

Iron ore loading berth and wharf extension AP5, Port Hedland, Australia

Design and construction contract for a fifth iron ore loading berth at Anderson Point Facility (AP5) in Port Hedland, Western Australia.

The works included the design and construction of a 306-metre-long wharf extension, seven berthing dolphins, the supply and installation of a modularised steel deck structure with precast concrete deck panels, conveyor structures and a transfer station.

The wharf extension enables shiploaders access to both the AP4 and AP5 berths, and the fifth berth increases the load-out capacity by an extra 15-20 to 175 million tonnes per annum.



Location	Port Hedland, Australia
Client	Fortescue Metals Group (FMG)
Contractor	BAM Clough Joint Venture
Contract type	Design & Construct
Contract period	February 2014 – March 2015
Contract sum	€72 million

'Increasing capacity in Port Hedland.'

Scope of work

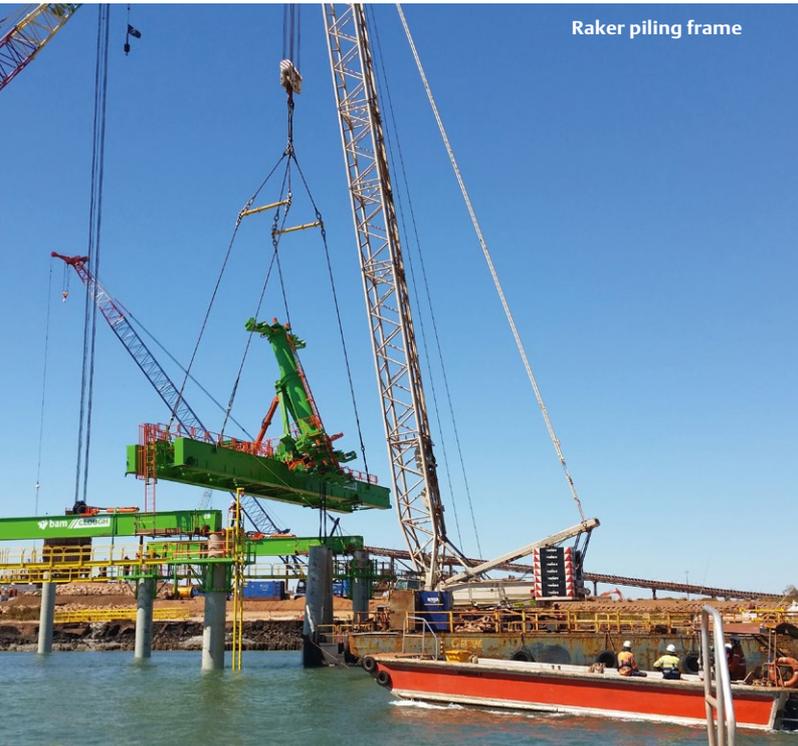
A concrete roadway along the full length of the new wharf provides vehicular access to both berths. The conveyor modules were supplied and installed to the extent of the required shiploader travel. An elevated conveyor bridge and access roadway were constructed from shore to the south end of the AP5 wharf where a prefabricated modularised transfer station was installed.

The seven independent berthing dolphins were designed and constructed to handle a varying range of iron ore carriers over the circa six-metre-long tidal range in Port Hedland.



Raker piling frame

Raker piling set-up



Tight schedule

The chosen solution in response to tight schedule constraints was to fabricate the steel topside modules in China. These had to be delivered to site fully constructed with a transfer station, precast concrete deck panels and conveyor structures, stretching the transportation and installation limits to reduce on-site installation works. All modules were successfully placed in-situ, allowing the site team to immediately work on the mechanical fit-out. Piling cycle time was optimised by using a custom, in-house designed raker piling template capable of 'walking' over the vertical piles, making it independent from tidal restrictions and requiring minimal handling to move to the next piling location.



Piles for the berth



1,500 tonnes in one lift: deck module with pre-installed transfer station