

Industrial Revolution and Architecture

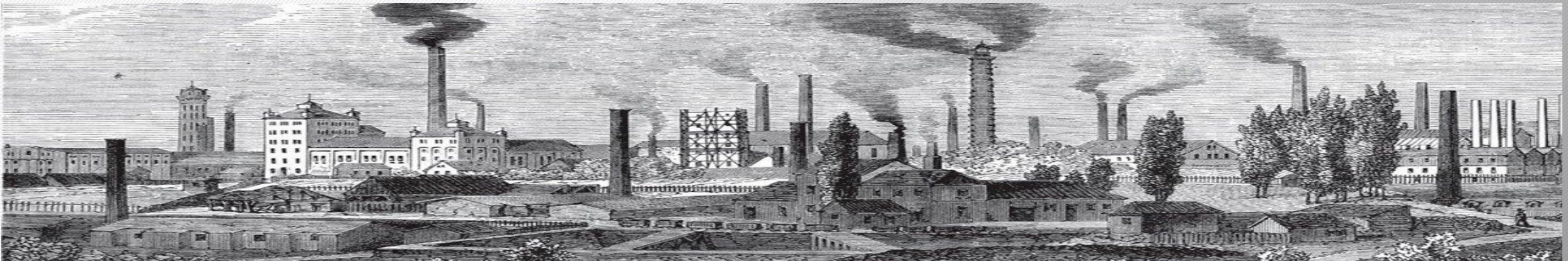
Theory of Architecture Fourth Stage

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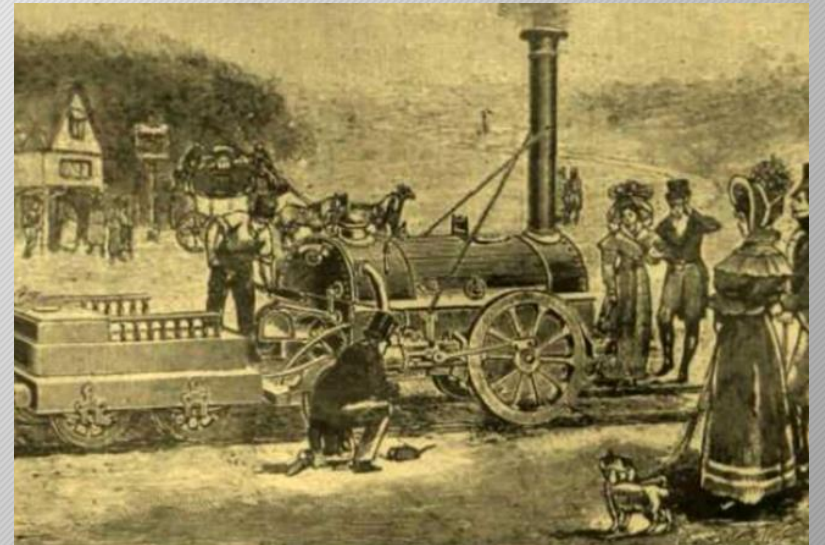
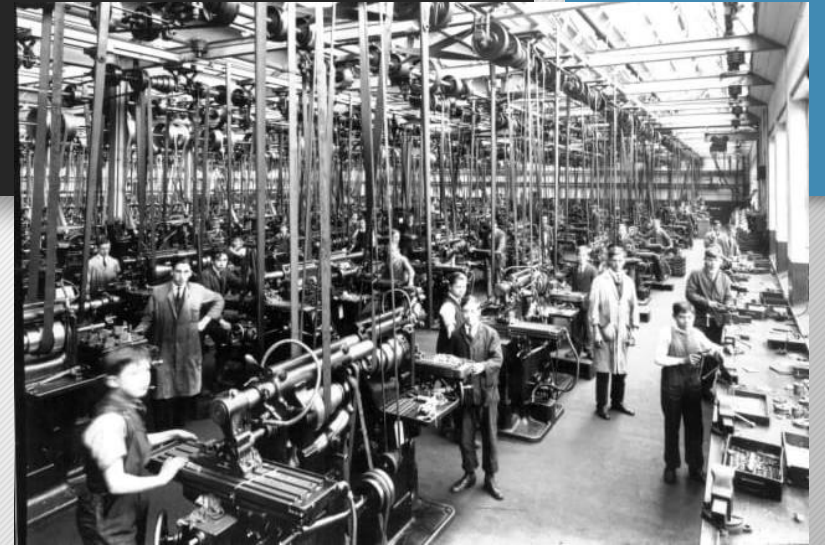
Industrial Revolution

- The Industrial Revolution was **the transition to new manufacturing processes** in the period from about 1760 to 1840.
- This process began in **Britain** in the 18th century and from there spread to other parts of the world.
- The main features involved in the Industrial Revolution were technological, socioeconomic, and cultural.



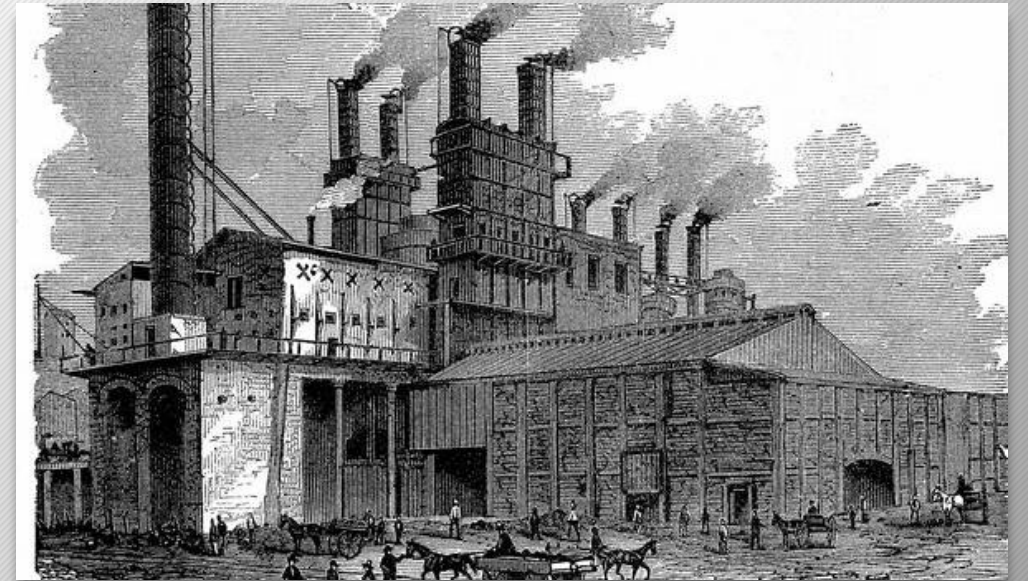
The technological changes

- The use of new basic materials, chiefly iron and steel.
- The use of new energy sources, such as coal, the steam engine, electricity, petroleum, and the internal-combustion engine
- The invention of new machines, that permitted increased production.
- Important developments in transportation and communication, including, automobile, airplane, telegraph, and radio.
- The rise of the factory system, with science applications.



Industrial Revolution's main Effects on Architecture

- 1. Using Machinery
- 2. Mass Production
- 3. Standardization
- 4. The use of new materials (Steel and Glass)



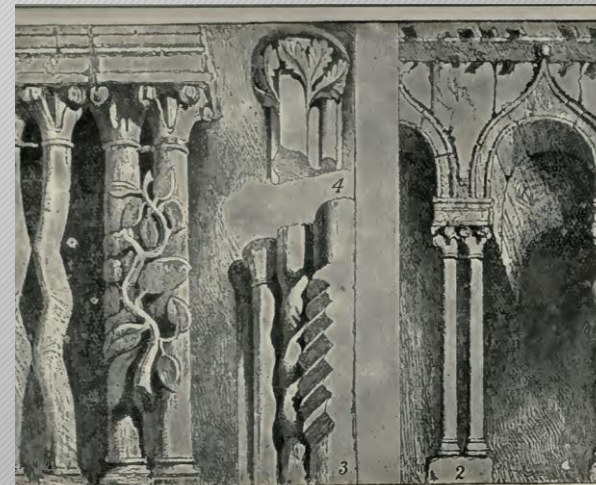
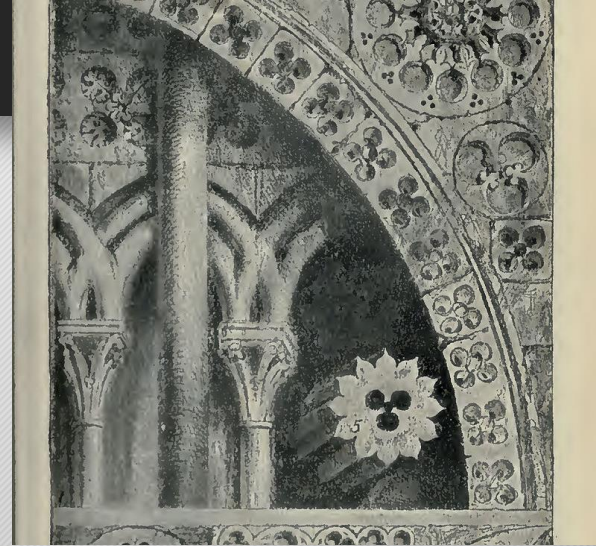
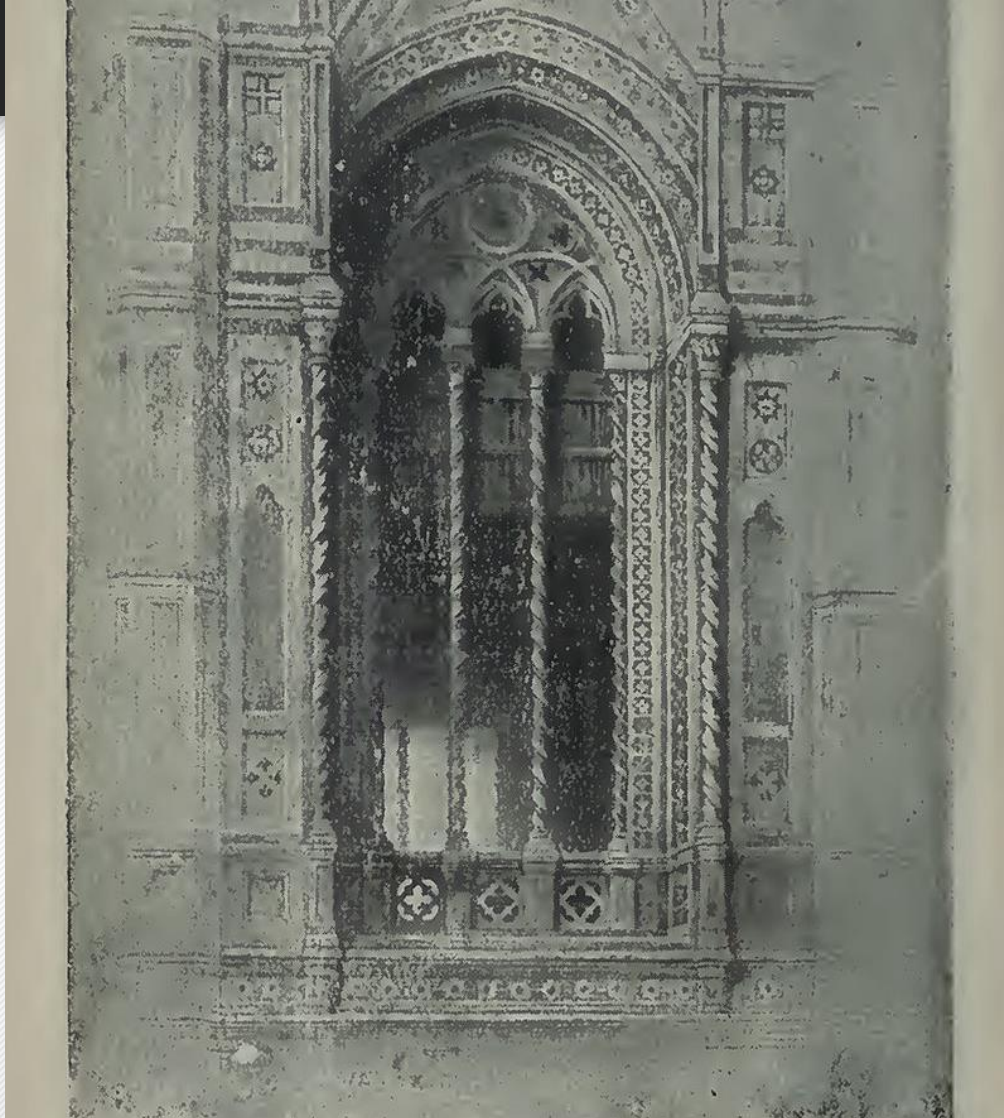
Picturesque in Architecture

- ❑ Picturesque is an aesthetic ideal introduced into English cultural debate in 1782 by William Gilpin .
- ❑ *Relative Chiefly to Picturesque Beauty*.
- ❑ It appeared in architecture with the writings of the English art critic and theorist **John Ruskin**, (*The Seven Lamps of Architecture*) , in 1849. The 'lamps' of the title are Ruskin's principles of architecture.
- ❑ These writings are considered as the contemporary thinking behind the **Gothic Revival**. That was in practice.
- ❑ Ruskin's book helped to capture and summarise the thoughts of the movement.



Picturesque in Architecture

- Ruskin's nine pencil drawings illustrate the principles in the Romanesque and Gothic examples



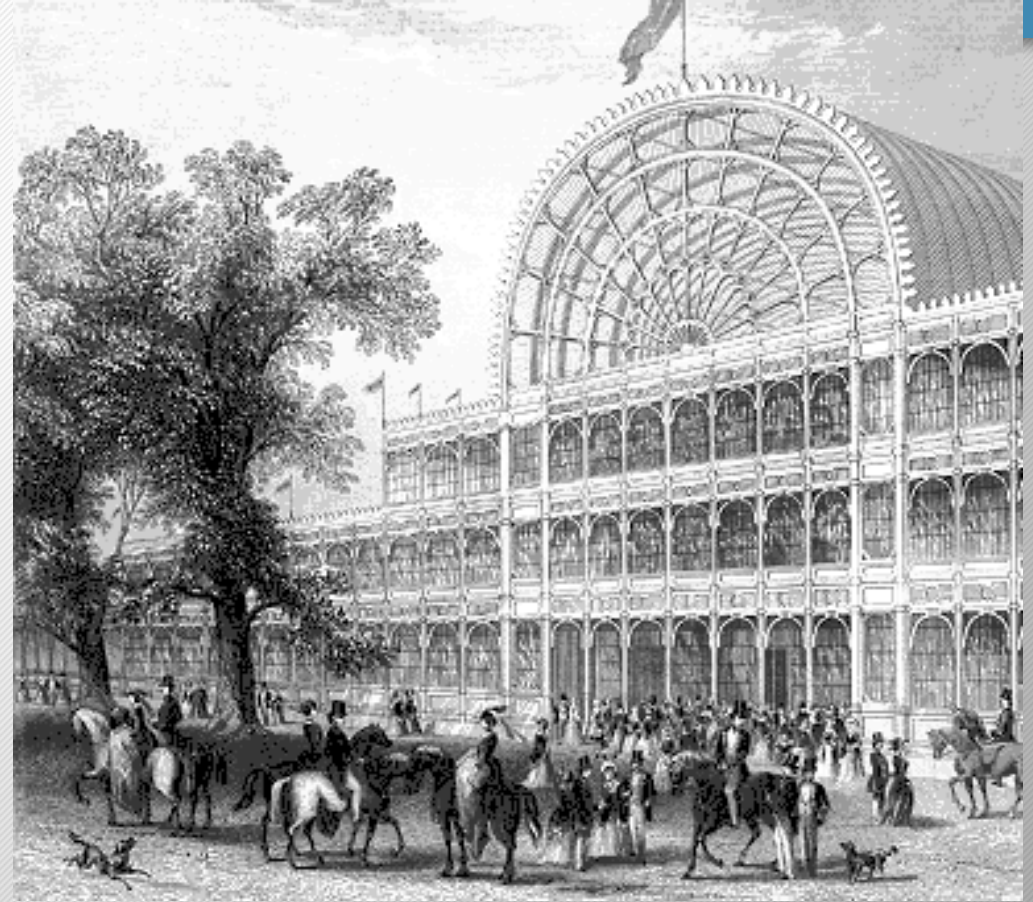
The Crystal Palace

- ❑ The **Crystal Palace** was a cast-iron and plate-glass structure
- ❑ built in Hyde Park, London, to house the Great Exhibition of 1851.
- ❑ exhibition spaces display examples of technology developed in the Industrial Revolution, and world civilization
- ❑ Designed by Joseph Paxton an architect and gardener
- ❑ It was destroyed by fire in 1936.

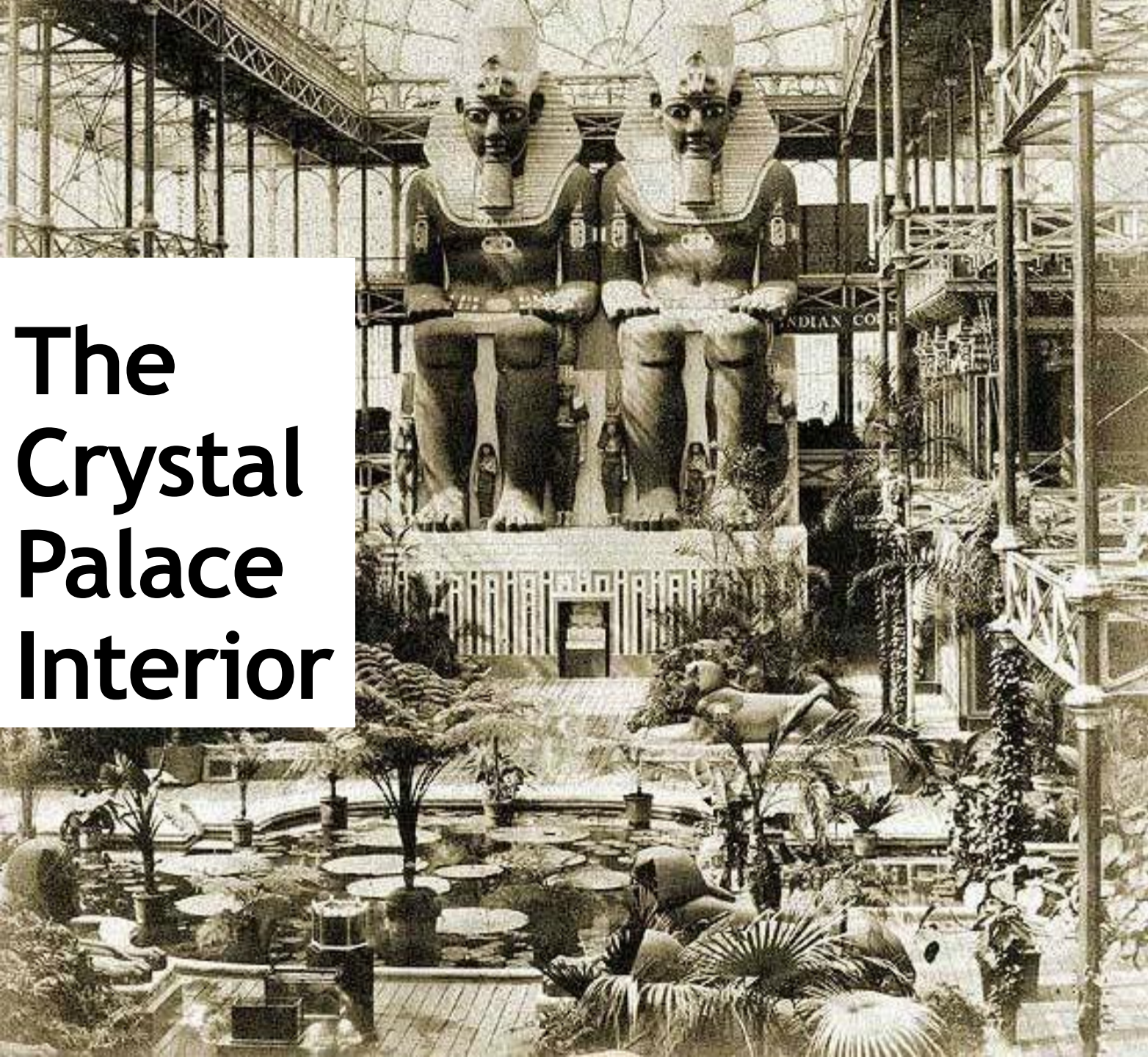




The Crystal Palace

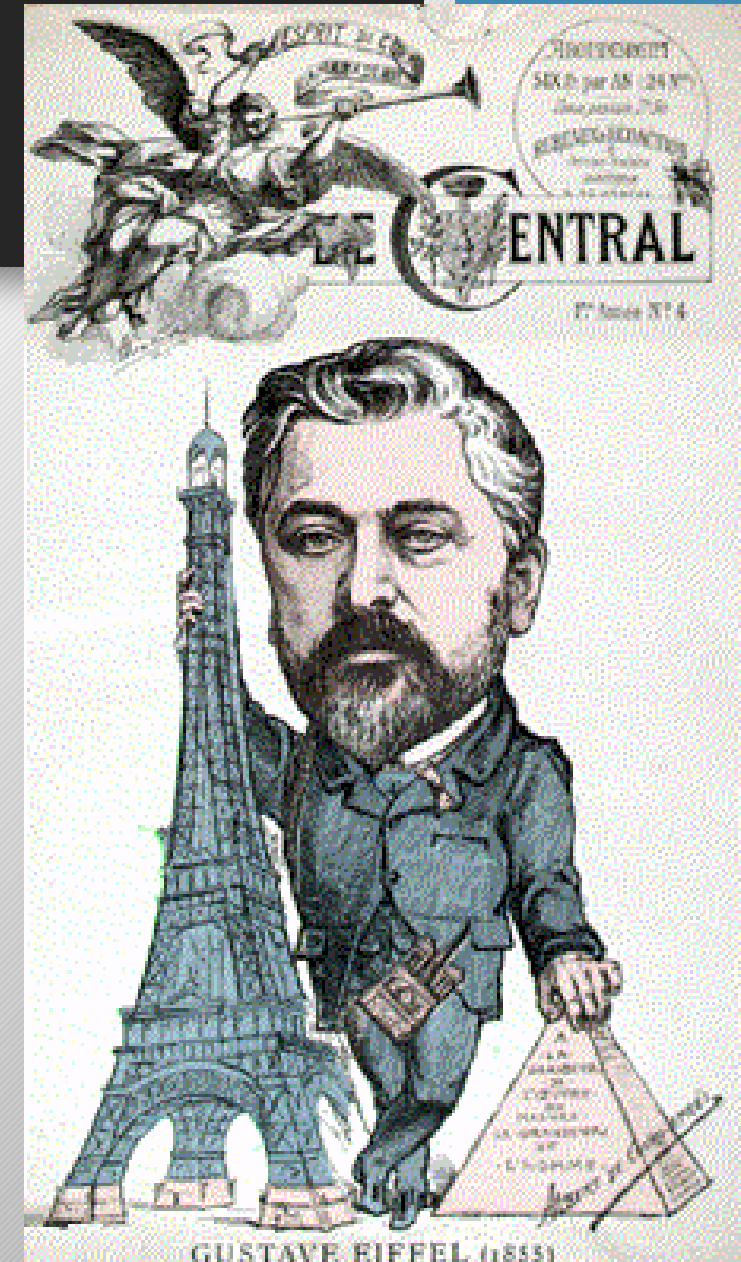


The Crystal Palace Interior



The Eiffel Tower

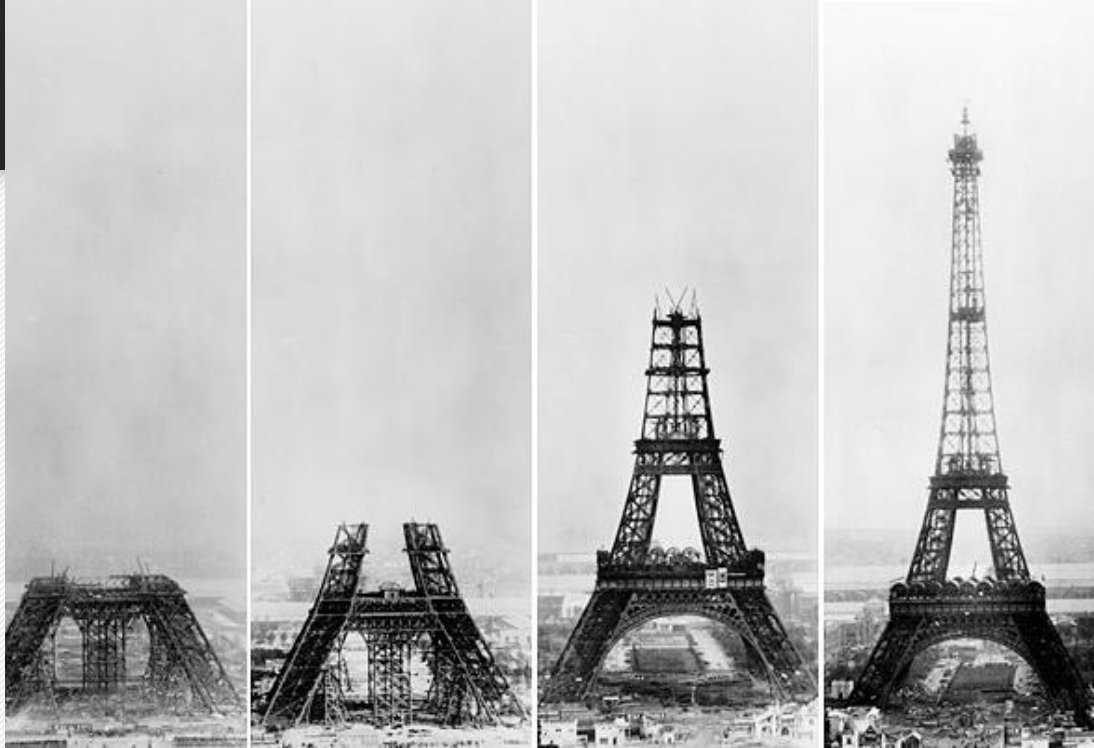
- ❑ It is named after the engineer Gustave Eiffel, whose company designed and built the tower.
- ❑ Constructed from 1887-1889 as the entrance to the 1889 World's Fair.
- ❑ it was criticized by some of France's leading artists and intellectuals for its design, but it has become a global cultural icon of France and one of the most recognisable structures in the world
- ❑ The tower is 324 metres



The Eiffel Tower

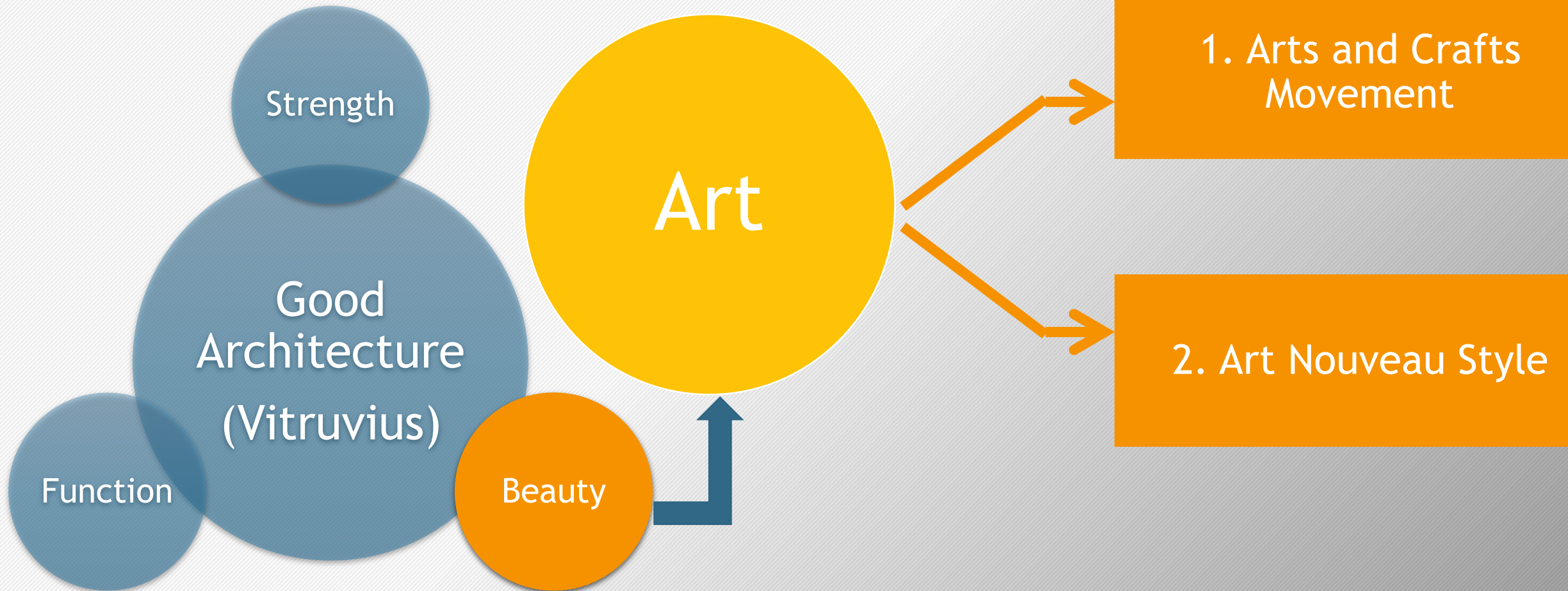
- ❑ Before Eiffel tower, architects tried to repeat historic stone structures.
- ❑ the Eiffel Tower changed completely the way they were using the new material (steel). The structure, its appearance is completely new and modern, without particular function.
- ❑ Eiffel installed a meteorology laboratory on the third floor of the tower to save it from extinction.
- ❑ In 1910, the city of Paris renewed Eiffel's tower structure as a wireless telegraph transmitter.
- ❑ The tower is still contains more than 120 antennas, broadcasting both radio and television signals throughout the capital city and beyond.





The Eiffel Tower construction

What are the principles of Good Architecture?



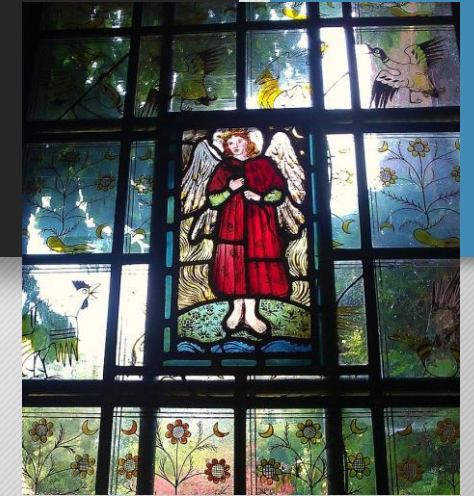
1. Arts and Crafts movement

- ❑ An international movement that began in **Britain in 19th century**
- ❑ It encourages **traditional craftsmanship.**
- ❑ It was **anti-industrial** (reaction against Industrial Revolution).



What are the principles of Arts and crafts movement?

- **1. Structural “authenticity”:** exposed beams, strong posts, clear roof line
- **2. Simplicity:** open floor plans, smooth surfaces, lack of complicated carving
- **3. Native materials:** wood, stone, brick.
- **4. The hand of the artist:** hand-made works, and the use of stained glass as decoration.

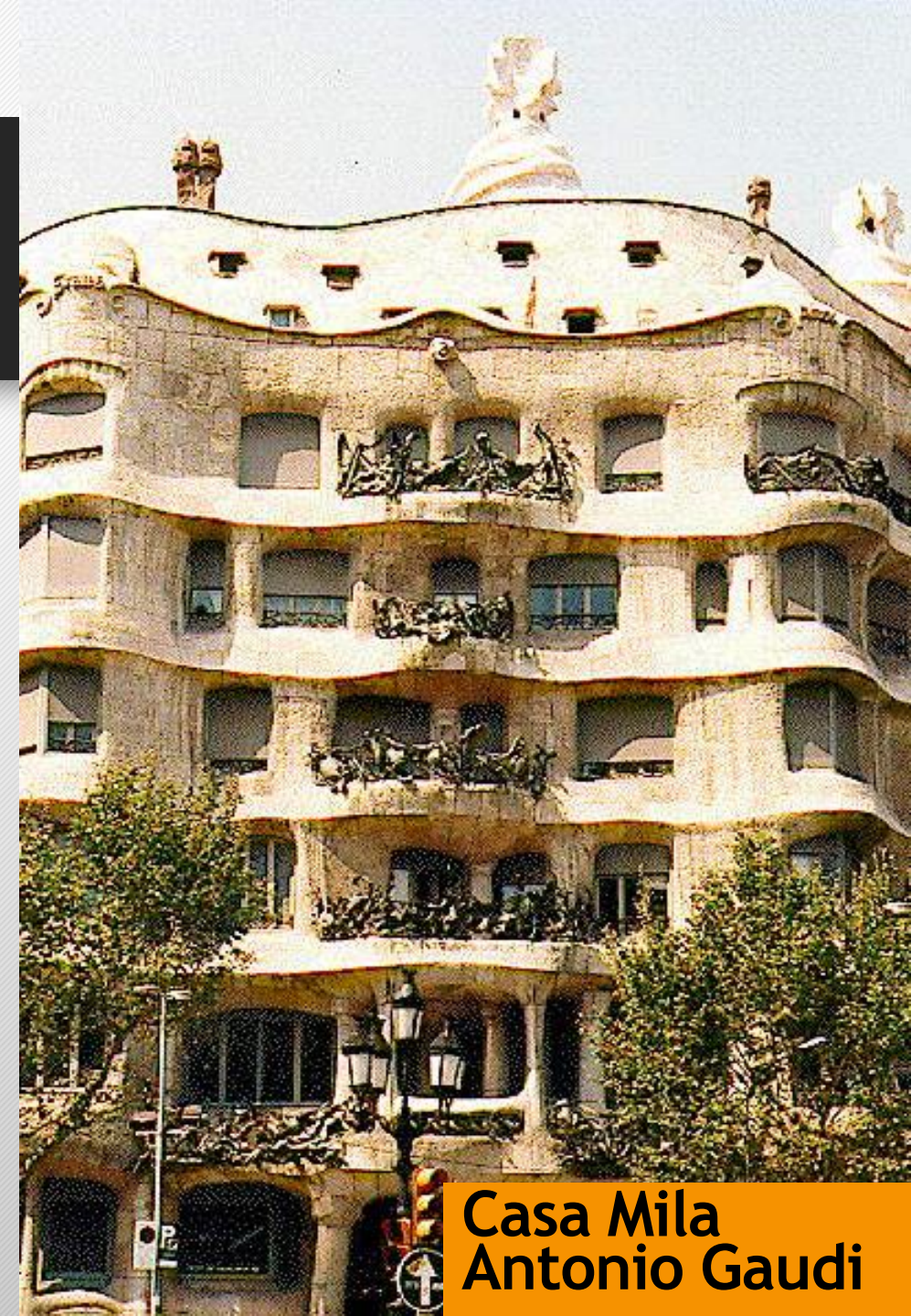


Red House, 1859,
Philip Webb, William
Morris, London



2. Art Nouveau Style

- ❑ A design style that became popular in Europe and the United States in 19th century.
- ❑ The term 'Art Nouveau' is French and means “**new art**”
- ❑ Art Nouveau was a desire to create a **new art for a new age** by embracing the possibilities of the Industrial Revolution.



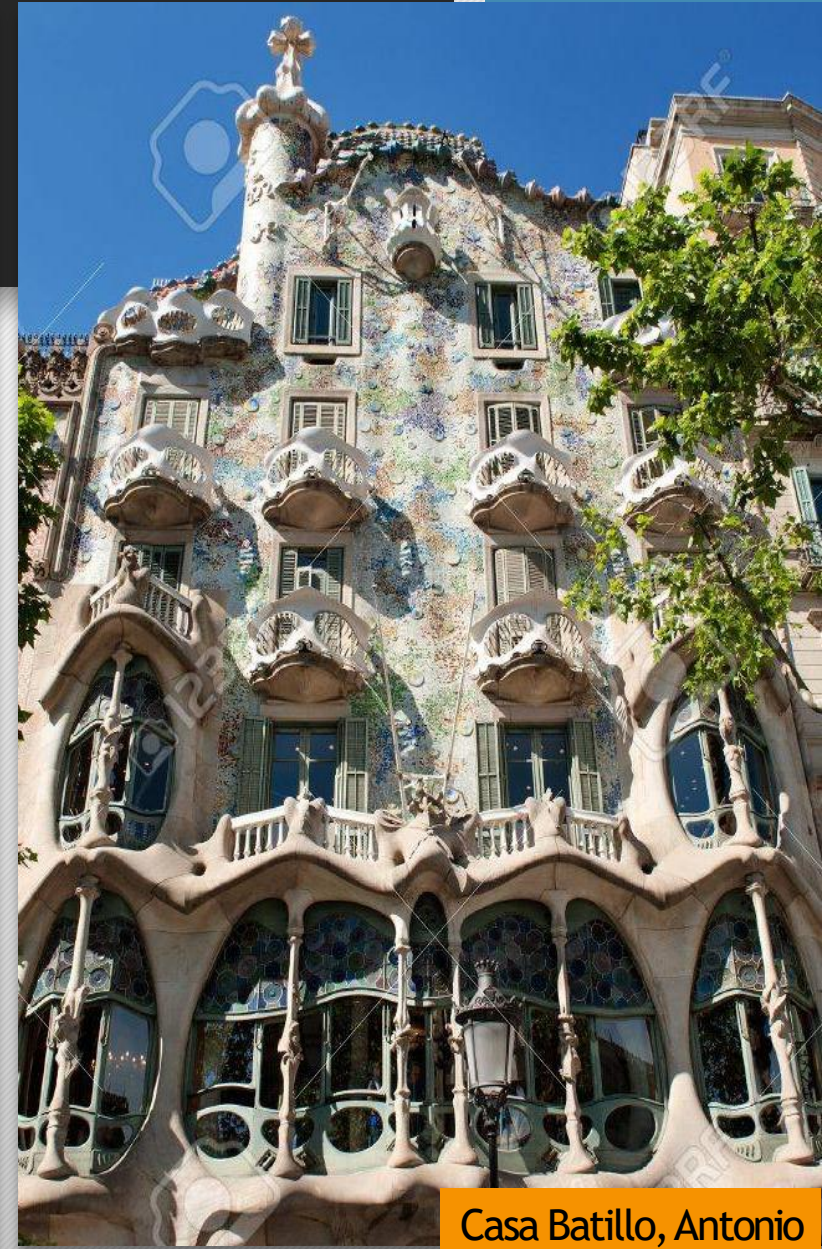
Casa Mila
Antonio Gaudi

What are the principles of Art Nouveau Style?

- 1. Asymmetrical shapes
- 2. Extensive use of arches and curved forms
- 3. It's a style influenced by nature (Organic).
- 4. Sculptural elements that use glass and wrought iron.



Hôtel Tassel, Victor Horta, (1893-1894)



Casa Batillo, Antonio Gaudi, (1893-1894)

Q/ What is the reason of difference in architectural design trends after the Industrial Revolution?

Q/ What is the design trend for each building below?



**Casa Batlló, Barcelona
Antonio Gaudi**



**Mineral Hall, Missouri
Louis Curtiss**



Thank You

THANK YOU