Case Study

Gabions & Reno Mattresses

Geofabrics

Project:	Paraburdoo Primary Stockpile Walls
Date:	2012
Client:	RIO TINTO
Contractor:	Austral Construction Pty Ltd
Location:	Paraburdoo, Western Australia

GEOFABRICS®
Smarter Infrastructure

Gabion Retaining Wall

Rio Tinto's Paraburdoo open pit mine which began operations in 1972 is located 80km south of Tom Price in the Pilbara. The combined production capacity of the Paraburdoo, Eastern Range and Channar mines is 20 million tonnes of iron ore. The ore is processed on site before being loaded onto rail and transported to Dampier.

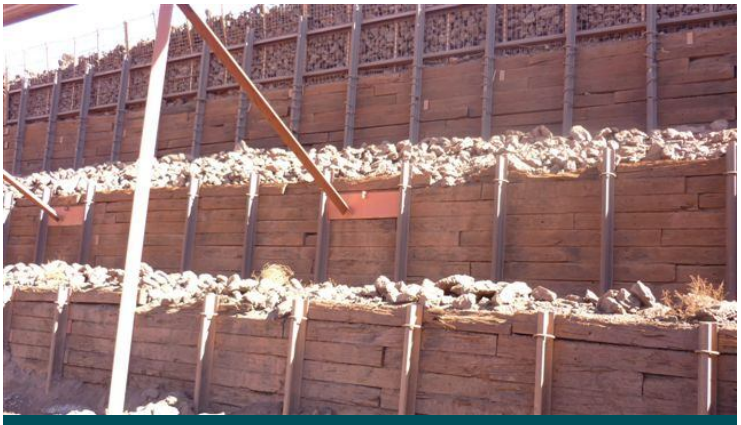
In 2010, Rio Tinto contacted **Geofabrics Australasia Pty Ltd** regarding a solution to replace the two 7m high timber sleeper primary stockpile walls. The existing walls were showing signs of distress and a decision was made to investigate options to replace the walls with a suitable system. In 2011, the Consulting Engineers, **Parsons Brinckerhoff** compiled a pre-feasibility report for the replacement walls and included Terramesh® (Gabion faced reinforced soil) and mass gravity Gabion walls as viable options. Rio Tinto evaluated the systems and a decision was made to proceed with mass gravity Gabion walls.

Geofabrics Australasia was asked to provide technical input pertaining to long term durability of the Gabion units, construction methodology, rock fill specification and design parameters of the Gabion system. To fulfil the design life requirement, Galmac (95% Zinc 5% Aluminium Alloy) + PVC coated Gabions were specified for the works.

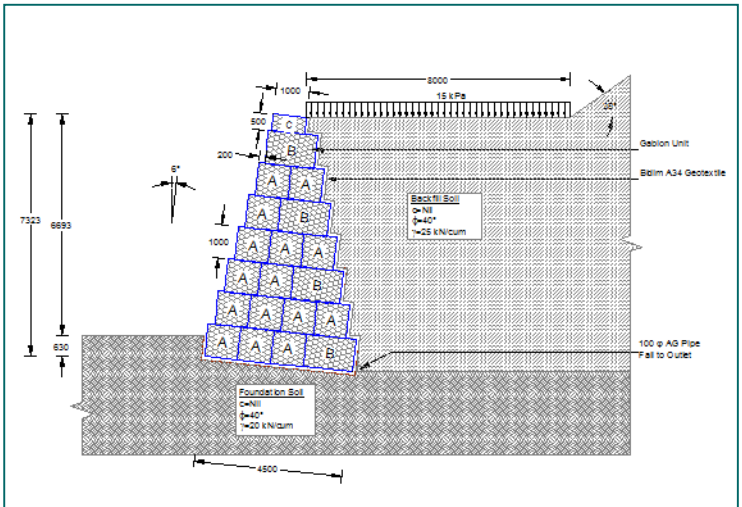
Austral Construction Pty Ltd, a specialised national contractor for Australia's mining and port infrastructure projects, was awarded the project. They completed the project to a very high standard within the allotted timeframe and safety requirements.

Geofabrics Australasia also supplied Bidim A34 geotextile for separation behind the Gabion wall, preformed bracing wires to assist in maintaining straight Gabion faces, stainless steel rings (and pneumatic lacing tools) to speed up installation and drainage pipe. Elcoseal® X1000, a Geofabrics Australasia manufactured geosynthetic clay liner, was installed horizontally behind the wall to prevent potential saturation of the backfill.

The Original Timber Sleeper North Wall



The Terraced North Wall Showing Signs Of Distress



The GAWACWIN Design Suggestion Provided To RIO TINTO

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The Completed 7m High Mass Gravity Gabion North Wall **Aug 2012**

The Rio Tinto project tender document stated that the successful contractor would need to participate in theoretical and practical installation training provided by Geofabrics Australasia Pty Ltd prior to commencement of the Gabion wall. For quality control purposes it was a prerequisite that a sample Gabion was installed on site which was used to establish the acceptable method and standard to which all subsequent Gabions were constructed.

The Rio Tinto project engineer stated that they were very pleased with the final outcome and in particular the speed of installation i.e. with a double shift, the 1300m³ of Gabions took only 20 days to place and fill.

The Stepped Arrangement Of The Gabion Side Walls

Gabion Assembly Demonstration At Geofabrics Office

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