

PRE-INDUSTRIAL REVOLUTION DAYS



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Pre-industrial society

- Pre-industrial society refers to social attributes and forms of political and cultural organization that were prevalent before the advent of the Industrial Revolution, which occurred from 1750 to 1850. Pre-industrial is a time before there were machines and tools to help perform tasks

When did Civil Engg. started?

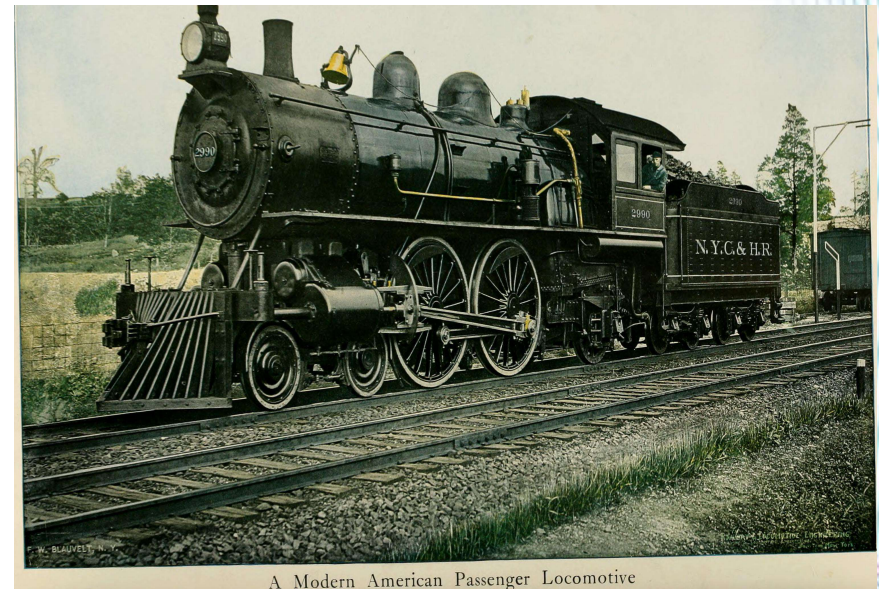
- 18th century
- Before Industrial Revolution, Civil Engineering included all engineers that did not practice military engineering, said to have begun in 18th century France. First “Civil Engineer” was an Englishman, John Smeaton in 1761.

Industrial Revolution

- The Industrial Revolution was a time when the manufacturing of goods moved from small shops and homes to large factories.
- This shift brought about changes in culture as people moved from rural areas to big cities in order to work.
- It also introduced new technologies, new types of transportation, and a different way of life for many.

Development in Transportation system

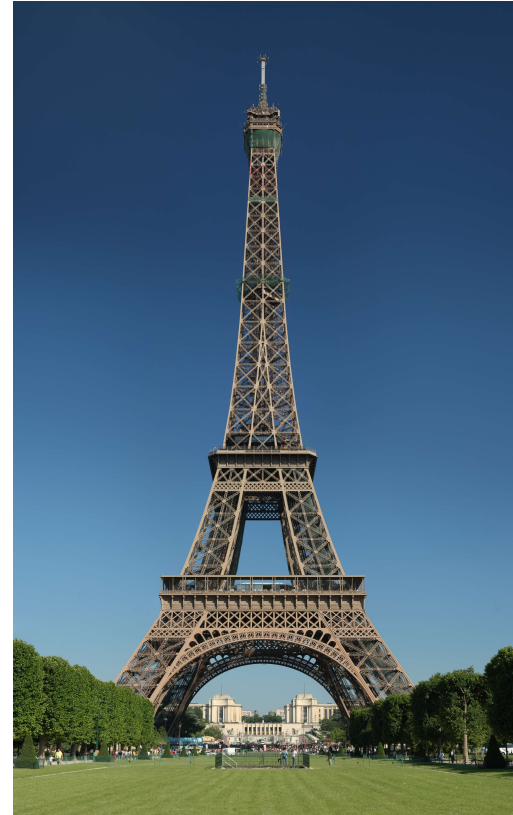
- Roads, railways and canals were build.
- Canals were begun to built to connect the major manufacturing centres.
- Rail roads were spreaded over broad areas.



A Modern American Passenger Locomotive

Invention of building materials

- Cast Iron - approximately 4 times stronger in compression than stone.
- Wrought Iron – about 40 times better in tension than stone.
- Glass was easier to manufacture.
- Building started to be built in almost any shapes and sizes.



They made it possible!!!

- Joseph Aspdin invented **Cement** in 1824. He called it **Portland Cement** because the concrete made from it looked like **Portland stone**, a widely used building stone in England.
- The Chinese of the Han dynasty (202 BC – 220 AD) created steel by melting together wrought iron with cast iron, gaining an ultimate product of a carbon-intermediate steel by the 1st century AD.
- A French gardener by name Joseph Monier first invented the reinforced concrete in the year 1849.



Some buildings made of Portland Stone

- St Paul's Cathedral, London (1677).



- The Port of Liverpool Building, England (1907).



- 100 King Street, England (1935).



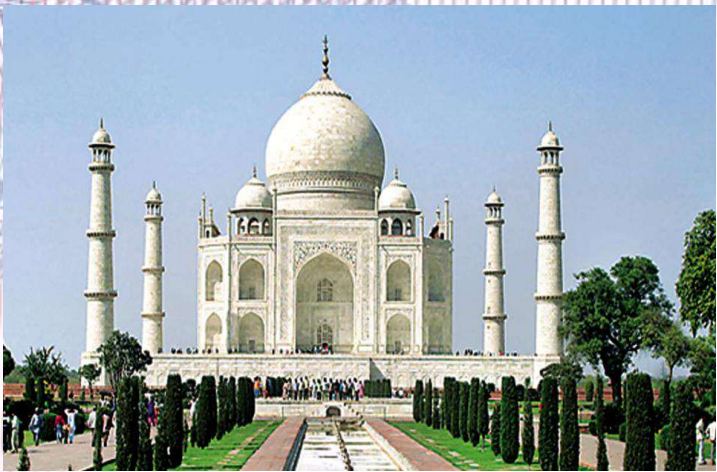
From Walking to Flying

Earlier

- The Taj Mahal took approximately 20 years and about 20,000 workers to complete.
- The Great Wall of China - approximately 20 years
- Colosseum – 8 years

Today

- Burj Khalifa was build in about 5 years.
- We builded a whole island in only 6 years.
- The Atmosphere building in Kolkata, took about 2.5 years.



We even connected the Oceans

The Panama Canal

- The Panama Canal is an artificial 82 km waterway in Panama that connects the Atlantic Ocean with the Pacific Ocean.
- The canal cuts across the Isthmus of Panama and is a conduit for maritime trade.
- Construction of the canal began in 1881 by France, but there were engineering problems and too many people were dying due to disease. Construction stopped until the US took over in 1904.





**Hope You Build
Good!**



Thank You