

## London Bridge

Owner: Bridge House Estates

Completed: 1973

Designer: Lord Holford and Mott Hay & Anderson

There has been a bridge on this site for almost as long as there has been a city of London. The first was erected over 2,000 years ago, with successive bridges built by the Romans, William the Conqueror and King John. In 1014 the Danes had seized London. In an effort to reclaim the English crown, the Saxon King Ethelred the Unready attacked the bridge with the help of a Viking raiding party led by King of Olaf of Norway. They sailed up the Thames, tied their boats to the wooden bridge supports and rowed away on the tide, pulling the bridge down behind them and giving rise to the famous song 'London Bridge is Falling Down.'

During the Tudor period around 600 buildings lined the bridge, some over six stories tall. In fact it was so heavily populated that it became a ward of the city. The heads of traitors used to be impaled on the poles of the bridge's gatehouse, among them William Wallace d.1305, Thomas More (d.1535) and Thomas Cromwell (d.1540).

In 1722, when the carts, coaches and carriages caused too much congestion on London Bridge, the Lord Mayor decreed that all vehicles should keep to the left, which later became the rule for all roads in Britain. By 1763, the houses and shops lining the bridge were removed to provide extra clearance for the increased traffic. A severe frost caused permanent damage to the bridge in 1813 and a design competition was arranged calling for entries for its replacement. The competition was won by architect John Rennie, with a conventional design of five stone arches, and the new bridge was built in 1831.

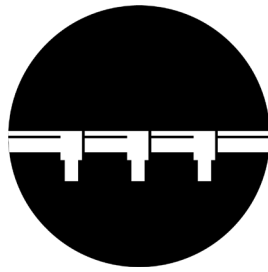
As cars proliferated and traffic continued to increase, in the 1960s the bridge began to sink at one end. In 1968, the structure was purchased for £1 million (then \$2.4 million) by the McCulloch Oil Corporation, who shipped the bridge across the Atlantic and re-erected it, piece-by-piece, over Lake Havasu in Arizona. There is no foundation, alas, to the urban myth that the purchasers mistakenly thought that had bought Tower rather than London Bridge.

Completed in 1973, the London Bridge of today was designed by William Holford & Partners. Consisting of three spans of pre-stressed concrete cantilevers, the bridge is minimalist in appearance, its only decoration the granite obelisks on the faces of the piers and the polished granite facing of the parapet walls.

The footpath on the eastern side of the bridge was made much wider than the western one to accommodate commuters arriving at London Bridge station. It is widely reported that the footpaths are heated during cold spells to prevent icing, however plans for this were never completed due to high running costs. One Sunday every autumn vehicle traffic is replaced by sheep for the annual Sheep Drive by Freemen of the City of London, a practice that dates back to the 12th century.

### Artist's Vision

Villareal's artwork for London Bridge responds to the continuous stream of movement, colour, noise, and cultural activity in the surrounding area. The simple form and silhouette of the bridge is complemented by fields of broad and warm colour.



## Cannon Street Railway Bridge

Owner: Network Rail

Completed: 1866

Designer: Sir John Hawkshaw

Nothing whatsoever to do with artillery, Cannon Street got its name as a shortening of the Middle English 'candelwrichstrete' which means 'street of candle makers,' first mentioned in the 12th century. The street sits within the Ward of Candlewick, one of 25 ancient subdivisions of the City of London.

Cannon Street Bridge, designed by Sir John Hawkshaw and originally opened in 1866, consists of five impressive spans supported by cast iron Doric pillars. It was officially named the Alexandra Bridge in honour of Princess Alexandra of Denmark, who married Edward, Prince of Wales, in 1863.

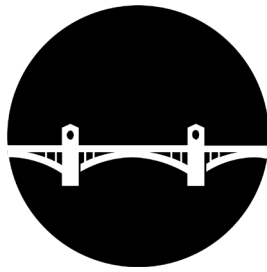
The original bridge incorporated two footpaths, one of which was a public toll-path and the other used exclusively by railway employees. The footpaths were removed in 1893, when the bridge was widened and strengthened by adding four extra cast-iron cylinders to the upstream side of each pier.

In the last 100 years the bridge has been rebuilt twice. The station was badly damaged during the Second World War and many of the original ornamental features were removed when British Rail undertook extensive renovations to the structure in 1982. However, two brick towers from the original bridge remain on the riverfront. These towers flank the bridge on the north side and conceal large tanks that contain enough water to power Cannon Street station's hydraulic lifts.

### Artist's Vision

Cannon Street Bridge, despite being one of the oldest bridges on the Thames, had never been lit before. Villareal's artwork celebrates the bridge's oft-overlooked utilitarian character and monumental Doric columns, with subtle kinetic colours mirroring the motion of the trains passing above.





## Southwark Bridge

Owner: Bridge House Estates

Completed: 1921

Designer: Sir Ernest George and Basil Mott

The original Southwark Bridge (formerly known as Queen Street Bridge) designed by John Rennie was completed in 1819. Its official opening was held at midnight to publicise a striking innovation: lighting provided by 30 gas lamps. The bridge was the largest cast iron structure of its era, but it was underused and lacked the strength to carry heavy goods vehicles.

Bridge House Estates bought the structure from the failing Southwark Bridge Company in 1866 and eventually demolished it in 1913. The new bridge, designed by architect Sir Ernest George and engineer Basil Mott, opened in 1921 after significant construction delays during the First World War. Unlike London and Blackfriars Bridges, Southwark Bridge does not have silver dragons to mark the city boundary on the southern bank of the Thames, as its construction was privately financed.

The bridge consists of cast iron arches with abutments and balustrades of grey granite and is painted green and yellow, with sentry-box like structures on the turreted pier headings. The arches and piers are directly aligned with those on the west side of Blackfriars Bridge to ease the flow of the river, reducing the risk of crosscurrents.

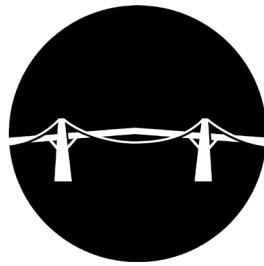
Below the bridge on the south landing you can still see some old steps that were once used by the Thames watermen as a landing dock to moor their boats and wait for customers. Before there were many bridges to cross the Thames these watermen provided the main form of transport across the river.

On the north bank of Southwark Bridge runs a pedestrian tunnel with a wall mural that depicts scenes of the Thames frost fairs. In several winters between the 17th and early 19th centuries (known as 'the Little Ice Age'), the Thames froze over giving Londoners the opportunity to set up festivals with food stalls, shops, sporting events and even temporary pubs on ice. The piers of London Bridge were spaced so tightly together that they disrupted the flow of the river and allowed the Thames to freeze over.

### Artist's Vision

Drawing inspiration from the colour palettes of the Impressionist masters, the bridge's illumination continues, with slightly more saturation, the colours used on Cannon Street Bridge.





## Millennium Bridge

Owner: Bridge House Estates

Completed: 2000

Designer: Arup Group, Foster + Partners and Sir Anthony Caro

Millennium Bridge was London's first new pedestrian bridge for over a century. The design was chosen through open competition and was won by Foster & Partners and Sir Anthony Caro with Arup. The bridge is an unusually shallow stressed cable suspension bridge, specifically designed to provide spectacular views of St Paul's Cathedral and Tate Modern.

The bridge was dedicated by Queen Elizabeth II and originally opened in 2000. The sheer volume of pedestrian traffic on the bridge on opening days (90,000 people) caused an unexpected swaying motion, causing it to be nicknamed 'The Wobbly Bridge'.

This problem was fixed by the retrofitting of 37 fluid-viscous (energy dissipating) dampers to control horizontal movement and 52 tuned mass (inertial) dampers to control vertical movement. The bridge was reopened in 2002 and has not been subject to significant vibration since.

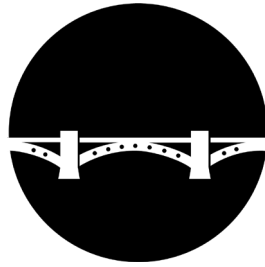
Inspired by Sir Norman Foster's love of superhero Flash Gordon, the architect's original lighting scheme was designed to incorporate a 'blade of light'. Alas this was not successfully realised at the time. For Illuminated River, Leo Villareal consulted Fosters & Partners so that he could reference the original lighting concept in his artwork for Millennium Bridge.

Artist Ben Wilson can often be found painting miniature works of art on discarded chewing gum on the walkways. If you look closely at the grooves of Millennium Bridge, you can discover up to 400 works of art.

### Artist's Vision

Illuminated River's pulse of light mirrors the movements of people crossing the bridge, highlighting their faces and casting silhouettes that enhance the bridge structure, while preserving the inky darkness of the Thames below.





## Blackfriars Bridge

Owner: Bridge House Estates

Completed: 1869

Designer: Joseph Cubitt

The original Blackfriars Bridge opened in 1769 and was designed by Robert Mylne, a Scottish architect, then aged only 26. Mylne had studied architecture in Rome, and his design for the bridge was influenced by Piranesi, elegant and classical in style with nine semi-elliptical arches of Portland stone. With St Paul's Cathedral in the background, the bridge became the subject of a number of 18th century oil paintings, notably William Marlow's view of St Paul's from the South Bank, completed in the early 1770s.

Originally known as William Pitt Bridge (after the prime minister), it was changed to Blackfriars when Pitt fell out of favour. The name commemorates a 13th century Dominican monastery that had once stood nearby (Dominican monks were also known as black friars because of their dark cloaks)

The toll-booths that originally operated on the bridge were destroyed in the Gordon Riots of 1780. The bridge underwent extensive repairs between 1833 and 1840, however erosion from the polluted water flowing out of the nearby River Fleet and into the Thames had irreparably damaged the bridge masonry. Owned by the Bridge House Estates, they soon called for a new bridge of a more durable material.

Queen Victoria opened the current Blackfriars Road Bridge on 6 November 1869, almost exactly a century after the inauguration of its predecessor. Following the ceremony, the Queen travelled up to Farringdon Road where she opened the Holborn Viaduct.

Blackfriars Road Bridge was designed by Joseph Cubitt and consists of five elliptical wrought-iron arches (the first bridge to use this design) so as not to create cross-currents and disrupt river traffic. Massive granite piers topped with pulpits serve as a reminder of the ancient monastery from which the bridge took its name. The bridge is painted red, white and gold, with gold emblems fixed into the supports. Said to be the tidal turning point, it is decorated to the east (downstream) with images of seabirds and to the west (upstream) with fresh water birds. The bridge also marks the boundary of the historic City of London, with its southern landing guarded by a statue of a silver dragon.

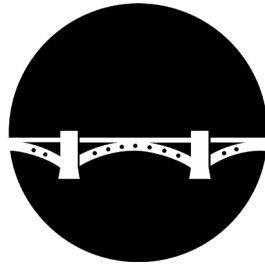
The bridge was widened in 1910 to allow trams to cross, and to accommodate the high volume of traffic. Since May 2016, it has also carried the north-south Cycle Superhighway 6. Used by approximately 54,000 vehicles a day, at 105 feet, it is now the widest bridge over the Thames in London.

Robert Mylne's original design can still be seen on the decorative tiles in the bridge's southern pedestrian subway.

### Artist's Vision

The Illuminated River artwork for Blackfriars Bridge will use a colour scheme that closely complements the red pillar supports that remain from the original Blackfriars Railway Bridge. Subtle scarlet and mauve hues will gracefully reveal the underside of Blackfriars Bridge.





## Waterloo Bridge

Owner: Westminster City Council

Completed: 1942 (officially opened 1945)

Designer: Sir Giles Gilbert Scott

The original bridge, designed by John Rennie the Elder, was opened in 1817 by the Prince Regent accompanied by the Duke of Wellington to commemorate the second anniversary of the Battle of Waterloo.

By the beginning of the 19th century the population of London was already over a million, and both Blackfriars and Westminster bridges were struggling to cope with the resulting increase in traffic. A parliamentary act of 1809 gave the Strand Bridge Company, the largest and most successful of all the toll-bridge builders, the authority to raise £500,000 (in £100 shares) to fund a new bridge. The construction of the bridge drew large crowds and Tsar Alexander I of Russia even visited the site on his 1814 trip to London. The completed structure was supported by nine elliptical arches of Cornish granite, with two Grecian Doric columns on each pier.

The bridge nonetheless fell into disrepair by the mid-1880s, the foundations damaged by the increased tidal scour caused by the removal of the old London Bridge. The piers of Waterloo Bridge were reinforced between 1882 and 1884 and attempts were made up to 1923 to save the ailing bridge, but it was ultimately closed in 1924.

Despite conservationists calling for its repair, London County Council commissioned Sir Giles Gilbert Scott, celebrated today for Battersea Power Station and the red telephone box, to design a new bridge.

During the Second World War, women were employed to complete the construction by the building contractor Peter Lind & Company, hence Waterloo Bridge is known colloquially as the 'Ladies Bridge'. It was the only bridge in London to suffer multiple hits by German bombers, but it was finally finished in 1945 and opened by Rt. Hon Herbert Morrison on 10 December. At the opening, a race was declared to see who could be the first to cross the bridge. The race was won by Leonard Mitchell, a sixteen-year-old schoolboy from Balham.

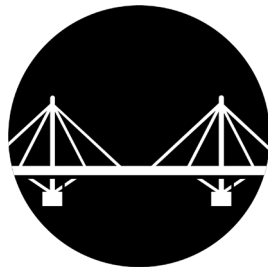
At 1,230 feet long and 80 feet wide it is the longest bridge in London and was the first to incorporate electric lights. It is made of reinforced concrete with Portland stone cladding and supporting arched beams on the outside edges. Conveniently, Portland stone is able to 'clean itself' whenever it rains which is why the bridge looks as though it is in such impressively good condition. Two of John Rennie's Doric columns from the original Waterloo Bridge are retained in the southern abutment.

In 1868, a spectacular Iron Age helmet dating from 150-50 BC was recovered from the Thames riverbed at this point. It is the only Iron Age horned helmet to be found in all of Europe. Nicknamed the 'Waterloo Bridge Helmet' it can be seen today in the British Museum.

### Artist's Vision

Among the many artists who have found inspiration in Waterloo Bridge, Claude Monet visited London at the turn of the twentieth century to create a series of canvases depicting the bridge's earlier iteration and nearby vistas. In the spirit of the Impressionists and the English Romantics who captured the Thames and its bridges in their paintings, Leo Villareal's artwork for Waterloo Bridge incorporates colours that shift and blend, adjusting to the constantly changing riverscape and its surroundings.

Villareal's references for Waterloo are drawn from the bridge's architecture, detailing, and history. Citing a visual tie with Millennium Bridge, the artist finds a similar opportunity to explore a single line of light, which, in this instance, will introduce colour on the bridge's masonry arches. Villareal's artwork will complement this existing aesthetic, introducing a 379 meter stretch of lighting across each side of the bridge in addition to washes of light on its underside.



## Golden Jubilee Footbridges

Owner: Westminster City Council and Network Rail

Completed: 2002

Designer: Lifschutz Davidson Sandilands

A competition was launched in 1996 to design two footbridges that would flank the existing Hungerford Bridge and commemorate the 50th anniversary of the Queen's coronation. Illuminated River's architects Lifschutz Davidson Sandilands won the competition alongside engineers WSP Group with a design of twin cabled-stayed 15-foot-wide and 984-foot-long footbridges attached to a forest of leaning suspension masts. Princess Alexandra officially opened the Golden Jubilee Footbridges in July 2003.

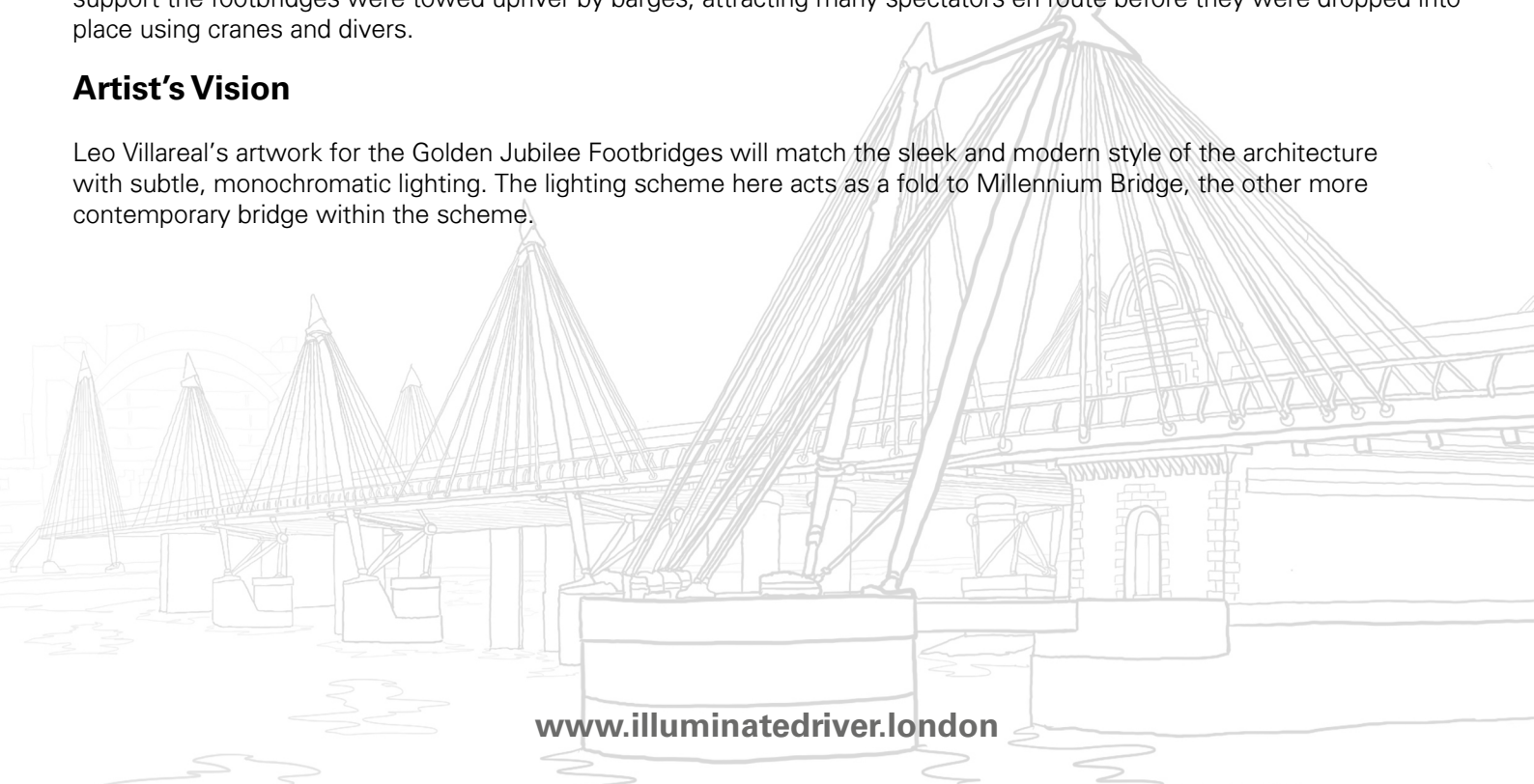
The Golden Jubilee bridges are not the first bridges to be crossable by foot at this point of the river. The original structure for the Hungerford Bridge was an elegant suspension footbridge designed by Isambard Kingdom Brunel which opened as a toll bridge in 1845. On its first day, more than 80,000 people paid 1/2d each to cross. Commissioned by the Hungerford Market Company in an attempt to attract business from the South Bank, it was then the longest suspension bridge in Britain at 1,462 feet.

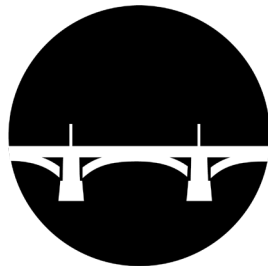
The Hungerford Bridge and Market were purchased in 1859 and subsequently demolished by the South Eastern Railway Company in order to extend their line from London Bridge through to the newly proposed Charing Cross Station. The new railway bridge was designed by Sir John Hawkshaw in 1864 and constructed from nine wrought-iron girders set on cast-iron cylinders. In 1886 the bridge was widened to accommodate an increase in the number of railway tracks from four to eight. Pedestrian walkways were then added to each side, but when the railway bridge needed to be widened again the upstream walkway was removed. The remaining footbridge was narrow, poorly maintained and potentially dangerous to cross at night.

The construction of its replacement – the Golden Jubilee Footbridges – was a complex process. The Northern and Bakerloo Underground lines run under the Thames at this point, but fears of finding unexploded Second World War bombs on the riverbed meant that some of the foundations had to be dug by hand. The three 225-ton concrete beams that support the footbridges were towed upriver by barges, attracting many spectators en route before they were dropped into place using cranes and divers.

### Artist's Vision

Leo Villareal's artwork for the Golden Jubilee Footbridges will match the sleek and modern style of the architecture with subtle, monochromatic lighting. The lighting scheme here acts as a foil to Millennium Bridge, the other more contemporary bridge within the scheme.





## Westminster Bridge

Owner: Transport for London

Completed: 1862

Designer: Thomas Page

The Old Westminster Bridge of 1750 designed by Swiss engineer Charles Labelye, was originally funded by a lottery. Or at least, it was supposed to be. Although the funder originally hoped to raise £100,000, in the end the lottery only generated £40,000. This debacle led novelist Henry Fielding to call Westminster the 'Bridge of Fools', a reference to the gamblers who sunk money into the state lottery but also to the government at the time who had to put up the rest of the funding.

Fearing the loss of ferry traffic and trade, Westminster Bridge met fierce opposition from the Church, the City and the watermen when it was first proposed. Nevertheless, the completed bridge – with fifteen semi-circular arches in Portland and Purbeck stone – was regarded as a triumph, being the first stone bridge to cross the Thames in 500 years. Many artists were inspired to paint the Old Westminster Bridge, among them Samuel Scott, William Marlow, Canaletto and Claude Monet. The bridge was illuminated at night by 32 oil lamps, which were replaced in 1814 by gas lamps, and subsequently by electric lighting in 1898.

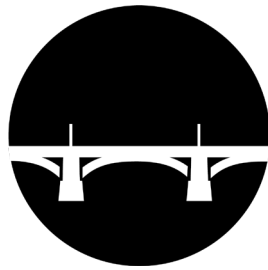
In 1831 the derelict old London Bridge was demolished, which increased the flow of water causing scouring that undermined the foundations of the piers of Westminster Bridge. A Parliamentary Act was passed in 1853, transferring the bridge to the Commissioners of Public Works and allowing a new bridge to be built, with Thomas Page, the Commission's engineer, appointed to design it. Sir Charles Barry, the architect responsible for re-building the Palace of Westminster after a fire in 1834, was taken on as architectural consultant, so that the bridge would blend in with his new Houses of Parliament. The new bridge opened on Queen Victoria's 43rd birthday – 24 May 1862 – with a 25-gun salute to honour her 25 years on the throne.

Westminster Bridge stands next to the UNESCO World Heritage Site of the Palace of Westminster and is a Grade II listed structure. Leo Villareal's sequencing for Westminster Bridge is a subtle addition, honouring the bridge's historically significant design. Westminster Bridge will be lit underneath in soft green tones, complementing the bridge's characteristic colour and activating the latticework beneath.

### Artist's Vision

Westminster Bridge is part of the UNESCO World Heritage Site of the Palace of Westminster and is a Grade II listed structure. Leo Villareal's sequencing for Westminster Bridge is a subtle addition, honouring the bridge's historically significant design. Westminster Bridge will be lit underneath in soft green tones, complementing the bridge's characteristic colour and activating the latticework beneath.





## Lambeth Bridge

Owner: Transport for London

Completed: 1932

Designer: Sir Reginald Blomfield and G Topham Forrest

Designed by architects Sir Reginald Blomfield and G. Topham Forrest with London County Council engineer Sir George Humphreys, Lambeth Bridge was officially opened on 19 July 1932 by George V and Queen Mary. It is a five-span steel arch structure, adorned by decorative obelisks at either end and with piers and abutments clad in Cornish granite. Above each pier are the carved London County Council coats of arms, flanked by dolphins. Carrying four lanes of road traffic, the bridge is 776 feet long and 60 feet wide and cost nearly £1 million to erect. The colour scheme emphasises red, the colour of the leather benches in the House of Lords, which is near the bridge's northern landing.

The obelisks at each end of the bridge appear to be topped with pineapples. What these fruits represent has been much debated. Some believe they are actually pinecones, an ancient symbol of hospitality. Others believe they are Masonic emblems of enlightenment. A popular theory is that they are a reference to the Tradescant family who settled in Lambeth in the 17th century. Father and then son attained the title of Keeper of His Majesty's Garden, managing the Queen's palace grounds at Oatlands, near Weybridge in Surrey. It was here that John Tradescant the Younger cultivated the first pineapple to grown on British soil.

The Lambeth Bridge Company commissioned engineer Peter William Barlow to design the original Lambeth Bridge, which was opened in November 1862 by a local businessman named Mr Hodges travelling across in his new fire engine. The 828-foot-long suspension bridge supported two 32-foot towers and crossed the river between Market Street, Westminster (which later became Horseferry Road), and Church Street, Lambeth. The bridge was largely used by pedestrians paying a day toll, since the approaches were too steep for heavily laden horse-drawn carts. The tolls were dropped in 1879 once the Metropolitan Board of Works had purchased the bridge. In 1911 the bridge had become visibly unsafe with one of the piers tilting and the iron structure rusting, and all traffic was banned from the bridge, which eventually led to a call for its replacement.

Before the Old Lambeth Bridge was constructed, a horse ferry operated here for centuries. Owned by successive Archbishops of Canterbury, the profitable ferry was the only location in London where you could cross the Thames with a horse and cart. The horse ferry was far bigger than most ferries of the time although it was not always failsafe. Through the years Oliver Cromwell, James I and at least one Archbishop are all rumoured to have fallen in the water here.

### Artist's Vision

Leo Villareal's artwork will complement the red colouring of Vauxhall Bridge by using corresponding varied hues of warm light beneath the hand railings and the bridge's underside.

