13.2: 20th Century Architecture

Architecture is generally described as any creatively designed and constructed building or structure enhancing the city, town, or landscape. It is also the science of designing the building so the structure is safe, inhabitable, and will still be standing in the event of damage from fire, flood, earthquake, or other natural disasters — the architects below designed buildings in styles unique to their ideas, designs, and creations.

<table>
<thead>
<tr>
<th>Architect</th>
<th>Style</th>
<th>Specialty Designs</th>
<th>Specialty Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antoni Guadi</td>
<td>Catalan Modernism</td>
<td>Helicoid and hyperboloid forms</td>
<td>Brick, mortar, concrete, ceramic pieces</td>
</tr>
<tr>
<td>Frank Lloyd Wright</td>
<td>Organic architecture</td>
<td>Sloping roofs, open plans, low profile, long/low windows, cantilevered balconies</td>
<td>Concrete</td>
</tr>
<tr>
<td>Oscar Niemeyer</td>
<td>Abstract forms and curves</td>
<td>Free-flowing curves</td>
<td>Metal, concrete, glass</td>
</tr>
<tr>
<td>Julia Morgan</td>
<td>Arts and Crafts</td>
<td>Craftsman Style</td>
<td>Re-enforced concrete, tiles</td>
</tr>
<tr>
<td>Eero Saarinen</td>
<td>Neo-futuristic</td>
<td>Sweeping, arching, structural curves</td>
<td>Steel, glass</td>
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<tr>
<td>Unknown</td>
<td>Systemic and functional</td>
<td>Style based on use</td>
<td>Mud, water, thatch</td>
</tr>
</tbody>
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The Sagrada Familia in Barcelona, Spain (13.1), was designed and partially built by **Antoni Gaudí Cornet** (1852-1926), a Spanish artist following Catalan modernism with a distinctive style reflecting his individualization. Gaudí was inspired by the art from Persia, India, and Japan and incorporated these ideas along with the neo-Gothic movement, a growing art movement at the time. He also integrated his design with an organic style from nature.

The Basilica Temple Expiatori de la Sagrada Familia is a Roman Catholic Basilica started by Gaudí in 1883 who used the Gothic and Art Nouveau styles with curvilinear forms and columns as his design inspiration. When Gaudí died in 1926, the building was only twenty-five percent complete. Construction carried on, only interrupted by the Spanish Civil War, with a planned completion date of 2026, the one-hundredth anniversary of Gaudí's death.

The interior of the church is a standard cross with five aisles and a central nave vault stretching forty-five meters, the side naves reaching thirty meters (13.2). The columns are uniquely Gaudi designed with tree-like structures and spreading branches to support the load, a three-dimensional intersection of helicoidal columns. In the center of the nave,
the designs intersect with the multi-colored columns. There is extensive glasswork in windows on each end of the church. The outside façade is heavily decorated with iconic religious carvings (13.3). Eighteen spires were designed for the completed cathedral; however, only eight spires (13.4) have been built to date.
Antoni Gaudí transcended conventional modernism with his unique, organic style of design. He never drew plans on paper, opting for building three-dimensional models to view all the details.

Casa Batllo (13.5), built between 1904 and 1906, is in the center of Barcelona. The façade of the building was designed on imagination and whimsy, built from stone and colored glass. The wavy shape of the building was plastered with lime mortar and covered in glass and tile mosaic. The roof (13.6) of the building is built in the shape of an ornate animal exhibiting oversized iridescent scales and tiled spine. Casa Batllo is a modern marvel of shape, light, color, and design.
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VIDEO*: https://www.khanacademy.org/humanities...r-construction
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13.5 Casa Batllo
Frank Lloyd Wright (1867-1959), one of America's premier architects, designed more than 1,000 buildings in his lifetime. Wright's philosophy on design extended to the environment where the building was to be placed. The structure needed to be in harmony with humanity living in the house or using the building and the surrounding land. He was a leader of the Prairie School movement—a 20th-century style based on the Midwestern United States—loosely following the Arts and Crafts Movement.

Constructed in 1936, Fallingwater (13.7) is one of the most famous Wright homes. The 5330 square foot house appears to float over a waterfall, jutting out above the river on a 4,100-hectare nature preserve. The waterfall cannot be observed from anywhere in the house, and you must leave the home and walk down a short trail to even see the waterfall, a contentious point with the homeowner since they wanted to see the waterfall. Wright disagreed with the owners and believed in exercising the sense of hearing to appreciate the waterfall from the house, the sound creating a magical atmosphere. Wright designed the furnishings for the living room (13.8), with a strong reflection of Japanese design and architecture. The fireplace has the same brick inside and outside, only separated by a glass window giving the appearance of sitting in nature. The living room was built on top of a large boulder that Wright incorporated directly into the design. Fallingwater is now owned and maintained by the Western Pennsylvania Conservancy.
Wright also designed the Solomon R. Guggenheim Museum (13.9) in New York City in a cylindrical formation. The grand interior contains a ramp gallery (13.10) from the first floor to the massive skylight on the top floor. Opening in 1959, the museum received criticism from architects, artists, and critics, however, the public widely praised the design as new and innovative.
13.9 Solomon R. Guggenheim Museum
The Guggenheim Museum, with its spiral design, influenced Oscar Niemeyer (1907-2012), a Brazilian architect who was a leader in modern architecture. In 1960, Niemeyer was known for his planned city of Brasilia, the newly designated capital of Brazil and the United Nations Headquarters in New York City. He embraced modernism with its curved lines and organic shapes, offering a contrast to the geometric severity of the current architectural designs.

Niemeyer was an advanced engineer who experimented with his favorite medium, concrete, and developed techniques using reinforced concrete to improve the plasticity of the material, challenging traditional architecture, breaking from the past, and making a giant leap into the future. Dedicated in 1970, the Cathedral of Brasilia (13.11) was constructed as a hyperboloid structure with sixteen concrete columns weighing 90 tons each. As the official building for the executive branch of government, The Palacio do Planalto (13.12) was one of the essential Niemeyer buildings. The four-story structure designed with tapering lines formed the columns standing against the broad expanse of glass walls.

From California, Julia Morgan (1872-1957) was one of the greatest American architects. Known for her large buildings founded on Craftsman-style structures, she designed more than 700 buildings. Hearst Castle in San Simeon, California, is her best-known work along with Asilomar in Monterey, California. Graduating from the University of California, Berkeley, Morgan was the first woman to be admitted at l Ecole Nationale Superieure des Beaux-Arts in Paris for the architecture program. Morgan returned home to her Northern California home and was the first woman in California to be granted an architectural license. After she started her own company, one of her first significant designs were many of
the buildings at Mills College.

She met William Randolph Hearst, who hired her to design the Los Angeles Examiner Building in 1914, and in 1919, Hearst hired Morgan to design his most significant and most complex project, Hearst Castle (13.13) in San Simeon. Morgan designed the buildings, landscaping, pools, and animal shelters, spending 28 years to supervise every aspect of the Hearst Castle project. Inspiration for the buildings came from the grandeur of Europe, a Mediterranean style main house with two ornate twin towers. The iconic Greek Neptune pool (13.14) boasts marble columns and statues, while several guest cottages are scattered around the gardens. The elaborately decorated interior rooms (13.15) have marble fireplaces with an extensive collection of art and tapestries hanging on the walls.
Located on 107 acres on the beach in Monterey, Asilomar (13.16), Morgan designed most of the buildings between 1913 and 1928 in the Arts & Crafts architectural style. The movement-based its designs on the harmony between nature and the craftsman, creating expertly crafted buildings from local resources to blend in with the surrounding landscape. Asilomar was initially constructed for the YWCA with 16 buildings, 11 are still standing. Today the property is owned by California State Parks (13.17) and is a popular place as a conference center. Julia Morgan paved the way for all women architects who followed her.
Large sweeping arching curves are associated with the designs of Eero Saarinen (1910-1961), a Finnish American architect and industrial designer known for his neo-futuristic styles. Saarinen was the designer of the iconic Saint Louis Arch (13.18) TWA terminal at JFK Airport, New York, and the Milwaukee Art Museum. Saarinen designed the St. Louis Arch to rise from a small forest on the edge of the Mississippi River, signifying the gateway to the West. The TWA Flight Center (13.19) opened in 1962 using Saarinen's design, employing modernism and human movement originally called the grand center of flight. The design from overhead resembles a bird, TWA’s logo. The 31,700 square meter Milwaukee Art Museum (13.20) was open to the public in 1957, a dynamic structure resembling winged flight.
The Dogon are a group of people living on the central plateau in Mali, just south of the Niger River. The Dogon settled the area in the 13th century and still follow the religious traditions of their ancestors reflected in their dance masks, elaborate wooden sculptures, and beautiful architecture. The Dogon villages (13.21) are groups of unique mud buildings designed for different purposes. Their granaries have a distinctive pointed roof covered with woven thatch and
containing the owner’s possessions. There are separate granary buildings for women and men; the male granary is designed to house pearl millet and other grains while the female granary is a storage hut for personal belongings and goods for sale like woven cotton or pottery.

13.21 Dogon village

Although all the villages are laid out slightly differently, the architecture of the village is based on the body of a human lying stretched out on the ground, the head oriented to the north where the togu na is located. The togu na (13.22) is a building for men and used to rest during the heat of the day and as a place to discuss affairs of the village. The roof is quite low to the ground, the low height designed to prevent fighting amongst the men during their conversations. For menstruating women, there is a house on the outside of the village the women occupy for five days and then return to their family. On the highest position in the area, stands the house of the Hogon, the village elder. Multiple structures may have carved human figures, each one with a different meaning. The support pillars or columns are tree trunks carved with human forms.
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