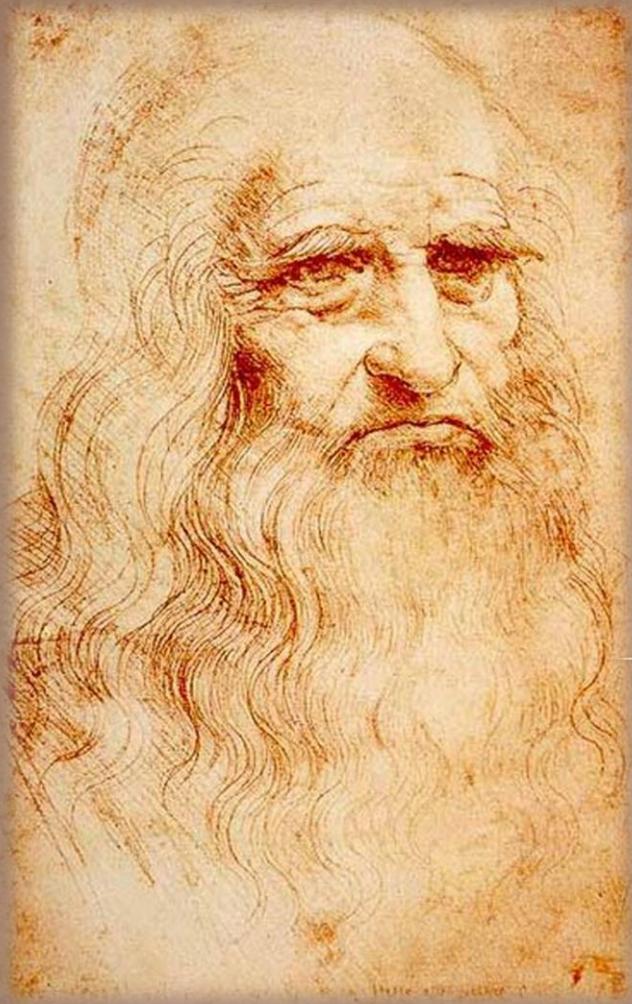


Structures and their Designers



Leonardo Da Vinci (1452-1519)

A renaissance man who excelled as an architect, painter, sculptor, and inventor.

While very little of his architectural work was realized or built, he proposed designs for domed, centrally planned churches, fortifications, numerous mechanical inventions, and buildings in various scales from chapels to palaces to cities.

Da Vinci attempted to incorporate in his designs, art, and inventions what he observed around him in nature. Most of Da Vinci's ideas were explored in sketches and study models, many of which were left incomplete. The incomplete studies could possibly indicate that Da Vinci developed them to the point in which he could learn the most, and then moved on to the next idea.

Key Concepts: Most designs were sketched and never built, focus on structure, focus on development of the design



Sir Christopher Wren (1632-1723)

Sir Christopher Wren is one of the most highly acclaimed English architects in history. He is known for rebuilding 51 churches in the City of London after the Great Fire in 1666, including his masterpiece, St. Paul's Cathedral.

Not only an architect, Wren was educated in Latin and Physics. He was also a noted astronomer and mathematician-physicist. Wren studied first-hand (what was then) modern design and construction.

Instead of using set rules and formulas as many other architects of the time employed, he used a combination of reason, intuition, experience and imagination when it came to his architectural designs.

Key Concepts: many of his works were churches, domes, Romanesque, grandeur, detailed



Thomas Jefferson (1743-1826)

The third president of the United States was classically educated in many languages, cultures, and in the fine arts. Jefferson was involved in law, politics, and architecture starting in his late-teens/early twenties. Jefferson was a perfectionist who maintained an obsession with compiling, listing, ordering, and observing. He continually strove to find the perfect solution. This ability to observe and record the often overlooked details would serve him well in his later architectural studies of existing buildings and measured drawings.

From the very beginning of his career, Jefferson regarded books as the ultimate source of knowledge. It was through books that Jefferson first discovered the world of architecture.

Architecture was a disciplined orderly world, governed by laws and principles, a world of tangible, measurable, repeatable relationships. Within the pages of these books, Jefferson found what he considered to be the elements of architecture - the classical orders. He found these orders illustrated, proportioned, and praised by Andrea Palladio the great architectural theorist of the Renaissance. Architecture had an immediate appeal to Jefferson's probing methodical nature.

Key Concepts: Romanesque/Neo-Classical, columns, domes, symmetry, octagons



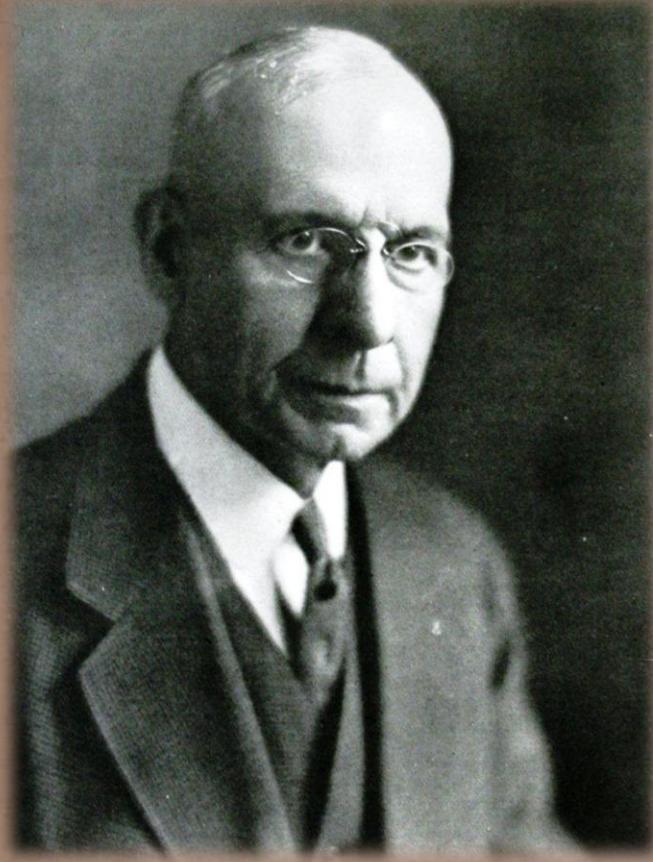
Antoni Gaudí (1852-1926)

A Spanish architect, famous for his unusual buildings that integrated forms from nature. Gaudí studied every detail of his creations, integrating into his architecture a series of crafts in which he was skilled: ceramics, stained glass, wrought ironwork forging and carpentry. He introduced new techniques in the treatment of materials, such as *trencadís*, made of waste ceramic pieces.

Gaudí was influenced by Egyptian, Indian, Persian, Mayan, Chinese and Japanese art. Gaudí observed of Islamic art its spatial uncertainty, its concept of structures with limitless space; its feeling of sequence, fragmented with holes and partitions, which create a divide without disrupting the feeling of open space by enclosing it with barriers.

They are imaginative works that find their main inspiration in nature. Gaudí studied organic and chaotic geometric forms of nature thoroughly, searching for a way to give expression to these forms in architecture.

Key Concepts: imaginative, unusual forms, geometric elements, light and airy spaces, highly detailed



Louis Sullivan (1856-1924)

an American architect, called the “father of skyscrapers” and “father of modernism). Sullivan was educated at MIT (Massachusetts Institute of Technology) and at the École des Beaux-Arts in France.

Prior to the late 19th century, the weight of a multistory building had to be supported principally by the strength of its walls. The taller the building, the more strain this placed on the lower sections of the building; since there were clear engineering limits to the weight such "load-bearing" walls could sustain, large designs meant massively thick walls on the ground floors, and definite limits on the building's height. The development of cheap, versatile steel in the second half of the 19th century changed those rules. America was in the midst of rapid social and economic growth that made for great opportunities in architectural design.

A much more urbanized society was forming and the society called out for new, larger buildings. The mass production of steel was the main driving force behind the ability to build skyscrapers during the mid 1880s. Coining the phrase, “form follows function,” Sullivan was able to break away from the traditional masonry building forms, and expand the size and height of his designs as far as the steel would allow him.

Key Concepts: little decoration added to his buildings, “form follows function”, steel structure sky scrapers, massive semi-circular arches



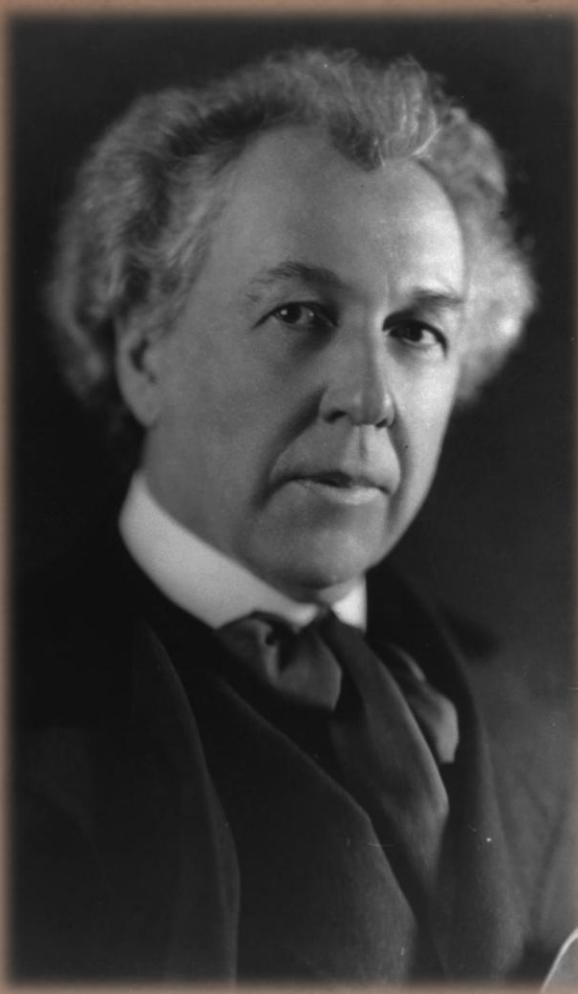
Julia Morgan (1872-1957)

The first licensed woman architect in California who designed over 700 buildings in her career. Morgan graduated from UC Berkeley with a degree in civil engineering. She graduated with a degree in architecture from the École des Beaux-Arts, the first woman to graduate with a degree in architecture in Paris.

Operating out of her own office in San Francisco, Morgan practiced architecture from there most of her career. Her most famous project was Hearst Castle in San Simeon, CA, which featured 56 bedrooms, 61 bathrooms, 19 sitting rooms, 127 acres of gardens, indoor and outdoor swimming pools, tennis courts, a movie theater, an airfield, and the world's largest private zoo.

Morgan also designed many YWCA and other institutions to serve women.

Key Concepts: Classical, Mediterranean, Moorish, reinforced concrete construction, nature incorporated, courtyards



Frank Lloyd Wright (1867-1959)

An American architect, interior designer, writer and educator, who designed more than 1,000 structures and completed 500 works. Wright believed in designing structures which were in harmony with humanity and its environment, a philosophy he called organic architecture.

His work includes original and innovative examples of many different building types, including offices, churches, schools, skyscrapers, hotels, and museums. Wright also designed many of the interior elements of his buildings, such as the furniture and stained glass. He worked for, and was influenced by Louis Sullivan.

Key Concepts: Influenced by Arts and Crafts, open floor plans, simple massing, horizontal lines, flat or hipped roofs with broad overhanging eaves, windows grouped in horizontal bands, integration with the landscape, solid construction, craftsmanship, and discipline in the use of ornament, also constructed buildings with precast concrete blocks



Le Corbusier (1887-1965)

A Swiss architect, designer, urbanist, writer and painter, famous for being one of the pioneers of what now is called modern architecture. Le Corbusier focused on urbanism, or the efficient use of land and infrastructure.

For a number of years French officials had been unsuccessful in dealing with the squalor of the growing Parisian slums, and Le Corbusier sought efficient ways to house large numbers of people in response to the urban housing crisis. He believed that his new, modern architectural forms would provide a new organizational solution that would raise the quality of life for the lower classes.

His *Immeubles Villas* (1922) was such a project that called for large blocks of cell-like individual apartments stacked one on top of the other, with plans that included a living room, bedrooms and kitchen, as well as a garden terrace. Le Corbusier's study of urbanism expanded beyond housing units to the study of complete city layouts.

Key Concepts: Five principles of architecture – concrete pillars to open the structure, non-supporting walls that could be arranged as desired, an open floor plan, ribbon windows (strips of horizontal windows), roof gardens/integration of nature; usually monochromatic (one color) designs

A black and white portrait of Zaha Hadid, showing her from the chest up. She has long, dark hair that is slightly messy and appears to be blowing in the wind. She is wearing a dark, V-neck top. The background is dark and out of focus.

Zaha Hadid (1950)

A theoretically influential and groundbreaking modern woman architect. Hadid's seemingly impossible designs are dynamic and innovative, with a focus on urbanism and the affect of architecture on society.

Many of her designs incorporate existing landscape and topographic elements and her designs tend to be experiments of new technologies, which result in unexpected forms.

Key Concepts: Unusual forms, impossible looking structure, modern



Photo by Michael Falco

Santiago Calatrava (1951)

A Spanish architect, sculptor and structural engineer whose early career was largely dedicated to bridges and train stations, whose designs elevated the status of civil engineering projects to new heights.

Calatrava's style has been heralded as bridging the division between structural engineering and architecture. In the projects, he continues a tradition of Spanish modernist engineering. Nonetheless, his style is also very personal and derives from numerous studies of the human body and the natural world.

Key Concepts: highly engineered structures, brings art into structure, focus on bridges and train stations

Review of Key Concepts

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**Match the
Structures
to their
Designers**



Guaranty Building



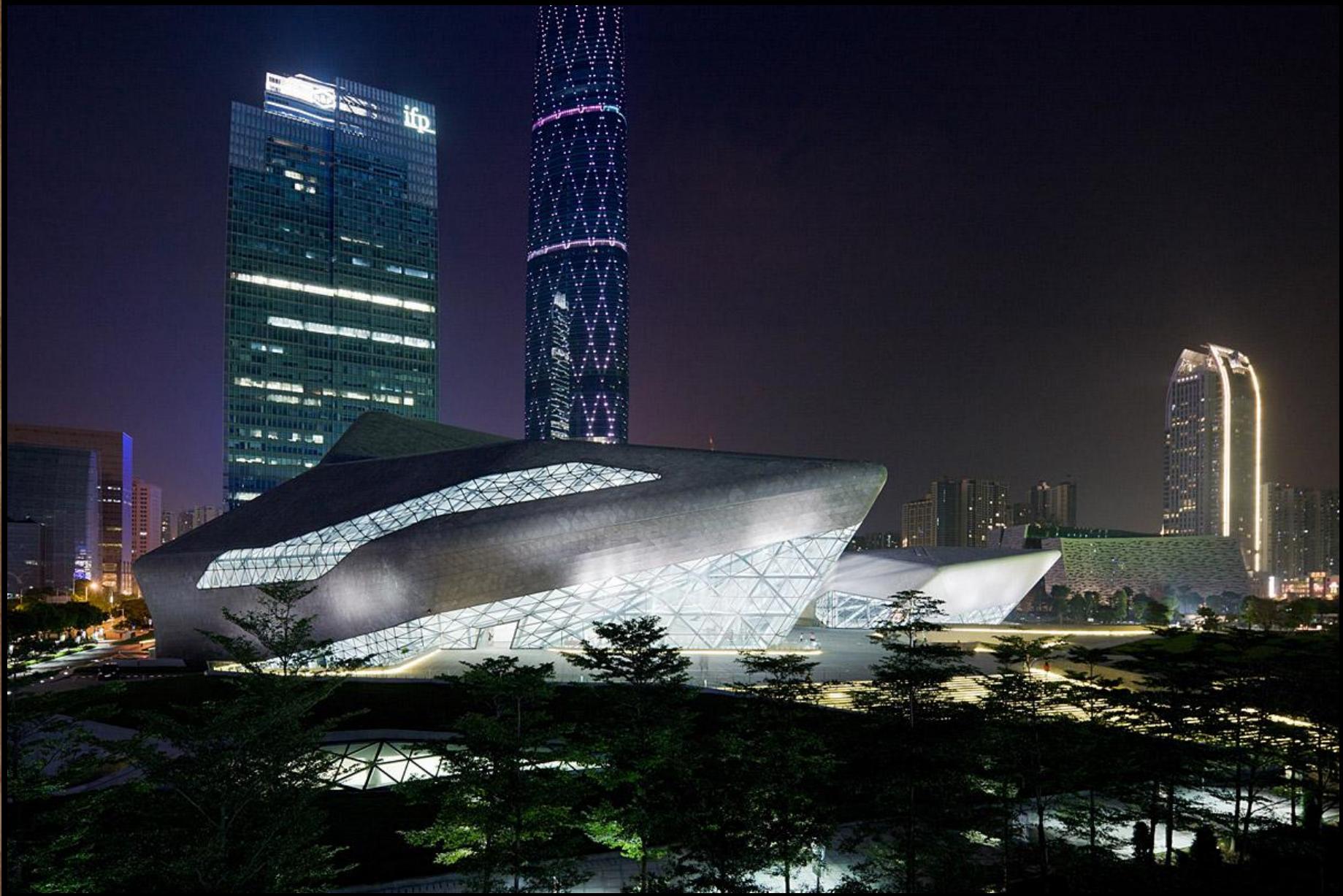
Alamillo Bridge



Monticello



St. Paul's Cathedral



Guangzhou Opera House



City Plan Sketch



Falling Water



© Justin Vidamo - 2011

Hearst Castle



Villa Savoye



La Sagrada Família

How do you think you did?

Need any repeats?

**Switch answers sheets
with another team...**

Answers

Guaranty Building – Louis Sullivan

Alamillo Bridge – Santiago Calatrava

Monticello – Thomas Jefferson

St Paul's Cathedral – Sir Christopher Wren

Guangzhou Opera House – Zaha Hadid

City Plan Sketch – Leonardo Da Vinci

Falling Water – Frank Lloyd Wright

Hearst Castle – Julia Morgan

Villa Savoye – Le Corbusier

La Sagrada Familia – Antoni Gaudi