"The external architectural effect relied on the adroit placement of large plate glass windows large plate-glass windows, in undecorated planar surfaces. Although it was a long way (in meaning as well as form) from this villa, with its neoclassical plan and its strict symmetry, to the interpenetrating planes and dynamic asymmetries of the International style of the 1920s, the achievement of such as drastic simplicity within a decade and a half of the beginnings of Art Nouveau, and a full decade before Le Corbusier’s white cubic villa designs of the 1920s is worthy of comment.

In fact, it is by no means certain that Loos’s prewar designs had much influence on the emergence of modern movement after the First World War. As a polemicist, Loos was brilliant; in an article entitled ‘Ornament and Crime’ (1908), he inveigled against the very notion of ornament on the grounds that it was evidence of a decadent culture:

Children are amoral, and — by our standards — so are Papuans. If a Papuan slaughters an enemy and eats him, that does not make him a criminal. But if a modern man kills someone and eats him, he must be either a criminal or a degenerate. The Papuans tattoo themselves, decorate their boats, their oars, everything they can get their hands on. But a modern man who tattoos himself is either a criminal or a degenerate. Why, there are prisons where 80 per cent of the convicts are tattooed, and tattooed man who are not in prison are either latent criminals or degenerate aristocrats. When a tattooed man dies at liberty, it simply means that he hasn’t had time to commit his crime... What is natural to children and Papuan savages is a symptom of degeneration in modern man.

I have therefore evolved in following maxim, and pronounce it to the world: the evolution of culture marches with the elimination of ornament from useful objects.

Translated into the situation in which Loos found himself, this meant that Art Nouveau, for all its emancipation from academic formulas, had to be seen as yet another superficial and transitory “style.” a true style for the times would be discovered when ornament was done away with, and essential underlining qualities of form, proportion, clarity and measure were allowed to emerge unadorned. At least, this was what Adolf Loos believed, and there was a generation of later architects ready to follow a similar direction in the search for a supposed universal style for modern times.
"In this view certain aspects have been stressed, such as functional coherence, the absence of ornaments, spatial economy, use of the flat roof on the garden side, the reduction of the external image to a pure white shell. All these aspects are undoubtedly present in the work and, moreover, exerted an unquestionable influence on the stylistic revolution of the postwar years. But, in emphasizing the elements of anticipation, the evolutionistic interpretation has shown its limits, leaving unexplored the theoretical weight and specifics of methodology of Loos's design, which it reduces to a trivial search for functional solutions."
One far from negligible fact that it fails to grasp is that the surprising modernity of the Steiner House is the result not so much of a process of abstraction as of an updated tradition. Proof of this is afforded by just those elements that appear to be the newest ones, such as the total absence of decoration on the outside walls (in fact, plastered with simple lime mortar like the old Viennese houses) or the use of the curved sheet-metal roof (in turn drawn from the local historical building culture).

"In short, the disruptive and innovative character of this work derives from an analytical and selective reflection on history, and not yet from the desire for the denial of history on which the Bauhaus will build its theories after the war, and still less from an adherence to functionalism."

— from Benedetto Gravagnuolo, Adolf Loos: Theory and Works, p.139
CUBISM, DE STIJL AND NEW CONCEPTIONS OF SPACE:
THE INTERNATIONAL STYLE IN ARCHITECTURE

**Inspiration:** mechanical simplicity and structure.
**Principles:** Mondrian’s principles of dynamic equilibrium, basically the balancing of “unequal but equivalent oppositions.”
**Intention:** to induce a feeling of “mystical harmony of humanity in the universe.”
**Color palette:** basic black and white,
**Structural elements:** the steel beams and rails painted in bright primary colors.

This contrast of bright color was set against the white and black surfaces to accent the structure of the building. When a person looked directly at a building that was designed in the International Style of Architecture, they were overcome with the impression that the flat surfaces and segments of the building could be moved at will, simply by sliding them to one side or the other. However this illusion of shift-ability was impossible, as moving any one part would cause the destruction of the whole. Another element of the International Style that was incorporated in this design was the use of continuous windows and reflective surfaces. As light entered through the glass it was reflected by black painted surfaces or mirrored surface that reflected the light back through the glass.
The interior of the International Style building was based on the use of boxes. Simple, clean lines kept the interior of the building structured, but cozy. The upper level of the building was designed to be a "universal space" for all the occupants of the building, or it could be segmented and divided into a variety of living spaces simply by sliding panels out of a wall to create room dividers that could enclose a room. When the segmentation was no longer needed, these panels could be slid back into the wall and the universal space could be reopened for entertaining. This allowed the owner of the house to create the space that best fit their lifestyle and spatial needs.

The Schroder House best demonstrated the International Style of architecture, and this architectural style became so popular around the world, that the style became known as the International Style. The Bauhaus, created by Walter Gropius, incorporated this style into its design.

The building, in fact, is regarded as the best example of De-Stijl Architecture by a majority.
The Rietveld Schröder House constitutes both inside and outside a radical break with all architecture before it.

It was a two-story house, built in a neighborhood, composed of ordinary terraced houses, but Schröder House makes no attempt to relate to its neighbouring buildings.

- Inside there is no static accumulation of rooms, but a dynamic, changeable open zone.
- The facades are a collage of planes and lines whose components are purposely detached from, and seem to glide past, one another. This enabled the provision of several balconies.
- Like Rietveld's Red and Blue Chair, each component has its own form, position and color.
- Colors were chosen to strengthen the plasticity of the facades: surfaces in white and shades of grey, black window and doorframes, and a number of linear elements in primary colors.

Gerrit Rietveld’s Schröder House (1924) looks like a painting by De Stijl artist Piet Mondrian come to life. Flat rectangular plates intersect asymmetrically. Accents of yellow blue and red float in the pale linear composition. Inside the abstract forms continue with railings lamps chairs and tables all relentlessly rectilinear. The house is neither left-wing nor right-wing. It is right angle.
FLEXIBLE PARTITIONS:
Rietveld wanted to leave the upper level as was. For Mrs Schröder, however, in the living area, the design should provide a flexible use of the space, either as open or as subdivided. With a system of sliding and revolving panels, Rietveld achieved that flexibility. When the panels are opened, the living level comprises three bedrooms, a bathroom and a living room. In-between this and the open state is a wide variety of possible permutations, each providing its own spatial experience.

TRADITIONAL PLAN SCHEME:
The ground floor can still be termed traditional: there is a central staircase, and around that staircase, kitchen and three sit/bedrooms are located.

UPPER FLOOR/LIVING AREA:
The living area upstairs was designed as an attic to satisfy the fire regulations of the planning authorities. It, in fact, forms a large open zone except for a separate toilet and a bathroom.

The upper floor can be subdivided into smaller rooms by sliding doors.
Red and Blue Chair designed by Gerrit Rietveld in 1917.

The Red Blue Chair was a chair designed in 1917 by Gerrit Rietveld. It represents one of the first explorations by the De Stijl art movement in three dimensions. The original chair was painted in the familiar De Stijl palette of primary colours - that is, black, grey, and white. However, it was later changed to resemble the paintings of Piet Mondrian when Rietveld came into contact with this artist's work in 1918. Rietveld joined the De Stijl movement in 1919.

The chair currently resides in the Toledo Museum of Art in Ohio. It features several Rietveld joints.
Hoge Stoel Highback Chair, 1919. Gerrit Rietveld (Dutch, 1888-1964) Stained and painted panga-panga wood, (91.7 x 60 x 60 cm).

Side Table, 1923. Gerrit Rietveld (Dutch, 1888-1964) Wood, (60 x 51.8 x 50.2 cm).

Stool, 1923-24. Gerrit Rietveld (Dutch, 1888-1964) Painted wood, (45.1 x 44.1 x 42.9 cm).

Table Lamp, 1925. Gerrit Rietveld (Dutch, 1888-1964) Metal and half-painted glass bulb, (38.1 x 19.7 x 11.4 cm).

Military Side Chair, 1923. Gerrit Rietveld Deal and painted plywood, (89.5 x 40.3 x 51.5 cm), seat h. (45.1 cm).

Zig-Zag Chair, 1934. Gerrit Rietveld Wood, (73.7 x 37.8 x 40.6 cm), seat h. (43.2 cm).


Table Lamp, Central Museum Utrecht
Gerrit Rietveld (Dutch, 1888-1964) Offset lithograph, (59.7 x 59.7 cm).
RESPONSES TO MECHANIZATION: 
THE DEUTSCHER WERKBUND

In Germany, which industrialized later than Britain and France, and experienced some of the opportunities and traumas of the process deeply, there was much debate concerning the ideal relationship between the artist and industry. Broadly speaking there were four main strands of opinion.

- One of these was a direct continuation of Arts and Crafts values in the Kunstgewerbeschulen (Schools of Applied Art), where the belief was maintained that quality goods would be achieved only through a concentration on handicrafts.
- Closely related to this view was a highly individualistic idea of the role of artistic invention which held that authentic forms in architecture could arise only from the imprint of the expressive temperament; this position tended to extend the most subjective aspects of Art Nouveau and led to the “Expressionist” outlook.
- A third position was materialist and down-to-earth by contrast, and tended to hold that the best forms would be those emerging from the logical and direct use of new materials to solve building problems; it was, in other words, functionalist look.
- The fourth position (the one which will principally concern us) tended to regard the functionalist as an uncultivated brute, the Expressionist as an irrelevant remnant of the cult of genius, and the craftsmen as an extinct entity unless directed to the problems of designing objects for mass production. Thus it became the business of the artist/architect to design the “type forms”—be they objects of industrial design, building elements, or pieces of industrial structure—of a new mechanized and, let it be said, German civilization.

It was an ideology in which the artist had to function as a sort of mediator between formal invention and standardization, between personal style and the appropriate form for the Zeitgeist (or ‘spirit’ of the Times), between a sense of the contemporary world and reliance on age—old artistic principles.

One of the most vocal proponents of the fourth position was Hermann Muthesius (author of Das englische Haus), who founded the Deutscher Werkbund in 1907. This organization was set up precisely to forge closer links between German industry and artists, and thereby upgrade the quality of national product design in emulation of what Muthesius had seen in England. From the start this was seen as far more than a commercial matter; rather it was one involving deep probings into the nature of ‘the German spirit’, the role form in history and the psychic life of the nation. Muthesius wrote:

Far higher than the material is the spiritual; far higher than function, material and technique, stands Form. These three aspects might be impeccably handled but—if Form were not—we would still be living in a merely brutish world. So there remains before us an aim, a much greater and more important task—to awaken once more an understanding of Form.

... the re-establishment of an architectonic culture is a basic condition of all the arts... It is a question of bringing back into our way of life that order and discipline of which good Form is the outward manifestation.

Muthesius inherited some concerns of English Arts&Crafts tradition:
- The moral power of design to influence people’s lives
- A sense of integrity in the expression of nature of materials
- A feeling for the dignified embodiment of function, and
- An obsession with the ‘dishonesty’ of false revivalism.

When the Deutscher Werkbund’s ideal to
- “DESIGN FOR MACHINE,” and
- German Idealist tradition (Hegel)
was added to those concerns, the debates was condensed on the following central notion:

It was the destiny of Germany to realize some higher idea in the historical scheme of things, and a related notion that a sort of ‘will-to-form’ with a strong national taint would realize the form of genuine style. Such a style would not then be seen as a merely personal, conventional or wilful matter, but as an inevitable force of destiny: a universal necessity.
As an organization, the German Werkbund was clearly indebted to the principles and priorities of the Arts and Crafts movement, but with a decidedly modern twist. Members of the Werkbund were focused on improving the overall level of taste in Germany by improving the design of everyday objects and products. This very practical aspect made it an extremely influential organization among industrialists, public policy experts, designers, investors, critics and academics.

German architect, designer and painter, Peter Behrens, was the first large-scale demonstration of the viability and vitality of the Werkbund's initiatives and objectives. In 1907, AEG (Allgemeine Elektrizitäts-Gesellschaft) retained Behrens as artistic consultant. He designed the entire corporate identity (logotype, product design, publicity, etc.) in which he reconciled the Prussian Classicist tradition with the demands of industrial fabrication and for that he is considered the first industrial designer in history. Peter Behrens was never an employee for AEG, but worked in the capacity of artistic consultant. In 1910, Behrens designed the AEG Turbine Factory.

From 1907 to 1912, he had students and assistants, and among them were Ludwig Mies van der Rohe, Le Corbusier, Adolf Meyer, Jean Kramer and Walter Gropius (later to become the first director of the Bauhaus.)

AEG Turbine Factory, Peter Behrens, Berlin, 1908-9
One of the earliest designs was for the celebrated turbine factory (1909) in Moabit, Berlin, which used an exposed hinged steel frame—designed with Karl Bernhard (b. 1859)—and unadorned masonry cladding on the gable end to create one of the canonical statements of 20th-century architecture, in which transparency and the rhythms of the industrial process were combined with classical monumentality.

The AEG Turbine Factory of 1908-9 had the character of a temple dedicated to some industrial cult. The colossal tribunes had to be lifted and moved from one end of the hall to the other while work was done on them, a process requiring an uninterrupted central aisle and an overhead moving gantry. Behrens's solution was to make the whole building a series of elegant, parallel two sided cranes meeting at the peak of the roof. There was a grand even ennobling character to the whole, and effects of visual lightness and massiveness were cleverly orchestrated to emphasize the overall lines. Had Behrens been a mere functionalist he might simply have optimized the functions and clothed the resulting structure in cheap materials without concern for proportion let alone the impact of forms on the spirit; had he been an 'Expressionist' he might have sought to dramatize the process of movement with a highly sculptural formal arrangement. But Behrens steered a way between these approaches in a search for a 'sober' and, indeed, 'typical' form in the 'classical / German spirit'.

The gantry shape was blended ingeniously with the image of classical pediment.

The supports and profile were adjusted to give a dignified rhythm and impression of repose.

BUT the usual expectations of load and support were reversed, since these steel stanchions were tapered, being thinner at the bottom than at the top.

The repeated exposed steel supports along the side elevation were given the character of a travele of classical supports.

The vast areas of glass in the main facade were laid flush with the pediment plane, so as to give the sense of a thin screen hovering in front of the massive corner quoins in concrete, which provided a suitable sense of structural stability to eye.
Fan (model GB1) c. 1908.
Peter Behrens (German, 1868-1940)
Painted cast iron and brass. (28.8 x 27.3 x 15.3 cm).
Manufactured by Allgemeine Elektricitäts Gesellschaft (A.E.G.).

A.E.G.- Metallfadenlampe
(A.E.G. - Metal Filament lamps)
Printer: Hollerbaum & Schmidt, Berlin, 1907.
Peter Behrens (German, 1868-1940)
Lithograph, (69.2 x 52.7 cm).
Arthur Drexler Fund.

Electric Kettle 1909.
Peter Behrens (German, 1868-1940)
Nickel-plated brass and rattan, (22.9 x 22.2 x 15.9 cm). Manufactured by Allgemeine Elektricitäts Gesellschaft (A.E.G.).

The Werkbund Exhibition of 1914 was held in Cologne, Germany. Bruno Taut's best-known building, the prismatic dome of the Glass Pavilion familiar from black and white reproduction, was a brightly colored landmark. Walter Gropius and Adolf Meyer designed a model factory for the exhibition. Henri van de Velde designed a model theatre. However, a debate was sparked in which Muthesius argued for industrialized design while van de Velde spoke up for the creative artist and craftsman. After the 1914–18 war the Werkbund moved away from anything redolent of an Arts-and-Crafts position towards the Modern Movement.
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 spaces, hovering volumes and interpenetrating 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 (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.

The Villa La Roche (1923–5), Paris, was commissioned by the Swiss banker Raoul La Roche, whose brief also called 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.
Les 5 Points d’ une architecture nouvelle, 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 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 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.
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 (Le Corbusier 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 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).

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.
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.
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.
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."
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 scape. 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 leading up to the bar and sun terrace.

The amazing roof terrace.
Photos by Pınar and Ezra Ash
Informally known as "Ronchamp", the chapel of Notre Dame du Haut in Ronchamp (French: Chapelle Notre-Dame-du-Haut de Ronchamp), completed in 1954, is one of the finest examples of the architecture of Franco-Swiss architect Le Corbusier and one of the most important examples of twentieth-century religious architecture.
The chapel at Ronchamp is singular in Corbusier's oeuvre, in that it departs from his principles of standardization and the machine aesthetic, giving in instead to a site-specific response. By Le Corbusier's own admission, it was the site that provided an irresistible genius loci for the response, with the horizon visible on all four sides of the hill and its historical legacy for centuries as a place of worship.
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).

THE BAUHAUS: INDUSTRIAL STRENGTH

Although Constructivists in Russia and Futurists in Italy were proposing radical designs around World War I, the style that came to dominate world architecture and define Modernism was born in Germany. The Bauhaus, a state school founded in 1919 “to unite fine and applied arts in a new architecture” was its epicenter.

Bauhaus Modernism was a movement or method, not a style. It proposed simple, streamlined houses for workers, which would be affordable, efficient and well designed. Living in such an environment, it was thought, would improve the human condition and foster an egalitarian society. Mass production was the key. Only standardized components were feasible to fill the urgent need for mass housing quickly and cheaply.

Architects considered themselves as leaders of a social revolution. They would create a new society on the drafting board—social, not just aesthetic, reform. For the first time, great architects concentrated not on designing palaces for royalty or monuments for church and state, but ordinary housing for the common man.

Traits of Bauhaus architecture that proliferated across the globe in high and low-rise structures from 1930 to 1970 were free-plan interiors; use of concrete, glass and steel; stark white cubes; unadorned wall surfaces, strip windows flush with the wall pane; and flat roofs. This “white architecture” was called factory and machine design. Order, regularity, and the sense of space, rather than mass predominated.

Founded in 1919, by the architect Walter Gropius, and shut down by the Nazis in 1933, the Bauhaus brought together artists, architects, and designers in an extraordinary conversation about the nature of art in the age of technology. Aiming to rethink the very form of modern life, the Bauhaus became the site of a dazzling array of experiments in the visual arts that have profoundly shaped our visual world today.

The most influential school of avant-garde art, design and architecture of the twentieth century, the Bauhaus was a vibrant laboratory for defining artistic practice in the modern age. The school made its home in three German cities: Weimer (1919-25), Dessau (1925-32), Berlin (1932-33).

Over its 14-year existence, the Bauhaus had three different directors: Walter Gropius (1919-28), Hannes Meyer (1928-30), and Ludwig Mies van der Rohe (1930-33). While all three directors were architects, its illustrious faculty which included figures such as Lyonel Feininger, Vassily Kandinsky, Paul Klee, László Moholy-Nagy, and Oscar Schlemmer, were drawn from the artistic avant-garde, insuring a dialogue that challenged traditional hierarchies of the arts, placing fine art, architecture, and design on an equal footing.

This structure also encouraged cross disciplinary interpollination.

When the Nazis closed the Bauhaus in 1933, its teachers scattered, spreading the concept of rectangular minimalism across Europe and the United States. Architects like Walter Gropius, Marcel Breuer, Ludwig Mies van der Rohe, and László Moholy-Nagy exiled from Germany, and immigrated to the United States:

- **Gropius and Marcel Breuer taught at Harvard’s Graduate School of Design.** (Gropius banished the study of architectural history at Harvard, fearful that the knowledge of the past would stifle creativity.)
- **Ludwig Mies van der Rohe taught at Illinois Institute of Technology.**
- **László Moholy-Nagy founded the Chicago Institute of Design, and continued his career there.**

**Walter Gropius (German, 1883-1969)** American architect, industrial designer and teacher of German birth. He was one of the most influential figures in the development of the Modern Movement, whose contribution lay as much in his work as theoretician and teacher as it did in his innovative architecture. The important buildings and projects in Gropius’s career—the early factories, the Bauhaus complex at Dessau (1925-6), the Total theater project for Berlin, the housing estates and prefabricated dwellings—were all more than immediate answers to specific problems. Rather, they were a series of researches in which he sought prototypical solutions that would offer universal applicability. They were also didactic in purpose—concrete demonstrations, manifestos, of his theories and beliefs. His theories sought to integrate the individual and society, art and industry, form and function and the part with the whole. He left Germany for England in 1934; three years later he emigrated to the USA, where he continued to teach, write and design for the rest of his life.

Gropius had only five terms of formal training as an architect. The first was in 1903 at the Technische Hochschule, Munich, which was followed by some practical experience in Berlin (1903-4) in the office of Solf & Wichards; the remainder were spent at the Technische Hochschule, Charlottenburg, in 1906-7 and were followed by a series of small independent commissions in Pomerania. In 1908 he entered the Berlin office of Peter Behrens, then acting as design consultant to the Allgemeine Elektrizitäts-Gesellschaft (AEG). Gropius had difficulty in holding a pencil, and he called himself Behrens’s ‘factotum’ rather than architectural assistant. This difficulty in drawing, from which he suffered all his life, had two positive side-effects: a shift of interest from the drawing-board as an end in itself to the process of design and construction as one integrated activity, and a sharpening of his ability to define and analyze problems in architecture and prescribe solutions in principle, with greater clarity and precision than many of his contemporaries. In Behrens’s office Gropius met fellow-assistants Adolf Meyer and Mies van der Rohe and perhaps Le Corbusier, who came to work there in 1910, at around the time that Gropius left.

One can see the effects of the years with Behrens not only through such contacts but also in Gropius’s own realization of the powerful influence of industry, both for architectural patronage and in the building process, and in his appreciation of the architect’s comprehensive role, from graphics and product design to building and urban planning. The synthesis of his enduring fascination with the industrial process and his holistic approach (‘the scope of total architecture’) was already apparent in his ideas for industrial housing outlined in a memorandum presented to the head of AEG in 1910. The following year he joined the Deutscher Werkbund; this was an organization dedicated to that synthesis of art and industry that Gropius himself so ardently advocated.
On leaving Behrens (1910), Gropius opened his own office in Berlin, with Adolf Meyer as his associate. Their practice flourished until interrupted by World War I. Two buildings of this period stand out: the Fagus Factory (1911–13) on the Leine at Alfeld and the model factory of 1914.
The Fagus Factory was a striking example of early modernist architecture.

- The simplified modular treatment of the main façades,
- The extensive use of glass and
- The dramatic omission of piers at its corners

These three features usually stressed as a visual point of stability—made Fagus Factory an innovative landmark in the evolution of the Modern Movement. At the same time, Gropius retained an elemental classicism not only in the ordered regularity of its columned façade, but in the nuances of design:

- the entasis-like treatment of the narrow brick piers,
- the correction of optical illusions in the graduated spacing of the glazing bars and
- the precision of detail of the metal profiles.

At the end of World War I, Gropius returned to a chaotic, revolutionary Germany. He joined the newly formed Arbeitsrat für kunst, becoming its director the same year. Soon afterwards he accepted an offer to head the Kunstschule and the Kunstgewerbeschule in Saxony, which he combined and renamed the Staatliches Bauhaus, Weimar. On assuming directorship of the Bauhaus in April 1919, his main preoccupations became education and the establishment and consolidation of the institution. It was an idealistic institution, and his opening manifesto proclaimed a utopian vision of ways to build, 'which will embrace architecture and sculpture and painting in one unity, and which will rise one day towards heaven from the hands of a million workers'. The immediate reality of the Bauhaus was more modest, its goals more realistic and its scope restricted to the theory and practice of design. Within these parameters its achievements were notable (as demonstrated by the impressive Bauhaus exhibition of 1923).

The Haus am Horn was built for the Weimar Bauhaus's exhibition of July through September 1923. It was designed by Georg Muche, a painter and a teacher at the Bauhaus. Other Bauhaus instructors, such as Adolf Meyer and Walter Gropius, assisted with the technical aspects of the house's design. Gropius stated that the goal of the house's construction was "the greatest comfort with the greatest economy by the application of the best craftsmanship and the best distribution of space in form, size, and articulation."
The Haus am Horn was a simple cubic design, utilizing steel and concrete in its construction. At the center of the house was a living room, twenty-feet square, with specialized rooms surrounding it. Gropius described the rooms design: "In each room, function is important, e.g. the kitchen is the most practical and simple of kitchens -- but it is not possible to use it as a dining room as well. Each room has its own definite character which suits its purpose." Each room had specially-designed furnishings and hardware designed by and created in the Bauhaus workshops. Laszlo Moholy-Nagy, for instance, designed the lights and were made in the metal workshop; Marcel Breuer, a student at the time, designed the furniture, including the built-in cabinetry.
The Bauhaus originated in Weimar in 1919 as a new type of design school. In 1924, when further work in Weimar became impossible, the Bauhaus offered itself up to other towns. That Dessau, an aspiring industrial city in central Germany, was chosen by the Bauhaus Masters over Frankfurt am Main, for example, depended in part on the fact that it could offer the Bauhaus a new school building. Walter Gropius, founder of the Bauhaus in 1919 and its director until 1928, designed the building on behalf of the city of Dessau and in cooperation with Carl Fieger, Ernst Neufert and others in his private architectural practice – the Bauhaus did not have its own department of architecture until 1927. The Bauhaus workshops were integrated within the building’s interior design. The city of Dessau provided money for the new school building on a development site close to the train station and also for the Masters’ Houses, and remained the owner of both properties.

In his design, Walter Gropius refined architectonic ideas he first put into practice before WW I in the construction of the Fagus-Werke in Alfeld an der Leine. In Dessau as in Alfeld, the glass curtain wall suspended in front of the load-bearing framework defines the exterior of the workshop wing and openly shows the constructive elements. Gropius, rather than visually amplifying the corners of the cubic body of the building, allowed the glass surface to overlap the edges, thereby creating the impression of lightness.
The most renown constructions, the "Bauhaus building" and the "Master Houses" were built in 1925-26. Especially the "Bauhaus building", an asymmetrical composition with three wings, strictly lived up to principle of form following function.

Walter Gropius
Bauhaus Building in Dessau, 1925–1926
Busch-Reisinger Museum, Harvard University, Cambridge, Massachusetts

Gropius consistently separated the parts of the Bauhaus building according to their functions and designed each differently. He thereby arranged the different wings asymmetrically – in relation to what is today the Bauhausstraße and the Gropiusallee respectively. In order to appreciate the overall design of the complex, the observer must therefore move around the whole building. There is no central viewpoint.

On the right, behind the curtain wall, lie the "laboratory workshops" of the Bauhaus classrooms, and on the left the wing containing the City of Dessau "Technical College". The raised section above the road housed the administration offices and Walter Gropius’ private architecture practice.

Stairwell in the workshop wing
Photo Klaus Frahm

The glazed, three-storey workshop wing, the block for the vocational school (also three storeys high) with its unostentatious rows of windows, and the five-storey studio building with its conspicuous, projecting balconies are the main elements of the complex. A two-storey bridge which housed, e.g., the administration department and, until 1928, Gropius’s architectural practice, connects the workshop wing with the vocational school. A single-storey building with a hall, stage and refectory, the so-called Festive Area, connects the workshop wing to the studio building. The latter originally featured 28 studio flats for students and junior masters, each measuring 20 m². The ingenious design of the portals between the foyer and the hall and a folding partition between the stage and the refectory, along with the ceiling design and colour design, impart a grandiose spatial coalescence to the sequence of foyer-hall-stage-refectory, shaping the so-called Festive Area. The façade of the students’ dormitory is distinguished in the east by individual balconies and in the south by long balconies that continue around the corner of the building.
Under pressure from the National Socialists, the "Hochschule für Gestaltung" (school of design) at the Bauhaus was closed in 1932. After suffering heavy bomb damage towards the end of the war, the building was provisionally repaired. Designated a protected monument in 1974, it was comprehensively restored for the first time in 1976. The Wissenschaftlich-kulturelle Zentrum Bauhaus Dessau (WKZ), which began to establish a Bauhaus collection and which organised events, introduced an institution that focused on the work of the Bauhaus Dessau into the building. The WKZ merged with two further education institutes in 1987 to form the Bauhaus Dessau, which in 1994 became the Bauhaus Dessau Foundation. With its declaration as a World Cultural Heritage Site in 1996, it was decided to carry out further extensive restoration, which was completed in 2006. Today, the Bauhaus is therefore once more a vital place for experimental design, research and teaching, similarly dedicated to the cultivation and communication of the Bauhaus legacy, and to work on contemporary urban issues.

The Masters' Houses by Walter Gropius, Dessau, 1925-26

The Bauhaus movement needs no introduction; and its importance for architecture, as well as the arts and crafts is indisputable. In 1925, the city of Dessau also commissioned Walter Gropius with the construction of three semidetached houses for the Bauhaus masters and a detached house for its director. The plot lies in a small pine-tree wood. In 1926, Gropius and the Bauhaus masters László Moholy-Nagy and Lyonel Feininger, Georg Muche and Oskar Schlemmer as well as Wassily Kandinsky and Paul Klee were able to move in with their families.

Haus Feininger, The Bauhaus Building, Dessau
As mentioned before, the school’s progressive teachings sought to unite art and production, a philosophy clearly reflected on its own Gropius-designed home. And it is this building, especially the School’s bright colour scheme, designed by Hinnerk Scheper, along with the Bauhaus legacy, that provided an ideal backdrop for our Haus Style, which brings together sharp visual dissections, block colours and geometric shapes.

With this ensemble of buildings, Gropius aimed, using industrially prefabricated and simple “building block” construction elements, to put the principles of efficient construction into practice – both in relation to the architecture and the building process itself. The standardization of construction elements was, however, in view of the technical resources available at the time, only partially realized.

Meisterhäuser Dessau, Haus Kandinsky/Klee

The building soon became a recognizable icon of Classical Modernism, symbolising the movement and underlining through its decoration-free, clean style, a modern approach and a special, fully built-in the architectural solution, use of colour.
The Masters' Houses, Dessau, 1925-26

The houses acquired their form through interleaved cubic corpora of different heights. Vertical rows of windows on the side façades provide lighting for the stairways, while the view of the semidetached houses from the street is characterized by the large glass windows of the studios. The façade of the Director's House was the only one to feature asymmetrically arranged windows. The sides facing away from the street have generous terraces and balconies. The houses are painted in light tones and the window frames, the undersides of balconies and down pipes in stronger colors.

Meisterhäuser Dessau, Haus Kandinsky/Klee

The creation of a row of houses, called the Masters' Houses and planned to be the homes of the School's Director and its professors and guests, was one of the campus' most important additions, transferring the Bauhaus teachings to the residential typology. The houses, which have been occupied since by most of the top professors of the Bauhaus community, like Gropius himself, Paul Klee, Wassily Kandinsky, Laszlo Moholy-Nagy and Georg Muche, were designed as show cases of the pioneering, Bauhaus way of architectural design for living.

Masterhouses Dessau, House Muche/Schlemmer, View South-East
The semidetached houses are essentially all the same: Each half of the house shares the same floor plan, albeit mirrored and rotated by 90°. Only on the second floor do the halves of the houses differ – the western section always features two additional rooms.

All the houses were equipped with modern furniture, and fitted cupboards were integrated between the kitchen service area and the dining room and between the bedroom and the studio. While Gropius and Moholy-Nagy fitted their houses exclusively with furniture by Marcel Breuer, the other masters brought their own furniture with them. The artists also developed their own ideas with respect to the arrangement of color, which, with Klee and Kandinsky, for example, was closely related to their own artistic work.
Ludwig Mies van der Rohe (American, born Germany. 1886-1969) German architect, furniture designer and teacher, active also in the USA. With Frank Lloyd Wright, Walter Gropius and Le Corbusier, he was a leading figure in the development of modern architecture. His reputation rests not only on his buildings and projects but also on his rationally based method of architectural education.

He was born Ludwig Mies but later adopted his mother’s name, van der Rohe. The son of a master stone mason, Mies van der Rohe had no formal architectural education, but now is regarded as the father of all modern architects in a sense.

• In the first half of the 1920s the newly established Weimar Republic offered few opportunities for building in Germany, but progressive developments in the arts were beginning to find a hospitable European centre in Berlin. Mies van der Rohe participated fully in these activities. He directed the architectural division of the Novembergruppe (1921–5), helped to finance and wrote for the magazine G (Gestaltung) and prepared a remarkable series of projects in which he explored the architectural possibilities of the new building materials.

Studies for glass skyscrapers (1919–21), in which multi-faceted glass skins enclosed open skeletal structures, were followed by an equally prophetic seven-storey concrete office building (1922) in which the cantilevered structure is the dominant exterior element, with the windows recessed in continuous horizontal bands.
Two projects for country houses followed in 1923–4, one in brick, one in concrete. In them he developed the concept of decellulization of interior space as initiated by Frank Lloyd Wright.

Many other projects were designed during this period, all to remain unbuilt. The Karl Liebknecht and Rosa Luxemburg Monument to the November Revolution (1926; destr.) in the cemetery at Friederichsfelde in Berlin was a vigorously three-dimensional symbolic wall, composed of recessed and raised overlapping rectilinear blocks of brickwork and carrying a five-pointed star and standard. He designed and built the Wolf House (1926; destr.) at Guben, a finely crafted flat-roofed brick house, and municipal housing in the Afrikanischestrasse (1926–7) in Wedding, Berlin, three- and four-storey buildings with balconies on the south side. The decade closed, however, with two notable achievements.
In 1927, as First Vice President of the Deutscher werkbund, Mies van der Rohe directed one of the most successful of the inter-World War initiatives, the Weissenhofsiedlung exhibition in Stuttgart. He invited the foremost European architects to participate, among them Walter Gropius, Le Corbusier, Behrens, Max Taut and Bruno Taut. Twenty permanent residential buildings for working class were built around his own four-storey steel-framed apartments. They provide a remarkable exhibition of comparative individual interpretations of the new architecture. It was an international showcase of what later became known as the International style of modern architecture.

The German architect Mies van der Rohe was in charge of the project on behalf of the city, and it was he who selected the architects, budgeted and coordinated their entries, prepared the site, and oversaw construction. Le Corbusier was awarded the two prime sites, facing the city, and by far the largest budget.

The twenty-one buildings vary only slightly in form, consisting of terraced and detached houses and apartment buildings, and display a strong consistency of design. What they have in common were their simplified facades, flat roofs used as terraces, window bands, open plan interiors and prefabricated elements which permitted their erection in just five months. All but two of the entries were white. Bruno Taut had his entry, the smallest, painted a bright red.

The estate was designed with tenant participation, and a streamlined building process in mind. Advertised as a blueprint for future workers' housing, in fact each of these houses was customized and furnished on a budget far out of a normal workers reach. The exhibition opened to the public on July 23, 1927, a year late, and drew large crowds. Of the original twenty-one buildings, eleven survive as of 2006.
Modern architecture is usually characterized by:

- White walls, flat roofs, window bands, and open plan interiors;

**IN OTHER WORDS:**

- an adoption of the principle that the materials and functional requirements determine the result
- an adoption of the machine aesthetic
- an emphasis of horizontal and vertical lines
- a creation of ornament using the structure and theme of the building. Not rejection of ornamentation.
- a simplification of form and elimination of "unnecessary detail"
- an adoption of expressed structure
- Form follows function...

We call the architecture of similar embodiments with the common stylistic features of Weisenhoff buildings (such as their simplified facades, flat roofs used as terraces, window bands, and open plan interiors) as **Modern architecture**. We call the period of 1920s and 1930s when only this kind of building was popular as the period of **high modernism**.

It was not, however, until 1929 that Mies’s revolutionary ideas that shaped Modern Movement were finally realized in his German (or Barcelona) Pavilion (destr.; reconstructed 1986), Montjuïc, Barcelona.
It was a last-minute addition to the German section of the Exposición Internacional in Barcelona in 1929 for which Mies van der Rohe and Lilly Reich (with whom he collaborated on exhibition projects) had been given overall design responsibility by the government in 1928. Here Mies van der Rohe used the open (decellurized) plan as an architectural analogy of the social and political openness to which the new German republic aspired. Space-defining elements were dissociated from the structural columns, planning was free and open, merging interior and exterior spaces: unbroken podium and roof planes were held apart by a regular grid of slender cruciform steel columns, giving a clear field for spatial design, using opaque, translucent and transparent walls freely disposed between the columns. These ideas were crucial to all his subsequent work. The rich materials of the space-defining walls, the reflecting pools—in one of which stands a sculpture by Georg Kolbe—and the furniture that he designed specifically for the pavilion (the well-known Barcelona chair, stools and table), all added to the architectonic qualities in a building of great poetic beauty.

Late in 1928, Mies van der Rohe began to design the pavilion that would represent Germany at the 1929 Barcelona International Exposition, the first such event in which the country had participated since its defeat in World War I. The democratically elected postwar government had made its aspirations for the pavilion clear: the building was to represent “our desire to be absolutely truthful, giving voice to the spirit of a new era.” The state made few other demands, leaving Mies free to pursue his most radical architectural expression of free-flowing space, bounded only by rich but abstract surfaces of Tlumian marble, mirror chrome, plate glass, and onyx. Since the pavilion was demolished when the fair was over, relatively few later audiences and architectural critics had ever seen the building except through the filter of period black-and-white photographs, and its significance became largely a matter of thirdhand debate rather than actual experience. In time it came to be interpreted in terms of Mies’s later, more rational work of the 1940s and later, often denoted as simple “glass boxes.” This unfinished and little-published rendering of the interior, however, reveals another attitude, more sensual than objective. To the right of the column whose outlines are sketched in the center of the drawing, Mies carefully renders the view from the main space through a glass wall into the courtyard, with its reflecting pool and a sculpture of a reclining figure. Rather than making the glass look fully transparent, he gives the dark green Tlumian marble different shadings behind the wall and to the left and right of it, approximating the visual effect of the screen of gray glass. Even the reflection of the sculpture in the pool is studiously considered. —Terence Riley
In the years following World War I, Germany started to turn around. The economy started to recover after the 1924 Dawes Plan. The pavilion for the Universal Exhibition was supposed to represent the new Weimar Germany: democratic, culturally progressive, prospering, and thoroughly pacifist; a self-portrait through architecture. The Commissioner, Georg von Schnitzler said it should give “voice to the spirit of a new era”.

This concept was carried out with the realization of the “free plan” and the “floating room”.

The pavilion stood for barely six months before being dismantled and all its reusable elements being sold. The photograph shows the reconstruction which has since been built. The pool of its marble-lined courtyard features the sculpture “Der Morgen” (The Morning) by Georg Kolbe.

Ludwig Mies van der Rohe
German Pavilion at the International Exhibition in Barcelona, 1929
Plan
Mies wanted this building to become "an ideal zone of tranquility" for the weary visitor, who should be invited into the pavilion on the way to the next attraction. Since the pavilion lacked a real exhibition space, the building itself was to become the exhibit. The pavilion was designed to "block" any passage through the site, rather, one would have to go through the building. Visitors would enter by going up a few stairs, and due to the slightly sloped site, would leave at ground level in the direction of the "Spanish Village". The visitors were not meant to be led in a straight line through the building, but to take continuous turnabouts. The walls not only created space, but also directed visitor's movements. This was achieved by wall surfaces being displaced against each other, running past each other, and creating a space that became narrower or wider.

Mies after USA

In 1938 Mies van der Rohe settled in Chicago and took up an appointment as Director of the Architecture Department of Armour Institute, which in 1940 became the College of Architecture, Planning and Design at Illinois Institute of Technology. He also re-established his architectural practice and for the next 20 years he divided his time between it and his teaching duties. His work in both capacities reflected a philosophy of architecture, based upon Thomas Aquinas's proposition that reason is the first principle of all human work. It led him to question open speculation and personal expression as the main bases for creative architecture and to follow certain general principles that he learnt from the buildings of the great architectural epochs of the past; namely that architecture is derived from, and eventually becomes an expression of, the significant forces that combine to determine the ethos of an epoch or a civilization, that architecture's physical realization is accomplished through the use of clear construction, elevated to a higher plane through an understanding of the art of building—Baukunst; that a language of architecture gradually evolves during the epoch in response to the epoch's particular needs and means, guided by a grammar based upon the principle of structure—the morphological and organic relationship of things that permeates the whole building fabric, illuminating each part as necessary and inevitable. At Illinois Institute of Technology (IIT) he set up a curriculum based on these principles and the belief that ‘The function of education is to lead us from irresponsible opinion to truly responsible judgement; and since a building is a work and not a notion, a method of work, a way of doing should be the essence of architectural education’ (Carter, 1964, p. 141).
Mies's first high-rise building...The design principles first expressed in 860-880 Lake Shore Drive were copied extensively, and are now considered characteristic of the modern International Style. The towers were not entirely admired at the time they were built, yet they went on to be the prototype for steel and glass skyscrapers worldwide. 860-880 Lake Shore Drive Apartments embody a Modernistic tone with their verticality, grids of steel and glass curtain walls (a hallmark of Mies' skyscrapers), and complete lack of ornamentation. Since Mies was a master of minimalist composition, his principle was "less is more" as it is demonstrated in his self-proclaimed "skin and bones" architecture.

These buildings show clearly Mies van der Rohe's development and refinement of a structural aesthetic based on an open flexible plan. In contrast to many of his contemporaries, Mies van der Rohe profoundly questioned the concept 'form follows function' 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 the frequent need to revise the arrangement of living and working spaces. Thus, within a concept of overall size and complexity of function taken in generalized terms, he chose to develop and work within three trabeated building types: the low-rise skeleton frame building, the high-rise skeleton frame building, and the single-storey clear-span building. In all these types those 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, leaving the peripheral areas available for the flexible arrangement of classrooms, workshops, laboratories, offices, flats or exhibition spaces as the particular building's function required.

Refinement of the high-rise building type moved from the reinforced concrete structural frame with brick and glass infill at Promontory Apartments, to the fireproofed steel structural frame enclosed by a skin of black-painted steel mullions, column and floor fascia plates with clear glass at the 26-storey 860 Lake Shore Drive Apartments, through to the prestigious Seagram Building with its skin of bronze mullions, floor fascia plates, glazing frames and louvres, with tinted glass and marble. The former visually expressed both columns and floors externally, the latter expressed the floor lines and the corner and ground-floor columns. the skin follows the Seagram Building's solution but comprises black-painted steel components with aluminium glazing frames and louvres, with tinted glass. There are also subtle differences in proportions between bay sizes and the positioning of projecting mullions to express scale in terms of an overall category of use or to take account of the building's magnitude.
Following a number of unrealized projects, the first built example of Mies van der Rohe’s single-storey clear-span building was the Farnsworth House, Plano, IL—one of the best-known houses of the 20th century. The house, which is raised above the ground against the Fox River’s spring flooding, comprises a classically proportioned and finely crafted white steel structure with rectangular floor and roof planes cantilevering beyond externally positioned ‘I’ section columns—the space between being subdivided into interior and exterior living areas.

The house has a distinctly independent personality, yet also evokes strong feelings of a connection to the land. The levels of the platforms restate the multiple levels of the site, in a kind of poetic architectural rhyme, not unlike the horizontal balconies and rocks do at Wright’s Fallingwater.

Homework:
What is the philosophy of the Farnsworth House???
(this might be an exam question, study at home...)

The Farnsworth House addresses basic issues about the relationship between the individual and his society. Mies viewed the technology-driven modern era in which an ordinary individual exists as largely beyond his control. But he believed the individual can and should exist in harmony with the culture of his time to successfully fulfill himself. His career was a long and patient search for an architecture that would be a true expression of the essential soul of his epoch, the Holy Grail of German Modernism. He perceived our epoch as the era of industrial mass production, a civilization shaped by the forces of rapid technological development. Mies wanted to use architecture as a tool to help reconcile the individual spirit with the new mass society in which he exists. His answer to the issue is to accept the need for an orderly framework as necessary for existence, while making space for the freedom needed by the individual human spirit to flourish. He created buildings with free and open space within a minimal framework, using expressed structural columns. He did not believe in the use of architecture for social engineering of human behavior as many other modernists did, but his architecture does represent ideals and aspirations. His mature design work is a physical expression of his understanding of the modern epoch. He provides the occupants of his buildings flexible and unobstructed space in which to fulfill themselves as individuals, despite their anonymous condition in the modern industrial culture. The materials of his buildings, no-nonsense industrial manufactured products like mill-formed steel and plate glass, certainly represent the character of the modern era, but he counter-balances these with traditional luxuries such as Roman travertine and exotic wood veneers as valid parts of modern life. Mies accepted the problems of industrial society as facts to be dealt with, and offered his idealized vision of how technology can be made beautiful and can support the individual. He suggests that the downsides of technology decried by late 19th century critics such as John Ruskin, can be solved with human creativity, and shows us how in the architecture of this house.
The house is anchored to the site in the cooling shadow of a large and majestic black maple tree. As Mies often did, the entrance is located on the sunny side, facing the river instead of the street, moving visitors around corners and revealing views of the house and site from various angles as they approach the front door. The simple elongated cubic form of the house is parallel to the flow of the river, and the terrace platform is slipped downstream in relation to the elevated porch and living platform. Outdoor living spaces are extensions of the indoor space, with a screened porch (screens now gone) and open terrace. Yet the man made always remains clearly distinct from the natural by its geometric forms, highlighted by the choice of white as its primary color.

Glass walls and open interior space are the features that create an intense connection with the outdoor environment, while the exposed structure provides a framework that reduces opaque exterior walls to a minimum.

The careful site design and integration of the exterior environment represents a concerted effort to achieve an architecture wedded to its natural context.

Mies conceived the building as an indoor-outdoor architectural shelter simultaneously independent of and intertwined with the domain of nature.

Reconnecting the individual with nature is one of the great challenges of an urbanized society. The 60-acre (240,000 m²) rural site offered Mies an opportunity to bring man’s relationship to nature into the forefront. Here he highlights the individual’s connection to nature through the medium of a man-made shelter. Mies said: “We should attempt to bring nature, houses, and the human being to a higher unity”.

Eight white-painted steel beams support the floor and roof slab and raise the house above the flood-endangered river plain. Placed in front of the house is a laterally-offset terrace platform; wide steps connect the different levels. The interior, glazed from floor to ceiling throughout, is articulated only by a core of precious wood containing kitchen and bathroom facilities. A free-standing wardrobe separates the sleeping area from the living area.
In the interior area (enclosed by large sheets of plate-glass and paved with Roman Travertine marble), living, sleeping and kitchen spaces are subtly defined around a free-standing wood-panelled core housing bathrooms and services. The exterior area, also paved with Travertine, forms a protected terrace, and this is connected by a flight of steps to a lower open floating terrace and similar steps to the ground. There is no suggestion of a contrived formal relationship between the house and its natural surroundings, and the building’s occurrence in the landscape would seem almost fortuitous were it not for the harmony achieved between it and the terrain. Its independence of, and at the same time interdependence with, its surroundings creates a convincing and moving image in a technological era and is prophetic of the handling of the relationships of buildings to context in many future projects.

As a microcosm of the mature work of Mies van der Rohe the Farnsworth House has all the elements of the developed clear-span single-storey building type as exemplified by the larger Crown Hall (College of Architecture) at IIT and the new Nationalgalerie (1962–8), Tiergarten, Berlin. The former has a rectangular steel roof structure carried by external steel plate girder portal frames; the latter has a square steel roof structure supported in a cantilevered manner by eight peripherally located steel cruciform columns.
Centrally located on the campus of the Illinois Institute of Technology, four miles south of downtown Chicago, Illinois, the building houses the architecture school. The two level building is configured as a pure rectangular form, enclosing a column free interior space on the upper level sitting above a sunken lower level. The roof is supported by exposed steel columns supporting exterior steel girders visible above the roof.

Crown Hall is characterized by an aesthetic of industrial simplicity, with clearly articulated exposed steel frame construction. The steel frame is infilled with large sheets of glass of varying qualities of transparency, resulting in a light and delicate steel and glass facade wrapping the open plan, free flowing interior of the upper level. While the lower level consists of compartmentalized rooms, the high upper floor level, occupying almost 50% of the total area of the building, is dedicated to a single glass-enclosed architecture studio space. Mies called it a "universal space", intended to be entirely flexible in use.

In many of Mies van der Rohe's buildings his introduction of externally projecting steel, aluminium or bronze 'I'-shaped mullions, the projection of structure is said to be "a modern interpretation of the Greek, Roman and Gothic principle of manifest structural order." As in classical buildings, Mies's designs stands out with a greater perfection succeeded by subtle improvements in proportion and detailing rather than by radical changes in overall expression. This is what we called "an immediately recognizable Miesian look."
Because Mies van der Rohe developed his concept of architecture in a logical manner from one building to another, his work as a whole is endowed with a unity of purpose and expression. Regardless of magnitude or function the works belong together as a coherent group and speak with a single architectural language. This consanguinity is due to a number of factors: structural systems have been selected in accordance with the overall requirements of the building's functions, and their components are revealed, either actually or symbolically:

- **non-load-bearing external skins and interior space-defining divisions** are articulated separately from stressed members, leaving no doubt as to what is structural and what is not;
- **materials, whether natural or industrially produced**, are used in such a way as to acknowledge the nature of each;
- **visible modules** represent subdivisions of the structural bays in relation to function and provide a tool for internal planning and a practical inducement to flexibility in use;
- **careful and thorough detailing** exemplifies to the user the visual refinement called for in the further division of space;
- **subtle proportions** result from visual judgments, not systems;
- **provisions are made for expressive response** to changing conditions of light and weather.

In Mies van der Rohe’s hands the critical interaction between building function, construction and structure, which is at the heart of architecture, frequently touched true poetic expression.

One cannot deny Mies’s influence on the architects practising after World War II. He believed architecture to be a historical process, and that in consequence architects should recognize relationships between the significant facts of their own epoch and the ideas that are capable of guiding these facts in a direction beneficial to society in general. In his own work he tried to reach a practical synthesis of this ideal with the disciplines set by the principle of structure: he tried to evolve a truly contemporary language for architecture, a language that comes from the past yet is open to the future.
International Style in Italy: Rationalism

• Modern architects reacted against the architecture of the 19th century, which they felt borrowed too heavily from the past. They found this architecture either oppressively bound to past styles or cloyingly picturesque and eclectic. As the 20th century began they believed it was necessary to invent an architecture that expressed the spirit of a new age and would surpass the styles, materials, and technologies of earlier architecture. This unifying purpose did not mean that their buildings would be similar in appearance, nor that architects would agree on other issues.

• The institutionalization of Modern Architecture in Italy had a political philosophy and ideology since its first inauguration. Deeply linked to Futurism, institutionalized on the dialectics of the Italian avant-garde culture with the mayhem of Fascism, each phase of the Italian modern architecture was signified under an “-ism” that epitomized its doctrinaire nature for Italian culture.

• The permeation of Modern Movement into the realm of Italian architecture was due to a political aphorism, urging a ‘return to order’ by doctrinaire ideals.

Giuseppe Terragni (April 18, 1904 - July 19, 1943) was an Italian architect who worked primarily under the fascist regime of Benito Mussolini and pioneered the Italian modern movement under the rubric of Rationalism. One of his more famous works is the Casa del Fascio built in Como, northern Italy, which was begun in 1932 and completed in 1936; it was originally built in accordance with the International Style of architecture and frescoed by abstract artist Mario Radice. Terragni, together with a group of friends, called themselves “Gruppo 7.” They were against:

* the Futurists’ destructive fury
* the pretense of Art Nouveau
* the decorative expedience of neoclassicism.

The Group defined their position as "Razionalismo", Rationalism.
Modern architects also differed in their understanding of historical traditions. While some abandoned historical references altogether, others used careful references to the past to enhance the modernity of their designs. Italian architect Antonio Sant'Elia resoundingly rejected traditional architecture in his *Futurist Manifesto* of 1914. He called for each generation to build its houses anew and celebrated glass, steel, and concrete as the materials to make this possible.

The modern designs of Giuseppe Terragni, on the other hand, referred explicitly to the past. Terragni’s *Casa del Fascio* (Fascist Party Headquarters, 1932-1936) in Como, Italy, featured an inner atrium for public assembly inspired by the courtyards of Italian Renaissance palaces, and windows laid out according to ancient Greek and Roman theories of ideal architectural proportions. Terragni saw tradition as providing ideal building blocks for a new architecture. But the building’s concrete and steel construction and its sleek, unornamented form expressed a thoroughly modern aesthetic.
Terragni, in Casa del Fascio, did not reject to refer to the past practices, but his references were modern interpretations of the past’s essential elements for current purposes.

"The landmark of modern European architecture. This building describes the creative spirit of Terragni within the context of the rationalist vocabulary. It is an early testament of style, which might explain why, fifty years later, it is the object of passionate studies. It is a perfect prism with the side 33.20 meters long and 16.60 meters high. It represents a startling point of such rigidity as to encourage a struggle against any classicist potential. The square and the prism are in fact the basic principles of the purism of Le Corbusier. In the building it is these principles that are being questioned because the main volume is not on ‘pilotis’ and the facades are not free from the structural framework, in fact, they are involved with it, so as to achieve a layered depth. The pulling back of the entrance and breaking up of the top make certain that the building attains a transparency...The human scale and the horizontal prevail.”

— Bruno Zevi, Giuseppe Terragni p70, 74.