

Leading the way in Sustainability on the new extensions of the M4 and M8

Sustainability is at the heart of what we do and is embedded in the design, construction, and the operation of the M4 and M8 link tunnels.

Environmental and social practices have been enhanced, resulting in positive tangible outcomes in the local community and across the broader Sydney arterial road network. The project also contributes to a range of United Nations Sustainable Development Goals which provide the foundation for Transurban's Sustainability Strategy and are part of a global partnership for the wellbeing of people and the planet, now and into the future.

Industry leading sustainability practices on the M4-M8 link tunnels includes switching to renewable energy, and optimising the tunnel design to improve efficiency, to ultimately reduce Greenhouse Gas (GHG) emissions during the construction and future operation of the tunnel. The ventilation design reduces GHG emissions by around 13%, and the innovative LED lighting design has reduced GHG emissions by around 8%. Overall, carbon emissions during construction and operation of the tunnels have been reduced by around 400,000

tonnes or 28% of forecast emissions throughout the project lifecycle.

The tunnels have significantly reduced lifecycle impacts during construction through careful selection of concrete and working with a range of local suppliers. By working with key suppliers and industry partners with the aim to reduce the embodied carbon emissions, a range of bespoke initiatives were delivered including reducing transport distances, using recycled and alternative materials, designing material use more efficiently, and adapting tunnel excavation methods. During construction, 32% of supplementary cementing material was used in the concrete mixes which equates to over 35,000 tonnes of waste material that has been diverted from landfill.

Infrastructure assets are designed to last for decades, usually from 50 to 100 years, and therefore need to be resilient to global changes over these timeframes. Resilience and adaptation to the physical impacts of climate change has been embedded at an early design phase, to ensure resilience to natural hazards and the changing environment such as projected hotter, drier, and stormier conditions, combined with higher sea levels.

For more information

Call **1800 660 248** (toll free) and speak to a team member or email us info@westconnex.com.au.



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Over 35,000 tonnes of waste diverted from landfill by using supplementary cementing material

An infrastructure sustainability rating has been implemented across the Design and As Built phases of the construction of the tunnels, which is a standardised framework governed by the Infrastructure Sustainability Council. The project achieved a 'Leading' Design rating which is the highest rating category attainable.



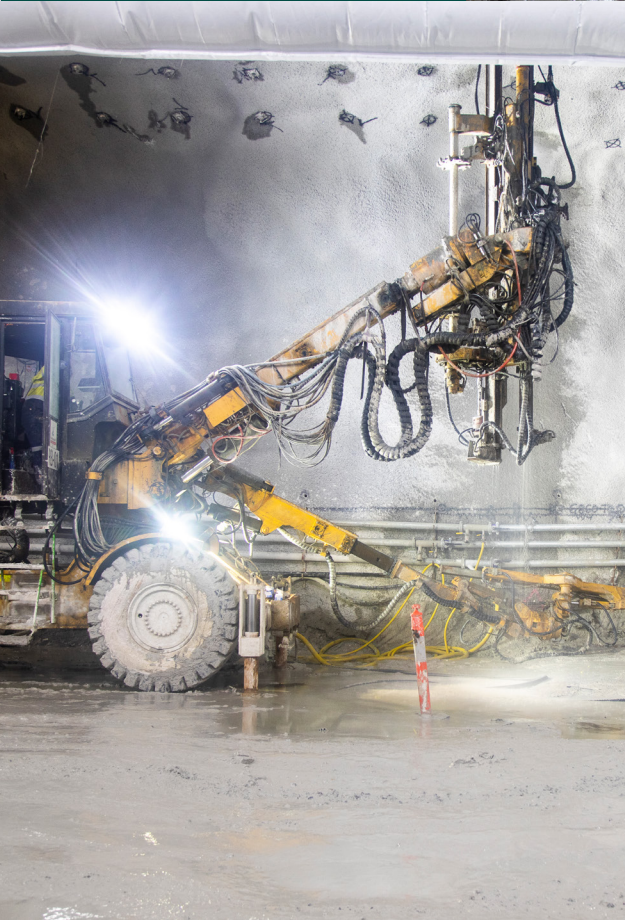
32% cement replacement within the 271,498m² of concrete used on the project



Female participation on this infrastructure project is 21%—double the national average working in construction



63% of the 665,137kl water consumed to date was from recycled sources



Steel rock-bolts are typically used as temporary support during tunnel construction but on this project, glass-fibre-reinforced polymer (GFRP) rock-bolts have been used. These have many advantages including excellent durability, light weight for manual handling, and lower environmental impact. Over 12,500 GFRP rock-bolts have been used which has led to over 8,300,000 tonnes of spoil being beneficially reused. The GFRP spoil exemption is a NSW first innovation verified by the Infrastructure Sustainability Council.

