

STATE THEATRE CENTRE OF WA

DIAPHRAGM WALL, BARRETTES, PILES & ANCHORS



Developer: Government of Western Australia
Forward Works Contractor: Broad Construction

Main Contractor: John Holland
Specialist Contractor: GFWA

THE PROJECT

State Theatre Centre of Western Australia, also known as New Performing Arts Centre is located at the corner of William Street and Roe Street in Perth's Northbridge suburb.

In November 2005, Kerry Hill Architects was announced as the winner of an international competition for the design of a new performing arts venue. The design includes 575 seat Heath Ledger Theatre, 200+ seat flexible Studio Underground, a multi-purpose outdoor space, spacious foyers and public amenities, including bar facilities for each performance space, associated rehearsal rooms, a palette of natural materials including black metal, curved timber and gilded bronze, strong contemporary visual identities for each performance space and state-of-the-art theatre equipment.

THE ROLE OF GFWA

GFWA was awarded the contract the special foundations works including the installation of diaphragm walls, barrettes, secant piles, soil anchors and injection of microfine cement grout.

A total of 28 diaphragm wall panels, with a maximum depth of about 15 m were installed around the theatre to allow for excavation and construction of the sub-terrain structures. The panel thicknesses were 0.6 and 0.8 m and the longest panels were 6.85 m. Total panel length was approximately 180 m.

Two barrettes, each 0.6 m thick and approximately 6.1 m long, were also installed down to the depth of 13.65 m.

677 m² of secant piles were also installed down to an approximate depth of 6 m.

One row of anchors were installed during excavation to provide lateral support for the diaphragm walls.