Le Corbusier during the 1920s and 1930s

Le Corbusier 1920s
-original name: Charles Eduard Jeanneret (1887-1965)
-born in a French speaking Switzerland, La Chaux-de-Fonds
-watch engraving
-worked for August Perret for a few months in Paris in 1908
-between 1910 and 1911, stayed in Germany to make a report on German applied art

AEG Turbine Factory, exterior (1908-1909)

Peter Behrens Berlin, Germany

-worked briefly for Peter Behrens
-also attended an important Deutscher Werkbund conference

Le Corbusier 1920s
-he then traveled to the Balkans, Istanbul, and Athens (next slide)
-fascinated by the Parthenon and converted to Classicism (partly an influence from Perret and Behrens)
-to reconcile architectural tradition with modern technology

Parthenon (*BC 477-438*)

-in 1917, permanently moved to Paris
-opened a firm and also started to paint in oils under the guidance of Amedee Ozenfant
-Jeanneret and Ozenfant called themselves ‘Purists’
-they wrote a book Apres le Cubism and with Paul Dermee, a poet, founded the magazine L’Esprit Nouveau in 1920
-about this time, started to use Le Corbusier

The relationship between cubism and purism

Juan Gris
The Book, 1913

Still Life (1919)

Jeanneret/Le Corbusier

Apres le Cubism (1918)
-praised Cubism for its abolition of narrative, its simplification of forms, its compression of pictorial depth, and its method of selecting certain objects as emblems of modern life
-but condemned it for its decorative deformation and fragmentation of the object and demand the object's reinstatement
"Of all the recent school of painting, only Cubism foresaw the advantages of choosing selected objects . . . But by a paradoxical error, instead of sifting out the general laws of these objects, Cubism showed their accidental aspects."
-Still Life, 1919
Shows Cubism's influence in its flattening of pictorial depth and overlapping of planes, but the object has now been reinstated in its integrity, acquiring solidity and weight, and resisting the relativistic fragmentation of reality

Towards a New Architecture (Vers une Architecture), 1923

(First English translation in 1927)

Grain Silos and elevators

In the book, LC included many images of grain silos in America.

American Grain Silos and Elevators

American Grain Silos and Elevators

-LC paid eulogy to the geometric clarity of the American grain silos.
-The geometric cubes and cylinders emerge as the ideals forms in terms of maximizing the volume of the container, while securing structural solidity.
-These were not the products of aesthetic whims, but the products of rational calculation.
-In these structures, nothing was wasted. Nothing was arbitrary.
-Every aspect was rational.
-LC in this context praised engineering, and condemned decorative arts.

-In the book *Towards a New Architecture*, LC also presented a page in which the Greek temples like the Parthenon were juxtaposed with automobiles.
-What was he thinking?

-the equation of technology and classicism
    - Proportional harmony of the classical architecture (based upon standardization)
    - The beauty of the constructions of modern technology that embody mathematical order and numbers in harmonious relationship
-the mind moved by the perception of the mathematical relationship that unify individual forms
-“the modern industrialized world implied a change from individualism to collectivism”

Pavillon de L'Espirit Nouveau (1925)

Le Corbusier

Exposition des Arts Decoratifs

Paris, France

The Pavilion de L’Esprit Nouveau
-designed with his cousin and new partner, Pierre Jeanneret, and built at the occasion of the Exposition des Arts Decoratifs in Paris in 1925
-the aim of the exposition was to reassert French dominance in the decorative arts, and most of the work was ‘modernized’ form of the French artisanal decorative tradition.
-Le Corbusier challenged this tradition
-the pavilion proposed nothing less than the abolition of the decorative arts as such
-far from being a tastefully designed middle-class home, it was an apartment for a kind of generic without qualities living in a post-war economy dominated by mass consumption and mass production
-the elements were two kinds: fixed and mobile
-the fixed elements: modular storage units integrated into the architectural background
The mobile elements were chosen from products available in the market, leather chairs from Maples and bentwood dining chairs from Thonet
-montage of found objets-type lacking any formal consistency to each other
-Adolf Loos’s idea of interior

Adolf Loos, *Scheu House,* interior view (1912)

Charles Jeanneret (Le Corbusier) *Dom-ino Frame* (1914-1915)

-LC's interest in new structural system led him to develop a simple, basic structural unit in architecture.

-This unit was called the Domino Frame.

-It was a reinforced concrete structure composed of columns and floor platforms.

Charles Jeanneret (Le Corbusier) *Dom-ino Frame* (1914-1915)

-the columns & the floor plate constituted a prefabricated system independent of walls and partitions

-the concrete frame is conceived as being independent of the spatial planning, and as a means of industrializing the building process

LC started to study practical benefits of this new structural system, innovative architectural vocabularies that may arise from the adoption of this system

Five Points of a New Architecture (1926)

Le Corbusier

The benefits were compiled into what LC called “Five Points of Architecture” (prescription of the rules of a new architectural system)
1. Pilotis, 2. the roof garden, 3. the free plan, 4. the horizontal window, 5. the free facade
Five points are the benefits of modern constructional technology
Overturning the conventions of architecture, in particular masonry construction

Pilotis: lifted the building off the ground allowing landscape or traffic to pass underneath. A basic device for both city planning and architecture
The roof garden: reintroduce nature into architecture and the city (planting also supplied ways of insulating the flat concrete roof)
The window: the vertical versus the horizontal window (debate with Perret)
The free facade: does not bear structural role any more. a thin membrane or window of any size
The free plan: allowed rooms of different sizes to be slotted into the skeleton and spaces to be orchestrated in sequence. the interior becomes a field of plastic improvisation triggered by the contingencies of domestic life and giving rise to “the architecture of promenade (*promenade architectural*),” which Le Corbusier claimed that it is equipped with “disorderly order.” plan-making

Le Corbusier *Maison La Roche* (1923-1924)

-Stands at the end of a cul-de-sac and Le Corbusier responds to this site condition by creating an L-shape plan.

Maison La Roche, plan (1923-1924)

-In fact, this L-shape plan combines two houses – one for la Roche, and the other for Le Corbusier’s sister-in-law.
-His sister-in-law wanted a compact house, and the collector, la Roche, wanted to use his dwelling to display his Purist and Cubist works

-The main volume of the house primarily contains dwelling spaces
-The curved volume lifted free of the ground on slender supports contain a studio

Le Corbusier

Maison La Roche (1923-1924)

Le Corbusier

Le Corbusier, Villa Stein (1927), Garches, France

Le Corbusier, Villa Stein (1927), Garches, France

-An opportunity to create a free-standing volume
-The façade is a skin that does not bear any structural weight
-Two long strip windows run from one side to the other.
-These windows are surmounted by a heavy wall punctured at its center
-But, then a series of elements in asymmetrical rhythm at the lower part: first floor – a variety of openings cut into it (a garage for to the left, a small entrance to the servants' quarters under a tiny balcony, a large area of industrial glazing, the main entrance is surmounted by a canopy)

Le Corbusier, Villa Stein, Garches, France

-There is a roof terrace.

-A storage space is set into a curved volume, recalling immediately the funnel of a liner (nautical allusion)

-In the interior, Other nautical allusions: staircase, railings, gallery
-Experience similar to walking on the deck of an ocean-liner (next slide)
-In terms of the process of construction with reinforced concrete frame and insertion of non-bearing partitions, the building was constructed like a machine.
-Simultaneously, his architecture figurative quality – like an ocean liner.
-Put differently, his architecture also looks like a machine to some degree.
-Technology as leading to a new kind of architecture at the level of principle, yet at the same time, it was the source of figurative articulation (lineament), too.
-The oscillation b/t non-figuration based upon principle and figuration

Villa Savoye (1929-31)

Le Corbusier

Villa Sovoye (1929-31)
-the best example in terms of illustrating the five points.

-The house is raised on pilotis & appears as a pure white prism hovering above the convex surface of the filed in which it is sited

Villa Savoye (1929-31)

Le Corbusier

-Pilotis for the arrival of car The arriving car drives under the house.

-Once one enters the lobby, one is welcomed by a ramp.
-To the left of the ramp is a staircase.
-The relationship between the ramp and the staircase is set in such a way that one is encouraged to take the ramp, while using the staircase is always an option.
-The gap between the two elements also operates as the passage to bedrooms at the back.
-It is a beautiful, skillful setting of a relationship among the ramp, the staircase and the rooms.

-One thing that amazes me in LC’s architecture is this kind of moment.
-He is the master of setting up wonderful relationship among architectural elements in which the user always finds right way to move forward, while he or she is not dictated upon to move this way or that way.
-There is an order, and at the same time, freedom.
-The main floor is an enclosure occupied partly by accommodation and partly by a terrace garden.
-The ramp turns into an outdoor circulation element.
-W/in the geometrical purity of the enclosing cube, the interior is free & asymmetrical. (obeying its own dynamic logic)

-This section shows the continuous journey from the entrance

-And then to the roof garden.
-This is a great example of what Le Corbusier called Architectural Promenade.

-The climax of this architectural journey is defined by an opening which represents or frames the nature outside.
-Nature is perceived through a frame of human technological construction. The frame is not simply a frame.
-It is combined with a table at its bottom, as if it were encouraging a certain offering.

-Seen from the outside, this villa marks a great contrast with the surrounding nature.
-It is a white, pure cube separated from the ground through pilottis.
-The floating, homogeneous elevation wraps around diverse geometrical volumes inside.
-The white surface that reflects the sunlight back to the air creates a great contrast with shaded depths of the house such as the ground level and the terrace.

Andrea Palladio Vicenza, Italy

Villa Rotunda (Villa Capra)

exterior (begun 1565-1566)

Villa Savoye (1929-31)

Le Corbusier after 1930s

-The introduction of new devices like *beton brut* (exposed concrete), the *brise-soleil* (the sun breaker) and complex curved geometries
-These new vocabularies create a productive tension with the well-worn formulations of his earlier period including the five points of architecture

•The main room of the plan was inspired by Le Corbusier’s unbuilt project Maison de M. Errazuris in Chile (1930) (It also reveals a typological similarity to Le Corbusier’s Le Petit Maison in Swiss b/c of the flexible long narrow living area)
•The interior of the Maison de M. Errazuris indicates an ensemble of concrete footings, local stones covering the floor and the ramp, and the post and lintel structure using wood.
•Upon this ensemble added an inclined roof built out of a wooden lattice structure covered w/local tiles.

Le Corbusier, Swiss Pavilion (1930-1931), Paris, France

-built for Swiss students studying in Paris
-Composed of two blocks: first, containing a lobby, a library, and an office, and the second, a five-story dormitory sitting above pilottis.

-Structure is also composed of different systems, abandoning the domino system
-the library utilizes stone masonry wall in a curvilinaer shape (watery construction)
-the dormitory is a light steel frame structure (non-watery construction) again sitting on massive pilottis.
-The steel frame structure reflects the repetitive character of the rooms
-There is a metaphor of a ship (the dormitory) anchoring to the ground (the rubble masonry wall)

Swiss Pavilion, rubble wall and column detail (1930-1931) Paris, France

Le Corbusier

Le Corbusier, Petite Maison de weekend, near Paris (1935)

-deliberately set low in the ground with concrete vaults and grass on the roof
-“a subtle and poetic synthesis of time-honored agrarian building methods and advanced engineering technique
-the structural module of the shell concrete vault operated as the basis for the plan of the house

-The square module stands free in the garden of the house as a canopy
-consisted of a thin shell supported at each of its corners by equally thin reinforced concrete piers
-When this module was used within the body of the house to form the vaulted roof, the piers were partially replaced by load-bearing rubble stone walls
-the early sculptural ethos of Platonic form is replaced by the tectonic articulation of the construction itself (tectonics)

-there is an evocation of a cave in the interior
-Le Corbusier also inserts an alcove built out of bricks cut roughly as a structure within the shell strucutre

Le Corbusier

Maisons Jaoul, Neuilly, Paris, 1952-54, section and ground floor plan

-these houses were for the Jaoul family, one for his friend Andre Jaoul, and the other for his son Michel
-Both houses sit on top of a subterranean garage
-In this project, LC continued the allusion to the vernacular
-space of dwelling constructed by crude brick, and rough concrete frame and vault

-The houses adopted roughly cut bricks and rough shuttered concrete
-the construction was executed by cheap Algerian labour
-primitivism, yet not without rationality of modern movement

-The houses adopted roughly cut bricks and rough shuttered concrete
-exposure of the concrete strucutre: one, concrete frame, the other, concrete vault
-bricks form walls; timber and plywood form window panels; and the concrete vaults are covered with turf (grass)
-the construction was executed by cheap Algerian labour
-primitivism, yet not without rationality of modern movement
-Along with the Unite d’habitation, the houses affected the emergence of a whole movement in Britain, (New) Brutalism

Le Corbusier, Notre Dame du Haut (1950-1954), Ronchamp, France

-the ziggurat at the site marks the spot where a previous church was destroyed in the final years of World War II
-Le Corbusier was proposed by Pere Couturier, the Francsican editor of L’Art sacre, as the architect to rebuild the pilgrimage chapel of Notre-Dame-du-Haut at Ronchamp, on the magnificent hill top site near Besancon

-a dark roof with pointed angle and complex curvature rests on convex and concave battered rubble walls
-The roof was sophisticated piece of structural engineering
-It was based on the design of concrete dams, and serves as a rainwater collector

-the requirement for open-air celebration of mass has been carefully studied and met.
-Open air altar sits under the boat-like roof.
-This outdoor sanctuary is replete with pulpit and an image of Madonna in a glazed box embedded in the wall (so that it can be seen from the inside too)

-the walls are punctured by irregular openings and sprayed in whitewashed gunnite concrete
-the wall facing the south is glazed with coloured pieces of glass

-the interior is hollowed out like a cave
-the metaphor of catacomb
-the floor is sloped to bring one’s attention to towards the altar
-characteristic of the post-war Christian architecture – positioning of the altar at the lowest spot

-the juncture between roof and walls is deftly handled with a slight gap so that a crack of daylight gleams through.
-Giving buoyancy to the roof with heavy and suppressing presence
-the interior has excellent acoustic properties
-the perforated side wall (next slide) streams the light into an otherwise sober interior

-Along with the main chapel, there additional small chapels for private worship or a worship of a small congregation
-These smaller chapels are top-lit within the towers

-three kinds of light – one from the slit, another from the side openings, and the last from above for the side chapels.
-The light from the side is also practical for the liturgy performance

-the church shocked many architects and critics who flocked to see it.
-They were puzzled by the change of direction by Le Corbusier to a profound depth
-Nikolaus Pevsner: complained of a retreat into irrationality (betraying the fact that he considered Le Corbusier’s early works as rational)
-James Stirling: dismayed by ‘conscious imperfectionism’ and questioned whether the church should influence the course of modern architecture

Le Corbusier, Dominican Monastery of La Tourette (1955), Eveux (near Lyon), France

-It was soon after Ronchamp was completed that Le Corbusier was asked to design another religious structure
-Dominican monastery

-monastery was a type of architecture that interested him for a long time since his visit to the Charterhouse at Ema in Tuscany in 1907
-It is said that Le Corbusier was deeply impressed by the ordered rule of the architecture, the balance between public and private realms, and the emphasis upon contemplation of nature from the cells
-this community of believers was also based on economic and simple living, that is further conjoined with the worship of God

-Le Corbusier wanted to realize the traditional cloister arrangement in his plan
-Yet the site was a slope overlooking meadows (next slide: section)
-This site condition required considerable modification to realize the traditional cloistered court
-The building blocks are gathered together in such a way that they form a central space to symbolize the togetherness of the community
-However, it was not practically used as in a traditional cloister

Le Corbusier

La Tourette, Eveux-sur-Arbresle, 1957-60, east-west section

-plan
Upper level: at one side, the upper part of the main chapel, and the remaining three sides are wrapped up by the wings with cell units.
Lower level: accommodates the communal portions of the monastery: the main chapel, refectory, passage ways and stairs

-each monk has his individual balcony framing a private view over trees or far distant hills to the west
-in contrast, the refectory has concrete struts (slats) with differentiated intervals (next slide)
-these slats are the idea of the project architect, Iannis Xenakis
-He put his own interest in music into the design, notably the subtle display of intervals in the concrete slat *ondulatories*

-the main chapel was accessed from the lower level
-It was entirely inward-looking and was a full triple volume in height

Le Corbusier

La Tourette, Eveux-sur-Arbresle, 1957-60

Crypt with stepped altars

-Below the main chapel was crypt chapels
-Here, LC’s interest in the power of light to generate emotional and spiritual impact was given full rein in such features as the ‘light cannons