

Helix Bridge

Singapore

The Helix Pedestrian Bridge spans the mouth of the Singapore River where it opens onto Marina Bay. It links the established Raffles Avenue district with the new Bay precinct that contains the Sands Resort and the Gardens By The Bay, and leads around to the CBD Financial District.

The project encompassed both the pedestrian bridge and a new vehicular bridge, the latter running straight across the river mouth. The pedestrian bridge is curved in plan to distance pedestrians from the traffic while also enabling pedestrians to connect from one bridge to the other at mid-span. The bridge is 285 metres long, made up of three 65 metre spans and two 45 metre end spans.

The source of inspiration for the structure was the DNA molecule. It provided a deceptively lightweight solution to a bridge that curves in plan and is tubular in section, this geometry being devised to integrate structure, deck and canopy within its overall 10.8 metre diameter.

The economy of material facilitated by the DNA-based structure prompted the Singapore Urban Development Authority to have the bridge fabricated in duplex stainless steel. The decision afforded opportunity to pare the members to minimal dimensions – the tubes are only 273 mm in diameter – and to craft the connections linking the spirals like tendons. Tiny LED spots are integrated into the tubes accentuating the delineation at night. The canopies alternate between fritted glass and steel mesh, creating

varied experience from their reflectivity and translucency.

These treatments caused us to consider the bridge as a ‘bracelet’ enfolding the mouth of the river at its opening to the bay. In order to facilitate views of boating events held on the bay, a series of oval viewing pods were added, appearing like studs along the bracelet.

The delicate tracery of the bridge’s double spiral has created a foil to the massive buildings that flank the shorelines, in particular the Marina Bay Sands Resort. The bridge acts as both a crossing and as a place of relief in this context, evidenced by the many Singaporeans and visitors that come to merely stroll and enjoy its experience.



Environment:	marine
Material:	duplex stainless steel piping
Size and volume:	273 diameter and 600 tonnes
Architects:	Cox Architecture
Photographs:	Christopher Fredrick Jones
More information:	coxarchitecture.com.au



