

Design And Construction Of The Bruce Highway Upgrade, Caloundra Road To Sunshine Motorway

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structures and the benefits that the DDI interchange design brought to the project. The paper also reviews some of the technical challenges associated with the construction of the upgrade while maintaining live traffic operations.

The Bruce Highway Upgrade project between Caloundra Road and Sunshine Motorway (CR2SM) is an \$800m highway improvement project involving the widening to 6 lanes over a 5km stretch of the Bruce Highway on the Sunshine Coast incorporating two significant interchange upgrades as well as multiple creek and river crossings. The purpose of the project is to provide a safe, high-volume capacity and flood immune section of highway between Caloundra and Maroochydore. The southern interchange at Caloundra Road incorporates Australia's first diverging diamond interchange (DDI) utilising two new bridges over the Bruce Highway. The DDI replaces the existing interchange and reduces the project footprint adjacent to the State Forest without the need for additional land take.

Twenty new bridges comprising of prestressed concrete (PSC) girders and deck-units were employed across the project along with three new box-culvert type structures for active-transport links. Twelve structures cross rivers and creeks where peak flow velocities of 6m/s can occur. All bridges were founded on concrete cast in-place piles which were socketed into rock.

This paper addresses discusses some of the bridge solutions adopted, how concrete was utilised to provide resilient and durable