

The pioneers

Isambard Kingdom Brunel

Considered to be Britain's greatest engineer, Isambard Kingdom Brunel was born in 1806 to an English mother and a French father. His father, Marc Brunel, himself a celebrated engineer, moved to England at the time of the French Revolution. After a formal education in both France and Britain, Brunel went on to work for his father on the building of the Thames Tunnel. Within four years, and still only aged 20, he was appointed principal engineer of the project. In 1833, Brunel was appointed chief engineer to the new Great Western Railway company working on the line that linked London to Bristol. His work on railways saw him engineer over 1,200 miles of railway with lines constructed across the globe, in Ireland, Italy and Bengal.

Whilst with the Great Western Railway company, Brunel also began his work on ship building, persuading the company to build a steam boat for travel from Bristol to New York. The Great Western was launched in 1838 and was the largest steam ship of its day, over 236 feet in length. From here, Brunel went on to build the Great Britain and finally the Great Eastern, which was designed to carry over 4,000 passengers.

He was married in 1836 to Mary Horsley. Brunel died in 1859, aged 54, having been taken ill while preparing for the maiden voyage of the Great Eastern in 1858.

John Roebling

Born in 1806 in Muhlhausen, Thuringia, Prussia (now Germany), John Roebling was educated in the public schools of Muhlhausen before attending the Royal Polytechnic School in Berlin. Graduating in 1826 with a degree in civil engineering, Roebling was obliged to spend three years in service to the State, working on road-building projects.

He emigrated to America in 1831 along with his brother. They settled in Pennsylvania where they

sought to establish a farming community. When the farming venture failed, Roebling resumed his engineering work, taking on canal and railway building projects. In 1841, Roebling invented twisted wire rope cable which preceded the use of wire rope supports in the construction of suspension bridges.

He constructed his first suspension bridge in 1845 and went on to build numerous others, the most famous being the Brooklyn Bridge. He died in 1869 after a freak accident – whilst surveying the site for the Brooklyn Bridge his foot was crushed and he later succumbed to lockjaw. His son, Washington, oversaw the continuing work on the Brooklyn Bridge which was completed in 1883.

Robert Stevenson

Robert Stevenson was born in Glasgow in 1772, to Alan Stevenson and Jean Lillie. After the death of his father in 1794, his mother subsequently remarried Thomas Smith, whom she met through her church activities.

Stevenson began his work on lighthouses whilst in the employ of his stepfather, assisting in the supervision of lighthouses around the Scottish coast. After working hard to qualify as a civil engineer, Robert built up the family business of lighthouse construction and civil engineering, with his greatest achievement being the building of the Bell Rock Lighthouse.

Stevenson married Jean Smith (the daughter of his stepfather by an earlier marriage) and had a large family. Continuing the family tradition, three of his sons followed him into the lighthouse-building business, with his eldest son, Alan, becoming engineer to the Northern Lighthouse Board.

Stevenson died in 1850.

Dr Thomas C Durant

Born in 1820, Thomas C Durant made his name building railroads, notably the Mississippi and Missouri railroad across Iowa. He came to the Union Pacific Railroad as Vice President and General Manager and set about establishing support and financing for its construction. A successful and driven man, Durant also used his position to further his own gains and was often accused of bribery and corruption.

Durant died in 1885.

Joseph Bazalgette

Joseph Bazalgette was born in Enfield in 1819. He began his career working on railway projects and was later appointed Chief Engineer of the Metropolitan Board of works in 1855, having previously been employed by the Metropolitan Commission of Sewers.

His greatest achievement was the building of the London Sewers network, which began after the “Great Stink” of 1858. Taking eight years to build, between 1859 and 1865, Bazalgette oversaw the construction of 82 miles of sewage super highway, which were linked to a thousand miles of street sewers.

He was also responsible for the building of the Thames Embankments, and Battersea, Hammersmith and Putney Bridges, doing perhaps more than anyone of the time to transform London into a modern city.

Bazalgette died in 1901.

Ferdinand de Lesseps

Hailing from a family of distinguished French diplomats, Ferdinand de Lesseps was born in 1805 in Versailles. After studying law, he went to work with his uncle, then the French ambassador to Lisbon. He later served with his father in Tunis and, after his father’s death, he spent time in Egypt, Rotterdam, Malaga, Barcelona and Madrid.

Having befriended the new Viceroy of Egypt, Mohammed Said, many years before, de Lesseps was given the job of overseeing the construction of the Suez Canal. When the canal opened in 1869, he was hailed as a hero, both in Egypt and France.

Several years later, he expressed his desire to build an inter-oceanic canal. 1 January 1880 saw de Lesseps and his young daughter dig the first spade of earth in the construction of the Panama Canal. The venture suffered numerous setbacks in the shape of weather, disease and financial mismanagement, leading to its failure in 1889. De Lesseps died five years later in France, having fallen from his celebrated position.

Arthur Powell-Davis

Born in 1861, in Decatur, Illinois, Arthur Powell Davis earned a Bachelor of Science degree in Civil Engineering from Columbian (now George Washington) University in 1888. Davis gained work as a topographer for US Geographical Survey through the help of his uncle, John Wesley Powell, who was its director and who conquered and explored the Colorado River.

Davis progressed through the Government ranks and, in 1906, became Chief Engineer of the Reclamation Service, a position he held until his appointment to Director on December 1914. During his tenure as Director, Reclamation outlined the development of the Colorado River basin before Congress in 1922. Davis was the first to recommend construction of multipurpose dams.

He died in Oakland, California, in 1933, before the Hoover Dam came into operation.