular architecture according to Stanford Anderson's *The Vernacular, Memory, and Architecture* article were categorized into two major subjects. The first was the architecture that built on *social memory*, referring to the architecture that people in society remember through its external forms and shapes and is able to connect them to one common specific function, such as in churches and cathedrals. The second is the architecture that is constructed based on *disciplinary memory*. This term was assigned to the architecture that produced memory from actions or operations occurring within its space. In this case, the people might not notice the shapes or forms of the architecture, although they recognize it from the activities it provides inside. As a result, the architecture approached an autonomous state, which

¹⁹³ Stanford Anderson, "The Vernacular, Memory, and Architecture," 161.

could be built with a radical innovation in scale, organization, and meaning. Moreover, Anderson also pointed out that, “if there was a condition under which social and disciplinary memory are not separated, that would be in vernacular architecture.”¹⁹⁴ To summarize, in various societies, where each community was able to generate their own type of vernacular, the outcome would proceed differently, ranging from being vernacular due to its form to being vernacular because of its function.

When considering Le Corbusier’s process of modern design, the production of his understanding of vernacular did not transfer the vernacular meaning through its existing form, although it did so via its social processes—found in the people and their relations to the artifacts.¹⁹⁵ Le Corbusier’s architecture thus fell into a category of *disciplinary-memory* or a more *self-consciously conceived* architecture. The characteristics of the architecture of the 1920s relative to Le Corbusier’s lifetime achievement—the white-washed, cubical, uplifted masses with ribbon windows—concealed the truth of its vernacular nature. Because the audiences often perceived modern architecture only through its external appearance separate from experiencing the internal space, the shape and form had blinded them to only obtain the vocabulary the architect set up as a shell, instead of acknowledging the increased access to vast amounts of light, air, and space or the vernacular quality. However, when looking closely at this purist form and pairing it with the architectural vernacular form of the classical, one would see the similarities between Le Corbusier’s pilotis and the columns of the Greek Parthenon (as he displayed in *Toward a New Architecture*). The functions and characteristics of both columns are similar in

¹⁹⁴ Ibid.

¹⁹⁵ Ibid., 170.

their representation. They both communicate and reflect the vernacular of places and the environmental presences of Athen and Paris. In Le Corbusier's own modern and Western setting, he sought the "found elements" of everyday life, not those received for aesthetic purposes. Since those times and places are recognized to possess a vernacular tradition, hence this was a search for "forms not chosen but received."¹⁹⁶ Therefore, to understand modernist architecture through a primitivist, regionalist, and vernacular perspective, the form of modern architecture itself needs to truly comprehend both the cultural and physical idea of the modern.

Thirdly, in regard to the ideologies Le Corbusier cultivated from his modernist architectural characteristics, we can infer that the stereotyped character of his first-phase received a major influence from his intense study of many philosophers; from John Ruskin, Eugene Glasset, Charles Blanc, and Owen Jones, to Hermann Muthesius and Adolf Loos. Additional influences came from associations and conversations with his artist friends such as Amedee Ozenfant and Fernand Leger. Even though a form of his modern architecture was understood to have emerged from the essence of Purism, Le Corbusier's modernist spirit actually derived from *sachlichkeit* or factualness, an ideology that was defined by a predilection for functional work, professional conscientiousness, and usefulness.¹⁹⁷ Therefore, a selection process for composing a modernist architecture was indifferent to the course of development for shaping vernacular architecture—which was transformed through time.

Le Corbusier's architectural works were built according to a definition of *sachlich*—factual, to the point, pertinent in nature—and were thus individually constructed in relation to

¹⁹⁶ Ibid.

¹⁹⁷ Stephanie Barron and Sabine M. Eckmann, *New objectivity: modern German art in the Weimar Republic, 1919-1933* (Los Angeles: Los Angeles County Museum of Art 2015).

their specific site surroundings, not more generally. The intention of the architect was to create a universal solution, yet not a placeless architecture. However, due to the failure of the architecture of his first-phase—which could not be a representative of the current political situations - and the inconsistent standardization of the construction technology—which would not allow him to accomplish his mass-production method—the style of this modernism was disregarded by the broader society and later by himself. Le Corbusier therefore searched for a new approach that would permit his architectural ideals to become real and more tangible. The result came out in his architectural projects beginning from the 1930s onward, in which he tried to incorporate primitive wisdom along with regional culture in every design.

For example, he adopted a primitive masonry wall to become the main structure in his first pre-fabricated affordable house - *Maison Loucheur* in 1929 - and utilized large stone blocks, carved tree trunks and rustic roofing tiles in response to the remote site conditions of *Maison Errazuriz* in 1930. The shift in Le Corbusier's employment of materials and construction techniques certainly confirm that he had adjusted his means and methodology to meet the environmental conditions—while at the same time, meeting the unavoidable social requirements. Both the external forces and the internal forces encouraged Le Corbusier to pay attention to another set of issues in his architectural design and urban planning—to consider humanism and the human management system. Le Corbusier thus demonstrated his architecture and planning ideals based on these concerning factors—the vernacular and humanism—in his projects from the 1950s to 1960s. The most explicit example of this approach is his city planing for the Punjab state capital, Chandigarh, which was completed in 1965.

From the large-scaled master plan to the smallest details, Chandigarh's design, was shaped by Le Corbusier's integration of vernacular methods in every inch of the city plan. When compared to his urban plans from the 1920s, the architect developed his approach from believing in the radiocentric model to linear planning. Hence, in Chandigarh, instead of having a garden wrapping around the core of the city, has linear strips of garden running through every block. In its architectural aspects, you can see the development of its architectural form, from a cubist block with ribbon windows to a curvilinear-gestured form that resembles the human body. In their detail, the brise-soleil or sun breaker was created to respond to the heat and sunlight during various times of the day. In this final phase of his architectural evolution, Le Corbusier reached the point where he could transform the use of concrete—from only responding to the building function, to including its aesthetic and poetic comprehension. According to Francesco Passanti in his essay "The Vernacular, Modernism, and Le Corbusier,"

He had begun within a movement seeking to invent a regionalist style; and he had ended by arguing, with Loos and Muthesius, that modern culture is best described by the work of those anonymous people, notably engineers, who do not try to invent a new aesthetic. This conclusion created a problem for somebody like Le Corbusier, who saw himself as a creative artist: what was his contribution going to be?¹⁹⁸

His works in the 1950s and 1960s could be the best answer to this question, since it joined the function and construction techniques, together with the aesthetic purpose that was meaningful to the architectural culture of the time. Le Corbusier had reached the point where he could further integrate his initial regionalist concept with the contemporary architectural technology. Here, his art is achieved by focusing not on the relationships of form, but rather by concentrating on the relationships of meaning. By investigating Le Corbusier's middle years, it was certainly different

¹⁹⁸ Francesco Passanti, "The Vernacular, Modernism, and Le Corbusier," 447.

from examining the architecture he produced during the two phases that represent the peak moments of his career. It allows us not only to understand the relationship between modern architecture and the vernacular, but also to understand the value of those periods that lie in between the high points of achievement in architecture. The study allows one to see the hidden aspects that are not apparent during the more advanced moments.

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