

ARCHITECTURE IN THE FIRST HALF OF THE TWENTIETH CENTURY

Le Corbusier
International Style in Italy: Rationalism

Week 13

LE CORBUSIER'S QUEST FOR IDEAL FORM

- The 1920s in Europe, Russia and, to some degree, the United States was one of those rare periods in the history of architecture when **new forms were created** which seemed to overthrow previous styles, and **set a new common basis for individual intervention**.
- Sometimes called the 'International Style', this shared language of expression was more than a mere style; it was also more than a revolution in building technique, though its characteristic effects of **interlocking** (birbirine bağlı) **spaces, hovering** (havada asılı) **volumes and interpenetrating** (içiçe geçmiş) **planes admittedly relied on the machine-age materials of concrete, steel, and glass.**
- Like most major shifts in the history of forms, **the new architecture gave body to new ideas and visions of the world.**
- It expressed polemical attitudes and Utopian sentiments;** and whatever qualities individual buildings may have shared, they were still the products of artists with personal styles and private preoccupations.
- It is only by probing into the ideals and fantasies behind the forms that one may begin to understand their meaning.
- This applies particularly to Le Corbusier, whose vast imaginative world included **a vision of the ideal city, a philosophy of nature, and a strong feeling for tradition.** He was one of those rare individuals who succeed in investigating their creations with **a universal tone.**

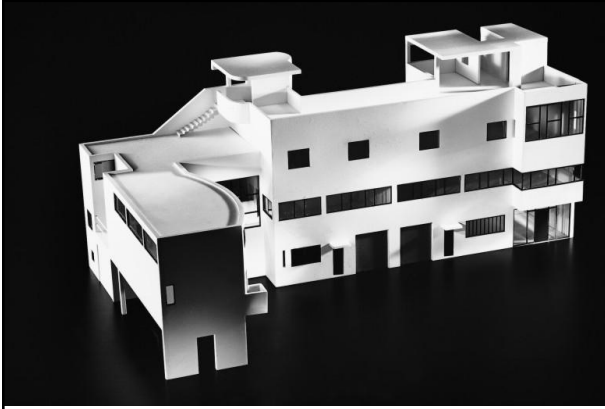
Le Corbusier (Charles-Édouard Jeanneret) (1887-1965) Swiss architect, urban planner, painter, writer, designer and theorist, active mostly in France. In the range of his work and in his ability to enrage the establishment and surprise his followers, he was matched in the field of modern architecture perhaps only by Frank Lloyd Wright. He adopted the pseudonym Le Corbusier for his architectural work c. 1920 and for his paintings c. 1930. **His visionary books, startling white houses and terrifying urban plans set him at the head of the Modern Movement in the 1920s, while in the 1930s he became more of a complex and sceptical explorer of cultural and architectural possibilities.** After World War II he frequently shifted position, serving as 'Old Master' of the establishment of Modern architecture and as unpredictable and charismatic leader for the young. Most of his great ambitions (urban and housing projects) were never fulfilled. However, the power of his designs to stimulate thought is the hallmark of his career. Before he died, he established the Fondation Le Corbusier in Paris to look after and make available to scholars his library, architectural drawings, sketches and paintings.



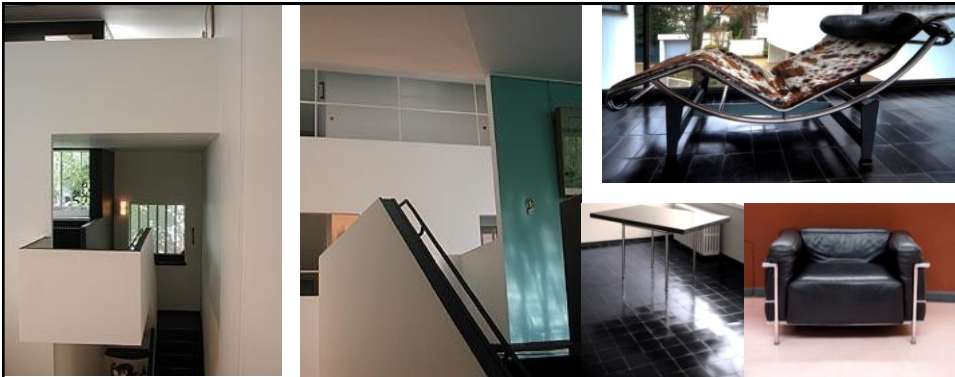
Corbusier painted throughout his life, usually in the morning. He claimed towards the end of his life that this work, private and largely unrecognized, provided his architecture with its main moral and formal support. His **early** paintings and watercolors, made at La Chaux de Fonds, were influenced by **Symbolism and Animism**, but when he came under Ozenfant's influence, his approach to natural form changed dramatically. **A major criticism of Cubism in *Après le Cubisme* and in the articles in *L'Esprit nouveau*, most of which were later grouped together in *La Peinture moderne* (1925), was that it lacked a serious attitude to iconography and was far too decorative.** For the Purists, the task was to **rediscover the laws of geometric order in nature, using 'rules' such as the golden section and reference to the so-called Phileban solids.** They were aided in this by selecting as their subjects artefacts that themselves had these properties, typically the results of industrial production. An elaborate procedure for drawing and redrawing the appropriate glasses, carafes, plates and pipes was designed to discover the formal relationships. Paintings such as *Vertical Guitar* (1920) or *Still-life with a Pile of Plates* (1920) show this approach very clearly. **Color was used according to strict rules: solid, somber earth colors to express volume and more dynamic hues for emphasis.**



Still Life
Le Corbusier (French, born Switzerland. 1887-1965)
 1920. Oil on canvas, 31 7/8 x 39 1/4" (80.9 x 99.7 cm).

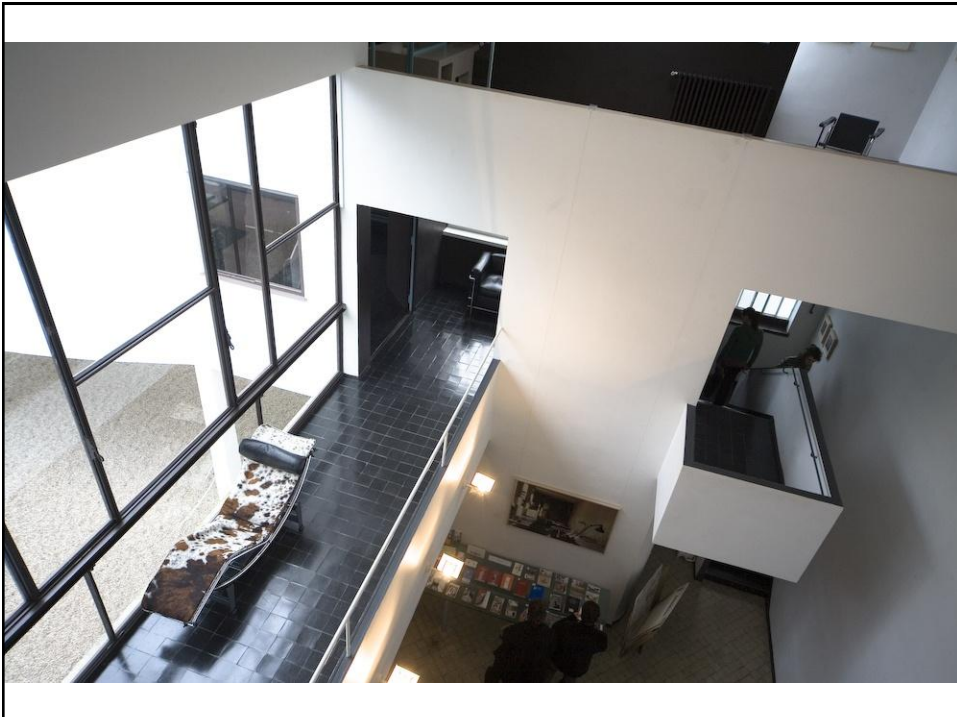


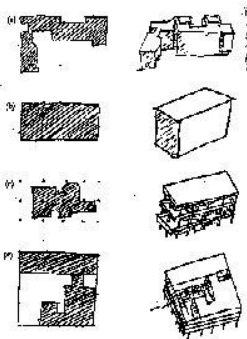
The Villa La Roche (1923–5), Paris, was commissioned by the Swiss banker Raoul La Roche for accommodating the splendid collection of Cubist and Purist paintings that Le Corbusier and Ozenfant had helped him to assemble. **The house marks a radical departure in that it was more picturesque and spatially elaborate than its predecessors.** Many of the most extraordinary features of the plan (e.g. an 'empty' hallway rising three storeys through the house, and a ramp in the gallery, which is in turn supported above an empty space by an exposed piloti) resulted directly from forced alterations. In the final stages of the design, forms and functions were literally moved around, and all the living functions of the house were placed in a vertical column at one end, in order to allow maximum freedom for a stunning '**promenade architecturale**' (as Le Corbusier called it) through a display of Corbusian volumes and spaces. The house has been acclaimed as **his first fully developed masterpiece.**





The program included a salon, dining room, bedrooms, a study, a kitchen, a maid's room and a garage. The site faced north, and zoning restrictions prevented windows looking over the surrounding back gardens. **It was therefore necessary to get light in by creating light courts, a terrace, and skylights.** In promenade of the house, the spaces experientially expand. At the roof is a roof terrace, similar to the deck of a ship.



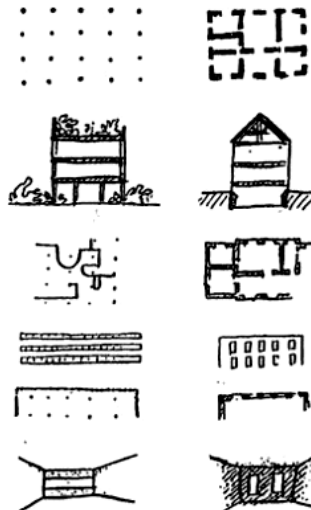


above: Four Studies of the potentials of the 'Five Points', 1929.

- (a) Maison La Roche-Jeanneret,
 (b) Villa Stein,
 (c) Villa at Carthage,
 (d) Villa Savoye

Les 5 Points d'une architecture nouvelle (five points of a new architecture), which Le Corbusier finally formulated in 1926 included:

- (1) the **pilotis** elevating the mass off the ground,
- (2) the **roof garden**, restoring, supposedly, the area of ground covered by the house
- (3) the **free plan**, achieved through the separation of the load-bearing columns from the walls subdividing the space,
- (4) the **free facade**, the corollary (*sonuç*) of the free plan in the vertical plane, and finally,
- (5) the **long horizontal sliding window**.

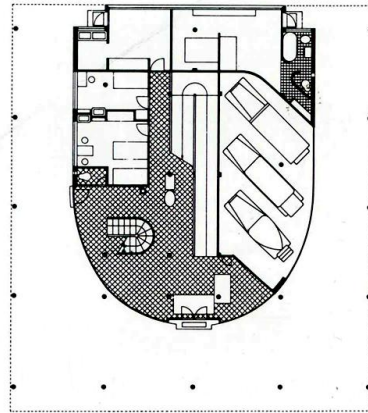


The classic domestic design of this period was the **Villa Savoye (1929–31)**, built on an open grassy site overlooking the village of Poissy, near Versailles. The Olympian abstraction of the first design (October, 1928) is breathtaking: **the ground-floor plan was determined by the turning circle of a motor car, and the transport analogy continued in the ramp, which rose through three storeys to the roof.** The horizontal white box of the *piano nobile* floated above the ground on its pilotis and was crowned by a second-floor main bedroom suite, which appeared as a series of sculptural, curving screens. This design presented difficulties of size and cost, necessitating the removal of the rooms on the top floor.

The Villa Savoye has the pristine (extremely clean) clarity and shocking simplicity to serve as a Modernist icon. It has often been misinterpreted as the ultimate expression of functionalism. In reality it is one of the most highly idealized and aestheticized conceptions of Le Corbusier's career.

Plans

On the ground floor are the lobby, rooms for domestic staff and garages; behind the strip windows on the first floor are the living rooms, which open onto the terrace garden via sliding glass walls. The roof, with its curved screen walls and "framed" views is a sun terrace. The floors are connected by ramps and spiral staircases.



Le Corbusier and Pierre Jeanneret
Villa Savoye in Poissy, 1929–1931
North corner
Photo Mounce Babey/Artephot



The Museum of Modern Art, *MoMA Highlights*. New York: The Museum of Modern Art, revised 2004, originally published 1999, p. 152

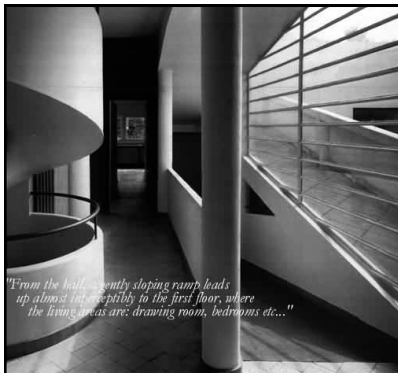
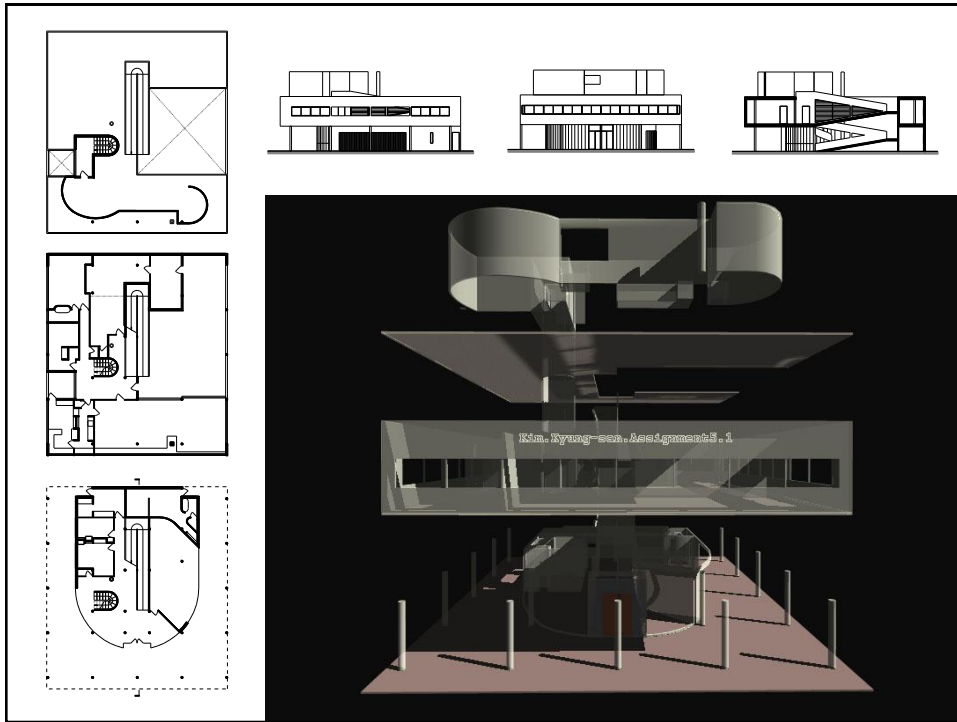
The Villa Savoye was designed as a weekend house outside Paris. Le Corbusier, along with his cousin Pierre, planned the entire composition as a **sequence of spatial effects**.

Arriving by automobile, the visitor drives underneath the house, circling around to the main entrance. From the entrance hall, he or she ascends the **spiral stairs or the ramp** to the **main-level living area**. The ramp continues from the **central terrace** to the **upper-level sun deck**. Sheltered by brightly colored wind screens, it is a perfect vantage point for savoring sunlight, fresh air, and nature.

In his famous book of 1923, *Vers une architecture (Towards a New Architecture)*, arguably the most influential architecture book of the twentieth century, Le Corbusier declared **houses to be "machines for living in."** Villa Savoye, a white rectilinear volume on a flat landscape, celebrates Le Corbusier's belief that ideal, universal forms, although rooted in the classical tradition, were appropriate to architecture for the machine age. **The design incorporates Le Corbusier's "five points of architecture,"** which he believed to be indispensable elements: **pilotis** (reinforced-concrete columns), the **free plan**, the **free facade**, **horizontal bands of windows**, and the **roof garden**.

This model was included in The Museum of Modern Art's first architecture exhibition, in 1932, which documented the various trends that came to be known as the International Style.

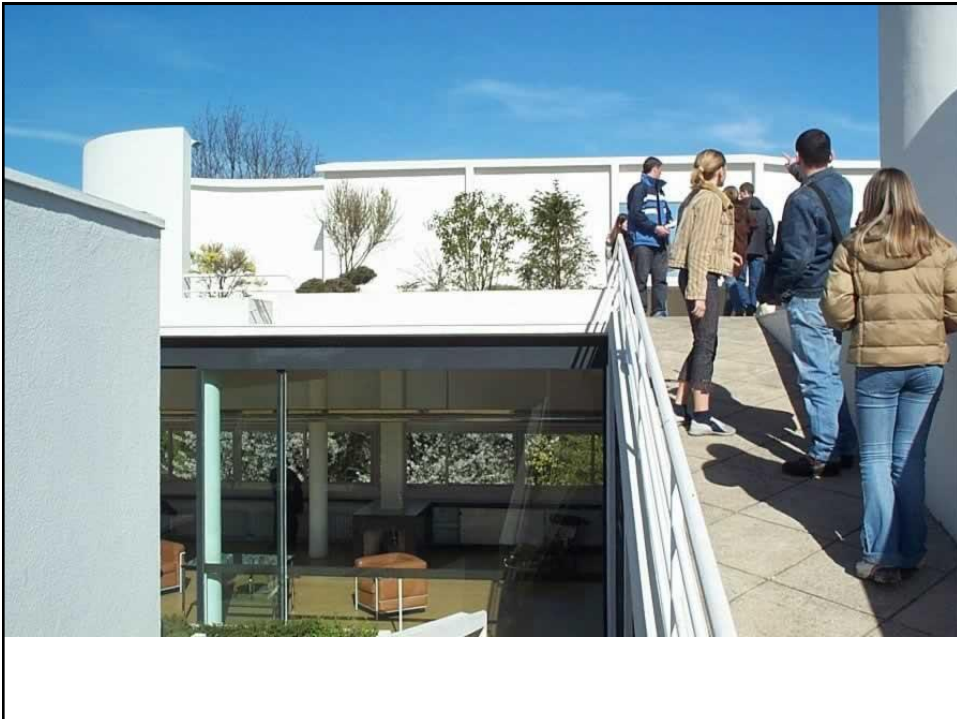
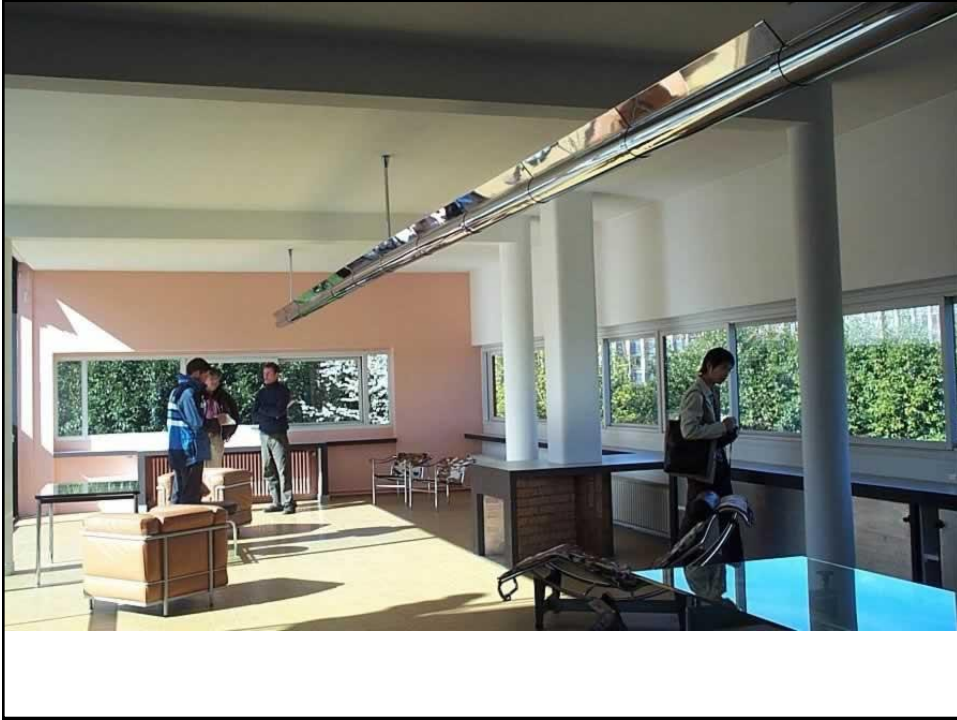


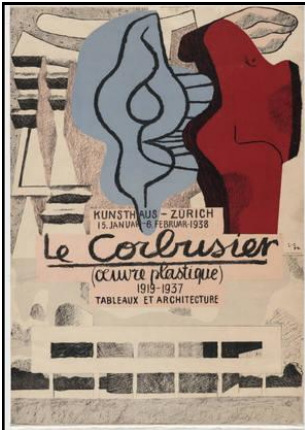


The design features of the Villa Savoye include:

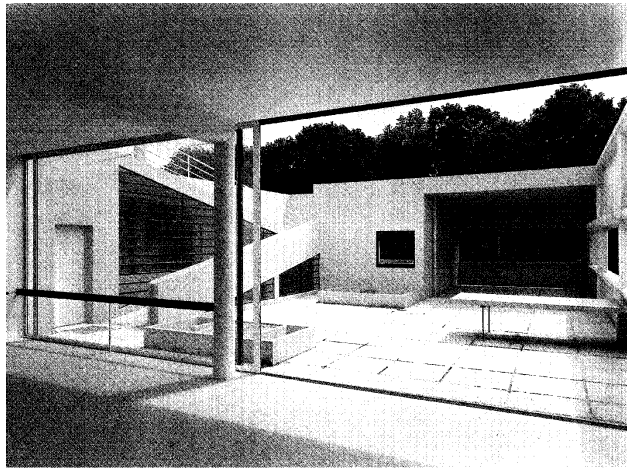
- modular design** -- the result of Le Corbusier's researches into mathematics, architecture (the golden section), and human proportion
- "pilotis"** -- the house is raised on stilts to separate it from the earth, and to use the land efficiently. These also suggest a modernized classicism.
- no historical ornament**
- abstract sculptural design**
- pure color** -- white on the outside, a color with associations of newness, purity, simplicity, and health (LeCorbusier earlier wrote a book entitled, When the Cathedrals were White), and planes of subtle color in the interior living areas
- a very **open interior plan**
- dynamic, non-traditional transitions between floors** -- spiral staircases and ramps
- built-in furniture**
- ribbon (serif) windows** (echoing industrial architecture, but also providing openness and light)
- roof garden**, with both plantings and architectural (sculptural) shapes
- integral garage** (the curve of the ground floor of the house is based on the turning radius of the 1927 Citroen)







Le Corbusier, Oeuvre Plastique 1919-1937
 Le Corbusier (Charles-Édouard Jeanneret)
 (French, born Switzerland, 1887-1965)
 Printer: J. C. Muller, 1937. Lithograph, (100 x 70.3 cm).



terrace garden with a ramp leading up to the roof level
 Photo Maurice Bobry/Artaphor

Le Corbusier, Cite Radieuse, Marseille

The **Unité d'Habitation** (French, literally, "Housing Unity" or "Housing Unit" since Unité has both meanings in French) is the name of a modernist residential housing design principle developed by Le Corbusier, with the collaboration of painter-architect Nadir Afonso. The concept formed the basis of several housing developments designed by him throughout Europe with this name. In the block's planning, the architect **heavily drew on his study of the Soviet Communal housing project, the Narkomfin Building.**

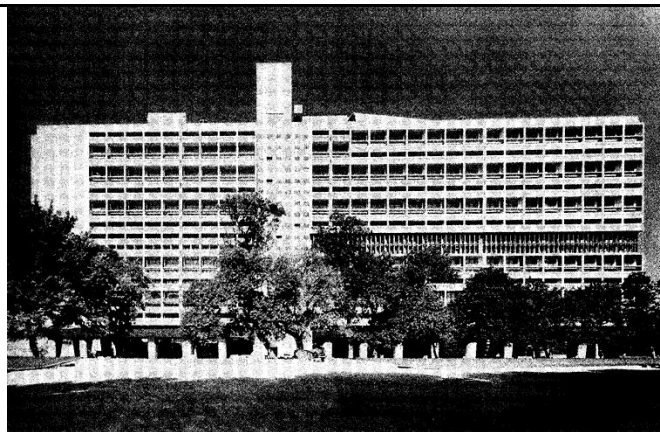


Narkomfin Building, 1928, Moscow



"Le Corbusier's most influential late work was his first significant postwar structure— **the Unité d'Habitation in Marseilles of 1947-52.** The giant, **twelve-story** apartment block for **1,600 people** is the late modern counterpart of the **mass housing** schemes of the 1920s, similarly built to alleviate a **severe postwar housing shortage.** Although the program of the building is elaborate, **structurally it is simple:** a rectilinear ferroconcrete grid, into which are slotted precast individual apartment units, like 'bottles into a wine rack' as the architect put it. Through ingenious planning, **twenty-three different apartment configurations** were provided to **accommodate single persons and families as large as ten,** nearly all with **double-height living rooms and the deep balconies** that form the major external feature."

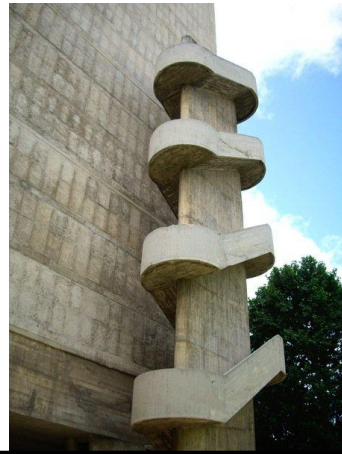
— Marvin Trachtenberg and Isabelle Hyman. Architecture: from Prehistory to Post-Modernism. p541.



View from the road
Photo private collection



56 metres high, 137 metres long and 24 metres deep, this "vertical housing city" provides room for **337 apartments.** Each apartment has a loggia and a two storey section with a gallery, and extends the full depth of the building. The room heights are 226 cm and 480 cm. These —in cross **L-shaped**— units slot over each other in such a way that space for the access corridor is left in the center. **The shopping and communication centers on the seventh and eighth floors are identified by a change in the facade structure.** The entire building **surface is bare concrete;** only the **balcony and window niches are painted a clear red, blue, yellow and green.**



Views from the outside..
 The pilotis..
 The roof terrace..
 The fire stairs..
 Unique and poetic utilization of reinforced concrete.
 Brutalist sensibility...



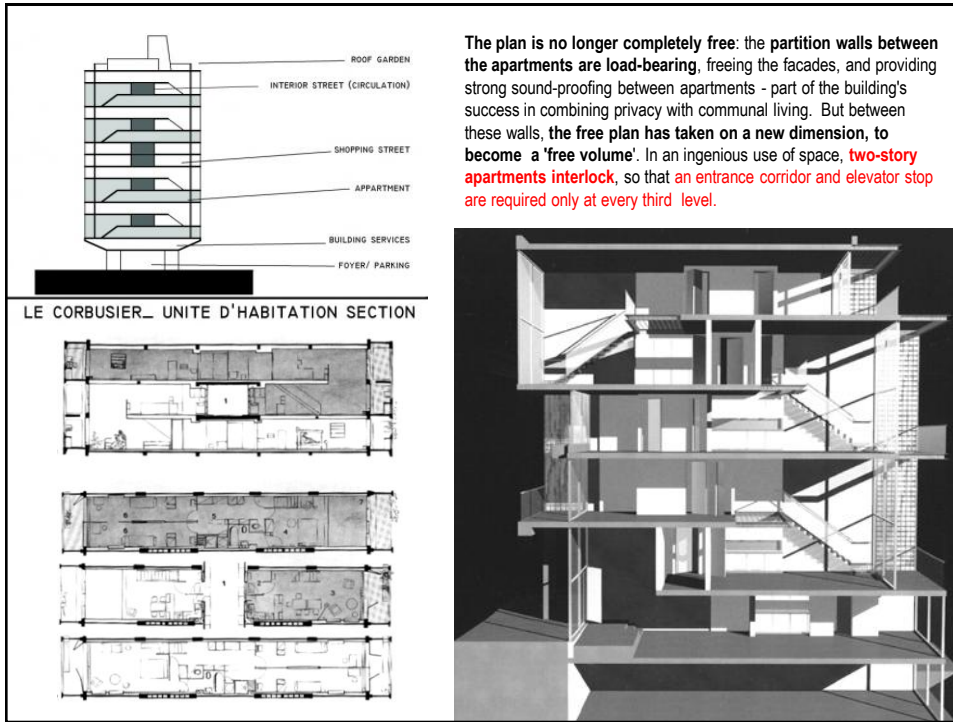
The Marseille *Unité d'habitation* brings together Le Corbusier's vision for communal living with the needs and realities of post-war France. Up to 1600 people live in a single-slab 'vertical village', complete with an internal shopping street halfway up, a recreation ground and children's' nursery on the roof, and a generous surrounding area of park land made possible by the density of the accommodation in the slab itself.





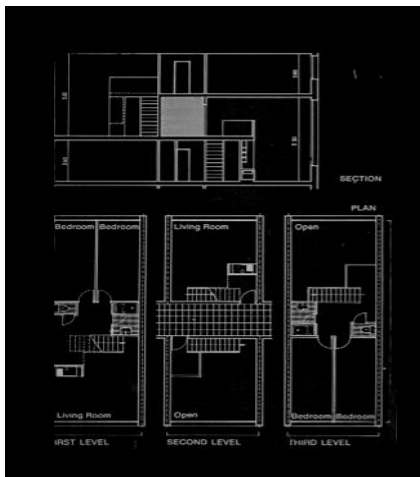
The *Unité* introduced the world to **raw concrete - *béton brut*** - with its **texture defined by the wooden planks** shaping it when it was poured. This unwitting **prototype for the New Brutalism** to follow came from necessity: not only was there **insufficient steel in post-war France for a steel construction**, but there was **insufficient skilled labor for consistent, precise construction**. Le Corbusier made a virtue of this necessity:

'...I have decided to make beauty by contrast. I will find its complement and establish a play between crudity and finesse, between the dull and the intense, between precision and accident. I will make people think and reflect, this is the reason for the violent, clamorous, triumphant polychromy of the facades.'



The plan is no longer completely free: the partition walls between the apartments are load-bearing, freeing the facades, and providing strong sound-proofing between apartments - part of the building's success in combining privacy with communal living. But between these walls, the free plan has taken on a new dimension, to become a 'free volume'. In an ingenious use of space, **two-story apartments interlock**, so that **an entrance corridor and elevator stop are required only at every third level**.

LE CORBUSIER_ UNITE D'HABITATION SECTION



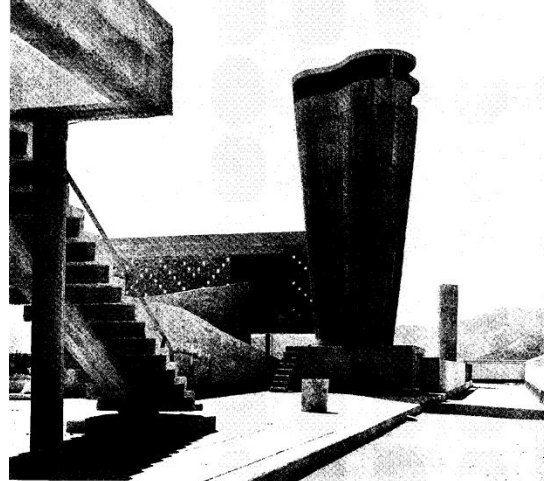
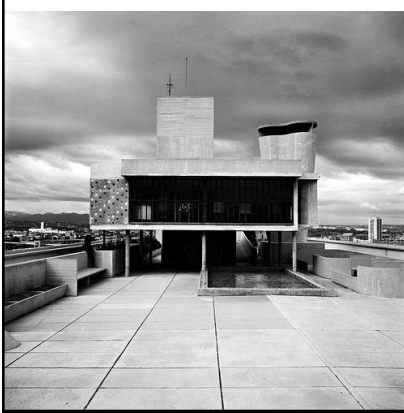
On one side of the corridor you may enter an apartment's lower level, taking up one side of the building, and climb the stairs within the apartment to a double-aspect floor of bedrooms above; on the other side of the corridor you may enter the neighboring apartment's upper level, and descend to the double-aspect floor below. As a result, apartments typically combine bright, double-height sitting rooms on one level, with long, narrow bedrooms on the other.

Photos from interior

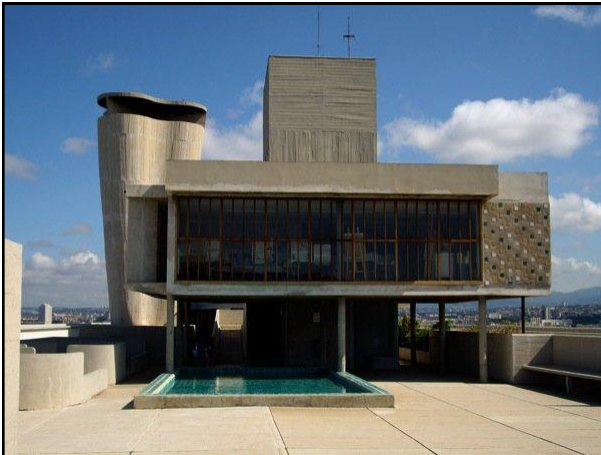




Most of Le Corbusier's 'five points of architecture' from the 1920s and the Villa Savoye are alive and well in the *Unité*: the strong **pilotis** creating circulation space beneath, the **free facades** now loud with a carefully orchestrated pattern of single- and double-height balconies generated from fifteen different types of apartment, and the **roof terrace** reclaiming the lost land beneath the building for recreation.

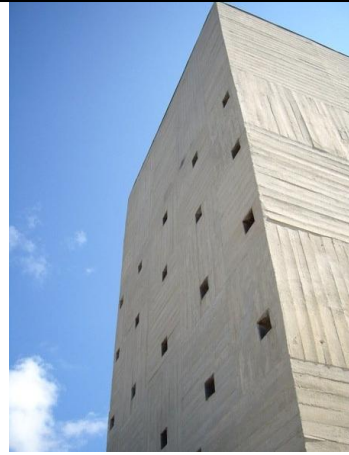


The apartment blocks two ventilation shafts end in powerful and sculpturally moulded super structures which dominate the varied roof scope. To the rear on the left is the child daycare centre with swimming pool, on the right the running track and , in the foreground, the steps eading up to the bar and sun terrace.



The amazing roof terrace.
Photos by Pinar and Ezra Ash





The amazing roof terrace.
Photos by Pinar and Ezra Ash



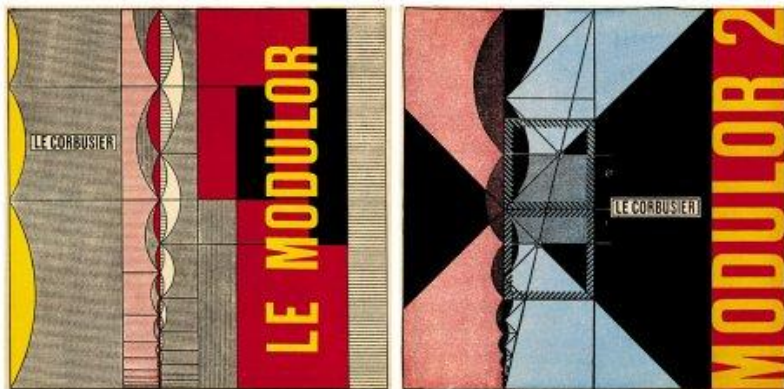
Photos from the indoors, the restaurant, the corridors, etc..
From the public floors...

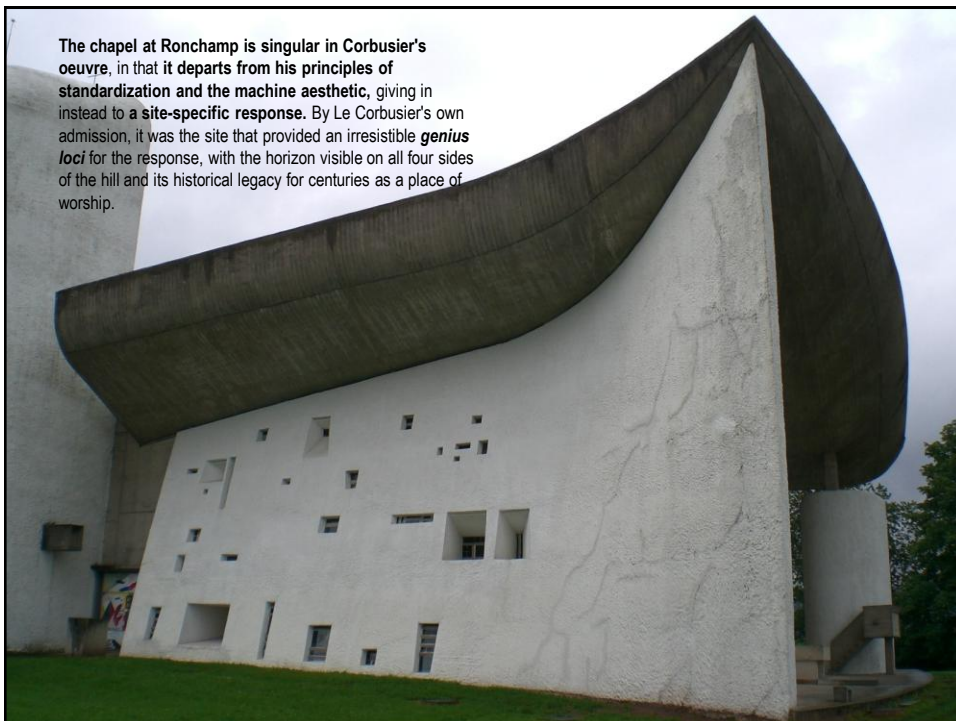
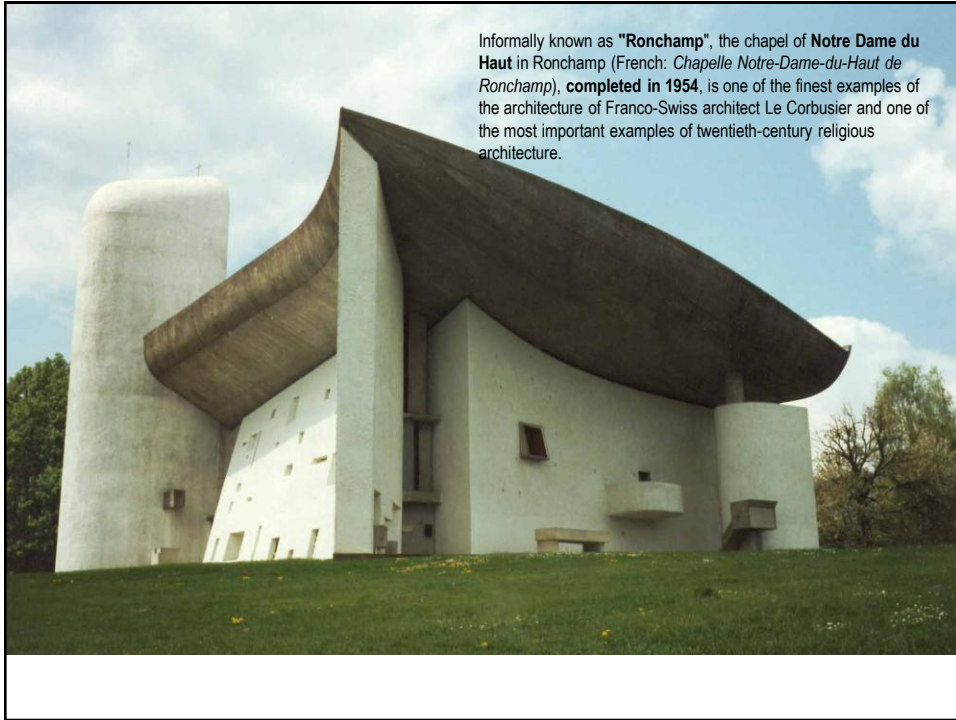


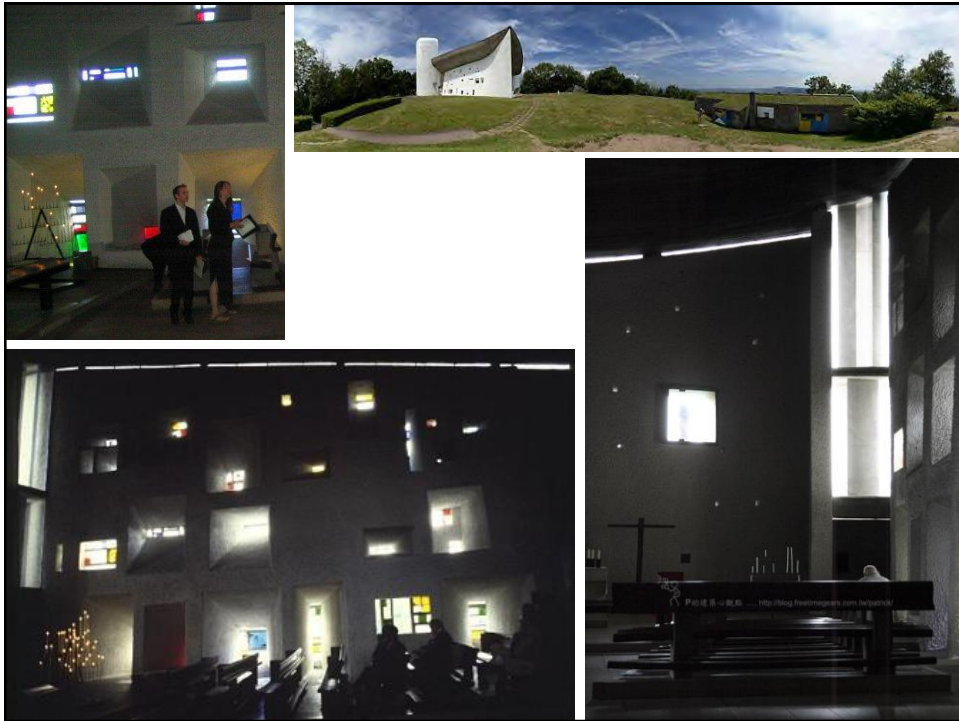
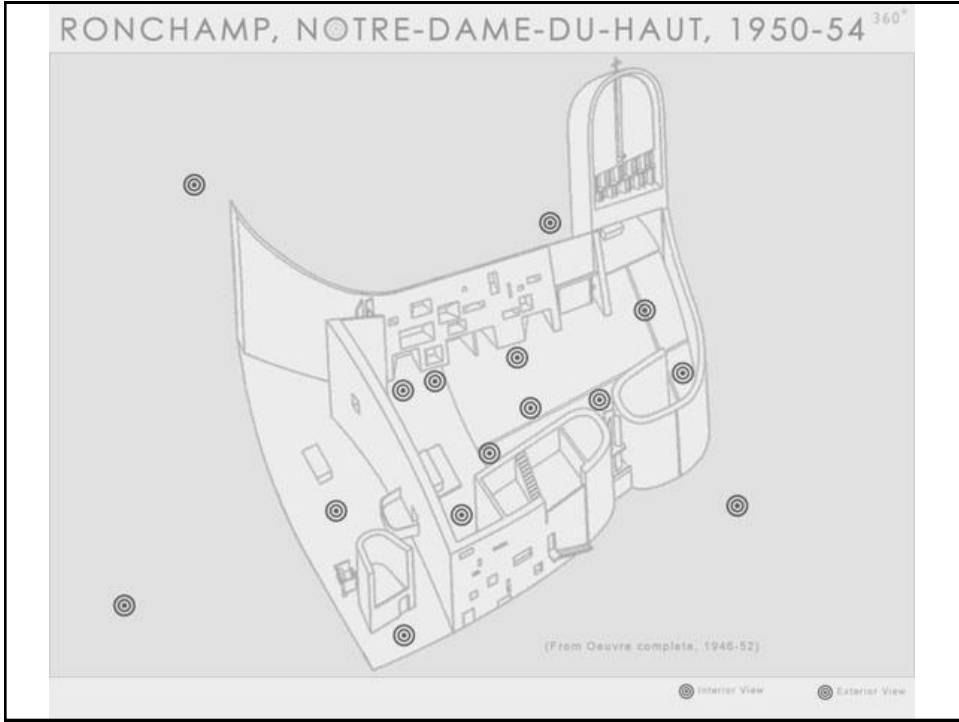


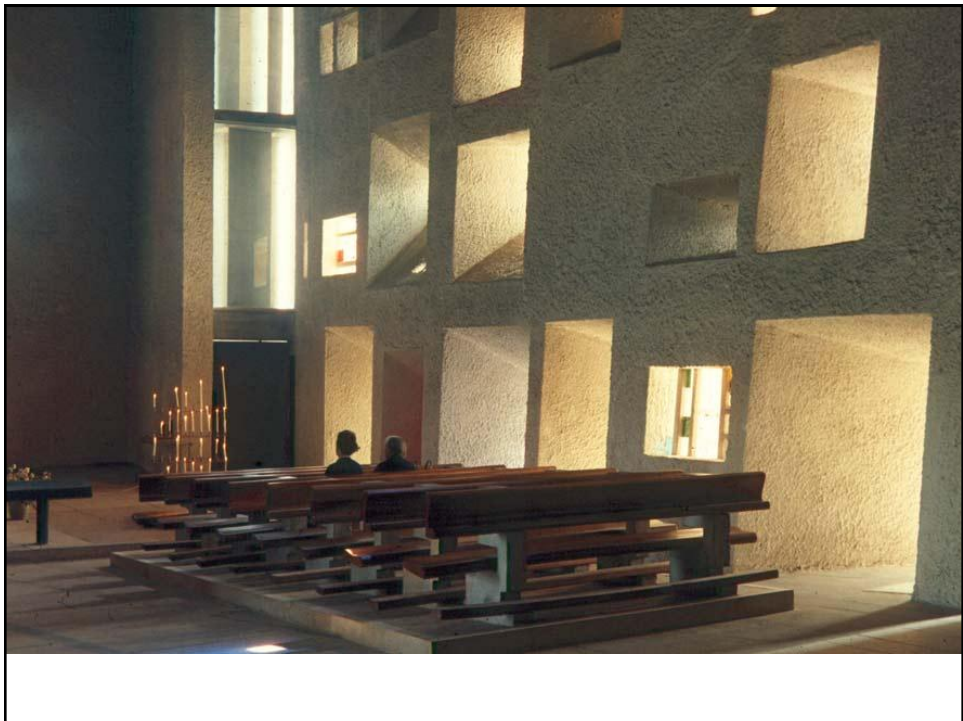
The Modulor: Le Corbusier explicitly used the **golden ratio** in his **Modulor system** for the **scale of architectural proportion**. He saw this system as a continuation of the long tradition of Vitruvius, Leonardo da Vinci's "Vitruvian Man", the work of Leon Battista Alberti, and others who used **the proportions of the human body to improve the appearance and function of architecture**. In addition to the **golden ratio**, Le Corbusier based the **system on human measurements, Fibonacci numbers**, and the double unit. He took Leonardo's suggestion of the golden ratio in human proportions to an extreme: he sectioned his model human body's height at the navel with the two sections in golden ratio, then subdivided those sections in golden ratio at the knees and throat; he used these golden ratio proportions in the Modulor system.

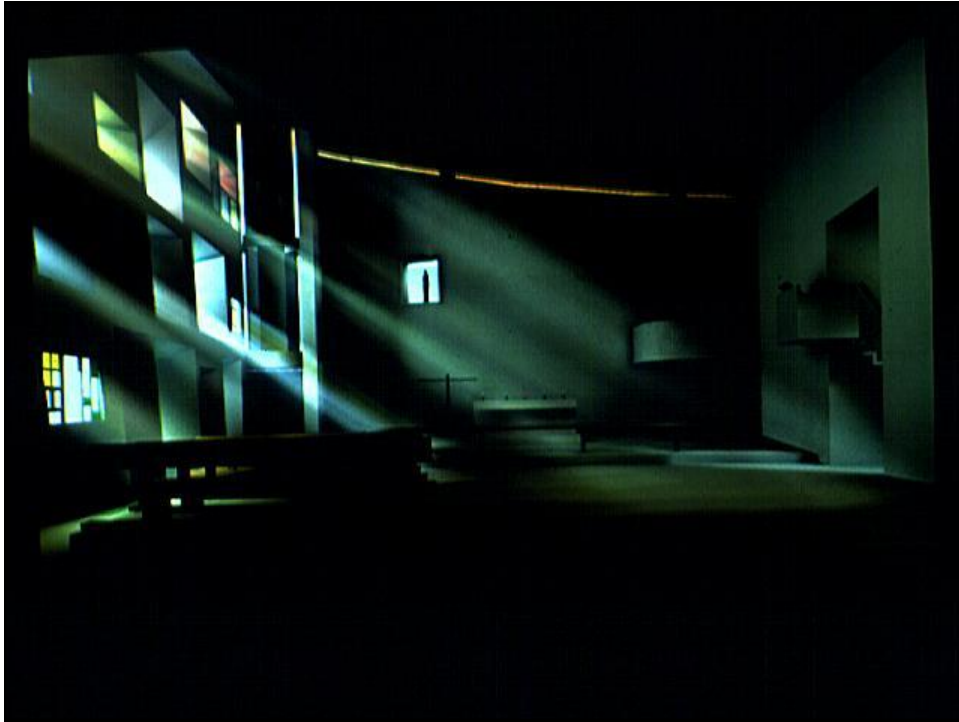
Le Corbusier placed systems of **harmony and proportion at the centre of his design philosophy**, and his faith in the **mathematical order of the universe** was closely bound to the golden section, which he described as **"rhythms apparent to the eye and clear in their relations with one another. And these rhythms are at the very root of human activities**. They resound in Man by an organic inevitability, the same fine inevitability which causes the tracing out of the Golden Section by children, old men, savages, and the learned."
















Le Corbusier (Charles-Édouard Jeanneret) (French, born Switzerland, 1887-1965), Pierre Jeanneret (Swiss, 1896-1967) and Charlotte Perriand (French, 1903-1999)

Armchair with Adjustable Back (Basculant Chair) 1928.
Chrome-plated tubular steel and canvas, (66.3 x 65.1 x 66 cm).





Chaise Longue (LC/4) 1928. Chrome-plated steel, fabric, and leather, (67 x 58.4 x 158.4 cm).

Grand Confort, Petit Modèle Armchair 1928.
Chrome-plated tubular steel, horsehair, down, and leather,
Overall: (66 x 76.2 x 70.5 cm); seat h,(40.6).