

BRUNEL MUSEUM GUIDED WALK

BRUNEL'S LONDON

10.45 am Embankment Tube This is a voyage – and a walk – *into the birthplace of modern London*. It's under three Brunel bridges and over two Brunels' tunnels. It's a descent into the best kept secret in London. Several secrets, actually. Broken slipways on the Isle of Dogs. Shattered columns in empty shops. A secret doorway by an ancient wharf. A lost handrail. An underground theatre. Secrets. *Outcroppings of the past that haven't been swallowed by the passage of time*. That tell of the monster ship. And of the world's most important tunnel. That more than tell. That take us down into the darkness where men died and Brunel met with destiny.

RIVER THAMES

Brunel is often thought of a Bristol man, but there is more Brunel in London than in Bristol, and today we will visit his first and last projects. The best way to see Brunel in London is by river, and we will travel under three Brunel bridges and over two Brunels' tunnels to see the launch ramps of his monster ship Great Eastern on the Isle of Dogs. This was his last project, and where the famous photograph was taken standing in front of the huge launching chains. We will then travel through his first project, the Thames Tunnel, before descending into the secret underground chamber where he nearly drowned.

Hungerford Bridge 1841

The original Hungerford Bridge was an elegant suspension bridge, with fine towers built in the Italian campanile style. It took pedestrians to Hungerford market, now the site of Charing Cross Station. The bridge was taken down in 1864 to build a railway bridge into the new railway station. Nothing wrong with the bridge, by the way, and the railway uses brick piers built by Brunel.

You can see the pier this side of the river is almost on the embankment, but originally it was as far into the river as the pier on the south bank. As well as supporting the pedestrian bridge, the piers also served the river ferries. The pier on the north side is now much closer to the bank since Sir Joseph Bazalgette built Victoria Embankment to house the sewer and the underground railway.

Brunel has a reputation for bad finances, but the bridge was good business. It was built for £80,000 and sold to the railway for £125,000 and collected £25,000 a year toll from pedestrians at a penny a time. There was also revenue from river steamers using its piers. So with revenue and capital appreciation, this was a good investment.

In 1864 the bridge was demolished for the railway bridge, built by Hawkshaw. The original chains now span the gorge for his Clifton Suspension Bridge, which was actually completed after his death as a memorial. Hawkshaw was Chief Engineer. Interesting to note that Telford rejected Brunel's first design for Clifton because the span was too long and dangerous. Brunel's original Hungerford Suspension Bridge was an even longer span.

Hawkshaw's Bridge was very ugly and the subject of a famous cartoon in Punch Magazine: the goblin of ugliness perches on the embankment, throws up his hands

saying ‘Nothing I have done is as ugly as this’. It has since been improved by the cable stay millennium bridges for pedestrians, as you see.

Blackfriars Railway Bridge 1886

We are now approaching our second Brunel bridge, Blackfriars Railway Bridge. It was built by Sir John Wolfe Barry and Henry Marc Brunel, IKB’s son. There were three generations of engineers in the Brunel family. Sir Marc Brunel, the Frenchman, who some say is the greater genius (we later visit his Tunnel); his son IKB our most famous engineer; his grandson Henry Marc Brunel.

The first Blackfriars Bridge was built by Cubitt for the London, Chatham and Dover Railway. Eventually it proved too weak to support modern trains, and was removed - all that remains is a series of columns crossing the Thames. There you see them, in oxide red, supporting the bridge that isn’t there.

Henry Marc Brunel & Sir John Wolfe Barry’s bridge has recently been modified, and Blackfriars is now the first railway station to span the river.

Tate Modern

Most successful Gallery attraction in the UK. Best view in London from the café.

Shakespeare’s Globe

Rebuilt by American actor, Sam Wanamaker. Brunel’s underground chamber, our last stop, is half the size of Shakespeare’s Globe, but underground.

Golden Hinde

Replica of Sir Francis Drake’s famous ship that sailed around the world. We pass a monument to this voyage on a dolphin further down the river.

Tower Bridge 1894

We are now approaching our third and final Brunel bridge – and this may surprise you - Tower Bridge is a Brunel bridge. Architect Horace Jones, who won the design competition, was knighted and dead within a year and before construction had even began. It was built by his engineers Sir John Wolfe Barry and Henry Marc Brunel, the same team that built Blackfriars Railway Bridge.

Tower Bridge is another solution to the same problem the Thames Tunnel addresses, and we will pass over it very shortly. How do you move stuff across the river without stopping ships going up and down the river. This is a bascule bridge. Bascule is the French word for see-saw, and those roadways or bascules. It’s a see-saw bridge. The bridge opens a thousand times a year, even today. People miss it because the bascules go up and down in 5 minutes. Each bascule weighs a thousand tons, and this is one of the most famous bridges in the world.

Sir John Wolfe Barry was son of Sir Charles Wolfe Barry, who with a little help or hindrance (depending on your taste) from Pugin, built Houses of Parliament. Henry Marc Brunel was the son of Isambard Kingdom Brunel, our most famous engineer, and grandson of Sir Marc Brunel. They build one of the most famous bridges in the world and no one remembers them. This is a cautionary tale about having famous parents, and I advise all young people who detect any leanings towards celebrity in either parent: despatch them, painlessly but quickly. They will only get in the way.

Traitors' Gate

On your left

Shad Thames/St Saviour's Dock

On your left are ancient mooring rights, and tiny inlet, St Saviour's Dock. This is where Charles Dickens placed 'Oliver Twist' and the young pickpockets and Fagin.

Town of Ramsgate

On your right, a famous pub the Town of Ramsgate. Where pirates had their last drink before execution.

Execution Dock

Three red balconies and an 'E' below the eaves. Pirates were hung in a small cage or gibbet, above the water at low tide, and left there till the water covered them three times. Then they were cut down and cut into little pieces and nailed to a board at the entrance to St Saviour's Dock, which we have just passed.

Cherry Gardens Pier

Turner painted the 'Fighting Temeraire' from this pier.

Captain Kidd

Famous pub, famous pirate executed here

Mayflower pub & Brunel Museum

On your right is Rotherhithe, and the sailors' church, and through the gap look for the light blue walls of the Thames Tunnel shaft, or Grand Entrance Hall. We are now travelling over the Thames Tunnel, Brunel's First Project and where he nearly drowned. Our journey ends there later this afternoon, and there is jetty from which the Pilgrim Fathers sailed.

Prospect of Whitby

On your left, famous pub

Surrey Docks City Farm**Old Victual ling Yards & Drake's Voyage**

The globe on the dolphin has red dots marking Drake's round the world voyage

Greenland Dock Pier

We get off at the next stop, Masthouse Terrace Pier

Great Eastern

We have travelled under three Brunel bridges, over his tunnel and now we stand at the launch site of his last and greatest ship. The Great Eastern was launched sideways, and this is one of the two ramps down which it was pushed. The river was too narrow for the ship to be launched conventionally. Five times bigger than anything else afloat, and I say again launched sideways. The image of a ship, champagne bottle against the bows and stern sliding into the water is hard to dispel. But here two cradles on two sets of ramps – one of them behind me – carried the ship down into the water, and I

say again, sideways. The ship pushed sideways down the two ramps was 700 feet long, or the length of the central span of Brunel's Paddington Station.

The ship was nicknamed: Leviathan or sea monster. It took weeks to launch, the ship got stuck and had to be pushed down the ramps by hydraulic rams. The ship's other nickname was: 'the ship that doesn't like the water'. Tangye built the rams and boasted 'We launched the Great Eastern, and the Great Eastern launched us'. A good advertising campaign...

Here is where the famous photograph was taken, in front of the huge chains – not the chains over there, by the way. The Great Eastern was so big it could steam from England to Australia – and back again – without refuelling. Biggest ship in the world for 50 years. Lusitania was the next ship of greater tonnage and that was the ship whose sinking brought America into the World War.

The Great Eastern was the first modern ocean liner: double hull, bulwarks or walls from keel to top deck and construction on an industrial scale. 3 million rivets and $\frac{3}{4}$ million plates, but only three sizes. If the Great Eastern had hit the iceberg, unlike the Titanic, it wouldn't have sunk.

Remember, this is only one half the ramps. The ship was launched sideways and there was another set of ramps, just like this, built over there.

Walk to Island Gardens DLR

Statue of Peter the Great *by Mikhail Shemyakin*

Came to Deptford to learn about shipbuilding, and trashed Sir John Evelyn's house. Czar's statue in the trees and at the top of the steps across the river, with a dwarf. Seven feet tall, but he always travelled with a dwarf. Bit unnecessary...

Royal Observatory & the red ball

On river journey or on Canary Wharf pier.

The river is quiet now, but was once the busiest river in the world. In Brunel's day, the British Empire covered $\frac{1}{4}$ of the world's land surface and $\frac{1}{4}$ of the world's population were subjects of the British King or Queen. British school children were taught 'the sun never sets on the British Empire', because there was a crown possession at every longitude. Spanish schoolchildren were taught the same of Spain. But it was a Frenchman who explained to me: 'The sun never sets on the *British* Empire because God doesn't trust the British in the dark'

In Brunel's day there were 3,000 ships in this river every day, and the Thames Tunnel was built to move ships' cargo. Huge tall masted ships brought cargo up the river from all over the world. Every day there were 3,000 tall masted ships and 10,000 little boats, all in a chaotic jumble of masts and rigging, with just a narrow channel in the middle of the river for passage up and down. The river is so congested, you could walk on the river from here to London Bridge without getting your feet wet, by jumping from ship to ship. It takes longer to get stuff across the Thames than it takes to get stuff across the Atlantic.

They needed a way of getting cargo across the river as well as up and down the river. You can't build a bridge because that would prevent the tall masts going up and down. The only way to move cargo across the river was under the river

DLR to Shadwell/change for London Overground

At Shadwell we will get off briefly at Wapping to view the arches, but we don't leave the platform and we catch the next train.

Wapping

- i) Keep well clear of the yellow line. Staff get anxious.
- ii) Flash photography is not allowed. Take photographs but without flash.

At Wapping, Brunel's Tunnel begins at the end of the platform. From Rotherhithe you see a single arch, built in 1869 for the railway.

i) Poster Pedestrian Tunnel

The Tunnel in its first incarnation. Fine ladies and gentlemen *walk under a river* for the first time anywhere in the world. If the men who built this tunnel were heroes, remember the men and women who walked through the tunnel felt heroic too. It was exciting and dangerous.

ii) Poster Under Construction

Longitudinal section of tunnel under construction. See the archways for the shops, and the miners' cage. On top of the shaft there are pumping engines, later moved into the engine house when the shaft became the pedestrian entrance. See the tall masted ships – there were 3,000 in the river every day. The tunnel was designed to move cargo under the busiest river in the world, but they had no money to build ramps to get cargo the down there.

iii) Poster Steam Trains

For the first time anywhere in the world, steam locomotives travelled under a river. A noisy, dirty, smelly business. Notice the gentlemen leaning over the balustrade, behind the steam. Ascend the stairs to see that balustrade.

iv) Poster Electric Trains

The tunnel is used as Brunel intended, moving cargo, but not in his lifetime.

Train Journey to Rotherhithe: The Underwater Fairground 1852

You are travelling through the world's first underwater fairground. Here, before the trains came were performing horses, tightrope walkers, sword swallows, fire eaters, magicians, Ethiopian serenaders, Indian dancers, Chinese singers, electricity, and Mr Green the celebrated bottle pantomimic equilibrist.

Rotherhithe Station platform

You have travelled through the oldest tunnel in the Oldest Underground system in the world, but this is a confusing tunnel. Designed to move cargo, it opened as a pedestrian tunnel, a banquet hall, a shopping arcade and fairground. Follow me now to The Brunel Museum and the Tunnel Club.