

Tower Bridge



Tower Bridge is a Grade I listed combined bascule and suspension bridge in London, built between 1886 and 1894, designed by Horace Jones and engineered by John Wolfe Barry with the help of Henry Marc Brunel.[1] It crosses the River Thames close to the Tower of London and is one of five London bridges owned and maintained by the City Bridge Foundation, a charitable trust founded in 1282. The bridge was constructed to give better access to the East End of London, which had expanded its commercial potential in the 19th century. The bridge was opened by Edward, Prince of Wales and Alexandra, Princess of Wales in 1894.

The bridge is 800 feet (240 m) in length and consists of two 213-foot (65 m) bridge towers connected at the upper level by two horizontal walkways, and a central pair of bascules that can open to allow shipping. Originally hydraulically powered, the operating mechanism was converted to an electro-hydraulic system in 1972.

History

In the late 19th century, commercial development in the East End of London increased, leading to demand for a new river crossing downstream of London Bridge. A traditional fixed bridge at street level could not be built because it would cut off access by sailing ships to the port facilities in the Pool of London between London Bridge and the Tower of London.[2]

A Special Bridge or Subway Committee chaired by Sir Albert Joseph Altman was formed in 1877 to find a solution.[3] More than fifty designs were submitted, including one from civil engineer Sir Joseph Bazalgette, which was rejected because of a lack of sufficient headroom. A design was not approved until 1884 when it was decided to build a bascule bridge.[2][4] Sir John Wolfe Barry was appointed engineer and Sir Horace Jones the architect (who was also one of the judges).[5][6] An Act of Parliament authorising construction was passed in 1885. It specified that the opening span would provide a clear width of 200 feet (61 m) and headroom of 135 feet (41 m). The design had to be in a Gothic style.[5] Construction was funded by the City Bridge Foundation, a charity established in 1282 for maintenance of London Bridge that subsequently expanded to cover Tower Bridge, Blackfriars Bridge, Southwark Bridge and the Millennium Bridge.[7]

Attraction

The Tower Bridge attraction is a display housed inside the Bridge's Towers, the high-level Walkways, and the Victorian Engine Rooms. It uses films, photos, and interactive displays to explain why and how Tower Bridge was built. Visitors can access the original steam engines that once powered the bridge bascules, housed in Engine Rooms, underneath the south end of the bridge.[31]

The attraction charges an admission fee. The entrance is from the Ticket Office on the west side of the North Tower, from where visitors can climb the stairs (or take a lift) to the high-level Walkways to cross to the South Tower. In the Towers and Walkways is interpretation about the history of the Bridge. The Walkways also provide views over the city, the Tower of London and the Pool of London, and include two Glass Floors, where you can look down to see the road and River Thames below. From the South Tower, visitors can visit exit and follow the Blue Line to the Victorian Engine Rooms, with the original steam engines, which are situated in a separate building underneath the southern approach to the Bridge.[64]

Benjamin Crisler, the New York Times film critic, wrote in 1938: "Three unique and valuable institutions the British have that we in America have not: Magna Carta, the Tower Bridge and Alfred Hitchcock." [67] Architectural historian Dan Cruickshank selected Tower Bridge as one of his four choices for the 2002 BBC television documentary series Britain's Best Buildings.[68][69] The bridge and its surrounding landscape was depicted in an official BBC

trailer for the 2021 Rugby League World Cup (in reference to London being one of the host cities).[70]Design

Construction

Construction started in 1886, with the foundation stone laid by the Prince of Wales on 21 June, and took eight years.[8][9] Major contractors included Sir John Jackson (foundations),[10] Armstrong, Mitchell and Company (hydraulics), William Webster,[11] and Sir William Arrol & Co.[12] 432 people worked on the site; E W Crutwell was the resident engineer for the construction.[13]

Two piers, containing over 70,000 long tons (78,400 short tons; 71,123 t) of concrete, were sunk into the riverbed to support the construction.[14] More than 11,000 long tons (12,320 short tons; 11,177 t) of steel were used in the framework for the towers and walkways, which were then clad in Cornish granite and Portland stone to protect the underlying steelwork.[15]

Jones died in 1887, and George D. Stevenson took over the project.[16] Stevenson replaced Jones's original brick façade with the more ornate Victorian Gothic style, which made the bridge a distinctive landmark and was intended to harmonise the bridge with the nearby Tower of London.[13][16] The total cost of construction was £1,184,000[9][13] (equivalent to £143 million in 2021).[17]

Design

The bridge is 800 feet (240 m) in length with two towers each 213 feet (65 m) high, built on piers.[43] The central span of 200 feet (61 m) between the towers is split into two equal bascules, or leaves, which can be raised to an angle of 86 degrees to allow river traffic to pass.[44] The bascules, weighing over 1,000 tons each, are counterbalanced to minimise the force required and allow raising in five minutes.[45]

The two side spans are suspension bridges, each 270 feet (82 m) long, with the suspension rods anchored both at the abutments and through rods contained within the bridge's upper walkways. The pedestrian walkways are 143 feet (44 m) above the river at high tide and accessed by lifts and staircases.[5][13]

There is a chimney on the bridge that is painted to look like a lamppost. It was connected to a fireplace in a guardroom located in one of the bridge piers.[46]