Dublin Port Tunnel

Did you know?

Dublin Port Tunnel is the largest ever civil engineering project in Ireland; only the electrification dam on the River Shannon at Ardnacrusha in the 1920s comes near. The project employed 5000 people over the course of its construction delivering 7.5 million man hours. It is the longest road tunnel in an urban area in Europe. The contract was signed in December 2000, work started early 2001 and the tunnel was open on 20th December 2006.

Facts and Figures

- This project involved the construction of 5.5km of carriageway, 4.8km of which are in tunnels.
- The project site was treated as a mineshaft until the machines broke through at the other end of the Tunnel. The Whitehall site had a hole 56 metres in diameter, greater than the length of an Olympic size swimming pool (50m+).
- The project installed a crossing under the Dublin-Belfast railway line east of Fairview while the rail line remained live.
- There are three new bridges within the Project:
  - Shantalla Bridge over the motorway
  - A new bridge in East Wall over the Tolka
  - A new interchange and entrance into Dublin Port.
- Alfie Byrne Road was raised by between 1.5 and 2 metres also providing a new entrance to East Point Business Park.
- The project built 4,500 meters of boundary walls, all of which was either stone clad or fitted with acoustic panels.
- The Project planted 40,000 trees and shrubs.
- The Dublin Port Tunnel physical height is 4.9m and operating height is 4.65 meters. The legal operating height clearance in Europe (as per EU directive 1996) is 4m with the exception of UK and Spain, which have none. Dublin Port Tunnel is higher than the Boston Big Dig (4.45m), Sydney’s A6 (4.5m) and Madrid’s Calle 30 (4.5m). The regulation height in Ireland, at the time of the Tunnel’s design, public inquiry and tender was 4.25m. This legislation was revoked in July 2000 on procedures.
- There are 50 traffic lights from Dublin Port to the Red Cow, via the Quays. There are 3 traffic lights from Dublin Port to the Red Cow via the Port Tunnel.
- There is a dedicated, specialist fire tender for the Port Tunnel and 200 Dublin Fire-fighters went to Switzerland to have specialist training for Tunnel incidents.
- 16 jet fans run the Tunnel’s ventilation system and are capable of changing the air within minutes.
- 2 million tonnes of rock and clay have been moved over the course of the project.
- Much of the Tunnel is between 21 and 23 metres (7 storeys deep) below ground level, through hard limestone. There is approximately 10 metres of rock and 12 metres of boulder clay above the Tunnel.
- Grainne, the hard rock tunnel boring machine, weighed 1800t, was 156m long, used 3.2Mw of electricity and cost approximately €27 million. It required 45 tunnellers per shift to operate.
- Megan, the boulder clay boring machine, weighed 1100 tonnes was 60m long, used 400kw of electricity and cost €10million. It required 18 tunnellers to operate it on a shift basis.
- Both tunnel boring machines were dismantled when they completed the first tube and reassembled in the return position - an operation that took three months for each machine. The same operation took place when they finished in 2004 before being moved off site.