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

Mies van der Rohe in America

-came to America in 1937
-settled in Chicago in 1938
-took up an appointment as Director of the Architecture Department of Armour Institute (later in 1940 became the College of Architecture, Planning and Design at Illinois Institute of Technology)

Mies van der Rohe in America

-his practice and teaching reflected a philosophy of architecture based upon Thomas Aquinas's proposition: "reason is the first principle of all human work"
-questioned personal expression
-searched for general principles that he learnt from the buildings of the great architectural epochs of the past:

1. namely that architecture is derived from the significant forces determining the ethos of an epoch
   -Architecture becomes an expression of the epoch
   -a language of architecture gradually evolves in response to the epoch of each period and to its particular needs and means
2. architecture becomes noble through the clear understanding and expression of construction.
   -Construction as the art of building (Baukunst)

-At Illinois Institute of technology, he set up a curriculum based on these principles and the belief
-'The function of education is to lead us from irresponsible opinion to truly responsible judgment'
-'since a building is a work and not a notion (speculation), a method of work, a way of doing should be the essence of architectural education'

Illinois Institute of Technology (1939), preliminary scheme

Chicago, Illinois

Mies van der Rohe

-from 1940 to 1952 he redesigned the Illinois Institute of Technology campus
-the bold contrast bt. main buildings and open spaces
-responds to the grid system of the surrounding south side of Chicago, yet in a great contrast with its congested suburban condition through neo-classical axiality and serenity with asymmetrical variance

-the buildings were in the shape of rectangular steel-framed boxes
-the buildings were like, according to Curtis, ‘elegant factories’: with brick panel infills, tight steel detailing, sober proportion and the air of straightforward factuality

-impersonality of each building and the utilization of the high-quality steel craftsmanship in Chicago

Alumni Hall (1945-1946)
Illinois Institute of Technology

Mies van der Rohe, Crown Hall (1952-1956)

-the architecture building of the campus
-the image of factory with the elegance of neo-classicism: symmetry, proportion, the clear expression of load and support

-the elevation reflects honestly the system of construction. Abstraction of the construction logic to a composition, creating a rhythm between thin steel vertical supports and wide glass panes
-this creates the image of lightness, orderliness, and extension to infinity

Mies van der Rohe

Right, Top: Crown Hall, IIT, Chicago, 1950-56

Right, Bottom: New National Gallery, Berlin, 1962-67

Left: Interior of the Crown Hall

-vast, uninterrupted universal space (probably inspired by Albert Kahn’s Bomber Assembly Plant of 1939)
-the glass box: a space good for everything, a space that accommodate every happening

“Universal Space”
-In contrast to many of his contemporaries, Mies van der Rohe questioned the concept ‘form follows function’
-This was because he recognized that functional requirements often change
-He believed that building solutions should allow for an optimum degree of flexibility in order to accommodate economically frequent needs to revise the arrangement of living and working spaces
-In this context, he preferred a steel frame trabeated system that captures open space
-the functions not requiring daylight, such as lecture theatres and law courtrooms, and the fixed core accommodating lifts, stairs, toilets and service ducts are located within the interior spaces of the plan
-this way, he leaves the peripheral areas available for the flexible arrangement of classrooms, workshops, laboratories, offices, flats or exhibition spaces as the particular building’s function required

How can we criticize the universal space?

Mies van der Rohe

on the building site of the
Farnsworth House (1946-50)

-the house is raised above the ground against the Fox River’s spring flooding

-The building sits on eight columns running from the foundation to the roof
-The columns on the sides are put in such a way that the corner is open

-the interior area is enclosed by large sheets of plate-glass and paved with Roman Travertine marble (next slide)
-living, sleeping and kitchen spaces are subtly defined around a free-standing wood-panelled core
-This core houses bathrooms and service
-a kind of universal space applied to the particular program of dwelling

Mies van der Rohe

Farnsworth House, Plano, Illinois, 1945-50,
sliding gauze screen

-a great example to think about “Is the glass box good for a specific case like a family dwelling?”
-to a degree, idiosyncratic, impractical, or put it positively, experimental
-strong interest in transparency

-stands on Park Avenue in New York
-designed by Mies van der Rohe and Philip Johnson between 1954 and 1958
-praised for its monumental presence of in silence in Manhattan
-a building of sober and symmetrical proportion and clothed in elegant materials such as bronze-tinted auburn glass

Seagram Building (1954-1958)

New York, New York

Mies van der Rohe

-sits on a raised podium
-one approaches along a main axis between symmetrical rectangular pools (flanked by ledges of marble)
-A portico is implied by the overhanging slab
-again attached vertical mullions
-prefabricated elements of architecture adopted to construct a building of repetitive units: Mies brought this factuality and the commonplaceness of the modern urban office to a sublime order

-Mies attached I-Beams onto vertical mullions
-prefabricated elements of architecture are adopted to construct a building of repetitive units
-Mies brought this factuality and the commonplaceness of the modern urban office to a sublime order
-Why would Mies attach I beams?
-Duality of the attached beam

-Mies’s buildings and approach became appropriated for the economic production of buildings in capitalism

Lever House (1951-1952)

New York, New York

Skidmore, Owings, and Merrill

US Air Force Academy (1954-1962)

Colorado Springs, Colorado

Skidmore, Owings, and Merrill

General Motors Technical Center (1948-1956)

Warren, Michigan

Eero Saarinen

-an example of the universal space
-The universal space seems to assume a certain laboratory condition in terms of the amount of light and the degree of temperature.
-The universal space is secretively presupposed with the universal man.
-In terms of light, every corner is evenly illuminated
-The lack of the dialectic bt. darkness and light

Union Carbide Building (1957-1960)

New York, New York

Skidmore, Owings, and Merrill