

Tower Bridge

Tower Bridge is a combined [bascule](#) and [suspension bridge](#) in [London](#), built between 1886 and 1894. The bridge crosses the [River Thames](#) close to the [Tower of London](#) and has become an iconic symbol of London. As a result, it is sometimes confused with [London Bridge](#), about half a mile (0.8 km) upstream. Tower Bridge is one of five London bridges owned and maintained by the [Bridge House Estates](#), a charitable trust overseen by the [City of London Corporation](#). It is the only one of the trust's bridges not to connect the City of London directly to the Southwark bank, as its northern landfall is in [Tower Hamlets](#).

The bridge consists of two [bridge towers](#) tied together at the upper level by two horizontal walkways, designed to withstand the horizontal [tension](#) forces imposed by the suspended sections of the bridge on the landward sides of the towers. The vertical components of the forces in the suspended sections and the vertical reactions of the two walkways are carried by the two robust towers. The bascule pivots and operating machinery are housed in the base of each tower.

The bridge deck is freely accessible to both vehicles and pedestrians, whereas the bridge's twin towers, high-level walkways and Victorian engine rooms form part of the Tower Bridge Exhibition, for which an admission charge is made. The nearest [London Underground](#) tube stations are [Tower Hill](#) on the [Circle](#) and [District](#) lines, [London Bridge](#) on the [Jubilee](#) and [Northern](#) lines and [Bermondsey](#) on the Jubilee line, and the nearest [Docklands Light Railway](#) station is [Tower Gateway](#). The nearest [National Rail](#) stations are at [Fenchurch Street](#) and [London Bridge](#).

In the second half of the 19th century, increased commercial development in the [East End of London](#) led to demands 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.

A *Special Bridge or Subway Committee* was formed in 1877, chaired by Sir Albert Joseph Altman, to find a solution. 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). An Act of Parliament was passed in 1885 authorising the bridge's construction. It specified the opening span must give a clear width of 200 feet (61 m) and a headroom of 135 feet (41 m). Construction had to be in a [Gothic style](#).

Barry designed a bridge with two [bridge towers](#) built on piers. The central [span](#) was split into two equal bascules or leaves, which could be raised to allow river traffic to pass. The two side-spans were suspension bridges, with rods anchored both at the abutments and through rods contained in the bridge's upper walkways.

Construction

Construction started in 1886 and took eight years with five major contractors – [Sir John Jackson](#) (foundations), [Baron Armstrong](#) (hydraulics), [William Webster](#), Sir [H.H. Bartlett](#), and [Sir William Arrol & Co.](#) – and employed 432 construction workers. E W Crutwell was the resident engineer for the construction. The first stone was laid by [Albert, Prince of Wales](#).

Two massive 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. 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.

Jones died in 1887 and George D. Stevenson took over the project. Stevenson replaced Jones's original brick façade with the more ornate [Victorian Gothic](#) style, which makes the bridge a distinctive landmark, and was intended to harmonise the bridge with the nearby [Tower of London](#). The total cost of construction was £1,184,000 (equivalent to £136 million in 2019).

Opening

Tower Bridge was officially opened on 30 June 1894 by the Prince and [Princess of Wales](#). An [Act of parliament](#) stipulated that a [tug boat](#) should be on station to assist vessels in danger when crossing the bridge, a requirement that remained in place until the 1960s.

The bridge connected Iron Gate, on the north bank of the river, with Horselydown Lane, on the south – now known as Tower Bridge Approach and [Tower Bridge Road](#), respectively. Until the bridge was opened, the [Tower Subway](#) – 400 m to the west – was the shortest way to cross the river from [Tower Hill](#) to [Tooley Street](#) in [Southwark](#). Opened in 1870, Tower Subway was among the world's earliest underground ("tube") railways, but it closed after just three months and was re-opened as a pedestrian foot tunnel. Once Tower Bridge was open, the majority of foot traffic transferred to using the bridge, there being no toll to pay to use it. Having lost most of its income, the tunnel was closed in 1898.

The high-level open air walkways between the towers gained a reputation as a haunt for [prostitutes](#) and [pickpockets](#); as they were only accessible by stairs they were seldom used by regular pedestrians, and were closed in 1910. The walkway reopened in 1982 as part of the Tower Bridge Exhibition.