

DARTFORD CROSSING

Picture 01 – Opening Screen and preamble.



The idea of a tunnel crossing was first proposed by the Ministry of Transport in 1924.

Initial reports at the start of 1924 suggested a crossing between Tilbury and Gravesend, replacing a ferry service, but this had been rejected by July in favour of a route further upstream, near Dartford.

A tunnel between Cliffe and Tilbury had also been considered and tentatively started in the late 19th century but water ingress in the chalk was a major problem and the idea abandoned.

By 1929, the total cost of building the tunnel had been estimated at £3 million (equivalent to £212 million in 2023). The tunnel was planned to be part of a general orbital route around London and was provisionally known as part of the "South Orbital Road".

The Dartford–Thurrock River Crossing, commonly known as the Dartford Crossing and until 1991, the Dartford Tunnel, is now a major road crossing of the River Thames in England, carrying the A282 road between Dartford in Kent in the south and Thurrock in Essex in the north.

The crossing's development started in the late 1930s, but was interrupted due to the Second World War and resumed in the 1950s.

The original tunnel catered for a single lane of traffic in each direction, but rising traffic levels required the second tunnel to be built.

The M25 connected to the tunnels at both ends when completed in 1986, and the increased traffic put pressure on the tunnels' capacity.

A private finance initiative scheme was started in 1988 to build the bridge. The combined crossing now handles four lanes of traffic in each direction.

Picture 02 – The QE2 Bridge and tunnel approaches.



It is the busiest estuarial crossing in the United Kingdom, with an average daily use of over 130,000 vehicles.

It opened in stages: the west tunnel in 1963, the east tunnel in 1980 and the bridge in 1991. The crossing, not officially designated a motorway, is

considered part of the M25 motorway's route. Described as one of the most important road crossings in Britain.

The crossing has always been tolled, and though the cost of construction has since been paid back, the toll was retained, and rebranded as a congestion pricing scheme from 1 April 2003.

Since 2008 it has been free from 10 pm to 6 am. An automatic number plate recognition charging scheme named the "Dart Charge" began in November 2014.

As a result, the booths on the Kent side were removed and the charge is now only payable online, by post, or in participating retail outlets. A residents' scheme is available, offering discounts for people living near the crossing.

Picture 03 – Traffic congestion



Described by the Highways Agency as "a vital transport link for the national and South East economies", and by the local Thurrock Council as "one of Europe's most heavily used crossings and complex traffic management systems".

Picture 04 – London Orbital Motorway.



It is signed as a major destination on London's orbital route, the M25, though the crossing and its approach road are an all-purpose road (the A282).

This allows some non-motorway traffic—such as mopeds, learner drivers and agricultural vehicles—to use it.

The speed limit for the crossing is set at 50 mph. The bridge can be closed due to high winds or maintenance. On these occasions, traffic uses the tunnels in both directions

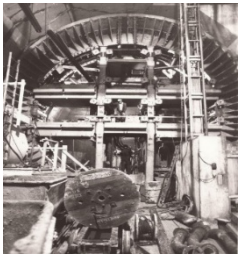
Picture 05 - Alternative routes



Thurrock Council suggest that this crossing will be essential for managing congestion.

A public consultation on the scheme ended in March 2016, with the route announced in April 2017. As of December 2023, contracts have been awarded and the target date for completion is 2032.

Picture 06 – The Building or Boring of the tunnel



Western tunnel

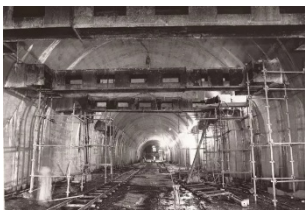
Work on the tunnel was delayed due to World War II, and resumed in 1959, using a Greathead Shield, similar to the work on the Blackwall Tunnel some 60 years earlier.

The delay in work due to the war allowed the tunnel's design to be improved, which included a better ventilation system.

The two-lane bore, 28 feet - 8.6m diameter tunnel opened to traffic on 18 November 1963; the total project cost was £13 million (equivalent to £307 million in 2023[46])[53] and it initially served approximately 12,000 vehicles per day.

The toll was originally two shillings and sixpence, equivalent to 12.5p post-decimalisation, and approximately equivalent in purchasing power to £3.00 in 2023.

Picture 07 - Eastern tunnel



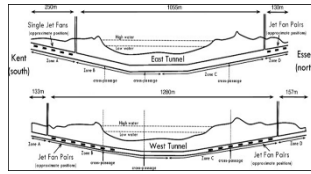
From inside the eastbore tunnel in 1963

The first tunnel was expected to carry two million vehicles a year but by 1970 was carrying over eight million. That year, Michael Heseltine, then a junior transport minister, announced that a second tunnel would be built in conjunction with the North Orbital Road, later to become the M25.

Construction was approved in April 1971, with an initial expected opening date in 1976. The second tunnel opened in May 1980, allowing each tunnel to handle one direction of traffic, by which time the joint capacity of the two tunnels had increased to 65,000 vehicles per day.

Connection of the crossing to the M25 was completed on the southerly Kent side in 1977 (Junction 2) and to the northerly Essex side in September 1982 (Junction 31). Following the completion of the M25 in 1986, the daily demand had grown to 79,000 vehicles.

Picture 08 - A ventilation shaft to the north of the east tunnel



Some of the excavated material was also used to create a nature reserve at Wallasea Island in Essex before the Crossrail project did the same.

Picture 09 - Queen Elizabeth II Bridge

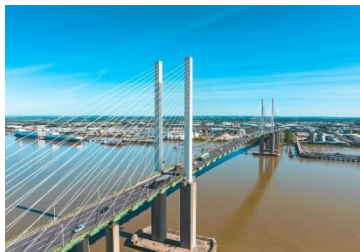


During the early 1980s, it was anticipated that traffic through the tunnel would rise on the completion of the M25 in 1986. At the time, the expectation was that other routes in London would be improved instead, diverting 15% of traffic away from the tunnel.

In 1985, the Transport Minister, announced that the number of toll booths would be increased to 12 each way, but concern grew that two tunnels would not be able to cope with the full demands of a completed M25.

The bridge was opened by Queen Elizabeth II on 30 October 1991. The total cost of construction was £120 million (£268 million in 2023), including £30 million (£63 million in 2023) for the approach roads.

Picture 10 – Cable Stay Bridge



It is the only bridge across the Thames downstream of Central London to be opened since Tower Bridge in 1894.

The two main caissons supporting the bridge piers were constructed in the Netherlands. Each caisson was designed to withstand a bridge strike of a ship weighing up to 65,000 tonnes and travelling up to 18.5 kilometres per hour (11.5 mph)

The bridge deck is about 61 metres (200 ft) high, and it took a team of around 56 to assemble its structure. During construction of the approach road, a World War II bomb was found in its path, which required closure of the entire crossing.

Picture 11 - Cycling



Bicycles are not permitted on the crossing, but cyclists can be carried across the crossing by the transport authority. Section 27 of the Dartford-Thurrock Crossing

Act 1988 requires that this service be provided free of charge.

Cyclists report to the crossing control offices on either side, using a free telephone service. The transfer takes around 15 to 30 minutes.

In October 1963, the Dartford Tunnel Joint Committee ordered five double-decker buses based on the Ford Thames Trader chassis for special duties, taking cyclists through the Dartford Tunnel. These had a lower deck purpose-built for carrying bicycles, with upper deck seats for cyclists.

The service was reduced to one bus in April 1964 and then cancelled in 1965, to be replaced by the current transfer service using a vehicle with a rear cycle rack. One of these buses has been preserved.

Picture 12 - TEXT ONLY – Charging Scheme.

Under the original agreement when the bridge was built, tolling was supposed to stop once it had paid for itself, which was almost 15 years ago. In February 1999, the government announced the Dartford Crossing would be free of toll charges by the end of 2003.

Motoring organisations - and drivers themselves - welcomed the news. But in 2001, it was revealed that the government had backtracked out of the initial agreement, and there was outrage from all angles.

In 2000, the European Union issued a directive that value-added tax should be charged on all road tolls, including the Dartford Crossing.

The Government opposed the directive and said it would bear the additional cost. However, the Highways Agency decided that the tolls would become a "charge", under legislation introduced by the Transport Act 2000 to introduce charging schemes on any trunk road bridge or tunnel at least 600 metres (2,000 ft) in length.

Traffic

A 2016 report by Highways England suggested the crossing is used around 50 million times a year.

Picture 13 – End.