

# MODERNISM I

Le Corbusier

Introduction to Architectural History

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Spring 2021, 7.15 – 8.35pm

Remote

- Now we enter Modernism (with a capital 'M').
- Modernism started in the fine arts a couple decades before architecture.
- While Modernist styles were emerging around the world, Western Europe undoubtedly served as its hub.
  - We'll see that a big impetus for the movement of Modernism from Europe to America was the emigration of many architects (both Jewish and non-Jewish) right before and during the second world war.



## Le Corbusier (Charles-Édouard Jeanneret)

Swiss, French; 1887 - 1965

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- Arguably the most important figure in 20<sup>th</sup> century Western architecture (or at least in standard canon)
- Born Charles-Edouard Jeanneret
  - Changed his name to Le Corbusier at age 33
- Was almost 20 years younger than Frank Lloyd Wright



'The Grand Tour'

3

- At age 24, set out on a long journey through Italy, Greece, and Turkey
- During his trip, he found he was disgusted by Italian Baroque
  - Thought the style was decadent, wasteful

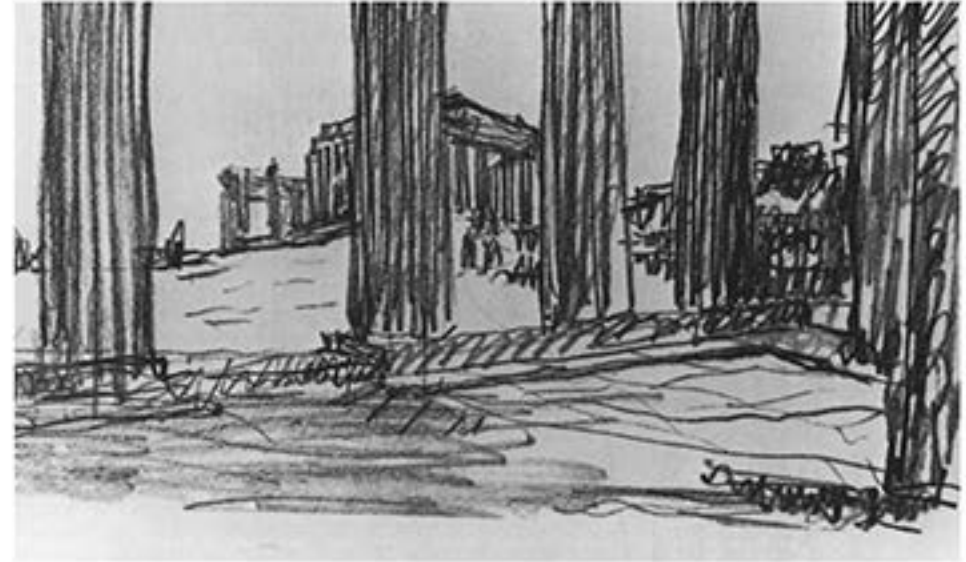


'The Grand Tour'

4

- Instead, he was impressed by the Parthenon
- For a month, made many sketches of this structure





'The Grand Tour'

5

- He believed that the Parthenon touched on something universal
- Architecture was nothing more than 'tuning in' to the universals of the universe



AUTOMOBILES

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TOWARDS A NEW ARCHITECTURE



THE PARTHENON, 447-438 B.C.

the run of the whole thing and in all the details. Thus we get the study of minute points pushed to its limits. Progress. A standard is necessary for order in human effort.



PAESTUM, 600-150 B.C.

When once a standard is established, competition comes at once and violently into play. It is a fight; in order to win you must do better than your rival *in every minute point*, in



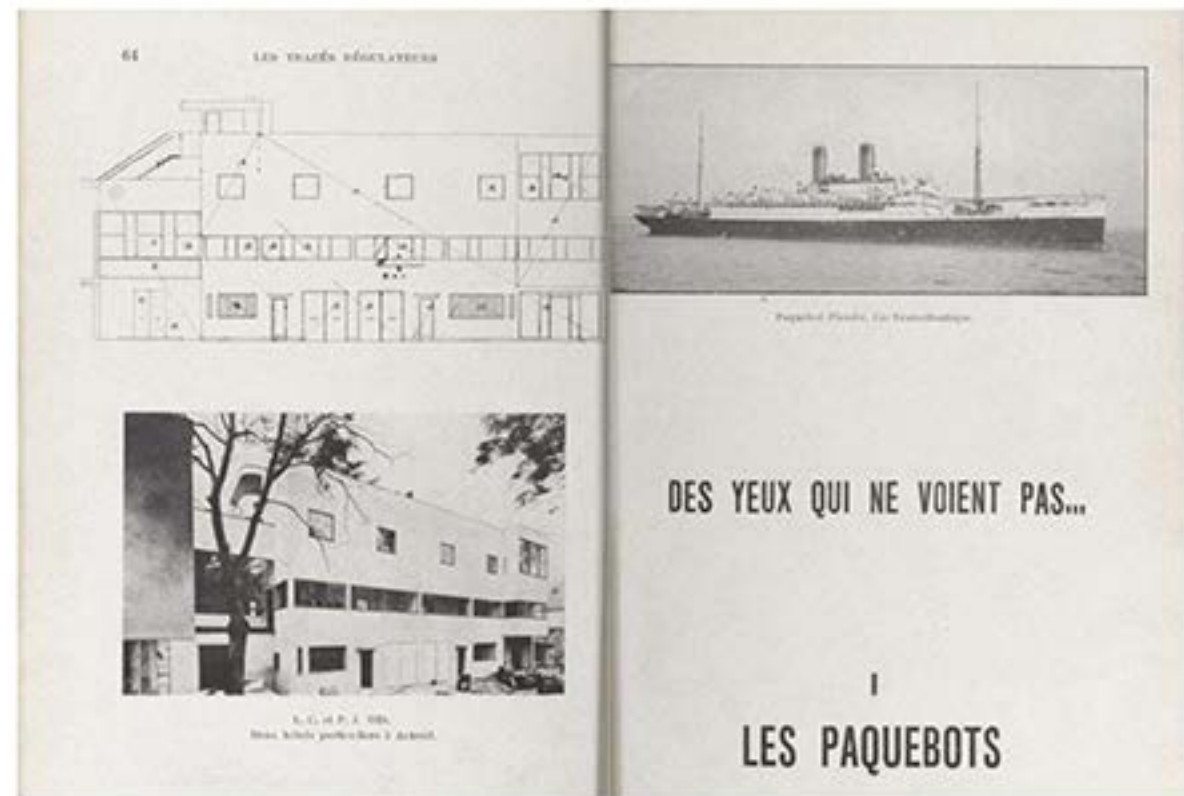
DAIMLER, "GRAND SPORT," 1909



BENZ, 1907

Le Corbusier, *Vers une Architecture* (1923)

- Corbusier' laid out the bulk of his approach (and theory of architecture) in his seminal publication, *Towards an Architecture (Vers une Architecture)* (1923).
- Among his most important concepts, he was drawing comparisons between ideal works of architecture (The Parthenon, The Paestum) with pieces of modern engineering and fabrication.



Le Corbusier, *Vers une Architecture* (1923)

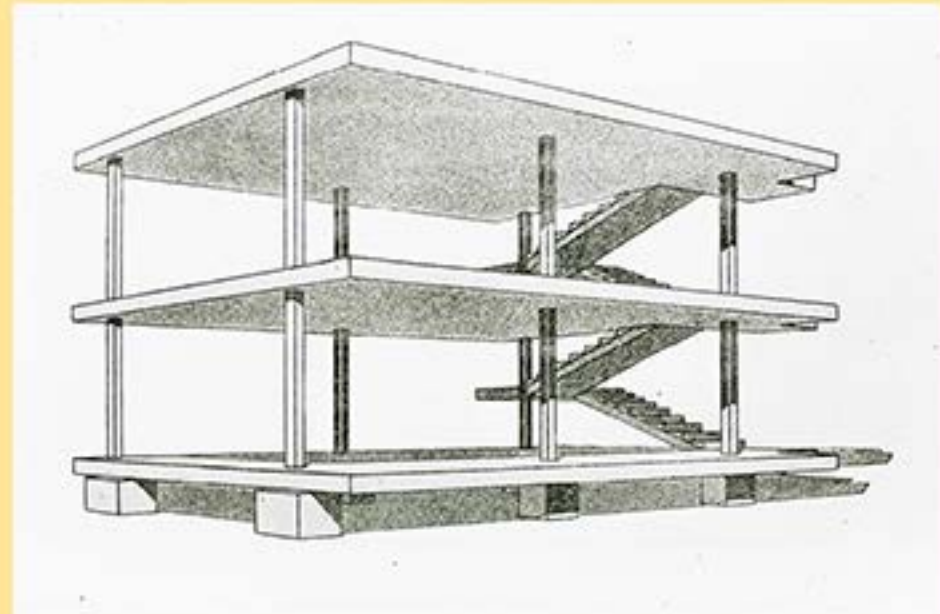
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- In addition to automobiles, the ocean liner was the model par excellence.



# Maison Dom-ino

- 'Domino' was a play of words
  1. Like the game, dominoes could be laterally connected ad infinitum
  2. 'Domus' means "home" in Latin
- Generic and universal form generator
- Influence by technology + social context



- An important system that encapsulated a lot of Corbusier's approach – the *Maison Dom-ino*



# Maison Dom-ino

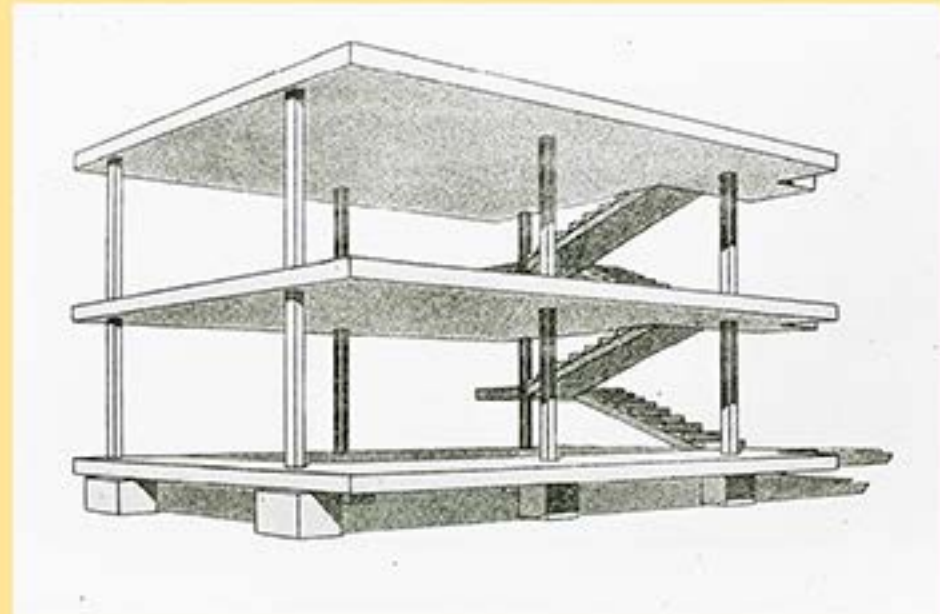
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- 'Domus' (Dom-ino) means "home" in Latin

# Maison Dom-ino

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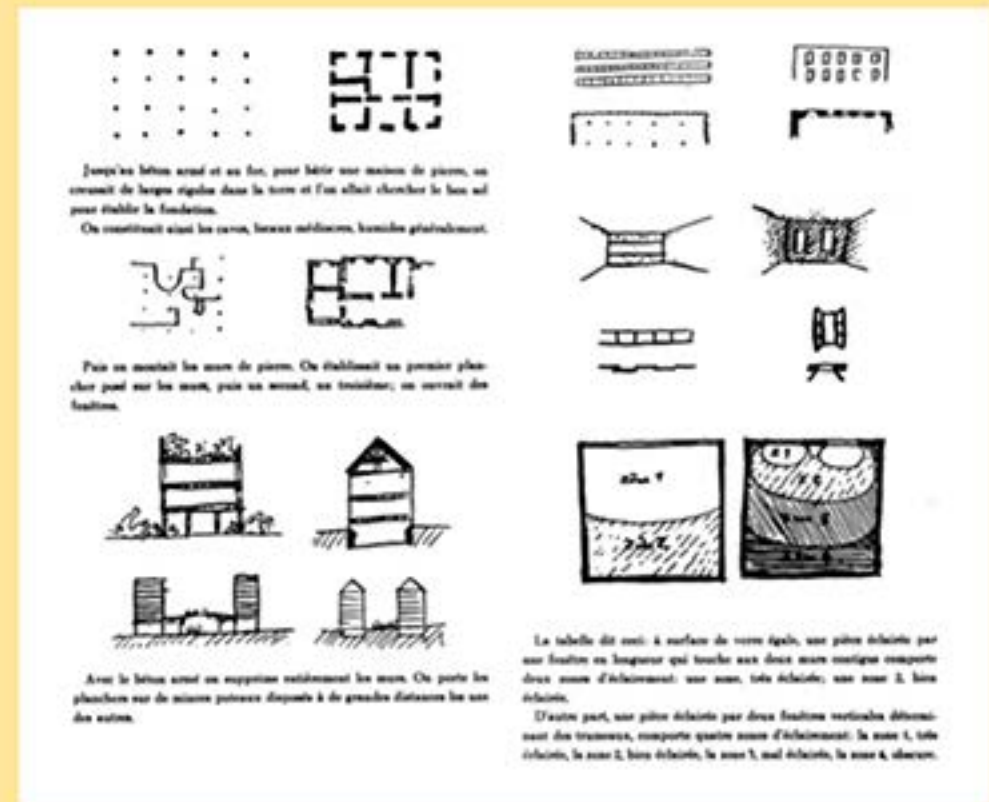


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- Design as a generic and universal formal generator
- Cantilever (to allow for curtain wall – the exterior façade can be made of panels and essentially tacked on to the edge of the floors)
  - Fenestration could go over corners (which were traditionally reserved for heavy structures, e.g. corner columns/piers)

# Le Corbusier's 5 Points of Architecture

5-point summary Corbusier's philosophy of architecture, which sought to exploit new kinds of spaces that would respond to contemporary materials, construction, culture, and lifestyles.



- Corbusier labeled these points as such in 1926.
- These work in conjunction with the Dom-ino principle.



## 1. Pilotis

- Most important point
- Lifted the building off the ground

## 2. Free Ground Plan

- Walls to designate space rather than structure
- Demands of form over structure

## 3. Free Façade

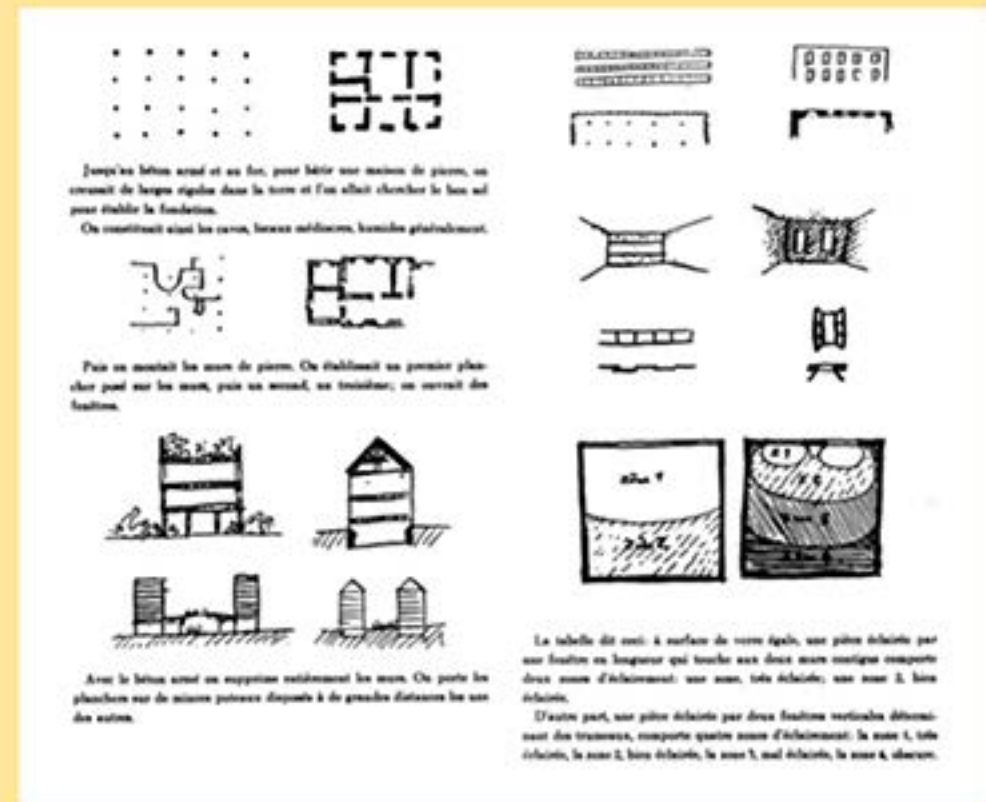
- Similar to Free Plan, but in elevation
- Independence of opening from structure

## 4. Ribbon Window

- Dependent on Free Façade
- Even lighting throughout contained room

## 5. Roof Garden

- Reintroduction of nature into the city
- Provide insulation for flat concrete roof



*Five Points of a New Architecture (1926)*

- A clear attempt to canonize his theory – like a manifesto, a grand statement.

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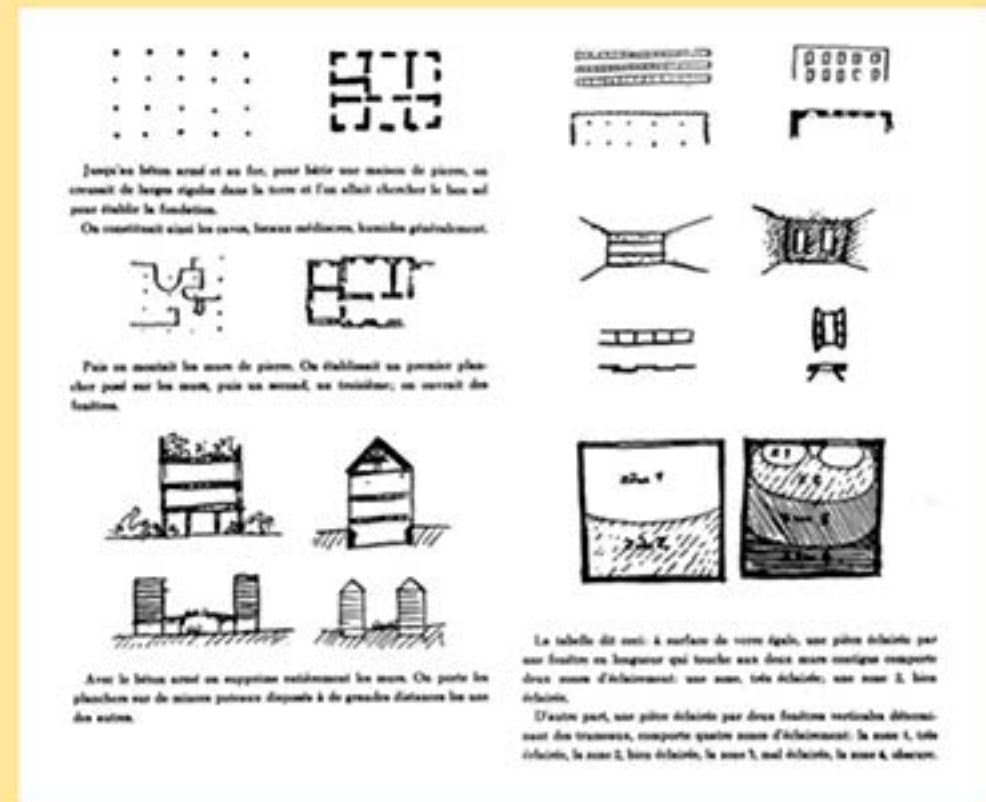
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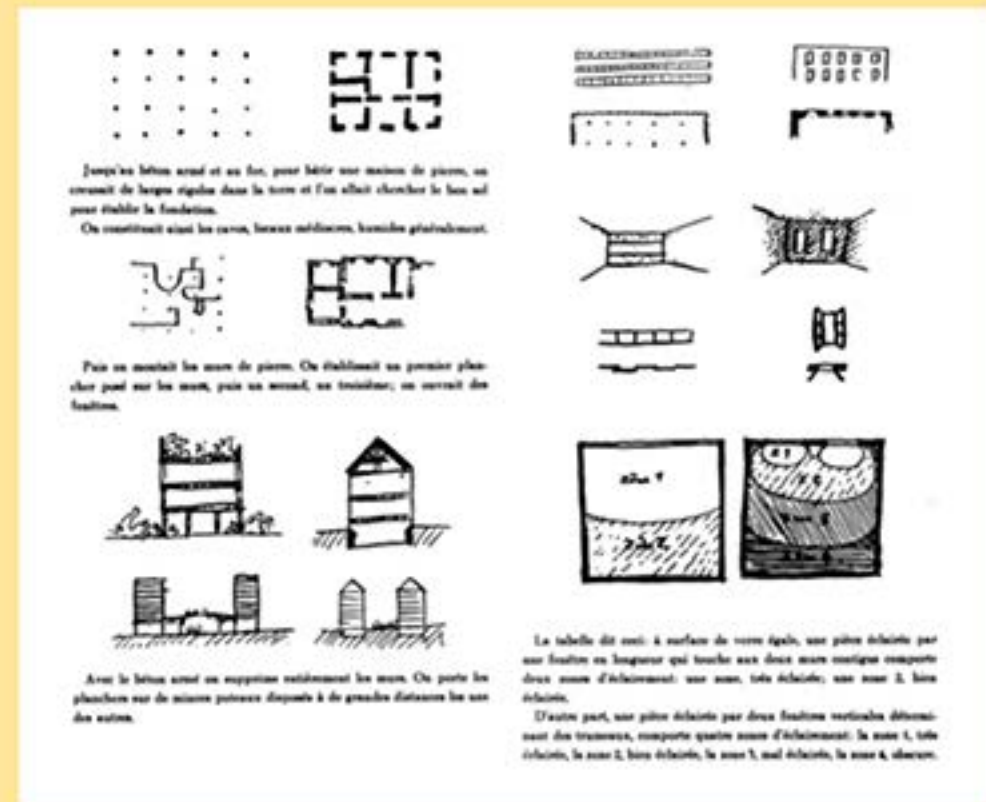
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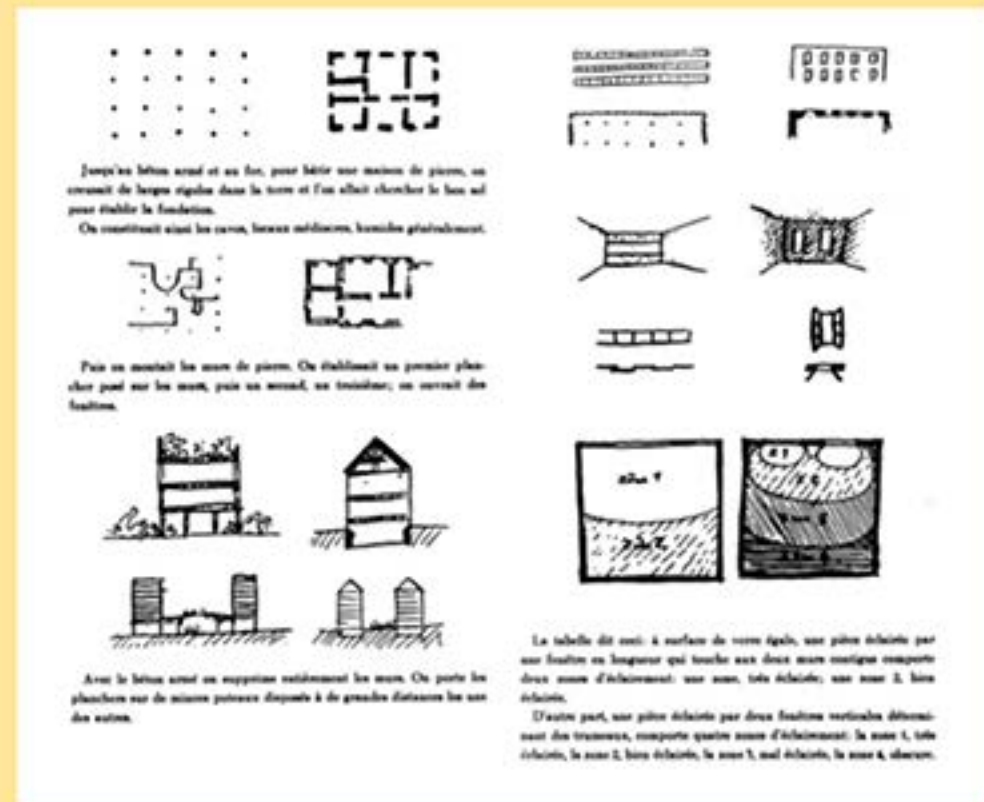
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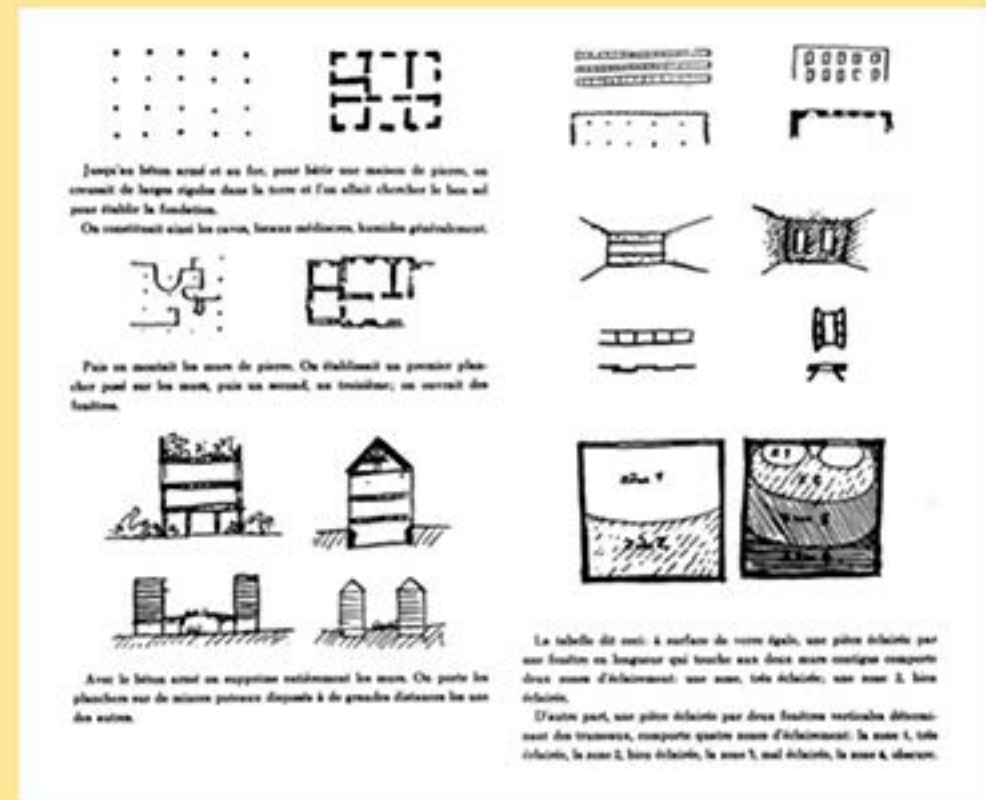
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**Béton armé**  
'structured concrete' =  
Reinforced concrete



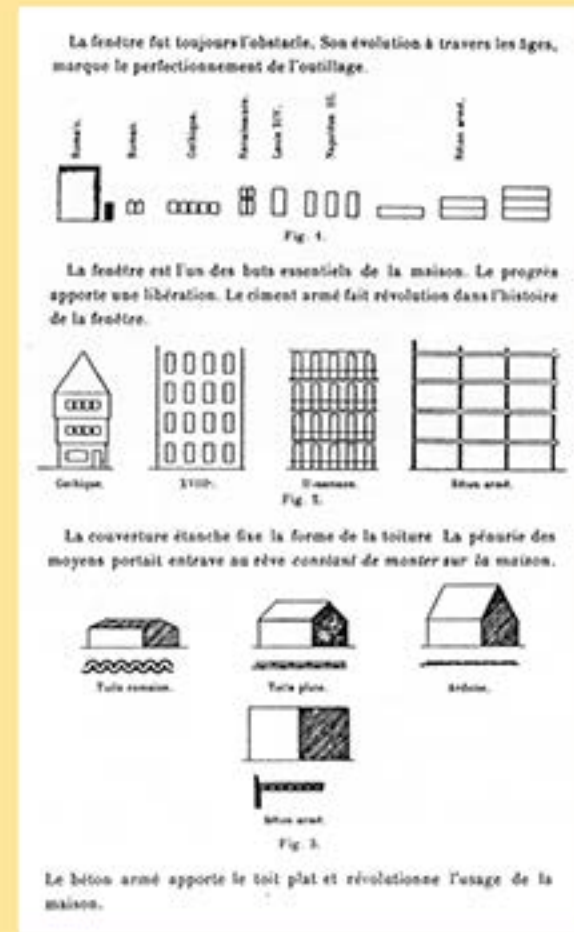
*Five Points of a New Architecture (1926)*

- The technique of reinforcing concrete with steel mesh (the grid sheet) and Reibar (textured 'bars') significantly increases its structural capacities.



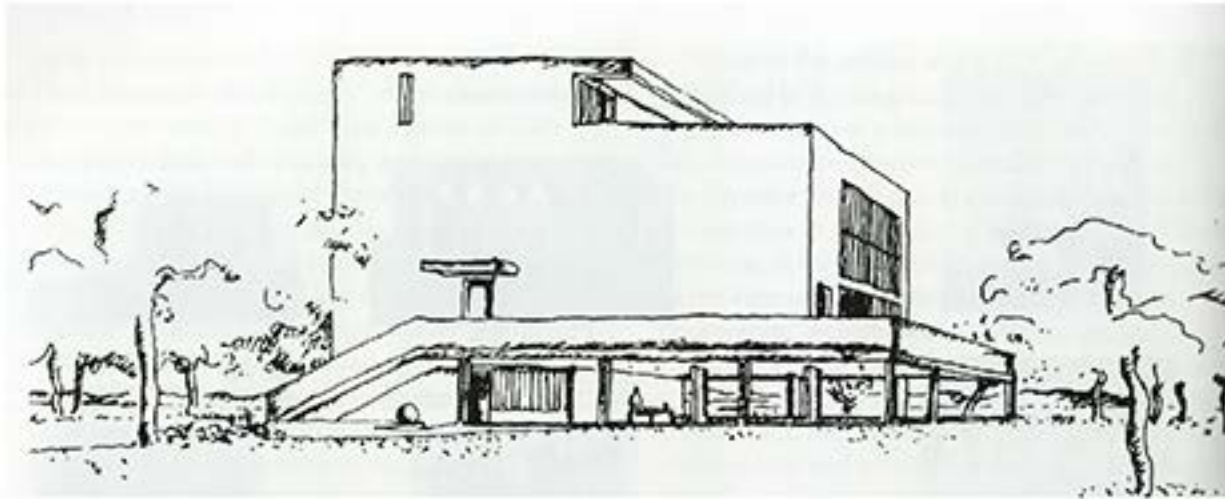
# Béton armé

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*Five Points of a New Architecture (1926)*

- For Corbusier, the most important consequence was that larger spans could be achieved, allowing for a 'Free Plan' ('Plan Libre'), meaning space could easily flow across, as opposed to be constrained by the structural (load-bearing) walls, which disrupt spatial continuity.



*Villa/Maison Citrohan*

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## Villa/Maison Citrohan

- Post-WWI attempt at making affordable and aesthetically pleasing housing
  - Mass-produced
  - Reinforced concrete
  - Single or single family housing
  - Produced through a number of variations
- Preceding his 5 Points, so we don't see everything here yet



*Villa/Maison Citrohan*

- Named to be like the car company Citroën
  - Machine-like, efficient





*Villa/Maison Citrohan*

- Inspired by assembly-line manufacturing



*Villa Savoye, Poissy (near Paris), France (1929 – 31)*

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## Villa Savoye

- Arguably his most well-known residential project, and an exemplar of his 5 Points
- The residence was intended to be a summer retreat/weekend getaway for its client
- Can be thought of as a box floating on pilotis, with a ramp (ground floor gravel driveway) running right through

# Pilotis

Also known as 'Piers'.

Structural elements that hold a building above grade (ground level), preventing contact with the ground, and also allowing use of available space below.







- 'Front side' of the house
- The appearance of a floating band, almost like a spaceship, was intentional
  - Showcasing the structural principle of the plan libre
  - Illustrating the potential of a continuous ribbon window



*Villa Savoye, Poissy (near Paris), France (1929 – 31)*

- On left picture, you can see the scissor ramp that cut vertically throughout the entire house



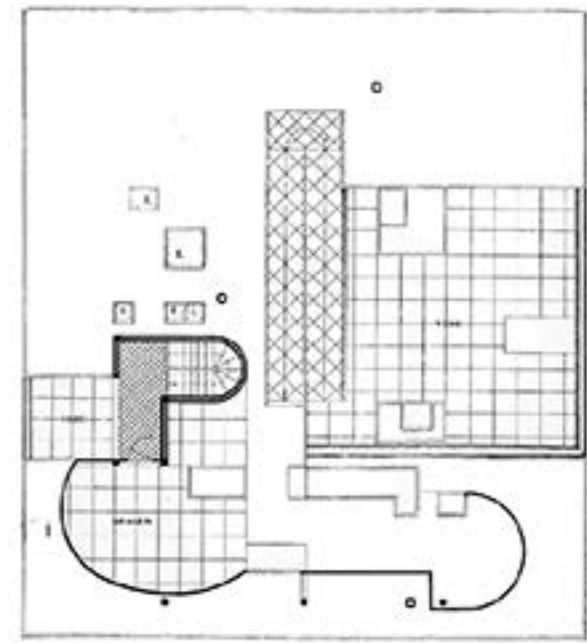
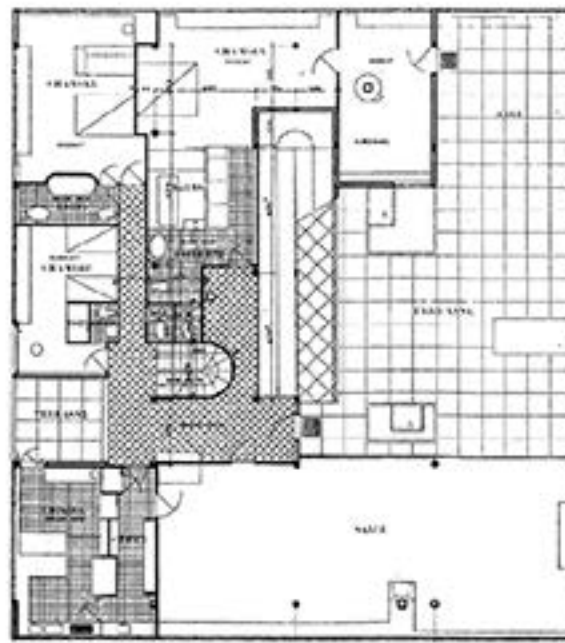
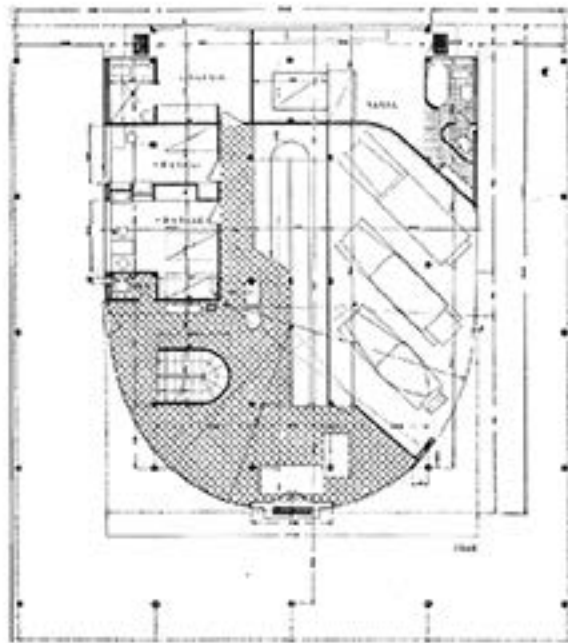


- Presence of a 'Roof Garden', as per his 5 Points





- Though not technically a window, the roof has its own 'Ribbon Window' that frame the surrounding tree.



*Villa Savoye, Poissy (near Paris), France (1929 – 31)*

- Various floor plans, from ground (left) to second floor (middle) and roof (right)
- Ground floor plan incredibly important illustration of Corbusier's notion of Plan Libre (Free Plan)
  - With the use of pilotis instead of walls, the architect could simply array a grid of them, and the walls could be free to move wherever, as they are no longer structural
  - You see this same idea echoed on the roof, with curves that don't strictly follow the column placement

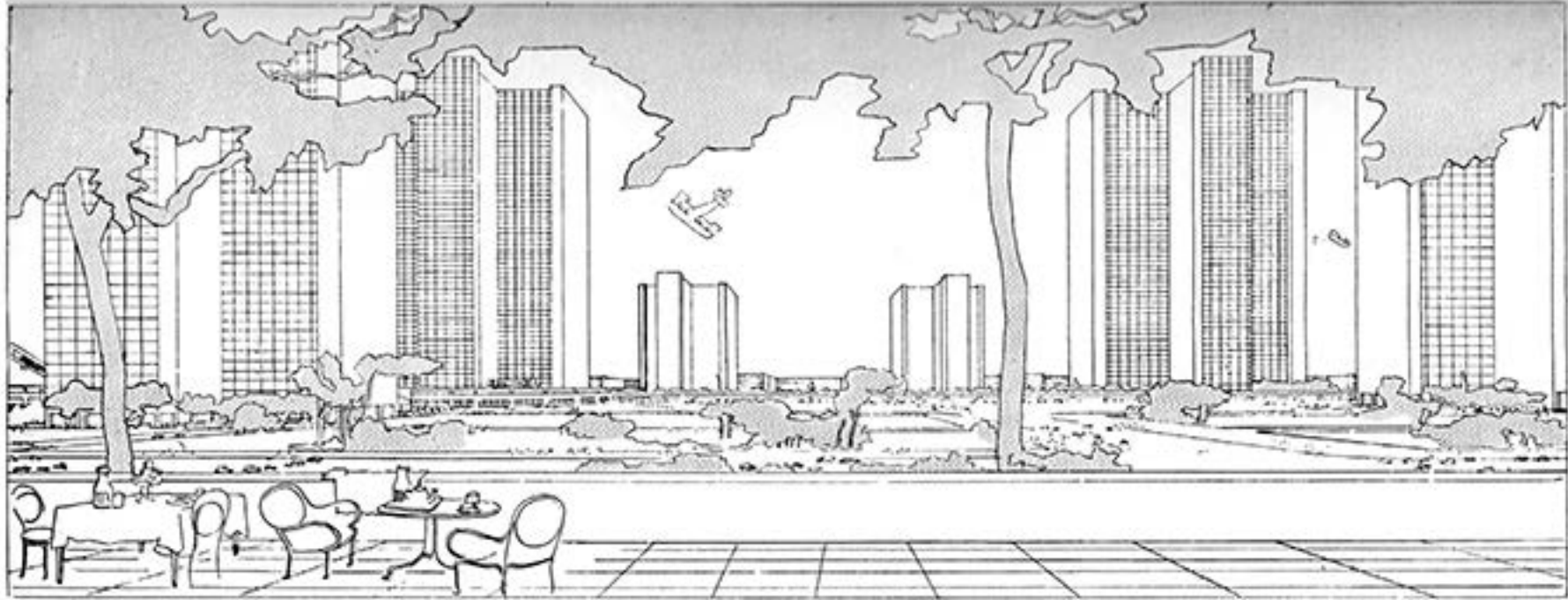


*Ville Contemporaine (1922)*  
City for 3 million inhabitants

29

- In addition to the design of buildings, Corbusier also came up with a number of urban design schemes
  - Typified the Modernist aesthetic at the scale of entire cities



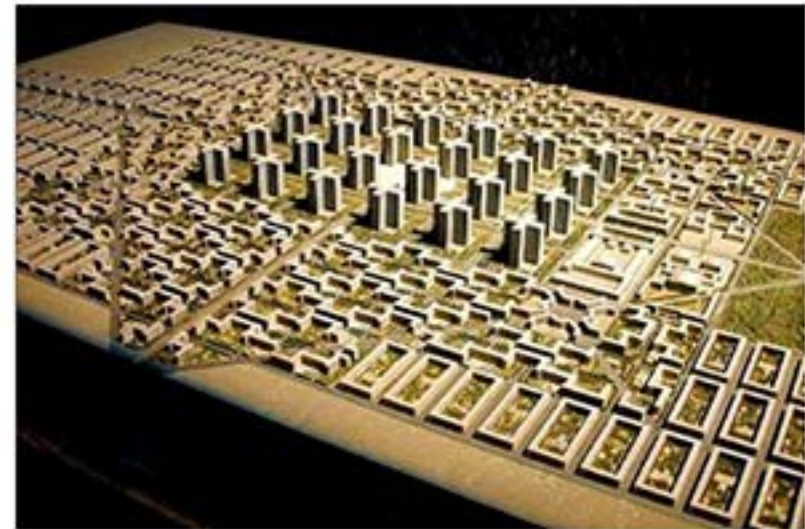
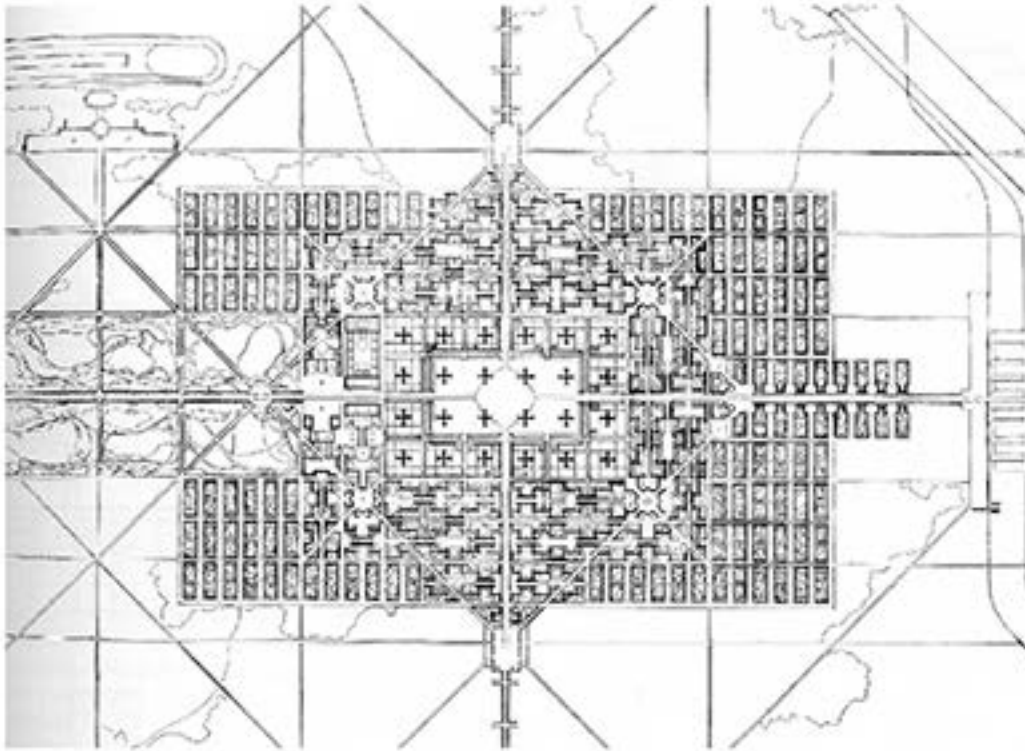


*Ville Contemporaine* (1922)  
City for 3 million inhabitants

- Ville Contemporaine [City for 3 million inhabitants] (1922)
  - Criticized NYC skyscrapers for being too small and too close to each other
  - Instead Corbusier opted for larger residential skyscrapers, but spaced farther apart to allow increased natural lighting and fresh air.



*Ville Contemporaine* (1922)  
City for 3 million inhabitants



*Ville Contemporaine (1922)*  
City for 3 million inhabitants

32

- We can clearly see much of the urban design was based off of geometry – something that would be heavily criticized in years to come
  - Belief that ordered geometry = ordered society, healthy living
- The city to become a vast park.

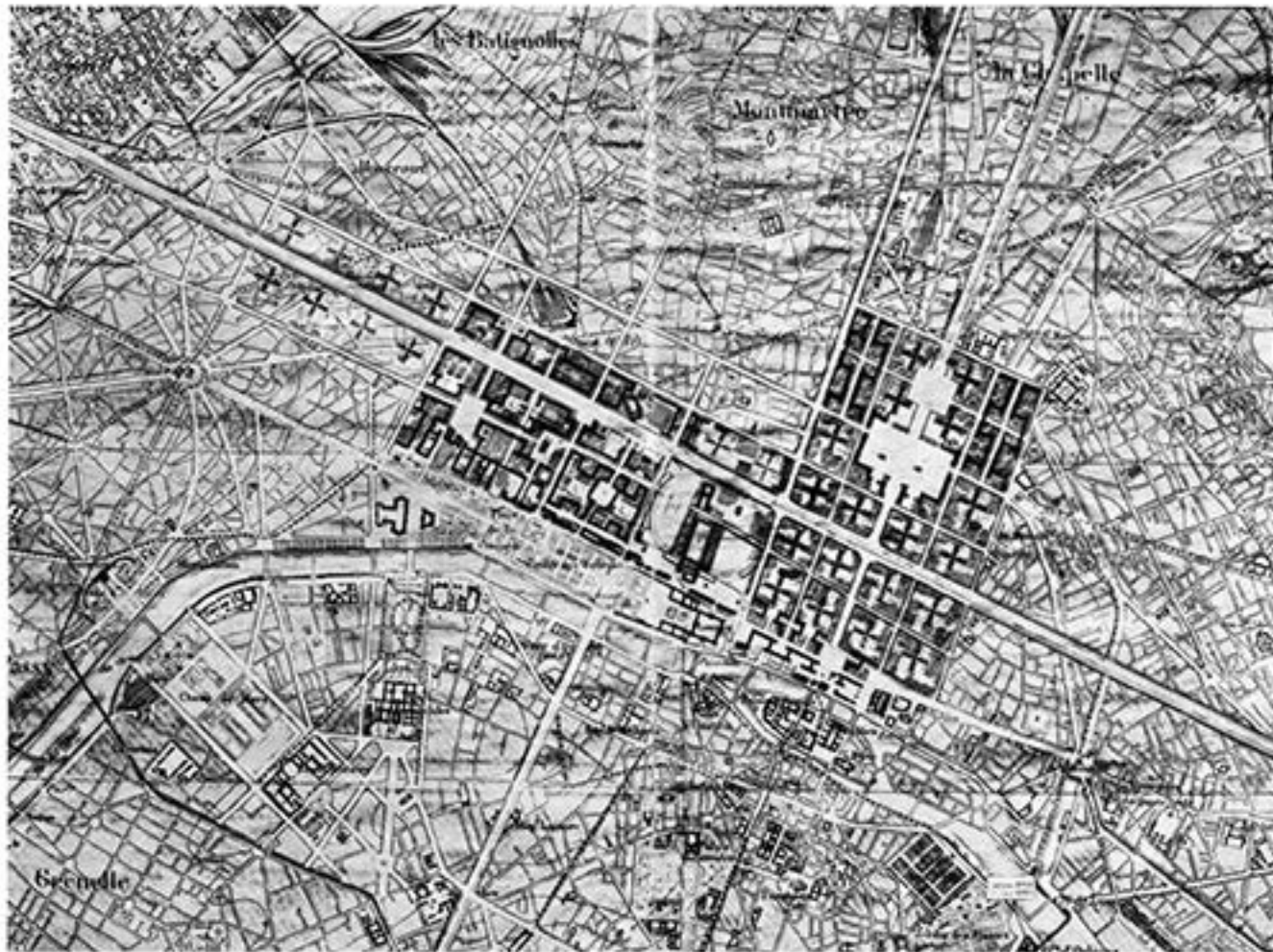




*Plan Voisin, Paris (1925)*

33

- Corbusier's developing of his original city plan, Ville Contemporaine, but proposed razing a major part of the city of Paris to accommodate for this scheme.



*Plan Voisin, Paris (1925)*

34

- Intended to clean up the city of Paris, by intentionally denying the texture of its historical plan.
  - This idea we call “Tabula Rasa” (Clean slate)



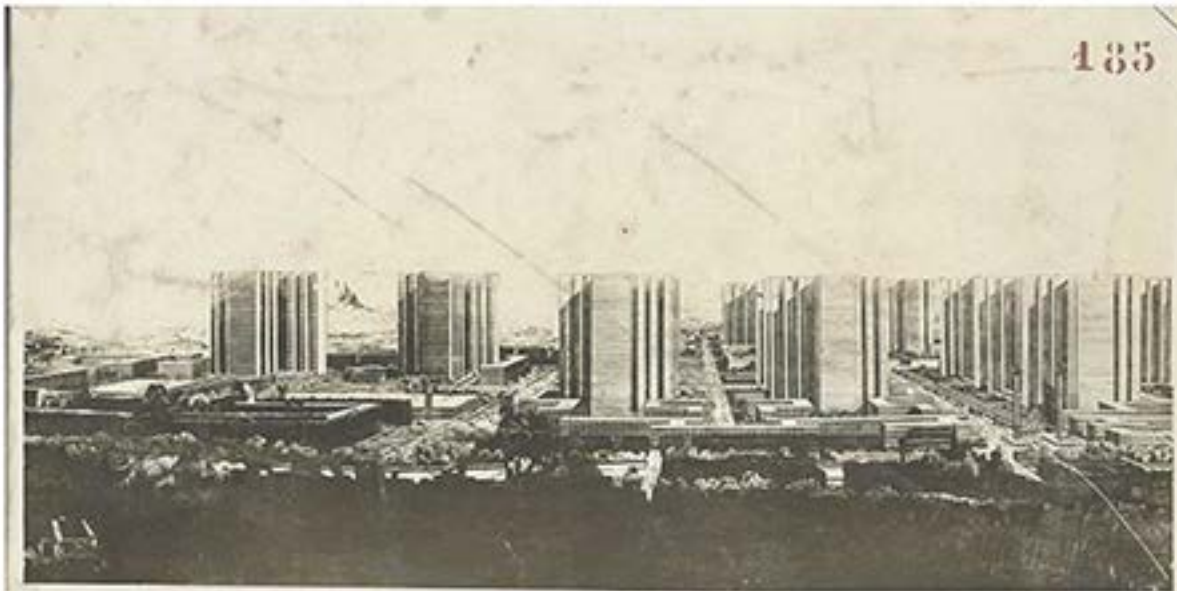
# Tabula Rasa

An idea of urban planning exemplified during the Modernist period, in which a 'clean start' to a site was preferred rather than integrating new structures with a city's existing fabric.



- In short, the attitude is that a site is so bad, that it's better just to start from scratch.
- Obviously, this is rarely if ever a desirable approach when considering the displacement of inhabitants and the value of historical plans.





*Plan Voisin, Paris (1925)*

- Clear similarities to Ville Contemporaine, yet placed onto an actual site.

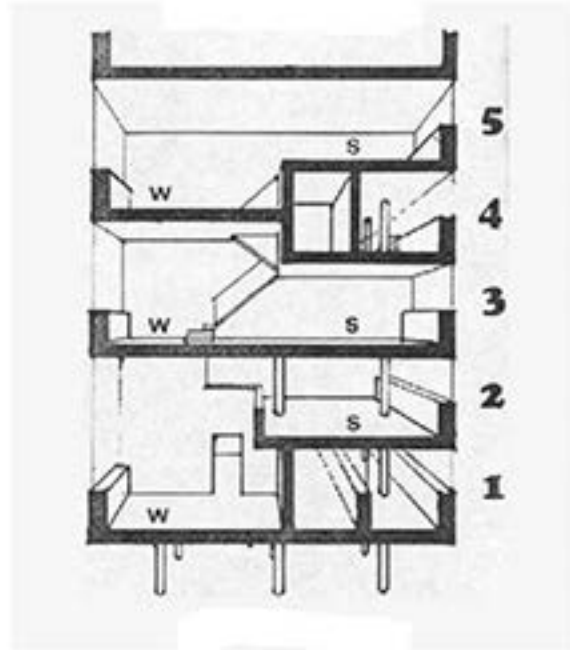


*Unité d'habitation, Marseille, France (1952)*

37

- While his urban designs are not fully realized (thank goodness!), his housing block *Unité d'habitation* serves as a model of his ideas of collective residences.
- Block housing as a prototype to be distributed across the world





Moisei Ginzburg, *Narkomfin Building*, Moscow, Russia (1928)





1. **Marseilles, France (1952)**
2. Nantes-Rezé, France (1955)
3. Berlin, Germany (1957)
4. Briey, France (1963)
5. Firminy-Vert, France (1965)

*Unité d'habitation*

- Ultimately 5 instances of the Unité were constructed in France and Germany, with the one in Marseilles (the first) as the most known.



1. Marseilles, France (1952)
2. Nantes-Rezé, France (1955)
3. Berlin, Germany (1957)
4. Briey, France (1963)
5. Firminy-Vert, France (1965)

*Unité d'habitation*

40

- Quite similar between each other, and that was precisely the point.
  - Think about Corbusier's admiration for industrial manufacture, such as the production of automobiles.



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*Unité d'habitation*





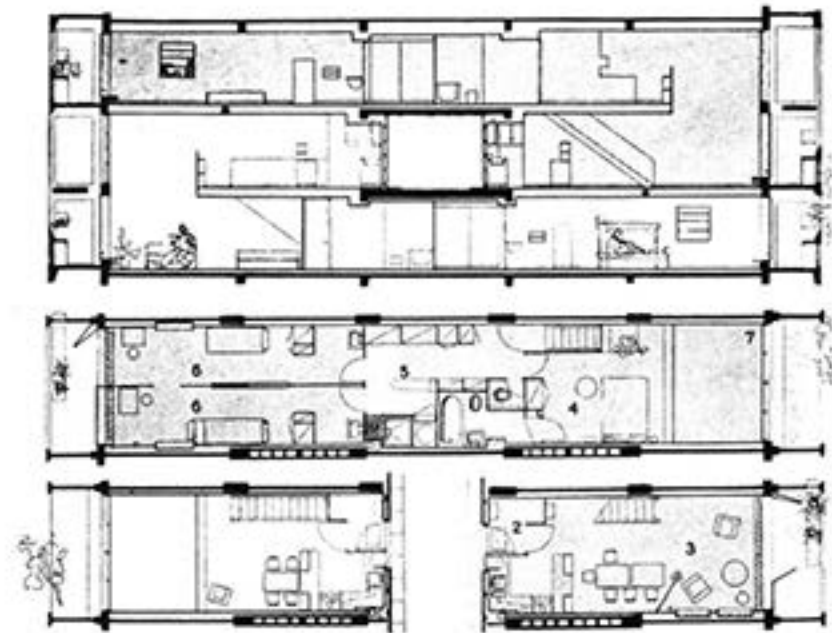
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*Unité d'habitation*



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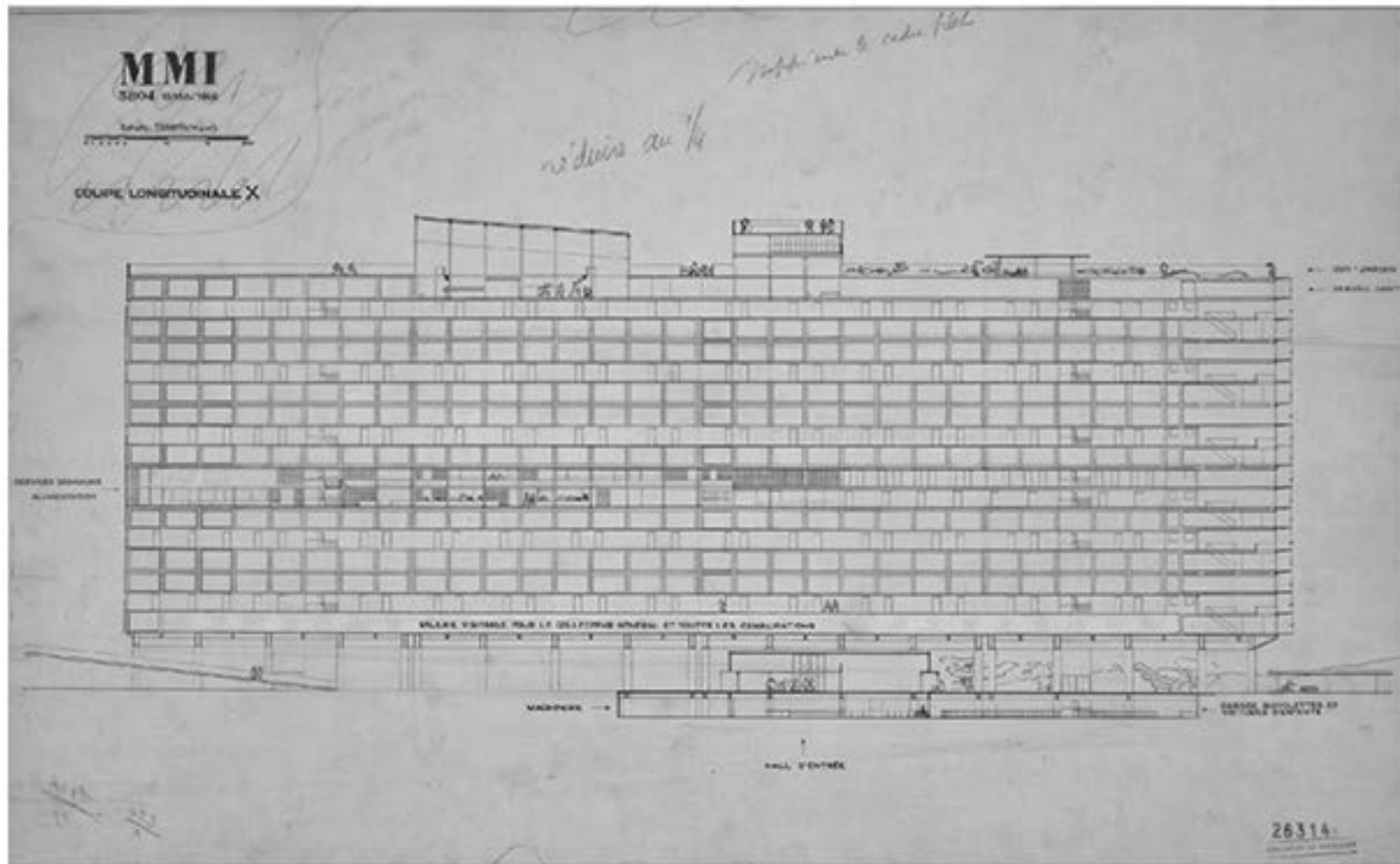


*Unité d'habitation, Marseille, France (1952)*

44

- The structural and organizational premise of the building can be thought of as an empty frame, with living units 'slotted' in.
- Each unit is double-height living room with terrace
  - 23 different configurations, depending on size of family
  - Intended to show difference, even though through repetitive construction

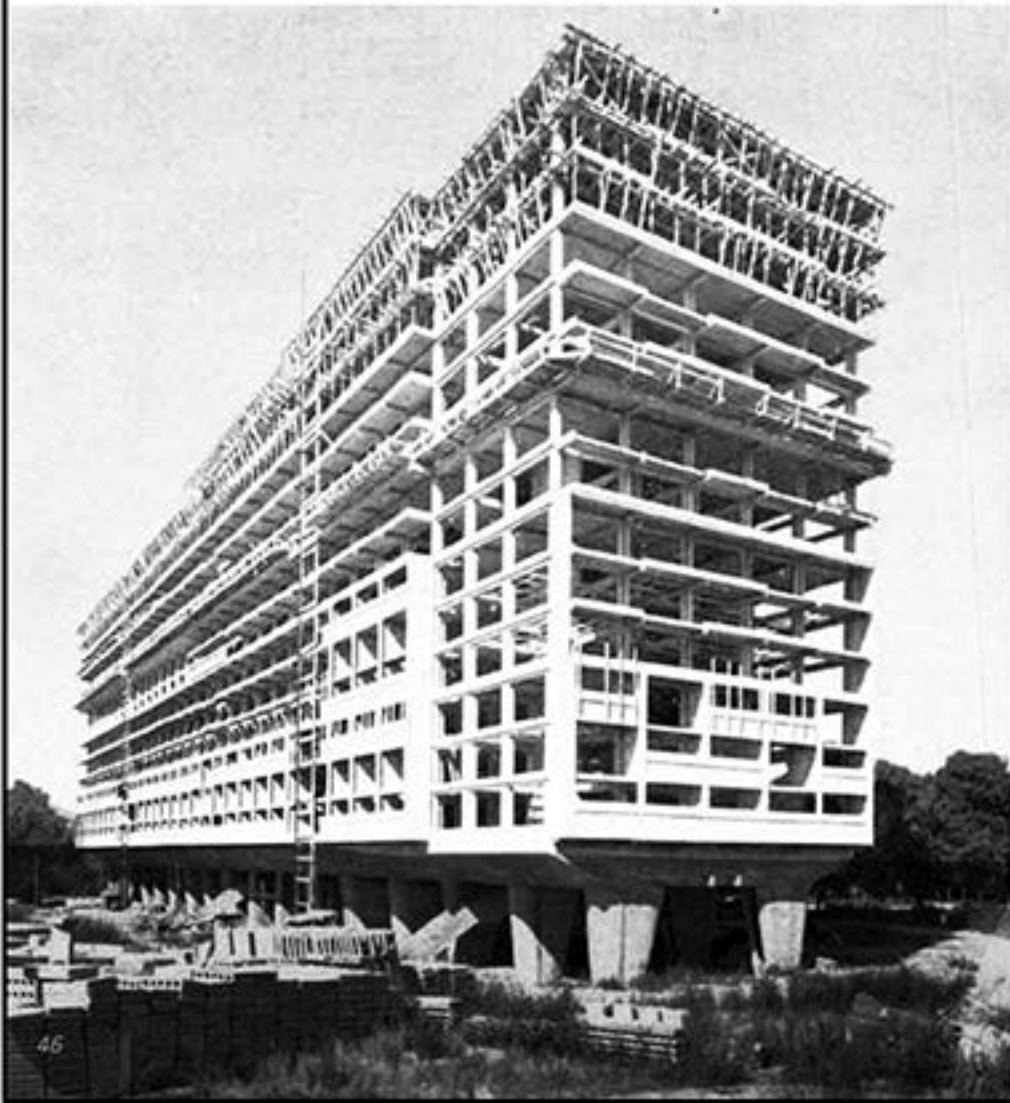




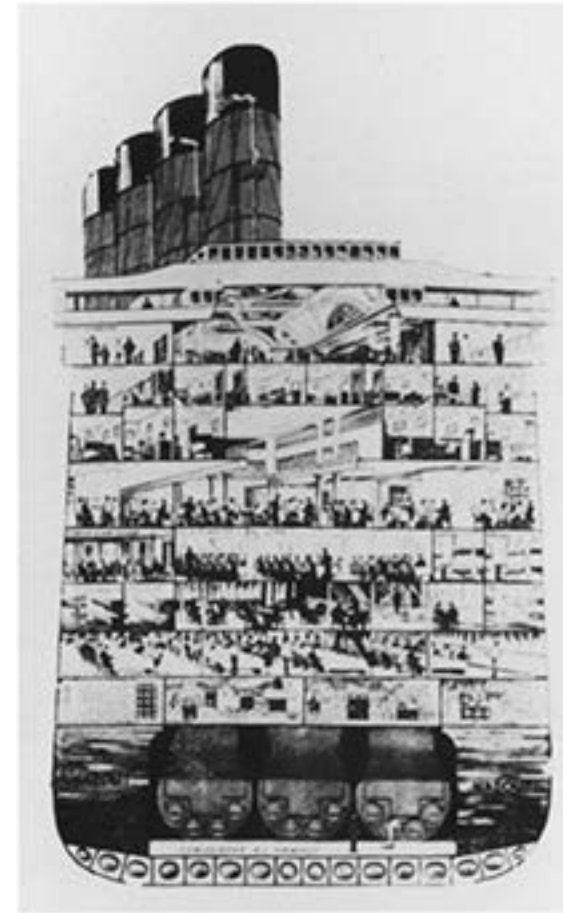
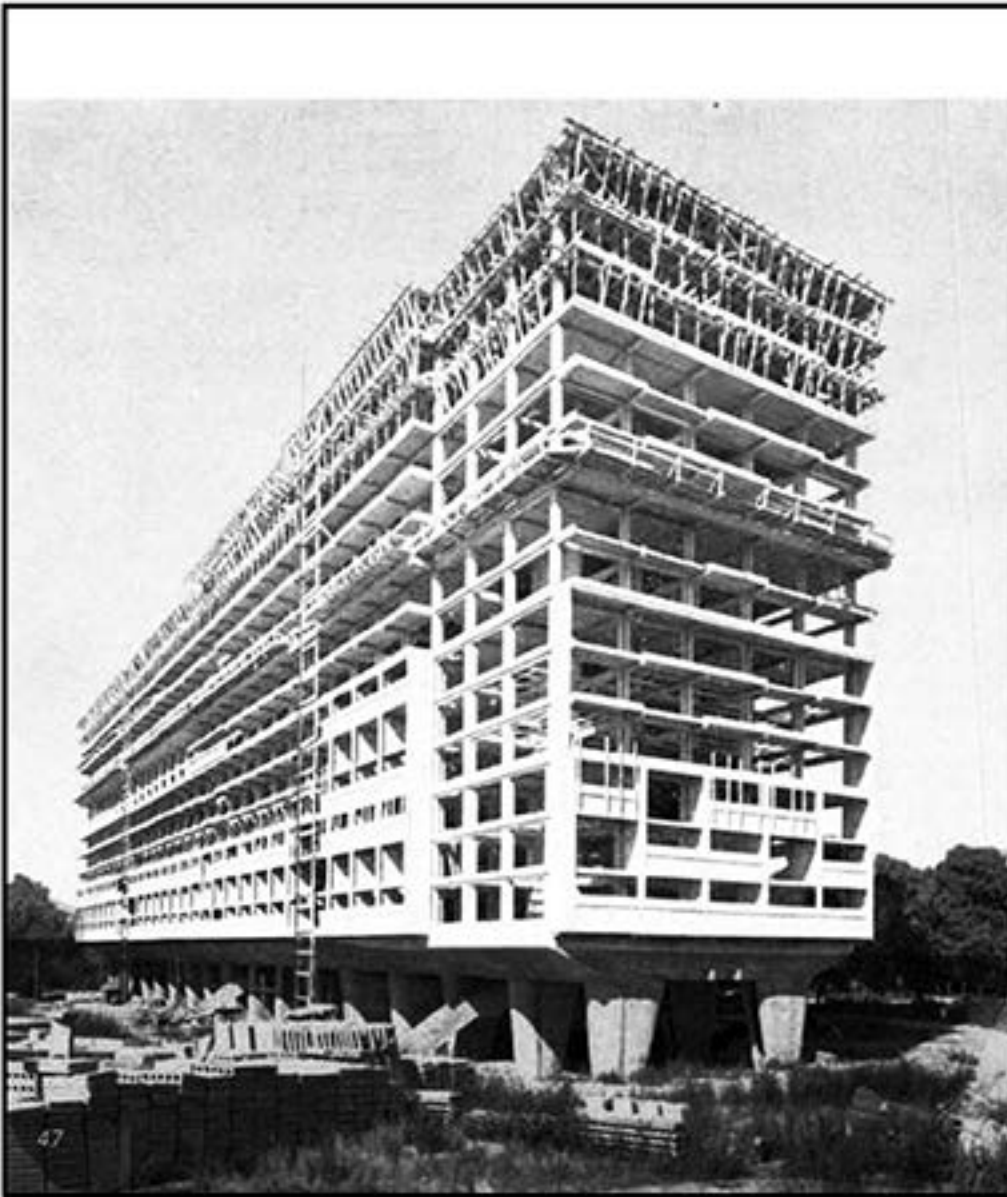
Unité d'habitation, Marseille, France (1952)

45

- 12 stories
  - Can be thought of as a synthesis between an accumulation of Villa Citrohan and an urban planning scheme in the vertical
- Following his 5 points, the Unité sits on massive pilotis, a series of ribbon windows, free ground plane (in one axis), and a roof 'garden' (for play, as opposed to vegetation).
- Sandwiching residential floors, there are 3 public domains (as strata)
  - Ground Level
  - Roof Terrace



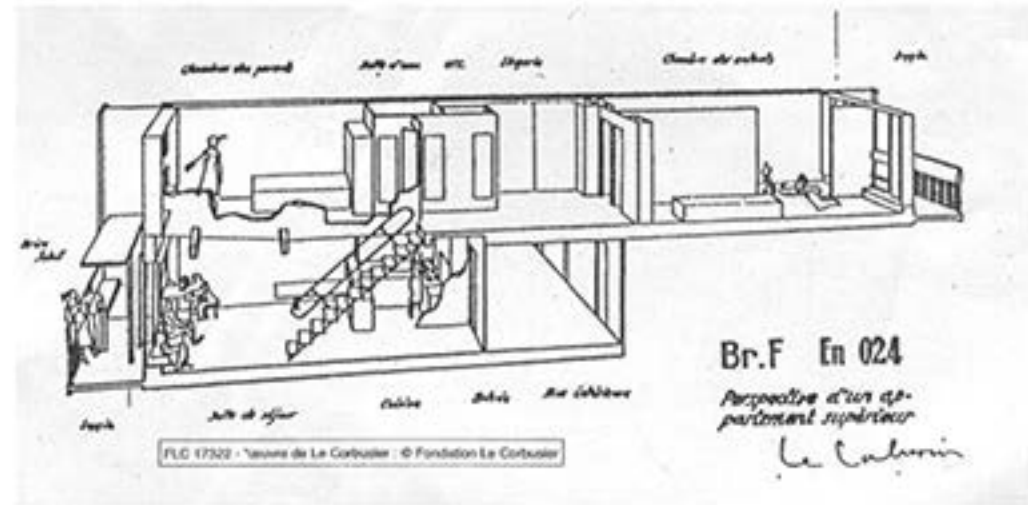
*Unité d'habitation, Marseille, France (1952)*



*Unité d'habitation, Marseille, France (1952)*  
*Ocean liner section, from *La Ville Radieuse* (1935)*

- Corbusier's comparison was of course the ocean liner.



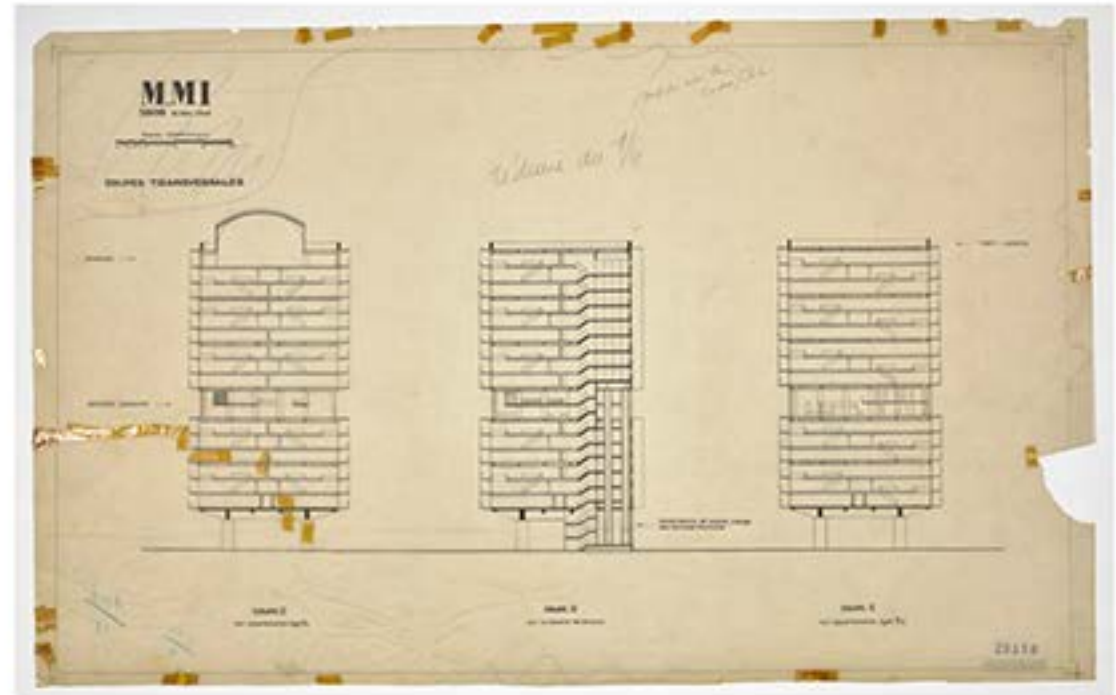


Unité d'habitation, Marseille, France (1952)



*Unité d'habitation, Marseille, France (1952)*

- Roof terrace (recall the 5 Points)



*Unité d'habitation, Marseille, France (1952)*

- A view of the Rue Intérieure (interior street)
- On right section, notice the staircases that connect two floors in a residential unit.

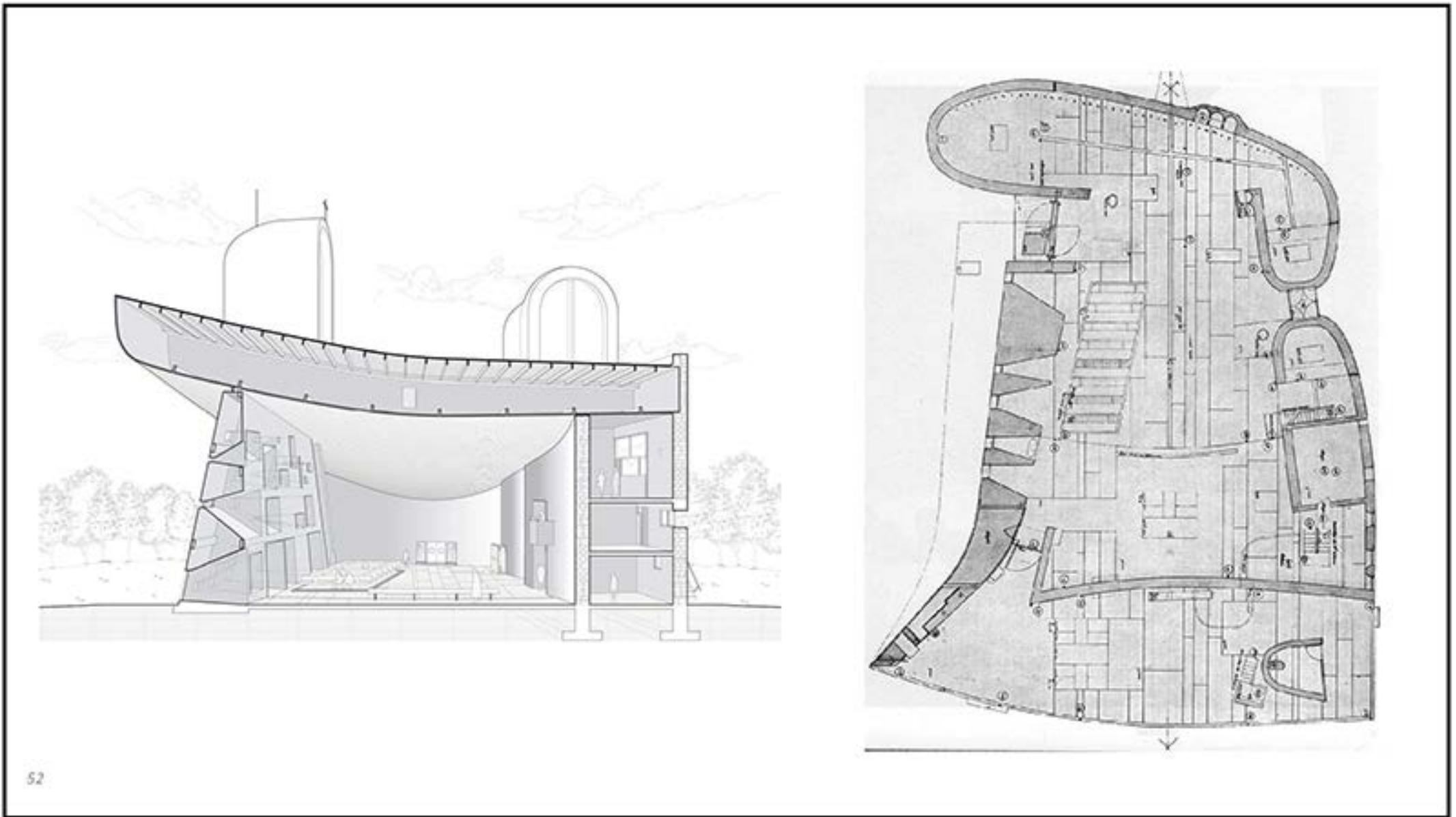




*Chapelle Notre-Dame-du-Haut de Ronchamp, Ronchamp, France (1953 - 5)  
Ronchamp Chapel*

51

- Roman Catholic Chapel, quite modest in scale
- An example of Corbusier's waning interest/dedication to Machine-Age aesthetic
  - Nevertheless, this project should be understood as a kind of one-off, even for Corbusier.



- A complex plan and section.
- Pay attention to the perceived mass of the walls and roof (wherein fact not as solid as they appear from the outside).
- In plan, pay attention to the irregular poche of the walls.



*Chapelle Notre-Dame-du-Haut de Ronchamp, Ronchamp, France (1953 - 5)  
Ronchamp Chapel*





*Chapelle Notre-Dame-du-Haut de Ronchamp, Ronchamp, France (1953 - 5)  
Ronchamp Chapel*

54

- Interior of the chapel.
- In natural perception, the chapel is dimly lit (though not dark, but much lighter than the photograph on the right).

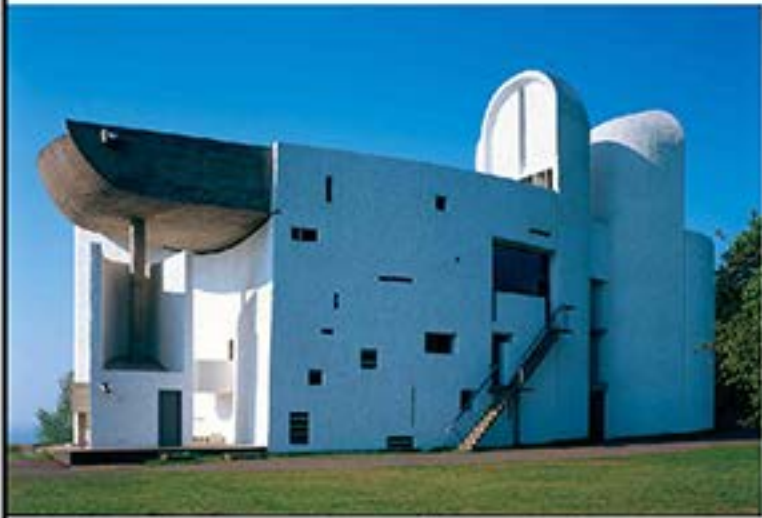


*Chapelle Notre-Dame-du-Haut de Ronchamp, Ronchamp, France (1953 - 5)  
Ronchamp Chapel*

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- Wall showing how light enters the chapel through massive apertures.
  - Flooding the interior space with a wash of colors.





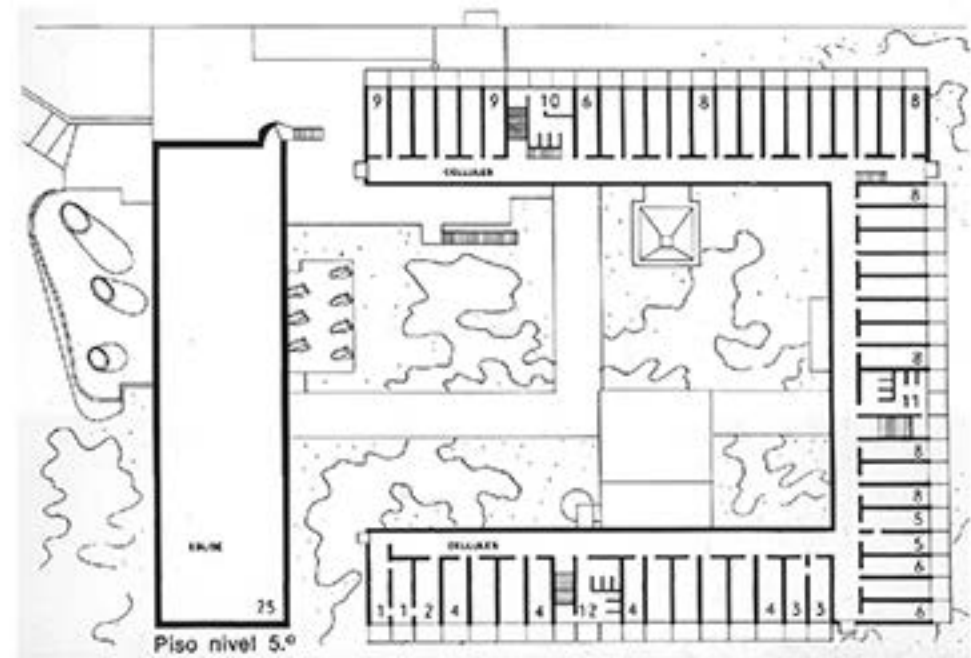
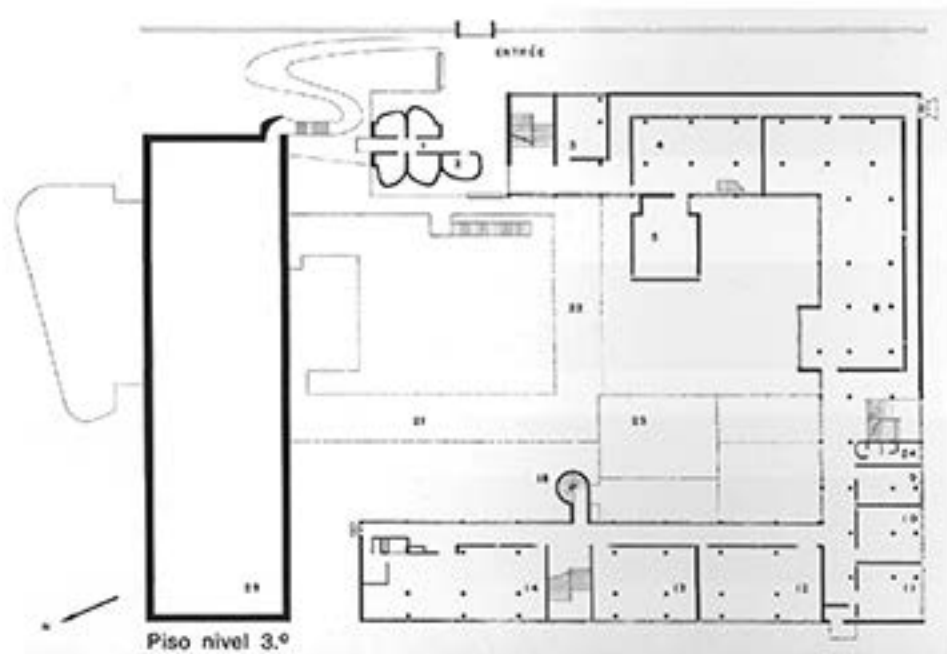




*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

57

- Corbusier's final building, known generally as *La Tourette*
  - While Ronchamp was under construction, he was asked to design this monastery
- Located in Lyons, France
- Still functioning as a monastery



*Couvent Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

- Massive building, general form is that of a courtyard facing the church (“eglise” in right plan).
- On left plan, you can see the role of the pilotis (black dots running through the courtyard buildings)
- Upper floor (right plan) regularly divided for quarters – single, hence the narrow proportions
- Courtyard building facing inward, as shown by the lining hallways.



*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

59

- Roof garden, per Corbusier's 5 points
- The entire structure sits on a hillside, looking on the city below.





*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

60

- View of the interior courtyard.
- Given the monastery program, the layout is inward looking, based on community, a bit hermetic even.



- Communal areas located on lower floors.
- Mess for communal dining and meeting.





*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

62

- Right: Example of sleep quarters
  - Similar sequence of spaces as those in L'Unité, but more modest in scale
  - Private balcony for reflection in the very background





*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

63

- View of the chapel (in actual view, quite dark and somber in lighting).
- Right image, view of the altar.



*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

64

- Additional interior views of the chapel.
- Strong coloration in sharp contrast to the 'béton brut' ('raw concrete')
  - Texture from shuttering



# Shuttering

Wooden strips used as a temporary structure ('formwork') for shaping concrete. In many applications, the texture left by the shuttering is intentionally left as a mark of the concrete's materiality.







*Sainte Marie de La Tourette, Eveux-sur-l'Arbresle (Lyons), France (1953 – 1961)*  
*La Tourette*

66

- Represents one of his most mature works.
  - Not about a single idea or 'one-liner', but should be read as a series of gestures finding common ground in one building.
- Even though La Tourette was designed for a closed community of monks, it was inspired by the architect's ideals of living and working, and touched by a kind of spirituality.