

Frank Lloyd Wright: Masterworks in the Midwest

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Bill Keene Study Leader



Unity Temple, Oak Park, Illinois –constructed 1905-1908. Designated a UNESCO World Heritage Site 2019

Frank Lloyd Wright is generally recognized as one of the most innovative, influential, and important architects of the twentieth century. He was a pioneer in innovative design and the use of new materials and of adapting materials to new applications. Wright introduced the open floor plan, championed the blending of the built environment with Nature through extensive use of glass, wood and an intimate sense of scale that combined to dissolve the barrier between his creations and their setting. Wright was well known and respected in Europe before he was generally known at home. Both his personal and professional life have elements of triumph and tragedy. By the time he died in 1959 he was one of the most famous architects in the world and his fame remains undiminished even now more than 65 years after his death.

What follows essentially ignores substantial aspects of Wright's personal life, focusing instead on his career, those who influenced him, his evolving style, the multiple phases of his career, and his pursuit of an American style of architecture unique to his time and place and not derived from or beholden to historical precedents. .

Following that overview of Wright's career, are brief descriptions of the buildings we will visit during the tour: the Wright Home and Studio in Oak Park, 1889-1898, the S.C. Johnson Corporate Headquarters by Wright, 1939-1947, the Pettit Chapel 1907, the Laurent House 1952 and "bootleg" houses from 1892, as well as the Edith Farnsworth House by Mies van der Rohe, 1946-1951 and the Auditorium Building, 1889 not included on this tour but an important site in Wright's development working for Louis Sullivan whom Wright considered his mentor.

A key aspect of this tour will be visits to four of the buildings by Wright added to the UNESCO World Heritage List in 2019. The final section of the handout discusses in some detail each of the eight Wright buildings added to the UNESCO List, not simply the four we will visit. The material was excerpted from the justification component of the nomination process for the eight buildings.

Wright's Early Life and Influences

Frank Lincoln Wright was born at a pivotal time in American history, two years after the end of the Civil War and two years before the completion of the first transcontinental railroad. During the more than nine decades of his life, Wright witnessed unprecedented changes that reshaped America, taking it from a largely rural agrarian economy to a major industrial force and leading world power. At the time of his birth the major technological developments of the steam engine and the telegraph were already changing how business, industry, and government operated and impacting social interactions as well; railroads helped unite the nation by cutting travel times to the West by weeks or months, hastening the closing of the frontier. The telegraph began the move toward instantaneous communication, and both transformed how distances were perceived. Before Wright's life reached its halfway point, inventions like the telephone, electric light, and internal combustion engine were profoundly changing business, industry, and society. During the second half of his life, the pace of change accelerated impacted by the Great Depression, two World Wars, changing patterns of family life, women achieving the right to vote, radio, television, motion pictures, and the splitting of the atom. Wright died only a decade before the first landing on the moon took place.

Wright's father, while well-liked as a minister and music teacher, failed to achieve financial success, remaining unsuccessful as he sought to enhance the family's financial security both as a minister and teacher. The family settled in Iowa, Massachusetts, and several other locations before moving back to Wisconsin in 1877 about the time Wright was ten years old. There the family remained in Madison for several years and Wright spent summers working on the farm of his uncle James. While he complained about and deeply disliked the hard work, he nonetheless developed a deep appreciation of the land and nature that profoundly influenced his approach to architecture.

Following his parents' divorce, he dropped his given middle name and adopted part of his mother's family name Lloyd-Jones for his middle name of Lloyd. From that point on, he was Frank *Lloyd* Wright. Always a voracious reader, the works of Ralph Waldo Emerson, Henry David Thoreau and Walt Whitman contributed to his intense belief in freedom and democracy. This philosophical outlook was inseparable from his approach to architecture and his belief that architecture is critical to the development of true culture and democracy.

In 1887, Wright left an engineering program at the University of Wisconsin after less than three terms going to Chicago with the goal of pursuing a career in architecture. His talent was quickly recognized, and he jumped from firm to firm, each time securing more money. In 1888, he joined Adler and Sullivan, where within a short time he became the lead draftsman. There, he worked on many projects ranging from the Charnley House (1891), to factories, commercial buildings, synagogues, the Auditorium Building (1889) and the Transportation Building at the Chicago World's Fair of 1893. The relationship between Wright and Sullivan was one of quick recognition of Wright's skill and promise by Sullivan. Wright rapidly rose to become the chief draftsman in the office and with Sullivan's blessing worked on several projects considered too small for the partners. Wright was *the* architect and was paid by the firm for the projects which helped him hone his skills and earn added income for his rapidly growing family. However, tensions between the two developed, growing to the point where Wright left the firm in early 1893. The reasons for the split remain unclear, one view holds that Sullivan dismissed Wright because he had undertaken work outside the office without permission, clearly violating his contract. However, an opposing view maintains that Wright left of his own volition and supporting that view is recent scholarship indicating that Sullivan was concerned by Wright's rapidly developing level of skill and may have seen his draftsman as a rival.

The three phases of Wrights career

Wright opened his own practice in 1893 following a protracted disagreement with Sullivan supposedly for working on commissions without the approval of the firm. During a career that spanned seven decades, he developed an architectural form unmistakably his own, but also influenced by the cultural and architectural forces of the time. Wright's buildings demonstrate a remarkable variety of forms but are nonetheless based on the underlying principles of what he termed *organic architecture*. While he used the term loosely over the years, the term encompassed architecture rooted in the natural landscape, providing users with a sense of harmony and even serenity indispensable for daily living, and in so doing, creating a composition that blended and blurred the boundaries between the building and its site, and between man and nature.



Figure 1 Willits House 1901

leaves that deeply overhung extensive bands of windows further enhanced the horizontal appearance and helped tie the structures to the ground. While not devoid of ornamentation, the Prairie Style used ornamentation sparingly, often consisting of strips of trim so placed as to further emphasize the horizontal or acting to draw the eye around a corner. [see figure 1]

During the second phase of his career from roughly the end of World War I and the mid 1930's, Wright executed relatively few commissions - the most notable being Tokyo's Imperial Hotel and his series of textile block houses in California. Nonetheless, it was a time of experimentation with new and different building techniques and designs based on geometric forms other than the square or rectangle. Wright also enhanced his standing among a generation of young architects in America through a series of lectures and articles expounding on his philosophy of architecture.



Figure 2 Imperial Hotel 1917-1922



Figure 3 Taliesin Fellowship 1930s

Although many architects faced hardship with the onset of the Depression, Wright was especially hard hit since his time spent outside the US as he worked on the Imperial Hotel came just as the Modernist style began to emerge first in Europe following World War I and then by the end of the 1920s in the United States. Wright, if discussed at all, was portrayed as a pioneer but old fashioned, surpassed by a new generation who brought a refined sense of simplicity to their designs executed in glass, steel, and concrete nearly devoid of ornamentation.

Despite several years of little or no work and the added economic

chaos of the Depression, 1932 was a seminal year for Wright with implications of things to come personally, economically and for his career. Wright at the urging of his wife finally completed his autobiography and established the Taliesin Fellowship, essentially a school of architecture. In addition, he also published a book, *The Disappearing City*, which introduced his concept of city planning that would evolve into Broadacre City and would become the pattern for post-World War II suburban development throughout the United States and much of the



Figure 4 Wright Room at MoMA Exhibit 1932

World. Finally, he participated in a major exhibition at the Museum of Modern Art in New York that placed him in the same company as the leaders of Modernism in Europe and America.

The exhibit, *Modern Architecture: International Exhibition* held early in 1932 at MOMA first introduced the work of such leading European Modernists as Le Corbusier, Mies van der Rohe, and Walter Gropius to the United States. Historian Henry Russell Hitchcock and curator Philip Johnson traced the development of the style. and with their title, *The International Style: Architecture Since 1922*, they coined the term that has since become synonymous with the architecture they described and showcased in the exhibition.

Neither Wright's situation nor his prospects immediately improved. However, within a few months, publicity from the MOMA exhibition and from his autobiography began to attract attention to both the school drawing a full roster of students by the Fall of 1932 and about his work eventually leading to new commissions. Two of those new commissions in particular, were responsible for re-launching Wright's career in spectacular fashion by early 1938.

The first commission was for a vacation home for a wealthy Pittsburgh department owner whose son had briefly attended the Taliesin program; the second was for a corporate headquarters complex in Wisconsin. The first became one of the most famous houses of the twentieth century, Fallingwater seamlessly blending a spectacular modern structure and engineering wonder seamlessly into a dramatic natural setting. The second, the SC Johnson complex emerged as a dramatically different example of how modern architecture could interpretate the needs and serve the functions of business and beauty together.

By the late 1930's Wright had reemerged as a major force in modern architecture thus beginning the third phase of his career. But how did this happen? Fallingwater, spectacular, unusual, and so photogenic that by itself could have garnered sufficient interest in Wright to re-launch his career but instead the genesis for much of the publicity came about as the result of the Johnson commission. SC Johnson was a pioneer in nationwide advertising,

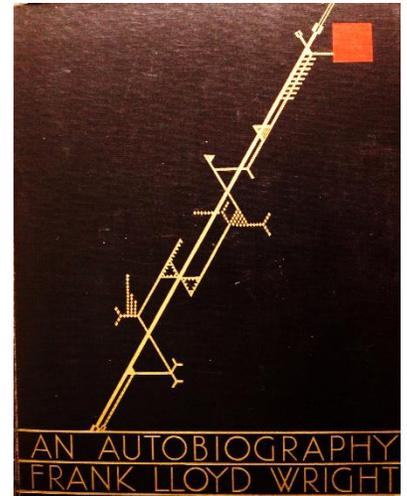


Figure 5 Wright's Autobiography

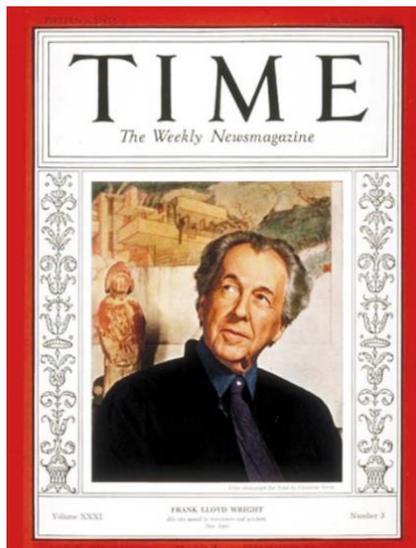


Figure 6 Time Magazine January 1938

and taking advantage of that, the company used their connections with the news, business, and photojournalism magazines of Henry Luce to ensure extensive coverage in Time, Life, Fortune other publications. As the Johnson headquarters took shape, step-by-step coverage followed both the building and its colorful and controversial architect. At the same time, interest was growing in Wright's Fallingwater, consequently by late 1937, plans were in place for coverage in all four Luce magazines. Thus, in January 1938, Fallingwater was featured in a Time cover story, there was extensive photo coverage in Life and articles in business-oriented Fortune, and because of Luce' strong interest in architecture there was an entire special spiral bound issue of Architectural Forum, where all the advertising and other material could be torn out leaving a compendium of only Wright's work and plans. Soon thereafter, his work was also featured in the Hearst newspapers and magazines, professional journals, and innumerable other publications. Over the course of the next two decades, Wright received some 40 percent of his total commissions and completed more than 100 Usonian houses, the Price Tower, the Marin County Government complex, the Guggenheim Museum, twelve buildings for the campus of Florida Southern College, the Beth Shalom Synagogue, and other religious buildings. Among the unexecuted projects were houses, hotels and commercial buildings, a new capitol for Arizona, a complex of structures for Bagdad and a mile-high skyscraper for Chicago.

Wright Developed Not One but Several Approaches to Architectural Style

Wright did not adhere to a single style instead his work reflects elements of Arts and Crafts, Art Nouveau, Art Deco, and even the International style, along with influences from the orient and Mesoamerica. Wright maintained that aside from Japanese art and architecture, that he was not influenced by other styles or architects. Despite the denials, Wright was aware of earlier and current developments in European architectural theory and practice. Just as he was widely read in philosophy, Wright closely followed the writings of Viollet-le-Duc, John Ruskin, William Morris, Andrew Jackson Downing, the Vienna Secessionists as well as the Arts and Crafts movement in England and Scotland, the Futurists, the Bauhaus, and others over the course of his career.

Arts and Crafts: Wright's use of wood, local materials, and highly skilled craftspeople tie his work closely to the arts and craft movement. He was not only familiar with the work of Macintosh but became friends with C.R. Ashbee (founder of the Guild of Handicraft, a leading Arts & Craft group in England). Ashbee not only visited Wright shortly after the turn of the 20th century but later contributed essays in publications featuring Wright's work. Advocates of the style, especially in England, rejected the heavy reliance on industrialization. Instead, they called for a return to hand-crafted work with designs inspired by and featuring patterns based on natural forms. They embraced materials and practices of medieval craft guilds by handcrafting in wood, stone, clay, and metal. Although Wright relied heavily on the use of wood, stone, and other natural materials, and employed the best craftsmen and demanded high standards in the execution of the designs he developed, he nonetheless differed sharply from the some in the movement by embracing technology. He typically incorporated the latest in heating, and cooling, lighting, and structural materials in both his domestic and public buildings. In 1901, he criticized the artisans in the movement for living in the past; failing to understand that society had changed, forever moving past the time of the completely handcrafted by artisans. Wright also criticized much of the available machine products and fixtures, not because they were machine made but because they relied on imitating historical styles rather than reflecting contemporary conditions. He argued that not only were new materials available and that they must be embraced but that the machine could do some things better than handcrafting. He argued that this would free the artist to develop designs that reflected their time and place, incorporating the changes in society and the host of new materials such as steel and concrete.

Prairie Style: Wright's affinity for quality workmanship and use of materials not only link him with the Arts and Crafts movement but also underlie the style most associated with his early body of work, the Prairie School or Prairie Style. Wright was a pioneer in the style characterized by horizontality, low pitched or flat roofs, broad or deep overhanging eaves, bands of horizontal windows, integration of the structure with the landscape, restrained use of ornamentation, sturdy construction, abundant use of wood, brick and stone, and quality craftsmanship.

Art Nouveau: Aligned with elements of arts and craft in his early work were suggestions of Art Nouveau particularly in work before 1910. Wright is credited with influencing Art Nouveau developments in Europe and among the Art Nouveau elements in his work are such items as the lunettes in his home in Oak Park (1895), and decorative touches on the Winslow House of 1893 including a screen in living room and a freeze and arches on the exterior.

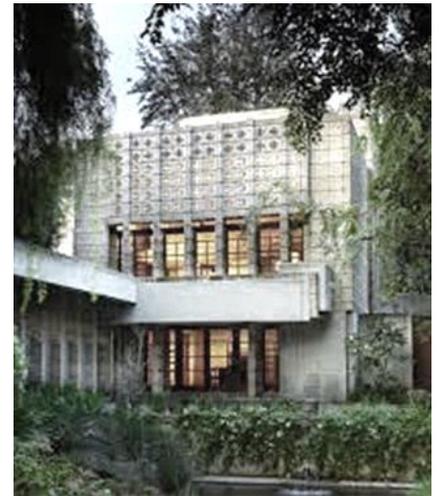


Figure 7 Millard House 1923

Art Deco: Wright's use of strong geometric shapes, employing squares, triangles, hexagons, and circles links aspects of his work to Art Deco. His Hollyhock House of 1919 - 21 in Los Angeles followed by his textile block houses of the 1920's in the area set the tone for California Art Deco based on Mesoamerican themes such as the Millard House and was the basis of a large house for Wright's cousin some years later in Oklahoma but absent the Mesoamerican influence. Later still, Wright returned to a less bold textile block approach in some of his Usonian houses built after World War II. While many of Wright's designs have an element of Art Deco, the S.C. Johnson headquarters stands out one of the most important and the most iconic example of Wright's work.



Figure 8 Fallingwater 1937

International Style: Although he publicly shunned the International style, both his masterpiece Fallingwater and his project for the 'House on the Mesa,' demonstrate a deep understanding of the style he consistently deprecated. Fallingwater represents his ability to gain inspiration from an existing style or example and make it his own through a transformation that moves far beyond that which provided the initial impression.

Wright often employed glass, steel, and concrete in new ways, often he pushed the envelope. Consequently, at times roofs leaked, cantilevers sagged, heating and cooling systems proved inadequate. But it can be argued that without such efforts by Wright and other forward-thinking architects that modern architecture in the 20th century might have been quite different and developed later than what did happen.

An American Style and Organic Architecture: Wright sought to create a uniquely American architecture. He shunned historicism and whatever stylistic approach he followed for any given project, his goal remained the same -- to develop a design that reflected the unique conditions and

traditions he saw as central the life in the contemporary United States. He sought to develop an architectural style that reflected contemporary American society, incorporating current and innovative technology that best fitted the needs of his clients. He turned the American house into an art form, expressive of the values he thought so important. In his public buildings Wright was often on the forefront employing the latest in technology and developing designs that provided workers with a light-filled, healthful, inspiring environment.

The term Organic Architecture is so intimately associated with Wright, it has often been confused with his unique style. However, by Organic Architecture he meant an architecture derived from organic principles not from imitating his style or that of any style. Rather he challenged his apprentices to think for themselves, develop their own style, and adapt it to the specifics of the task at hand. "Given similar conditions, similar tools, similar people, similar language, I believe architects will, with proper regard for the organic nature of the thing produced, arrive at greatly varied results; buildings sufficiently harmonious with each other and more so with great individuality." Finally, underlying his work was the objective "to make the landscape more beautiful than before that building was built."

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Part II: Descriptions of Buildings from the Itinerary of Wright: Masterworks in the Midwest

Frank Lloyd Wright Home and Studio – 1889 - 1898



Figure 9 Home and Studio view from Chicago Avenue

philosophy. Wright revised the design of the building multiple times, continually refining ideas that would shape his work for decades to come. The exterior of the house, which he would later refer to as “Seaside Colonial,” reflects his early interest in the Shingle style, then popular on the East Coast and favored by his previous employer, Joseph Lyman Silsbee. Sullivan’s stylistic influence can also be seen in the simplification and abstraction of the building and its plan.

With an emphasis on pure geometric forms, natural materials and connection to the land, the exterior of the Oak Park Home heralds the beginning of Wright’s mature philosophy. The remarkably open interior, in which Wright eschewed the Victorian hierarchy of public rooms for warm central spaces that gave primacy to family life, embodies Wright’s desire to liberate space. The dining room, added in 1895 along with a barrel-vaulted playroom, marks the architect’s first attempt to create a totally unified environment. Wright designed everything in the home from the lighting and mechanical systems to its furniture and decorative arts. It is, however, the playroom that best reveals Wright’s increasing embrace of simplicity. Though the scale of the playroom is carefully tailored to a child’s point of view, its expansiveness renders it one of the greatest of Wright’s early achievements and signals his ability to deftly manipulate space.

By 1889 Wright at 22 had moved to Chicago, was newly married and working for major architecture firm of Adler and Sullivan. He aspired to build his first home and borrowed \$5,000 from his employer, Louis Sullivan, to build a home for his future family.

The home was the first over which Wright had complete artistic control, and he would use it as an opportunity to experiment with design concepts that contained the seeds of his architectural



Figure 10 Wright Home view of Playroom



Figure 11 Wright Studio View of Drafting Room

In 1898, Wright once again expanded the house, with a four-room addition that would serve as his studio for the next eleven years. Fourteen associates would work within the two-story octagonal drafting room alongside Wright’s private office, library, and reception hall. The Oak Park Studio years proved an incredibly prolific period in Wright’s career, during which he pioneered the first uniquely American style—known as the Prairie School—and produced more than a third of his life’s work.

<https://franklloydwright.org/site/oak-park-home-studio/>

SC Johnson Buildings Headquarters, 1936-1939 – Research Tower, 1947-1950, Additions, 1951



Figure 12 Headquarters and Tower view to NE

In 1936, third-generation SC Johnson leader H.F. Johnson, Jr. sought out the architect Frank Lloyd Wright. Even though ground had been broken for a new administrative office, H.F. wanted to explore a more modern approach. And he wanted it enough to scrap the old plans and take a risk on the innovative Wright. It would be a building designed to inspire.

Johnson later explained, “Anybody can build a typical building. I wanted to build the best office building in the world, and the only way to do that was to get the greatest architect in the world.” So began a relationship between H.F. and Wright that would endure for decades.

The New SCJ Headquarters: An Office Like No Other

From the 43 miles of glass Pyrex tubing that forms its windows, to the soaring columns in its Great Workroom, our Administration Building is a truly unique place to work. It is also the only corporate headquarters that Frank Lloyd Wright designed that remains operational.

The building, which opened in 1939 in Racine, Wisconsin, is celebrated as one of the top 25 buildings of the 20th century. We like to think it reflects the innovation, boldness and adventure that are still the spirit of SC Johnson today.

The Johnson Administration Building is not going to be what you expect. But, I can assure you of one thing, you'll like it when it is put up. Frank Lloyd Wright, Architect



Figure 13 Installing Pyrex Tubing in the Skylights of Headquarters c.1938



Figure 14 Great Workroom view to South

Decades ahead of his time, Wright employed innovative modular furniture and an open office plan to make the workspace more productive. The Administration Building also was one of the first in the United States to be completely air-conditioned.

Perhaps the most recognized feature of the Administration Building's Great Workroom is its columns. Wright called them "dendriform," meaning tree-shaped, but many also refer to them as lily pads because of the unique shape of their top supporting pads. The columns are just 9 inches in diameter at their base, but blossom to 18.5 feet in diameter at the top.

Despite their beauty, not everyone shared Wright's optimism that the columns were a good idea. Initially, the Wisconsin Industrial Commission refused to approve the building plans, saying that they believed the design of the columns to be unrealistic. Wright, however, was not deterred.

In 1937, he oversaw a structural integrity experiment. Hundreds of onlookers and H.F. himself gathered to watch the dramatic field test. In the end, the columns proved their worth. They withstood a load of sixty tons – ten times the required amount. The construction was approved.

Frank Lloyd Wright Designs in Every Detail

Wright's focus was not just the structure itself. He planned more than 40 different pieces of furniture for the Administration Building. Each was created to reflect aspects of the building's unique design and to help get work done – for example, rolling file carts that could be moved easily around the Great Workroom. Open “bird cage” circular elevators run from the basement to the Penthouse level, giving a panoramic view of the building.

He also identified a warm red-brown shade for both exterior and interior walls. Most brick buildings use just a few brick shapes – one could say the buildings are designed to fit the brick. In the Administration Building, on the other hand, the brick was designed to fit the building.

Nearly 200 special shapes of brick were created, including interior and exterior radii, interior and exterior radius corner brick, and other special shapes. The trim is Kasota Stone of a color that complements the bricks, and the mortar in the horizontal joints is raked out to give the entire building a flowing, streamlined effect.

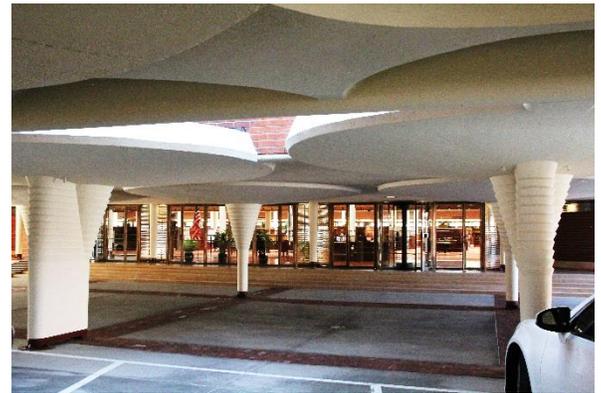


Figure 15 Main Entrance from Garage



Figure 16 Main Entrance: an example of compression and release



Figure 6 Research Tower view to SE

Frank Lloyd Wright called the completed Administration Building an architectural interpretation of modern business at its best. He said he designed it to be “as inspiring a place to work in as any cathedral ever was to worship in.”

And, indeed, it did just what H.F. and Wright intended: It set the company apart and brought huge attention to us as a unique business. *Life Magazine* touted the Administration Building as the shape of things to come, comparing it to the futuristic buildings featured at the 1939 World's Fair in New York.

It is genuine American architecture, owing nothing to foreign inspiration, different from anything ever built in the world before. Life Magazine, 1939

The Research Tower

The Research Tower was begun in 1947 and completed in 1950 and provides a vertical counterpoint to the horizontality of the Administration Building. It is one of only two existing high-rise buildings by Wright. Cantilevered from a giant stack, the tower's floor slabs spread out like tree branches, providing for vertical segmentation of departments. Elevator and stairway channels run up the reinforced concrete core, which Wright called a tap root. This single core was based on an idea that he had proposed in 1929 for the St. Mark's Tower,¹ and which he used again in 1952 in the Price Tower in Bartlesville Oklahoma. Freed

from peripheral supporting elements, the tower rises from a garden and three fountain pools that surround its base while a court on three sides provides parking for employees.

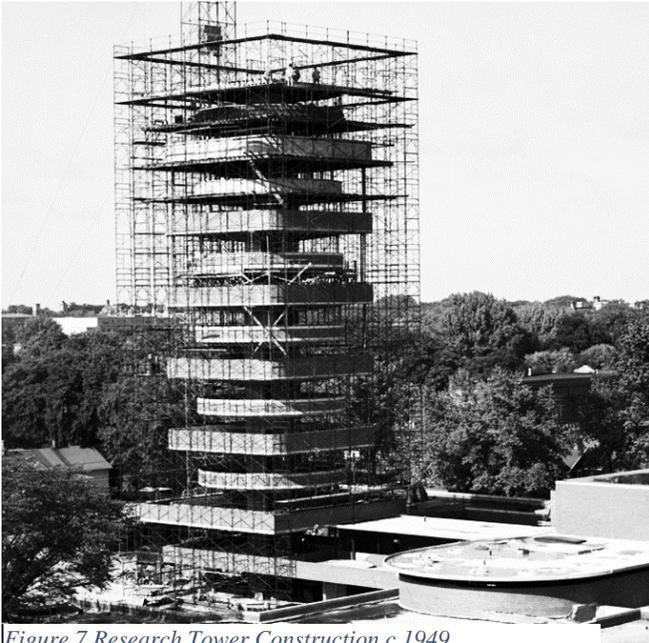


Figure 7 Research Tower Construction c.1949

The tower rises 153 feet cantilevered out from the 13-foot diameter concrete core which extends 54 feet below grade. This tap root's core is hollow above ground, carrying wiring, pipes, stairs, and an elevator just as a taproot carries nourishment and water through a tree. The thirteen floors consist of alternating square levels with circular open mezzanines, all cantilevered from the taproot. The is wrapped with non-load-bearing curtain walls of brick bands alternating with Pyrex tubing matching the earlier headquarters building.

The Research Tower was taken out of use in 1980 because it no longer met fire safety codes; it only has a single 29-inch-wide twisting staircase, and originally had no sprinklers because Wright thought them ugly. SC Johnson considered



Figure 19 Office Additions 1951

proposals to retrofit the tower to meet these codes, including one submitted by apprentices from Taliesin, but all were ultimately rejected out of concern it would mar the appearance of the tower. The company remains committed to preserving the building and in 2013, an extensive 12-month restoration was completed. The tower was relit on December 21, 2013, to mark the winter solstice, and S.C. Johnson & Son announced that it would be opened for public tours for the first time in its history. The research labs shown on the tour have been set up to appear frozen in time, including beakers, scales, centrifuges, archival photographs, and letters about the building.

The Pettit Chapel – 1907

One of only ten religious structures build by Wright during his career, the Pettit Chapel, was completed in 1907. Commissioned by Emma Glasner Pettit as a memorial for husband Dr. William Henry Pettit. Located in the Belvidere Cemetery in Belvidere, Illinois, the chapel is the only religious structure by Wright executed in his Prairie style.

The building has a T-shaped plan with the chapel forming the stem of the T and an open porch creating the cross bar. Unlike most of Wright's of the time, the façade is symmetrical with the main entrance formed by a short flight of stairs framed by doors on each side giving access to the restrooms, furnace, and storage room in the basement. The porch not only incorporates the open terrace common to other Wright designed buildings of the era but also another purpose. Wright specifically meant for the porch to be used by those attending funerals while they waited for their cars.

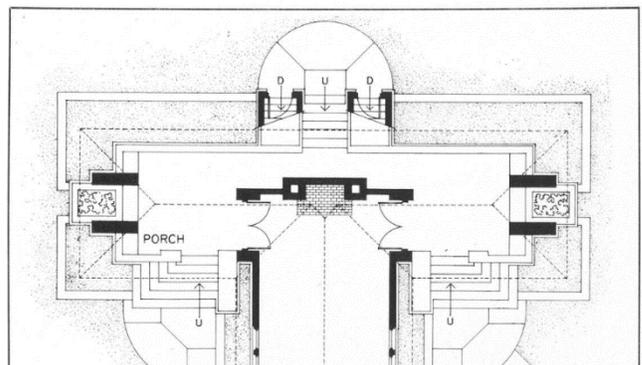


Figure 20 Pettit Chapel Plan



Figure 21 Pettit Chapel

The low-pitched hipped roof presents a simplified silhouette broken only by the low-formed chimney from the chapel, a feature found in some of Wright's other early Prairie style buildings such as the Heurtley House, and the Winslow House. The roof and its overhanging eaves, the horizontal bands of windows and the cypress trim painted in a contrasting color to the stucco exterior, embody the very essence of Frank Lloyd Wright's Prairie style buildings:

Laurent House 1949 - 1952

The Laurent House is the only house designed by Wright for a client who required a wheelchair. In 1946, shortly after returning from the Navy having served in the Navy, Laurent underwent an operation to remove a spinal tumor. Although the tumor was removed, as a result of the operation, became paralyzed, never walking again. As a result of the legislation establishing the Specially Adapted Housing Program, as a disabled veteran, Laurent was able to apply for a grant of up to \$10,000 that could be applied to the cost of a new house. The Laurents approached Wright and he agreed to design their house. Final plans were ready in late 1949, bids sent out in early 1950 and construction complete in 1952. The glass wall consists of alternating fixed panes with operating panes of windows.

The house as originally completed was a single-story Usonian solar-hemicycle design of 1,400 square feet, a later addition increases the size to approximately 2,600 square feet. A key feature of the house is a 55-foot concave wall of glass giving an uninterrupted view of the back yard. Ventilation is assured by placement

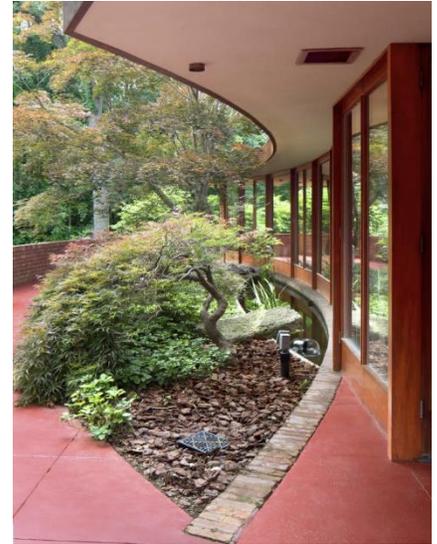


Figure 22 Laurent House Terrace



Figure 23 Laurent House Wright designed desk to accommodate wheelchair.

of fixed panes of glass, alternating with operating windows, doors near either end of the glass wall provide direct access to the extensive concrete terrace.

While neither the original plan nor the enlarged work is unusual size for a Usonian house of the period. However, the spatial arrangements are unique. Wright always worked with the client to determine their

specific needs and desires. With Laurent, these differed from any previous client. Bound to a wheelchair, Laurent provided Wright with an extensive list of specific needs to be included in the new house that covered such items as wider doors, lower light switches, doorknobs, faucets, drawers, and cabinets and no elevation changes. Even more important Laurent stipulated that he wanted room to change his direction without needing to back up his wheelchair, or "inconveniencing guests to rise and move their chairs and furniture to allow (him to pass)".



Figure 24 Laurent House hallway with view into bathroom

The results can be both subtle and dramatically different at the same time depending on where one is standing and what is in view. In the large open aspects of the plan, especially the living and dining areas, differences are not overtly apparent. However, the kitchen, hallways and the bathroom are quite different, more open, and with the bathroom in particular, almost spacious, especially in comparison to other Usonian of the period. When complete, the house was replete with Wright designed furnishings, chairs, tables, desks and built ins.

In 1958, the Laurents requested Wright prepare plans for an addition to the home. Wright died before the completion of the final drawings. The home was expanded past the carport by Wright associate John Howe in 1960 bringing the total to about 2,600 square feet.

Two Examples of Wright's "Bootleg Houses" Chicago Avenue -- Oak Park 1892

"Bootleg" designs were produced by Wright working independently while still employed by Adler and Sullivan. The high-pitched roofs, octagonal dormers, and bays, form a complexity of shapes that is evocative of the Queen Anne style, an architectural mode popularized by British architect Richard Norman Shaw.

The bootleg houses are noteworthy because they show a transitional period in Wright's approach to design, when he was testing new ideas before he truly embraced the Prairie Style.

Thomas Gale House – 1892 -- 1027 Chicago Ave

Queen Anne elements but with minimal decoration and tending toward rectilinearity suggesting Wright's future design direction. The steeply pitched roofs, overall clad in wooden clapboard the design is reminiscent of the style of Wright's first teacher Joseph Silsbee

Essentially similar in plan and design to the Parker House (next door) with a prominent octagonal turret but that having a more refined window treatment. Despite its somewhat conventional form, the Gale House rejects the decorative flourishes that typified the Queen Anne style. It thus hints of Wright's interest in



Figure 25 Thomas Gale House



Figure 26 Robert Parker House

creating sophisticated designs using elemental forms relying more on geometrical trim rather than applied sculptural forms typical of the period. This is also an example of one of many octagonal spaces Wright designed, including an octagonal library and drafting room and balcony in his Oak Park studio (one of his first designs) and an octagonal skylight in the Guggenheim (one of his last).

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Robert Parker House – 1892 1019 Chicago Avenue

Wright designed this house for Gale as a speculative venture. Here his preference for large, simplified geometric shapes is very apparent.

The design incorporates many of the same features of the Gale House but with somewhat less sophistication. It has also been noted to share design features with the Emmond House, also a bootleg composition built in 1892 in La Grange, Illinois. The Robert Parker house is defined by bold, geometric forms. An octagonal turret stands adjacent to the entrance which is sheltered by a shallow

overhanging eave. The entrance leads to an octagonal reception room, library, and dining room on the left. The second-floor features four bedrooms and a bathroom.

An Example of Wright's First Commissions After Starting His Own Office
Walter Gale House – 1893
1031 Chicago Ave

One of Wright's earliest commissions after opening his own office. In this case the work was begun by other arch however Gale bought Wright to complete the work. Here the finished work has some features which are unique in Wright's work. The spindle railing is found in no other project by Wright. Also unusual is the porch not having a roof, most of Wright's porches through the Prairie period had covered porches integrated into the façade. The difference here could be the result of fitting Wright's plan into the existing foundations. Like the two bootleg houses down the block, the house has some Queen Anne elements and also demonstrates some precursors to Prairie style in the geometric shapes, ribbon windows, and a front door not easily seen from the street, hinting at the "path of discovery" a later feature of Wright's residential designs.



Figure 27 Walter Gale House

The façade is dominated by a large circular turret. The rounded turret on the right of the house is balanced on the left by a narrow, angular dormer that extends two stories from the building's second floor to its attic. The second-floor primary bedroom is encircled by a continuous band of curved windows with diamond-paned leaded glass. The uninterrupted grouping of windows is similar to the continuous band of leaded glass windows found in the semi-circular dining room bay of Wright's 1893 William Winslow house.

The Edith Farnsworth House – Mies van der Rohe – 1946-1951

The Edith Farnsworth House was designed and built between 1946 and 1951 as a weekend retreat for prominent Chicago nephrologist, musician, and poet, Dr. Edith Farnsworth. It was conceived and built as a place to relax, entertain, and enjoy nature. It is set on the floodplain of the Fox River and is the first of only three houses built by Mies van der Rohe in the United States. The house invites nature in through continuous glass walls and is anchored delicately to the site. The simplicity of the design, precision in detailing, and careful choice of materials made this and others of Mies's buildings stand out from the mass of mid-century Modernism.

It is recognized as an iconic masterpiece of the International Style of architecture and has National Historic Landmark status. Mies's design features an all-glass exterior. In the actual construction, the aesthetic idea was progressively refined and developed through the choices of materials, colors, and details. While the livability of its design proved to be less than ideal, and the cost overruns were substantial, the Edith Farnsworth House would increasingly be considered by architects and scholars alike to constitute one of the crystallizing and pivotal moments of Mies's long artistic career.

"If you view nature through the glass walls of the Farnsworth House, it gains a more profound significance than if viewed from the outside. That way more is said about nature—it becomes part of a larger whole." Mies van der Rohe

The significance of the house was recognized even before it was built. In 1947, a model was exhibited at the Museum of Modern Art in New York. Describing it, Philip Johnson (the show's curator, noted that "Farnsworth house, with its continuous glass walls, is a simple interpretation of an idea. Here, the purity of the cage is undisturbed. Neither the steel columns from which it is suspended, nor the independent floating terrace break the taut skin."



Figure 28 Edith Farnsworth House

The house's main structural support consists of eight white vertical I-beams, which connect the rectangular roof and floor slabs with floor-to-ceiling plate glass. The structure is suspended on those beams some 5 feet above the ground and more than 8 feet above the Fox River, which lies just 100 feet to the south. A third of the slab is an open-air porch (which Farnsworth had screened in after the house was finished), and the only operable windows are two small hopper units (which are hinged at the bottom) at the eastern end in the bedroom area. A rectangular offset

patio, covered with the same travertine as the floor slab of the house, sits a few steps below the house. I-beams connect just below the roof and patio surfaces, their welds polished smooth to make the connection invisible. Smoothness and continuity are also apparent in the details of the other surfaces of the house. Mies removed all evidence of seams and fastenings.

A central core contains all services, two bathrooms, a kitchen with a continuous stainless-steel countertop on the north side, and a primavera wood living space and fireplace on the south side. Nonetheless, the house was intended as a vacation home or weekend retreat, it lacked storage space, closets, and other necessities of full-time living, all of which the architect ignored in favor of an aesthetic perfectionism.

Although the house was set at the level of the hundred-year flood and placed on five-foot stilts, development upstream has resulted in growing stormwater runoff increasing the potential for frequent and severe flooding. The house has been flooded several times including in 1954, 1996, 1998, 2006 at times with severe damage.



Figure 29 Farnsworth House flooded c.2008.

A rumored romance between client and architect reportedly soured as the house was built and cost overruns spurred lawsuits between Farnsworth and Mies. Farnsworth continued to spend weekends in the glass house for the next 20 years, until a nearby bridge and roadway made the setting less bucolic. In 1972 she sold the property to Peter Palumbo (later Lord Palumbo). He held it until 2003, when it was purchased by the National Trust for Historic Preservation, which offers public tours.

Comparison – The Farnsworth House and the Philp Johnson Glass house



Figure 30 Farnsworth House flooded c.2006



Johnson Glass House- 2019

Note: the Johnson House embraces the site, nestled on the ground whereas the Farnsworth, stands out resting on stilts because of the flood plain but also standing out being white in stark contrast to the green meadow.

Note: Excerpted from: Architecture.org, Britannica, Wikipedia, Architectural Digest, and the National Trust for Historic Preservation

Auditorium Building Adler and Sullivan – 1887 - 1889



Figure 31 Auditorium Building from the Park

The Auditorium Theatre is the result of collaboration between civic leaders who envisioned a building that might make opera and the arts accessible to people in every income bracket. In 1885, the developer business leader and arts patron Ferdinand Peck organized a group of wealthy locals to finance an opera and concert hall. Following the Chicago fire of 1871 much of the business center of Chicago was destroyed. The need for new offices, hotels, housing, and cultural amenities was great and the Auditorium building was one of the more ambitious projects to come about in the post-fire era.

Peck was committed to bolstering the state of the arts in Chicago. In 1886, rising tensions over labor issues and the movement for the eight-hour workday led to the explosive 1886 Haymarket Square riot which helped inspire Peck to make the theater accessible to all Chicagoans. Thus, the theater itself was designed so that every seat has good views and acoustics (unlike traditional European opera houses where expensive box seats were the best). In addition, the Auditorium Building was designed as a pioneering mixed-use project that would include a 4,200-seat theater, a 400-room luxury hotel and 136-suites of office space. The plan was for the proceeds from the hotel and offices would fund performances and keep ticket prices affordable for everyday workers.

Adler and Sullivan

Based on Adler's outstanding acoustical achievements, Peck selected the firm of Dankmar Adler and Louis Sullivan to bring the project to life. A young Frank Lloyd Wright was hired as an office draftsman and in the process of working on the massive project, he learned a great deal from Sullivan whom he regarded as his mentor and soon came to lead drafting team. Sullivan used load-bearing stone walls on the exterior of various textures and colors blended with the rhythm and massing of repetitive window patterns, into a cohesive composition. The building had separate entrances for the theater, office building and hotel. Highly influenced by H.H. Richardson's Marshall Field Wholesale Store, Sullivan included the use of monochromatic rusticated stone. Meanwhile, the theater and hotel interiors provided an outlet for his genius in ornamentation.

Compression and Release

Each patron who arrived for a performance was led through the small, dark entranceway into the theater. The entrance was "compressed" by low ceilings such that when patrons emerged, the impact of "expanding" into the towering six-story auditorium, with its grand gilded arches and glittering ceiling, would be all the more dramatic.

Engineering Challenges

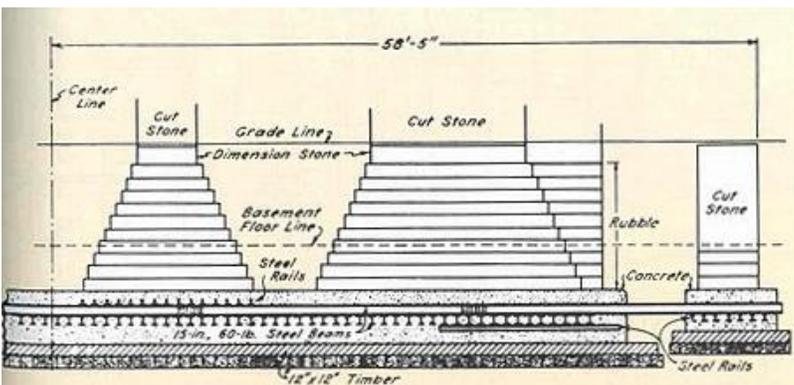


Figure 32 Auditorium Building Foundation

Adler addressed several engineering challenges in his acoustical design for the theater. In an era before scientific acoustical calculations the result is a masterpiece of sound engineering. Further, because the site was on marshland, Adler developed a floating foundation substantial enough to support the 16-story tower originally planned for the building. It consisted of a "raft" of railroad ties, steel rails, pitch, and concrete (see figure 21). However, after the foundation was in place, Peck requested two extra floors on the tower and the architects complied. The additional two

stories caused excessive settlement under the tower, proving Adler's original calculations correct. The Auditorium's fortress-like exterior with thick load-bearing outer walls are much heavier than the interior—as a result the foundation has sunk three feet into the ground. A banquet hall was also added late in the construction. Adler carried its load on giant iron trusses above the vaulted roof of the theater. The theater featured many technological advancements for its time, including the display of 3,500 bare carbon filament light bulbs. Such bulbs had been seen publicly for the first time in 1879.

When completed, the Auditorium was the largest, tallest, priciest, and heaviest building of its time. It was not only an enormous civic achievement but also a symbol of the city's success and emergence as a cultural center. The Auditorium's innovative engineering and design brought international recognition to the firm.

Because two additional floors were added the tower, the additional load eventually caused the tower to settle about three feet, resulting in steps down from street level to the box office and the sometimes slightly listing floors of the lobby (see Figure 22).

Peck's vision for the theater was to create a space that was democratic, where the best seats were not reserved for the wealthiest patrons. Box seats were relocated to the sides, with an expansive main floor and generous balconies that offered optimal sightlines to the general public. Peck's vision was difficult to fulfill. The hotel and offices could not financially support the theater. In the 1940s, the Auditorium was taken over by the City of Chicago and used as a World War II officers' center. By 1945, the space had deteriorated, suffering significant damage to Sullivan's plaster ornamentation. To prevent it from being demolished, Roosevelt University acquired the building but lacked the funds to restore it until 1963 when an Auditorium Theatre Council was formed to raise money for its restoration. Under the direction of architect Harry Weese, the theater was beautifully restored and reopened in 1967.

<https://www.architecture.org/learn/resources/buildings-of-chicago/building/auditorium-building/>

Figure 34 Entrance Note: over time the building has settled, the entrance is now below street level.

Part III

The Eight Buildings by Wright Added to the UNESCO World Heritage List in 2019

The 20th-Century Architecture of Frank Lloyd Wright

(Condensed and Adapted from)

Nomination to the World Heritage List by the United States of America (2016) Revised 2019

Justification For Inscription By Richard Longstreth

Photography by Bill Keene

In 2019 eight unique structures representing the scope and evolution of the work of Frank Lloyd Wright were added to the UNESCO list of World Heritage sites as examples that have contributed to the advancement of Modern architecture during the first half of the twentieth century and continuing to the present.

The Outstanding Universal Value of the series is manifested in three attributes. First, the series represents a new conceptual approach to the development of form and space, where interior and exterior aspects are closely related spatially, experientially, and often structurally, with the interior arrangement being the primary generating factor. Interior space is manipulated in dynamic and complex ways to a degree seldom matched in the architecture of any era or place. Spatial continuity is expressed through open plans and transitions between indoors and outside that blur the distinction between the two. Dynamic forms are achieved through innovative uses of structure and materials. These factors combine to create a richness of experience through contrast—compression and release, light and dark, rough, and smooth, refuge and prospect—as well as carefully composed paths of movement that foster a deeper understanding of place.

Second, the design of the buildings in this series is fundamentally rooted in nature's forms and principles such as growth, suitability to location, and unity, in the way the parts relate to the whole. This work breaks new ground in the ways architecture could be related to the natural environment. Rural examples engage in spirited dialogues with the site (Taliesin, Fallingwater, Taliesin West). Herbert and Katherine Jacobs House, the suburban example, utilizes the site to create its own natural setting. Urban examples, on the other hand, either become detached viewing platforms for their environs (Frederick C. Robie House, Hollyhock House) or are inward-oriented sanctuaries (Unity Temple, Solomon R. Guggenheim Museum). Irrespective, their architectural language is one of geometric abstraction inspired by nature's forms. The inherent properties of structural systems and/or materials provide the basis for expression. These designs are wholly unified—in form, space, detail, materials, structure, and, often, furnishings.

Third, the series represents an architecture conceived to be responsive to the evolving American experience. This work vigorously embraces the new—new technology, new kinds of space, new uses of materials, new modes of living. Later work responds to an increasing casualness in domestic life—indoors and out—and reliance on the automobile for routine transportation. But the radical departures from conventional and even avant-garde designs are deeply rooted in traditional values of dwelling and community. The degree to which they draw from traditional practices of an unusually wide spectrum is matched by the extent to which those various traditions—non-Western and Western—are synthesized and transformed into an architecture that seems to have no precedent. Several of these buildings are infused with structural innovations and all manifest an unusual sensitivity to the expression of materials. Their roots in nature are coupled with their focus on the individual, and individuality, rather than on the collective. They embody what was an unceasing pursuit of new architectural environments — public and private — to address contemporary human needs. Their longstanding international fame is more than justified by the intrinsic qualities that give this series such distinction in these varied respects.

This series constitutes a major transect in the history of Modern architecture between 1900 and 1960. The two oldest properties are extraordinary embodiments of avant-garde modernism at its inception and subsequent examples are primary exhibits of some of the many, evolving facets of a movement that was (and remains)

relentlessly experimental in the development of form, space, and structure, in the use of materials, and in a number of cases in redefining building programs to address contemporary human and functional needs.

The 20th-Century Architecture of Frank Lloyd Wright embodies the development of a new aesthetic in architecture and a new language in which to manifest it. The series reveals some of the extraordinary breadth of expression that could be found in Modern architecture during a period over fifty years. The series further embodies some of the boldest structural experiments of the era, ranging from the use of reinforced concrete to new systems comprised of wood. Work in this series contributes significantly to new approaches in the creation of sacred space, institutional space, and domestic space. The series entails important examples of the twentieth-century quest for creating substantively new environments that were intended to respond to the demands of modern life. The series exemplifies a consistency in approach that goes beyond functional concerns to embrace a fundamentally new approach to architectural design in all its myriad facets.

Unity Temple - 1905



Figure 35 Unity Temple from the NW

The oldest building in the series, Unity Temple in Oak Park, Illinois (1905), is a premier example of architecture at the turn of the twentieth century that embodies a revolutionary approach to the development of form and space—one that constituted a radical break from long standing Western notions of enclosure as well as from conventions of religious architecture. That approach broke even from then-current European modernist practices (e.g., Art Nouveau) in rejecting the notion of architecture as walls penetrated by discrete openings (doors, windows) to an abstract ordering of form that defined, but never fully encompassed space, allowing an interpenetration of interior and exterior spaces and of interior spaces among themselves. Here, the lobby opens to terraces on its two long sides and onto the Unity House on a third side, while the worship space is

encased by walls save at the uppermost level, where transom windows extend along most of the perimeter. Paths of circulation from the exterior into the lobby, thence to the worship space are not only circuitous, but filled with contrasting experiences of compression and expansion over multiple levels.

Unlike most houses of worship, the full impact of the principal space only becomes apparent after this lengthy, complex spatial progression. The configuration of that space is rooted in the tradition of Protestant meeting houses, where seating extends around three sides of a more-or-less cubical volume. Yet reaching that space at Unity Temple and experiencing it once there are far removed from any historical precedent. The underlying abstract geometry of the plan is dramatized by the prolific use of ornamental embellishment that is an integral component of the underlying order, not a decorative departure from it. Throughout, the idea of *gesamtkunstwerk* is embodied through fixtures, windows, and other interior components—all architectonic in character rather than being applied decoration in any traditional sense. Thus, Unity Temple breaks from the norm for houses of worship in the United States not only in its rejection of prevalent medieval and classical models, but also in the way space is formed, in its spatial progression, and in the nature of its embellishment.



Figure 36 Unity Temple Interior



Figure 37 Unity Temple Exterior Detail Night

Unity Temple is also a departure from the norm in its use of monolithic reinforced concrete (that is, concrete poured to form walls, not a skeletal frame)—a structural technique then employed in the United States primarily for industrial structures such as grain elevators and manufacturing plants, not for civic or institutional buildings. The massive walls facilitated by this use of concrete, combined with a symmetrical composition and hierarchical massing, give the exterior a monumental quality that makes it seem substantially larger than its actual size. The massing vaguely suggests that of some ancient temple of indeterminate origins, but nothing about its appearance worship. Likewise, the axially of the composition is drawn from Beaux-Arts practices, but this order is defied by the circuitous movement necessary to reach most parts of the interior.

The abstract rigor of Unity Temple’s massing, spaces, and details, as well as the power of its concrete structure was orchestrated to provide a place that was a welcoming sanctuary for members of its congregation. The worship space’s configuration underscores the importance of church as an organized community. When seated, congregants are bound to one another visually—more so than in most traditional cruciform or square plans, but congregants also are formally placed, mostly in tiers around the central space. On the other hand, the expansive lobby as well as the principal room in the Sunday School are conducive to more casual interactions. All these spaces were tailored to the principles of Unitarianism, which Wright knew well from his own family, and especially from his uncle, Jenkin Lloyd Jones, for whom he had designed a house of worship earlier. At Unity Temple, Wright’s own parish, he sought to

provide a new kind of setting that manifested the traditional values of this denomination.

Finally, Unity Temple breaks from convention in its relationship to the environs. While most worship spaces, irrespective of period, are inward looking, their portals engage with the landscape (urban or rural) around them. Unity Temple’s main block squares off with the principal street it faces and enunciates its corner site; however, the two entrances are inconspicuously recessed well back from that main street. Urbanistically, then, the design suggests a fortress as much as a house of worship. This rejection of place—a thoroughfare that served (and still serves) as a major east-west route from Chicago to

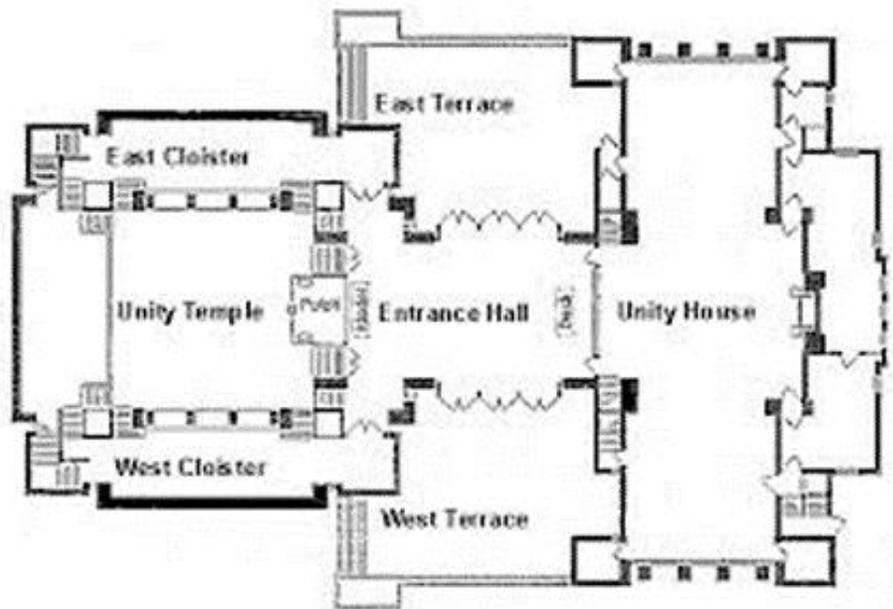


Figure 38 Unity Temple Plan Main Floor

outlying residential communities, with the commercial center of Oak Park nearby and an array of institutional and commercial buildings in proximity—was intended to exclude an environment deemed undesirable. This approach to urban settings came to characterize many facets of Modern public and institutional buildings during the 1960s and 1970s. From Wright’s perspective, it was shielding an interior environment created according to what he understood to be natural principles from an “unnatural,” inharmonious setting.

The Robie House - 1908

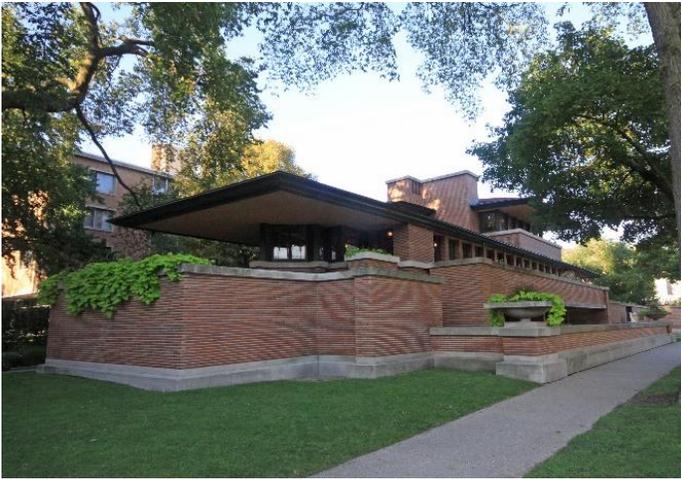


Figure 39 Robie House from the SW

above street level in order to provide a degree of privacy in an urban setting.

The constraints of a long, narrow corner lot led to accentuating the house's geometric composition, with roofs boldly cantilevered (using embedded steel I-beams) and dramatically projecting sections of wall. Windows are set in long bands that wrap more-or-less continuously around the perimeter. Below, the base extends outward in a series of layers to offer a complex counterpoint. In contrast to the reserved monumentality of Unity Temple, the exterior of the Robie House possesses a dynamic, sculptural three-dimensionality that is unmatched in the work of other architects of the period or earlier anywhere on the globe. At once ground-hugging and gravity-defying, the composition is enriched by the use of Roman brick (a type revived in the United States during the late nineteenth century) articulated with limestone coping. Both underscore the building's pervasive horizontality, as does the use of mortar, which is recessed between courses and in the vertical joints is set flush with (and colored to match) the bricks. It is these materials and the ways in which they are arranged that provide visual stimulus. The exterior is bereft of applied ornament.

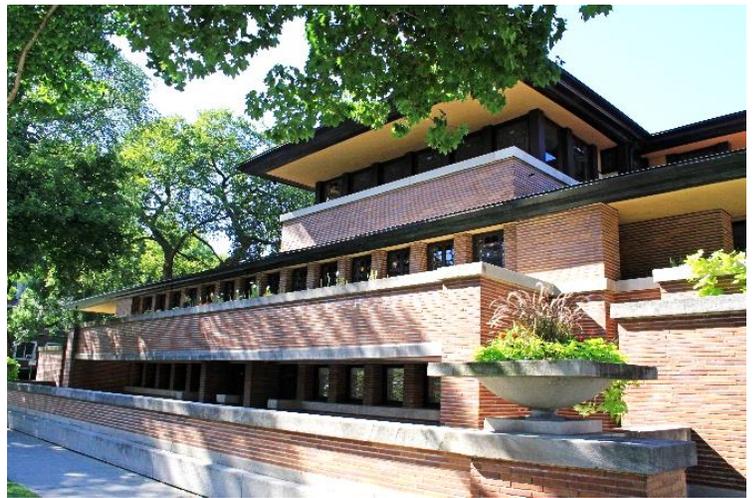


Figure 40 View from the NE



Figure 41 Living Room View to the West

The Robie House also exemplifies a new approach to developing domestic space whereby the principal rooms are defined, but not fully enclosed by walls. Instead of a room comprising walls, with thresholds created for doors and openings for windows, those on the principal floor of the Robie House form a continuous space that is punctuated by a central fireplace, stairwell, and gridded screens. This openness also exists in the connection between indoors and out, with the window bands and French doors providing nearly uninterrupted views of the environs. As in Unity Temple, movement through space in the Robie House is circuitous, but here with a cave-like entrance near the rear of the building leading to a low, womb-like vestibule from which an

open stairwell with three turns leads to the principal floor. Paralleling the contrast between indoors and out at

Unity Temple, the principal spaces at the Robie House are elaborately articulated with wood trim on the walls and ceiling in rectilinear patterns that integrate both registers for the heating system and overhead light fixtures. Screens and built-in furniture in the dining room augment the effect of an exuberant and rich architectonic totality.

Especially through monographs published by Wasmuth in Germany and, later, by Wendingen in the Netherlands, Wright's new approach to designing architecture had a profound effect on avant-garde European modernism during the 1910s and 1920s, embodied early on in the work of Walter Gropius such as the Werkbund Exhibition pavilion (1913) and later in that of members of the De Stijl group and of Ludwig Mies van der Rohe and his Barcelona Pavilion (1929), among others. By the late 1920s the creation of abstract architecture with spatial fluidity, indoors and out, would become a defining characteristic of avant-garde modernism in many parts of the world. Without such pioneering work as Unity Temple and the Robie House, twentieth-century Western architecture would have assumed a very different complexion.

Taliesin – 1911-1959



Figure 42 Taliesin View to NW Hilltop

and the Robie House, Taliesin accentuates form in a seemingly contradictory way—at once hugging the land and soaring above it to give the traditional Romantic impulse a wholly new, dynamic interchange with the hillside terrain. Taliesin is in fact one of the most original responses to steeply sloping topography created during the early decades of Modern architecture. In broad conception its response to the site is informed by hillside villas of the Italian Renaissance that Wright came to know firsthand while he was preparing the Wasmuth volumes at Fiesole, just outside Florence. The design also draws from traditional Japanese architecture by breaking down its sizable extent into domestically scaled pavilions so that the complex in its entirety can only be comprehended with movement around the premises.

Taliesin, outside Spring Green, Wisconsin (1911), is a consummate example of the transcendental longing for architecture to engage the pastoral landscape; to partake in a respectful dialogue with the site; to reaffirm human roots in nature. These qualities have characterized a basic cultural outlook in the United States that was substantially inspired by English Romantic literature and landscape design of the eighteenth and nineteenth centuries, and it was one that became shared in a number of other Western countries as well. While rendered in a vocabulary informed by earlier works such as Unity Temple



Figure 43 Taliesin Midway Farm

Locally quarried limestone, minimally dressed and set in rough, horizontal bands, with many of the pieces projecting, is used extensively throughout Taliesin to underscore its ties with the land. The highly textural quality of this work is evocative of centuries-old masonry Wright would have seen in Italy, and its use here is contemporary with the rustic use of rubble stone for stylish country houses in both the United States and Britain. At the same time, the stone walls at Taliesin are treated as rugged planes, interspersed with stucco walls and window banks to form a complex, abstract composition. A duality also exists between their predominantly vertical forms and the emphatic horizontality of the stonework. Finally, the stone lends a sense of intimacy and retreat, both in the court around which the three arms of Taliesin extend and in the domestic spaces, where stone is used for massive fireplaces and to accentuate secluded recesses. At the same time, interior space connects to the outside in two ways. On one side, rooms and their terrace extensions become a series of panoramic viewing

platforms of the rolling Wisconsin River Valley. On the other side, spaces are tied to an intimate, terraced garden and vistas up the slope before descending rapidly down to the farm. Through the dramatic play of form, space, and materials the house gives a new and thoroughly modern vigor to longstanding Romantic sensibilities.

Taliesin is further an especially ambitious example of combining an architect's workplace with a dwelling place, a practice that may well have been inspired by the houses of unusually successful artists such as Frederic Church. Other early examples in the United States were the house-offices of Frederick Law Olmsted (property purchased 1883) and Henry Hobson Richardson (property purchased 1874), both in suburban Boston, Massachusetts. Perhaps the most famous such compound before Taliesin was Eliel Saarinen's Hvittrask (1901-03) outside Helsinki, where the office area was fully integrated into the composition. Wright had already embraced this union when he added a studio-office to his residence in Oak Park in 1898, an appendage that contrasted with the house and demonstrated how far his design approach had developed over the preceding decade. At Taliesin, like Hvittrask, the office was wholly a part of the overall design. Finally, far more than other designers' residences of the late nineteenth and early twentieth centuries Taliesin became an experimental ground for new ideas, where additions and alterations to its fabric began soon after its initial completion in 1912 and continued until Wright's death over four decades later.



Figure 44 Taliesin Hillside School

Hollyhock House



Figure 45 Hollyhock House Central Court

Hollyhock House manifests with uncommon invention and lyricism the pronounced tendency toward regional expression and local identity that, during the interwar decades, was widespread in the United States and likewise pursued in other parts of the world. Here, in an unconventional turn, ancient Meso-American sources were tapped as a springboard for exterior expression, while a traditional Spanish patio is freshly interpreted as an anchor for the interior configuration. At the same time, the scheme's strong Beaux-Arts axuality and its multifaceted complexion seem to draw from Wright's seven-year experience of designing the Imperial Hotel in Tokyo, which extended to 1920, well after plans for Hollyhock House were completed. Like Taliesin, Hollyhock House's multiple parts make the design impossible to understand from any single vantage point; however,

in other respects it is the antithesis of the Wisconsin house, set firmly at the top of a hill, massive, even monolithic, in appearance, as if were constructed of concrete, its exterior walls adorned in ornament. These seemingly disparate qualities are woven into a seamless whole and choreographed with a theatricality that met the very specific functional and decorative desires of its unconventional owner. Such theatricality was also emblematic of many works of the period across the globe—from the spirited exuberances of Art Deco to the scenographic escapism of historicizing movie palaces. Here, however, the treatment is more reserved and specific to its location, and the effect is more monumental.

Unlike Taliesin, which is wedded to the sloping hillside, Hollyhock House dominates its hilltop site. The large Olive Hill tract was located in a then sparsely developed residential area of East Hollywood. On all sides of the house, pergolas and terraces extend outward to provide sweeping views in some places, intimate vistas in others. Taliesin was built upon the cultivated landscape of dairy farms in south-central Wisconsin, but Hollyhock House followed an increasing practice in southern California, namely transforming a relatively barren, arid landscape into a lush one through irrigation. As Wright drew inspiration from Meso-American sources for the building itself, so he seems to have been inspired by the hillside Tuscan gardens he saw while residing at Fiesole.

The monumental theatricality of the house was to be matched by lush vegetative theatricality of newly created landscape. No less than at Taliesin architecture and nature are set in an intimate dialogue.

Inside, Hollyhock House is organized for elegant entertaining and theatrical performances on a regular basis in a highly original way. Many of the spaces are organized with cross-axial discipline, tying them together volumetrically and perceptually. But while there are many avenues of continuity, the plan is not entirely an open one. The configuration allows for an unusual degree of flexibility in the use of space, pushing the boundaries of traditional domestic use. Taking advantage of the region's salubrious climate, the direct connections to outdoor terraces and courts are unusually extensive.



Figure 46 Hollyhock House View to SW Master Suite Above Nursery

Fallingwater - 1935

Fallingwater, in southwestern Pennsylvania (1935), is an extraordinary embodiment of the maturing of Modern architecture and of the tendency to broaden its scope of expression. The design in a sense is a rejoinder to the International Style and, more specifically, to Richard Neutra's spectacular Lovell House in Los Angeles (1927-29), which similarly pirouettes from a hillside site. Fallingwater's intense geometry of vertical and horizontal planes also likely owes a debt to the architectural exercises of the De Stijl group from the 1920s. But the Pennsylvania house has none of the machine aesthetic that permeated Neutra's work and that of many European colleagues of the period. Instead, its emphatic embrace of carefully chosen natural materials and rugged textures offers a poetic response to the remote, wooded site along Bear Run. The materials and colors of the house echo those in their setting, each component of the design playing a part in the coherent composition.



Figure 47 Fallingwater View to NW - Note Steel Braces Under Balcony

Seemingly thrust into the hillside and at the same time perched over the creek, Fallingwater accentuates Taliesin's dramatic engagement with a sloping terrain, using cantilevered forms to create a three-dimensionality that was far more dramatic than most examples of Modern architecture at that time—taking the plastic qualities of the Robie House one step further. The building is, in effect, an enormous piece of sculpture that is emphasized by the arresting unity of materials, color and motifs used throughout. The house seems to be at the same time an outgrowth of the land and a striking counterpoint to it. The intensity of this play was rendered possible by a very bold use of reinforced concrete, stretching the limits of use for the material at that time. The projecting concrete slabs are further extended vertically as parapets—like the raised edges of a tray—to give added strength to the cantilevers, while augmenting the effect of horizontal planes floating above one another and echoing the stone ledge that creates the waterfall. The effect of the whole is simultaneously an ethereal defiance of gravity and a



Figure 48 Fallingwater View Downstream prior to Steel Bracing

remarkable expression of complementarity between the building and its setting. As at Taliesin, masonry walls, laid in rough horizontal courses, are integral to the structure, but at Fallingwater they are not so much interspersed as they are a visual anchor tied to the upward slope of the site. Approaching the house, the effect

is dominated by the concrete cantilevers, but by the time one progresses a short distance to the main entrance the building appears to be mostly a series of vertical stone slabs.

Two of those planes frame the deeply recessed entrance that opens into a tight, low-ceilinged vestibule. Just beyond, the principal floor is comprised primarily of an expansive single space tailored to accommodate a variety of functions—one of the most open plans to be found in a residence of any size at that time. The dining area is framed by stone walls, the same as those seen on the exterior, including one with a massive fireplace, giving a sense of intimacy and seclusion. Gradually this space becomes more open until, at the far end, window bands and glazed swinging doors allow the wooded setting to be visually dominant. And to one side, a series of retracting glass panels enables descent to the stream below. The massive masonry piers and flagstone floor are rustic attributes that, until the 1930s, seemed antithetical to Modern architecture. Underscoring the roughness of the site, a great boulder on which the chimney rests erupts from the floor to form the fireplace hearth and further ties the house to its setting.



Figure 49 Fallingwater View of Living Room from Dining Room

In contrast to the main floor, those above form an intricate web of circulation and private sleeping and reading areas—all within a limited footprint. The diminutive scale of these spaces is countered in the bedroom by opening the outer wall to sizable terraces. Beyond that, structural innovation is again strikingly in evidence with the canopy leading up to the guest wing. Consisting of a single slab that gains its structural integrity by both its stepped sequence and its curving form, this outdoor shelter is dramatically anchored to its stone base by only a single steel lally column near the outside edge of each of its seven tiers.

Fallingwater is an extraordinary example of a longstanding tradition in the United States, where houses designed for weekend or seasonal use are laboratories for developing new ideas in residential design and in architecture more broadly. The intense play between openness and constraint, the degree to which living functions are combined in a single space, the interweaving of precision, ruggedness, and structural innovation, and especially the unified nature of the composition, have had a lasting impact on Modern architecture.

The Jacobs House – 1936

The Herbert and Katherine Jacobs House in Madison, Wisconsin (1936), is a standard-bearer for its era in the design of freestanding, single-family houses of modest size—a design that could be replicated, with variation, in great numbers. The design gives a maximum sense of spaciousness to living areas—inside and out—all organized in response to the increased need for privacy in the automobile age. The concept for this scheme emanated from Wright’s Broadacre City (1933), his famous utopian plan for a fully decentralized, automobile-oriented matrix for settlement. The Jacobs House provided the first opportunity to refine the Broadacre City idea of a “typical” freestanding house in built form and served as the prototype for subsequent dwellings, some much larger, which he called Usonian houses.

Constrained here by a small site in a middle-class suburban subdivision and by the limited means of the clients during the Depression, the Jacobs House introduced a number of innovations to address these challenges. The building is situated near one corner of its lot so as to take maximum advantage of the remaining open space, in contrast to its neighbors (and dwellings of this type generally), which were more or less centered on their sites. The Jacobs House is oriented to this open area, privatized through landscaping, turning its back to the street to muffle the noise of passing motor vehicles. This configuration was again a contrast to the norm, in which frontal orientation remained standard. Moreover, the L shape allows maximum exposure to the yard for the living and bedroom wings alike. This siting not only greatly enhances the sense of spaciousness—indoors and out—but gives the rooms full solar exposure during the harsh winter months when it is most needed—a pioneering example in Modern residential architecture of enhancing thermal properties through natural means.



Figure 50 Jacobs house from the street

providing ample insulation (by standards of the time). The sandwich wall was also conceived to facilitate prefabrication so that such houses could be manufactured in quantity and components readily delivered to their respective sites. The inherent qualities of stained pine boards, with alternating battens, also gave the interior a visual richness while precluding the need for plaster or for wall decorations. As in a traditional Japanese house the entire scheme is developed on a modular grid. Wright designed all the furniture, mostly out of plywood, demonstrating that one could live in an individual *gesamtkunstwerk* without incurring great expense. Spatially the Jacobs House is innovative in its organization, with the largest square footage allocated to the living area that seamlessly connects to a dining area set in a glazed nook that also opens to the kitchen. The latter space is tightly configured like those in modest apartment units of the period. For a house of limited size, there is also an unusual degree of connection between indoors and out, with pairs of glazed swinging doors tying the living area to an outside terrace (an extension of the floor slab) and to the lawn that lies adjacent to the three bedrooms in the other wing. All these elements were conceived to maximize livable space and a sense of spaciousness for budget conscious, middle-class families.

Heating the Jacobs House was also accomplished by a then-novel use of pipes embedded in the concrete floor slab. Pumping hot water allowed the slab itself to radiate heat evenly in every space. The elimination of radiators (then the prevalent means of heating in the United States), of a basement, and the use of an open carport instead of an enclosed garage were all new devices employed to reduce cost. Equally important was the sandwich wall construction devised for this dwelling, using horizontally laid pine boards and battens—inside and out—with a plywood sheet wrapped in paper between them. The system was devised to speed assembly, without conventional framing, and to minimize wall thickness while

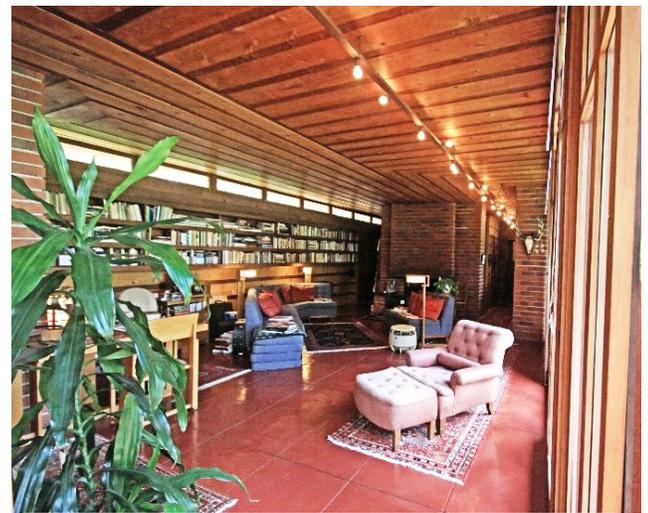


Figure 51 Jacobs House View of Living Room

Reinventing housing to address increasingly informal living patterns and also the demands of a depressed economy was a major concern of proponents of Modern architecture during the interwar decades. In the United States that concern extended to maintaining the viability of building modest-sized middle-class houses. After World War II home builders took up the challenge for a considerably larger, new mass market. Alfred Levitt, chief designer for Levitt and Sons, the most famous large-scale house developers in the United States, spent months studying one of Wright's later Usonian houses while it was under construction on Long Island in New York. The attributes found in the Jacobs House's effective integration of openness within a compact matrix and use of a slab floor as well as a carport had a significant impact on the firm's subsequent work. The subject of widespread publicity, the Jacobs House itself became an important point of departure for the design of moderate-size dwellings of various types internationally.

Taliesin West – 1938-1959

Taliesin West, in Scottsdale, Arizona (begun 1938), complements Fallingwater and the Jacobs House in demonstrating the broadening scope of expression in Modern architecture. However, the differences between the three in form, materials, and character—irrespective of function or site—are so pronounced that they hardly seem to emanate from the same hand. Indeed, Taliesin West seems to turn the tenets of Modern architecture upside down. The rugged stonework at Taliesin and Fallingwater appears refined compared to that at Taliesin

West, where unquarried stone taken from the site is drenched in messily formed concrete to the point where the rocks seem to float, creating an effect that is raw, even primordial. This “crude” use of masonry was employed in direct response to the rough desert setting, one that was then widely considered to be hostile to habitation. Yet the experience of the processional path through Taliesin West is rich and warm. If Taliesin and Fallingwater seem to spring from the landscape, Taliesin West embeds itself in its setting, scarcely differentiating its profile from the desert when viewed at a distance. The site was quite isolated when the complex was begun amid a great expanse of desert, 21km from the then small community of Scottsdale, with the jagged peaks of the McDowell Mountains forming a backdrop.



Figure 52 Taliesin West View to NE

At the same time, the complex also has an air of impermanence, as if it were a camp. Above the stone are redwood (and later steel) beams set at a fifteen degree angle, their ends formed like U-shape brackets, which serve as visual anchors and also make the beams appear to float above their masonry bases. This unusual structural solution enables a clear span over the large drafting room as well as the main living area, punctuating those spaces and giving them scale, while enhancing the jagged profile from without. Here, as in Fallingwater, structure becomes a primary basis for expression, albeit to a very different effect. The bold form and scale of these beams also offers a striking contrast to the roofs they support, originally made of canvas and now of fiberglass. The translucent attributes of these materials enhance the analogy to a great tent, providing shelter with an economy of means. Filled with light and flowing air, the workspaces nonetheless convey a sense of complete enclosure, much like a traditional desert tent. This emphasizes the intentional effect of moving through the sequence of spaces in the complex.



Figure 53 Drafting Room view to SE.

If structure and materials suggest a oneness with the tough, arid landscape they also stand in opposition to adobe, the material that was traditionally most widely used in desert settings—in the Southwestern United States, in Saharan Africa, and elsewhere across the globe where such extreme conditions exist. Adobe resists supporting heavy loads and also must be regularly protected by a coat of mud plaster (or in recent years, stucco). By its very nature, the form of adobe is soft, without much texture (except where a new protective coat is needed) and forms massive walls with minimal openings. Taliesin West is not only the polar opposite in a material sense, but also antithetical in its permeability. Here, the structure was configured to allow the penetration of warmth from the sun through its canvas roof and also the free flow of air from one side to another, enhanced by the roof's angle. Like the Jacobs House, Taliesin West is designed to take full advantage of natural forces to enhance the building's habitability.

As it was precocious in its response to climate, Taliesin West also set an important precedent in showing how intense ruggedness and modernity need not be contradictory qualities, but ones that could be integral



Figure 54 Lightning Tower and Water Feature

As it was precocious in its response to climate, Taliesin West also set an important precedent in showing how intense ruggedness and modernity need not be contradictory qualities, but ones that could be integral

contributors to a whole. The angular geometry that shapes the complex in plan and in elevation contributes to this sense of unity by emphatically conveying a taut, abstract order.

The Guggenheim Museum - 1959

The Solomon R. Guggenheim Museum in New York City took well over a decade to realize from conception to completion (1959), but throughout the process its design radically redefined what an art museum could be. In both form and space, it stands in conspicuous contrast to New York's Museum of Modern Art (MoMA; original building, 1939), an institution intended to define the nature of significant contemporary painting, sculpture, and architecture (and later other artistic media), whose new building was completed only a few years before studies for the Guggenheim began.



Figure 55 Guggenheim General view to NE



Figure 56 Guggenheim An Early Concept Rendering

Paralleling the design of Unity Temple some four decades earlier, the Guggenheim is entirely inward in its orientation, ignoring—and in this case defying—its urban grid setting along Fifth Avenue. In the mid-1950s, when the design was finalized, nearby blocks of that street were lined on the east side with high-rise apartment houses from the 1920s and newer ones constructed after World War II, combining to form a nearly continuous wall facing the open expanse of Central Park to the west. The Guggenheim's mass was (and remains) an abrupt, somewhat tempestuous break in this urban order, its muscular curving forms holding their own amid the taller planarity of buildings on neighboring blocks. Like Unity Temple, too, the structure is comprised of monolithic reinforced concrete, and its entrance, if frontal, is underplayed. The basic similarities end there. The museum is much more structurally adventurous and is also organized as an important public

space rather than a sequestered place of worship.



Figure 57 Guggenheim Main Gallery

The Guggenheim's exterior dramatically bespeaks its inner configuration. Unlike most museums, irrespective of period, the exhibition space was originally a single, continuous volume. This area, known as the rotunda, is a six-tiered spiral, its floor extending upward as high walls on the perimeter and as a low parapet facing the atrium. (Later modifications and a rear addition have not significantly changed the configuration or the power of this space.) While anchored to a triangular stair tower set off to one side, the spiral structure is essentially self-supporting—one of the most daring uses of concrete at that time. In contrast to the cross-axial spatial order common to eclectic museums of the nineteenth and early twentieth centuries and to the looser arrangements found in the then small number of modernist examples such as MoMA, movement at the Guggenheim was tightly choreographed. One enters the atrium (or rotunda) fairly abruptly from the outside. From there the intent was to ascend in an elevator to the top floor, then walk down the spiral to examine the art. The use of circular geometry, with which Wright had experimented for some years, here commands every aspect of movement and the overall experience. The Solomon R. Guggenheim collection (the building was intended to house a personal collection, not to mount or host temporary exhibitions) consisted of a stunning array of early-twentieth-century European avant-garde work, much of it by former members of the Bauhaus faculty who were

instrumental in redefining the ways objects and space could be depicted in two dimensions. The building's

unorthodox, processional layout, circular geometry, and the spatial drama it induces in the procession can be read in part as an American rejoinder to the achievements of European artists, suggesting the supremacy of architecture and of organic principles as a means of reinterpreting form and space.

While the solution remains a singular one, it nevertheless formed a foundation, in the United States and abroad, for a new era in museum design, whereby the building's form is an active agent in the experience of art. The design was also a pioneering example globally of a new adventurousness in the use of reinforced concrete structure that became seen as a means of conveying a sense of strength and purpose in architecture without lapsing into traditional patterns of monumentality.

Potential Future Sites for Inclusion in the UNESCO World Heritage List

The possible extensions to this proposed series would demonstrate some further elaboration and variation on the essential attributes described above. The Ward Willits House (Highland Park, Illinois, 1902) is the first full manifestation of Wright's mature domestic style in the early twentieth century—the first realization of the Prairie idiom. The plan, structure, furnishings, art glass and interior and exterior spaces were devised as a coherent synthesis of interrelated elements. Bands of floor-to-ceiling leaded art-glass windows open to the garden, allowing nature to penetrate the interior. Rooms are oriented along a cross-axial plan and ceiling heights are modulated to create a sense of progressive expansion and contraction. The Robie House is its culmination and fullest expression of these ideas.

The Tazaemon Yamamura House (Ashiyashi, Japan, 1918) is a hillside house that in many ways anticipates later work such as Fallingwater in its connection to landscape, and Taliesin West in its spiral path of movement. It is also a remarkable blend of traditional Japanese elements with those of Wright's Prairie houses making it a bridge between the two that results in something entirely new.

The Alice Millard House, "La Miniatura" (Pasadena, California, 1922), demonstrates another variation on the expression of the intrinsic qualities of materials, through the use of concrete in a manner called "textile block." Here Wright experimented integrating the ornamental treatment of the concrete block with its structural function, making form and structure entirely one. Like Hollyhock House, it looks to ancient American forms for inspiration and seeks to manifest the distinctiveness of southern California but differs by having structure form and ornament all the same.

The most singular of the contemplated extensions, the S.C. Johnson Administration Building and Research Tower (Racine, Wisconsin, 1935; 1944) is, like Fallingwater, a tour de force in its structure. In the Administration Building, structure is devised to serve atmospheric ends, to create a special environment—in this case for a large office—rather than to solve a structural problem. The tower, on the other hand, was the first time Wright was able to execute his very original idea of making a multi-storied building analogous to a tree's structure. It is also a stunning illustration of how an addition can contrast with and complement the original work.

The Paul Hanna House (Stanford, California, 1936) is a powerful demonstration of how the Usonian house concept can be employed effectively in a considerably larger residence, using a more complex geometry than the simple grid of the first Jacobs House. Though the original house was economical in construction, Wright later expanded it, and the result is a more elaborate design in which the spatial limitations inherent in the first Jacobs House are not apparent. It also offers a superb response to the topography on a sizable lot.

The Herbert and Katherine Jacobs House II (Middleton, Wisconsin, 1944) was a very precocious domestic concept in having passive solar heating form the basis for the design, and inclusion of a bermed wall to protect the building from winter weather. This, with other sustainable construction approaches that were far ahead of their time, have made it widely known and influential.

Irrespective of the strong individual characteristics of the eight buildings in the nominated series, The 20th-Century Architecture of Frank Lloyd Wright constitutes a whole that is greater than the sum of its parts by underscoring the richness and complexity of this organic approach to Modern architecture over the span of more

than half a century. The series also underscores the basic consistency of that approach, developing an abstract, geometric vocabulary based on nature's forms and principles. The series demonstrates the substantial range in functions and scales to which that approach could be effective.

Collectively these buildings reveal the importance of function as a basis for creating form. They exhibit the continual search for new structural solutions, new uses of building materials, and new spatial environments. The series shows a very broad spectrum of responses to urban, suburban, and rural sites. Equally significant, the series illustrates the consistent importance of addressing human needs in the twentieth century—for the city house and the country retreat, for the suburban residence of modest size and the urban mansion devised for elaborate entertaining, for a house of worship, and for an art museum that provides for a new sociability. Each component of this series constitutes an important piece to this rich mosaic that is widely acknowledged to be one of the greatest contributions to twentieth-century architecture.

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