

Le Corbusier's modernist vision: creating a universal city plan

A Comparative Evaluation of Le Corbusier's Urban
Designs for Paris and Chandigarh

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Abstract

This study compares Le Corbusier's urban plans for Chandigarh with Paris, highlighting the modernist principles he applied and the design concept's universality. This study aims to investigate the degree to which the architect's concept of universal urban planning may be implemented in various metropolitan settings, while examining the ways in which his designs were impacted by the specifics of Chandigarh and Paris.

In this thesis, the first part of the research consists of finding Le Corbusier's early key principles on a city. Le Corbusier's own publications, including 'L'Urbanisme', 'The Plan Voisin' and 'The City of Tomorrow and Its Planning,' were studied to find these.

In order to determine if Le Corbusier's theory of urban planning was generally applicable, a comparative analysis takes place to illustrate the distinctions between his universal concepts and the particular components of both city plans. This analysis can be found in the second part of the thesis. Where has he moderated his general approach, and where do the disparities lie? Le Corbusier's literature and sketches on these city plans have been examined to find these answers. For a more comprehensive knowledge of his work, secondary sources have also been explored.

The thesis shows that the differences in results between the Chandigarh project and Plan Voisin underscore the difficulties involved in attempting to execute a single, comprehensive plan across a range of urban environments. Le Corbusier's utopian vision came to pass in Chandigarh, but its realization also highlighted the challenges associated with bringing such ideals to fruition. Le Corbusier's method of thinking evolved over time,

demonstrating the necessity of adapting abstract concepts to the unique conditions of each city.

Keywords: *Ville Contemporaine, Plan Voisin, Chandigarh, urban planning.*

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Introduction

One of the forerunners of modern architecture, Charles-Édouard Jeanneret-Gris, was a Swiss-French architect, designer, painter, and urban planner who went by the pen name Le Corbusier. As a 20th-century icon, he still serves as an inspiration to modern designers and artists around us. His work is included as a UNESCO World Heritage Site (2016) which attests to the work's acknowledged international significance and effect during the twentieth century (Rodríguez-Lora, Navas-Carrillo, & Pérez-Cano, 2021).

His efforts to develop a “universal plan” for cities are best shown by two of his most well-known city plans, the Chandigarh City Plan and the Plan Voisin for Paris.

Le Corbusier's early experiments with urban planning were embodied in Plan Voisin, which he conceived early in his career. The outcome of his subsequent efforts nearing the last stages of his city planning period is Chandigarh, which is at the opposite extreme of the spectrum. Before embarking on these enormous undertakings, Le Corbusier firmly believed that a universal design that encapsulated the qualities of a prosperous city had to exist, one that could be implemented in any setting (Corbusier, 1925).

The central focus of this thesis is a comparative analysis of these two iconic urban plans against the backdrop of Le Corbusier's universal plan. Le Corbusier's belief in a universal design will be examined in terms of how it might be used in various urban situations. It will specifically look at how the city designs of Chandigarh and Paris support or refute this idea, providing insights into how his theoretical ideas are applied in various urban contexts. More specifically:

“In what ways did Le Corbusier's modernist principles manifest in his urban plans for Paris and Chandigarh, and how did the specific contexts of each city influence these plans?”

Through an examination of the fundamental components of the ‘universal plan’ in conjunction with the details of Plan Voisin along with the Chandigarh City Plan, the extent can be determined to which Le Corbusier's utopian concept and its pragmatic implementations align and differ. Firstly, to be able to gain knowledge of his universal city ideas, the first sub-question will be:

“What was Le Corbusier's general vision of a city and how it should function?”

To be able to compare the city plans against the backdrop of his universal plan, the second sub-question comes in: “What were Le Corbusier's plans for Paris and Chandigarh?”

Lastly, to be able to determine what the effect of the circumstances and context was on Le Corbusier's city plans, the last sub-question will be answered:

“What were the main differences between the two city plans?”

In addition to highlighting the unique features of each city plan, this comparative analysis will contribute to the larger discussion on the applicability of city planning in general.

The key goal of this research is to find out how generalizable Le Corbusier's city concept is to different cities. And what does this teach us about the global diversity and progress of urban planning from his efforts in Chandigarh and Paris? The goal of this thesis is to offer a thorough understanding of the intricate connection that exists between utopian concepts and the actual state of urban development.

Methodology

Previous studies have thoroughly examined Le Corbusier's theories and plans for cities, his application of symbols, and his unique ideas about architecture. The majority of research on Le Corbusier's designs for cities covers a broad spectrum of his ideas and projects over time or concentrates on specific case studies of specific city plans.

This specific thesis takes a multilayered approach to comprehend Le Corbusier's urban planning. First, Le Corbusier's books, including 'L'Urbanisme' as well as "The City of Tomorrow and Its Planning," are thoroughly studied. These publications explain the fundamental principles underlying his general vision and the concept he aims to.

Subsequently, two of his city plans, the Plan Voisin for Paris along with the Plan for Chandigarh, are analysed using official sketches and documents. This sheds light on the actual applications of his ideas. In addition, secondary materials are used, such as documents and interpretations by other writers who have evaluated his work. These various perspectives help to have a better understanding of the effect and importance of Le Corbusier's design for cities.

Lastly, a comparison study is conducted, drawing a contrast between the key ideas of his general and universal concept and the specific components of the two city designs. All of this is done to investigate the generality of Le Corbusier's city planning theory and determine the degree to which his ideas may be applied to various urban settings.

1 Le Corbusier's general vision for cities: Ville Contemporaine (1923)

1.1 Introduction

By the time Le Corbusier started to involve himself into the world of urban planning, his understanding in the field of architecture was extensive. Compared to his approach to architecture, Le Corbusier took a longer time to find the field of urban planning. His knowledge of urban planning was quite limited. Le Corbusier would have had a hard time getting advice in this undeveloped subject. He was forced to start over since he saw the enormous issues that current cities were facing. His first concepts were quite conceptual, and over the years that followed, they were gradually refined and altered (Guiton, 1981).

1.2 The proposed revolution in city planning

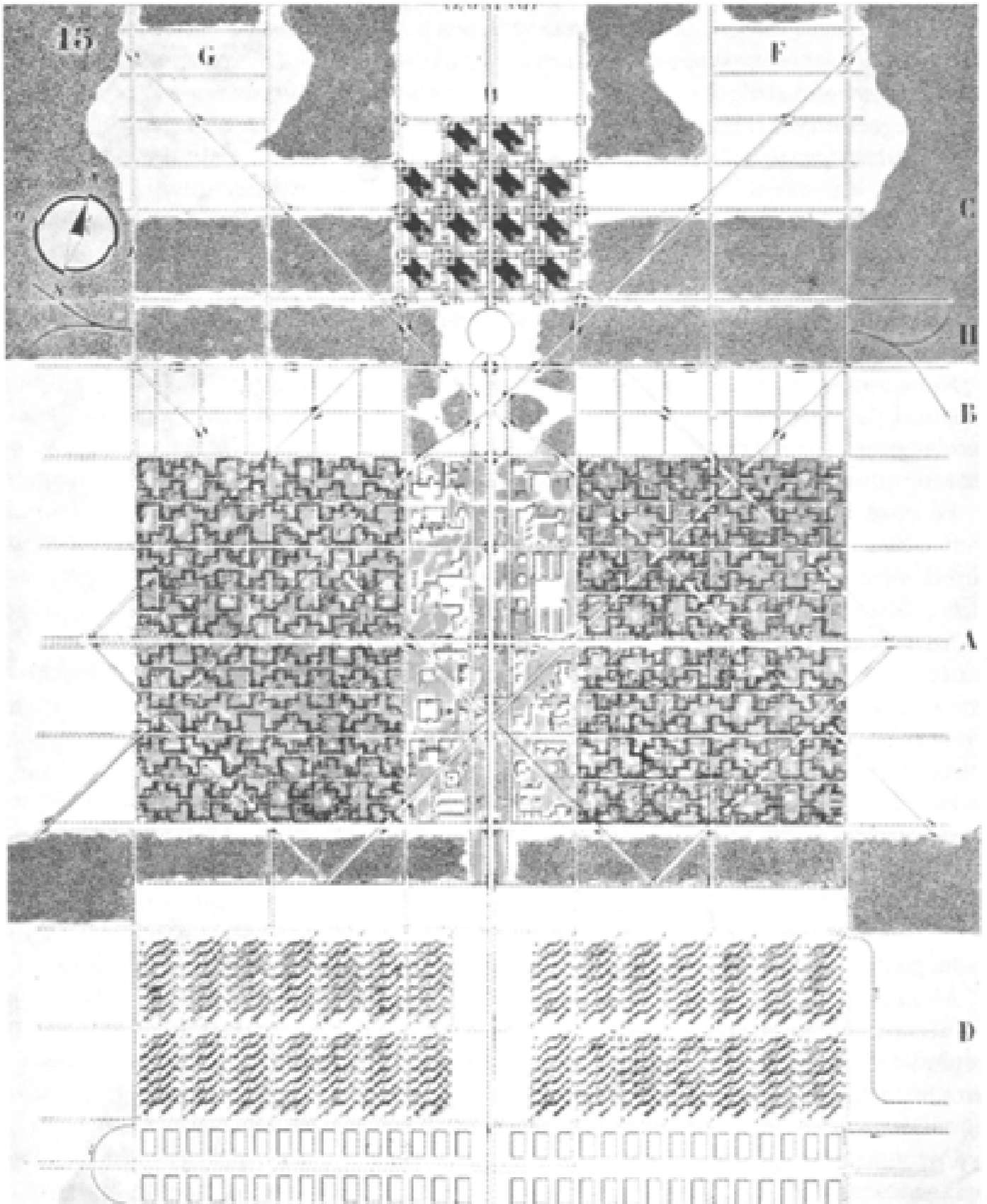
Le Corbusier regarded the industrial era as an opportunity to transform society and enhance everyone's quality of life. These ideas were first expressed in his first 'city' plan as he called it the 'Ville Contemporaine' (the Contemporary city). The idea of the 'Ville Contemporaine' was presented in his 1923 book 'Vers une architecture' (Towards an architecture). Le Corbusier suggested drastic alterations to the urban layout in order to better serve the requirements of contemporary civilization. The idea was not an in-depth plan of a particular developed city (Corbusier, 1925). Instead, it was an innovative proposal for urban planning that Le Corbusier created to convey his vision of the perfect modern metropolis, as you can see in [figure 1](#) (Guiton, 1981). The concepts for this urban design presented at the semi-annual Salon d'Automne were revived and expanded upon in 1925 for the 'Exposition des Arts Décoratifs' in Paris, where they were to be embodied

in a pavilion intended to serve as a "manifesto of the esprit nouveau" (Tungare, 2001). As Le Corbusier said so himself, in the book he wrote after, 'The City of Tomorrow and its Planning', his vision was not as received as he had hoped, as he writes: "It was greeted with a sort of stupor; the shock of surprise caused rage in some quarters and enthusiasm in others... There were no notes to accompany the plans, and alas! Not everybody can read a plan. I should have had to be constantly on the spot in order to reply to the fundamental questions which spring from the very depths of human feelings." (Le Corbusier, 1925, p.8).

His goal was to develop a conceptually strong formula that would lead to the core ideas of contemporary town planning, not to overthrow the current status system. Le Corbusier envisioned that these urban planning ideas could serve as the foundation for any system of modern urban planning. He says over and over that once these basic ideas are established, they can be strongly and universally applied to the particular city, be it a tiny town or a major city like New York, London, Paris, or Berlin. Planners can take charge and determine the course of future developments by comprehending these ideas and applying them to a particular situation (Corbusier, 1925).

Le Corbusier (1925) wrote "The survival of obsolete frameworks paralyzes city development. Industry and commerce will be strangled by backward cities. Traditionalism, in large cities, obstructs the development of transport, cramps and debilitates activity, kills progress, and discourages new ideas. The decay of old cities and present day working pressures are causing physical and mental illness. Contemporary society must

Figure 1.
diagram of Ville Contemporaine's layout



Remark. Le Corbusier, 1922. Layout with repetition of buildings and skyscrapers.
“*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP.
Copyright Agency, 2019.

recover its spent forces. The layout of a city determines the physical and mental condition of its residents. Unhealthy societies waste away. A nation's vigour depends on that of its citizens. Contemporary cities cannot meet contemporary needs unless they are adapted to new conditions. Large cities govern the life of the nation. If large cities are stifled, the nation will founder! To transform cities, we must discover the basic principles of contemporary urban planning." (p.30).

Le Corbusier (1925) critiques the way that big cities are currently being rebuilt in the modern era. He compares the process to a fierce war and claims that officials are acting hastily to implement new traffic signals and police uniforms without clearly defining their objectives. He believes that the big metropolis is a more potent "wild beast" that is coming of age, and he wonders how humanity will handle it. According to him, the difficulties of reconstructing big cities in a contemporary manner require an organized approach with specific goals and guiding principles.

In his book 'L'Urbanisme' (1925), Le Corbusier employs a particular metaphor to explain how humans (men) and donkeys choose and arrange their routes. He refers to a meandering, purposeless path travelled with little thought or intention as "the donkey road." Conversely, "the way of people" is a straightforward, goal-oriented strategy that embodies human reason and the capacity to make decisions based on knowledge and real-world experience. Le Corbusier uses this metaphor to imply that individuals walk in straight lines because they know where they are going and have a clear objective in mind. To accomplish this, they put their emotions

and instincts under control. The donkey, on the other hand, "just walks and has no purpose, steer clear of any exertion at all costs" (Corbusier, 1925, p.11).

Le Corbusier's theories, which finally resulted in the Radiant City, called for the total demolishment of cities and their replacement with his idealized, well-organized settings (O'Donnell, 2019).

1.3 Key elements for a successful city

According to Le Corbusier, a number of elements can be distinguished that are essential to recognize in general urban planning (Corbusier, 1925):

a) *Ideal Site:*

For urban development, a flat site is thought to be the best option. He stresses how important it is to have a level site, particularly in areas where traffic has increased, as this offers a regular solution to the traffic issue. He advocates modernizing a city without clinging to traditions that hold us back from the city's success (Corbusier, 1925, p.108).

b) *Population composition:*

A city needs to be zoned according to various uses, such dwelling, working, playing, and transportation. There must be a separation of inhabitants into mixed-type, suburban, and city dwellers. City dwellers and workers both reside in cities. Garden city dwellers who work in the outer industrial zone are considered suburban. The mixed kind raises their children in garden cities while working in the business district of the city (Corbusier, 1925, p.109).

c) *Urban density:*

His philosophy of urban density sought to strike a balance between the needs of people and the effective utilization of available space. Shortening the dis-

tances to be travelled is achieved in city centres with higher population densities. The construction of vertical city centres should be promoted to maintain open areas and shorten travel times. Our current cities' centres need to be made less congested (Corbusier, 1925, p.109).

d) *Streets and Traffic:*

He advocates for a sophisticated, well-managed and separated street system. He critiques the antiquated street design and the significance of clever, well-planned street building. A plan to construct various road kinds in layers to categorize traffic. The main 'arteries', elevated roadways, run north, south, east, and west. Le Corbusier highlights that a city's ability to function depends on its speed as he states, "The city with speed has success" (Corbusier, 1925, p.110).

e) *Stations and Traffic:*

According to Le Corbusier, we also need to expand our transportation options. He highlights the significance of having a central train station in the city centre. He calls for a covered subterranean station that doubles as an air taxi airport. The central station includes mezzanine for fast traffic, ground floor for entrances and booking offices, basement for city and main artery tubes, sub-basement for suburban lines, and sub-sub-basement for main lines (Corbusier, 1925, p.110).

f) *Grid City Planning:*

There should be an outline for a city with streets spaced 375 meters apart, according to Le Corbusier. He feels the need to focus on cutting back on the number of roads and crossings in order to ease traffic congestion. Additionally, it would lessen the effects of air pollution and traffic noise on locals and the distance would give the city a feeling of quiet and space (Corbusier, 1925, p.112).

g) *Green and open spaces:*

Le Corbusier advocates to support the maintenance and growth of public areas as the city's breathing spaces. He critiques the growing density that is displacing these open areas. Parks and other open areas have to be included in new city plans (Corbusier, 1925, p.114).

1.4 Ville Contemporaine as an example

Le Corbusier showcases his general vision and 'key elements' for a successful city in the 'Ville Contemporaine' plan. Within this plan, Le Corbusier describes the city quite specifically, although it was not designed for a specific location. A sketch of Le Corbusier shows the layout he had in mind (figure 2 and 3). The city has 24 towers that can accommodate 10,000–50,000 workers apiece, making up the hotel and commercial district for a combined population of 400,000–600,000. Garden cities provide over 2,000,000 people, while residential blocks, of which there are two primary varieties, house an additional 600,000 people.

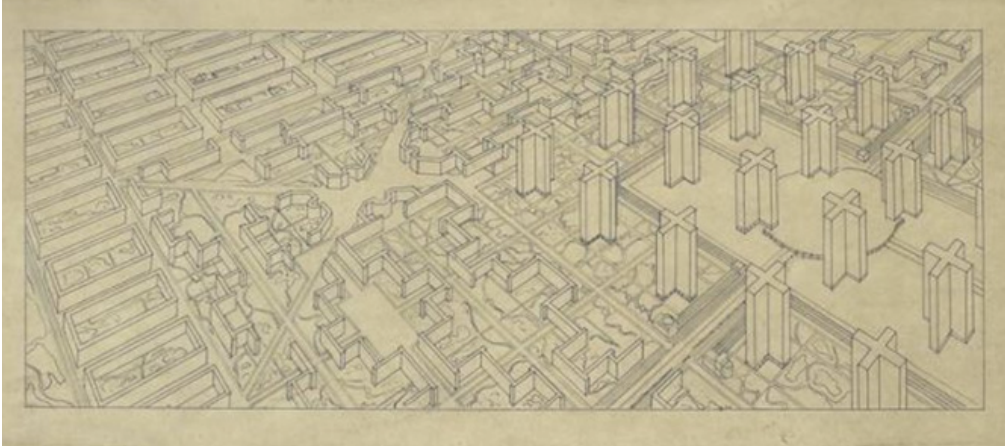
The city is separated into clearly defined zones for various purposes, such as habitation, employment, recreation, and transportation. Le Corbusier promotes open space as a priority in the city layout (figure 2). This design dedicates a significant portion of the overall area to various types of public entertainment and community facilities (Corbusier, 1925).

□ Area (a) is 95% dedicated to theatres, squares, and restaurants, suggesting that these areas are primarily meant for culture and social activities (figure 3).

□ In area (b), gardens along with

Figure 2.

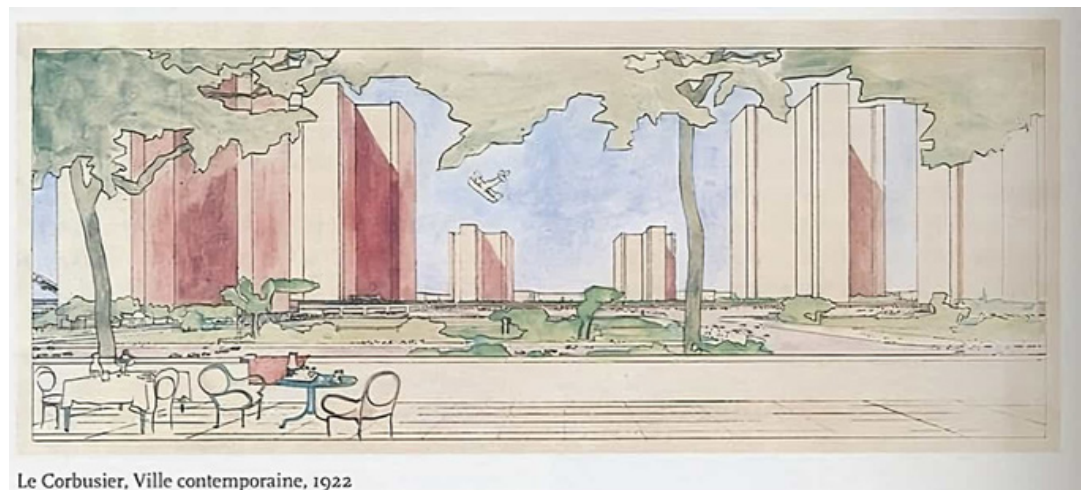
Remark.



Remark. Le Corbusier, 1922. Layout with repetition of buildings and skyscrapers. From “*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP. Copyright Agency, 2019 (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>)

Figure 3.

Perspective sketch of Ville Contemporaine

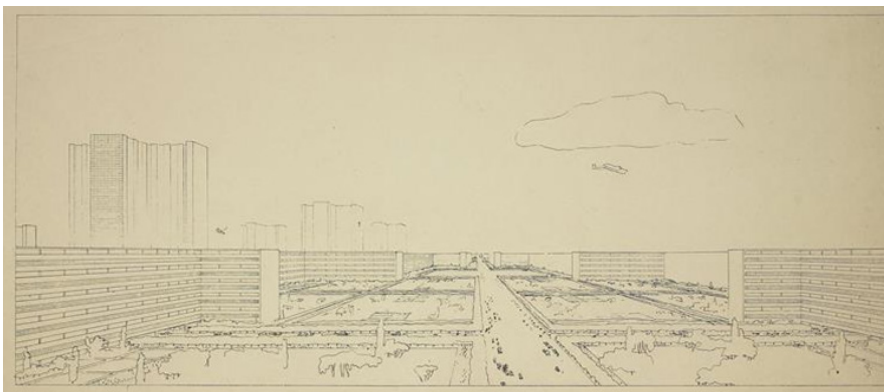


Le Corbusier, Ville contemporaine, 1922

Remark. Le Corbusier, 1922. Sketch that shows his vision on creating more open spaces. Published by Frithowulf.

Figure 4.

Bird view sketch of garden city layout with large roads in Plan Voisin



Remark. Ville Contemporaine buildings facing parks, Le Corbusier, 1925. From “*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP. Copyright Agency, 2019 (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>)

sports fields occupy 85% of the land, reflecting a focus on greenery and recreational activities for the residents (figure 3).

□ Area (c) is assigned 48% of the space, indicating a mix of purposes such as residential, commercial, and public spaces (figure 3).

Industrial quarters are characterized by residential and commercial skyscrapers with “set-backs” or “cellular” architecture that face parks (figure 4). However, the parks are pushed to the edges of the city and do not integrate with the city centre. Garden cities are emphasized, together with a geometrical layout and industrialization-driven construction uniformity with the goal of lowering costs, increasing efficiency, and improving architectural quality. Le Corbusier emphasizes that the uniform layout does not lead to uniformity, but rather creates a varied and harmonious urban landscape in which different streets have unique characteristics, making the city both structured and diverse (Corbusier, *Urbanisme*, 1925).

Le Corbusier’s *Ville Contemporaine* incorporates four key concepts: utilizing technology developments for urban clustering, building skyscrapers to alleviate traffic, encouraging a balanced distribution of people and buildings, and supporting an efficient ground metropolitan transit system. These ideas, which are ingrained in avant-garde megastructures, represent a revolutionary approach to urban planning and are a reflection of Le Corbusier’s methodology (Corbusier, 1925).

1.5 Conclusion

Ville Contemporaine, the urban concept that Le Corbusier developed, was entire-

ly apart from other urban concepts of the day. He was against the idea of a chaotic city and was in search of an efficient and happy haven. The secret to his utopia, he claims, is functional isolation. The city would be split up into several zones for dwelling, working, recreation, and transportation. A significant significance was given to the green areas that separated the zones. Gardens, parks, and squares offered respite, clean air, and a chance to commune with the natural world.

Le Corbusier envisaged a vast network of public transportation to ensure mobility. All areas of the city would be connected by metros, trams, and buses, eliminating the need for automobile travel. Another foundation of his approach was technology.

The plan constituted a visionary break from conventional urban design, highlighting functional segregation, green areas, and efficient transit as foundations of his ideal vision for cities.

2 The plan for Paris: Plan Voisin (1925)

1.1 Introduction

By 1925, Le Corbusier had created the Plan Voisin for Paris. Presented in his book “Urbanism,” which outlined his radical vision of urban renewal and modernization, it was one of the first concepts Le Corbusier created for urban planning. This project received a lot of criticism and was never realized.

“The donkey marked out all of our European cities, including Paris, unfortunately” (Corbusier, 1925). In this sentence, Le Corbusier refers again to the donkey road, but now specifically to the fact that this phenomenon has also affected Paris.

Le Corbusier felt that it was time to forward the idea of the Contemporary City with a more specific focus in 1925, after it was not receiving the kind of response he had hoped for: Paris. Central Paris would have undergone a drastic transformation under what he named the Plan Voisin. The project’s name refers to one of its key components: the creation of an innovative traffic pattern (Guiton, 1981). Le Corbusier displayed a modest sketch in which he modified the plan to fit the unique circumstances of Paris in addition to the Ville Contemporaine’s chosen design, which he displayed in 1922 (figure 5 and 6). This urban concept for Paris gained importance in 1925 during the International Exhibition of Decorative Arts in Paris (Lathouri, 1999). The ‘Ville’ is returned to its original location - Paris, the continent’s ‘eye’ - by means of this Plan Voisin (Guiton, 1981).

In his book *L’Urbanisme*, Le Corbusier emphasizes the Voisin Plan’s many benefits, including its ability to ensure corporate profits and societal peace. He claims that the image of the Voisin Plan, with its

huge 800-foot office towers (figure 5 and 6), glorifies big business and centralized state authority. Le Corbusier emphasizes the need of urbanization for generating value and profit, saying that high density land usage boosts property values and multiplies corporate profits.

“Urbanization is not spending money, but making money, making money,” said Le Corbusier about his plan for Paris. “The centres of major cities represent enormous land values that can be increased tenfold because modern technology makes it possible to build on 60 floors and no longer on 6 floors” (Corbusier, 1925).

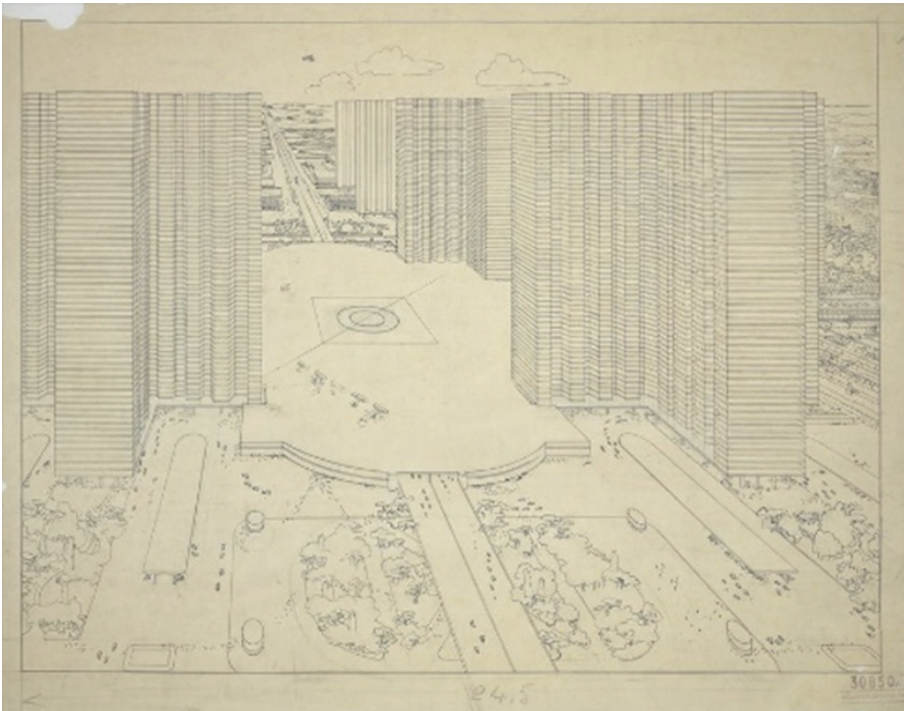
Le Corbusier firmly believed that a city like Paris should strive for both unity among its individual buildings and variation in its overall appearance: “When we walk through a city, our minds can evaluate the general plan and appreciate coordinated and majestic layouts. But our eye, limited to the narrower range of its visual field, sees only a succession of cells: a jagged, disjointed, diversified, complex, oppressive sight... overburdened, its only feeling is one of pain and fatigue, and the mind, after this initial defeat, is too harassed, exhausted, to respond to the splendid layouts” (Corbusier, 1925).

2.2 Context Paris

Over the ages, the city has grown organically, providing the creation of a complicated street layout and a blend of historic and contemporary structures. From four million in 1918 to a total of five million in 1930, the Paris region’s population increased significantly during the 1920s. The largest metropolis in the world at the time and capital of the French Republic, had been challenged by social unrest and

Figure 5.

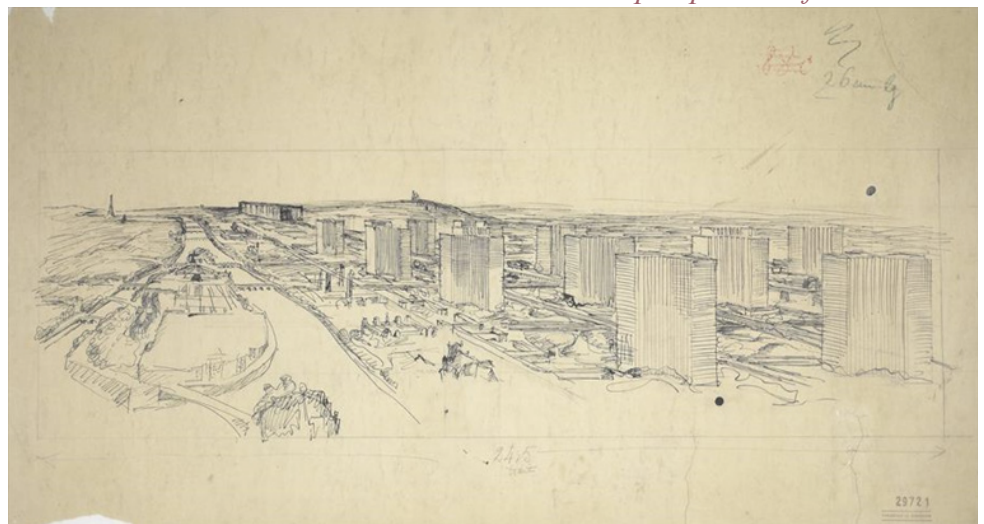
Bird view sketch of open space in Plan Voisin



Remark. High density buildings with large open spaces, Le Corbusier, 1925. From “*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP. Copyright Agency, 2019 (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>)

Figure 6.

Aerial perspective of Plan Voisin



Remark. Aerial view Plan Voisin, Le Corbusier, 1925. FLC 29721. From “*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP. Copyright Agency, 2019 (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>)

economic issues. Due to the high cost of land, the impoverished were compelled to relocate to the suburbs, while the rich and powerful bourgeoisie continued to live within the city centre. When the Musée Social was established in 1894, its goals were to advance capitalism and fight poverty. Previous legislation, like the 1919 “Loi Cornudet,” aimed to enhance urban aesthetics while preserving traditions for post-war reconstruction. As a result of industrialization, people’s means of survival and consumption patterns evolved, and advertising and art eventually merged.

2.3 Key elements

a) *Site*

Even though Le Corbusier argued that a flat site was best for city development, the chosen part of Paris for the plan Voisin had some diversity in terrain. This chosen part of Paris contained a large area of the centre of Paris. This area takes up almost seven of the “arrondissements” (Velasquez, 2015). Le Corbusier suggests an extensive reconstruction to make the city habitable, and that an entirely new vision for urban development would replace all existing buildings and infrastructure located between Seine and Montmartre (Guiton, 1981), see [figure 7](#). In the study of Velasquez, it becomes evident that Le Corbusier had envisioned the city plan with different elevations as suggested in the general city vision.

As he opposed the clinging to tradition of cities in his general vision, he critiqued the diversity of architecture in Paris and wished to destroy “A thousand different buildings... the beauty of ugliness... dirty and completely at odds with each other” (Corbusier, *The City of To-morrow and Its Planning*, 1925).

The Louvre, the Palais Royal, the Place Vendome (which he loved), the Place de la Concorde, the Arc de Triomphe, and a few other unique churches and townhouses would be the only structures saved (Guiton, 1981).

It is striking that regardless of whether the Ville Contemporaine was not location-oriented, the Paris plan appears to be a direct transfer of the general city layout Le Corbusier designed ([figure 8](#)). Included are structures in a regular orthogonal grid that occupy a significant portion of the right bank of the Seine. The outline reacts to a distinct geometric model, which is a large rectangle with an orthogonal crossing of two grand roadways, a centre, and an essential point (Velasquez, 2015).

b) *Population composition and urban density*

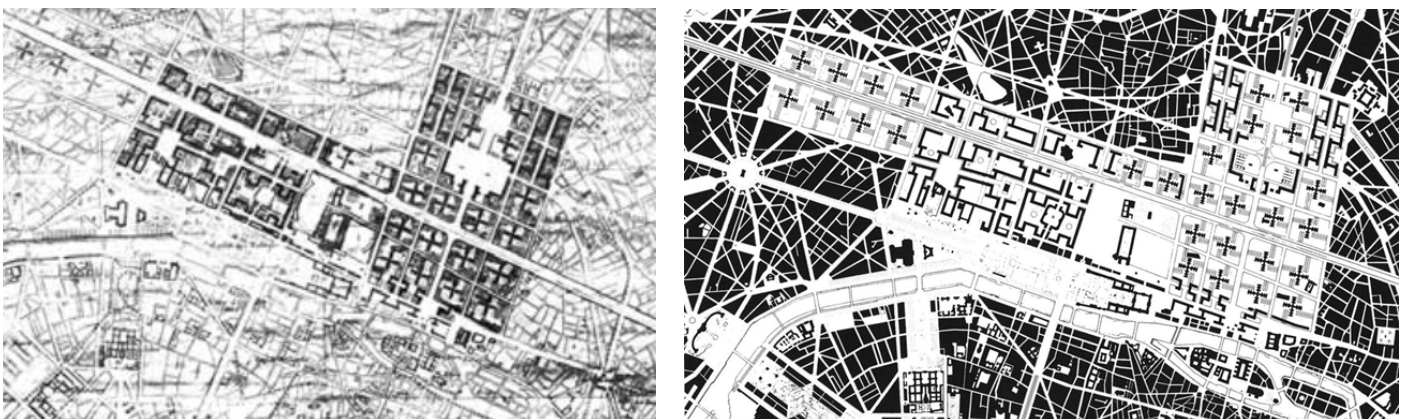
As Le Corbusier advocated in his general vision, the construction of vertical city centres is vital to maintain open areas. As seen in [figure 9](#), on the east of the station lies the business district (Sector A), which is composed of 18 cross-shaped skyscrapers surrounded by buildings with ‘Redents’. The residential neighbourhoods (Sector C) are primarily made up of Unité buildings and their ‘Redents’ and run between Rue des Pyramides towards the Champs Elysées circle. Two cruciform skyscrapers top the central station (Sector B), while a fourth section (Sector D) that stretches from the residential area’s western boundary to Avenue Wagram has eight more cruciform towers (Velasquez, 2015). The cruciform business skyscrapers would be 60 stories high and would be able to house five to eight hundred thousand people.

Figure 7.
Model of the Plan Voisin



Remark. Model of Plan Voisin, made in Paris. From “*Foundation Le Corbusier*”, by © Fondation Le Corbusier/ ADAGP. Copyright Agency, 2019. (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>)

Figure 8.
Plan Voisin layout of Paris



Remark. on the left: General floor plan of Plan Voisin, 1929. Le Corbusier. From “*Gesamtes Werk*” (p. 111) © FL C-ADAGP.
on the right: Detail of Le Corbusier’s Plan Voisin for Paris. From “*The ‘Closed/Open’ Duality in Contemporary Urban Form*” by Rowe and Koetter, 2010.

Remark. Victor Velasquez, 2015. The plan Voisin divided in sectors.

At the heart of Le Corbusier's plan for Paris was the notion of zoning: a strict division of the city into separate commercial, business, entertainment and residential areas. **Figure 6** depicts a perspective drawing, made by Le Corbusier himself, of the business centre and a portion of the residential, cultural, and governmental quarter that stretches west along the Seine.

As seen in **figure 6 and 7**, despite its enormous size, the city consists solely of three different types of buildings: the cruciform shape skyscraper, a closed complex called Immeuble-Villas (**figure 10**), and the Unité buildings with "Residents". The geometric business core of the city is made up of cruciform skyscrapers and solitary vertical buildings, while its "Immeuble-Villas" are primarily located on the outskirts. Facility buildings, a sizable tract of vegetated reserve, garden city suburbs, and an industrial zone bisected by a fictitious river all compliment the city plan (Velasquez, 2015).

The residential buildings, or called "Unités", with a height of 50 meters, could each house 2,700 people and serve as a vertical village, with food and laundry facilities on the first floor and a kindergarten and pool on the roof. There were three types of dwellings, although they all were similar: first, the setback dwelling, meandered across the city and cellular housing formed the sides of each rectangle in the city grid, making an enclosed parc. Secondly, the individual cells, now called villas, had two double height spaces looking over the parc, one left open to make a hanging garden. The

blocks spanned the roads and in between them were planted areas for common use. The third type of dwelling was in garden cities outside the city proper, beyond the green belt. They were seemingly endless blocks of three double height units that snaked across the countryside using the setback layout (Corbusier, Plan Voisin, 1910-1929), visible in **figure 7**.

The total residential area would accommodate 78,000 people on a surface of 260 hectares. In sharp contrast to the dense metropolitan region that the plan aimed to replace, just twelve percent of Plan Voisin's land was to be developed (**figure 7**). 49% of the built-up area was designated for residential use, with the remaining 51% reserved for any additional uses of the site. Approximately one-third of the open area was designated for car use, while the remainder was pedestrian-only (Rodriguez-Lora, Navas-Carrillo, & Pérez-Cano, 2021). As Le Corbusier describes, "For only 5-10 per cent of the surface area of its business centre is built over. That is why you find yourselves walking among spacious parks remote from the busy hum of the autostrada." (Corbusier, *Urbanisme*, 1925).

He suggested that the existing residents, living in the current city centre, whom he branded "cavemen," relocate to brand-new garden cities in and around Paris (O'Donnell, 2019).

c) *Paris - Streets and Traffic*

"It is the street of the pedestrian of a thousand years ago, it is a relic of the centuries; it is a nonfunctioning, an obsolete organ. The street wears us out. It is altogether disgusting! Then why does it still exist?" (Corbusier, *Urbanisme*, 1925). In this section Le Corbusier attacks Paris's traditional street as an antiquated and in-

effective component of urban design. In his opinion, the street is a remnant of the past that is no longer necessary for the advancement of urban development and modern society.

Le Corbusier's general ideas for a properly managed street system were incorporated into Paris's new urban design. The plan Voisin advocated for broader roadways to accommodate automotive traffic and to reduce the load that horse-drawn carriages imposed on cars. These roads would be connected to tree-lined pedestrian walkways that would be surrounded by skyscrapers in the open space above the tree line. These walkways, as seen in the drawing in [figure 5](#), would eventually lead towards the buildings, which featured ground-floor cafés, stores, and offices (Corbusier, Plan Voisin, 1910-1929). What is striking about the Voisin plan is that fast traffic (cars and trucks), local traffic (cars intended for the residents of the city) and slow traffic (pedestrians and cyclists) were separated from one another.

□ For the slow traffic tree-lined pedestrian walkways are connected to the local traffic roads.

□ For the local traffic, wide roadways are connected to the main arteries to reach destinations.

□ For the fast traffic, elevated highway, called 'main arteries' in the Plan Voisin, links the city's four zones and runs across east to west.

Looking at [figure 8](#), the main road axis linking the city's four zones runs across east to west is clearly visible in the schematic layout of Paris. According to Le Corbusier, the purpose of this wide axis, which runs alongside with the Champs Elysées as an elevated highway, is to relieve congestion in the

city centre and link distant areas of the city (Corbusier, *Urbanisme*, 1925). Also, other wide roads, particularly those that go through an enormous plaza in the business district are seen in the layout. The freeways are connected at the middle level, while local roads intersected at ground level, providing pedestrian access to the three stories below ground (Corbusier, *Urbanisme*, 1925).

d) Paris - Stations and Traffic

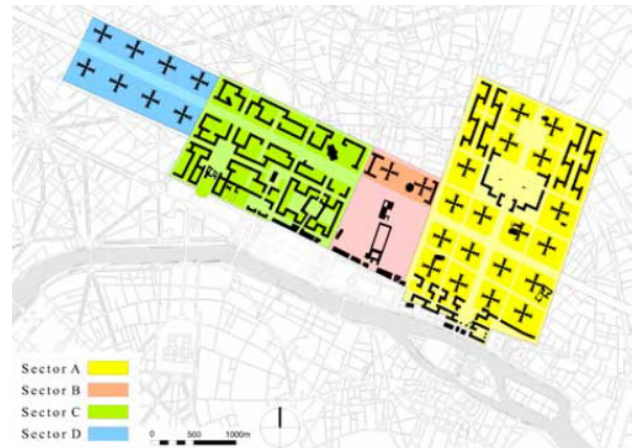
Just as he proposes in the general city vision, he expanded the transportation options in the new plan for Paris. The plan included multi-level public transport along the lines of the contemporary city and three-storey glass pedestrian centres overlooking the parks.

The Voisin plan consisted of a grand central station where two elevated roads intersect. The station consisted of six levels: three above the ground as well as three below. The highest level had a modest aerodrome for taxis. This element was newly introduced in the plan Voisin and were the pinnacle of transportation innovation in that age, stretching the boundaries of traditional travel ways to new levels. The levels below ground were used for rail transportation, with tube trains at the first level, suburban trains underneath that, and mainline trams on the lowest level. The main transit deck was located in the heart of this metropolitan region, and it served as the hub for the huge underground train system that transported residents to and from their homes (Corbusier, *Urbanisme*, 1925).

"Since this City has three or four times the density of our existing cities, the distances to be transversed in it (as also the resultant fatigue) are three or four times less." (Corbusier, 1910-1929)

Figure 9.

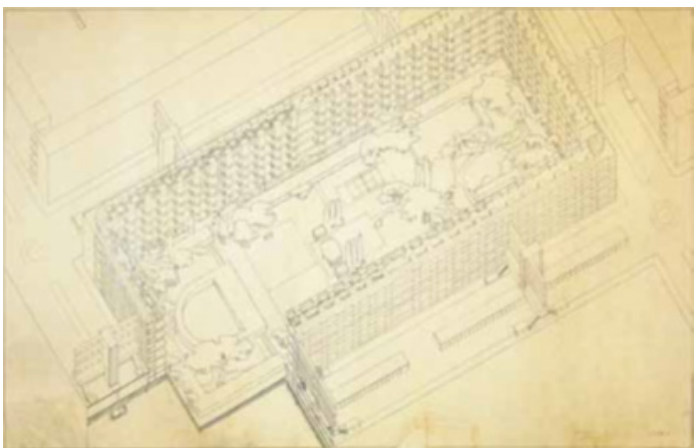
Paris divided into sectors in Plan Voisin



Remark. Sectors of plan Voisin. From “*The architectural patrimony in the graphical representation of the Voisin Plan*” (p.273) by Victor Velasquez, 2015.

Figure 10.

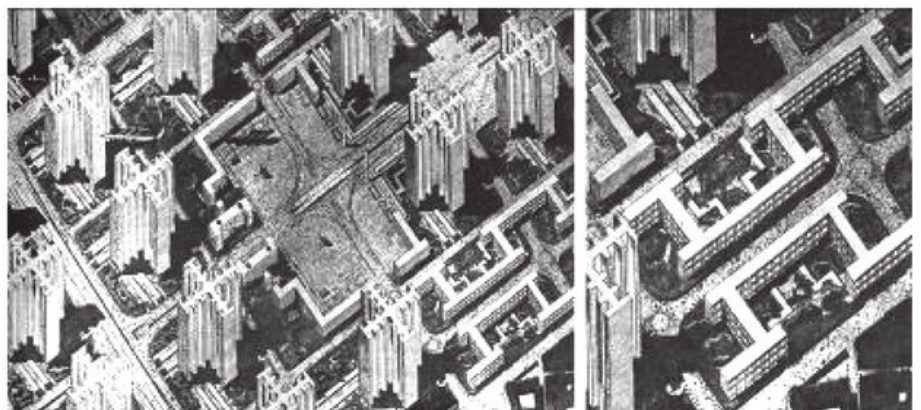
Sketch of Immeuble-villa for Plan Voisin



Remark. Axonometric sketch of ‘Immeubles-villa’, Le Corbusier, 1922. From “*Foundation Le Corbusier*” by © Foundation Le Corbusier/ ADAGP. Copyright Agency, 2019 (<https://www.fondationlecorbusier.fr/oeuvre-architecture/projets-plan-voisin-paris-france-1925/>) . FLC30849.

Figure 11.

Redents in Plan Voisin



Remark. General axonometric view and detail of the Redents, Le Corbusier, 1935. From “*Endurance and transformation in Le Corbusier’s Redent*” (p.65) by J.Cubero, 2016. FLC 29723.

e) *Paris - Grid city planning*

The Voisin plan also prominently displays the grid layout, which is a key component of his overall theory of urban planning and a way to bring simplicity and order to urban settings. Plan Voisin proposed 18 cruciform glass office skyscrapers arranged on a rectangular grid in a vast park-like landscape, with triple-tiered pedestrian walkways with raised terraces placed between them. Extending diagonally to the west, there would be an accompanying rectangle with low-rise residential, government, and cultural facilities surrounded by further open spaces (O'Donnell, 2019).

Le Corbusier notes how the monuments in the Plan Voisin aren't attached to the axes or placed at their ends, which breaks with 'Haussmannian' tradition. They are found in the city or viewed from above as 'objets trouvés'. As the model is implemented onto the actual site, the current city remains, undermining the model's fundamental premise of the contemporary city. The non-orthogonal grid of Plan Voisin, as well as the buildings' slightly rotated orientation in reference to the axes, demonstrate this. The objective of "the magnificence of the effect" remains, but it must be changed to address the tension between concept and context (Lathouri, 1999).

g) *Paris - Green and open spaces*

As he suggests in his general vision on urban planning, he implemented the green and open spaces in the plan for Paris. The city would be surrounded by a protected green zone of woods and fields where all building was prohibited. Outside this zone were three more areas; for sports, industry and the third type of housing. Open spaces dominate the cities layout,

buildings have to be built higher to make this increase in open space possible.

"You are under the shade of trees, vast lawns spread all round you" (Corbusier, *The City of To-morrow and Its Planning*, 1925). Here, Le Corbusier describes an idyllic setting with trees, vast lawns and pure air. Although no buildings can be seen through the dense canopy, large office blocks in the distance are described as "transparent prisms" that appear to float high above the ground. Le Corbusier seems to use nature in this plan also to break up the view of the massive buildings from ground level. Parks would be situated between the Unités, providing residents with maximum natural daylight, minimal noise, and recreational activities right on their doorstep.

Le Corbusier's Plan Voisin bird view sketch (figure 5, p.5) and the axonometric sketch (figure 11) shows apparent open areas between the buildings. These open spaces and green spaces on the edges of the plan were quite extreme for the norm at the time.

2.4 Conclusion

Plan Voisin served as the test case for Le Corbusier's vision of a harmonious universal metropolis. The proposal echoed his *Ville Contemporaine* concept, with green spaces embraced, the city divided into functional zones, and a vast transit network envisaged. Even though Plan Voisin never got carried out, it serves as a reminder of Le Corbusier's bold vision and the difficulties in balancing utopian goals with practical urban planning considerations.

The similarities between Le Corbusier's designs and plans for *Ville Contemporaine* along with those of Paris point to his quest for a universal me-

tropolitan model that could be applied to a variety of settings, independent of the particulars of the current city structure.

This illustrates his idealistic view of urban development, which prioritized efficiency and practicality, sometimes at the price of the unique character and context of each place.

3 The city of Chandigarh (1950)

3.1 Introduction

Although many of Le Corbusier's proposals were for smaller areas or individual neighbourhoods inside existing cities, Chandigarh represents a large-scale urban development project. The Capitol Chandigarh (figure 12), was designed by Le Corbusier as a symbol of unity and stability after India's partition in 1917, serves as the focal point for the newly formed government of Punjab. Le Corbusier was largely responsible for designing the master plan of Chandigarh and the Capitol Complex. However, he eventually took on a project of designing the city's business centre and several additional buildings (Lathouri, 1999).

The development of the capital city took a number of years, and it had been completely finished by September 1953, when all of the governmental departments ultimately relocated from Simla to the new structures in Chandigarh (Lathouri, 1999).

3.2 Context Chandigarh

Following nearly two centuries of British power, Punjab was divided, and Chandigarh was established as the new capital of India in 1947 upon the country's independence (Gontarczuk, 2017). Named for the Hindu goddess Chandi, Chandigarh was intended to represent a contemporary, autonomous India (Gontarczuk, 2017). With assistance from Maxwell Fry as well as Jane Drew, Le Corbusier took responsibility for the city's development after Albert Mayer resigned from the project (Gontarczuk, 2017). In Chandigarh's growth, colonial influences and deeply ingrained social structures endured despite attempts to represent a new era (Dieleman, 2006). Mayer's original design was for a layout with integrated

green spaces and superblocks, drawing inspiration from the garden city concept (Dieleman, 2006). Nevertheless, concerns about its success surfaced, leading to changes and conversations with Nehru on the monumental element of the city. These discussions led to changes in the plan to satisfy Nehru's expectations for the architectural grandeur of the city, transforming Chandigarh into a symbol of contemporary India. According to Dieleman (2006), Chandigarh's population remained socially divided, with lower-income groups living in informal communities on the outskirts of the city and having difficulty accessing resources. This highlights the persistent differences in post-colonial Indian society.

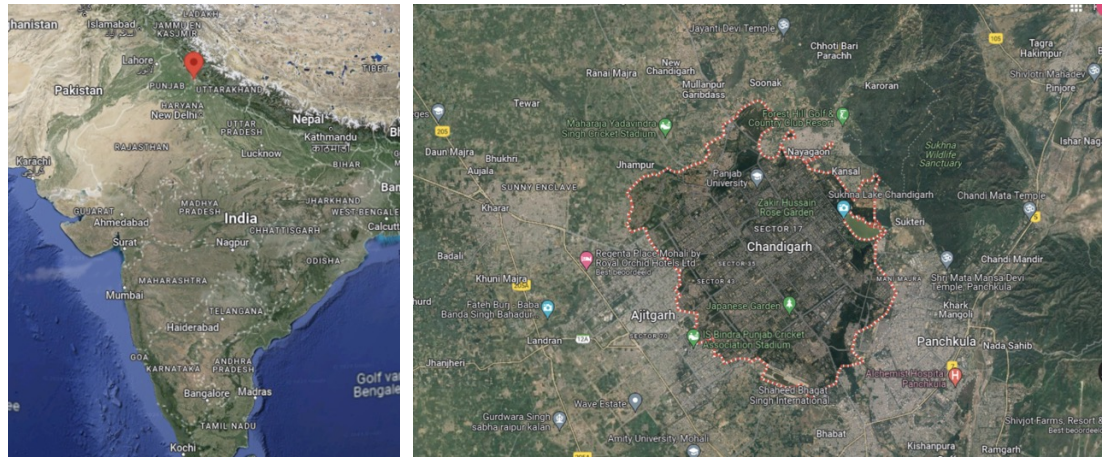
3.3 Key elements

a) *Site*

At first, the search for an ideal location for the future Punjabi capital had to be conducted. The government was in doubt whether to develop an entirely new city or convert an existing metropolis. The cost of both approaches is estimated to be similar due to the lack of critical amenities such as sewers and water supply in existing cities (Dieleman, 2006). Furthermore, Nehru was against an existing metropolis to serve as a representation of the newly formed nation, fearing that traditions reflecting the existing city would stymie India's progress (Dieleman, 2006). Because Le Corbusier was introduced in the project in a later stage, he had no influence on the decision of the location.

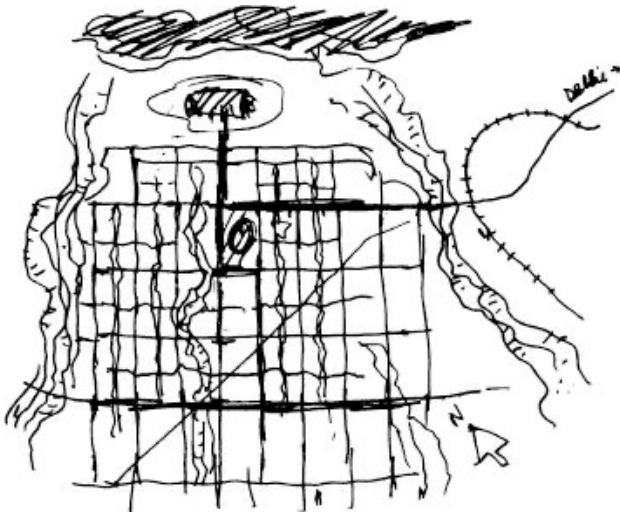
The location had to fit a number of criteria, including safety, adequate size for future population growth and infrastructure, and affordability of land. Finally, a spot at the bottom of the Hi-

Figure 12.
Location of Chandigarh project



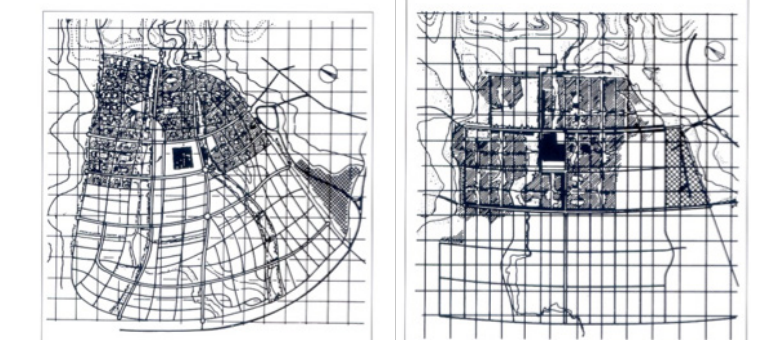
Remark. Google maps location of Chandigarh, India. From “Google Maps”, Retrieved February 12, 2024, from (<https://www.google.com/maps/place/Chandigarh,+India/@30.7322804,76.7707136,12z/data=!3m1!4b1!4m6!3m5!1s0x390fed0be66ec96b:0xa5ff67f9527319fe!8m2!3d30.7333148!4d76.7794179!16zL20vMDFm-MXE4?entry=tту>). Copyright by Google.

Figure 13.
Sketch of the Chandigarh plan by Le Corbusier



Remark. The Chandigarh plan, Le Corbusier, 1948. From “MIT Press” by Maxwell Fry, 2019 (<https://mitp-arch.mitpress.mit.edu/pub/lpiv36vr/release/1>).

Figure 14.
Comparison between Mayer’s and Le Corbusier’s plan for Chandigarh



Remark. Mayer’s master plan (left) and that of Le Corbusier (right). From “Chandigarh: Indische stad naar westers model” (p.48) by Dieleman, 2006.

malayas had been selected for the city's construction, which first functioned as farming land of 24 villages resulting in the displacement of around 9,000 people. The location is surrounded by two periodic rivers that are normally dry, except throughout the monsoon season in August and July, and the climate changes dramatically, with winters below zero and summers reaching 45 degrees Celsius, followed by dehydration and sandstorms (Dieleman, 2006). This created new challenges for Le Corbusier's theoretical ways of urban planning.

At the same time, Le Corbusier was able to create a totally new urban landscape (figure 13, p.20). Chandigarh's flat, empty environment, delimited by two river lines and the Himalayas, is excellent for displaying objects and monuments that reference a sacred landscape with cultural context (Lathouri, 1999). Although there was a need for monumental elements in the design, Le Corbusier did not have to adhere to the city's existing traditions.

b) *Population composition and urban density*

As said earlier, Le Corbusier adopted the preliminary plan created by Mayer and Nowicki (figure 14, p.20). The city's plan emphasized the symbiotic relationship between industrial architecture and green spaces (Burke, 2011). This metropolis was meant for 150,000 people, but it has since evolved into a city featuring 1,200,000 residents (Mas museum Antwerp, 2019).

Le Corbusier incorporated not just the Garden City model, but also his own architectural concept from his proposal 'Ville Contemporaine, though in the context of Chandigarh, the tall glass

skyscrapers were replaced by sculptures expressing the city's governmental function (Lathouri, 1999). Le Corbusier also sought to put his Unité d'Habitation concept into practice by constructing residential towers for city government staff members. However, the government did not approve this suggestion (Lathouri, 1999).'

The super blocks of the general vision remain, but they have gotten supersized in the plan of Le Corbusier (3 old city blocks would fit into the new one Le Corbusier had created) and were called 'Sectors' (figure 15, p.25). The plan also incorporates Le Corbusier's general concept of zoning, he created zones in the north of the city for civil government and the southern zones were meant for district administration, which comprise Chandigarh's urban plan. The Sectors, a new translation of the zoning-method for Le Corbusier, were key in the design. The goal was for the sectors to be self-sufficient and introverted, with units consisting of approximately 150 neighbourhood families (Gontarczuk, 2017).

The proposals for these sectors included four residential groups grouped in a hierarchical fashion. These categories were connected to economic and social position, influencing the residences' location, size, and design (Dieleman, 2006).

- Type 1 features luxurious estates, made from high quality materials, for politicians and the privileged, complete with expansive gardens and terraces. These are situated in the city's most central areas, providing direct access to facilities and public spaces.

- Type 2 were intended for the Middle-class residences. These are in less

central places but still have convenient access to amenities. These are comfortable residences with a combination of both indoor and outdoor space; the emphasis is on efficiency.

- Type 3 is designed for residences for the skilled workers. These are situated on the outer edges of the metropolitan area, with easy access to the office areas. These dwellings are simple and modest in style, with an emphasis on functionality.

- Type 4 refers to worker housing. They are situated on the outer edges of the city, with reduced land and infrastructural expenses. The dwellings are minimalistic with only the necessities. These are relatively simple and functional structures, with an emphasis on low cost.

The city centre, spans one “sector” and contains commercial facilities. These are structures that surround the “chowk,” an Indian plaza where public institutions like the post office, town hall, and museums are housed (Dieleman, 2006).

c) Chandigarh - Streets and Traffic

Le Corbusier explains the city’s network of streets, known as the “7Vs” (figure 16, p. 25). These roadways are arranged hierarchically according to what sort of traffic they serve, just as he proposed in his general vision. There are routes for cars of various speeds, particular services, roads that connect to local amenities, neighbourhood streets, and hiking paths. Each area of the city is linked to a main road for efficient traffic flow and is intersected by business and neighbourhood streets (Patle, 2021).

- V1 High-speed roads connecting Chandigarh to neighbouring cities, with double roadways surrounded with trees and lights that make the

journey to Chandigarh pleasant (Patle, 2021).

- V2 Vehicle major highways known as ‘Margs’ (Patle, 2021). Commercial amenities at the city level are situated next to these roads. These highways are the city’s primary axis, connecting various key areas like the train station with university, the Capitol, and the city centre. To give the city a feeling of grandiosity the buildings around these roadways are intentionally bigger than what can be found elsewhere in the city (Dieleman, 2006).

- V3 Linking roads connect all sectors with the main roadways, and the V-3 roads form a regular grid that defines each sector’s boundaries (Patle, 2021).

- V4 Crossroads that intersect a sector and contain shopping areas and additional facilities, as well as connections to other communities, with shopping routes positioned to be always shaded (Patle, 2021). To minimize people having to frequently cross the street, shops were only allowed on one side (Dieleman, 2006).

- V5 Circulation routes within a sector that connect to the inner streets (Patle, 2021).

- V6 Roads that lead to the dwellings (Patle, 2021).

- V7 Streets that travel through the sectors’ green areas and are only meant for pedestrian traffic, with bike tracks running parallel to them (Patle, 2021).

These seven ‘V’s’ are intended to provide pleasant pedestrian circulation between and within the city’s sectors while also retaining the advantages of high-speed car travel. The result is that the sectors

walkable, and it takes less than 15 minutes to walk from one sector's corner to its centre. This structured road network layout defines Chandigarh's urban pattern while also filtering vehicle and pedestrian traffic to allow for smooth mobility around the city. The various types of roads intersect at certain places, and occasionally they are even mixed which is not typical for his general idea on streets and traffic.

d) **Chandigarh - Stations and Traffic**

Le Corbusier's city plan for Chandigarh excluded a railway station from the proposed metropolis, which goes against his general vision of how a city should be organized. However, Chandigarh has been provided with an efficient transportation network, as said before. This system includes roadways that link various areas of the city. Additionally, the city had a central bus terminal that functioned as a major centre for public transportation. The Chandigarh Central Railway Station, located beyond of the planned city yet crucial for rail links between Chandigarh and the rest of the nation, served as the primary hub for rail links to other cities (DHNS, 2012).

e) **Chandigarh - Grid city planning**

Le Corbusier intended to apply the same ideas he used throughout his European architecture projects to the 'virgin' Punjabi terrain. Chandigarh's grid of wide boulevards reflects Le Corbusier's general vision on grid city planning.

Mayer's initial fan-shaped design was modified by Le Corbusier into a grid with nearly orthogonal curves (figure 14). In order to create a structured and ordered road network, he instituted the hierarchy of roadways, named the seven

V's, as mentioned before.

The typical grid planning idea of Le Corbusier, which separates the city into homogeneous and orderly sectors (figure 15) or blocks, in this case heavily relies on the previously mentioned 47 "sectors". These areas support a set number of local households and are intended to be self-sufficient, helping the city's planned and organized growth (Walden & Fry, 2021).

The concept, intended for an urban population of 500,000 people, is built on a rectangular grid that is tailored to the terrain. Despite the Master Plan came to reality as planned, Le Corbusier was never satisfied with the houses that grew alongside his valued grid. However, after what he deemed a "betrayal" of his staff, Le Corbusier changed his plans dramatically, building manmade hills between the Capitol building and the remainder of Chandigarh, cutting the line of view between the two (Dieleman, 2006).

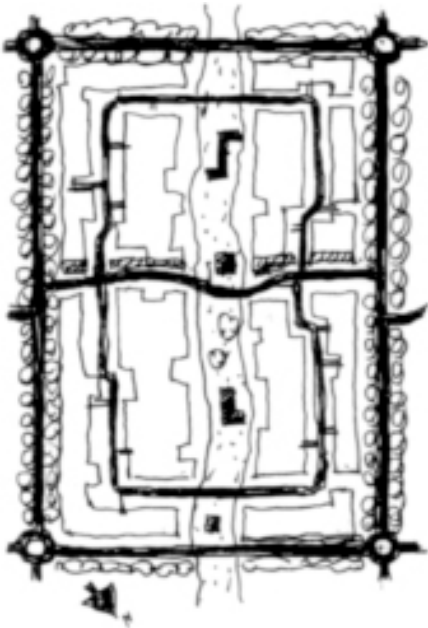
The general location of the capital building also remained the same as in the previous plan of Mayer, though according to the clients wishes, Le Corbusier made the complex much bigger. There is also now a grand avenue terminating at the capital. The streets are no longer curvy, but instead completely straightened orderly. This refers back to the previous saying about the 'pack donkeys way and the mans way' of Le Corbusier, where he denounced the organic urban forms of the traditional European cities.

f) **Chandigarh - Green spaces**

Because Le Corbusier utilized the core elements of Mayer's urban plan, certain aspects of the "garden-cities" are still very visible in the new city plan of Le Corbusier. He made a concerted effort

Figure 15.

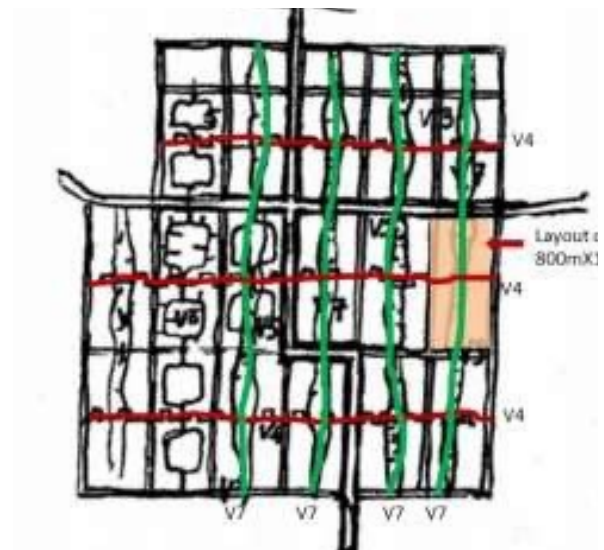
Sector in Chandigarh by Le Corbusier



Remark. Working sector surrounded by protected boundaries, Le Corbusier, 1949. From “<https://mitp-arch.mitpress.mit.edu/pub/lpiv36vr/release/1>” by Maxwell Fry.

Figure 16.

Analysis of 7V concept by Le Corbusier



Remark. V4 connecting adjoining sectors & V7 bisecting each sector transversely. From “Facets of Urban Public Space: A study of V4 market streets of Chandigarh” by Kanika Bansal, 2005. Copyright 2020 SERSC.

to prevent poverty, congestion, and poor sanitation in India's traditional cities. Le Corbusier included significant landscaping with planting into urban architecture, creating enormous green spaces, hidden urban parks, and communal gardens. He aimed to create a vibrant public place in which residents may interact with others while also having room for meditation and isolation. He envisioned people enjoying healthy and active lives in open green places, away from the 'speed' of modern cities (Ramesh, 2015).

The internal green spaces and linkages between the super blocks of the former plan of Mayer remain. There are ample green spaces within these sectors. Residents are able to use these spaces to walk to schools located in the centre of each sector (Gontarczuk, 2017).

The total city's layout is divided by continuous green strips that take the shape of both Leisure Valley and the special gardens at the city level, the sector-level central greens, the community-level small lots that surround clusters of houses, and, at the smallest scale, individual courtyards for each dwelling. The roadways are lined with rows of trees, whose species and shapes are dictated by the road's orientation and purpose in the V7 road network hierarchy (Ramesh, 2015). These features were an extension of the general vision of Le Corbusier.

Also, one unique reoccurring element can be seen in the design for Chandigarh: the backdrop of the Himalayan skyline in silhouette (Ramesh, 2015). The Himalayas captivated Le Corbusier, who used them as an inspiration for his architectural designs. Le Corbusier's approach to incorporating nature into modern city design was greatly influenced by his childhood in La Chaux-de-Fonds,

a village in the Swiss countryside tucked in the Jura mountains. Though the Garden City movement undoubtedly had an impact on him, his early upbringing in a meticulously planned community encircled by copious green spaces profoundly shaped his vision for Chandigarh. His early years spent in a community with lots of communal open space served as inspiration for his designs, which attempted to combine the best aspects of life in both urban and rural regions (Ramesh, 2015).

4.4 Conclusion

Chandigarh was a brand-new city concept built on an empty lot that gave Le Corbusier the freedom to plan a city without regard to existing structures and from the bottom up in alignment with his ideal urban ideals. He didn't have to take heritage preservation into account in order to implement his modernist concept of urban development here. Le Corbusier attempted to include his general city plan elements into the Chandigarh project, however including aspects from the existing context and city plan of Mayer were obligatory. Most important in his design for the city, Le Corbusier sought to achieve balanced population density and integrated green spaces across the city. The outcome of the design has zones put more emphasis on the integration of the functions within the city. This goes beyond the general vision Le Corbusier earlier made for 'Ville Contemporaine'.

4 Results

This section discusses the findings from the comparison of Le Corbusier's essential concepts with both of his city plans. The extent to which the implemented plans adhere to Le Corbusier's general vision on a city is explored here, with a focus on the context and the key elements described in his first manifest about cities.

4.1 Context comparison

Regarding the contexts, the Plan Voisin proposed a massive reconstruction of the existing me-tropolis Paris. Le Corbusier advocated removing major areas of ancient Paris while replacing them with new, tall skyscrapers and wide roadways. The plan placed minimal emphasis on the protection of historical heritage. Paris has an extensive and intriguing past that dates back to the Roman era. However, Le Corbusier advocated dismantling vast portions of ancient Paris, including the city's core, to make way for his new visionary design.

On the other hand, Chandigarh was a completely new city concept on an empty lot, which allowed Le Corbusier to design a city from the bottom up in accordance with his desired urban principles free from the constraints of pre-existing structures. Here, he was free to apply his modernist vision of urban development without having to consider heritage preservation. However, the plan for Chandigarh did face new obstacles, particularly in terms of temperature, for to which he had to devise creative solutions.

For both of the city plans, current residents living in the area were forced to relocate to designated areas Le Corbusier proposed.

Regarding the clients of both

projects, there were no formal clients who initiated the renovation of Paris. Le Corbusier created and refined the plan entirely on his own initiative and showcased the work on an exhibition in Paris. On the contrary, for the Chandigarh city plan, Le Corbusier was officially asked. This commission was set up directly by the Indian government with the goal of establishing a contemporary metropolis that represented India's freedom and advancement. The national government served as the customer in this case, giving Le Corbusier considerable flexibility in building and organizing the metropolis.

4.2 Key elements comparison

a) Site

Regarding the site, the Voisin Plan focused on modifying specific areas of Paris, whereas Chandigarh was a considerably broader urban development project that included the construction of a full new city. In Paris there is a gradual growth that Le Corbusier opposed, while in Chandigarh he was able to include the future growth of the city into the city plan. Ultimately, his Voisin Plan concentrated on targeted modifications to Paris, whereas Chandigarh represented a larger metropolitan project, demonstrating Le Corbusier's changing metropolitan vision and proactive attitude to future urban development.

b) Population composition and urban density

Le Corbusier's plan for Chandigarh and the plan for Paris show divergent methods of urban planning in terms of population composition and urban density. The Voisin Plan placed a high priority on efficiency and modernity, emphasizing

the division of labour and the grouping of people from various socioeconomic backgrounds. On the other hand, Chandigarh had a hierarchical structure, with different housing groups according to social status and income. Chandigarh sought to achieve balanced population density and integrated green spaces across the city, in contrast to the Voisin Plan, which placed an emphasis on dense urban layout, and vertical housing alternatives. Both plans, in spite of their differences, sought to shape the urban environment while attending to the requirements of their respective people.

c) **Streets and traffic**

In both of the city plans, Le Corbusier seemed to wish to cling to a distinct system of highways distinguished by varying speeds. Plan Voisin divided various kinds of traffic flows and connected them in particular spots. Traffic travelled over the city centre of Paris via elevated roads. In Chandigarh however, he created a slightly different arrangement in which the heart of the city centre was fully traffic-free for the benefit of efficiency in its use. The seven were more integrated throughout the city layout, and were sometimes combined.

d) **Stations and traffic**

Considering the stations and traffic system Le Corbusier proposed in his general plan, notable differences can be found in the comparison of the city plans. Elevated highways converged at the main train station in Paris, which housed many floors above and below ground to accommodate different public transportation options. The city also boasted an advanced transportation infrastructure. Le Corbusier's plan for Chandigarh, on

the other hand, did not include a central train station or elevated highways. The primary train link came from Chandigarh Main train Station, which was located outside the planned city, despite the fact that the city was connected to a functional public transportation system. For train connections to various cities and areas, this station acted as a hub.

e) **Grid city planning**

When comparing the grid system in both of the plans, it becomes evident that Le Corbusier attempted to include his general city grid into the specific city plans. In the plan for Chandigarh, Mayer's earlier plan was adapted until it became almost orthogonal again, as we also saw in the Voisin plan. At Chandigarh we can see that the city's grid also depended enormously on the 47 sectors that Le Corbusier designed. The Voisin plan, however, mainly connected 4 zones of the newly designed part of Paris, which ultimately made the grid a lot less complex than the grid for Chandigarh.

f) **Green spaces**

While there were planned green areas in the plan Voisin, expanding green space in Paris was not the main goal. The green spaces were primarily located near the edges of the designed city lay-out. On the contrary, there were a lot more integrated green areas in Le Corbusier's Chandigarh city plan. In order to increase liveability and encourage healthy lives, Chandigarh's grid design was enhanced with parks, gardens, and green spaces for the public in between the sectors. The green spaces in Chandigarh seem to be an elaboration on the general vision Le Corbusier used to have.

Conclusion

In the early years of his urban design career, Le Corbusier initially believed that all cities could be created in an identical manner, following an ideal formula to meet the demands of its residents. However, he later discovered that theoretical ideas needed to be refined to fit each city's specific circumstances. So, in what ways did Le Corbusier's modernist principles manifest in his urban plans for Paris and Chandigarh, and how did the specific contexts of each city influence these plans?

To conclude, after comparing Le Corbusier's choices of both the Plan Voisin (1925) and the Chandigarh city plan (1950), we can see notable differences in his approach towards planning the city. The plan of Chandigarh shows a lot more integration of the different elements in the city, which was lacking in the general vision he proposed in the early stages of his urban planning career. For example, mobility streams have been combined throughout Chandigarh layout, while in the Paris plan, he kept these separated. Additionally, his view on integrating nature in a city centre seems to have shifted over time. When comparing the key elements in both of the cities, the plan for Chandigarh seems to include more of a human scale within its design. However, considering the social goal Le Corbusier had in the first stages of his urban planning career, namely reducing the segregation in the city, only the Plan Voisin seemed to achieve that goal.

Whereas the Plan Voisin demonstrated the difficulties of balancing modernization and preservation of history in urban development, Chandigarh provided a chance for Le Corbusier to achieve his utopian vision free of such limitations. Both of the city plans therefore fa-

ced different challenges, and eventually only the Chandigarh city plan was realized.

Ultimately, the divergent results from the Plan Voisin versus the Chandigarh project highlight the challenges associated with trying to implement a single, universal plan in a variety of metropolitan settings. Le Corbusier was able to follow his utopian vision in Chandigarh, but the achievement of this vision also brought to light the difficulties in putting such ideals into reality. Le Corbusier's thought process changed with time, which is indicative of the need to modify theoretical ideas to fit the particular circumstances of every city. Therefore, this study reveals the significance of adapting methods to the distinct features of every city, underscoring the progression and intricacy of realizing prosperous urban development on an international level.

Discussion

When comparing the city planning of the plan Voisin and Chandigarh, mostly the context of the project as well as the essential principles on a city of Le Corbusier were considered. Given the unique circumstances of each project, it is critical to recognize the impact of external influences. One urban plan included developing within an established metropolitan area, whereas the other began with a blank slate. Furthermore, one urban plan missed predefined directions, whilst the other had to meet unique client requirements. Furthermore, we must remember that these plans were created at different stages in Le Corbusier's career and in different historical situations. Le Corbusier's own evolution throughout time could have also been a factor. Nonetheless, it's instructive to understand how external variables can considerably affect the final results of urban planning attempts, providing vital insights applicable to modern projects as such.

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