THE FIRST HALF OF THE TWENTIETH CENTURY IN THE UNITED STATES: THE STORY OF MODERN ARCHITECTURE

LOUIS SULLIVAN: Father of Modern Architecture

Sullivan and his partner, Dankmar Adler, were preeminent among Chicago School. Their buildings were not only functional examples of metal frame technology, but successful artistically in unifying a skyscraper’s repetitious components.

The Wainwright Building (1890) is a ten-story, steel-skeleton structure that emphasizes verticality with, for the first time, an aesthetically effective shell. A major landmark in American architectural history, the Wainwright building was hailed by Frank Lloyd Wright, as the first structure with “height triumphant.”

Sullivan influenced a generation of architects by designing the modern skyscraper as an organic whole. “Form ever follows function” was his credo. He said: “Whatever is beautiful rests on the foundation of the necessary.”

He delineated three major visible sections in his works:

- A strong base with broad windows for shops,
- A middle section for offices with vertical elements to dramatize height, and
- A capping cornice housing mechanical equipment.

The tripartite division corresponds to practical requirements.
The Guaranty Building (1895-96) with its giant arches, even more gracefully meets the challenge of imposing coherent visual organization on a tall tower. Here, Sullivan doubled the number of vertical piers (every other pier is not load bearing) to express not just function but as a design element forcing the eye to read the middle ten floors as one continuous, soaring unit. If buildings by other Chicago architects were a frank expression of their frame, Sullivan’s were a revelation of function and ingenuity.

In Sullivan’s treatment of Guaranty Building, the whole seems to grow organically. He clad its strong simple form in floral ornament, which he likened to “poetic imagery.” With a deft touch, Sullivan transformed pure structure and function into an aesthetic statement.
Although Sullivan studied at the famous Ecole des Beaux-Arts in Paris, he was believing in the necessity to create a national architecture. For him, for an American architecture, new forms should be invented, and new ornaments should be found that does not refer to any past period. Sullivan called for “a Democratic vista,” incorporating “the undreamed of, a versatility, a virtuosity, a plasticity as yet unknown!”

To create this bold new architecture, Sullivan drew on both the beauty of nature, and the dynamism of the new metropolis. Unlike his peers, he consciously avoided of European influence. He wrote:

“If American architecture ever succeeds in meaning anything, it will mean American life.”

He aspired to endow the tall commercial building with “sensibility and culture”.

The decoration with coiling cast iron ribbons in an Art Nouveau pattern:

The twisting tendrils, designed by Sullivan, interface around the building to provide visual interest and relief from the building’s unadorned bulk.
The details from inside

If we review the characteristics of Chicago Style, the most important items were as follows:

- Use of new material, new building techniques
- Elimination of historical ornaments
- Inventive and fresh surface decoration
- Expression of structure
- Abundance of antique styles
- Expression of building’s commercial purpose: FUNCTION

As a result, LOUIS SULLIVAN (1856-1924) is considered as the father of American Modern architecture.

He saw that the new vertical towers demanded wholly a new aesthetic. He was one of the earliest to use the steel frame, and he insisted on the necessity to express and recognize the inner grid, made of steel, through the form of exterior facade.

Therefore, the exteriors of his designs echoed: not only the building’s function, but its interior skeleton. He was believing in the necessity to create a national architecture. For him, for an American architecture, new forms should be invented, and new ornaments should be found that does not refer to any past period. He rejected antique styles, and the 19th century European architecture, but did not avoid using ornamentation. He wrote:

“Ornament, when creative, spontaneous, is a perfume.”
In the United States Frank Lloyd Wright also rejected 19th-century European architecture. He was a student of Sullivan. He attributed his new architectural concepts to educational building blocks he had played with as a child, to Japanese architecture, and to the prairie landscape on which many of his houses were built. Yet the fireplaces with adjacent seating that occupied a central position in his houses referred to the very distant past, when tending and maintaining a fire was essential for human survival.

In Wright’s houses, few dividing walls separated rooms and one room seemed to flow into the next. Wright's open design was extremely influential, and variations of it were used, not only for the houses of the wealthy, but for apartments and middle-class homes in Europe and the United States.

The Chicago Years:

Student of Sullivan: In 1888 he took a drafting job with the firm of Adler and Sullivan where he worked directly under Louis Sullivan for six years. Sullivan was one of the few influences Wright ever acknowledged. Sullivan, known for his integrated ornamentation based on natural themes, developed the maxim "Form Follows Function" which Wright later revised to "Form and Function Are One."

Sullivan’s legacy for “An American Architecture” : Sullivan also believed in an American architecture based on American themes not on tradition or European styles -- an idea that Wright was later to develop. Wright and Sullivan abruptly parted company in 1893 when Sullivan discovered that Wright had been accepting commissions for "bootleg" house designs on his own, a violation of an earlier agreement between the two. Many years later, the two renewed their friendship. Wright often referred to Sullivan as his "Lieber Meister," or beloved master.
Organic Architecture and the Prairie Houses:

Wright believed that architecture should create a natural link between mankind and his environment. "Organic architecture" as Wright came to call his work, should reflect the individual needs of the client, the nature of the site, and the native materials available. Some of Wright's most notable designs during this period were for "Prairie Houses." These houses reflected the long, low horizontal Prairie on which they sat:

- They had low pitched roofs, deep overhangs, no attics or basements, and generally long rows of casement windows that further emphasized the horizontal theme.
- He used native materials and the woodwork was stained, never painted, to bring out its natural beauty. This was his first effort at creating a new, indigenous American architecture.
- Other Chicago architects were also working in this same manner and the movement became known as "The Prairie School".

Wright's first revolutionary masterpiece from his own practice was the Winslow House built in 1893 in River Forest, Illinois. This home for his first client, William Winslow, clearly portrayed Wright's direction in architecture with its expansive, open proportions. This drawing of the Winslow House was prepared in 1910 for use in the portfolio of Wright's drawings published in Germany by Ernst Wasmuth. (Drawing copyright © 1985 the Frank Lloyd Wright Foundation.)

Wright and his thought on the “Art and Craft of the Machine”

Wright also began to give public lectures and to write about his thoughts on architecture. His most famous talk, "The Art and Craft of the Machine" was delivered in 1901 at Hull House in Chicago. It marked the first decisive acceptance of the machine by an American architect and was widely hailed.

The Arts and Crafts Movement, popular at the time, believed that much of the decline in quality craftsmanship was directly attributable to the machine. Wright, by contrast, embraced the machine and urged its use, not to imitate fancy hand-carving, but to bring out the simplicity and beauty of wood. This emphasis on simplicity and his insistence that natural materials be treated naturally, was a hallmark of his work.

Some of Wright's most important works at the time were:
1) the Martin House in Buffalo, New York (which introduced the horizontal bands of windows, a prominent feature of his later houses);
2) the Robie House in Chicago, Illinois (one of Wright's most celebrated Prairie houses);
3) the Larkin Building in Buffalo, New York (for which Wright developed several innovations such as wall-hung water closets and the first metal furniture); and
4) Unity Temple in Oak Park, Illinois (America's first important architectural work in poured concrete.)
The Robie House is one of the best known examples of Frank Lloyd Wright's Prairie style of architecture. The term was coined by architectural critics and historians (not by Wright) who noticed how the buildings and their various components owed their design influence to the landscape and plant life of the Midwest Prairie of the United States.
Typical of Wright's Prairie houses, he designed not only the house, but all of the interiors, the windows, lighting, rugs, furniture and textiles. As Wright wrote in 1910, "it is quite impossible to consider the building one thing and its furnishings another. ... They are all mere structural details of its character and completeness." Every element Wright designed is meant to be thought of as part of the larger artistic idea of the house.

Wright explained his **design philosophy**:
“Nature builds a tree from the inside out. That is what organic architecture is. It is building the way nature builds.”

The typical Prairie style home is distinguished by:

1) a horizontal line emphasized on the exterior by a low-pitched hipped roof,
2) long bands of windows,
3) wide overhanging eaves and brick courses or wood bands.

Inside,
1) The floor plan is open and radiates outward from a central fireplace.
2) Furnishings are not secondary elements, but integral to the design, and hence often consist of built-ins.
3) Construction materials and finishes are natural, and
4) Ornamentation is often restricted to art glass windows that function as "light screens," blurring the distinction between interior and exterior spaces.

Plan of Robie house is a typical example of Wright's **open design**:
Few dividing walls separated rooms and one room seemed to flow into the next.

• Wright started with the **concept of free flowing space**, then designed a structure not only to blend with the natural site but to maximize interaction between indoors and out.

**• free flowing space**

**• interaction between indoor and outdoor**
Wright and the draftsmen in his Oak Park studio reacted against the historical revivalism prevalent in American architecture at the time and sought to create an indigenous architectural style that combined functionality and beauty, and reflected the natural surroundings. They succeeded in redefining American residential architecture:

Frank Lloyd Wright's inspiration for an indigenous, local architecture had its roots in the flat, expansive prairie landscape of the American Midwest where he grew up:

“The prairie has a beauty of its own and we should recognize and accentuate this natural beauty, its quiet level. Hence, gently sloping roofs, low proportions, quiet sky lines, suppressed heavy-set chimneys and sheltering overhangs, low terraces and out-reaching walls sequestering private gardens,” he wrote, listing some of the characteristics of what came to be known as the Prairie style of architecture.

- The roof lines of Robie House are long and low, like the flat prairies that stretch through the Midwest.
- The space seems to extend visually through bands of windows and out to verandas and terraces.
- Cantilevered roofs parallel the ground to further the impression of sweep and spread.
THE INTERIOR DESIGN OF ROBIE HOUSE:

Frank Lloyd Wright contracted with interior architect George Mann Niedecken to manage the project. The basic philosophy that Wright and Niedecken shared was:

creating a home as one unified composition from exterior to interior.

The color scheme of living and dining rooms involved subtle pinks, warm yellows, and earth tones which were the colors Wright used for the art glass windows.

Inspired by Wright’s walls of art glass windows, Niedecken identified a range of hues from yellow to red ochre for the interior paint colors. He supervised an artistic treatment of paint applied to the textured-plaster walls and ceilings to create a variety of tone.

Therefore, the artistic treatment of the Robie House interior did not call for murals. There was an understanding between Wright and Niedecken that the decorative scheme was to be developed through the use of furnishings, art glass, rugs, and painted plaster. Each of these components is drawn into a singular harmony with ornamentation being executed through the use of a complex color palette, and a modernistic thrust toward reducing superfluous decoration, while emphasizing the integrity of materials.
As a result, the scope of Frank Lloyd Wright was to break out of the box-like structure of the Victorian house. His success was to blur the line between interior and exterior spaces by using groups of art glass windows as "light screens." He wrote in his autobiography, "Now the outside may come inside, and the inside may, and does, go outside."

Integration of glass, wood, and paint color in the dining room prow. Frank Lloyd Wright, architect. Frederick C. Robie House.

Anchored by a central stone hearth and chimney, interior space flows from room to room without walls or doors.

The 174 art glass windows are a key part of the design. Wright's windows usually wrap around the entire surface of the house. Their complex geometric patterns are often abstract representations of nature. Composed of pieces of clear and colored glass, the "light screens" enliven the light as it filters in, yet provide privacy to the dweller within the house.
To weave the sprawl together, interior trim (usually bands of oak) links the radiating channels.


Frank Lloyd Wright Home and Studio, Oak Park, Illinois, 1889–1909
Frank Lloyd Wright Home and Studio, Oak Park, Illinois, 1889–1909
The interior of Frank Lloyd Wright Home and Studio.
Oak Park, Illinois, 1889–1909
Dining Room of the Frank Lloyd Wright House and Studio in Oak Park, Illinois


The Frank Lloyd Wright Room also exemplifies one of Wright's most important contributions to modern architecture: the idea of spatial continuity.
Living room from the Little House, Wayzata, Minnesota, 1912–14

Source: Frank Lloyd Wright: Living room from the Little House, Wayzata, Minnesota (1972.60.1) | Heilbrunn Timeline of Art History | The Metropolitan Museum of Art

Unity Temple

in Oak Park, Illinois, 1905-1908

Unity temple is a church, designed by Wright, in which one could sense the spirituality but it is not like that found in most churches. the darkness and the theological ornamentation that was typical of church interiors was interpreted by Wright with modern motives, inspired by basic design principles and the use of material.
In fact, when Wright broke the box of Victorian architecture, with its tiny rooms closed off by walls and doors, he released new spatial possibilities:

**Space became a sculptural element, that could be energized, interlocking vertical and horizontal voids.**

He sought for a **unity** in space: His revolutionary use of poured concrete (adopted for budgetary reasons) created a huge unity of flowing space unified by ornamental banding.

"I discovered something tremendously important," Wright recalled. "That the reality of the building did not consist in the walls and roof of that structure but in the space in here to be lived in."
Wright’s career was jumpstarted in 1937, when at the age of nearly seventy, he created his masterpiece, Fallingwater. No building better illustrates the idea of organic architecture. The home seems an extension and amplification of the cascade it straddles.

Its owner, E. J. Kaufmann, when he saw the plans, exclaimed to Wright, “I thought I would place the home near the waterfall, not over it.” Wright replied, “I want you to live with the waterfall, not just look at it, and for it to become an integral part of your lives.” Architecture, the egoistic Wright explained, takes “guts. People will come to you and you tell what they want, and you will have to give them what they need.”
Fallingwater is unquestionably a triumph of daring. A boulder in the stream bed, which the Kaufmann family used to picnic on, became the fulcrum of design. Embedded in the floor in front of the hearth, the boulder is the still point from which all cantilevers radiate out. Perpendicular stacked shelves of concrete terraces hover over the waterfall. The buff color (Wright originally wanted gold leaf) of the terraces echoed the rock. Rusticated masonry forms the chimney and the walls, looking like natural ledges. The balconies’ horizontal sweep is balanced by the vertical uplift of the chimney core, which anchors the house to the ledge and reflects the falls.
Johnson Wax Administration Building
in Racine, Wisconsin, by Wright 1936-1939

Frank Lloyd Wright
Administration Building for S.C. Johnson & Son Co. in Racine, Wisconsin, 1936-1939
Exterior view
A totally different, but no less innovative design was the **Johnson Wax Administration Building** in Racine, Wisconsin. Its magical interior creates a sense of a protected community, an ideal workplace where space is allotted according to egalitarian principles. All curves, the huge interior is one vast work area. A ceiling of glass tubing between circle-topped columns admits diffused light to give a submarine glow to the interior. The form of Wright’s sixty columns (each 30 feet high) has been compared to lily pads or golf trees. Although fanciful, they serve a practical function. The hollow tubes are storm drains.

**Johnson Wax Administration Building**, Racine, Wisconsin, by Wright 1936-1939

Wright became interested in curves as a means of generating design. His commitment into democratic architecture produced this ideal communal working place. For Wright, decoration is integral, not applied. He designed all circular furnishings and fittings to harmonize with the structure.
GUGGENHEIM: GO WITH THE FLOW

Completed the year of his death (1959), the Guggenheim Museum reveals yet another incarnation of Wright as a discoverer of form. In it he finally achieved a building of continuously rolling space. Its helix gradually expands in a spreading spiral ramp for ultimate flow. The interior is an ocean of space capped by a skylight dome.