

# DALRYMPLE BAY COAL TERMINAL EXPANSION 7X PROJECT PERMANENT ROCK ANCHORS



**Client:** Connell Hatch



**Contractor:** John Holland Group

## THE PROJECT

The Dalrymple Bay Coal Terminal 7X Expansion is being constructed to increase the capacity of the terminal by 50% over 3-4 years. This current project is the 7th expansion stage since the terminal was first commissioned in 1982 and is used solely for the export of coal from Queensland's Bowen Basin which continues to be one of the most sought after commodities in the world.

The works involved the drilling and casing, assembly, installation and grouting of the permanent bar rock anchors at the toe of the 1200dia steel piles to provide an anchorage into the underlying rock. All of the anchors required are located along the new coal conveyor alignment which is being constructed from the existing onshore stockyard to the out-loading berths 4.5km offshore.

## MENARD BACHY'S ROLE

Menard Bachy commenced work on the project in the design stage in early 2007 with John Holland in Brisbane. The initial design and constructability of the anchoring system was looked at in great detail as all of the works had to be undertaken from a temporary work platform installed onto piles 20m above the sea level.

All of the anchor installation has been carried out post erection of the conveyor to ensure that the critical program path of the main conveyor construction was not compromised.

In November 2007 the main anchors works package was awarded to Menard Bachy and works commenced on installation of the permanent rock anchors. Due to the rock anchor design and project rock anchor specification the following design and methods were created for the works:

- Design and fabrication of a temporary working platform for carrying out all drilling, installation and grouting works;
- Anchor installation process and equipment for lowering of large bar anchors into drill hole up to 40m in depth;
- Diversers for capture of 100% of drilling and grouting spoils due to work environment immediately above the open ocean;
- Site/location specific Work Method Statements for lifting and plant movements within restricted space on the conveyor;

Menard Bachy was selected for this project for both assistance in design of the anchorage system and the experience and knowledge of installing such large anchors in a unique environment such as the 7X Project.