

ELIZABETH QUAY PEDESTRIAN BRIDGE

BORED PILES, CFA PILES & SHEET PILES



Owner: Metropolitan Redevelopment Authority

Managing Contractor: Leighton-Broad

Main Contractor: Decmil, Structural Systems & Hawkins Civil (DASSH)

Specialist Contractor: GFWA

THE PROJECT

Elizabeth Quay is a \$440 million project that will return the city's focus to the iconic Swan River and enhance Perth's reputation as one of the most liveable cities in the world. It is the centre piece of a bold plan to revitalise central Perth. Delivered by the State Government and supported by the City of Perth, Elizabeth Quay will cover nearly 10 hectares of prime riverfront land in the heart of the city. The project will create a magnificent precinct featuring a 2.7 hectare inlet surrounded by a split level promenade, shops, cafes, restaurants and other entertainment venues.

The project will be constructed on an existing old landfill with various thicknesses and heterogeneous materials mixed with sand and land reclaimed from the Swan River. The uncontrolled fill is overlaid by very soft and highly deformable Swan River Alluvium, and multi layers of the Guilford Formation with various thicknesses and elevations.

A feature arch and suspension bridge that will be 20 m high, 5 m wide and suspended over the inlet with a clearance of 5.2 m from the water will connect the promenades, the Island and the ferry terminal.

THE ROLE OF GFWA

GFWA was awarded the design and construction of the abutment and pier piles of the Pedestrian Bridge.

In this project a combination of bored and continuous flight auger (CFA) piles were installed to optimise efficiency and reduce costs and construction period.

A total of 12 bored piles, four per cap, were installed to support the western, central and eastern piers. The piles' diameters were 0.9 m, and pile depths were 25 m to 28 m. These piles were socketed 3 m to 6 m into the Kings Park Formation siltstone.

Four CFA piles were also installed at the location of the eastern abutment. The diameter and lengths of these piles were respectively 0.75 m and 17 m.

For quality control and verification purposes a variety of tests including static load tests, sonic logging and low strain integrity tests were carried out during the course of the project on sacrificial and working piles.

Additionally, GFWA installed 12 m sheet piles for retaining the ground during the excavation of the bridge piers.

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