Falcon Street Pedestrian Bridge

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Abstract

The Roads and Traffic Authority requires an enhanced pedestrian and cyclist facility at the Falcon St and Warringah Freeway junction. A part of these works is the new five span 220m long Falcon Street Pedestrian bridge, crossing a total of 18 traffic lanes, linking regional cycling routes and enhancing pedestrian and cyclist safety.

The superstructure is a horizontally and vertically curved single steel box girder. The bridge has five continuous spans with the two central spans 65m each in length. The aesthetic requirement to optimise the slenderness of the bridge constrained the design depth of the girder to 1500mm. This design achieved a very slender, long spanning bridge which kept as low as possible as to obtain minimum clearance over the Falcon St on and off ramps, not impede the visual vertical plane and fully achieve disabled access grades.

The location of the piers is highly constrained by the Warringah Freeway carriageways and the new Falcon St on and off ramps. The aesthetic design kept the piers to 600mm wide blade piers to accentuate the slenderness and add elegance to the design.

The Falcon St Pedestrian Bridge was designed by Aurecon for the RTA. Architectural and Urban Design was provided by KIAH Infranet. Aurecon was also commissioned directly by the contractor to provide construction stage services advice and temporary works design. This paper covers the concept planning and design development of the superstructure and substructure for construction by segmental erection, including the temporary supports required.

REED Constructions were selected as the contractor through an open tender process and no alternative design solutions were offered at tender stage. The bridge is well underway and due for completion in mid 2009.

Authors:

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Mark is an Experienced Engineer in Aurecon’s Bridges and Civil Structures Group. He has been with Aurecon since February 2005, and has since been involved with the design and documentation of a variety of bridges and civil structures. Mark is the Project Leader for the above described project.
**Dennis Gunaseelan**

Dennis is a Civil / Structural Engineer in the Transport group of Aurecon and has seven years experience in bridge and civil engineering consulting. His specialisations include design and documentation of a wide range of bridges and civil structures. Dennis was the design engineer for the Falcon Street Pedestrian Bridge.

**John Hilton**

John is an Executive of Aurecon and Aurecon’s Bridges Portfolio Manager in Australia, New Zealand and the Asia Pacific. John has over thirty years experience in the design and construction of bridges for a wide range of structure types and loading. John’s role in the project included assistance with the development of the design, review of detail design and provision of advice during construction.