

PRESS RELEASE

LIMERICK TUNNEL BRINGS AUSTRIA TO THE SHANNON

Limerick's access routes are soon to be enhanced by an arterial milestone: the completion of the Limerick Tunnel next year will not only be the coming of age of one of the largest and most important construction projects of Ireland's mid-west but will set the pendulum for the future growth of the city.



Two miles downstream from Limerick city, a vast construction site mars the otherwise undisturbed meandering of Ireland's largest river, the Shannon. Direct Route, the consortium that won the contract for the *Limerick Southern Ring Road Project* under the Transport21 Scheme is comprised of Austrian construction giant STRABAG, as well as Irish companies John Sisk, Roadbridge and Lagan. The centrepiece of the project is a 700m long submerged tunnel, a massive undertaking for which a trench had been carved into the river bed. According to chief contractor STRABAG, work

is progressing well, even though the time-pressure to complete the project forced Direct Route to temporarily implement 24-hour shift work in order to guarantee completion by autumn 2010.

40,000 cars per day

The immersed tunnel comprises phase 2 of the Limerick South Ring Road Project, a more than 12km stretch of road encompassing 10km of motorway and 2.3km of dual carriage way which will connect the N7 to the N18, thus interlinking Dublin with the Shannon/Galway region. Designed to take up to 40,000 cars per day, the tunnel is said to be a key player in the rejuvenation of this regional hub of Ireland's mid-west.



Award-winning project with many challenges

The construction of the tunnel was accompanied by a host of innovative solutions which earned the project the "European PPP-Deal of the Year 2006" award. One such challenge was the construction of a crack-free concrete. Numerous tests had to be undertaken and sophisticated cooling systems were applied to achieve the desired result. The Shannon's deep alluvium deposits caused big geotechnical difficulties as well. Vast quantities of suitable material – three million cubic metres - had to be imported for the construction of the carriageway on the river's floodplain. In other places the embankment had to be surcharged for two years to calculate the amount of vertical drainage that needed to be installed.



Liz & buddies defy the forces of physics

The procedures involved in immersing a tunnel itself are also worth closer examination. First, the tunnel was pre-cast on-shore in five sections. 'Liz', 'Grace', 'Brigid', 'Chantal' and 'Sarah', as the elements were christened by the tunnel immersion crew, each had a surface area of 805 square metres and weighed 20,000 tons. In other words, each segment was the length of a football pitch (100m), as high as a two storey house (8.5m) and wide enough for four lanes of traffic (25m). As a trench was carved into the river bed, 420,000 cubic metres of soil were excavated. Then, the casting basin was flooded to

allow the tunnel elements to be floated out into the river and immersed, similar to the method employed by a diving submarine, to sit in the prepared channel. Hydraulic rams were then used to pull the elements together before the river bed was restored above the tunnel. Quite an engineering coup, considering the prodigious forces acting on each tunnel element in the fast river currents.