



REPUBLIC OF TÜRKİYE
ALTINBAŞ UNIVERSITY
Institute of Graduate Studies
Department of Architecture

**A COMPREHENSIVE ANALYSIS OF
LE CORBUSIER'S ARCHITECTURAL
PROJECTS AND BOOKS**

Melisa FARİD

Master's Thesis

Supervisor

Asst. Prof. Dr. Deniz ÇETİN

İstanbul, 2025

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2025

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I hereby declare that all information/data presented in this graduation project has been obtained in full accordance with academic rules and ethical conduct. I also declare all unoriginal materials and conclusions have been cited in the text and all references mentioned in the Reference List have been cited in the text, and vice versa as required by the abovementioned rules and conduct.

Melisa FARÍD

Signature



DEDICATION

To my family, whose unwavering love and support have been my foundation throughout this journey. You have been my pillars, offering encouragement in times of doubt, patience through every late night, and a constant reminder of the purpose behind this work. Your faith in me has been a source of strength, driving me to push past every challenge with resilience. I am grateful for every moment of joy and sacrifice you've shared to help me reach this milestone.

To Professor Deniz Çetin, a mentor who has profoundly shaped my academic path. Your guidance, insightful critiques, and dedication to fostering intellectual curiosity have been indispensable. You've instilled in me a deep commitment to learning and an appreciation for the beauty of knowledge. Thank you for the inspiration, patience, and invaluable lessons that have gone far beyond the pages of this thesis. This work reflects the impact of your mentorship and encouragement, which have left a lasting mark on my academic journey and personal growth.

With immense gratitude and modesty.

ABSTRACT

A COMPREHENSIVE ANALYSIS OF LE CORBUSIER’S ARCHITECTURAL PROJECTS AND BOOKS

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Date: January/2025

Pages: 135

Le Corbusier left an indelible mark on architecture through his innovative designs and theoretical writings. With a comprehensive evaluation of his intellectual legacy and architectural contributions, this study aims to evaluate multifaceted relationships between Le Corbusier’s published works and architectural projects. The thesis seeks to assess Le Corbusier’s design principles, classification of works, and productivity throughout his life, divided into the early, middle, and late stages. The thesis seeks to provide an in-depth understanding of Le Corbusier's ideas and their physical manifestation in architecture by exploring his primary sources and analyzing his architectural projects. The research aims to go beyond a simple celebration of Le Corbusier's contributions by exploring the controversies and critiques of his works.

Keywords: Le Corbusier, Architectural Projects, Architectural Publications, Architectural Theories, Modern Architecture.

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ABBREVIATIONS

CIAM : The International Congress of Modern Architecture

CIRPAC : The International Committee for the Recognition of Contemporary Architectural



1. INTRODUCTION

Le Corbusier's influence and significance in the realms of modern architecture and art cannot be overestimated. Le Corbusier's immense contributions were reflected in various sectors, leaving a lasting impact on 20th-century architectural design. Le Corbusier highlighted his innovative concepts and experimental designs through a multitude of extraordinary building projects he undertook. While his architectural accomplishments are undeniably vast, it is crucial to explore deeper into the essential advancements in his architectural style and philosophy. Le Corbusier's architectural legacy encompasses a rich tapestry of ideas, with each structure exemplifying his extremely organized mindfulness and commitment to creating human well-being and social progress (Zaknic et al., 1911:13). In addition, Le Corbusier's influence extends far beyond physical structures through his ingenious design of urban development projects. He demonstrated his profound political beliefs and sought to redefine the way we inhabit and interact with our built environment. In his manifesto book *Towards a New Architecture*, Le Corbusier claims that "the home should be the treasure chest of living" (Le Corbusier, 1986: 5). His innovative concepts questioned conventional urban development practices, highlighting the significance of placing human needs above commercial priorities. For instance, the Radiant City concept exemplifies his advocacy for urban planning and social reform. Le Corbusier strongly advocated for modern life as it is the right that every man must possess. He states that "modern life demands, and is waiting for, a new kind of plan, both for the house and the city" (Le Corbusier, 1987:95). Furthermore, the written works of Le Corbusier play an essential role in recognizing his intellectual depth and creative process. His published books shaped the manifesto's theories. Within these books, Le Corbusier articulated his belief in the transformative power of architecture to shape society and improve the lives of its inhabitants (Steyn, 2010: 16).

The published works not only provide invaluable insights into his design principles but also serve as a source of inspiration for future generations of architects, encouraging them to push the boundaries of their craft and approach spatial design from a holistic perspective. His role in art was equally significant, as he made valuable contributions as a painter, architect, and writer. Le Corbusier, in his book *The Decorative Art of Today*, describes the function of art as "the purpose of art is to make the spectator see the world as a whole, to make him understand how everything fits together, and to make him realize his place in the whole" (Le

Corbusier, 1987: 125). Additionally, he argues that “art in its highest form has the power to reshape society, construct new realities, and give new meanings to life” (Le Corbusier, 1960: 67). His profound influence continues to shape the fields of architecture and art, inspiring countless individuals to pursue innovative and holistic approaches to design. Le Corbusier’s work on architecture was extensive, with major developments in his architectural style and philosophy, reflected in his work across various building projects (Rabaça, 2015: 4).

Le Corbusier produced 77 architectural projects, encompassing a wide range of functions, including private residences, housing complexes, industrial facilities, and cultural institutions. Additionally, he authored around 50 books, which offer a detailed account of his ideas and work (see Appendix A.1 and 2 for the complete list of books and projects). The integration between theory and practice can be completely observed through the projects and books. The books and projects reflect a unique synthesis of theory and practice, each enhancing the understanding of the other. His books, such as *The Athens Charter* and *The Modulor*, outline innovative theories that challenge traditional design conventions. Implementing these theories in his projects like the Unité d'Habitation and Villa Savoye Le Corbusier created a physical framework through which he tested and refined his ideas. Studying both aspects together highlights how he used architecture to advocate for a new aesthetic and social vision, emphasizing human proportions, and functionality for enhancing daily life. This approach provides insight into how his ideals shifted and adapted in response to architectural challenges, making it essential to evaluate his projects alongside his writings to gain a complete picture of his contributions.

Moreover, by evaluating his projects in conjunction with his books, it becomes evident how Le Corbusier used architecture as a tool for social change. Understanding this connection offers valuable insight into how his philosophies were translated into architectural realities. Besides, evaluating his books and projects provides immanence and a complete lens about his life and his productivity that displays how much effort he offered to shape modern architecture through his work. To sum up, investigating his theoretical works and books alongside his projects provides an examination of the consistency, effectiveness, and innovation in his approaches. Besides, the evaluation clarifies how his architectural works have evolved through his foundational concepts.

1.1 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The complexity of his contributions to architectural theory and practice has led to varied interpretations. While his innovative principles are widely recognized, less attention has been given to the interplay between the principles he imitated early in his career, and the innovative principles he later developed. Furthermore, the relationship between his extensive works of books and architectural projects is often discussed in general terms without systematic evaluation. There is also limited analysis of how his productivity over time influenced the evolution of his architectural and theoretical outputs. This raises the question in what ways does a comprehensive analysis of Le Corbusier's books and architectural projects contribute to our understanding? And what are the connections between his architectural projects and books? Thus, the problem statement centers on the need for a comprehensive evaluation that addresses the various aspects of Le Corbusier's legacy and how his productivity evolved throughout his career.

1.2 PURPOSE AND SCOPE OF THE THESIS

The thesis focuses on evaluating Le Corbusier's books, architectural projects, and theories. The scope is limited to Le Corbusier's lifetime to understand his works' significance and evolution. The study is structured around four primary areas of analysis:

- a. The project classification section is based on organizing his projects according to functional categories, such as residential, religious, and industrial.
- b. The productivity section is based on analyzing books and projects chronologically to comprehend productivity trends and variations in production.
- c. Imitative and innovative principles by identifying early influences, such as Art Nouveau, and tracing how these were transformed into architectural innovations such as Modular systems.
- d. Interaction between books and projects through exploring the dynamic relationship between his books and architectural designs.

By addressing these dimensions, the thesis provides a systematic understanding of Le Corbusier's theoretical and practical contributions, offering insights into his role in shaping 20th-century architecture.

Accordingly, the main purpose of the thesis is to evaluate the architectural works of Le Corbusier from a more objective, cross-referenced perspective, besides the critical viewpoint on his key works and principles. By breaking down with deep evaluation the thesis would bring a greater understanding of what Le Corbusier was trying to achieve.

1.3 METHODOLOGY

The thesis employs qualitative research as its primary methodology, emphasizing the interpretative analysis of Le Corbusier's books and architectural projects along with the criticism related to his works.

The projects and books are found through Corbusier's Foundation, and the figures are made as a qualitative methodology. Through the figures produced by the author, the study tries to understand productivity, the density of the projects, and interactions between books and projects. By categorizing and evaluating his books and projects through graphics, the research gained data that answered the questions. This approach ensures that the analysis is not only systematic but also specific to the complex characteristics of Le Corbusier's contributions.

Eventually, the structure of the thesis is based on dividing his life into three distinct periods as chapters. The first chapter will start with the introduction. The second chapter includes the early period (1887–1919), the third chapter consists of the middle period (1920-1942), and the fourth chapter involves the late period (1943–1965) (Figure 1.1). Each chapter is characterized by alterations of the principles, and philosophies focusing on key works and theoretical contributions divided into sections. The second chapter of the Early Period is divided into three sections. In the first section of his early life (1887-1905), the research will focus on his initial education, the influence of his teacher L'. Eplatténier, the imitation principles, and his transformation from art to architecture. The second section includes Le Corbusier's initial projects and trips that shaped his architectural philosophy. The third section of the early period illustrates his books, initial innovation principles, and theories.

The third chapter, Middle Period, is divided into two sections. The first section includes the architecture projects. The second section continues with the innovation principles, books, and CIAM Congresses. The fourth chapter of the Late Period encompasses three sections. The first section continues with books and integration innovation theories. The second section includes the late projects and trips while the third section includes post-death books. In the fifth chapter, the research will focus on the Evaluation of Le Corbusier's works, the chapter includes two key subjects. The first will concentrate on the assessment of his books and projects through four areas, project classifications, productivity, imitative and innovative principles, and interactions. The second subject is the Criticism towards Le Corbusier's works. Chapter six includes the conclusion.



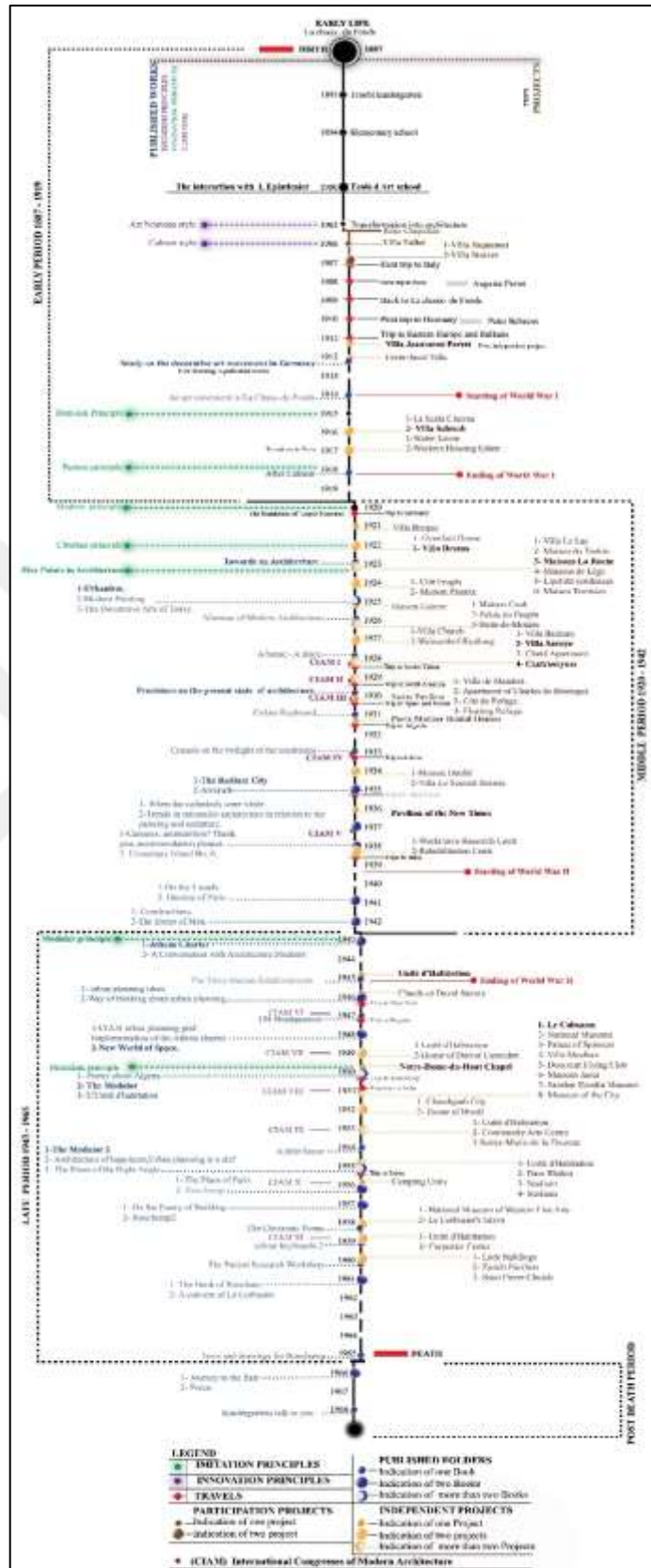


Figure 1.1: Le Corbusier's Early, Middle, and Late Periods (1887-1968) (Produced by the Author).

2. EARLY PERIOD OF LE CORBUSIER'S WORKS 1887-1919

The early period of Le Corbusier is divided into three sections: first, his early education in art, the influence of his teacher Charles L'. Eplattenier, and early exposure to architecture; second, his first participation and independent projects and initial trips; third, his books and theoretical works.

2.1 1887-1905: CHILDHOOD AND EARLY EDUCATION

Section one of the early period starts from 1887 to 1905 (Figure 2.1). Jeanneret the future Le Corbusier was born as Charles-Édouard Jeanneret-Gris on October 6, 1887, in the Jura highlands, in the Swiss watchmaking town of La Chaux-de-Fonds (Van Moos, 1979: 1).

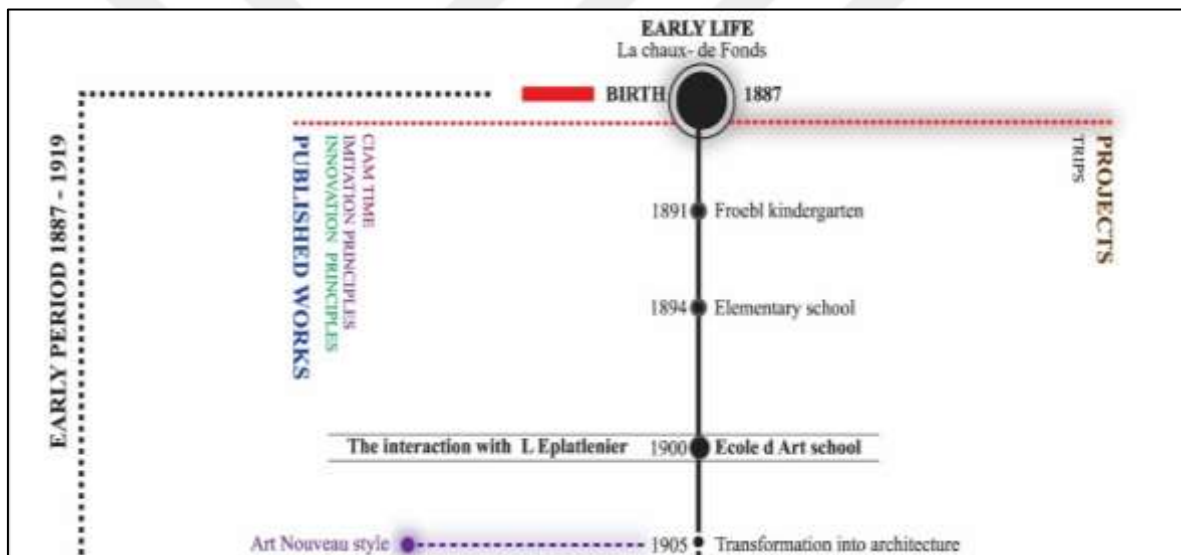


Figure 2.1: Early Period of Le Corbusier (1887-1905) (Produced by the Author).

La Chaux-du-Fonds is a small town in the northwest of Switzerland, situated between two ridges of the Jura, not far from the French border (Baker, 1996: 16). The Sapin tree was the most notable element of the landscape in La Chaux-de-Fonds. The Le Sapin is a French term for representing the tall, straight, and symmetrical pine trees. The houses in high Jura are recognized for their broad, low-pitched roofs located one story above the floor. The culture of Le Corbusier was greatly impacted by the landscape of Jura, especially the Sapin tree. For instance, Le Sapin's style was obviously in Jeanneret's paintings and his early participation projects (which will be discussed further in section 2 of this chapter). In addition, La Chaux-

de-Fonds is known for its watchmaking industry, and both Jeanneret's father and grandparents worked as watch-face enamellers (Blake, 1968: 13).

Jeanneret's family was well-established and involved in the town's activities; they were also deeply connected and loving. His father, Georges Edouard Jeanneret-Gris (1855-1926), was the long-time president of the local Alpine Club, and his mother was Marie-Charlotte-Amélie Perret (1860-1960) a piano instructor and musician, while the older brother Albert was born in 1886, just over a year before his Jeanneret was born (Lowman, 1981: 18). His family's Calvinism, affection for the arts, and passion for the Jura Mountains, where his family departed during the Albigensian Wars of the 12th century, all had an early influence on the young Jeanneret (Samuel, 2007: 20).

Jeanneret was sent to the local art school with the intention of training as an engraver and pursuing a career in the creative decoration of watch cases (Brooks, 1999: 10). Jeanneret and his elder brother Albert seemed to have a pleasant childhood (Figure 2.2). The older brother Albert was so talented academically, particularly in music despite, Jeanneret lacking academic abilities, he showed astonishing artistic ability as a child (Lowman, 1981: 20-22). In addition, Jeanneret was quiet and kind, but he was a rebellious and stubborn child. According to Brooks the excerpt from his father's journal proves that "Jeanneret is the black sheep of the family, he is typically a well-behaved and intelligent child. However, his character is challenging, as he is susceptible and stubborn, sometimes he provides us with a reason for worry" (1999: 12).



Figure 2.2: Jeanneret's Family (left), Jeanneret and his Brother (Right) (Brooks, 1999: 10).

At the age of three years and eleven months, Jeanneret started kindergarten on August 31, 1891, at Miss Colin's using the Froebel method of instruction. Froebel's method adopted its foundations from the theories of Friedrich Wilhelm August Froebel, a German educator from the early 1800s. Froebel had created unique wooden balls and bricks, along with activities that were meant to promote fun and practical material understanding (Weberp, 2009: 70). Jeanneret stayed at the kindergarten until 1894. He moved to a public school in the second year (1894-1895). He scored first in his class of 44 boys and consistently achieved first, second, or third in the class throughout primary school. After that, Jeanneret spent three years in post-primary school, during this period his education level had a dramatic change (Brooks, 1999: 21).

On April 25, 1899, at thirteen years old, Jeanneret joined the Ecole d'Art which focused on decorative arts. The institution was established to provide training for engravers with a focus on watch decorating. The students were encouraged to hone their craftsmanship skills while also nurturing a passion for ideas and intellectual pursuits. This creative environment was largely shaped by the school's new director, L'. Eplattienier. He observed that opening more fields was necessary for the school to continue operating. Thereby, more modern fields and strategies were opened and operated at the Ecole d'Art when L'. Eplattienier became the director of the school. Jeanneret started to take courses in design and engraver of watch cases while he was in secondary school. Therefore, two years after taking his first art course, Jeanneret became a full-time student at the school. At fifteen, he completely left the secondary school. During this year Jeanneret paid a huge attention to music. Besides, Jeanneret studied engraving, design, and creative sketching in Art Nouveau style for sixty hours a week, claiming he wanted to follow in his father's footsteps as a watchcase designer and engraver (Cohen, 2004: 7).

To sum up, since infancy, the father was so careful about making the children discover the nature around them by going out for extensive walks, which had a significant impact on Jeanneret's artistic ability integration. Moreover, Jeanneret mentioned that as well later in his publications "My father used to take us on walks up mountains and through valleys when we were little" (Le Corbusier, 1968: 96-97). This encouraged Jeanneret to highlight his greatest admiration, which is the variety of contradictions and extraordinary diversity of things in addition to the unity of natural laws.

2.1.1 Influence of Charles L'. Eplattenier

By 1902, the first artwork of Jeanneret was, an engraved watch, he received a prize at the age of fifteen, and it was partially made up of geometrical. The essential person guiding him through his design journey was Charles L'. Eplattenier was a fresh face in the world of interior design and mural painting (Frampton, 2001:10). In 1874, his life began in a small village between La Chaux-de-Fonds and Neuchâtel. He proceeded to the Ecole des Arts Décoratifs and later the Ecole des Beaux-Arts in Paris to study painting, sculpture, and architecture. Teaching both the technical precision and the aesthetic attractions of trees, plants, and the wider landscape as potential models of all creativity. Besides, he opened the eyes of those in the Swiss watchmaking business to the deeper layers of existence beyond what is immediately visible (Lowman, 1981: 24).

Charles L'. Eplattenier was considered a spiritual father for many students, he opened their eyes to see the objects from a different perspective. He taught his students about how architecture holds deep symbolic meaning and emphasized the responsibility that artists have towards society as well (Roth, 2018: 578). L'. Eplattenier intended to create a decorative aesthetic that would be specially, presented to the Jura. He illustrated his points using examples drawn from ancient art. He believed that there had been three fundamental and permanent architectural periods: Gothic, with its flowers, animals, and chimera, Greek, with its acanthus, and Egyptian, with lotus leaf (Von Moos, 1979: 17). Moreover, L'. Eplattenier encouraged his students to design buildings from their inception with consideration to the law of nature as well. Jeanneret had learned so much from his spiritual father; he was interested in some books that L'. Eplattenier had put in the art school library one of the books was *The Grammar of Ornament, a Historical Anthology of Decorative Design Motifs* by the Englishman Owen Jones in 1856 (Brooks, 1999: 27). The book influenced Jeanneret to start to examine and conduct studies on nature. Therefore, the character of his drawing was based sometimes on lyrical drawings of natural forms conceived as ornaments, and sometimes on rhythmical repetitions and transformations of one subject, while others were analytical sketches with identifications and cross sections (Frampton, 2001: 10).

Jeanneret realized that his future would be shaped by his teacher L'. Eplattenier. He presented all his appreciation and respect to his teacher who opened his mind and eyes to see what was hidden in the natural.

2.1.2 Art Nouveau: Imitative Principle

Between 1900 and 1910, Europe and the United States witnessed the emergence of the Art Nouveau movement, a worldwide movement in applied arts, including decorative arts and architecture. It was most frequently used in jewelry, posters, architecture, interior design, and art. With L'. Eplattenier the La Chaux-de-Fonds was destined to become the primary center of Art Nouveau design in Switzerland (Turner, 1971: 215). After 1900, ornamentation had taken center stage in almost every field of design, including building. It gave designers the freedom to reject what they saw as the constrictive legacy of historical designs and allowed them to approach new building methods (Von Moos, 1979: 19).

During the nineties, the character of Jeanneret was reshaped and affected so deeply by L'. Eplattenier and Owen Jones's book starting from the Art Nouveau principle followed to his future career.

Jeanneret stayed five years at the Ecole d'Art. Three years plus one term in the regular program followed by two years in the Cours Supérieur under L'. Eplattenier's direction, throughout this period his artistic development can be followed with precision, beginning in his first year of 1902- 1903 with exercises that encouraged general observation. By the second year, Jeanneret was more carefully recording nature, not with photographic realism but rather abstracting and conventionalizing its most characteristic forms (Jencks, 1948: 17).

Simultaneously the curving, unbroken line of the contemporary Art Nouveau becomes increasingly apparent in his work. By the third year, Art Nouveau thoroughly dominated his designs, during his fourth year of art school he shifted from engraving to the full-time study of architecture. Therefore, the most comprehensive understanding of L'. Eplattenier's educational goals were found in a few of Jeanneret's early works. As the symbolic representatives of the Jura forests, pine trees were mixed into ornamental designs (Brooks, 1999: 27). Conversely, a few of them are undeniably similar to the magnificent colour pictures found in the book *Grammar of Ornaments* by Owen Jones (Figure 2.3). These investigations examine a formal realm where nature and mathematics come together. To elaborate further, Jeanneret examined the tree in detail from several angles. He drew it in its landscape context using a technique of the founder of Art Nouveau Eugène Grasset's works, then simplified it to simple, primitive shapes to function as design elements that could be

repeated horizontally as well as vertically. Additionally, he investigated the fundamentals of root structure, examined development patterns, and examined shapes in sections, elevation, and plan (Jencks, 1987: 20).

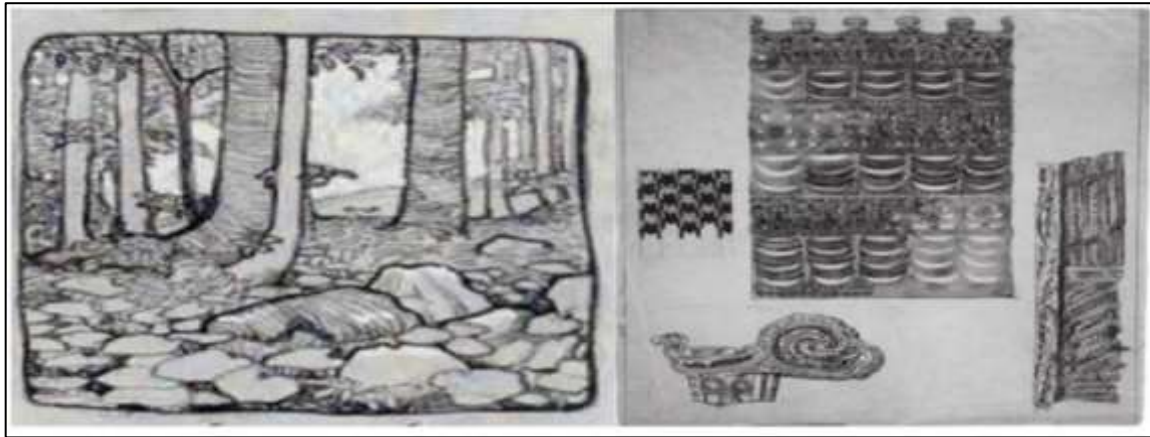


Figure 2.3: Trees and Rocks (Left), and his Works after the Effect by Jones (Right) (Von Moos, 1979: 19-24).

He even took into consideration the clear architectural connections of the tree from his designs, with branches creating openings and plates, roots acting as pilot, which means masses of greenery defining the forms of holes, and roots forming the bases of window framing components see (Figure 2.4).

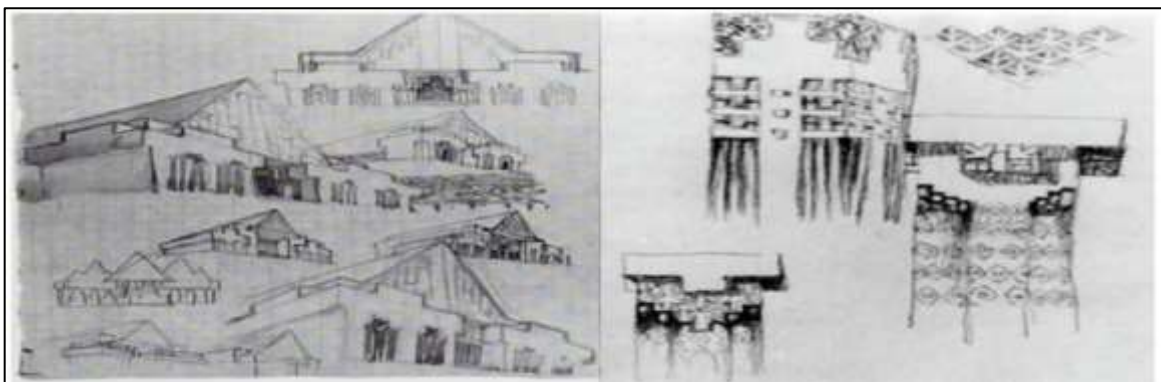


Figure 2.4: The Analysis of a Pine Tree (Left), and the Architectural Elements (Right) (Brooks, 1999: 109).

2.1.3 Transformation to Architecture

Jeanneret's early education focused more on arts and crafts, which may have made him feel less prepared for the challenges of architecture. Besides, he discovered his passion and talent

in various faces of art with the confirmation of his teachers, especially L'. Eplatténier (Cohen, 2004: 50).

Jeanneret intended to be an artist since he appreciated the freedom and the spaces that painting and other forms of visual art offered. Jeanneret was looking to architecture as a high-profile and difficult profession that requires an intimate knowledge of both engineering and art. Furthermore, he thought that architecture, with its limitations and technical requirements, emerged to leave less room for personal expression. The responsibility of designing buildings for future generations to inhabit, as well as the technical knowledge required by unskilled persons at this stage of his life, may have terrified him (Loach, 1998: 45).

He doubted his skills and potential as an architect and wasn't sure if he had the talent or ability to be successful in such a demanding and competitive field. His early studies of decorative arts reflected his enthusiasm.

L'. Eplatténier emphasized and recognized something different in Jeanneret's talent for art and how this can serve in architecture direction which is why he wanted Jeanneret to shift his passion into architecture. In a way of changing Jeanneret's perspective about architecture. L'. Eplatténier started to pursue and push him to learn architecture from an art perspective. Therefore, there was a copy of the book *Grammaire des arts du dessin* by Charles Blanc at the library of art school that already captivated Jeanneret. The book promises great things ahead in the future and indicates an overview of history as well. Blanc argued firmly against the idea that an architect is only a decorator of an engineer's designs, claiming that architecture is the foundation of all the arts. Blanc explained that the architecture of the future would come from new techniques of construction and would be based on a comprehensive knowledge of the historical structures of the past, which had been rediscovered in the nineteenth century (Von Moos, 1979: 21).

Jeanneret recollected that about his fear of architecture: “I had a horror of architecture and architects.” with the insistence of his teacher saying, “You will be an architect”, Jeanneret clarified that “I accepted the result, and I obeyed; I committed myself to architecture” (Von Moos, 1979: 28).

L'. Eplattenier understood that Jeanneret had a deep interest in the form, structure, and details of objects, he encouraged and gave Jeanneret the confidence and motivation to explore architecture to create his artistic vision to be more tangible. That was obvious when he convinced Louis Fallet who was a fabricator jeweler and a member of the school board to commission Jeanneret to construct his villa (Brooks, 1999: 71).

In 1905, as part of the school's unconventional art education method, L'. Eplattenier provided an architectural design project to the seventeen-year-old Jeanneret. L'. Eplattenier contacted his friend René Chapallaz, one of Jeanneret's teachers in the Art School who greatly influenced Jeanneret's earliest projects. L'. Eplattenier asked Chapallaz to help Jeanneret in the design of a small house. Chapallaz offered Jeanneret the assistance that he needed (Turner, 1971: 224).

That was the first mission and first step for Jeanneret to be an architect. Jeanneret's perspective of his future career merely changed after the statement of L'. Eplattenier to Chapallaz for adapting Jeanneret to be one of the designer staff at Villa Fallet (will be discussed further through section 2).

Jeanneret's transition from art to architecture was not a sudden shift but a gradual process influenced by his mentors, exposure to innovative ideas, and personal exploration. This transition allowed him to combine his artistic talents with architectural practice through the first three projects he collaborated with Chaballaz from 1906 to 1908.

To recapitulate, Jeanneret began to realize architecture as a powerful direction to express and allocable his concept on a large scale. According to Jencks, Jeanneret mentioned in most of his theoretical writings how art directed him toward architecture "art taught him to observe [...] it was through painting that he began to understand the essence of architecture [...] nevertheless, architecture allowed him to provide an arrangement to his concept, and to turn visions into reality" (Jencks, 2000: 90).

2.2 1906-1917: PROJECTS AND TRIPS

In section two of Jeanneret's early life, the research focuses on his early participation projects, initial trips, and early independent projects (Figure 2.5).

In Jeanneret's early life particularly, from 1906 to 1919 at the age of seventeen to thirty-one he published three books and constructed nine projects. The first three projects were considered participating projects, and the rest were independent projects.

The early participation projects started by Villa Fallet, Villa Jaquemmet, and Villa Stotzer.

The six independent projects in his early life are Villa Jeanneret-Perret or Maison Blanche or White House for his father and mother, Villa Favre-Jacot, Cinema La Scala, Villa Schwob or Maison Turque or Turkish House, Workers Housing Estate, and Water Tower.



Figure 0.5: The Early Period (Projects and Trips) (Right), between 1906 and 1917 (Produced by the Author).

2.2.1 Participations Projects

In this section, the thesis goes through the first three participating projects of Jeanneret Villa Fallet, Villa Stotzer, and Villa Jaquemmet (Figure 2.6).

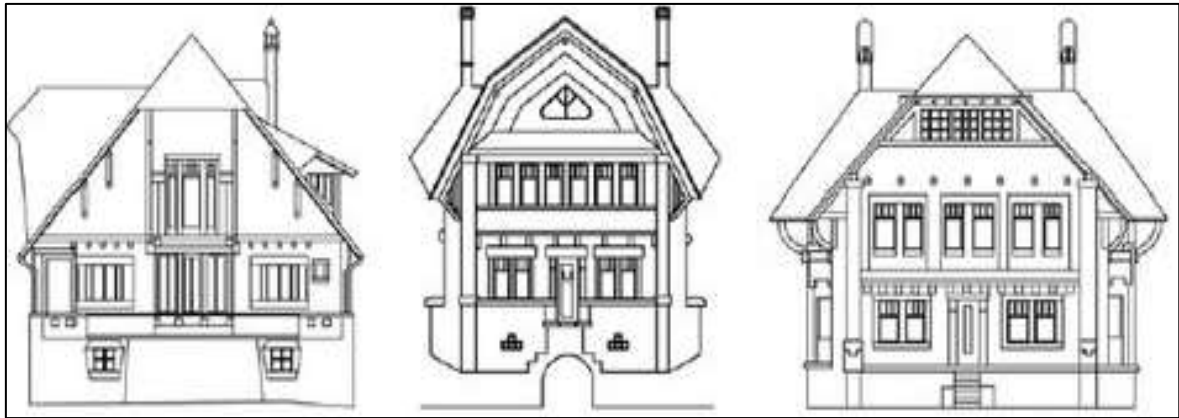


Figure 2.6: The Elevation of Villa Fallet (Left), Villa Stotzer (Middle), and Jaquemets (Right) (Vaughan & Ostwald, 2009: 367).

The mission of the first construction of Jeanneret started in late 1905 and the construction works started in 1906. The house was designed for Louis Fallet's family. The plan of Jeanneret was supervised by both the local architect René Chapallaz and the owner of the house Louis Fallet himself. Thereby, in 1906 Jeanneret's father clarified the commission of Villa Fallet to Jeanneret in his journal. He stated that "Jeanneret has just broken ground for the house, he is building for Fallet, which he, made the plan"¹. The project was built by Jeanneret with the participation of other students from the Ecole d'Art particularly, the senior classes; they took part in the decorations of the façade. The project is considered an arrangement of materials expressing the historical and present contextual frame of the surrounding area (Vaughan & Ostwald, 2009: 369). The main used materials in Villa Fallet were stucco, stone, and wood. According to Bekar "the Villa Fallet was constructed with heavily rusticated stone, which displayed an impressive effect of the relationship between pattern and texture on the other hand, Jeanneret was inspired by his geological sketches through his study at art school to make frames of windows and door that were sculpted from marble to create a surface with texture" (1996: 52).

The interior and exterior of the project were extravagantly decorated. The polychrome facades and gables were decorated with sgraffito glimpses that represent the Sapin tree style. Additionally, the ironwork of the project including the interior of the lock smithery, windows parts, and the door handle were decorated with motifs that represent the regional flora and

¹ Excerpts from the father's journal that shed light on the early years of Le Corbusier and his brother Albert maintained currently at The Bibliothèque de la Ville.

fauna of the Jura. Besides, the plan of the villa; the upper stories are constructed in decoratively carved, stucco-faced timber which was handcrafted by Jeanneret and his friends from art school. Furthermore, Jeanneret was not only passionate about the exterior works of the villa but also, accomplished many interior works as well. He designed chairs, wooden tables, and sideboards in the dining room (Foundationlecorbusier, n.d.a) (Figure 2.7).



Figure 2.7: The Decorative Façade with Fir Tree Style (Left), the Interior Works (Right) (Foundationlecorbusier, n.d.a).

The second and third corroboration projects with René Chapallaz were Villa Stotzer and Villa Jaquemet. After the satisfactory results of Villa Fallet. Albert Stotzer Louis Fallet's brother-in-law asked Jeanneret to design his building. The work was under control and overseen by René Chapallaz. Albert Stotzer wanted the house to be a two-unit, one for family use and the other for rental use (Foundationlecorbusier, n.d.a).

In November 1907, while Jeanneret was in Vienna he met Chapalaz. Jeanneret started the initial plans by proposing a clay model of the project. The main materials were iron, wood, and stone. A coating of distinct colours was applied to the external façade of the project. The common style of Villa Stotzer is Fir Tree Style, which is still present, particularly in woodworking. The project was rich in decoration from inside and outside however, it cannot be compared with Villa Fallet. In addition to the exterior work Jeanneret designed interior work, he created a closet with an integrated sofa.

In the same year of construction of Villa Stotzer, a watch case polisher and the brother-in-law of Louis Falle Ulysse-Jules Jacquemet asked Jeanneret to design a house following the same program as Villa Stotzer. Jacquemet desired a house with two units one for private use and the other would be rented. The plan was the same as Villa Stotzer. Moreover, Villa Jacquemet follows the same pattern of decoration style that existed in Villa Fallet and Villa Stotzer but with more simplicity. Moos describes the two villas Stotzer and Jacquemet as “larger variations of the Fallet objects with less pedantic in their decorative detailing” (1979: 9). Both share the same materials of masonry and concrete besides the timberwork. Furthermore, the two villas share a similar brief that required that the designs appear as single houses from the street, but they are two separate apartments. The initial plans for both houses were more ornate than Villa Fallet. Nevertheless, Charles Jenks describes the first three projects that Jeanneret participated in as “arts and crafts villas which, at a cursory glance [...] might be average Swiss chalets, but on further inspection, they reveal a nobility and personality that goes beyond stereotype” (2000: 19-20). Baltanás describes the first three projects of Jeanneret's work as “consider the early signs of a reassessment of the historicist idiom” (2005: 19).

2.2.2 Trips Time: 1907-1911

Jeanneret's early travels across Europe played a pivotal role in shaping his architectural philosophy and design principles. In 1907 after Jeanneret constructed Villa Fallet his teacher L'. Eplattenier advised him to leave his hometown and learn architecture from the wider board by traveling around the world.

The first time Jeanneret left his country in his early life continued for four years from 1907 to 1911. Jeanneret started his first trip to Italy where he stayed three months in Vienna, then in 1908 moved to Paris for twenty-one months. In 1909 he returned to La Chaux-de-Fonds two times for four and half months after that moved to Germany in 1910 where he stayed for twelve months, finally, he ended his trip in this stage of his life by Voyage d'Orient translated to Journey to the East in 1911. He spent seven months through the Voyage d'Orient trips between the Balkans, Türkiye, and Greece.

In 1907, he traveled to Italy with his friend Léon Perrin from art school. Through Jeanneret's trips to Italy, the dominant attitude and style of Jeanneret was Art Nouveau. He was affected

deeply by the Gothic Revival, John Ruskin, Owen Jones, and Charles Blanc (Brooks, 1999: 96). Jeanneret disapproved that the artist must be ahead of his time and set innovative principles for the future. To illustrate that, he refused the avant-garde style while he was staying in Vienna. To elaborate on that, the attitudes of Jeanneret have a profound reference to 1300 and earlier periods of architecture. In Italy, he showed enormous admiration for the cathedrals of Pisa, Milan, St. Mark's in Venice, San Michele, and the Bargello courtyard in Florence. According to Brooks "Jeanneret arrived in Italy with eyes that did not recognize the architecture Renaissance [...], he found great admiration for Renaissance portraits, particularly those featuring neutral-coloured silhouettes [...] he was most impressed by the rich materials and vibrant colours used in decorative arts by Gozzoli, Fra Angelico, and Giotto [...] although Europe and America had encountered an increase in classic values [...] the architecture of Albert, Bramante, Brunelleschi, and Palladio had not interested him at all" (1990: 9798).

Therefore, the most essential elements that captured Jeanneret's attention were Painting-related considerations such as Patterns decoration surface, colour, light, and shadow. Additionally, most of the artwork he produced was created with a pencil and watercolour (Figure 2.8). Jeanneret's concern was more on two-dimensional rather than focusing on three-dimensional architectural elements. His recognition of artistic elements controlled him far beyond not observing the architectural elements such as Mass, volume, space, and construction materials. The absence of these concerns in Jeanneret's attention at this period of his life led him to write to his spiritual father from Florence in 1907 September 21 "it seems to me that the city is not rich in architecture, Is this true? ".² What bothered Jeanneret during his trip to Italy was the requirement of huge knowledge to be able to recognize the architectural elements (Lowman, 1981: 33).

² Le Corbusier, *Journey to the East* (Cambridge, Massachusetts: MIT Press, 1987), p. 49.



Figure 2.8: A Painting with Watercolour (Left), a Painting with Ink Pencil (Right) (Le Corbusier, 1981).

The ideology and deep-rooted artwork of Jeanneret that shaped the observation of the architectural considerations were based on three guided books *Vues d'Italie* by Charles L'. Eplattenier, *Les Matins a Florence* by Ruskin, and *A Lucky Find* by Baedeker. These books served as a visual and thematic guide during his travels, helping Jeanneret to link his observations with architectural education. Eventually, the books were useful tools for practical information about Italy's cultural landmarks and architectural principles that helped Jeanneret explore Italy's rich architectural heritage (Turner, 1971: 224).

In 1908, he moved to Paris determined to observe and learn. During his time in Paris, Jeanneret directed his research again through the books. He was trying harder to build his faith in architecture from his conviction. He was successful in following the right direction for doing so. When Jeanneret arrived in Paris with his diary notebooks that included all his drawings and observations of artworks and architectural elements through his trip to Italy. He wanted to get a job through his discovery. Meanwhile, he contacted the well-known handicraftsman and the graphic designer Eugene Grasset asking him for a job. Grasset advanced Jeanneret to connect with Auguste Perret who was impressed by Jeanneret's drawings and provided him with a part-time position (Van Moos, 1979: 26).

Jeanneret began working in the office of architect Auguste Perret, the early expert in reinforced concrete, learning from Perret the enormous potential of new material. The sixteen and half months of working time with the architect, Perret considered the second essential influence on Jeanneret's background in architecture after the significant impact of his teacher L'. Eplattenier. Through the process of his interactions with the Perret firm,

Jeanneret was exposed to structural issues and innovative solutions (Zaknic, 1990: 28). According to Van Moos, the new page was opened to Jeanneret's perspective which will answer all the questions that he had when Perret recommended him to focus on studying mathematics and statistics instead of focusing on form (1979: 26).

When Jeanneret started to enlarge his perspective, he started to criticize L'. Eplatténier for neglecting the engineering and mathematical subjects being selective through focusing on certain knowledge in architecture such as decoration. Nonetheless, in 1909, Jeanneret went back to La Chaux-de-Fonds to interact and integrate into more missions by request of L'. Eplatténier. That indicates how Jeanneret was a contradictory young man trying to reject the past education methods or was seeking to get more attention the reasons unknown (Brooks, 1990:192).

Meanwhile, Jeanneret started to introduce another sector by L'. Eplatténier which is Urbanism. L'. Eplatténier agreed to provide a presentation on L'esthétique des villes at the Suisses general assembly in La Chaux-de-Fonds in 1910. Jeanneret was one of the students who presented the proposal on the subject and collaborated to write a book about it that is going to be signed by L'. Eplatténier and Jeanneret. The book was entitled *La Construction Des Villes* and translated into *Urbanism* in 1925 and through 1929 the book was translated into *The City of Tomorrow and Its Planning*.

In the same year 1910, he traveled to Grman. Through his previous trips, Jeanneret started to understand the meaning of architecture besides urbanism and built his independent knowledge after considering Perret's advice. While Jeanneret was in Grman he was seeking for Job. He was engaged with key figure German architects and designers such as Hermann Muthesius, Wolf Dohrn, and Peter Behrens. Jeanneret worked as a draftsperson at Behrens's firm for five months. Through his working time in Germany, he realized the concept of architecture as it is derived from industrial art besides, he had learned new technical methods in architecture. Jeanneret was pleasant with his position in Behrens's firm. However, this lasts no longer, he starts to lose the passion and becomes disillusioned with the atmosphere. Jeanneret stated in a letter to his friend William Ritter "over the past few months, my understanding of the classical genius has become so clear to me that my dreams have unambiguously led me there [...] you do not believe that the entire contemporary period is directed more than ever toward those fulfilling places where the square marbles turn white,

and the entablature and vertical columns run parallel to the lines of the oceans? I will make my dream come true if get the opportunity”³

In 1911, his most transformative journey was the Voyage d’Orient. The journey centered around the Balkans, Greece, and Turkey. Jeanneret encountered the vernacular architecture of the Mediterranean. The trip reached its conclusion with his visits to Athos and the Acropolis in Athens. Through his visits, he started to understand the Eastern way of living. Besides he started to observe the relationship between rationalism and idealism by analyzing two types of buildings houses and religious buildings. Mosques in Istanbul had a huge visual impression on him. Jeanneret described the interiors of the mosques through his three-week stay in the city, they are lofty so that the prayers can breathe (Brooks, 1990: 191). Meanwhile, he began to understand what the religion meant. Istanbul proved to be another source of deep spiritualist convictions (Von Moos, 1979: 31-33). Additionally, he was captivated by the center of the city (Figure 2.9).



Figure 2.9: Jeanneret's Sketch of the Central City of Istanbul (Von Moos, 1979: 31).

Jeanneret was impressed by the folklore, the bazaars of Istanbul, and the wooden Turkish houses (Figure 2.10). The themes that Jeanneret included in his sketchbooks describing the city are the effect of light, determined scale, and defined form (Brooks, 1990: 272). During his trip to Voyage d’Orient, particularly Istanbul, the sketchbook was filled with drawings more than any trip before. Even he devoted one completed chapter of his book *Voyage d’Orient*, published in 1966.

³ Letter from Jeanneret to Ritter, March 1911 cited from Lowman, J. (1981). Le Corbusier, 1900-1925: the years of transition (Doctoral dissertation, University of London).



Figure 2.10: Jeanneret's Sketch of the Wooden Turkish Houses (Le Corbusier, 1981).

Jeanneret was fascinated by the combination of light, scale, and form of Hagi Sophi which is considered a paradigmatic example, in addition to the blue mosque, and Galata Tower. Jeanneret was fully aware that the building represented an essential stage in the evolution of Western architecture. Jeanneret was focused on technical solutions and compositional principles based on assembled simple forms. According to Rabaça the Turkish sketches of Jeanneret where he attempts to recreate the exterior composition's original volumetric language (Rabaça, 1916: 11).

The initial destination following Istanbul was Mount Athos which is considered another metaphysical standpoint. The observed simplicity, harmony, and natural integration strongly impacted him. This journey was crucial in crystallizing his thoughts on the importance of proportion, light, and the relationship between building and its environment concepts that would later become central to his architectural philosophy. Jeanneret filled sketchbooks with renderings of what he saw, including many famous sketches of the Parthenon, whose forms he would later praise in his book *Towards a New Architecture*, (which will be explored in greater depth in chapter three section 1).

2.2.3 Independent Projects

At the end of 1911, Jeanneret returned to La Chaux-de-Fonds to teach alongside L'. Eplattenier and to open his architectural practice. Jeanneret's attitude toward the decorative arts and architecture dramatically changed because of his travel, reading, and receiving education from Auguste Perret and Peter Behrens. Therefore, in this stage, Jeanneret began to get rid of the ornamentation that existed richly in his first three participation projects. Even though he still formulated repeat patterns based on the Art Nouveau style. In 1911, at the age of twenty-three, Jeanneret's student days would end, and his professional career would begin (Brooks, 1990: 308).

In this section, the study highlights the two most significant of six independent projects that Jeanneret designed throughout his early life, Villa Jeanneret Perret and Villa Schwob which reflected the shift in Jeanneret's attitudes toward different architectural approaches.

In 1912, Jeanneret established his architectural practice office in La Chaux-de-Fonds. At this time Jeanneret built Villa Jeanneret Perret or Maison Blanche which lasted for six months to construct. The project was designed in La Chaux-de-Fonds not far from the Villas Fallet, Stotzer, and Jacquemet.

With a huge wild to start his independent work. Von Moos reported that Jeanneret was offered "a series of interesting commissions that allowed him to inaugurate what one might call the second pre-Corbusian phase of his early work which was characterized by shifting from Art Nouveau toward a neoclassicism of German origin" (1979: 37).

Jeanneret invented new ideas for Maison Blanche instead of continuing with the Fir Tree style, which he would later theorize in the Five Points of Architecture, it will be elaborated further in the next chapter. Therefore, the house is based on its exterior walls beside the four central pillars, pilotis, and free plan beside the row windows (Figure 2.11). The materials are cement plaster and white stucco. The house was designed in cubic and purist form, with a wider and hipped roof and a central dormer (Brooks, 1990: 321).

The façade of the house is plastered and covered in whitewash, each with a distinctive structure. The house consists of two levels with a basement and a wider roof (Schubert, 2003: 17). The living room and services like the dining room were on the first floor.



Figure 2.11: The Row Windows at the Second Level (Schubert, 2003: 18).

The second floor consists of bedrooms with room for Jeanneret to be used as a studio with a glass roof (Figure 2.12). The antechamber, living room, and dining room are located on the central axis, which Jeanneret referred to as the cathedral transept. The axis ends with a semi-circular projection that opens into the summer room (Lowman, 1981: 72).

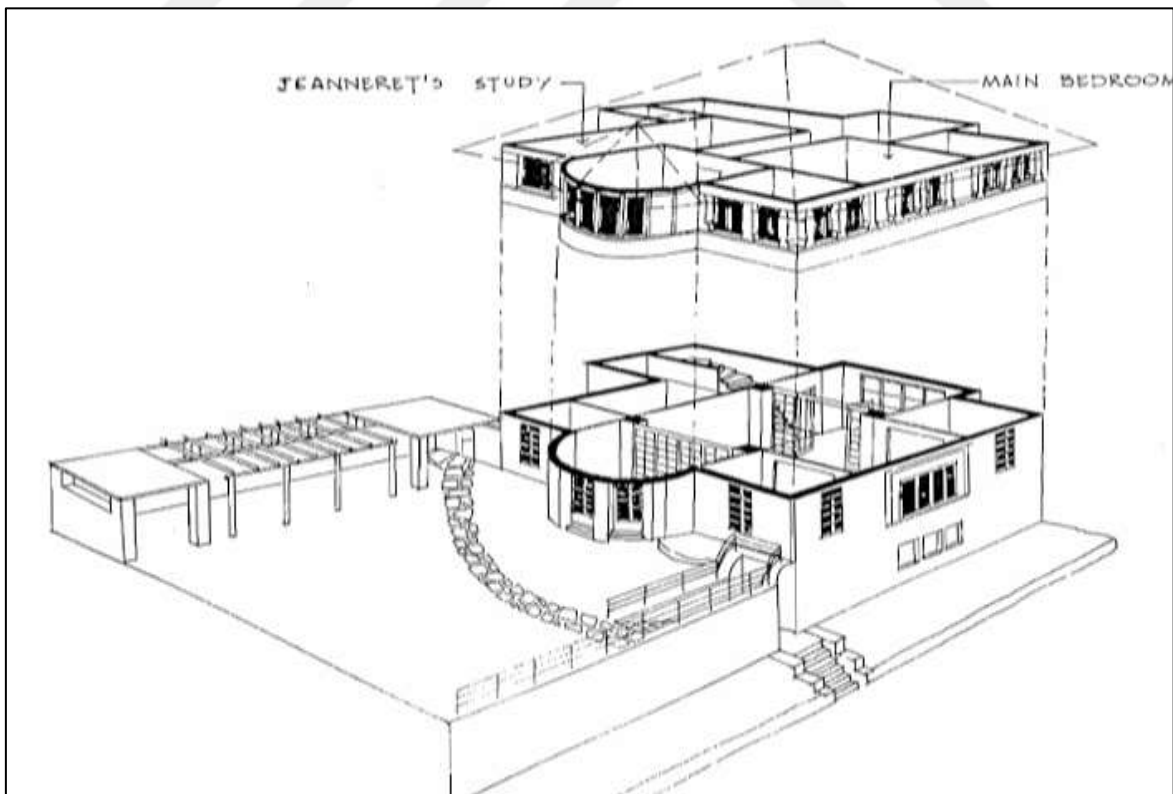


Figure 2.12: Jeanneret's Studio Room with a Glass Roof (Baker, 1996: 52).

Another essential project in Jeanneret's early life is Villa Schwob, which is called the Maison Turque (Figure 2.13). The villa was inspired by the wooden houses that Jeanneret observed when he was in Turkey in 1911; this was very clearly demonstrated through Jeanneret's early studies drawings of Villa Schwob by imitating the stand roof on the column for protecting from the rain, which was common in Turkey's houses.

The project is the last work of Jeanneret in La Chaux-de-Fonds before he took another direction for his future career by traveling to Paris in 1917 (Bacon, 2001: 70). The reinforced slabs and posts of the frame structure of the project allowed Jeanneret to design two elements of Five Points of Architecture the free façade and the free plan. Although the villa appears huge and more complex than some of his later projects, the project demonstrates that Jeanneret was still experimenting with how to effectively represent Purist principles of balance and pure lines in architecture (Curtis, 1986: 44). Furthermore, in Turkish House Jeanneret attempted to create harmony by using mathematical orders that led him to use the regulating lines in the façade for the first time. Besides, used a flat roof for the first time instead of a hipped roof which he theorized in his book *Towards a New Architecture* in 1923 (Baker, 1996:75).



Figure 2.13: Villa Schwob (Foundationlecorbusier, n.d.b).

The Maison Turque consists of three-floor plans in addition to the basement (Figure 2.14). The ground level includes a double-height living room with a bay window, a games room, a library, a dining room, an office, and a fireplace corner. While the first floor Contains bedrooms, the stairway on the first level, designed with a lobby area, provides access to all sleeping rooms and a view of the living room (Jencks, 1987: 44).

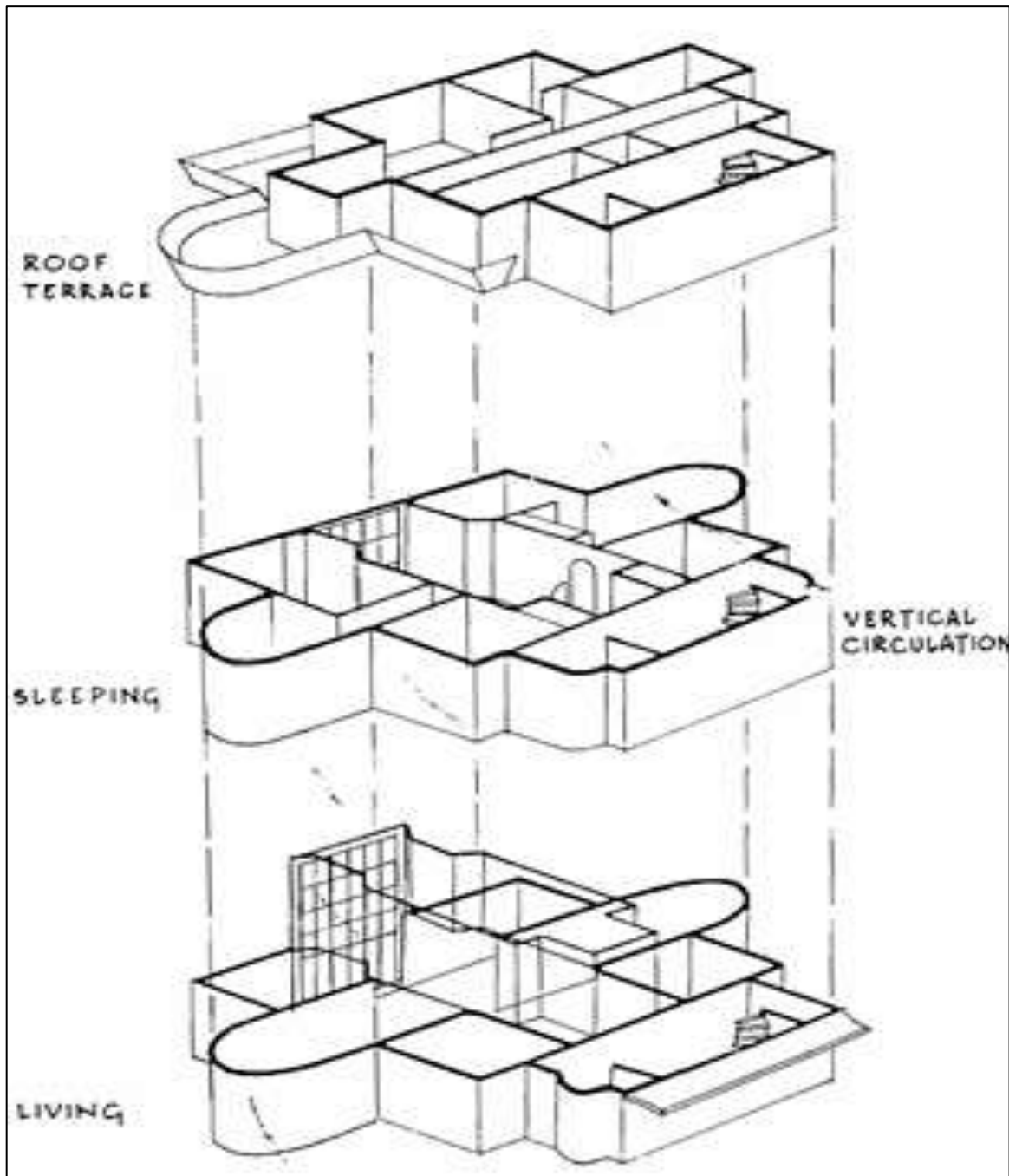


Figure 2.14: Exploded Floor Plans of Villa Schwob (Baker, 1996: 72).

2.3 1906-1918: THEORETICAL WORKS AND BOOKS

In this section, the research concentrates on the second imitated principle which is called Cubism, and his first innovative principle, Maison Dom-Ino, and the Purism principle. Besides, the early publication of books such as *Study on the Decorative Art Movement in Germany*, *An Art Movement in La Chaux-de-Fonds*, and the final book of his early life *After Cubism* (Figure 2.15).

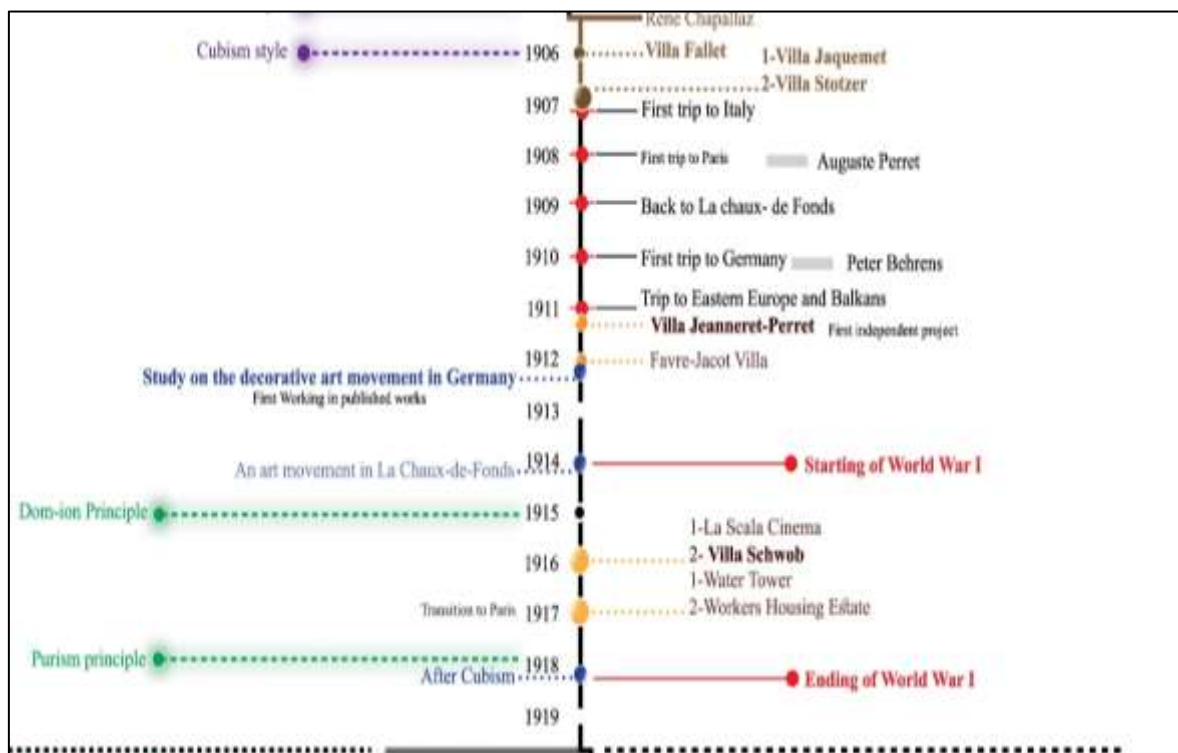


Figure 2.15: The Early Period (Theoretical Works and Books) (Left), between 1906 and 1918 (Produced by the Author).

2.3.1 Cubism: Imitative Principle

Cubism is one face of the avant-garde art movement that emerged in France. The first who implemented cubism were Pablo Picasso and Georges Braque in Paris from 1900 to 1914. The reason it is called Cubism is that the objects described in the artworks are displayed to be constructed of cubes and other complex geometrical shapes. The movement rejected the idea of resembling nature and is regarded as the primary source of inspiration for architecture. The geometric shapes in the highly abstracted pieces were referred to by Vauxcelles as cubes. Primitivism and non-Western sources have been identified as

additional influences on early Cubism (Cottingham, 2004: 249). The Cubism movement draws attention to the canvas's two dimensions, and it is also predicated on opposing or multiple points of view. From 1910 to 1912, Cubism developed in two different types analytical and synthetic. The analytic type called hermetic, is based on drawing and painting in a monochrome way using only one colour like grey or blue therefore, the person who looking at the artwork concentrates only on the forms and shapes, not the colour. Analytic cubists focused on forms like the cylinder, sphere, and cone to represent the natural world. The national style, often including elements of vernacular architectural forms, was a form of popularism designed to meet the national mood. The dynamism that had characterized pre-war Czech cubism was replaced by weighty geometric forms and emphatic use of colour (often in the new national colours, red, white, and blue. The Cubism movement was a revolutionary new approach to objects having meaning instead of representing reality besides being recognized not as a style or a dogma, but as the point of departure for the modern perception of the world (Laporte, 1949: 244).

The 1906, was the time for Jeanneret's engagement with Cubism however, it was primarily intellectual and indirect relation, and he never fully embraced Cubist principles in his architectural designs. Instead, he was influenced by the movement's emphasis on form, abstraction, and the analysis of space. Cubism helped Jeanneret to simplify the concept of plastic work, which inspired his architecture into the following statement "there are no sculptors, painters, or architects alone, the plastic event serves poetry by achieving completion in one form" (Le Corbusier, 1987: 85).

Jeanneret was a key figure in the development of Cubism in art and architecture as well by focusing on function over form. In 1918, Jeanneret started to create his style of Cubism and translate it into architecture. The next pages will elaborate on this in further detail.

2.3.2 Maison Dom-Ino: Innovative Principle

Since 1910 Jeanneret had already been focused on modernism, modern industrial development, and housing as the crucial challenge of modern architecture, all of which formed the foundation of Maison which means house. The movement represented a great

advance in the architecture sector since it was created by Jeanneret and Max Du Bois⁴. Jeanneret introduced the Les Masion Dom-Ino in the middle of 1915 (Curtis, 1986: 42).

Between 1910 and 1915 Jeanneret was concerned about structural innovation instead of adopting a defined style. Furthermore, the essential purpose of the innovative Maison Dom-Ino was the demolish cities and houses that led to a shortage in the first of the twentieth century specifically, during the First World War 1914-1918. Therefore, new methods and supplies must be created for the construction field to overcome the high demand for housing. The Dom-Ino structure was created as a solution to a particular issue before it became recognized as a visualization or a concept. Therefore, the absence of housing necessitated which are simple construction, quick manufacture, and mass production that the Dom-Ino sought to address (İskenderoğlu, 2009: 17).

Hence, Maison Dom-Ino was an architectural formulation, a social effort that attempted to find answers to the problems of the period. Jeanneret spent approximately fifteen years experimenting with Maison Dom-Ino. The initial concept of Dom-Ino appeared more like a design plan than a construction detail which was technically hard to implement (Figure 2.16). The system named Domino as a reference to the game of Dominoes and the Latin word domus, which means house. The six-point supports in the plan were created as an arrangement of modules that looked like a rectangular domino chip (Van Moos, 1979: 41).

The first appearance of Les Maison Dom-Ino, was in oeuvre complete, volume 1. Also, Jeanneret described it in his books *The City of Tomorrow and Its Planning* and *Towards a New Architecture* as a skeleton or a standard construction system devoted to mass production housing.

⁴ Max Du Bois (1891–1965) was a major player in the early twentieth-century architectural and technical fields. He cooperated with Le Corbusier on the Domino System, a groundbreaking reinforced concrete construction system. His role essential in the technological implementation of the Domino System. His engineering skills aided in the transformation of Le Corbusier's theoretical concepts into practical structural solutions. The Domino System's grid of concrete columns and slabs enabled flexible and open floor designs. The source by Frampton, K. (2007). *Modern Architecture: A Critical History*. Thames & Hudson.

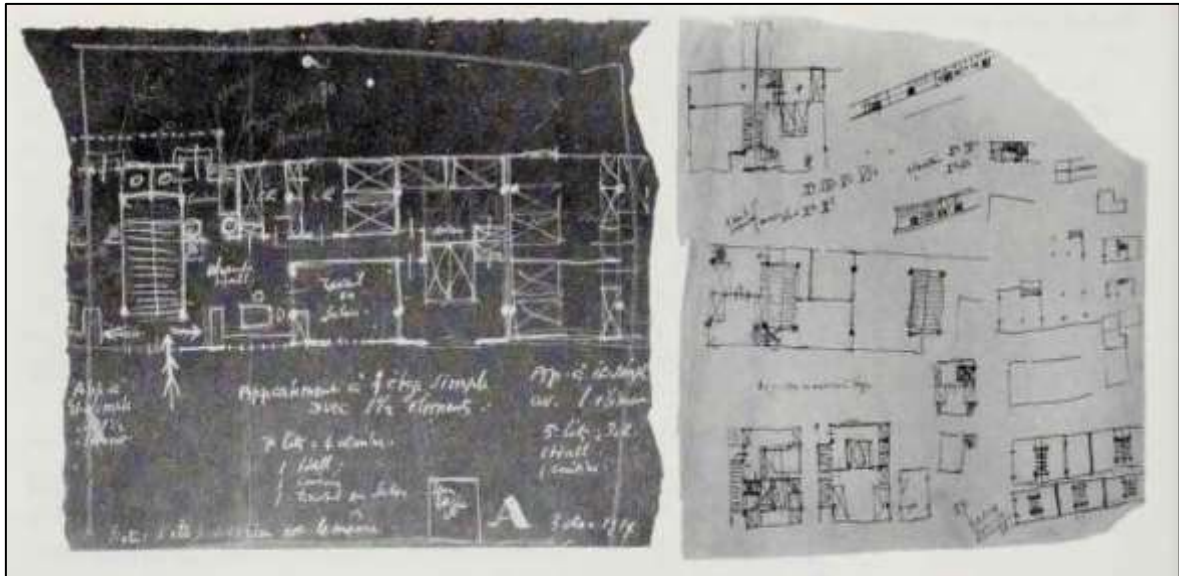


Figure 2.16: Initial Plans Study on Dom-Ino (Le Corbusier, 1929: 20).

According to Brooks the ideas of Dom-Ino were formulated in three steps the first was to replace load-bearing walls with free-standing concrete piers; the second was to build floor and ceiling slabs made of reinforced concrete without the use of conventional wooden formwork, removing the need for support from below; and the third was to make sure that the slabs were smooth and level on both sides and that they met the supporting piers at right angles [...] the combination of second and third ideas were not easy to achieve at all from engineering's point of view beside he introduced specific aesthetic ideals, which inevitably complicated and expanded the process that is why Jeanneret asked Du Bois for his assistance [...] the second concept Jeanneret aimed to achieve was ensuring that the horizontal slab met the vertical piers at right angles. To overcome the technical difficulties of the concept Jeanneret suggested utilizing metal I-beams to support the ends of hollow blocks, ensuring enough space between each row for iron rods and concrete to form flat arches of reinforced concrete. Secondary I-beams would be placed crosswise to support the primary beams, which acted as the base for pouring the concrete [...] these secondary beams would be temporarily attached to the sides of the vertical piers with a bracket secured by a steel pin embedded during the casting of the pier (1990: 384 -387).

The final shape of the studies is being constructed from three horizontal, rectangular slabs that are square in plan and are supported by six thin stanchions. The bottom slabs were block-shaped, and the level was connected by stairways (Figures 2.17, 2.18). Therefore, it was created in a structure-complement system that is independent of the house plan's functions.

It is produced in standard components that can be combined to create a wide range of house grouping options. Additionally, within the frames of Maison Dom-Ino, the structure system of a house is simply placed. The interior layout components can be alternated and arranged diversely as well. Tzonis states that the Maison Dom-Ino is widely recognized as more than just a technical layout. It is an intellectual formula that represents deeper historical foundations and general values and principles (2001: 56).

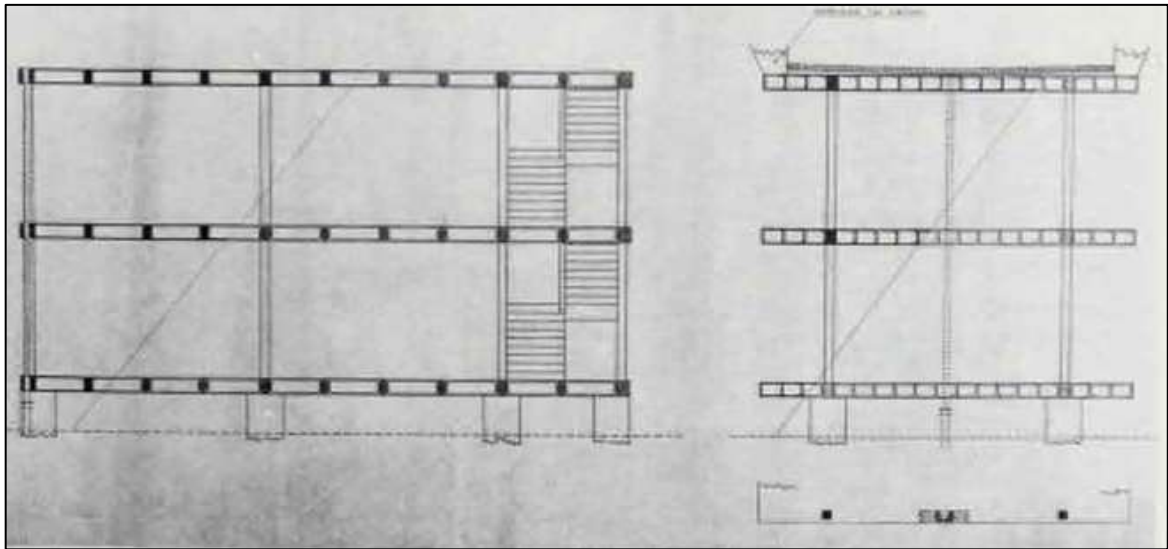


Figure 2.17: The Cross-Section of the Dom-Ino System (Le Corbusier, 1929: 23).

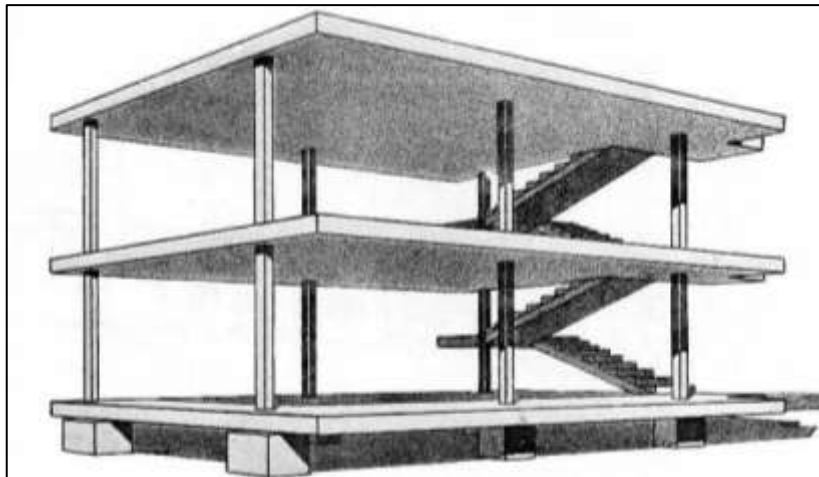


Figure 2.18: The Skeleton Perspective of the Dom-Ino System (Le Corbusier, 1929: 23).

After the completion of the frame, the remaining part is to define the standard size of Dom-Ino. Jeanneret started to study the standard for minimal housing in France. After determining the ideal size for the Dom-Ino module, he created types of plans, such as types A, B, and C.

Jeanneret separated types into rooms based on the intended size of each unit (Brooks, 1990: 391). The types are categorized into the single Dom-Ino module for one or two families and two-story residential structures with linked modules that form a U-shaped pattern across the landscape (Figure 2.19).



Figure 2.19: Sketches Showing the Dom-Ino Landscape Design Type (Le Corbusier, 1929: 24).

Jeanneret presented an efficient and rapid construction system based on an affordable and standardized reinforced concrete skeleton, utilizing rubble to fill the walls, and mass-produced windows, doors, and fixtures. Some of the houses had holes around grassy communal areas while the rest ended in formal patterns (Le Corbusier, 1960: 40).

The frame would represent the horizontal slabs that support the roof. The building would be covered from the damp and set apart from the ground by the concrete dice, which would eventually become the pilotis and the free ground plan (Samuel, 2007:23). In addition to this, the movement was the starting point for inventing new ideas such as the Five Points in Architecture that Jeanneret adopted in most of his projects throughout his life. However, several architectural decisions had a detrimental impact on structural behaviour, to the point where Perret advised Jeanneret that it would be impossible to construct such homes. However, Jeanneret developed it and used it after 1919, while before that he did not implement the system in many of the commissions (Curtis, 1986: 55).

Eventually, the Dom-Ino system was instrumental for Jeanneret to start his Five Points. The Dom-Ino was considered the first design attempt for a cheap house and was Jeanneret's first modern principle that made a revolution in modern architecture in the 20th century. Jeanneret states "invention of the Dom-Ino houses, and a most unexpected invention at the time [...] a forecast of the potentialities of reinforced concrete, of mass production, of human scale, of the modern factory" (Le Corbusier, 1960: 43).

The principle faced critical assessments from many architects and urban planners. According to Banham, the Dom-Ino system's reliance on a flat slab and open-plan design simplifies structural and load-bearing requirements, this oversimplification could lead to challenges in stability and adaptability for different architectural contexts (1960: 39).

Moreover, Millais harshly criticized Jeanneret's principles in his book *Le Corbusier: The Dishonest Architect* he highlights that in his book "there are no details on the construction of his intended home included in his sketches [...] how was the waterproofing and drainage of the flat roof to be accomplished? in what way were the planting boxes and cornice made? what was the heating system in the house? none of these issues are addressed, much less resolved, in a way that would significantly alter his design from then-standard procedure" (2018: 16-19).

2.3.3 Books

Alongside producing projects and dedicating significant time to educational trips, Jeanneret simultaneously worked on enhancing his writing and publishing books. In Jeanneret's early life from 1906 to 1918, he published three books *Study on the Decorative Art Movement in Germany*, *An Art Movement in La Chaux-de-Fonds*, and *After Cubism* (see Appendix A.2). Jeanneret's initial exposure to writing came through the field of urbanism, guided by his teacher L'. Eplatténier.

In 1910, while Jeanneret was in Germany, he was studying urban cities and provided proposals on that. Meanwhile, L'. Eplatténier wanted to produce an article that would be a book called *Le construction des villes*; he asked Jeanneret to work and present his proposal; the book was meant to be published in 1910, however, only the manuscript was presented; the whole book was not published till 1925 under the title *Urbanism* (Brooks, 1999: 201).

Another work that was meant to be published in the shape of a book in 1912, was the notes, drawings, and observations that Jeanneret documented through his trips from 1907 to 1911. Again in 1914, he tried to publish it under the title *Voyage d'Orient* but unsuccessfully it did not till 1966, after his death. Returning to the books in Jeanneret's early life, once again in Germany, Jeanneret began work on the book *Study on the Decorative Art Movement in Germany*. The art school requested that produce a report on the condition of German crafts, instructional methods, design practices, and the production of art objects (Van Moos, 1979: 30).

In 1912, the art school published a book which considered the first published book of Jeanneret. In the book, Jeanneret reported about the decorative arts movement in Germany within the broader European design context. He traces its development, particularly in response to the excesses of Art Nouveau and traditional ornamental design. His goal was to evaluate and analyze how the transition of the German Werkbund movement happened. German Werkbund is a movement dedicated to improving design through the collaboration of artists, architects, and industrialists (Curtis, 1986: 30-31). He highlights how Werkbund emphasis on industrial production aligns with modernist ideals of functionality and simplicity. Therefore, the book is considered an essential book to Jeanneret as it reflects his deep interest in contemporary artistic movements in Germany and was part of his broader critique of traditional architectural styles. In addition, the book considers the foundation of Jeanneret's intellectual evolution. It demonstrated his admiration for modernist principles and his advocacy for functionalism elements that became central to his architectural philosophy and practice later. He further addressed the influence of industrialization on contemporary design, highlighting the potential of industrial methods to produce effective products. Another important book in the early life section is *After Cubism* with Amédée Ozenfant⁵. Alongside the construction of architectural projects, writing texts, and research of urbanism, Jeanneret was giving so much attention to painting as he wanted to be a painter since he was in high school. Therefore, the book *After Cubism* refers to the vision of a new approach to art and design providing more simplicity and form of purity.

⁵ He was a member of the Parisian upper class, he run a fashion shop, and an enthusiast of modern artwork and photography. He also specialized in philosophy, anthropology, and poetry. In addition, he was a painter with an astonishing reputation in painting born in Saint-Quentin in 1886. He was introduced to Jeanneret by Auguste Perret when Jeanneret moved to Paris in 1917.

2.3.4 Purism: Innovative principle

The movement started in Jeanneret's language in 1916 when he was very thirsty for the ideas of the French Avant-garde style⁶.

Purism was born from Cubism by Jeanneret who had not become Le Corbusier yet and Ozenfant. Jeanneret started to formulate his concepts, principles, and theories for architecture, urban planning, and art that would direct his life's endeavors. All that could not have happened without the help of Ozenfant. In 1918, Jeanneret first met with Ozenfant by Perret, and since then, Ozenfant has provided new concepts and directions that altered Jeanneret's perspectives not only in art but also in architecture and writing (Curtis, 1986: 48). They collaborated to publish their manifesto which rejected Cubism as a romantic and irrational addition. The book *After Cubism* was launched simultaneously with the opening of their exhibition in the Gallery Thomas at the end of 1918, they founded Purism, a new artistic movement and both started contributing to a new journal called L'Esprit (Guedes, 2004: 250-152).

Purism is an attempt at art using plastic constants, rejecting conventional methods, and addressing above all the universal properties of the senses and the mind⁷. Jeanneret and Ozenfant embraced an ambiguous hope that mechanization would turn out to be a positive force in the coming era. According to Curtis Jeanneret advocates for a purity connected to geometry and the smooth surfaces typical of industrial production, leaving behind any traces of craftsmanship or the heterogeneity of the natural material [...] purist painting influenced architecture by providing a visual language that addressed both personal insights and the needs of modernity, while also aligning with what Jeanneret saw as universal constants (1986: 48-50). Jeanneret believed in the use of clean lines, geometric shapes, and open spaces to create functional and efficient buildings (Guedes, 2004: 257).

The first project of Jeanneret, through his first creation philosophy of purist principles, is a Water Tower at Podensac. These simple functional volumes were laid out along an axis of

⁶ The Avant-garde style emerged in the late 19th and early 20th centuries as a radical and innovative movement in art, literature, architecture, and other cultural fields. It is characterized by its challenge to conventional forms and its embrace of new, experimental approaches. Sourced from Frampton, K. (2007). *Modern Architecture: A Critical History*. Thames & Hudson.

⁷ Amédée Ozenfant and Le Corbusier, "Le Purisme", in L'esprit Nouveau, January 1921.

conveyors dramatized in sloping bridges. Concrete mushroom columns and ramps were used on the interiors. Jeanneret also designed workers housing. The Cubist principle of fusing different views was here regularized, for example was treated as a pure circle. Objects and surfaces were contained in their outlines and were spliced together with purely abstract shapes in flat layers (Van Moos, 1979: 15).

The Purist range of colors included electric blues, light greys, pinks, ochres, earth reds, greens, black and white. The light was even, pearly, and opalescent. Jeanneret did not stop painting using a purist style (Baker, 1996: 84).

However, his implementation of principles was still used in his paintings and architecture projects in his middle and late life.



3. MIDDLE PERIOD OF LE CORBUSIER'S WORKS 1920-1942

The study through the middle period highlights Jeanneret's focus on functionalism, urban planning, and housing solutions, which is evident in projects like Villa Savoye, where theory and practice strongly align. The middle period began in 1920 with the Modern movement, which was characterized by its use of new materials, focus on functionality, and reject traditional forms and ornamentation. According to Jeanneret "the nineteenth century was an age of hypothesis between theory and practice. The nineteenth century was swept by a desire for the grandiose" (1967: 129). The thesis explores this period through two sections (theoretical works and books) and (projects and trips) (Figure 3.1).

3.1 1920-1942: THEORETICAL WORKS AND BOOKS

Through section one of middle life, the thesis refers chronologically to his innovative principles and manifesto books (Figure 3.1). The middle period started with the modern principle that Jeanneret contributed significantly to the development of Modern Style. This trend was typified by rectilinear forms, open interiors, and weightless projects. Furthermore, the middle period includes innovative principles such as Citrohan, and Five Points of Architecture. In addition to this, the section included the most fundamental books that shaped modern architecture and urbanism such as *Towards a New Architecture*, *The City of Tomorrow and its Planning*, *Precisions on the Present State of Architecture*, and *The Radiant City*.

Furthermore, this section will include CIAM the Modern International Congress where Jeanneret defined the principles of modernist architecture, such as functionalism, standardization, and the rejection of historical styles. Besides, the development of urban principles. Jeanneret's middle-period books and projects through the 1920s began his rise to prominence in architecture. Jeanneret was required to change his name to a pseudonym with the declaration of the *L'Esprit Nouveau* translated into the *New Spirit* magazine. In the 1920s, his name became Le Corbusier as part of his shift toward a more modern architectural identity. The name derived from a distant ancestor called Lecorbésier, which means Crow in French (Gans, 2006: 31). The name was symbolic of a break from his past and a move toward a more professional architect and urban planner.

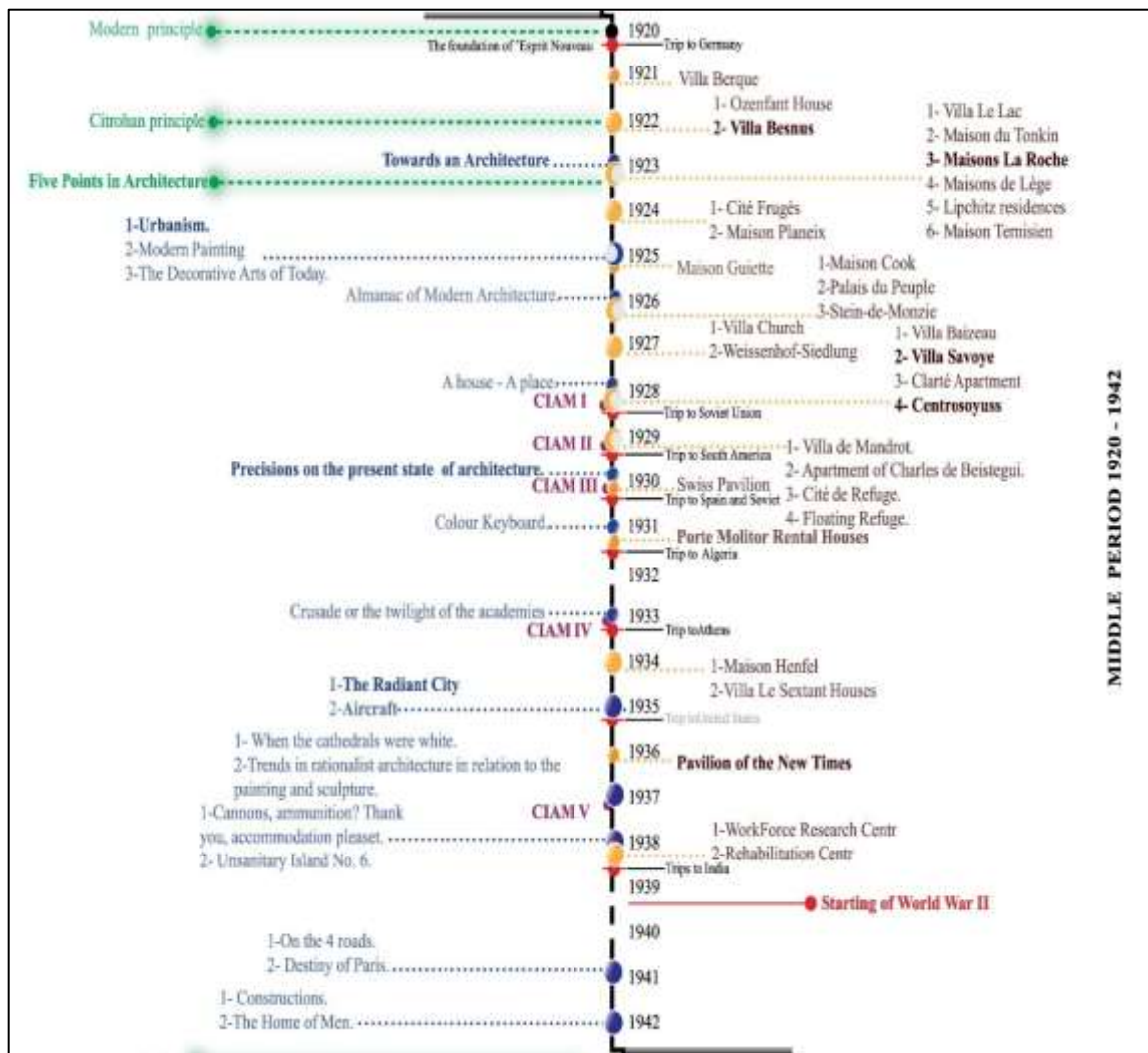


Figure 3.1: The Middle Period (Theoretical Works and Books) (Left), between 1920 and 1942 (Produced by the Author).

L' Esprit Nouveau, founded by Le Corbusier, Ozenfant, and Dermée, intended to document the spirit of a modernist environment. The magazine published themes of various sectors from architecture to poetry, technological advances, and issues of culture between 1920 and 1925. The magazine was considered the essential chance for Le Corbusier to introduce his books, principles, and projects to the world. The magazine aimed to break the traditional and adapting the machine age (Le Corbusier, 2000: 27).

Le Corbusier published in the New Spirit magazine from 1920 to 1925, eight books including *Towards a New Architecture*, *The City of Tomorrow and its Planning*, *Modern Painting*, *The Decorative Arts of Today*, *Almanac of Modern Architecture*, *A House - a*

Place, Precisions on the Present State of Architecture and Urbanism, and Crusade or the Twilight of the Academies (Foundationlecorbusier, n.d.c).

The New Spirit magazine was crucial for Le Corbusier's dissemination of his architectural and urbanistic ideas (Le Corbusier, 2000: 28). It allowed him to formulate a theoretical foundation for projects, including Maison La Roche and his urban planning proposals like the Radiant City. This transition is evident in his writings during this period, where he discusses architecture as a tool for social progress, aligning with broader modernist principles.

3.1.1 Citrohan: Innovated principle

The first appearance of Maison Citrohan's principle was at Salon d'Automne in Paris (Le Corbusier, 1960: 92). Le Corbusier envisioned the Citrohan house as being efficient like a car. Baker in his book *Le Corbusier: An Analysis of Form* states that “the relationship between the house and cars is evidenced by Le Corbusier’s name for the home” [...] he named it Maison Citrohan as an intended compliment to the Citroën automobile manufacturing company as he believed it to be as efficient as the new machines which are transforming the life 1920s” (1996: 90). The purpose of Citrohan is to develop urban and social housing in addition to, providing affordable and functional houses. In 1922, Citrohan was part of Le Corbusier’s vision for solving housing issues (Figure 3.2).

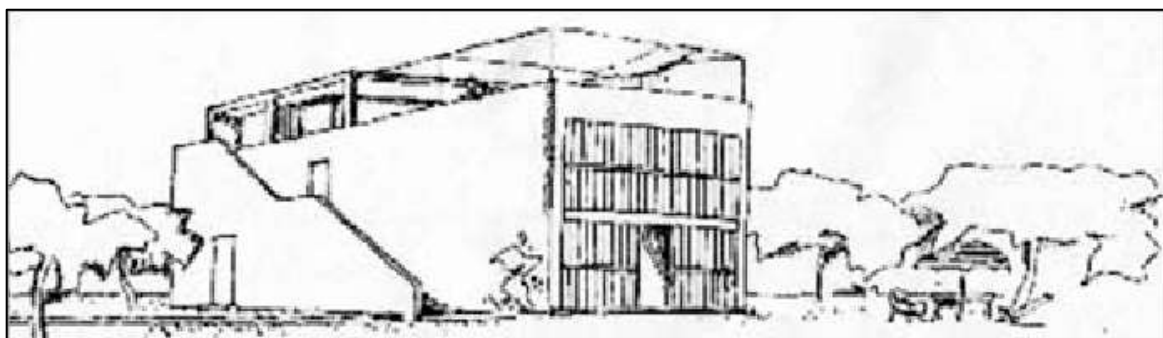


Figure 3.2: The Perspective of the Citrohan Principle (Le Corbusier, 1929: 31).

Moreover, the Citrohan principle was a solution to economic conditions (Von Moos, 1979: 87-88). It symbolizes the idea of mass production and standardization, besides providing efficient living spaces. Furthermore, his intention to build the house with common materials

would have made the Maison Citrohan more affordable and more accessible to people, which he hoped would improve the whole society (Le Corbusier, 1960: 40).

Le Corbusier's Citrohan incorporates parts of the Dom-Ino structural system from 1915, specifically the use of a reinforced concrete frame. Citrohan included principles from Le Corbusier's Five Points of Architecture which raise the building from the ground on pilotis to free the ground for vehicle circulation and amenities. The roof garden, sometimes known as a terrace, is clearly defined in Citrohan projects as a component of private domestic space (Frampton, 2001: 25). The design involved dividing the rectangular layout into two cube-shaped sections. One part features a double-height living space, while the other accommodates the remaining accommodations. A gallery area, which overlooks the living space, leads to the primary bedroom. The kitchen and dining room are located below, with additional bedrooms on the upper level beside a rooftop terrace. According to Curtis (1986: 54), the concept later evolved to include being raised on pilotis, freeing the ground beneath for parking as an integral part of the concept (Figure 3.3).

Citrohan's principle, like the Dom-Ino principle, faced criticism and challenges from many different scholars, such as Reyner Banham, Colin Rowe, and Kenneth Frampton. Banham in his book *Theory and Design in the First Machine Age* criticized Maison Citrohan for its stark functionalism and lack of consideration for human emotional and aesthetic needs (Banham, 1960: 55). However, the Citrohan principle was extensively applied to the design layout of Le Corbusier's projects in the 1920s. Villa Besnus is among the first projects that apply the Citrohan principle. Georges Besnus (1864 -1950) commissioned Le Corbusier to create a home that embodied Citrohan philosophy after seeing a model of the Citrohan on exhibit at the Salon d'Automne, where Le Corbusier's work was first introduced (Le Corbusier, 1987). The house comprised a ground-floor garage and a first-floor featuring a kitchen, dining room, living room, and library, which were divided by a fireplace and fixed concrete storage units. While the second floor includes the living area and a bedroom. The layout of the facades was asymmetrical.

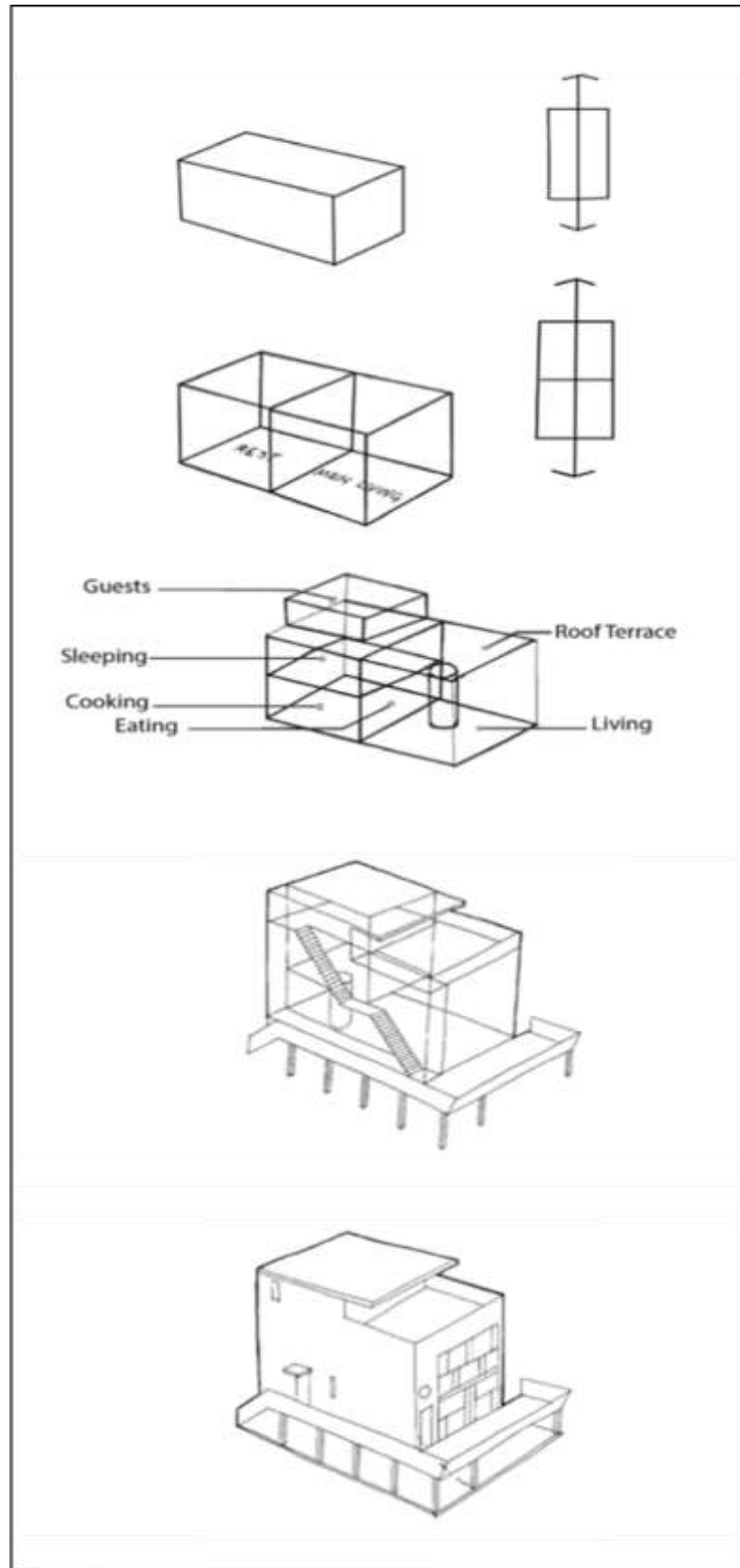


Figure 3.3: The Development of Citrohan's Design Process (Baker, 1996: 92-93).

While the ribbon windows covered the garden facade, and the stairway block embedded vertical windows (Figure 3.4). The project represents mathematical order in the façade beside it displays more natural light inside as a result of the ribbon and vertical windows.



Figure 3.4: The Vertical and Ribbon Windows of Villa Besnus (Le Corbusier, 1929: 49).

3.1.2 Five Points of Architecture: Innovative Principle

Le Corbusier's initial attempt to address the issue of mass housing was Maison Dom-Ino in 1914-1915 then Maison Citrohan in 1920-22. Citrohan considered the second step of Le Corbusier's Five Points of New Architecture. The first point that Le Corbusier advocated and documented in Citrohan's principle is the Pilotis which is a system of columns in place of load-bearing walls, enabling architects to maximize the amount of floor area (Frampton, 2001: 65). Then the concept developed to include the second point, which is the free floor plans which allow more flexible living spaces that might alter the accommodated lifestyle as a result of the absence of load-bearing walls. The third point is the Flat Roof which is covered in gardens to control temperature and maintain constant moisture content. The fourth point is Horizontal Windows or Ribbon Windows that offer uniform lighting and expansive views since they cut through non-load-bearing walls. The fifth point is the Free Façade which in the shape of open and closed parts provides the facade to dynamically link

or split inner and exterior design elements (Le Corbusier, 1960: 123). The first appearance of the Five Points was in 1923, he demonstrated them in his book *Towers a New Architecture*. Villa La Roch is considered the early project that embedded some elements of Five Points such as an open façade and ribbon windows (Figure 3.5).



Figure 3.5: Villa La Roch the Demonstration of Ribbon Windows and Open Façade (Le Corbusier, 1929: 63).

The connection between the project and the principle is notable by the application of the ribbon windows and open interior. The project represents the early development of Le Corbusier's Five Points of Architecture besides its early purist project during the 1920s. Furthermore, the project is considered among the first projects of Le Corbusier that embodied the concept of an architectural promenade inside the building through the display of a ramp (Curtis, 1986: 72).

Later in 1927, he theorized the concept through the well-known Villa Savoye. The project dynamically introduced all Five Points (Figure 3.6). The villa exemplified a synthesis of modernism and the affirmation of classical ideals. Moreover, the project is widely presented in Le Corbusier's books during the 1930s such as *Precisions on the Present State of Architecture and City Planning* in 1930 and *The Radiant City* in 1935. In addition to this, the project represents the development of an Architectural Promenade concept. Obviously, by the creation of Five Points Le Corbusier's philosophy was as much about function as form. Much of his work focused on how logical architecture can affect and provide an effective building.



Figure 3.6: Villa Savoye Documents the Five Points, Pilotis, Free Façade, Ribbon Windows, Flat Roof, and Free Plan (Curtis, 1986: 94).

Despite the Five Points' enormous recognition for influencing modern architecture, the concept was criticized. One major critique is its emphasis on functionalism, which some argue oversimplifies architectural design. Kenneth Frampton, in *Modern Architecture: A Critical History* pointed out that Le Corbusier's principles often overlook the cultural and societal complexities of specific contexts, concentrating only on global solutions (Frampton, 1980: 158).

In addition to this, the Horizontal Windows, praised for their ability to provide lighting and panoramic views, have been critiqued for disrupting the proportional harmony of traditional facades. notes that while the concept may optimize light and views, it often results in designs that feel monotonous and out of scale, particularly when applied without consideration of context (Rowe, 1976: 12). Furthermore, Jane Jacobs in the book *The Death and Life of Great American Cities* criticized Le Corbusier's open-plan principle as it prioritized individualism above social connection. According to Jacobs, these methods frequently disengaged locals and destroyed the organic social structure of urban areas, leaving them feeling less linked (Jacobs, 1961: 31).

3.1.3 Books

Through the middle period of Le Corbusier's works, from 1923 to 1942 he published eighteen books (see Appendix A.2). The books are *Towards a New Architecture*, *Urbanism*, *Modern Painting* with Amédée Ozenfant, *The Decorative Arts of Today*, *Almanac of Modern Architecture*, *A House - A Place*, *Precisions on the Present State of Architecture and Urbanism*, *First Colour Keyboard*, *Trends in Rationalist Architecture in Relation to the Painting and Sculpture*, *Crusade or the Twilight of the academies*, *Aircraft*, *The Radiant City*, *When the cathedrals were white*, *Journey to the land of the shy*, *Cannons, ammunition? Thank you, accommodation please*, *Unsanitary Island No. 6*, *On the 4 roads*, *Destiny of Paris*, and the final book in this period is *The Home of Men* with François de Pierrefeu (Foundationlecorbusier, n.d.d). The themes of books were centered around various aspects such as art, architecture, and urbanism.

The first and most popular book he published during this period was *Towards a New Architecture* in 1923. Through the book, he challenges traditional architectural practices by advocating for a modern approach that aligns with industrial advancements. The book is divided into several key sections, such as "Eyes Which Do Not See" "Architecture or Revolution", and "The Engineer's Aesthetic". In the chapter "Eyes Which Do Not See" Le Corbusier criticizes architects for their reliance on outdated forms, stating that "Architects are turning their backs on the future" (Le Corbusier, 1986: 41). He insists that the new era requires a vision that embraces technology, machinery, and the efficiency they bring. In the "The Engineer's Aesthetic" chapter, he praises engineers for creating efficient, purposeful forms and suggests architects should learn from this approach. He argues that "the house is a machine for living in" (Le Corbusier, 1986: 95). He emphasizes the idea that architecture must serve practical human needs rather than being a decorative art. While in the final section "The Engineer's Aesthetic" Le Corbusier connects architecture to social change, arguing that proper planning and standardization can solve urban problems and prevent social unrest. He states that "the problem of the house is the problem of the epoch. The equilibrium of society today depends upon it" (Le Corbusier, 1986: 287). By emphasizing these themes throughout the book, Le Corbusier lays the groundwork for modernist architecture, proposing solutions that prioritize practicality, efficiency, and societal well-

being. His call for a transformation in architectural practice reflects his principles for housing and cities.

The second essential book that is oriented around urban planning is *Urbanism*, translated into *The City of Tomorrow and Its Planning*. The book focuses on urban planning and modernist principles for building cities. Le Corbusier critiques traditional cities, viewing them as chaotic and inefficient, and proposes a new vision for the aesthetic order of the city. Le Corbusier explores city aesthetics, planning, and human interactions with urban spaces through the notable chapters including “The Pack-Donkey’s Way and Man’s Way,” where he critiques disorderly growth, contrasting it with a planned, grid-like urban design. He states that “the city is a tool for man,” emphasizing the functional role of architecture. Other sections like “The Great City” focus on integrating workspaces harmoniously within urban to enhance productivity and community life (Le Corbusier, 1987).

The third fundamental book in the middle period is *Precisions on the Present State of Architecture and City Planning*. The book originally a series of lectures given in Buenos Aires in 1929, serves as a comprehensive manifesto of his architectural and urban theories. Le Corbusier criticized the role of academics in architecture and urban planning. He states that “academic architecture is petrified, stuck in the past, and unable to respond to the real needs of the people” (Le Corbusier, 1960: 25). Furthermore, the book emphasizes human proportion through the notable chapters “A Dwelling at Human Scale” and “The Plan of The Modern House” (Le Corbusier, 1960: 85-123). Besides, he discusses modern architecture’s role in addressing the urban challenges of the 20th century. Le Corbusier discusses the need for rational city planning and efficient living spaces that reflect the technological advancements of the time by introducing the concept of a City of Three Million inhabitants (Le Corbusier, 1960: 141).

The fourth monumental book is *The Radiant City*. Through the book, Le Corbusier proposes a city model where structures are designed for efficiency, integrating green spaces and ensuring optimal living conditions. Le Corbusier investigates the importance of using modern techniques through the design of houses and cities (Le Corbusier, 1967: 18). Additionally, in the book Le Corbusier documented the first three essentials of the International Congress of Modern Architecture (CIAM) held from 1928 to 1933. The CIAM meetings were a series of influential congresses aiming to establish and improve modern

architecture and urban planning principles. These meetings, initiated by architects like Le Corbusier, Sigfried Giedion, and others, were instrumental in shaping 20th-century architecture. One of the book's core sections "High Buildings in the City" emphasizes his approach to vertical construction. Le Corbusier proposes tall, rectangular skyscrapers to maximize space and improve sunlight exposure and ventilation. This section presents Le Corbusier's concept for a high-density, organized city that could accommodate three million people. The city layout emphasizes a rational approach to zoning, dividing areas into residential, commercial, and industrial zones to reduce congestion. He also discusses the concept of automobile circulation while he states that "our streets no longer work, and we must create something to replace them [...] efficient traffic management is vital for urban planning and cities should be organized with distinct routes for pedestrians and vehicles [...] circulation is the city's bloodstream" (Le Corbusier, 1967: 121). His classifications aim to accommodate vehicles and pedestrians while ensuring safety and efficiency. The first vehicle road classification is high-speed roads. These roads are designed for fast vehicle movement, forming the primary circulation network in the city. They are positioned away from residential and pedestrian areas, allowing for swift travel without interference. The high-speed roads are meant to connect different city sectors, facilitating long-distance and inter-city travel. low-speed roads are compared to high-speed roads and are intended for intra-city traffic. They are designed to connect neighborhoods and commercial areas within the city, providing a convenient route for local commuting. These roads still prioritize vehicles but operate slower to ensure a safer and more controlled environment within the city. The local roads are designed to serve pedestrians with restricted vehicle access. They serve residential areas and the center of the neighborhoods. The smart idea is the separation between the pedestrian roads and vehicles while the pedestrian is on the upper floor and the vehicles on the ground ensuring that pedestrians can move freely and safely without interference from cars. These roads are positioned in such a way as to create a walkable and accessible environment, integrating green spaces and urban amenities close to residential zones (Le Corbusier, 1967: 121-125). The book further inquiries into ideas like collective amenities, proposing that public services like schools and hospitals should be accessible ensuring that every inhabitant has access to essential services within a short distance (Le Corbusier, 1967: 131).

3.1.4 CIAM Congresses 1928-1959

The International Congress of Modern Architecture (CIAM) consists of ten meetings from 1928 to 1959. In the middle life of Le Corbusier's works, the first five meetings of CIAM were held. The research focuses on the first five meetings as Le Corbusier demonstrated them in his book *The Athens Charter*.

Within the architectural community, there was a conflict during the 1920s. A struggle took place between modernists, who believed in new technologies and simpler masses without excessive ornamentation, built to reflect the modern times of industrial efficiency, and traditionalists, who wanted their architecture to be decorated and classically (Mumford, 2002: 12).

CIAM was largely influenced by the development of new architecture in the 1920s, with architects from Belgium, the Netherlands, and Germany playing a significant role in this movement (Vossoughian, 2006: 49). It is time for CIAM to exist which was a preeminent forum on architecture and urbanism that operated from 1928 to 1959 to resolve issues concerning modern cities, the housing crisis, and global concerns (Le Corbusier, 1973: 3). Le Corbusier was a leading proponent of the group.

Le Corbusier mentioned the CIAM congress concepts and visions in his books *The Athens Charter* in 1943 and *The Radiant City* in 1935. Le Corbusier had iam buses plan to debate and decide how modern architecture should be practiced in the twentieth century, he aimed to unite the entire continent and form a society of architects. Ultimately, he established this group in 1928 called the International Congress for Modern Architecture (CIAM). Sines the Patris Il was a single-class boat, for the first meeting (Domhardt, 2012: 178). All passengers on the boat were either members of Congress or friends or guests of one of them. They all had similar interests and were willing to discuss anything related to a better urban environment. They were also all aware of the significant opportunities for change in the Western world after the end of the First World War. The boat began its journey across the Metaradrine in 1933, the destination was Athens. The most influential architects in the world were gathered on board the ship to alter the architecture of the continent (Mumford, 2019: 291). These elite groups of urban planners and architects set the standard for how design and architecture should be done in the 20th century. They designed the industrial city's

architecture and planning for years to come, which is why we have minimum housing standards. They also created the ultimate achievement of urbanism. The question that presents itself is why we have not heard about these groups in a wider range. This could be because the organization was abounding with political strategy, conflict over authority, and powerful acts, which ultimately led to its failure. One of the most equitable features of the CIAM congresses was not restricted by age or any kind of professional class. The young people were able to participate and present their contributions as well. The congress members consisted of different backgrounds some of them were artists, urban planners, scientists, Architects, and art critics. Modern architecture's guiding principles will be discussed, developed, and disseminated by the group. The most familiar figures of the congress were Walter Gropius, Karl Moser, Hendrik Berlage, Victor Bourgeois, and Moholy-Nagy. The group kept increasing over time and got more members like Alvar Aalto, Louis Herman De Koninck, Christian Zervos, and Carola Giedion (Mumford, 2009: 228). The main reason for the gathering was to standardize architecture across the continent and create uniformity for the betterment of the profession and society at large. For this reason, they applied three distinct scales and designs in their work. The three stages: are the city, building, and unit levels. Even though it would not all be settled at once, their goal at each meeting was to advance the conversation and improve their guidelines. Additionally, the International Committee for the Recognition of Contemporary Architectural (CIRPAC) Problems was one of CIAM steering which has been founded on four continents and encompasses twenty-three countries, they remain committed to developing their discussions with works that include distinctive programming (Le Corbusier, 1973: 5).

To sum up, the general aim of the CIAM congress was to declare the disparate need for new concepts of architecture to carry out our present and future days demands. Furthermore, the congresses based on discovering the architectural problems, Presented modern principles and, Actable the modern principles with economic and social context. Examining the journey from La Sarraz via Frankfurt and Brussels to Athens as the result of intended scale transition experimentation is one way to approach it. This is because CIAM members followed a relatively structured path to investigate how to design modern cities collectively based on a rational modular scheme at ever-larger scales from individual dwellings in the neighborhoods to the plan of the city throughout five collaborating conferences. The visual

representation of shifting perspectives and scales seems particularly fitting for the reconsideration of CIAM starting point.

The first congress meeting was held on 28 June 1928 at La Sarraz Switzerland. The meeting was focused on the need for organization and identifying crucial principles for all architects and designers around the world. The goal of the first Congress's plan, which continued for three days, was to discuss architecture expression eliminate it from academic control and place it in the appropriate economic context. Additionally, it focused on the link between architecture and state, architecture and public standpoints, and urbanism from the point of traffic and density (Le Corbusier, 1973: 6-8). Le Corbusier and the organizers believe that this program ought to set boundaries for the conversations that follow, with subsequent congresses focusing on different topics.

“I established this program in the hope of showing our guests the direction I felt the discussions should take to avoid running around on the rocks of individual passions which problems of aesthetics inevitably arouse”. (Le Corbusier, 1967: 14).

In Le Corbusier's book *CIAM Urban Planning Grid: Implementation of the Athens Charter* he demonstrated four main objectives to be achieved. The first is to define the problem of contemporary architecture. The Second is to express the modern architectural concept. The third is to introduce this concept into social-technical and economic sectors. The fourth is to guarantee the realization of the architectural problem (Foundation le Corbusier, n.d.e). Furthermore, the fundamental concern that Le Corbusier himself had to start establishing this group was architecture should express the spirit of an era (Le Corbusier, 1967: 16). He wanted to break from the neo-classical principle, from the unnecessary decorations. He wanted a new architecture that reflected the new era of industrialization. Le Corbusier regularly was into drawing connections between the building trade's inefficiency and the motor industry's standardized efficiency (Le Corbusier, 1986: 274). The group members of the first meeting produced a documentation called the La Sarraz Declaration. Through the La Sarraz declaration, the group agreed that architecture could no longer exist in isolation apart from politics and government. They also emphasized the need for the design and construction industry to rationalize their methods and embrace new technologies. So, these statements were not just random, they were consciously chosen, to declare to the world that its design was about to change. Moreover, the outlined six questions that are in detail will

convene significant figures from the business, architectural, social, and economic fields (Klarin, 2018: 65). The six concerns related to architecture covered many key points that Le Corbusier declared in more detail in his book *The Radiant City*.

The first question is the implication of new technical methods on architecture, such as advocating for new structures, new materials, supporting walls, flat roofs, and free façade (Le Corbusier, 1967: 20-21).

The second question is the standardizing of building components to streamline construction, reduce reliance on varied trades, and increase efficiency. He suggested that prefabrication could replace traditional on-site methods, with standardized items like windows, doors, and stairs produced at scale. To support this, he recommended uniform architectural elements and modular, space-saving furniture to create functional, human-centered interiors. Additionally, he emphasized updating building hardware for durability, drawing inspiration from the robust designs seen in railway systems. This vision aimed to modernize construction by prioritizing mass production, uniformity, and adaptability (Le Corbusier, 1967: 21-22).

The third question is the general economy. Le Corbusier envisioned an economically driven shift toward industrializing construction, aiming to produce houses in factories for on-site assembly. He argued that standardizing dimensions for industrialized building elements would necessitate new building trades. To support this transition, he proposed establishing an international agency to educate the public and coordinate with the League of Nations to promote a universal technical language, facilitating global communication and fostering peace. He also recommended creating a Bureau of Architectural Inventions, linked to experimental labs worldwide, where innovations could be scientifically tested. Government funding for construction could then be directed to these labs to optimize housing solutions (Le Corbusier, 1967: 22-23).

The fourth question from the first meeting was related to city planning. Le Corbusier argued that iron and reinforced concrete provide the means to reshape city planning, addressing the social and economic upheavals of the machine age. He observed that the lack of a central coordinating agency leads to confusion and chaos, making it essential for every region to establish a responsible planning body. This body should guide large-scale reforms for both

urban and rural areas, hindered by fragmented land ownership. He advocated for laws to reconstitute land, increase its value, and modernize municipal regulations, particularly building height and development density. In cities, high-density zones should feature tall buildings, ample traffic flow, and green spaces, ideally encircled by a protective green belt. Le Corbusier emphasized orthogonal layouts for traffic and building blocks, with city planning those mandates roof gardens and elevated streets where needed to promote public health. He stressed a shift from short-term solutions to surgical city layouts, cutting directly through existing structures rather than merely widening streets, for effective, forward-thinking urban design (Le Corbusier, 1967: 23-24).

The fifth question was about domestic academics, Le Corbusier observed that the role of architects and the requirements for housing are often poorly defined, with clients unclear on their own needs. These disconnects lead to the failure to meet essential living standards, causing unnecessary spending and a legacy of costly housing inaccessible to many. He proposed introducing basic domestic education in primary schools, covering topics like home economics, spatial harmony, furniture function, cleanliness, sunlight, and basic physics. This foundational knowledge would cultivate a generation with a rational understanding of housing, empowering them to articulate and address their living needs effectively (Le Corbusier, 1967: 25).

The final question was to Concentrate on the link between architecture and government. Le Corbusier argued that architecture is fundamental to a nation's economic prosperity yet remains constrained by outdated pre-industrial methods and an academic system that clings to historical dogmas. Academies, in his view, distort architectural education by focusing on past styles rather than innovation, resulting in inefficient and costly practices. He suggested that governments should reclaim architectural education from these traditional institutions, prioritizing modern, productive methods that reflect progress and adaptability. By shifting away from academic monopolies, governments could foster a revitalized architectural spirit, positively impacting civic pride, national morale, and the character of citizens through architecture that is both dynamic and meaningful (Le Corbusier, 1967: 25-27).

At the end of the first meeting, the public was informed about the establishment of the CIAM through a declaration. Eventually, architects emphasize the importance of construction in human life and the need for architects to align with their epoch's orientation. They reject

principles from previous societies and advocate for a new architectural concept that addresses spiritual and material needs. They express their commitment to mutual assistance in achieving their moral and material aspirations globally (Le Corbusier, 1967: 28).

The second meeting of CIAM has a clear agenda for working on minimum architectural standards. In 1929, the second CIAM Congress was held in Frankfurt, at the request of the city's officials and organizations that focused on large-scale experimental projects devoted to the family home (Le Corbusier, 1967: 29). The subject matter given to the national groups by their CIRPAC steering committee concerned finding the types of homes that would efficiently bring together the greatest number of tangible and technological achievements that could be used to improve the family dwellings (Le Corbusier, 1967: 30).

The organization group of CIAM congresses was working on three different categories: unit, building, and city. However, CIAM II was focusing on a unit. They were based on a comprehensive study on dwellings for creating an adequate and ideal family home, which is considered the first time for conducting extensive research in this matter. To do so, the group of CIAM II studied case studies of housing units to understand how much space is needed per person such as Flats in Hampstead, Casa Bloc in Barcelona, and Wells Coates's Isokon (Vossoughian, 2006: 52).

The group intensely desired the whole unit to be mass production starting from entire structural walls to door handles and floor as well. To give an example light-giving facades to housing units that will provide a free ceiling, allowing for rational circulation and sunlight. These facades are arranged with slabs, girders, flat vaults, and posts, which can be installed upon request. The free ceiling principle requires the elimination of visible crossbeams. The arrangement of posts is determined by accurate computation of distances (Le Corbusier, 1967: 30). This system allows for a more open plan and efficient use of space. Moreover, the distances between posts and girder spans will be standardized to allow for industrialization. The presence of posts within the housing unit will be approximately between 5% and 25% to give the designer free space to make changes to the plan (Le Corbusier, 1967: 34). Since the house needs posts to cover 5% of the built-up area the foundations for carrying walls will be eliminated. Instead, the pilotis will take place. Following extensive discussion, the members of CIAM II produced the first comprehensive study on household standards alongside affordable family housing units for low-

income residents. However, the question here is what is the standardization that groups of CIAM were fighting to apply in housing units or minimum houses? Le Corbusier defined, that standardization as the way the industry can take over a product and produce it in large quantities and with high standards at a low cost (Le Corbusier, 1986: 281).

To sum up, The concepts of free plans, roof gardens, and pilotis were presented through CIAM II therefore, the result of the second CIAM Congress was producing a book featuring one hundred new housing plans from cities across the world, including locations such as the United States, Budapest, Paris, Brussels, Frankfurt, Vienna, Madrid, Hamburg, Zurich, Stockholm, Berlin, Moscow, and others (Le Corbusier, 1973: 15). The plans were divided into three categories, single-family houses, two-family homes, and multiple-family residential buildings. That means the unit was merely the beginning and how buildings and neighbourhoods are created which are considered the main subjects in the next CIAM meetings.

The third congress meeting was held in Brussels Belgium in 1930 (Porotto & Monterumisi, 2019: 79). The meeting aimed to design housing settlements that consisted of the previously established minimum units. Through the meeting many concepts were discussed one of these concepts is the perimeter block. The concept means to design a block full of buildings around the outer edges and open space in the center of the city. The perimeter block concept was rejected by the CIAM members as it prevented each unit from having equal access to natural light and adequate ventilation (Kallis, 2021: 128). Another concept that discussed through CIAM III was the high-rise buildings that presented by Corbusier and Gropius would make ideal worker housing structures. The concept was not accepted by the group members (Le Corbusier, 1973: 20). With the rejection of perimeter blocks and high-rise units, they adopted a different strategy. The buildings must have access to daylight, fresh air, and open, green spaces. The solution that came out of the group members after the rejection of the perimeter block is Zeilenbau Rows. Zeilenbau Housing was arranged in rows and placed properly separated to provide sufficient ventilation and lighting (Klarin, 2018: 69). The basic concept of this meeting was to minimize individual private spaces and increase communal amenities in collective housing. The meeting started with the production of 34 case studies by all members of various cities throughout the world that had been chosen by the CIAM members and CIRPAC (Le Corbusier, 1967: 36). These comprehensive investigations permitted the

members to discuss how cities should be designed, just as they had done for the dwelling units and building designs. This comprehensive analysis brought the question of how tall or low the building should be in the city and how the city should function and practice. There are two conflicting perspectives on the question. The first is the clustering of garden cities, which divides its residents over a large area while the second is the vertical gathering of residents in centered cities, which reduces the city's total area to a minimum (Le Corbusier, 1967: 35). The four functions of city living, working, recreation, and transportation were developed and highly discussed through CIAM III (Moors & Plevvoets, 2019: 120).

In summary, the perfect starting point had been set from CIAM I to CIAM III, for what was to come afterward, the dream of all architects to build the ideal city. The most significant of all the CIAMs, the one that established the principles of urban design for several decades to come, was the initial phase of the greatest accomplishments through CIAM III (Domhardt, 2012: 35).

Following the 1928 attempt in Frankfurt am Main, and during its third congress in Brussels in November 1930, CIAM decided to hold its next meeting themed “The Functional City” in Moscow. However, the Moscow congress never materialized. In 1929 as the initial stage, Moscow was offered to host the fourth CIAM meeting with the themes of urban organization, urban construction, and regional planning rather than on a boat that sailed from Marseilles to Athens. Le Corbusier's competition entry for the Palace of the Soviets in the USSR was rejected. Thus, the CIAM's members protested the outcome of the competition for the Palace of Soviets, which led to the congress being relocated from Moscow to Athens (Le Corbusier, 1973: 25). Nevertheless, an analysis of the archival materials reveals that the delay was caused by a significant shift in domestic USSR policy, which occurred before the CIAM argued about the competition's outcomes (Somer, 2007: 122). The fact that the process of events has never been fully investigated. After the conflict and uncertain reasons for postponing the meeting, CIAM IV was held in 1933 on a ship towards Athan. This CIAM was the most important and controversial of all the meetings (Cohen, 1992: 235). Additionally, in this meeting, Le Corbusier and his associates were in a commanding position during the fourth meeting. The 34 urban analyses that the CIAM members produced in CIAM III were meant to serve as a starting point for an interactive conversation and comparative examination. Throughout the meeting, the participants failed to arrive at a

definitive decision. Due to the power politics, that were controlling and utilizing urban planning and architecture to alter power dynamics and establish an unrestricted regime (Flierl, 2016: 51).

Contrary to this, the result that came out of the meeting is the Athens Charter which is recognized as a seminal document that defines a practical approach to contemporary city planning. It was produced by the Fourth Congress of CIAM IV in 1933 (Harvey, 1989: 33).

The fifth CIAM meeting, held in Paris in 1937, focused on dwelling and recovery as its central theme, with an emphasis on exploring housing issues and urbanism as a response to social and political challenges of the time (Le Corbusier, 1973: 25). This meeting aimed to examine ways to create healthy, efficient living environments that could address the needs of both individual dwellings and entire communities. Le Corbusier and his colleagues promoted the idea that cities should be organized scientifically, with a separation of these core functions to improve urban life and address issues such as overcrowding and poor living conditions (Le Corbusier, 1967: 141).

3.1.5 The Interaction Between Books and CIAM

The interaction between the five CIAM meetings and Le Corbusier's books is foundational to his development of modernist architectural theory and urbanism. Le Corbusier's active role in CIAM helped him formulate his principles through books, where he explored key themes in modern architecture that would resonate through each CIAM congress. It is observed that the first and second CIAM meeting is highly connected with Le Corbusier's book *Towards a New Architecture*. Le Corbusier contributed his ideas on functional living spaces, which he detailed in the book. Furthermore, the theme of Minimum Dwelling aimed to address the pressing need for affordable, hygienic housing. Besides, the book advocated for the new technical methods of architecture that were central ideas at CIAM I and CIAM II (Le Corbusier, 1986).

While the CIAM III meeting was central to the functional city theme influenced Le Corbusier's book *The City of Tomorrow and Its Planning*, where he elaborated on zoning and urban organization. CIAM III led to the definition of the city advocating for clear divisions of urban areas into residential, work, recreation, and transportation zones. Le

Corbusier's theory of Radiant City laid the groundwork for this CIAM theme, emphasizing light, air, and green spaces (Le Corbusier, 1987).

The CIAM IV meeting focused on the theme of "Rational Land Use" and aimed to address how architecture and urban planning could efficiently meet the needs of growing populations. Le Corbusier's participation in CIAM IV strongly influenced his urban theories and writings, particularly in his emphasis on the functional organization of cities, which was the declaration of the book *The Athens Charter* in 1943 (Le Corbusier, 1973).

While the CIAM V focuses on post-war urban reconstruction and housing needs. This meeting aligned closely with Le Corbusier's vision of urban renewal and human-centric design principles, as outlined in his books such as *The Radiant City* and *The Athens Charter* (Le Corbusier, 1967). CIAM V reinforced Le Corbusier's approach, encouraging functional design in urban architecture and influencing his later works, such as his plan for Chandigarh City in India, where he applied many of these principles. Another example is Unité d'Habitation in Marseille, it is a clear manifestation of CIAM's ideas, especially *The Athens Charter*, which Le Corbusier co-authored. (Le Corbusier, 2000).

3.2 1921-1938: PROJECTS AND TRIPS

The research explores his key projects and trips through the second section of Le Corbusier's middle period (Figure 3.7). This phase marks a crucial evolution in his architectural philosophy, influenced by his extensive travels and the execution of several iconic works.

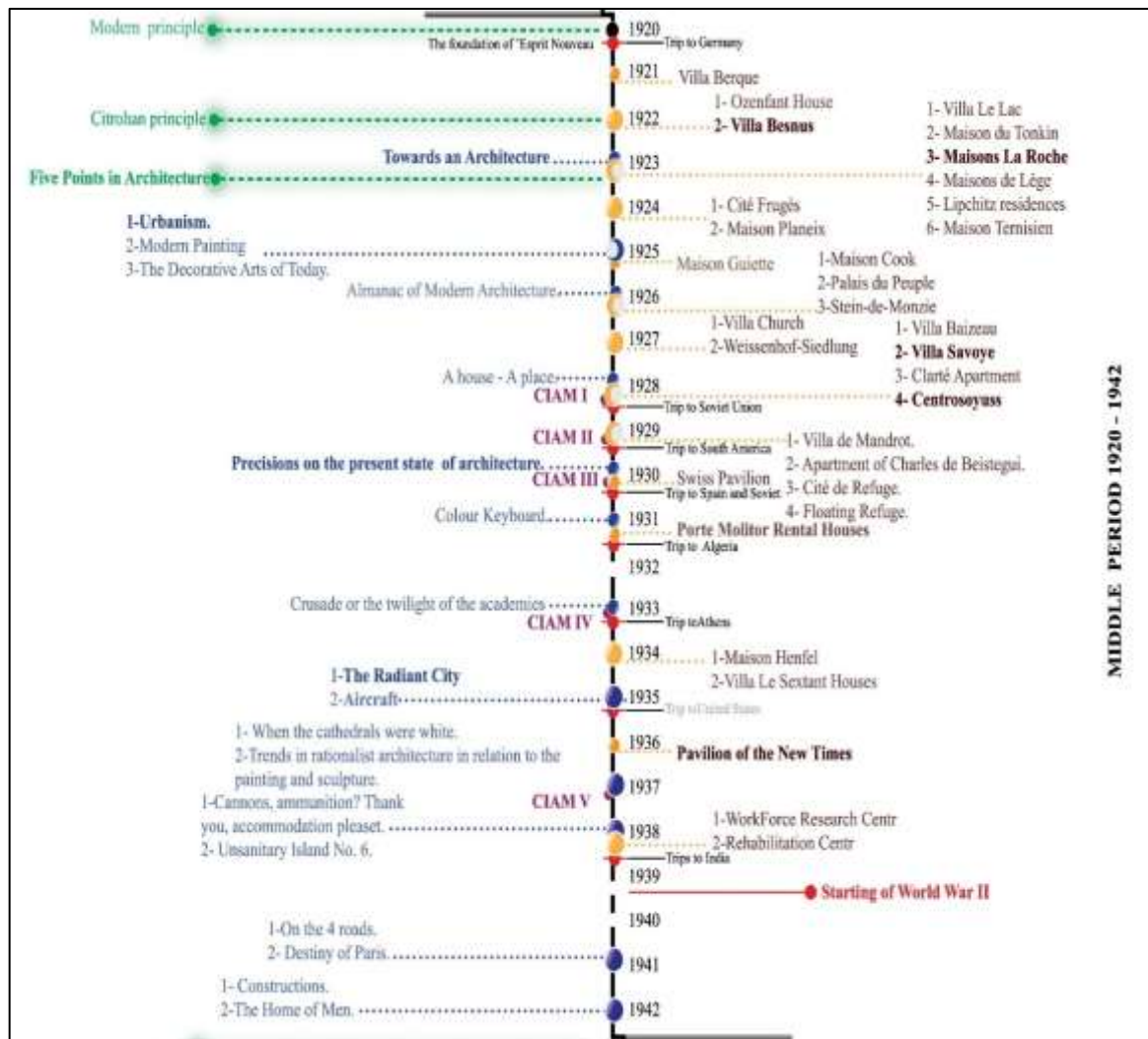


Figure 3.7: The Middle Period (Projects and Trips) (Right), between 1921 and 1938 (Produced by the Author).

3.2.1 Projects

According to the division of Le Corbusier's works through his life, in the middle period of Le Corbusier's works, he constructed thirty projects. The projects are Villa Berque, Villa Besnus, Maison-atelier Ozenfant, Villa Geneva or Villa La Lac, Maison du Tonkin, Maison La Roche, Maisons de Lège, Lipchitz residences, Maison Ternisien, Pavilion of the New Spirit, Cité Frugès, Maison Planeix, Garage Sensaud de Lavaud, Maison Guiette, Maison Cook, Palais du Peuple, Villa Stein-de-Monzie, Weissenhof-Siedlung Houses, Pavillon Nestlé, Villa Church, Villa Baizeau, Villa Savoye, Clarté Apartment, Centrosoyus, Villa de Mandrot, Apartment of Charles de Beistegui, Cité de Refuge, Floating Refuge, Pavillon

S.T.A.R, Porte Molitor Rental Houses, Swiss Pavilion, Porte Molitor Rental Houses, Maison Henfel, Villa Le Sextant, Pavilion of the New Times, Work Force Research Center, and Rehabilitation Center (Foundationlecorbusier, n.d.f).

The key characteristics that shaped and reflected the evolution of his architectural projects during this period are the Five Points of Architecture. The use of Modern materials such as reinforced concrete, glass, and steel allowed him to create lightweight structures and open spaces. Besides, designing with the concept of standardization and affordability. Le Corbusier states in his book *Toward a New Architecture* “architecture operates following standards” (1986: 131).

The middle-period projects were categorized by minimalist forms and clean lines. The key figure projects that illustrate these philosophies which the research will examine in this section are Centrosoyus and Pavilion of the New Times.

In Centrosoyus Le Corbusier concluded that this concept of Architecture is traffic after he examined the circulation patterns of foot movement in the city of Moscow. The project was designed by Le Corbusier and his cousin J. Jeanneret in late 1928. The project was constructed with new techniques and methods. The project documented the successful application of fresh air and lighting to large-scale projects (Le Corbusier, 1967: 116).

Through the project, Le Corbusier developed an Architectural promenade concept by using ramps through six floors of the building creating curvilinear staircases (Figure 3.8). The project is fully integrated with the application of Five Points. Besides, he created and advocated a new method for the project which is Exact Breathing based on creating environments that feel comfortable and enhancing the quality of life which reflects Le Corbusier's broader vision of integrating architecture with human physiology and psychology. However, the concept did not apply to the project (Le Corbusier, 1960: 45-74).



Figure 3.8: The Façade of Centrosoyus (Left), the Curvilinear Staircases as a Result of an Architectural Promenade Concept (Right) (Foundationlecorbusier, n.d.g).

Another essential project during this period is the Pavilion of the New Times in Paris (Figure 3.9). The pavilion illustrated his vision for future cities, emphasizing mass production, efficient urban planning, and the role of architecture in addressing social needs. The project was lightweight and designed to be easily assembled, dismantled, and moved. This flexibility aligned with Le Corbusier's vision for adaptable, scalable structures suited to changing urban needs. This project allowed him to develop his ideas on prefabrication and modularity further, which became central themes in his later work, including the Unité d'Habitation (Foundationlecorbusier, n.d.h).

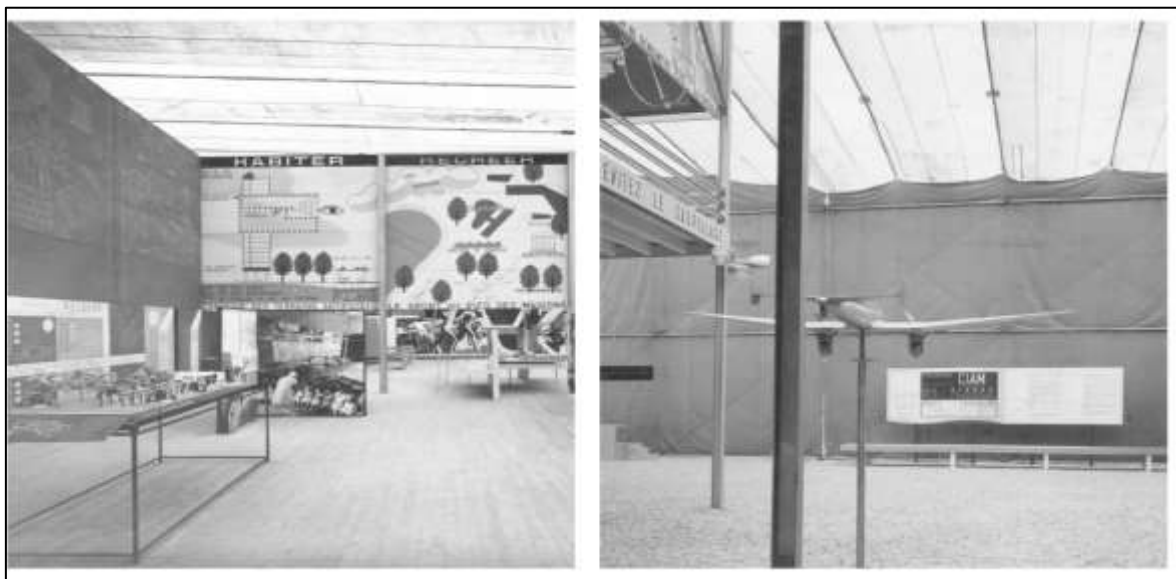


Figure 3.9: Pavilion of the New Times (le Corbusier, 1938).

3.2.2 Trips

Le Corbusier's travels during his middle period differed from those of his early years. These later journeys were primarily motivated by commissioned projects or engagements in advisory roles on urban design committees and giving lectures. Therefore, the focus of these trips leaned more toward creation rather than observation and examination, as was characteristic of his earlier journeys. Through this period, he visited Germany, Spain, Algeria, Athens, South America, Italy, the Soviet Union, the United States, and Turkey (Foundationlecorbusier, n.d.i).

In 1920, Le Corbusier went to Germany which was pivotal for enlarging his exposure to the modernist movement and industrial architecture after his first trip in 1910. When he was in Germany, he visited Berlin, and the emergence of the Bauhaus and Deutscher Werkbund movements influenced him. His trip to Germany was essential because it contributed to developing the Five Points of Architecture and informed his ideas in *Towards a New Architecture* (Passanti, 1997: 447).

In 1928 Le Corbusier visited the Soviet Union. Where he interacted with Soviet officials, planners, and architects who were interested in using modernist ideas to promote industrialization and urbanization under Soviet control was the main goal of these excursions. Le Corbusier received a request from the president of work in Moscow to communicate his views on urban planning and social housing. His experience in establishing collective housing units and his idea of a logical, standardized construction process attracted the interest of Soviet officials, who wanted to build efficient worker housing (Le Corbusier, 1967: 34-35). Therefore, the design of the Centrosoyus project in 1928 was a result of this trip.

In 1929, Le Corbusier traveled to South America. In the *Precisions on the Present State of Architecture and Urbanism* book, Le Corbusier describes his trip to South America, especially Argentina, Brazil, and Uruguay. This trip serves as a primary backdrop for *Precisions*, providing examples that support his theories on urbanism, architecture, and housing (Le Corbusier, 1960: 202-245). In 1930, Le Corbusier visited again the Soviets he also, contributed to designing a monumental project that was meant to symbolize Soviet power called the Palace of the Soviets. However, the design was not accepted. Although the

project was not chosen it allowed him to explore large-scale monumentalism and empowered his vision of blending architectural function with political ideology (Tugarinova, 2016: 93). In the same year, he also visited Spain, the purpose was to share his ideas on urban design and increase his influence in the rapidly developing country. During this tour, he discussed his ideas for modern architecture, which emphasize effective city planning and the fusion of functional architecture, in lectures and meetings with Spanish architects, and urban planners (Diez-Pastor, 2015: 1).

Furthermore, Le Corbusier was notably impressed by the Moorish architecture of Spain, particularly the Alhambra in Granada. His trip to Spain led him to experiment with more vibrant colour schemes in his later designs. While in 1931, Le Corbusier traveled to Algeria. The purpose of the trip was based on to explore the opportunities for modern architecture in the context of colonial urbanism. This trip was significant as it allowed him to study the landscape, climate, and cultural conditions of North Africa. Le Corbusier was interested in the relationship between architecture and the urban environment. In Algeria, he studied how local architecture responded to climate and context, which influenced his later works and theories on functional design. He proposed urban planning projects for Algiers from 1931 until 1942, integrating his modernist principles with the existing urban fabric. Following this trip, in 1933, Le Corbusier came back again to display his plans for the city (Le Corbusier, 1967: 228). His concepts of the city were never fulfilled. Within the same year, Le Corbusier traveled to Athens to participate in the Fourth Congress of Modern Architecture (CIAM), which played a crucial role in the development of modern architectural theory (Le Corbusier, 1973: 25).

In 1938, Le Corbusier traveled to India while he was commissioned to design Chandigarh City after the partition of India in 1947. His trip was an exploratory visit to understand the local culture, geography, and climate, which would inform his design principles for the new city. He aimed to create a modern city that incorporated green spaces, efficient traffic circulation, and a clear organizational structure (Le Corbusier, 2000: 226). He believed that Chandigarh could serve as a model for future urban developments in India and beyond. The visit allowed Le Corbusier to engage with Indian architects, officials, and the local populace, promoting a dialogue between Western modernism and Eastern traditions. This interaction helped him adapt his designs to better fit the local context (Fitting, 2002: 71-72).

4. LATE PERIOD OF LE CORBUSIER'S WORKS 1943-1968

The late period of Le Corbusier's work, spanning from 1942 to his death in 1965 and including posthumous realizations until 1968, marked a significant evolution in his architectural philosophy and practice (Figure 4.1).

This era witnessed a departure of Le Corbusier's philosophy from the strict functionalism of his earlier career, embracing more expressive and organic forms alongside his ongoing engagement with monumental and experimental projects.

During this time, Le Corbusier remained committed to integrating his theoretical explorations with practical applications, producing a range of influential projects and publications. Projects such as, Unité d'Habitation, Notre-Dame-du-Haut Chapel, and Le Cabanon. Publications books such as *The Athens Charter*, *The Modulor*, and *Modulor2*.

The late period of Le Corbusier's works is considered a very dramatic period while Le Corbusier shifted seamlessly between large-scale and minimalistic designs, as well as from mass-produced architectural concepts to a more brutalist approach (Curtis, 1986: 140).

Moreover, through the late period, Le Corbusier was concerned with representing his vision for social housing and urban living. He fully defined his city planning principles, he stated that "city planning is a question of synthesis" (Le Corbusier, 1960: 154).

During this chapter, the thesis categorizes the late phase of Le Corbusier's works into Three distinct sections (theoretical works and books), (projects and trips), and (post-death books) (Figure 4.1).

4.1 1943-1965: THEORETICAL WORKS AND BOOKS

Through the first section, theoretical works and books, Le Corbusier theorized his final innovative principle of the Modular system. He published twenty-five books from 1943 until the year of his death in 1965 (Foundationlecorbusier, n.d.d).

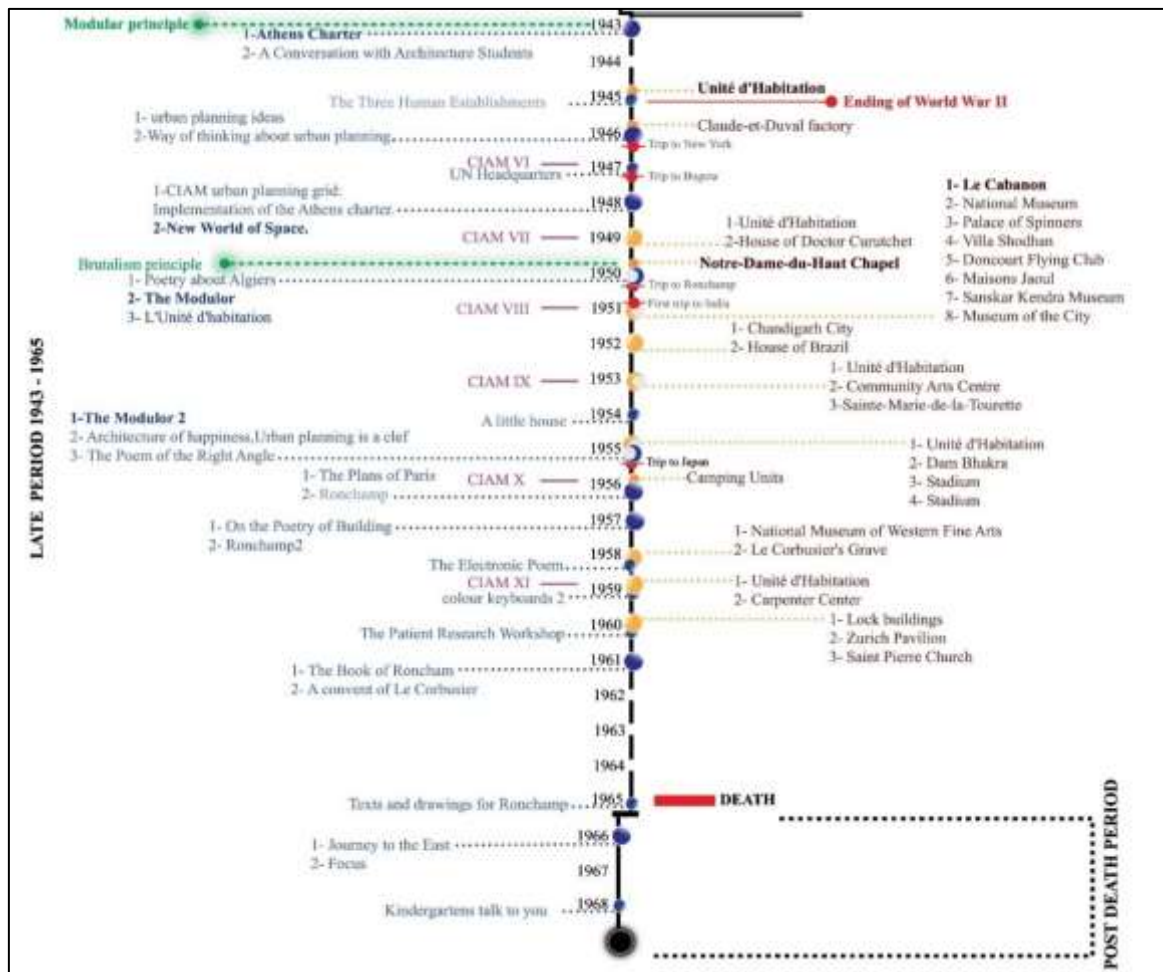


Figure 4.1: The Late Period (Theoretical Works and Books) (Left) between 1943 and 1965 (Produced by the Author).

4.1.1 Modular System: Innovative Principle

The Modulor system was the last principle that Le Corbusier created in the final period of his works. To address the pursuit of perfection, it is essential to work towards creating a standard. According to Le Corbusier architecture, at its core, follows a process grounded in these standards, which are derived from logic, analysis, and thorough study. These standards develop from a well-defined problem, but ultimately, they are shaped and solidified through experimentation (Le Corbusier, 1986: 131). Le Corbusier dreamed of achieving a standard proportion for construction. This standard developed after he created the regulating line that he documented in his book *Towards a New Architecture* in 1923. Le Corbusier proposed the Modulor system because he observed the need for architecture to be standard and more purist which might go beyond the metric and imperial systems (Curtis, 1986: 164). The Modular

is a human-scale system of proportions, aimed to create harmony in architecture and urban planning. Le Corbusier states “My dream is the construction sites throughout the country will feature a proportional grid either drawn on walls or made from iron strips. This grid would act as a universal guideline for the entire project, allowing for endless combinations and proportions. [...] Workers like masons, carpenters, and joiners would use it to determine the measurements for their tasks” (2000: 37).

Le Corbusier suggests taking a figure of a man with his arm raised, measuring 2.20 meters tall, and placing him within two overlapping squares, each 1.10 meters by 1.10 meters. A third square should then be positioned across the two initial squares, with the location of the right angle guiding where this third square is placed. This grid is designed around the human figure. The Modulor values, as originally devised, were based on the height of a man measuring 1.75 meters, which seemed more typical of French measurements. However, Le Corbusier remarked that in English detective stories, attractive figures, like policemen, are often portrayed as being six feet tall. The system adjusted to this six-foot standard, equivalent to 182.88 cm. The new Modulor, based on a six-foot person, converted neatly into simple values in feet and inches. It was well-established, particularly during the Renaissance, that the proportions of the human body followed the golden ratio. When Anglo-Saxon units were introduced, a relationship was created between the foot and inch that mirrored those natural body proportions. From then on, they focused on refining this new Modulor, using a six-foot human figure, into an easily understood round-value (Le Corbusier, 2000: 56-66). Le Corbusier extended the application of the golden ratio by segmenting the human body at key points such as the navel, knees, and throat ensuring each division integrated into this mathematical idea (Figure 4.2.) (Le Corbusier, 1980: 45).

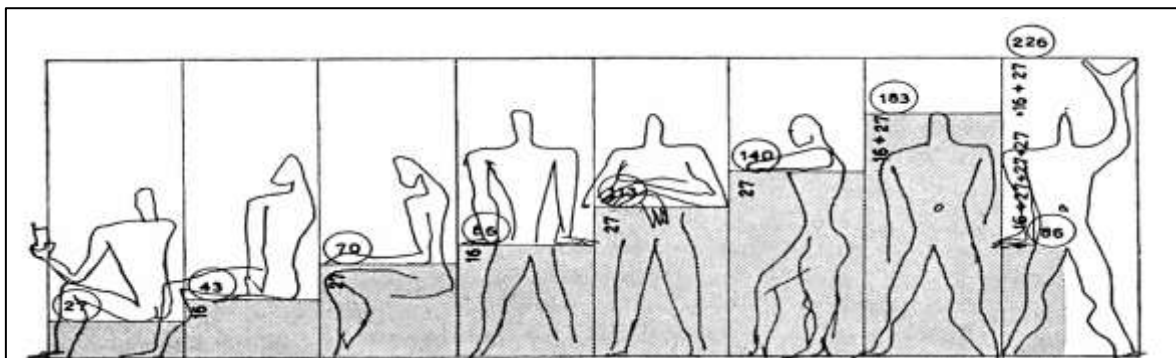


Figure 4.2: Using the Golden Ratio by Segmenting the Human Body (Le Corbusier, 2000: 67).

To sum up, the initial step of Modular development is based on observing human proportions, with a focus on the relationship between different parts of the body. Le Corbusier drew upon historical concepts of harmony and proportion, such as those found in classical Greek architecture and Leonardo da Vinci's Vitruvian Man. The second step applying the Golden Ratio (1.618) into his system, as he believed it offered a natural and aesthetically pleasing sense of proportion. This ratio was applied to human dimensions to create harmonious relationships between architectural elements. The third step is using the height of a typical man (around 1.83 meters or 6 feet) as a baseline, Le Corbusier developed two height ranges (one with the arm raised and one with the arm down). He then divided these into sections based on the Golden Ratio to create a scale of measurements (Le Corbusier, 1960: 72). These dimensions formed the core of his Modular system. The final step is applying this modular system to architectural design. Le Corbusier envisioned Modulor as a tool for standardizing building components, such as doors, windows, and furniture, to align them with human proportions. "The Modulor system is a working tool universally applicable to architecture and mechanics, clears the way for the imagination" (Le Corbusier, 2000: 185).

While the Modular is widely celebrated as a significant theoretical contribution, it has been subject to considerable criticism. The major critique is its over-simplification of human diversity. The Modulor uses the height of a 6-foot (183 cm) male as its standard. This choice excludes many demographic groups, including women, children, and individuals from cultures with different anthropometric averages. This has led to accusations of a lack of inclusivity, rendering the system less applicable across diverse contexts. Additionally, the Modulor has been seen as emblematic of Western-centric design philosophies, imposing a homogenized vision of proportion and aesthetics on global contexts (Frampton, 1980: 157).

Furthermore, postmodern architects, including Aldo Rossi and Robert Venturi, criticized the Modulor for its deterministic approach. They argue that architecture is a cultural and historical practice that cannot be reduced to universal mathematical principles. Rossi (1982:15) criticized modernist systems like the Modulor for their tendency to oversimplify complex social and cultural phenomena, while Venturi (1966: 47) highlights the system's alignment with modernism's failure to address cultural plurality.

4.1.2 Books

The publishing books start with *The Athens Charter*, *A Conversation with Architecture Students*, *Three Human Establishments*, *Urban Planning Ideas*, *Way of Thinking About Urban Planning*, *CIAM Urban Planning Grid: Implementation of The Athens Charter*, *New World of Space*, *Poetry about Algiers*, *The Modulor*, *'Unité d'habitation*, *UN Headquarters*, *A Little House*, *Modulor 2*, *Architecture of happiness*, *Urban planning is a clef*, *The Poem of the Right Angle*, *The Plans of Paris*, *Ronchamp*, *On the Poetry of Building*, *Ronchamp 2*, *Electronic Poem*, *Colour keyboards2*, *Patient Research Workshop*, *Book of Roncham*, *A convent of Le Corbusier*, and *Texts and drawings for Ronchamp* (see Appendix A.2). The three books published after his death are *Journey to the East*, *Focus*, and *Kindergartens Talk to You* (Foundationlecorbusier, n.d.d). Through these books, Le Corbusier emphasizes urbanism more than the early and middle periods. The research emphasizes the key figure books in this stage: *The Athens Charter*, *The Modulor*, and *Modulor2*.

The book *The Athens Charter* aims to establish principles for modern urban planning, emphasizing the need for functional city design in the face of industrialization and urban sprawl. Urbanism in Le Corbusier's language is not merely a science of arranging buildings it is a science of human order and purpose. The city must provide everyone with a space to work, live, and grow. He developed the concept through discussions at the CIAM meetings. Le Corbusier started the first foundation of the CIAM under the topic of "a far city of the discreditable palace". While the second Congress was under the title of a "toward worthy dwelling". While the third Congress under the title of toward a new form of inhabitant. *The Home of Man* which is a book from the middle period works was a title that Le Corbusier opened his chapter of the fourth CIAM. Le Corbusier's discussion of "The Title for the City and the Earth" was the opening chapter of the fifth and final meetings of CIAM that Le Corbusier referred to in the book (Le Corbusier, 1973: 13-35). The second section of the book includes the Charter based on three modern city design elements. First, which concentrates on the generalities required for the city and its region, second is the critical examination of the existing cities. Le Corbusier observed that the cities suffer from poor organization of buildings, narrow stress, and lack of adequate sunlight or fresh air. Therefore, after he examined cities, he proposed that third which is the city should be separated into work areas, leisure, inhabitants, and traffic (Le Corbusier, 1973: 46-53).

The other essential books are *The Modulor* and the *Modulor2*. The foundation of the principle appeared long before the declaration of the book. The foundation of Modular appeared even before 1923, in 1916 Le Corbusier used the regulating lines as a mathematical order in the Villa Schwob (Le Corbusier, 1986: 80-81). In this point Le Corbusier claims “I speak of a tool, the Modulor, lying on the draughtsman's table side by side with the pencil, the set-square, and the T-square. Are the T-square and the set-square crimes” (Le Corbusier, 2000: 220). In *The Modulor* Le Corbusier introduced the Modular principle based on the human figure, which aims for proportion accessible to all by connecting dimensions to the golden ratio (discussed further on page 66). In *Modulor2* the continuation of what he discussed in *The Modulor*, he discusses how the Modulor adapts to diverse architectural obstacles and highlights its value as a tool for designers. In this point, he states in *Modulor2* that “putting *The Modulor* into practice has yielded a significant and encouraging simplification: a simple numerical table on a half-sheet of typing paper supplies all the essential measures used in architecture” (Le Corbusier, 2000: 15).

Unité d'Habitation in Marseilles is one of the notable projects that he fully fulfilled with the Modular principle in *The Modulor*. Another essential project that Le Corbusier discusses in *Modulor2* is Chandigarh City in India where he fully applied the modular principle (Le Corbusier, 2000: 32). The Modular principle became the dominant principle in Chandigarh because it introduced a human-scale, aligning buildings with natural human measurements to improve functionality and spatial harmony. Le Corbusier adapted this system for Chandigarh's climate and cultural needs, ensuring that the city served as a comfortable, rationally organized environment. This proportionality created a universal architectural language emphasizing accessibility and modernity, harmonizing with India's postcolonial concept of progress and self-identity in urban development. Le Corbusier's *Modulor2* is more than just a tool for proportion; it's an attempt to reconcile humanity with the mechanized world.

Eventually, Le Corbusier envisioned a system that would integrate the human body's proportions into the structure of buildings, creating spaces that naturally feel harmonious. However, there's also a paradox, while he aimed for universal applicability, he based the measurements on a specific body type, which sparked criticism and discussions about inclusivity in design.

The books faced criticisms one of the significant criticisms was by Hilde Heynen while she examines the impact and implications of modernist principles, including Le Corbusier's Modulor system, through the lens of critical theory. Heynen criticized in her book *Architecture and Modernity: A Critique*, the dimensions around the universal human form and explores how these ideals in *The Modulor* and *Modulor2* sometimes clash with the realities of cultural and social needs. Heynen emphasizes that while Le Corbusier's Modulor system aimed to create harmony and proportion through a human-centered approach, it inadvertently imposed a rigid framework that prioritized formality over humans (Heynen, 1999: 142).

Another book that gained recognition through Le Corbusier's late works is the *New World of Space*. In the book, Le Corbusier did not introduce something new otherwise the book is considered as an illustration of his ideas and a small collection of his art, architecture, and urbanism works. He demonstrated the evolution of his design attitude with weightless structure projects such as the Pavilion of the New Spirit, Villa La Roch, and Villa Cook, within the concept that "the house is a machine to live in" (Le Corbusier, 1986: 4). The book also demonstrated his shifting ideology from a weightless structure to large-scale projects, such as Unité d'Habitation, and city planning concepts, such as Plan Vision and City Planning for Algeria (Le Corbusier, 1948: 33). Therefore, Le Corbusier presents his reflections on modern architecture and urbanism, exploring how space and light create harmony and functionality in built environments. In this book, Le Corbusier expands on his theories of architectural proportion and spatial composition, particularly how architecture can shape human experience in urban spaces (Le Corbusier, 1948: 55). Le Corbusier emphasizes his Citrohan and Five Points of Architecture as essential to achieving harmony in space. He uses photographic examples of his projects, such as Villa Savoye, to illustrate these concepts, showing how the spatial organization can bring new perspectives to urban settings. This book also reflects his philosophical commitment to modernism and architecture. The book's methodology seems different as Le Corbusier developed and used photographs to explain the relation between architecture, art, and urbanism through his projects and paintings.

4.2 1945-1960: PROJECTS AND TRIPS

In this section, the study explores Le Corbusier's major projects and travels during the late period of his career (Figure 4.3). Furthermore, Le Corbusier's late architecture projects present a willingness to experiment with unconventional forms and compositions. His late projects include symbolic and artistic features, reflecting his belief that architecture could convey deeper cultural and philosophical meanings. Eventually, Le Corbusier through this period frequently rethought conventional spatial arrangements to create open, connected areas. These characteristics will be improved through the key figure analyzing projects in this section.

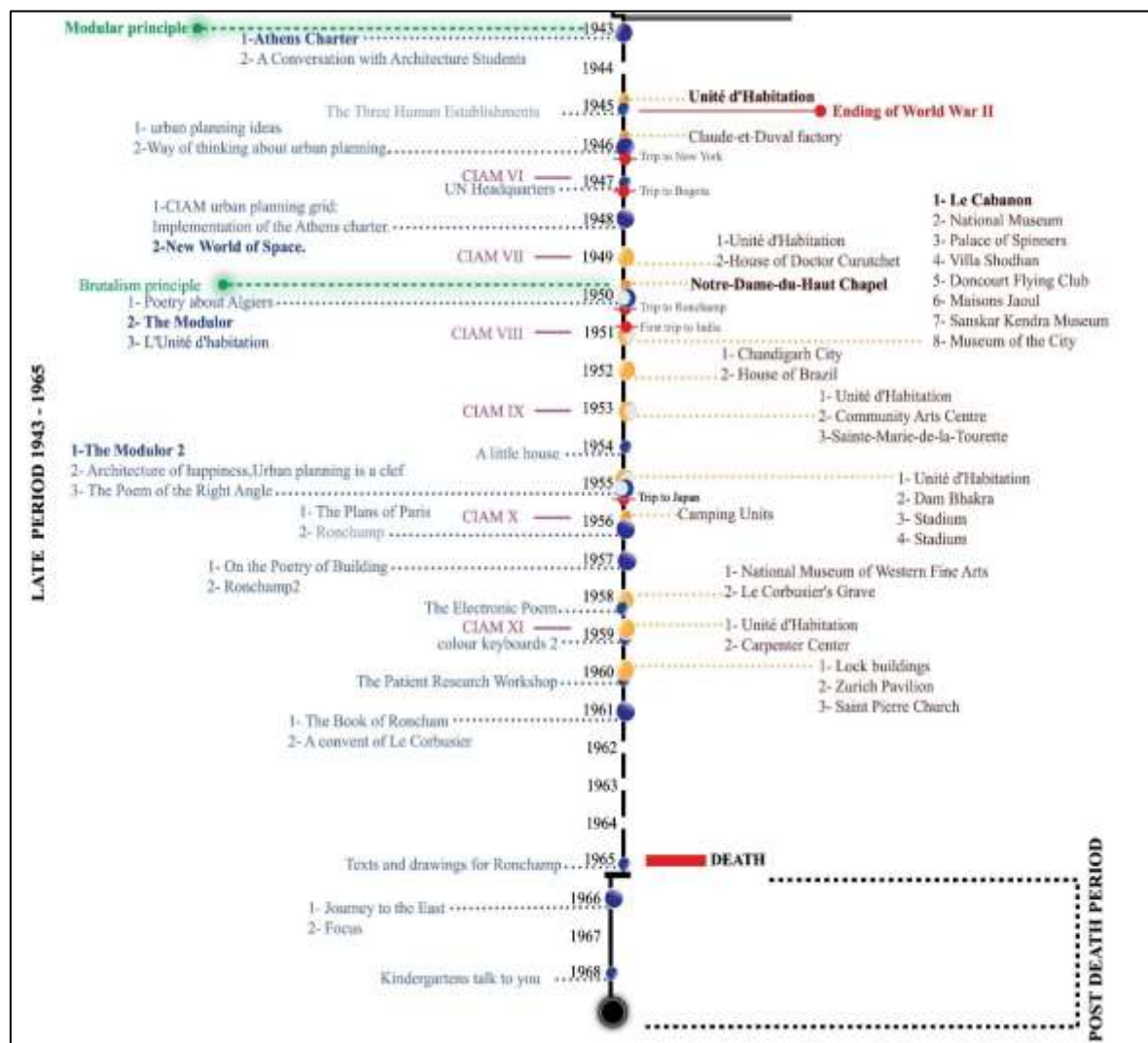


Figure 4.3: The Late Period (Projects and Trips) (Right), between 1945 and 1960 (Produced by the Author).

4.2.1 Projects

Le Corbusier constructed thirty projects in his late period from 1943 to 1965 (Figure 4.3). the projects are Unité d'Habitation in France, Claude-et-Duval factory, House of Doctor Curutchet, Unité d'Habitation in France, Notre-Dame-du-Haut Chapel, Le Cabanon, Maisons Jaoul, Palace of Spinners, National Museum of Western Art, Villa Sarabhai, Doncourt Flying Club, Villa shodhan, Sanskar Kendra Museum, Museum of the City, House of Brazil, Chandigarh City, Unité d'Habitation in Germany, Culture House, Sainte-Marie-de-la-Tourette, Unité d'Habitation in France, Dam Bhakra, Stadium in France, Stadium in Irak, Camping Units, Le Corbusier's Grave, Carpenter Center, Unité d'Habitation in France, Lock buildings, Zurich Pavilion, and Saint-Pierre Church (Foundationlecorbusier, n.d.f). The key essential projects through this period are Unité d'Habitation, Notre-Dame-du-Haut Chapel, and Le Cabanon.

The Unité d'Habitation project was the first project as a housing unit for Le Corbusier (Figure 4.4). In his book *Precisions on the Present State of Architecture and City Planning*, Le Corbusier mentions the concept of Unité d'Habitation and from where he got the inspiration, he states that “the origin of this research [...] goes back to my visit to the Charterhouse of Ema near Florence, in 1907. In this musical landscape of Tuscany, I saw a modern city crowning the hill [...] each cell has a view of the plain and opens onto a small, completely enclosed garden below [...] I thought I would never be able to come across such a cheerful interpretation of the habitation [...] this modern city dates from the fifteenth century. The radiant vision stayed with me forever” (Le Corbusier, 1960: 64).

The project was a result of twenty years or more of housing research. The project experimented with Le Corbusier's principles from the Dom-Ino, the contemporary city to the Modular and The Radiant City (Foundationlecorbusier, n.d.j). The project was inspired by the ideas of the Immeubles-Villa's concept (1923-1925), which provided flats with shared services like a school, a gym, a retail strip, and a roof terrace with amenities. The project is a prototype for mass manufacture. It displays enormous potential between the collective houses, individual and urban beside the natural and the other between private and public (Blake, 1968: 105). The project's frame is constructed of reinforced concrete. The facades are sometimes minimal and sometimes painted. The apartments are accessed via the vast entrance hall, which also serves as an intersection for the elevators and stairs. The project

consists of 18 floors with 58 apartments, Le Corbusier described the Unité d'Habitation as a Vertical City that includes residential apartments with commerce avenues on the seventh and eighth levels (Le Corbusier, 2000: 132). The projects encompass various amenities such as shops, communal spaces, and hotels. The vast rooftop terrace includes a gymnasium, an open-air theater, and a nursery school with a pool. The projects are considered an example of Le Corbusier's vision of integrating leisure and living spaces within a single structure (Le Corbusier, 1973: 31).



Figure 4.4: Unité d'Habitation 1945 (Foundationlecorbusier, n.d.j).

Another fundamental project in the late period of Le Corbusier's career is Notre-Dame-du-Haut Chapel (Figure 4.5). It demonstrates Le Corbusier's style shifting into a form that has not appeared in his previous projects. Le Corbusier concentrated on design with the spiritual, sculpture, and emotion. Le Corbusier states, "in building this chapel, I wished to create a place of silence, prayer, peace, spiritual joy" (Le Corbusier, 1957). In addition to this, the project illustrates Le Corbusier's departure from Pilotis and Modular to more monumentalism, texture, symbolic expression, curving roofline, thick walls, and irregularly small windows (Baker, 1996: 273-274).



Figure 4.5: Notre-Dame-du-Haut Chapel (Le Corbusier, 1957).

Le Corbusier's primary source of inspiration applied in the project is the praying hand, the shape of the ship, hat, and dove (Millais, 2018: 174) (Figure 4.6). The essential element of inspiration for Le Corbusier is the crab shell (Le Corbusier, 1957). The chapel's walls are punctuated by irregularly placed, coloured glass windows, which create a powerful play of light and shadow that differs from his signature horizontal ribbon windows. Le Corbusier's selection of various materials such as raw concrete, painted plaster, wood, cast iron, and bronze all add to the space's character. The roof overhang, which is elevated slightly above the walls below to allow a narrow strip of light to enter the building from only the east and south sides, indicates the structure's two receptive sides (McKay, 1979: 103).

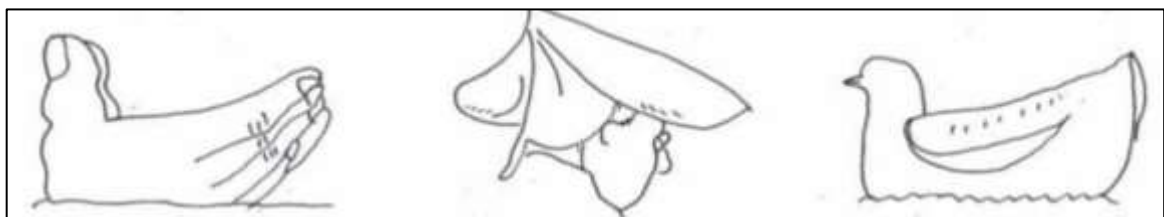


Figure 4.6: The Primary Inspiration Sources of Notre-Dame-du-Haut Chapel (Millais, 2018: 174).

Another project in the late period of Le Corbusier's career is Le Cabanon. The project documented the notable shifting of Le Corbusier's philosophy, from rigid, brutal, large scale as seen in the early, middle, and late periods to minimal and integrated design with natural (Figure 4.7). In Le Cabanon Le Corbusier, inspired by traditional log cabins, was constructed from wood and adorned with pine bark cladding, including a single-pitched eternit roof. Le

Corbusier designed the project for himself (Foundationlecorbusier, n.d.k). The small project consists of two windows, each 70 square centimeters and equipped with folding shutters, overlooking the Mediterranean and the century-old Carob tree (Freitas, 2016: 6).



Figure 4.7: Le Cabanon (Foundation Le Corbusier, n.d.k).

The furniture of Le Cabanon includes a closet, a storage area, a hardwood bed with a headrest, a table with shelves and storage units, and a coat rack (Figure 4.8).



Figure 4.8: The Furniture of Le Cabanon (Foundationlecorbusier, n.d.k).

The interior's minimalist style is brightened by bold colour accents such as a red toilet curtain, yellow parquet, green, red, and white ceiling panels, and coat rack pegs in contrasting colours (Klinkhammer, 2023: 12). The usage of various colours provided contrast (Figure 4.9).

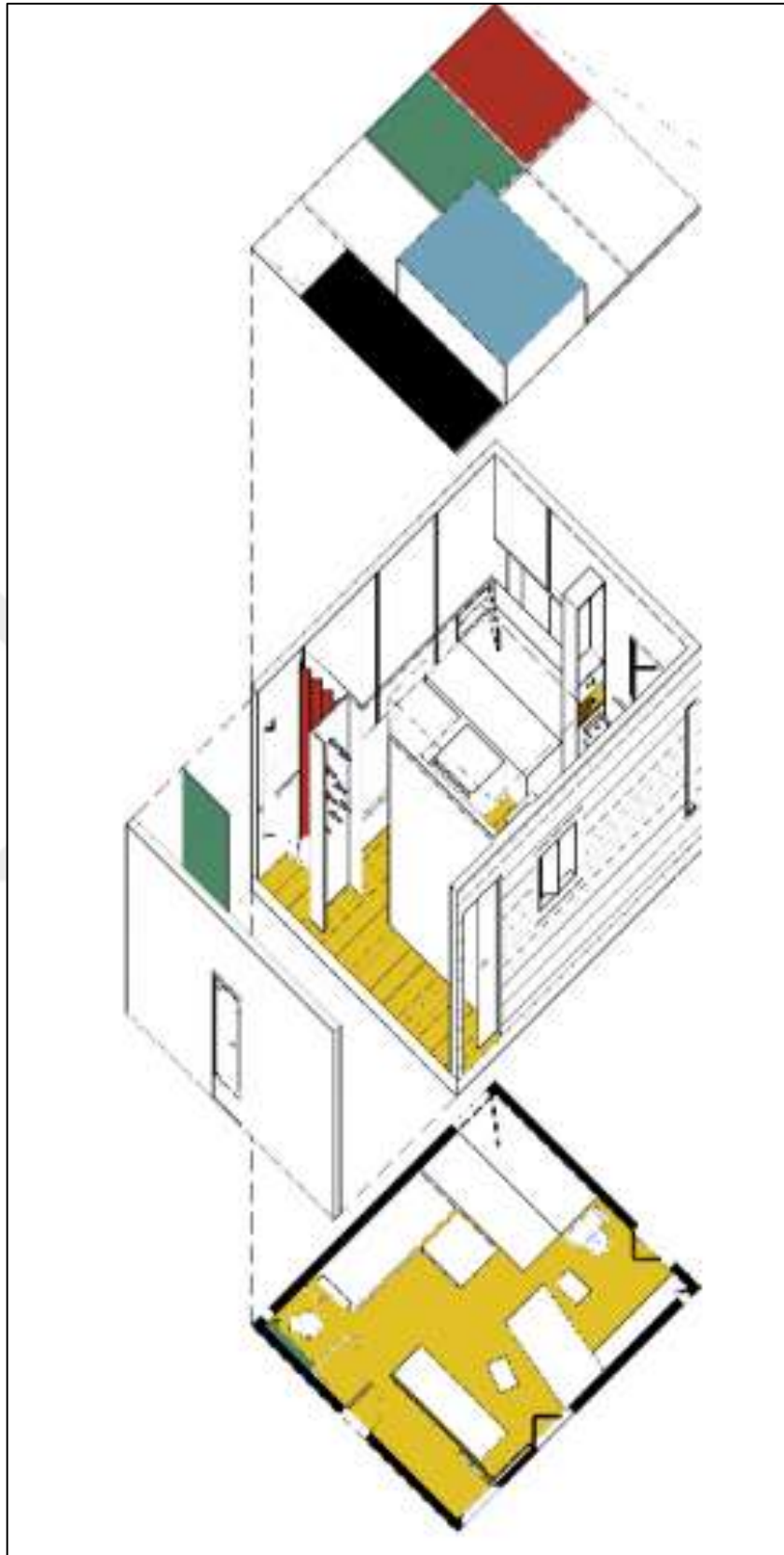


Figure 4.9: Isometric View of the Project Shows the Contrast Colours (Klinkhammer, 2023:12).

4.2.2 Trips

Le Corbusier's trips from 1943 until his death in 1965 were notably focused on international projects, exhibitions, and lectures, largely due to his established reputation and the growing recognition of his work worldwide. The significant trips during this period were to India, the United States, Japan, and different cities around Europe (Foundationlecorbusier, n.d.i).

In 1947, he visited the U.S. for the United Nations Headquarters project in New York, where he collaborated with architects like Oscar Niemeyer (Bacon, 2015: 21). Although many of his proposals for the UN headquarters were not realized, his involvement underscored his stature in global architecture. He again revisited the city in 1951, where he delivered lectures and attended exhibitions (Le Corbusier, 2000: 208). After Le Corbusier was asked to build the new city of Chandigarh, he began visiting India regularly throughout the 1950s and early 1960s. His work here involved not only the design of government buildings but also the urban layout of the entire city, where he applied principles from his Modulor system. His ideas about Radiant City and human-scaled architecture were realized in Chandigarh, with frequent visits ensuring he remained closely involved in each stage of construction. These visits helped him to develop important structures such as the Secretariat, Assembly Hall, and the High Court. (Curtis, 1986: 188). In 1955, Le Corbusier received an invitation to Japan for assistance in building Tokyo's National Museum of Western Art (Birksted, 2008: 755). In his later years, Le Corbusier returned to the United States and was honored for his architectural accomplishments. These last journeys also featured displays of his art and seminars. He continued to visit sites around Europe, especially France, to oversee his continuing projects in addition to his excursions to the United States. At the beginning of the 1960s, the trips were limited to conferences and site visits closer to home, particularly around the French Riviera, where he often stayed at his Le Cabanon on the beach in Roquebrune-Cap-Martin (Frampton, 2001: 224). In his later years, he remained committed to contemporary architecture, and his trips demonstrated his attention to both theoretical and practical contributions (Weber, 2008: 97). To sum up, Le Corbusier's final journeys were marked by the development of his architectural philosophy, a growing interest in major metropolitan projects, and an expanding global viewpoint. These trips were crucial to his career advancement as well as to the development of contemporary architecture in the following years.

4.3 1966-1968: POST-DEATH BOOKS

This section of the research examines the unpublished books of Le Corbusier, exploring the books he was unable to publish due to his sudden death in 1965 (Figure 4.10).

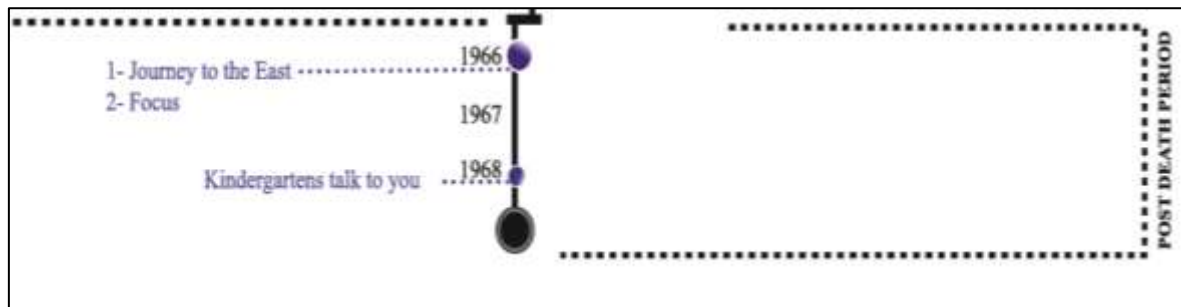


Figure 4.10: Post-Death Books between 1966 and 1968 (Produced by the Author).

After Le Corbusier died in 1965, in 1966, two books were published. *Journey to the East* is considered the first book that Le Corbusier formulated in 1911, It was the final work he approved for publication, just over a month before his passing. The book was published through Forces Vives Éditions, while the first edition was translated by Ivan Žaknić published by MIT Press in 1987 (Zaknic, 1990: 75). In the book, Le Corbusier presented a personal travelogue that reflects his experiences and observations while exploring Eastern cities such as Vienna, Bucharest, and Constantinople. The book emphasized the spiritual and cultural significance of architecture, contrasting Eastern design principles with Western modernism. Through his visits to mosques and significant landmarks in Istanbul, he highlighted the importance of harmony, cultural identity, and emotional connections to space. Ultimately, the journey influenced his architectural philosophy, enriching his understanding of the relationship between culture, spirituality, and design (Rabaça, 2017: 3).

The second book was published in 1966 by Jean-Pierre Faye through Forces Vives Éditions is *Focus*. The book included a selection of Le Corbusier's creations and thoughts on contemporary architecture.

In 1968, the book *Kindergartens Talk to You* was published by G. P. Roux through the Dénoël-Gonthier Éditions (Fondationlecorbusier, n.d.g).

5. EVALUATION OF LE CORBUSIER'S WORKS

After dividing Le Corbusier's works into early, middle, and late periods and presenting them with the key essential projects, books, principles, and trips that shaped his legacy, the thesis evaluates Le Corbusier's projects and books in four essential areas: project classification, productivity, imitative and innovative principles, and interaction between projects and books.

5.1 PROJECTS CLASSIFICATION

Le Corbusier's architectural projects can be classified based on their functional use, as he designed buildings for various purposes that reflect his vision of architecture's role. The evaluation will be conducted through three periods early, middle, and late life. Evaluating Le Corbusier's projects according to function allows for a deeper appreciation of his many-sided approach, his adaptation of theory to real-world needs, and the social impact of his architecture. This approach not only enhances our understanding of his legacy but also illustrates how functional concerns shaped modernist architecture. His classifications reflect different approaches to solving societal problems, from mass housing to urban planning (see Appendix A.3). These approaches could be divided into eleven categories: individuals, social use, culture, housing units, the working class, industry, sacred, residential, and exhibition projects (Foundationlecorbusier, n.d.f).

5.1.1 Chronological Stages and Key Findings

Figure 5.1 shows that in the early period of Le Corbusier's career, he constructed Six individual projects, one cultural, one industrial, and one working-class project.

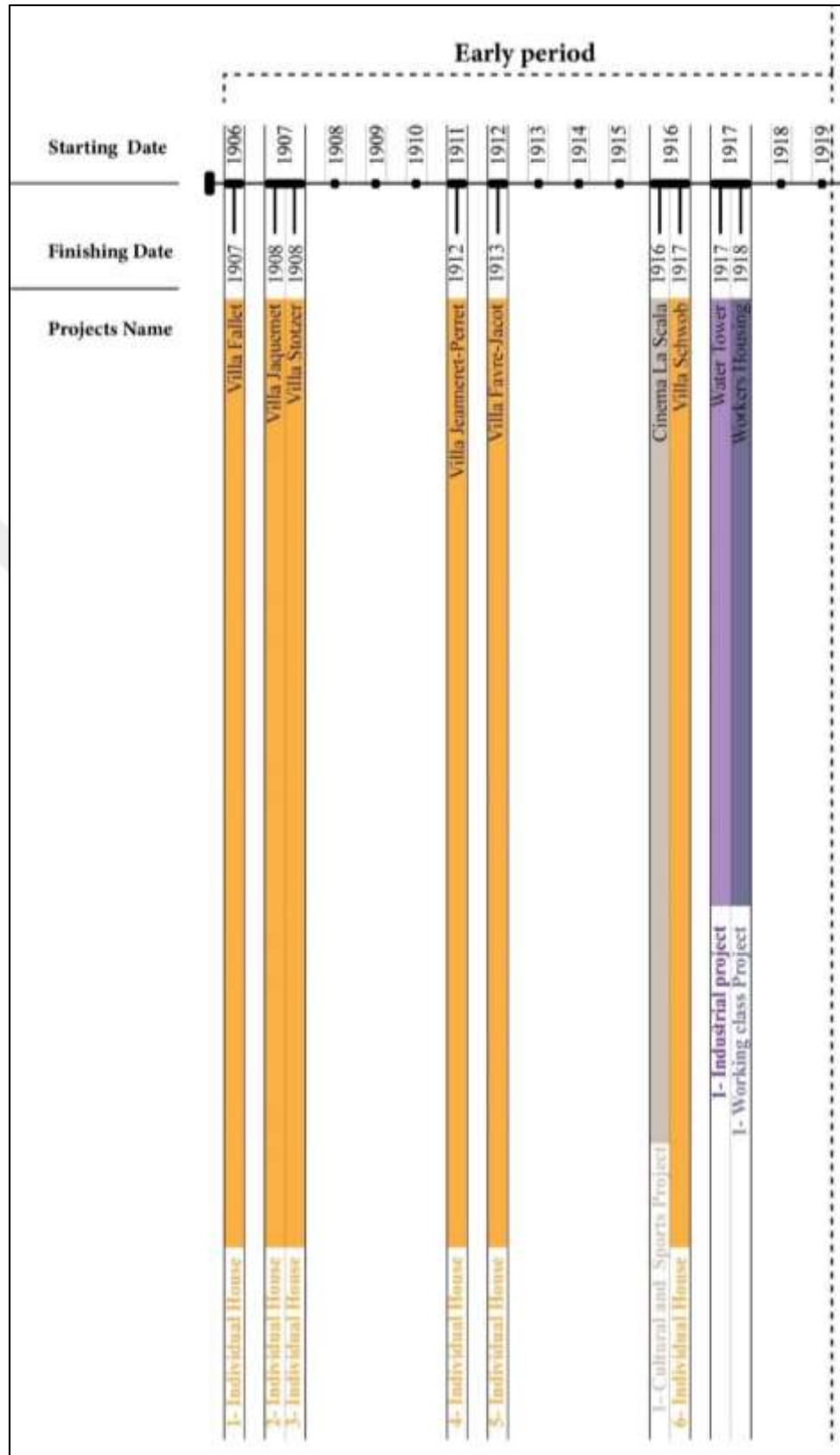


Figure 5.1: The Evaluation Based on Project Classifications Through the Early Period 1906-1919 (Produced by the Author).

Through the middle period from 1920-1942, Le Corbusier constricted eighteen individual projects, six exhibition projects, three working-class projects, five social use projects, two residential projects, one miscellaneous, and one administrative project (Figure 5.2).

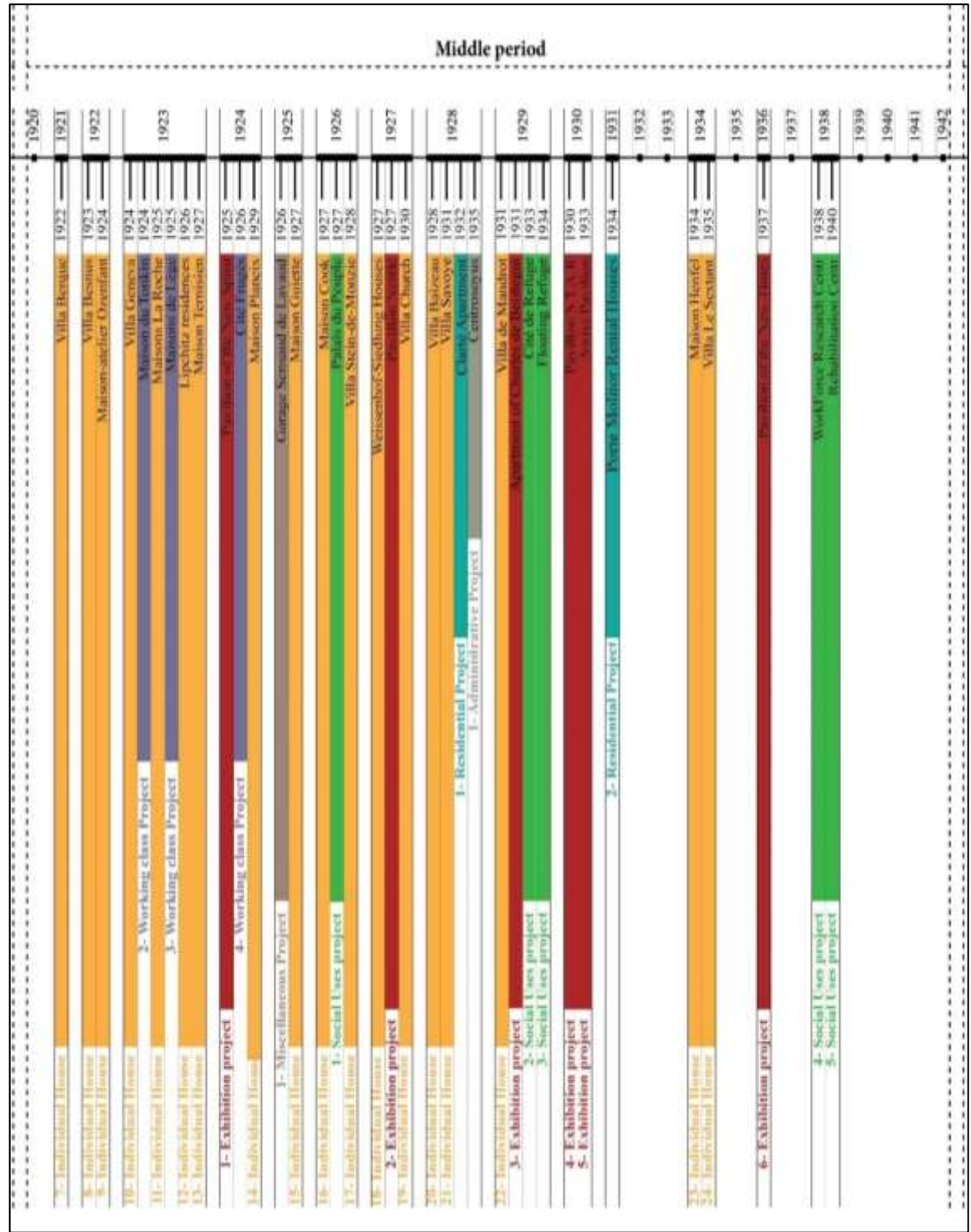


Figure 5.2: The Evaluation Based on Project Classifications Through the Middle Period 1920-1942 (Produced by the Author).

In late life, five housing units, three industrial, four individual, three sacral, five exhibition, one administrative, one residential, four cultural, and four miscellaneous projects (Figure 5.3).

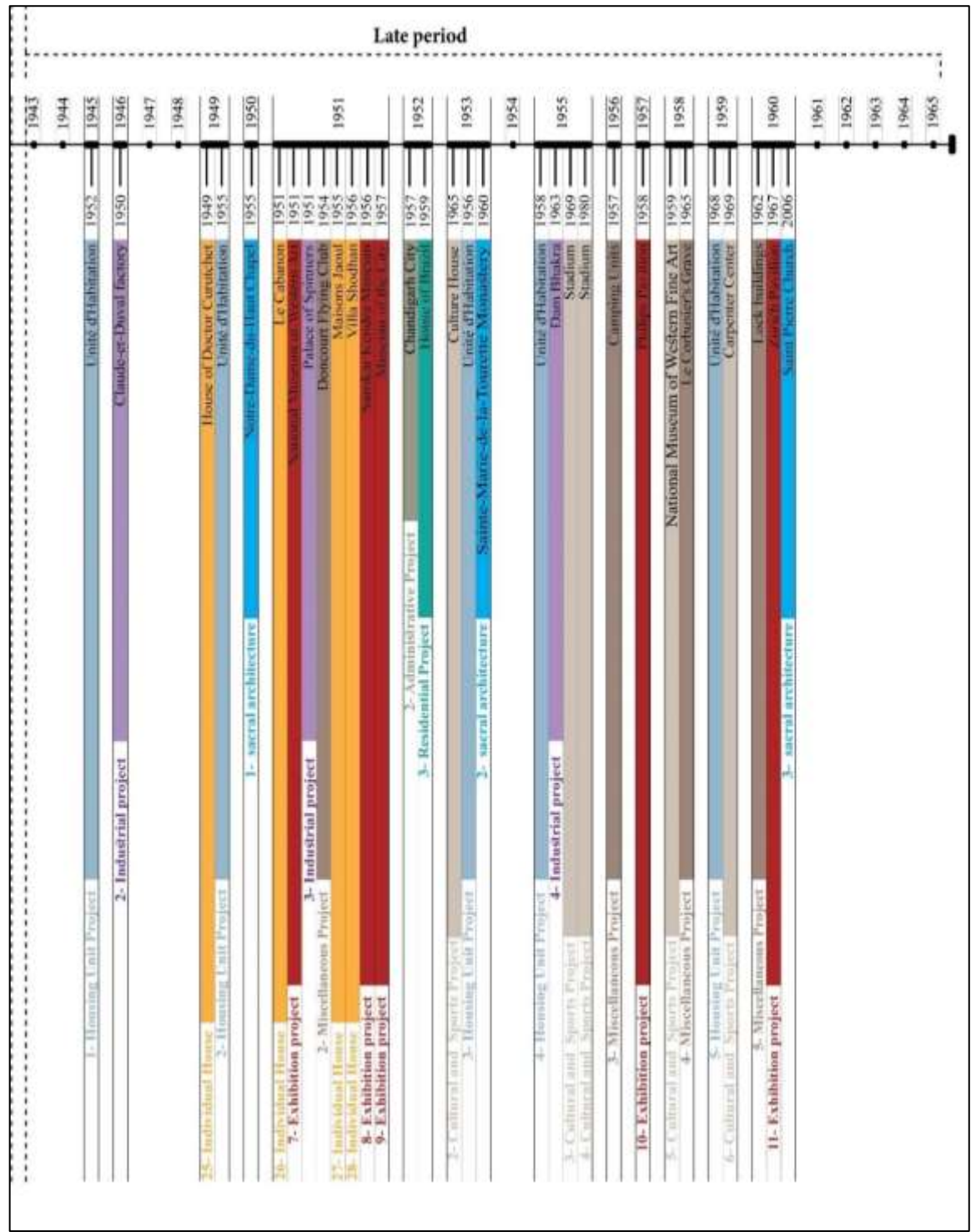


Figure 5.3: The Evaluation is Based on Project Classifications in the Late Period from 1943 to 1965 (Produced by the Author).

Upon closer examination of each stage of Le Corbusier's life, as seen in (Figure 5.4). Le Corbusier constructed twenty-eight individual projects, four industrial, six cultural and sports projects, three religious projects, five miscellaneous buildings, five social use, eleven exhibition projects, three residential projects, two administrative, four working-class projects, and five housing units.

From this examination, Figure 5.4, reveals that individual projects dominated the early and middle periods of Le Corbusier's building projects. This outcome interprets how he was focusing on solving and developing the house conditions. Le Corbusier was not yet internationally renowned; therefore, his early commissions were typically smaller and more personal, often for private clients. Moreover, Le Corbusier intended to concentrate on individual projects through the early and middle periods as resembling examples for redefining his innovation principles. However, they continued to be less in his later life.

Industrial projects appeared in early and late life while they did not exist in middle life. Le Corbusier's early work reflected his fascination with modern materials, especially reinforced concrete, steel, and glass. His admiration for industrial production and efficiency, as seen in the machine age, aligned with his architectural philosophy. Industrial projects provided an opportunity to apply these modern materials and production techniques. In later life, Le Corbusier enlarged the concept to a global scale through urban planning.

Furthermore, Figure 5.4, shows that socially oriented projects in the middle period were used as a tool to address the demands of rapid urbanization and housing shortages, which resulted in the improvement of housing unit concepts in his late-period projects.

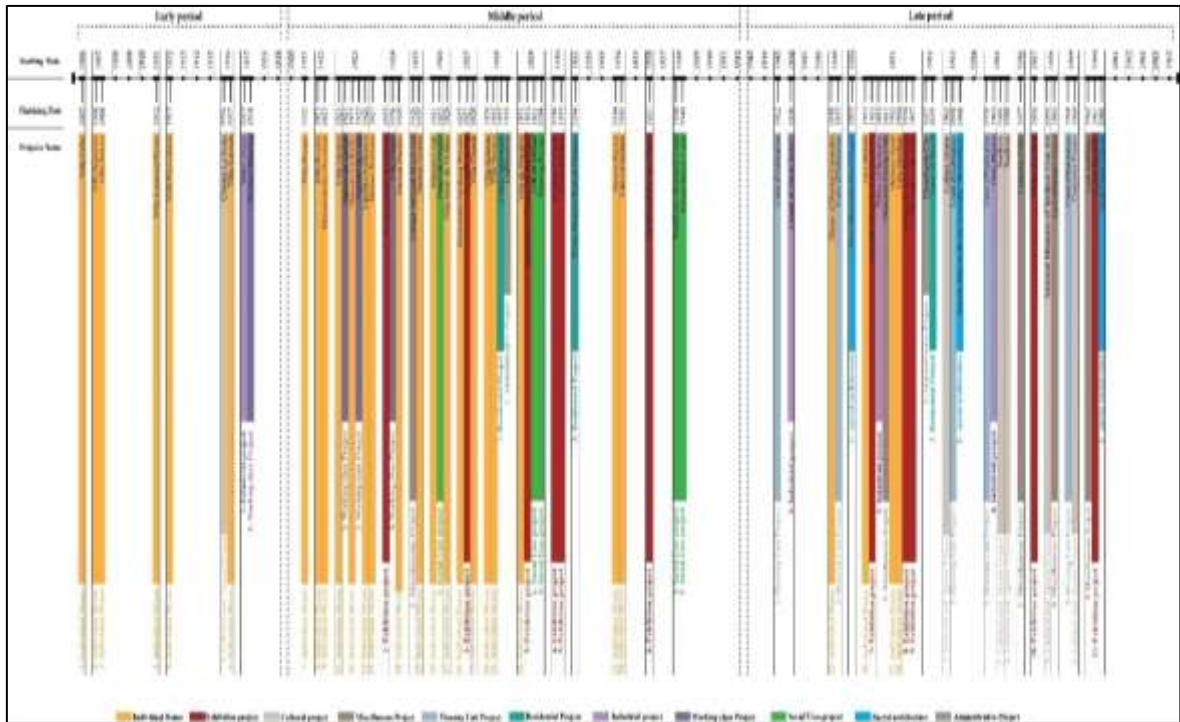


Figure 5.4: The Evaluation Based on Project Classifications Through the Early, Middle, and Late Periods 1906-1965 (Produced by the Author).

The outcomes indicate the proportion through every category (Figure 5.5). The first highest proportion of projects throughout Le Corbusier's projects are related to the individual category, representing 36% of the total projects. The second category is exhibition with 14.5% of the total projects. The third category is cultural and sports, with about 7.9% of the total projects. Coming to the fourth, fifth, and sixth categories the miscellaneous, housing unit, and social use comprise 6.6% of the total constructed projects. Meanwhile, the seventh and eighth categories are Industrial and working house class have the same proportion of 5.3%. While the ninth and tenth categories Residential and Sacral represent the same proportion of 3.9% of the total constructed projects. The final category is administrative which illustrates 2.6% of the total projects. From the observation, the highest percentage of the dominant category in Le Corbusier's projects is the individual and the lowest category is administrative. That raised the question of why Le Corbusier focused on constructing individual projects. Le Corbusier believed in creating designs that satisfied the individual's needs. He extensively advocated for a modern home in his books such as *The Home of Man* and *Towards a New Architecture*. The research concluded that Le Corbusier's emphasis on functionality, harmony, and innovative principles allowed him to concentrate on specific

projects that helped him refine and implement his ideas easily and without total rejection by authorities. In contrast to his visionary urban planning schemes, such as Plan Obus and the Radiant City they never materialized due to the projects being too huge in scale, faced political opposition, and were criticized for their utopian concepts. Many stakeholders viewed the designs as unrealistic, overly controlling, or incompatible with the urban environments they were meant for. Practical issues like funding and logistics also made them impossible to execute. Therefore, the concepts for urban planning were applied first to smaller-scale projects, such as Weissenhof-Siedlung Houses and Villa de Mandrot to implement these concepts on a more manageable level. Le Corbusier considered every individual project an opportunity to experiment with new principles, and techniques, which were fundamental to his architectural innovation. That contributed to more control and achieved tangible results.

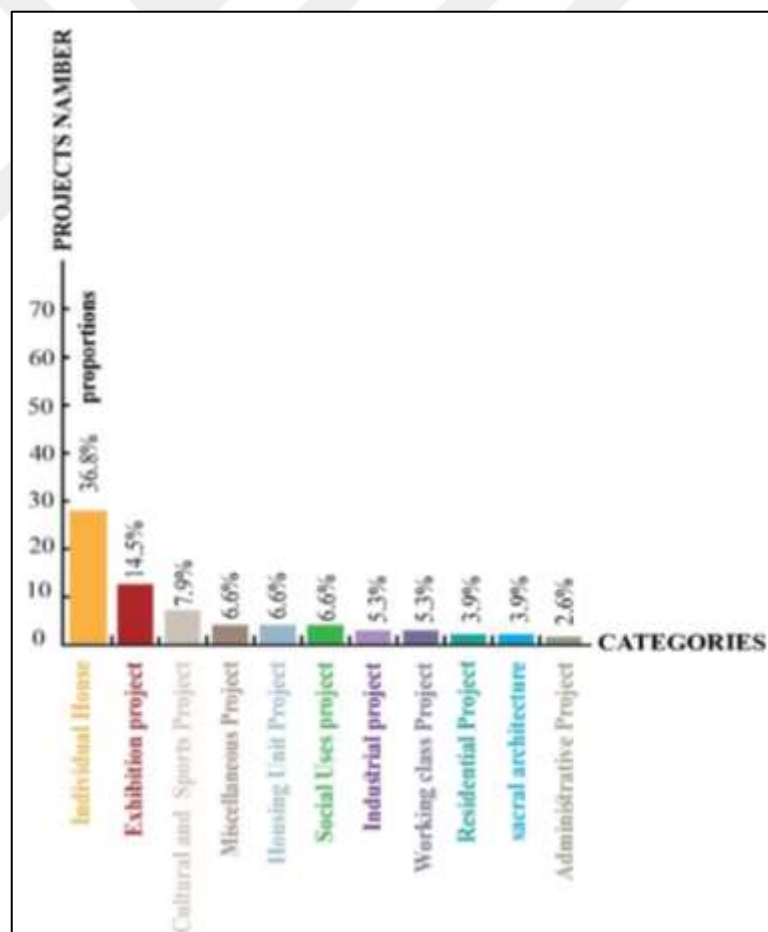


Figure 5.5: Shows the Proportion of Projects Categorized Through the Early, Middle, and Late Periods (Produced by the Author).

5.2 PRODUCTIVITY

Le Corbusier was the most dynamic and prolific architect, the research found out that he constructed 77 projects and wrote 50 books. The assessment will be conducted chronologically across the early, middle, and late periods, examining the correlation between the initiation and completion dates of projects and the publication of books to understand Le Corbusier's productivity over time.

5.2.1 Timeline Phases and Fundamental Discoveries

In Le Corbusier's early period, he started to construct nine projects, completed eight of them through the early period, and published three books.

At the beginning of the early period, the productivity of construction and completion projects was at the highest level with fewer books (Figure 5.7).

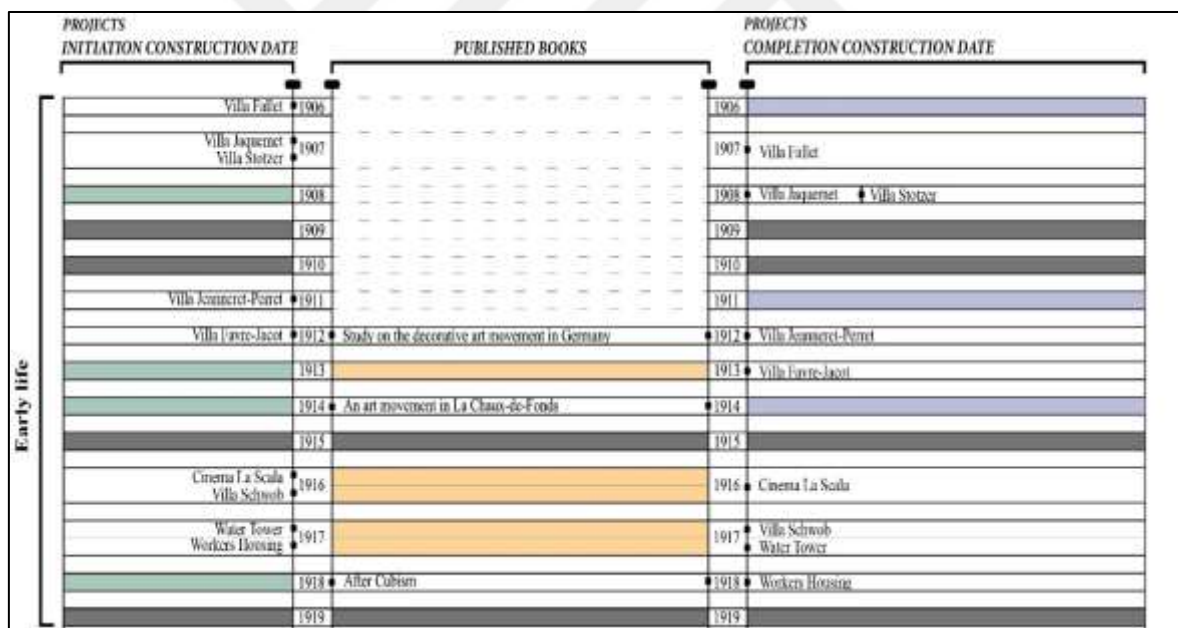


Figure 5.6: The Productivity of Starting New Projects, Publishing Books, and Completing Projects, Through an Early Period (Produced by the Author).

The most productive years of construction projects as seen in Figure 5.7, are 1907, 1916 and 1917. The most productive years of completion projects are 1908 and 1917 by completing two projects.

During the early life of Le Corbusier, he never exceeded two projects in a single year. In contrast, this level of productivity appears unusual for an architect who did not receive any formal education in architecture.

During the early life of Le Corbusier, he never exceeded two projects in a single year. In contrast, this level of productivity appears unusual for an architect who did not receive any formal education in architecture.

Figure 5.6 determines that in 1909, 1910, 1915, and 1919 Le Corbusier did not produce any books or projects. The reason lacking publishing books in 1909 and 1910 coincided with the extensive trips from Paris to Germany for more exploration of architecture and carrying out a study of decorative and industrial art. The trips significantly shaped his architectural vision, marking a period of personal and professional development rather than theoretical production. The notebooks from this time and the projects that he completed through this period reveal the gradual evolution of concepts that would later shape his work, although he had not yet formalized his thoughts into publishable material. However, he was working on urbanism ideas. Le Corbusier focused on pretesting his principle Domo-Inno to the public in 1915 rather than published books. In 1919, he concentrated on exploring the theoretical foundations of Purism in art and architecture, which emphasized simplicity, order, and a return to essential forms in art and design. Therefore, His creative energy was directed toward painting rather than architectural projects or books. That altered and developed his design vocabulary in years to come.

Through the middle period, Le Corbusier started to construct thirty-one projects. He completed all thirty-six projects through this period and published nineteen books (Figure 5.7).

With the first year of the middle period, Le Corbusier did not initiate any new projects and there were not any projects left to complete from early life.

Figure 5.7 explores that the beginning of the middle period started with a series of construction projects but fewer books and completion projects.

His lower productivity in writing during this time was due to the priority that he relied on practical work and the need to translate his innovative concepts directly into built forms. For

instance, in 1922, Le Corbusier did not publish a single book even after establishing the magazine L'Esprit Nouveau with Amédée Ozenfant which would serve as a starting point for him to produce more books in the years to come; the reason is that Le Corbusier was completely engaged with presenting his Citrohan principle in 1922 at the Salon d'Automne in Paris.

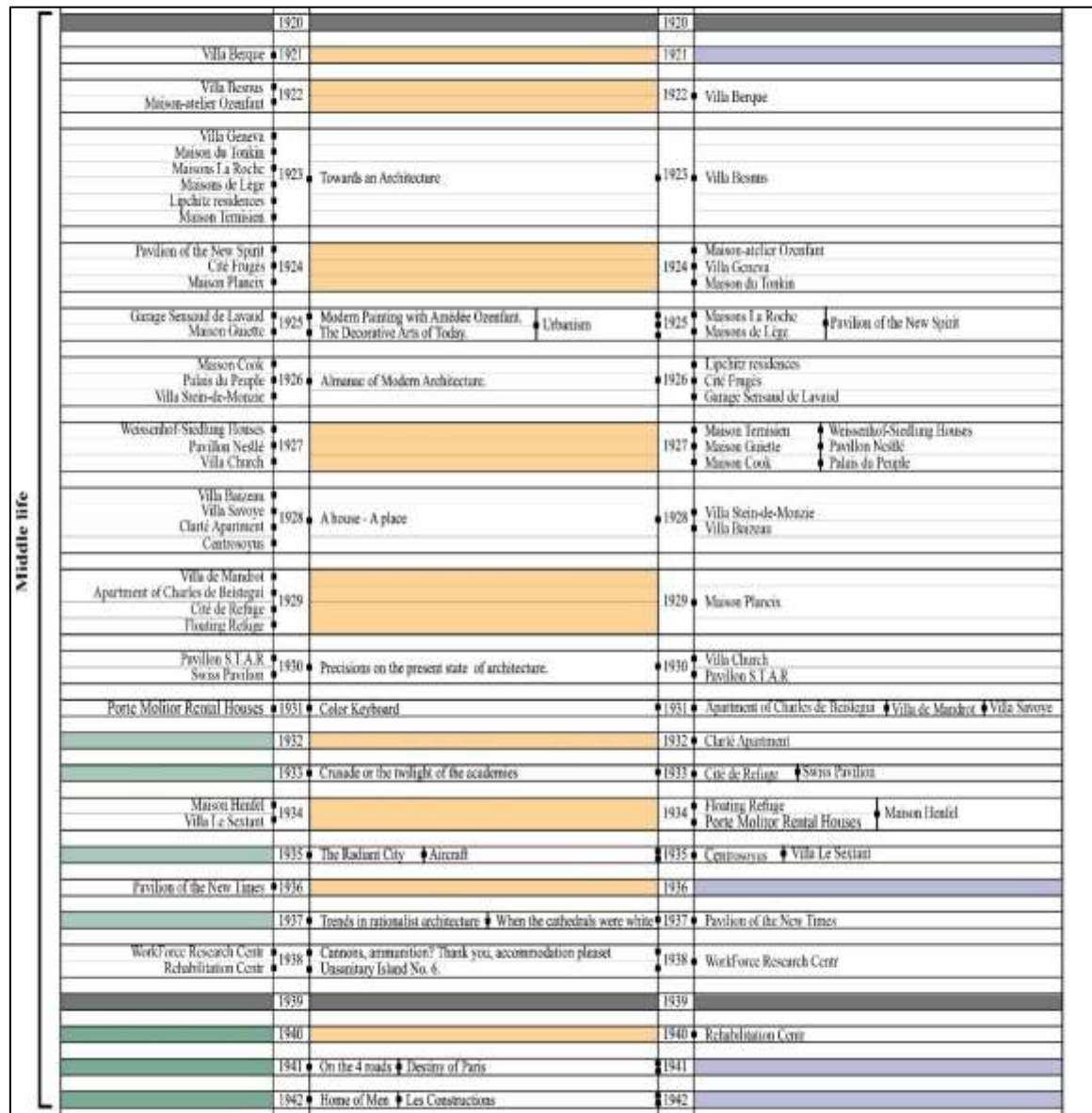


Figure 5.7: The Productivity of Starting New Projects, Publishing Books, and Completing Projects, Through the Middle Period (Produced by the Author).

Additionally, Figure 5.7, determines that the years of highest levels of productivity in the projects coincided with lacking publishing books. These years are 1924, 1927, 1929, and 1934. Le Corbusier was occupied with presenting his innovative principles through giving

lectures, particularly at the Sorbonne in 1924. In 1927, Le Corbusier lacked published books because he was occupied with preparation for the first CIAM meeting in 1928. The same reason for lacking published books appeared in 1929, due to the second CIAM meeting. That required his active involvement in discussions and collaboration with other modernist architects rather than publishing. The impact that Le Corbusier received from CIAM was more essential than publishing books this year. Also, he may have chosen to delay publishing through 1934, to refine and develop his concepts for future works which he demonstrated these ideas in his book, *The Radiant City* in 1935.

lacking productivity in producing projects and publishing books through 1939, due to the outbreak of World War II. The war created an unstable and challenging environment. That led to many of his urbanism concepts particularly, for Algiers being delayed or canceled. However, after the war, he resumed productivity in books and projects.

The research concluded that the middle period is characterized by significant projects and substantial books. As seen in Figure 5.7, the year of the highest level of starting work on new projects, is 1923, with six projects. The second high-level years are 1928 and 1929 with four projects. The third high-level years are 1924, 1926, and 1927 with three projects. The fourth high-level years are 1922, 1925, 1930, 1934, and 1938 with two projects. While the less productive years are 1921, 1931, and 1963 with one project.

The first greatest high level of productivity through completed projects is 1927 with six completed projects. The second highest level of completed projects are 1924, 1925, 1926, 1931, and 1934, with the completion of three projects. The third are 1928 and 1930, with two completed projects.

The most productive years in producing books are 1925, and 1943 with three publication books. In addition, 1933, 1937, 1938, 1941, and 1942, with two books.

Through the final stage of Le Corbusier's works, he started to construct thirty projects, completed twenty-five projects, and published twenty-three books (Figure 5.8).

Figure 5.8 investigates that Le Corbusier's late period was full of productivity through books and projects. Particularly the productivity of publishing books has started to increase.

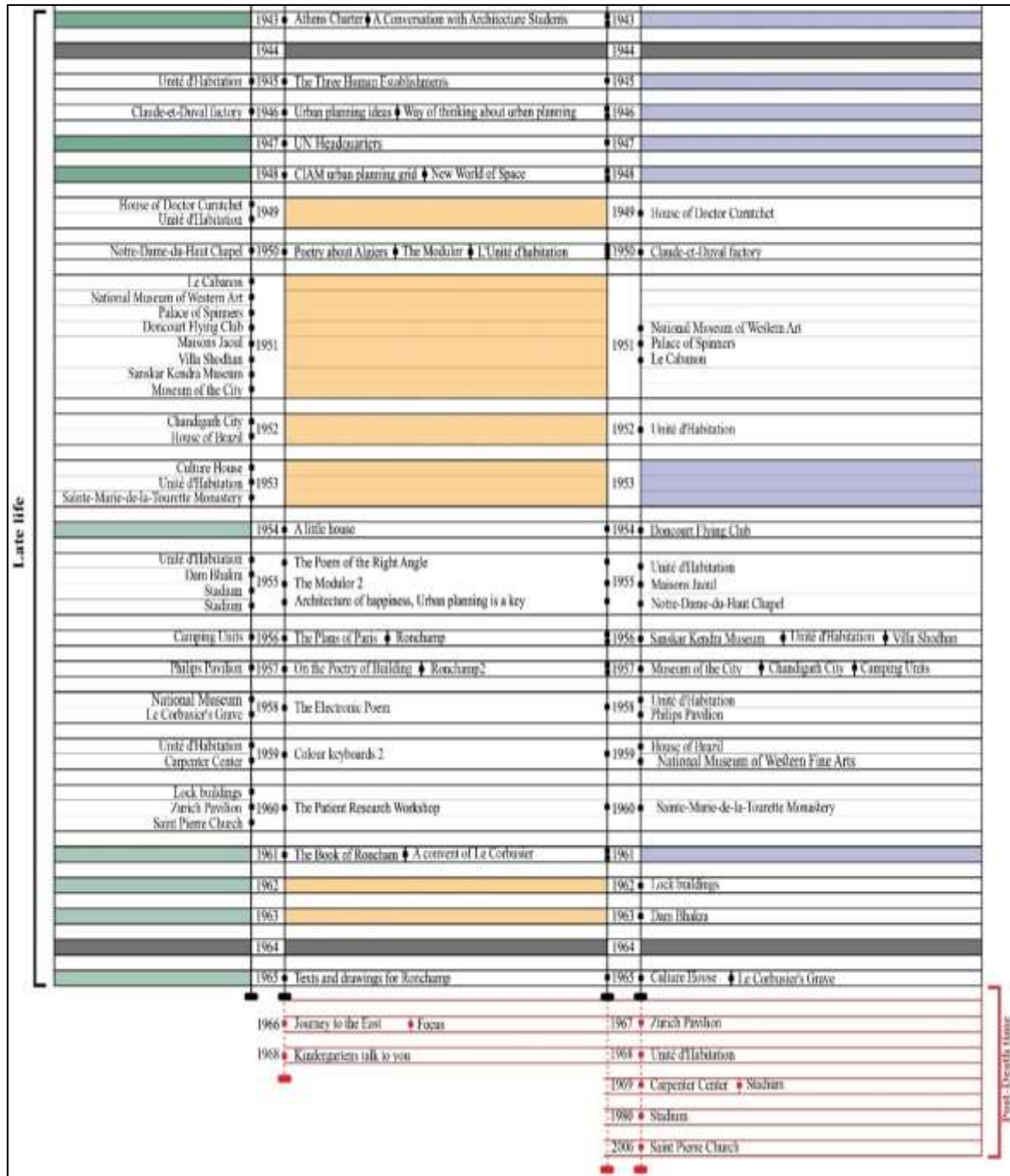


Figure 5.8: The Productivity of Starting New Projects, Publishing Books, and Completing Projects, Through the Late Period (Produced by the Author).

Furthermore, Figure 6.8 demonstrates that the years 1944 and 1964 lack achievements in books and projects that can be attributed to his intensive research on housing units, which specifically led to the most well-known projects such as Unité d'Habitation. Besides this Le Corbusier could have been reflecting throughout this period, improving his concepts, and modifying his architectural vision to fit the rapidly changing post-war environment.

Moreover, in 1964, Le Corbusier became seventy-seven; he seemed no longer interested in starting new initiatives but in preserving his legacy and ensuring that existing ones were completed. Le Corbusier was also able to take a break from active work at this point since his impact was well established and his theoretical and architectural contributions were well known.

Figure 5.8 finds out that the most highly productive years of starting work on new projects were lacking publishing books. To elaborate, in 1949, 1950, 1952, and 1953 Le Corbusier lacked publishing books due to his concentration on urban planning activities. He had a significant role in the planning of Chandigarh, India, and the creation of other important projects, such as the Unité d'Habitation. likely consumed his energy and attention, leaving little room for authoring books. In addition, during these years, Le Corbusier was working on the development of the Modulor which Albert Einstein would say “It is an invention that makes evil difficult, and good easy” (Foundationlecorbusier, n.d.l).

The first and most highly productive year of starting work on new projects is 1951 with eight projects. The second-high level in 1955, he worked on four new projects. The third high level is in 1953 and 1960 with three projects. The fourth high level are 1949, 1952, 1958, and 1959 with two projects.

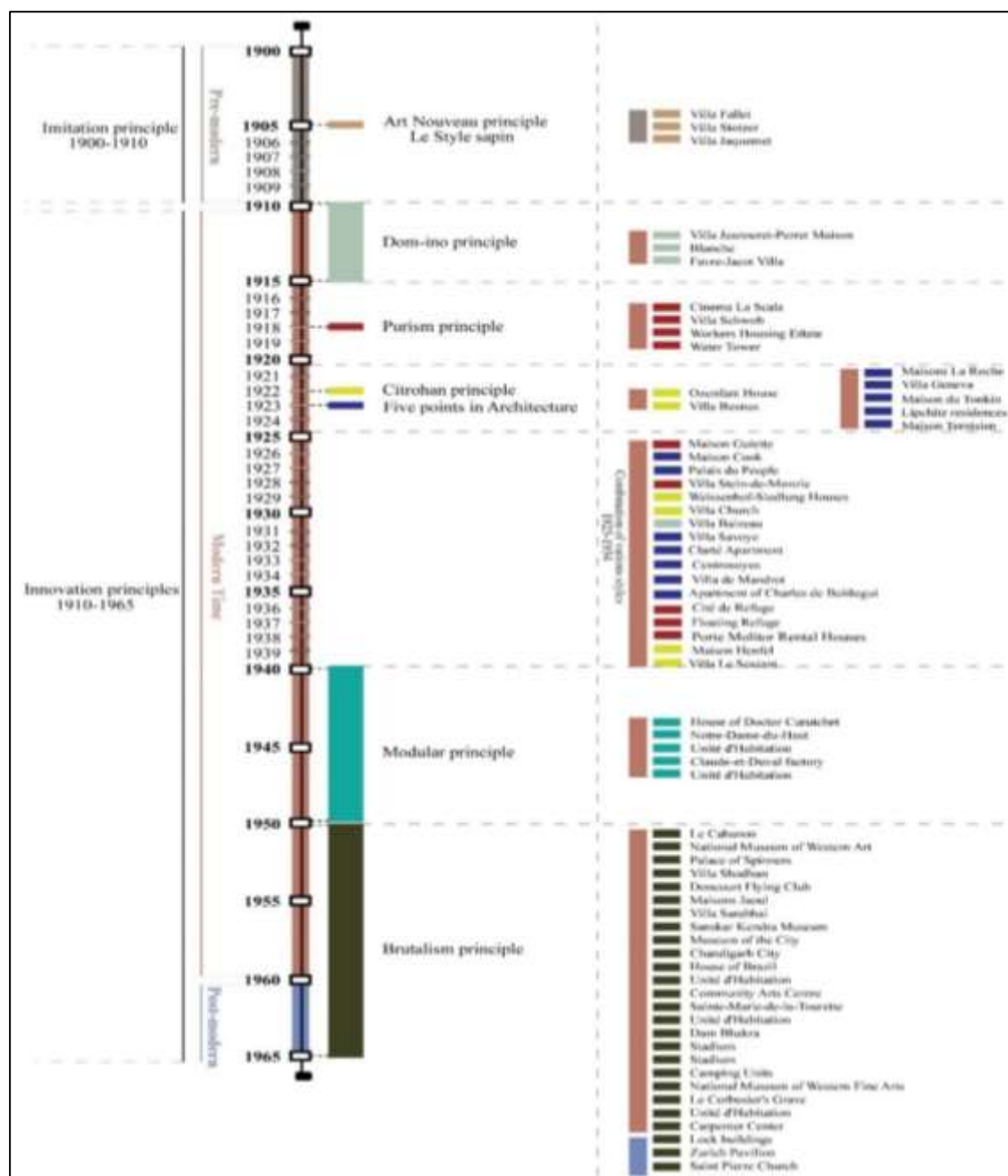
The highly productive years through the completion of projects are 1951, 1955, 1956, and 1957 by completing three projects. The second-high level are 1958, 1959, and 1965 with two projects per year completed.

The most highly productive year for book publishing is 1950 with three books. Then, in 1946, 1948, 1956, 1957, and 1961 with two books.

Eventually, with his death, the productivity of his books and projects did not end, some books and projects needed to be published and completed.

5.3 IMITATIVE AND INNOVATIVE PRINCIPLES

The study evaluates the principles of Le Corbusier's works into two key sections that shaped Le Corbusier's vision, the imitation principle and the innovation principle, examined across three distinct eras pre-modern, modern, and postmodern (Figure 5.9).



Art Nouveau was the first style that Le Corbusier imitated in the early period of his work. This was extensively utilized in his artistic works. In the pre-modern era roughly from 1900 to 1905 Le Corbusier studied Art Nouveau and applied it to his paintings and drawings.

From 1905 to 1910 Le Corbusier applied Art Nouveau to architecture, for instance, the first three participation projects Villa Fallet, Villa Stotzer, and Villa Jaquemot were rich with Le

Style Sapin. Another imitation principle that Le Corbusier limited was Cubism. Le Corbusier used the Cubism style in his artistic works, especially in 1906 and later he developed it to serve his architectural theories. In 1918, Le Corbusier transferred the abstract, geometric qualities of Cubist art into architectural forms (Guedes, 2004: 35). By using clean lines, geometric shapes, and open spaces to create functional and efficient buildings. This is the reflection of cubism called a purism style considered one of his innovation principles in the twenties.

The innovation principles highlight Le Corbusier's pivotal role as an innovator in modern architecture by advocating a rational, human-centered design approach seamlessly incorporating emerging technologies and materials. Le Corbusier studied architecture by evaluating the past through the principles of Renaissance, Baroque, Neoclassical, and Beaux-Arts. However, he disliked using the classicism and ornamentation styles. He argued that “I made my initial release as an architect under the influence of the decorative arts, and it took me some time to rid myself of them” (Le Corbusier, 1987: 45). He devoted himself to creating and implying modern principles. According to Le Corbusier, “architecture is everything but not decorative art” Besides, he criticized architects who stuck with the old-fashioned by describing them as “the eyes that do not see” (Le Corbusier, 1986: 91). Le Corbusier advocated all architecture around the world for innovative styles and adapting new principles. For innovative new styles that break the gap of modern times, he states that “style is a unity of principles animating an epoch's work” (Le Corbusier, 1986: 135). That is why Le Corbusier refused to continue to imitate Art Nouveau and Cubism. From 1910 to 1965, Le Corbusier experienced two of the most pivotal eras in architecture. The first period is modern from 1910-1960, which he considered one of its founders. The second is the postmodern time from 1960-1965; he witnessed the first five years of the era, from 1910 to 1915 focused on creating the first innovation principle which is the Dom-Ino principle. This is followed by Purism, Citrohan, Five Points of Architecture, Modular, and Brutalist principles through modern times and the beginning of postmodern times.

The outcomes of the evolution of the imitative and innovative principles and applying them in his architectural projects underscore his transformative influence on modern and early postmodern architecture. Le Corbusier rejected the old principle including Art Nouveau however, it seems that he did not embrace any other principle after Cubism. His projects

after 1910 started to take a different characteristic. Le Corbusier often blended imitation of classical forms with functionalist innovations, balancing historic architectural values with new technological possibilities. His early principles, like the Dom-Ino and Purism, provided scalable, industrial design options, which proved essential for modern urban housing. This approach sparked new trends that architects would later refine, merging functionalism with minimalist aesthetics that led to future movements.

His later application of the Five Points principle and his Brutalist works provided an expressive, sculptural style, often more focused on impact than purely functional form. This shift demonstrated that architecture could convey cultural identity and communicate with society, moving beyond pure functionality toward a form of architectural narrative that would become important in postmodernism.

Eventually, Le Corbusier's principles, evaluated over time, demonstrate how his fusion of innovation and imitation was instrumental in transitioning architectural thought from modernism's functionalist core to postmodernism's focus on human experience, identity, and versatility. His projects created a legacy in which buildings were no longer static entities but adaptable systems, uniting architectural ideals with practical urban solutions. This dynamic legacy, present across his works, ultimately contributed to our understanding of architecture.

5.4 INTERACTION BETWEEN PROJECTS AND BOOKS

Modern architecture was significantly impacted by Le Corbusier's publications and projects, which together comprise a coherent body of work. In addition to being theoretical frameworks, his publications were manifestos that promoted a new style of architecture and urban planning that was based on practicality, uniformity, and the use of contemporary technology. His projects, on the other hand, demonstrated the practicality of his principles by becoming tangible representations of these ideas.

After evaluating and observing the classification of both projects based on their functions and understanding the productivity of Le Corbusier's books and projects per year, it is essential to examine the interactions between his books and projects. This analysis will help to understand his thinking, philosophy, and legacy development fully.

Moreover, analyzing the relationship between books and projects is especially important because it considers a complete figure displaying how Le Corbusier translated theory into practice. His writings often introduced ideas on urban planning, functionality, and aesthetic principles, which he refined through built projects. Additionally, the interactions demonstrate how his views evolved based on practical challenges. By studying this interplay, researchers gain insights into how architectural theory impacts the built environments, which can guide contemporary urban planning and architectural practices. It also allows for a critical assessment of the successes and limitations of his vision.

In this section, the thesis concentrates on the interactions between key figure books and projects in a way to find what kind of links, relations, and interpretations Le Corbusier advocated and applied. Tracing a clear line between Le Corbusier's books and their realization in his architectural projects. The evaluation will be conducted through Le Corbusier's early, middle, and late periods. The examination is based on the Conceptual Parallels and core themes in his books and their implementation on the projects. In addition to this, analyzing according to the chronology of his publications and projects will lead to understudying the evolving ideas that were reflected in successive projects.

Through the early period, particularly in 1910, Le Corbusier started to publish articles (Foundationlecorbusier, n.d.d). His first realized book was *Study on the Decorative Art Movement in Germany* published in 1912, and two books *An Art Movement in La Chaux-de-Fonds* and *After Cubism* were followed to published. The themes of the three books of the early period were emphasizing more on art and the beginning of modern architecture.

Le Corbusier's early career changes and evolution became evident after the Voyage d'Orient, which had a profound impact on his views and approach. Initially, natural forms were central inspirations in designs such as Villa Fallet, yet classical influences gradually took precedence. In later projects like Villa Jeanneret-Perret and Maison Blanche, nature played a less dominant role, while Le Corbusier's focus shifted toward achieving clarity and structure through basic, primary geometric shapes (Baker, 1996: 79).

Moreover, the publications books *Study on the Decorative Art Movement in Germany* and *After Cubism*, during the early period affected the projects, especially after 1910 by eliminating unnecessary decoration elements as the first step and then focusing on function

over form. The notable projects affected by his early life principles were Villa Jeanneret-Perret and Villa Schwob. Von Moos reported that “Villa Jeanneret-Perret was characterized by transforming from Art Nouveau toward a neoclassicism of German origin in addition to the cubic and purist form (Von Moos, 1979: 37). That is exactly what Le Corbusier advocated in his book *Study on the Decorative Art Movement in Germany* to neglect the decoration and embraced more purist forms.

The Villa Schwob demonstrates that Le Corbusier was still experimenting with how to effectively represent Purist principles of balance and pure lines in architecture (Curtis, 1986: 44). Furthermore, in Villa Schwob Le Corbusier attempted to create harmony by using mathematical orders that led him to use the regulating lines in the façade for the first time which he refers to in his book *Towards a New Architecture* and *The Modular* (Baker, 1996: 74-75).

In summary, the interplay between Le Corbusier's early principles, writings, and architectural projects shows limited cohesion in his early period. His books, *Study on the Decorative Art Movement in Germany* and *After Cubism*, initially centered on art rather than a structured architectural approach. Although he did touch on architecture in these works, they lacked a clear organizational framework for architectural theory. This lack of coherence may stem from his early questioning of traditional methods and the fact that he had not yet fully developed his modernist ideology (Colquhoun, 2002: 33). Moreover, Le Corbusier was actively involved in various fields at the time, including urban planning, interior design, art, and writing. While these diverse pursuits would later enrich his work in later periods, they did not establish a unified connection between his publications and projects at this early stage. His theoretical pursuits were broad, often prioritizing the exploration of general principles over concrete applications. For instance, he did not apply his Dom-Ino (1915) principle to Villa Schwob in 1916; instead, he implemented the flat roof concept, later defined as one of his Five Points of Architecture in 1923 (Baker, 1996: 67). Similarly, he incorporated purist elements, such as regular lines and simplicity, into Villa Schwob, anticipating theories he formalized only two years later. This sometimes led to a disparity between his theoretical work and its practical application in his early projects. However, a primary link in this period stems from his travels, which deeply influenced his developing architectural style.

The interactions between projects and books in Le Corbusier's works during the middle period were notable. The middle period was characterized by the enormous transformation and implementation of modern technology, which was notable in his writings and projects. Furthermore, in his books and projects, Le Corbusier improved two essential principles: Citrohan and Five Points which impacted his architectural design. Besides, the middle period was marked with essential books for improving urbanism such as *The City of Tomorrow and Its Planning* in 1929, *Precisions on the Present State of Architecture and Urbanism* in 1930, and *The Radiant City* in 1935) (Frampton 2001, 131).

Middle period of Le Corbusier's works, notable with the publishing of *Towards a New Architecture* through the book, Le Corbusier emphasizes several core themes that laid the foundation for modern architecture. The book emphasizes the elements of architecture. Le Corbusier also promotes the use of regulating lines to achieve balanced proportions in design (Le Corbusier, 1986: 65). He reflects on how architecture influences living conditions and stresses the ethical obligations of architects. By drawing parallels between buildings and machines, he introduces machine aesthetics, advocating for buildings to be constructed with precision, like industrial design (Le Corbusier, 1986: 45). His buildings through this period, madly evoke machinery; they are machining whose purpose is to move us, which he had defined as the real purpose of architecture (Le Corbusier, 1986: 101).

The projects that alien and interact with *Towards a New Architecture* are Villa Le Lac, Maisons La Roche, Lipchitz House, Maison Ternesien, Maison du Tonkin, Maisons de Lège, Cité Frugès, and Maison Planeix have embedded the book's themes even from direct or indirect mention. His ideals of functionality, economy, industrial aesthetics, purity, regulating lines, simplicity, new materials, and new principles such as Citrohan and Five Points were embedded in the projects. For instance, Cité Frugès in Pessac was a housing development intended for workers and designed prefabricated components. Its standardized, minimalist approach aligns closely with Le Corbusier's advocacy for standardization in the book to provide quality housing at a low cost, focusing on efficiency over decorative elements (Le Corbusier, 1986: 90).

Similarly, Maison Planeix in Paris applies these principles, with its machine-like aesthetics and structural rationality, reflecting the shift towards "the spirit of the machine" that Le Corbusier promoted in his book (Le Corbusier, 1986: 101). This house combined both

residential and studio spaces, utilizing open-plan layouts and minimalist façades, capturing the core of Le Corbusier's industrial aesthetics and functional principles. The interaction between the book and these projects underscores his vision of architecture as a reflection of modern industry, standardization, and simplicity in design (Von Moos, 1979: 98).

Another essential interaction that could be observed is the connection between the book *The Decorative Art of Today* in 1925 and *Maison Guiette* in the same year. The project incorporates standardized elements that Le Corbusier called for the Type-Objects concept, which he saw as models for functional living spaces suitable for modern life. The project serves as a physical manifestation of the book's principles, designed for practical, artistic living without the constraints of traditional decorative arts (Le Corbusier, 1987: 69).

Moving toward 1930, Le Corbusier published another essential book *Precisions on the Present State of Architecture and Urbanism*. The essence of this book stems from a collection of talks delivered during Le Corbusier's South American travels. It presents his ideas on architecture and urban planning, incorporating his modernist perspective on addressing the issues facing industrialized societies. His approach emphasizes standardization and industrial methods as essential to enhancing quality of life. The book also highlights the connection between residential and occupational spaces, proposing that thoughtfully designed environments can support improved living and working conditions (Le Corbusier, 1967: 35). The connection between Le Corbusier's Swiss Pavilion in 1930 and his book *Precisions on the Present State of Architecture and Urbanism* seems direct however, lies in the application of his theoretical principles directly into the Pavilion's design. In the book, Le Corbusier discusses the importance of light, air, and open space, which are key features in the Pavilion's structure, incorporating pilotis (raised supports), ribbon windows, and a roof garden (Le Corbusier, 1967: 18). Moreover, the Pavilion serves as a practical realization of his Five Points, explicitly theorized in *Precisions* and applied in the Pavilion. The building's open façade, flexible interior spaces, and integration with natural surroundings embody these principles, making it a direct representation of the theories that he promotes in the book (Le Corbusier, 1967:41).

The notable and direct connection between the themes of *Precisions on the Present State of Architecture and Urbanism* and projects can be observed in the project *Centrosoyus* which was designed in 1928 two years before the book was published in 1930. In the book, Le

Corbusier emphasizes the need for rational planning, prefabrication, and modular design principles that he applied in the Centrosoyus building to pioneer a modern approach to public architecture. The Centrosoyus was significant as it became a real-world example of his concepts of creating efficient, flexible workspaces with his characteristic use of pilotis and ribbon windows, enabling both structural clarity and abundant natural light (Le Corbusier, 1967: 45). A unique aspect of *Precisions on the Present State of Architecture and Urbanism* as it relates to Centrosoyus is Le Corbusier's criticism of Russian construction techniques and his proposal of reinforced concrete as a superior material to accommodate large-scale public functions. He viewed reinforced concrete as essential for realizing his vision of open, adaptable interiors that could serve administrative tasks effectively, setting a precedent for functionalism in government architecture (Le Corbusier, 1967: 47).

Another connection through the middle period of Le Corbusier's books and projects is between the book *The Radiant City* and the project Centrosoyus. The book outlines Le Corbusier's urban planning vision for efficient, functional city design using principles of standardization and zoning. Le Corbusier emphasizes the need for well-organized, high-density buildings that accommodate both residential and office functions, advocating the idea of high-rise towers within open green spaces to promote air and light circulation (Le Corbusier, 1967: 51). The Centrosoyus building, which Le Corbusier designed for Moscow, embodies several principles laid out in the book *The Radiant City*. The project Centrosoyus is designed as an administrative office and applies open-plan layouts, vertical circulation, and a grid-like structure that aligns with his vision for efficient space usage. Besides, the project is considered a high-building alien with the book concept. This project is a practical application of Le Corbusier's ideas on modern office buildings, emphasizing functional zones for workers, controlled ventilation, and maximizing natural light which is a key concept also emphasized in the book (Le Corbusier, 1967: 116). Both the Centrosoyus project and *The Radiant City* reflect Le Corbusier's intent to design buildings that embody industrialization's efficiency, promoting clarity, standardization, and optimal working conditions, which he believed were essential for modern urban planning (Le Corbusier, 1929: 210).

To sum up, Le Corbusier's books and projects during the middle period formed a cohesive dialogue, where he explored theories and principles and put them into practice. Le

Corbusier's consistent pattern of theorizing in his writings and implementing in his projects showcases his evolving commitment to a modern architectural vocabulary, balancing innovation with practical application. Each project from this period marks a tangible response to the principles laid out in his books, effectively weaving his theoretical framework into the fabric of modernist design.

Through the late period, the interaction that could be observed is between the book *The Athens Charter* in 1943 and the project Unité d'Habitation in 1945. The book and projects are deeply connected because Le Corbusier developed concepts for contemporary living and urban effectiveness. The design of the Unité d'Habitation was strongly impacted by his articulation of fundamental urban planning concepts in *The Athens Charter*, which promoted zoning to divide residential, commercial, recreational, and transit districts. In line with his concepts in *The Athens Charter*, this building's focus on communal facilities and effective use of space creates a vertical city that seeks to address the social and physical requirements of its citizens while enhancing the urban setting (Le Corbusier, 1973: 54).

The interaction between the book *The Modulor* and Unité d'Habitation reflects a foundational shift in his design approach, particularly in addressing the needs of post-war housing with a focus on harmony between human proportions and architectural space. *The Modulor* rooted in principles of human scale and geometric proportion provided Le Corbusier with a standardized framework for dimensions that aimed to resonate aesthetically and functionally across diverse architectural contexts (Le Corbusier, 2000: 133-136). The Unité d'Habitation, was one of Le Corbusier's primary implementations of the Modulor system. Through the construction of the project, Le Corbusier utilized Modulor measurements for apartment layouts, room sizes, and corridors, ensuring that each unit was proportionate to the human body. The apartments themselves were duplexes with double-height living rooms, creating an expansive feel within a confined area, highlighting how the Modulor system allowed for a spacious experience in relatively compact living spaces (Le Corbusier, 2000: 140).

Furthermore, there is an interaction observed through the book *Urban Planning Ideas and Way of Thinking About Urban Planning* and the project Claude-et-Duval Factory. In the book Le Corbusier developed his philosophical and practical approach to city design,

building upon earlier concepts while offering a more comprehensive vision, particularly in the post-WWII context. He argued that architects must consider the urban context, advocating for collaboration with politicians, engineers, and urban planners. This integration of theory into practice is reflected in the Claude-et-Duval Factory, which focused on harmonious industrial design rather than isolated, disconnected structures (Le Corbusier, 1986: 288).

Another interaction between the book *Urban Planning Ideas and Way of Thinking About Urban Planning* and the project Chandigarh City. The project is a development of Le Corbusier's urban planning ideals, the project enabled him to adapt his prior ideas to the social, cultural, and climatic setting of India while also refining and applying many of them on a larger scale. The concept of Radiant City's evolution gave rise to the project Chandigarh City. To make this concept more achievable, he scaled it down. Chandigarh's more flexible zone permits lower-rise buildings and strikes a balance between massive civic facilities and human-scale residential districts, in contrast to the Radiant City's rigid and abstract skyscraper pattern (Le Corbusier, 1967: 85). Briefly, the aftermath of World War II provided Le Corbusier with opportunities to translate his ideas into solutions for reconstruction, addressing housing shortages, and urban redevelopment. Therefore, Le Corbusier's works from 1943 to 1965 display a rich interaction between his written theories and practical applications, as he continuously revised his concepts on proportion, human needs, and urbanism, laying the groundwork for modern architecture and urban planning. This period illustrates how his books not only documented his principles but also served as blueprints for realizing his vision in projects worldwide.

5.5 CRITICISM TOWARDS LE CORBUSIER'S WORKS

Through this section, the thesis will focus on the literature criticism of Le Corbusier's works throughout his life including projects and theories from minimal house, large scale to urban concepts.

Le Corbusier's works are widely known for changing the face of modern architecture and urban planning. However, his ideas and designs have faced strong criticism in different areas such as technical, social, and political needs, as well as ethical and cultural (Appendix B). The works often faced technical problems, particularly in the projects, such as flaws in construction and unrealistic plans. His ideas about cities have been criticized for ignoring the social and political needs of people and focusing too much on strict and uniform designs. Third, ethical and cultural critiques direct attention to Le Corbusier's potential that concentrates on universal and machine-like methods over local traditions and human needs.

These critiques reveal the complexities and debates surrounding his legacy, offering a balanced view of both his achievements and limitations.

Related to the technical criticism, Hilde Heynen critiques Le Corbusier's technical systems, such as Modulor, for being overly rigid and abstract. She argues that his reliance on such systems ignored the complexities of human diversity and physical environments. In her analysis, Heynen points out that Le Corbusier's technical approach often emphasizes efficiency and standardization over adaptability and inclusivity. This critique extends to his urban planning concepts, such as Radiant City, which Heynen identifies as technically ambitious but disconnected from the realities of the dynamic of human scale through urban life (Heynen, 1999: 119).

Furthermore, Malcolm Millais provides a comprehensive examination of Le Corbusier's designs' technical deficiencies, concentrating on the Villa Savoye. He draws attention to real-world problems including water leaks, inadequate insulation, and structural defects that compromise the building's ability to function. According to Millais, Le Corbusier frequently disregarded the recommendations of structural engineers in favor of aesthetic innovation and conceptual goals above engineering standards. He contends that these technical shortcomings reveal a disconnect between Le Corbusier's idealistic statement and the actual building industry (Millais, 2017: 66).

Additionally, Tim Benton provides a critical analysis of the technical execution of Le Corbusier's early residential projects. He points out structural and material issues in these works, such as inadequate drainage systems and challenges in maintaining reinforced concrete. Benton highlights that the technical experimentation in projects like Villa La Roche often resulted in practical shortcomings, affecting the functionality and durability of the buildings. His critique underscores the gap between Le Corbusier's technical ambitions and the everyday realities of construction and habitation (Benton, 1987: 213).

Le Corbusier's works received plenty of criticism related to social and political aspects as well. One of these critiques is by Charles Jencks who criticizes Le Corbusier's urban planning concepts for their authoritarian and overly systematic approach. He critiques the universal application of Le Corbusier's ideas, noting that they failed to respond to local cultural and social contexts (Jencks, 1977: 55).

Another critique of Le Corbusier's works is by William J. R. Curtis who emphasizes the gap between Le Corbusier's expansive urban ideas and the actual lived reality of urban communities that lack social and political ramifications. Despite being cutting-edge, Curtis argues that Le Corbusier's concepts frequently overlooked the social dynamics and human scale of cities. He criticizes Le Corbusier's ambitions in politics, claiming that his ideas for urban planning were more in line with authorities than a democratic society (Curtis, 1986: 170).

While Le Corbusier's works faced many challenges through the technical, social, and political implications, his works were criticized for the lack of ethical and cultural implications as well. Tom Wolfe criticizes Le Corbusier's work, saying his ideas forced a strict aesthetic that ignored traditional local styles and the needs of everyday people. He argues that Le Corbusier's designs were too rigid and failed to connect with the cultural identity of the communities they aimed to serve. Wolfe also accuses him of pushing modern ideas without considering the ethical impact of erasing local architectural heritage (Wolfe, 1981: 86).

6. CONCLUSION

Le Corbusier is widely regarded as one of the most pivotal architects of the 20th century. The evaluation of his architectural projects and books serves not only to document his legacy over the years but also to bring us towards the 20th century and guide us toward the future.

The thesis provides a systematic understanding of Le Corbusier's theoretical and practical contributions, offering insights into his role in shaping 20th-century architecture through the evaluation of his books and projects according to four dimensions: The project classification, the productivity of books and projects, and the interaction between books and projects. By addressing these dimensions, the thesis brings a greater understanding of what Le Corbusier was trying to achieve. Furthermore, the evaluation of Le Corbusier's books and architectural projects allows for an in-depth exploration of coherence, impact, and creativity in his methods.

Le Corbusier's output, which includes both books and architectural projects, is remarkable. Throughout his career, he published 50 books and constructed 77 architectural projects, demonstrating a productivity that was nearly working like a machine. Throughout his life, he has not gotten bored with what he likes to do. For instance, in 1951, Le Corbusier broke the rules by working on eight projects in one year. While he was working on many other missions such as painting or developing his concept of urbanism.

Productivity through books is undeniable as well. In 1955, Le Corbusier exceeded publishing three books per year. From 1905 till his death in 1965, Le Corbusier still gives the word the meaning and rules of modern architecture from his productivity in books and projects. However, throughout his whole life, there were eight non-productive years, distributed across different periods, and most of them were for developing his principles to fit with the global demands.

Le Corbusier's productivity over time influenced the evolution of his works, reflecting a deepening complexity and refinement of his architectural philosophy. During his early years, his output was mixed but marked by a strong engagement with Art Nouveau and an exploration of traditional forms, as seen in his early projects such as Villa Fallet, Villa Stotzer, Villa Jaquemet, Villa Jeanneret-Perret, and Villa Schwob. In the middle period, his productivity increased particularly with the publication of *Towards a New Architecture*. This

period demonstrated his commitment to modernism, functionalism, and his Five Points of Architecture which became foundational principles for his projects. Furthermore, with the increasing productivity, Le Corbusier focused on individual projects such as Villa Church, Villa Baizeau, and Villa Savoye. This phase reflected his growing interest in addressing societal needs through architecture, blending innovation with large-scale social housing solutions later. His increasing productivity was also focused on books during this period which allowed him to articulate and disseminate his theories widely.

In his late period, Le Corbusier's projects and writings exhibited a shift toward monumental and spiritual architecture. Works such as the Notre-Dame-du-Haut Chapel showcased a profound engagement with sculptural forms and symbolic meanings. His productivity in this phase was shaped by a synthesis of earlier ideas with new explorations, reflecting a mature integration of functionality, aesthetics, and human experience. Overall, Le Corbusier's evolving productivity, with peaks in both project developments, illustrates how his works were shaped by continuous experimentation and adaptation (Figure 7.1).

The characteristics of the early period of Le Corbusier's books are marked by an emphasis on the connection between art and architecture, advocating for rational design, the influence of Cubism, and a critique of decorative arts, as a departure from traditional aesthetics. Meanwhile, the middle period reveals a methodical approach to architecture and urban design, focusing on zoning and the functionality of spaces and machine aesthetics. Lastly, the late period of Le Corbusier's books reflect the artistic influences, and architectural thoughts, exploring human experience with a sensitivity to the emotional and aesthetic qualities of space.

By analyzing his architectural projects with his books, one gains valuable insight into the historical and philosophical transitions that shaped modern architecture. Furthermore, this analysis elucidates how his principles, such as the Dom-ino were developed into the Five Points of Architecture and the Modulor system, translated into real-world applications. His contributions have had a far-reaching and enduring impact on architectural education, urban planning, and design theory globally.

Moreover, the evaluation highlights Le Corbusier's dynamic productivity and his persistence and commitment to advancing architectural theory through his projects, year after year.

While Le Corbusier received huge fame, his theories and projects were also controversial for being radical ideas, for being more functional, and sometimes overlooking the social and emotional needs of inhabitants. However, Le Corbusier's writings and architectural works are deeply connected in his middle and late periods, and his books provide a theoretical foundation for his architectural innovations. His projects, in turn, served as tangible demonstrations of these theoretical ideas. Nonetheless, there were situations when Le Corbusier first applied and refined a principle in his projects, only and later theorized it in his books, such as the modular principle, which was initially implemented in projects like the Weissenhof Estate in the 1920s before being fully articulated in his late 1940s books. To sum up, the interplay between his projects and books allowed him to restore and refine his ideas, ensuring that his architectural legacy remained dynamic and influential throughout his career.

Eventually, this thesis argues that Le Corbusier was a visionary who reshaped how we think about architecture and urban planning these days. His ideas were essential, especially his focus on functionality, modern materials, and large-scale planning. However, his approach was often too rigid and idealistic, sometimes ignoring the emotional and cultural needs of the people who would inhabit his designs for them. For example, his concept of the Radiant City was inspiring in theory but problematic in practice, as he took advantage of efficiency over human connection and community. While he introduced revolutionary ideas, like open floor plans and reinforced concrete structures, his work could sometimes feel detached from reality.

Eventually, Le Corbusier's influence on architecture is undeniable, but his legacy is complex. He pushed the boundaries of what architecture could be, However, his work acts as both an inspiration and a reminder of the importance of balancing visionary ideas with practical execution. Despite criticism and changing times, his principles remain influential in shaping contemporary architecture. This study encourages ongoing reflection and adaptation of his theories to address modern challenges, ensuring that his legacy continues to inspire and inform the development of architecture. As we look to the future, his work continues to invite dialogue and reinterpretation, ensuring its relevance for generations to come.

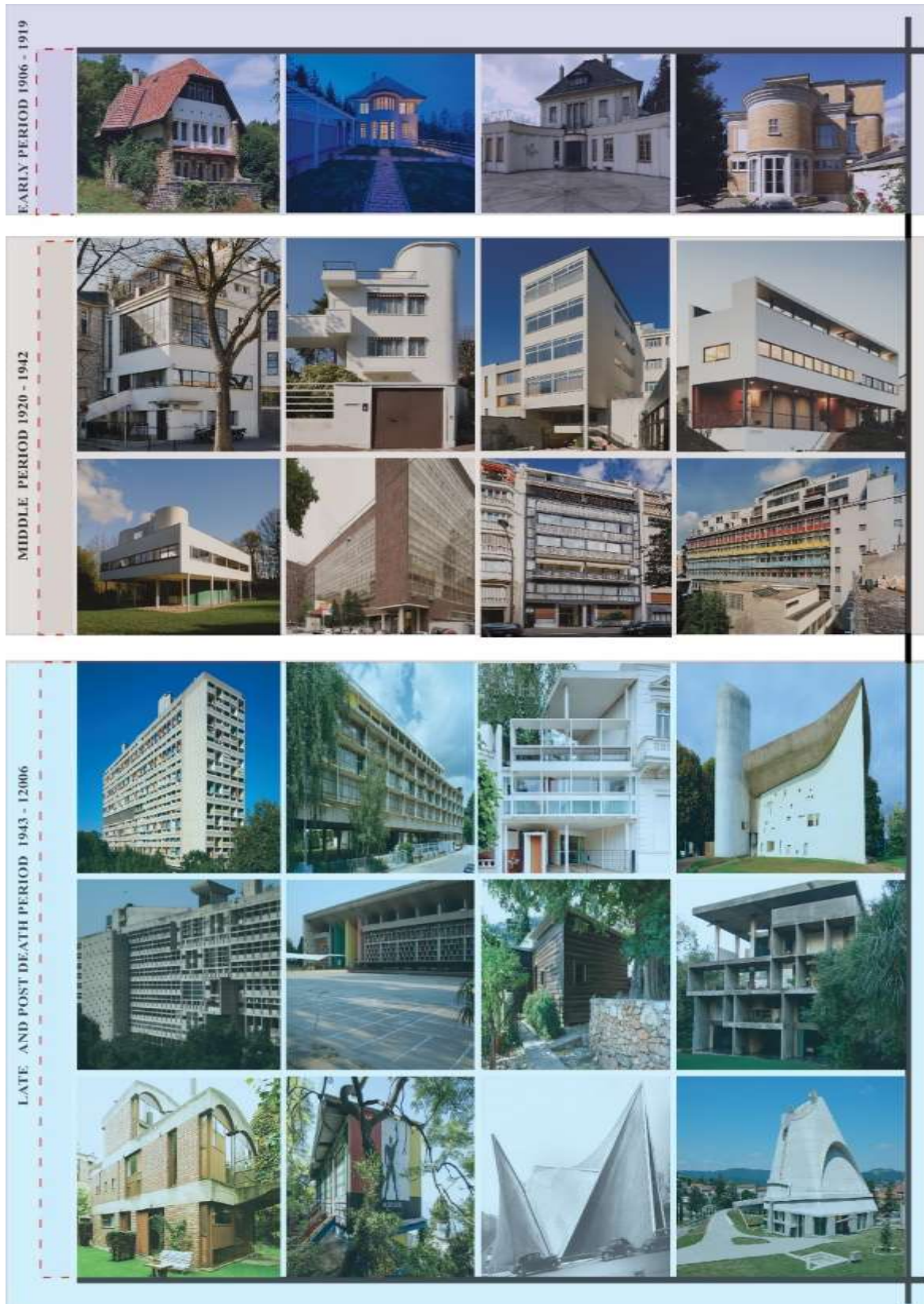


Figure 6.1: The Development of Le Corbusier's Projects between 1906 and 2006 (Produced by the Author).

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APPENDIX A

A.1 LIST OF 77 PROJECTS OF LE CORBUSIER

	PROJECT	DATE
1	Villa Fallet	1906-1907
2	Villa Stotzer	1907-1908
3	Villa Jaquemet	1907-1908
4	Villa Jeanneret-Perret	1911-1912
5	Villa Favre-Jacot	1912-1913
6	Cinema La Scala	1916
7	Villa Schwob	1916-1917
8	Workers Housing Estate	1917-1918
9	Water Tower	1917
10	Villa Berque	1921-1922
11	Villa Besnus	1922-1923
12	Maison-atelier Ozenfant	1922-1924
13	Villa Geneva or Villa La Lac	1923-1924
14	Maison du Tonkin	1923-1924
15	Maisons La Roche	1923-1925
16	Maisons de Lège	1923-1925
17	Lipchitz – Miestchaninoff studio-residences	1923-1926
18	Maison Ternesien	1923-1927
19	Pavilion of the New Spirit	1924-1925
20	Cité Frugès	1924-1926
21	Maison Planeix	1924-1929
22	Garage Sensaud de Lavaud	1925-1926
23	Maison Guiette	1925-1927
24	Maison Cook	1926-1927
25	Palais du Peuple	1926-1927
26	Villa Stein-de-Monzie	1926-1928
27	Pavilion Nestlé, demolished	1927
28	Weissenhof-Siedlung Houses	1927
29	Villa Church	1927-1930
30	Villa Baizeau	1928
31	Villa Savoye	1928-1931
32	Clarté Apartment Building	1928-1932
33	Centrosoyus	1928-1935
34	Villa de Mandrot	1929-1931
35	Apartment of Charles de Beistegui	1929-1931
36	Cité de Refuge	1929-1933
37	Floating Refuge	1929-1934
38	Pavilion S.T.A. R, demolished	1930
39	Swiss Pavilion	1930-1933
40	Porte Molitor Rental Houses	1931-1934
41	Maison Henfel	1934
42	Villa Le Sextant	1934-1935
43	Pavilion of the New Times	1936-1937

44	Work Force Research Centre, demolished	1938
45	Rehabilitation Centre, demolished	1938-1940
46	Unité d'Habitation	1945-1952
47	Claude-et-Duval factory	1946-1950
48	Unité d'Habitation	1949-1955
49	House of Doctor Curutchet	1949
50	Notre-Dame-du-Haut Chapel	1950-1955
51	Le Cabanon	1951
52	Maisons Jaoul	1951
53	Palace of Spinners	1951
54	National Museum of Western Art	1951
55	Villa Sarabhai	1951-1954
56	Doncourt Flying Club	1951-1954
57	Villa shodhan	1951-1956
58	Sanskar Kendra Museum	1951-1956
59	Museum of the City	1951-1957
60	House of Brazil	1952-1959
61	Chandigarh City	1952-1965
62	Unité d'Habitation	1953-1956
63	Culture House	1953-1965
64	Sainte-Marie-de-la-Tourette Monastery	1953-1960
65	Unité d'Habitation	1955-1958
66	National Museum of Western Art	1955
67	Dam Bhakra	1955-1963
68	Stadium	1955-1969
69	Stadium	1955-1980
70	Camping Units	1956
71	Philips Pavilion Demolished in 1959	1957-1958
72	Le Corbusier's Grave	1958-1965
73	Unité d'Habitation	1959-1968
74	Carpenter Center for the Visual Arts	1959-1969
75	Lock buildings	1960-1962
76	Zurich Pavilion	1960-1967
77	Saint-Pierre Church	1960-2006

A.2 LIST OF 50 PUBLISHED BOOKS OF LE CORBUSIER

	BOOKS	DATE	JOURNALS	PLACE
1	<i>Study on the decorative art movement in Germany</i>	1912	Haefeli et Cie	La Chaux-de-Fonds
2	<i>An art movement in La Chaux-de-Fonds</i>	1914	Unknown	La Chaux-de-Fonds
3	<i>After Cubism</i> with Amédée Ozenfant	1918	Des Commentaires	Paris
4	<i>Towards a New Architecture</i>	1923	L'EspritNouveau	Paris
5	<i>Urbanism</i> translated in 1929 to <i>The City of Tomorrow and its planning</i>	1925	L'EspritNouveau	Paris
6	<i>Modern Painting</i> with Amédée Ozenfant	1925	L'EspritNouveau	Paris
7	<i>The Decorative Arts of Today</i>	1925	L'EspritNouveau	Paris
8	<i>Almanac of Modern Architecture</i>	1926	L'EspritNouveau	Paris
9	<i>A House – A Place</i>	1928	L'EspritNouveau	Paris
10	<i>Precisions on the present state of architecture and urbanism</i>	1930	L'EspritNouveau	Paris
11	<i>First Color Keyboard</i>	1931	Salubra	Basel
12	<i>Crusade or the twilight of the academies</i>	1933	L'EspritNouveau	New York
13	<i>Aircraft</i>	1935	The Studio, Londres	Paris
14	<i>The Radiant City</i>	1935	de architecture d'Aujourd'hui	Paris
15	<i>When the cathedrals were white, Journey to the land of the shy</i>	1937	Plon	Paris
16	<i>Trends in rationalist architecture in relation to the collaboration of painting and sculpture</i>	1937	Reale Accademia d'Italia	Rome
17	<i>Cannons, ammunition? Thank you, accommodation please</i>	1938	de architecture d'Aujourd'hui,	Boulogne-sur-Seine
18	<i>Unsanitary Island No. 6</i>	1938	Imprimerie Tournon	Paris
19	<i>On the 4 roads</i>	1941	Gallimard	Paris

20	<i>Destiny of Paris</i>	1941	F. Sorlot	Paris
21	<i>The home of Men</i> with François de Pierrefeu	1942	Plon	Paris
22	<i>The Constructions</i>	1942	Étienne Chiron	Paris
23	<i>The Athens Charter</i>	1943	de l'Architecture d'Aujourd'hui	Boulogne-sur-Seine
24	<i>A Conversation with Architecture Students</i>	1943	Denoël	Paris
25	<i>The Three Human Establishments</i>	1945	Denoël	Paris
26	<i>About urban planning</i>	1946	Bourrelier	Paris
27	<i>Way of thinking about urban planning</i>	1946	de l'Architecture d'Aujourd'hui	Boulogne-sur-Seine
28	<i>UN Headquarters</i>	1947	Éditions Reinhold	New York
29	<i>CIAM urban planning grid: Implementation of the Athens charter</i>	1948	l'Architecture d'Aujourd'hui	Boulogne-sur-Seine
30	<i>New World of Space</i>	1948	Éditions Raynal & Hitchcock	Boston
31	<i>Poetry about Algiers</i>	1950	Falaize	Paris
32	<i>The Modulor</i>	1950	De l'Architecture d'Aujourd'hui	Boulogne-sur-Seine
33	<i>The Housing Unit of Marseille</i>	1950	Le Point n°38	Mulhouse
34	<i>A Little House</i>	1954	Éditions Girsberger	Zurich
35	<i>The Modulor2</i>	1955	De l'Architecture d'Aujourd'hui	Boulogne-sur-Seine
36	<i>Architecture of happiness, Urban planning is a clef</i>	1955	Forces Vives	Paris
37	<i>The Poem of the Right Angle</i>	1955	Falaize	Paris
38	<i>The Plans of Paris</i>	1956	De Minuit	Paris
39	<i>Ronchamp</i>	1956	Girsberger	Zurich
40	<i>On the poetry of building</i>	1957	Der Arche	Zurich
41	<i>Ronchamp2</i>	1957	Girsberger	Zurich
42	<i>The Electronic Poem</i>	1958	Éditions de Minuit	Paris
43	<i>Colour keyboards2</i>	1959	Salubra	Zurich
44	<i>The Patient Research Workshop</i>	1960	Vincent	Paris
45	<i>The book of Ronchamp</i>	1961	Éditions de Minuit	Paris
46	<i>A convent of Le Corbusier</i>	1961	Éditions de Minuit	Paris

47	<i>Texts and drawings for Ronchamp</i>	1965	Forces Vives	Paris
48	<i>The Journey to the East</i>	1966	Forces Vives	Paris
49	<i>Focus</i>	1966	Forces Vives	Paris
50	<i>Kindergartens speak to you</i>	1968	Dénoël-Gonthier	Paris



A.3 CLASSIFICATION OF LE CORBUSIER'S PROJECTS BASED ON FUNCTION

	PRIVATE HOUSE	DATE	PLACE	PRINCIPLES
1	Villa Fallet	1906-1907	La Chaux-de-Fonds Switzerland	Decorative style, cubism style (fir tree style).
2	Villa Stotzer	1907-1908	La Chaux-de-Fonds Switzerland	Cubism style. Richly decorated and Fir tree style.
3	Villa Jaquemet	1907-1908	La Chaux-de-Fonds Switzerland	Cubism style. Richly decorated
4	Villa Jeanneret-Perret	1911-1912	La Chaux-de-Fonds Switzerland	The beginning of the Dom-Ino style. And late of cubism
5	Villa Favre-Jacot	1912-1913	Le locle, Switzerland	Late of cubism
6	Villa Schwob	1916-1917	La Chaux-de-Fonds Switzerland	Dom-Ino style, Free façade, free plan, flat roof, regulating line.
7	Villa Berque – Refurbishment	1921-1922	Paris, France	Dom-Ino style,
8	Villa Besnus	1922-1923	Vaucresson, France	Concrete, symmetric layout, vertical ribbon window.
9	Maison-atelier Ozenfant,	1922-1924	Paris, France	Dom-Ino style, ribbon windows.
10	Little Villa on the shores of Lake Geneva	1923-1924	Corseaux, Switzerland	Free plan, roof garden, ribbon windows.
11	Maisons La Roche	1923-1925	Paris, France	Purist style, architectural promenade style.
12	Lipchitz Miestchaninoff studio-residences	1923-1926	Billancourt, France	Ribbon windows, simplicity.
13	Maison Ternesien	1923-1927	Billancourt, France,	Purist and Five Pints
14	Maison Guiette Restoration in 2021	1925-1927	Antwerp, Belgium	Purist style, Citrohan.
15	Villa Stein-de-Monzie	1926-1928	Vaucresson, France	Purist and Five Points.
16	Weissenhof-Siedlung Houses	1927	Stuttgart, Germany	Purist and five points.
17	Villa Baizeau	1928	Carthage, Tunisie	Purist and Five points.
18	Maison Planeix	1924-1929	Paris, France	Ribbon window, free façade.
19	Villa Church	1927-1930	Ville d'Avray, France	Purist style.

20	Villa Savoye	1928-1931	Poissy, France	Purist style, Five Points, Modular system, and Functionalism.
21	Villa de Mandrot	1929-1931	Le Pradet, France	Five Points.
22	Maison Henfel	1934	La Celle-Saint-Cloud, France	Functionalism and Five points in architecture.
23	Villa Le Sextant	1934-1935	Les Mathes, France	Five Points.
24	House of Doctor Curutchet	1949	La Plata, Argentina	Modular system and Five Points principles
25	Le Cabanon	1951	Roquebrune-Cap-Martin, France	Natural and functional style.
26	Maisons Jaoul	1951-1955	Neuilly-sur-Seine, France	Brutalism style.
27	Villa Shodhan	1951-1954	Ahmedabad, India	Brutalism style.
28	Villa Sarabhai	1951-1956	Ahmedabad, India	Brutalism style.

	INDUSTRIAL PROJECTS	DATE	PLACE	PRINCIPLES
1	Water Tower	1917	Podensac, France	Dom-Ino, the first project of him in France
2	Claude-et-Duval Factory	1946-1950	Dié-des-Vosges, France	Modern style and modular system
3	Palace of Spinners	1951	Ahmedabad, India	Brutalism
4	Dam, Bhakra	1955-1963	India	Brutalism

	MISCELLANEOUS PROJECTS	DATE	PLACE	PRINCIPLES
1	Garage Sensaud de Lavaud	1925-1926	Neuilly-sur-Seine, France	Simplicity.
2	Doncourt Flying Club	1951-1954	Doncourt-lès-Conflans, France	Purism style.
3	Camping Units	1956	Cap-Martin, France	Purist style.
4	Le Corbusier's Grave	1958-1965	Roquebrune-Cap-Martin, France	Purist style.
5	Lock buildings	1960	Kembs-Niffer, France	Modern

	RELIGION PROJECTS	DATE	PLACE	PRINCIPLES
1	Notre-Dame-du-Haut Chapel	1950-1955	Ronchamp, France	Raw material, Brutalism.
2	Sainte-Marie-de-la-Tourette Monastery	1953-1960	Eveux-sur-l'Arbresle, France	Raw material, Brutalism.
3	Sainte-Pierre Church	1960-2006	Firminy, France	Raw material, Brutalism.

	HOUSING UNIT PROJECTS	DATE	PLACE	PRINCIPLES
1	Unité d'Habitation	1945-1952	Marseille, France	Modular and Brutalism style
2	Unité d'Habitation	1949-1955	Rezé, France	Modular and Brutalism style
3	Unité d'Habitation	1955-1958	Berlin, Germany	Modular and Brutalism style
4	Unité d'Habitation	1953-1956	Briey-en-Forêt, France	Modular and Brutalism style
5	Unité d'Habitation	1959-1968	Firminy, France	Modular and Brutalism style

	RESIDENTIAL PROJECTS	DATE	PLACE	PRINCIPLES
1	Clarté Apartment Building	1928-1932	Geneva, Switzerland	Modern and Five Points
2	Rental building at Porte Molitor	1931 -1934	Paris, France	Modern style
3	House of Brazil, International University City	1952-1959	Paris, France	Brutalism, raw material

	WORKING CLASS PROJECTS	DATE	PLACE	PRINCIPLE
1	Workers Housing Estate	1917-1918	Nicolas d'Algermont, France	Cubism style
2	Maisons de Lège (Workers' Housing Development)	1923-1925	Lège, France	Mass production, standardization
3	Maison du Tonkin	1923-1924	Bordeaux, France	Dom-Ino
4	Cité Frugès (Workers Housing Estate)	1924-1926	Pessac, France	Standardization, Free plan.

	ADMINISTRATIVE PROJECTS	DATE	PLACE	PRINCIPLES
1	Centrosoyus	1928-1935	Moscow, Russie	Five Points
2	Chandigarh City	1952-1965	India	Brutalism

	CULTURAL PROJECTS	DATE	PLACE	PRINCIPLES
1	Cinema La Scala	1916	La Chaux-de-Fonds, Switzerland	Cubism, Dom-Ino
2	Culture House (Community Arts Centre)	1953-1965	Firminy, France	Brutalism style
3	National Museum of Western Art	1955	Tokyo, Japan	Brutalism style
4	Stadium	1955-1969	Firminy, France	Brutalism style
5	Stadium	1955-1980	Baghdad, Irak	Brutalism style
6	Carpenter Center for the Visual Arts	1959- 1969	Cambridge, U.S. A	Brutalism style
7	Heidi Weber Museum	1960-1967	Zurich, Switzerland	Brutalism style

	EXHIBITION PROJECTS	DATE	PLACE	DESCRIPTION
1	Pavilion of the New Spirit	1924-1925	Paris, France	Modern style,
2	Pavilion Nestlé Demolished	1927	Paris, France	Five points
3	Charles de Beistegui	1929-1931	Paris, France	Five points
4	Pavilion S.T.A. R demolished	1930	Le Bourget, France	Purism
5	Pavilion of the New Times	1936-1937	Paris, France	Purism
6	Sanskar Kendra Museum	1951-1956	India	Brutalism style
7	Philips Pavilion Demolished in 1959	1957-1958	Brussels, Belgium	Brutalism style
8	Museum of the City	1951-1957	Ahmedabad, India	Brutalism style

	URBAN PLANNING	DATE	PLACE	PRINCIPLES
1	Chandigarh City	1952-1965	India	Row material, Brutalism.

APPENDIX B

THE CRITICISM TOWARD LE CORBUSIER'S WORKS

	Author Name	Books Name	Criticism
Technical Criticism	Hilde Heynen	<i>Architecture and Modernity: A Critique</i> , 1999	Heynen highlights Le Corbusier's modernist approach's mechanical shortcomings. She criticizes his modular design system for being too rigid, claiming that it is unable to take into account the variety and complexity of human requirements and actions.
	Manfredo Tafuri	<i>Architecture and Utopia</i> , 1976	Tafuri criticized Le Corbusier's design for its highly technical and authoritarian characteristics, claiming that it ignored fundamental socioeconomic challenges.
	Malcolm Millais	<i>Le Corbusier, the Dishonest Architect</i> , 2017	Millais reveals several structural flaws in Le Corbusier's famous Unité d'Habitation in Marseilles. The building is criticized for its inappropriate architectural elements, such as gloomy internal passageways and flats with inadequate sunlight.
	Nikolas Boyarsky	<i>Le Corbusier's Mechanical Skeletons</i> , 1987	Boyarsky criticizes Le Corbusier's architectural designs for being dogmatic and mechanical. He contends that Le Corbusier's concentration on functionalism and mechanization distracts the human experience of architecture.
	Tim Benton	<i>The Villas of Le Corbusier and Pierre Jeanneret 1920-1930</i>	Benton emphasizes technical deficiencies such as structural failures, leaking roofs, and insufficient heating systems. He investigates how these practical difficulties influenced the livability and resilience of the buildings.

Social and Political Criticism	Charles Jencks	<i>The Language of Post-Modern Architecture</i> , 1977	Jencks critiques Le Corbusier's impact on the Brutalist movement projects, arguing that it produced aggressive and unsuitable urban landscapes.
	Colin Rowe and Fred Koetter	<i>Collage City</i> , 1978	Rowe and Koetter contend that Le Corbusier's rationalist and idealistic ideas for urban planning are criticized. Because of the methods fall short of considering the organic and irregular aspects of city life.
	Jane Jacobs	<i>The Death and Life of Great American Cities</i> , 1961	Jacobs criticized Le Corbusier's urban ideas, especially his zoning and division of metropolitan functions for damaging the natural diversity of urban life.
	Lewis Mumford	<i>The Culture of Cities</i> , 1938	Mumford critiqued Le Corbusier's urban planning ideas, particularly his advocacy for high-density housing and the separation of functions in cities. Mumford believed these ideas dehumanized urban living.
	Peter Blake	<i>No Place Like Utopia: Modern Architecture and the Company We Kept</i> , 1993	Blake emphasizes the shortcomings and limitations of the functionalist approach in constructing inhabitable urban settings as he challenges modernist architecture, notably Le Corbusier's contributions.
	Reyner Banham	<i>Theory and Design in the First Machine Age</i> , 1960	Banham argues that Le Corbusier's rigid functionalism frequently ignored the human element of architectural design.
	William J. R. Curtis	<i>Le Corbusier: Ideas and Forms</i> , 1986	Curtis criticizes Le Corbusier's designs, pointing out both their creative qualities and their environmental imperfections, particularly in terms of efficiency and economic effect.

Ethics and Cultural Criticism	Anthony Vidler	<i>The Architectural Uncanny: Essays in the Modern Unhomely</i> 1992	Vidler points out how his focus on rationalism and efficiency frequently resulted in environments that seemed unfriendly and sterile. Vidler claims that Le Corbusier's designs might lead to perceptions of alienation and loss of cultural identity.
	Kenneth Frampton	<i>Modern Architecture: A Critical History</i> 1980	Frampton questions the aesthetic and ethical implications of Le Corbusier's work, claiming that his methods frequently resulted in brutal and isolating environments.
	Tom Wolfe	<i>From Bauhaus to Our House</i> 1981	Wolfe criticizes the modernist movement and Le Corbusier's involvement in it, critiquing their status and lack of awareness of the requirements and demands of the public.
	Karel Teige	<i>The Minimum Dwelling</i> 1932	Teige stated that Le Corbusier's approach was excessively focused on efficiency and ignored the social and cultural necessitate of the residents.
	Richard Sennett	<i>The Conscience of the Eye: The Design and Social Life of Cities</i> 1990	Sennett contends that Le Corbusier's emphasis on control and order in his design creates antiseptic and repressive urban settings. Sennett highlights that developing and inclusive communities require a certain amount of chaos and complexity.