

HUNTER RIVER – SOUTH ARM

GROUND ANCHORS – SBMA SYSTEM



MENARD BACHY



Client: BHP Billiton
Consultant: Worley Parsons

Contractor: Daracon
Specialist Contractor: Menard Bachy Pty Ltd

THE PROJECT

The Hunter River Project involved the design and installation of 254 ground anchors using the Single Bore Multiple Anchor (SBMA) system. The SBMA system is a licensed design method to maximise the bond capacity of the ground, thus creating much higher capacity anchors than can normally be achieved using traditional techniques.

The anchors are being used for support of a permanent sheet pile wall on the shoreline of the Hunter River in Newcastle, NSW. The sheet pile wall is being installed as part of a major remediation project of the river sediments being undertaken by BHP Billiton.

MENARD BACHY'S ROLE

The works involved a detailed trial phase to optimise the design parameters to the site ground conditions, the onsite fabrication of the anchors using over 50,000m of specially imported cables and installation of the 30 to 35m long anchors with over 7,500m of drilling and 750 tons of cement.

The anchor capacities ranged from approximately 500kN to 900kN and were designed and constructed in accordance with BS8081.

The site ground conditions comprised very hard filling comprising slag and steelworks wastes over dense, water charged sands which posed challenging drilling and anchor installation conditions.

All works were completed from a specially constructed rock platform situated on the river side of the sheet pile wall. The works were subject to strict environmental controls given the location of the works and the high profile nature of the project. The site safety protocols were in accordance with BHP Fatal Risk Control Standards (FRCS) and required the development of specific work methods for the high risk drilling works.

Construction commenced in November 2009 and was completed in June 2010. The project was resourced with up to 4 drilling rigs working 6 days per week and a workforce of up to 30 people.