



# PORT OF DAMPIER BULK HANDLING FACILITY

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CLOUGH WEBUILD  
\$6.5 M

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As part of the Port of Dampier Bulk Handling Facility redevelopment, Clough WeBuild was engaged as principal contractor for the new build construction. The facility, which is located 1,540 kilometres (by road) north of Perth, Western Australia, was characterised by ageing wharf assets past their useful life. Prior to construction, significant demolition works were required to prepare the site for redevelopment. DEMEX was engaged as subcontractor by Clough WeBuild for the demolition scope of work.

The wharf was comprised of a heavy load out (HLO) facility and an alternative load facility (ALF). The HLO was a land backed sheet piled structure approximately 50 metres long and 25 metres deep that was utilised as a rock loadout wharf. The sheet piled wall was made up of 120 sheet piles and tied back to a sheet pile 'dead man' wall with anchor tie roads.

The ALF was a precast concrete block gravity structure approximately 30 metres long and 16 metres wide. The ALF was constructed on shallow water from mass concrete precast blocks tied together with an in situ concrete capping beam. The internal section of the wharf was filled with structural fill, while precast concrete blocks were typically 40 tonnes each.

A critical element of this project was understanding the conditions of the piles at the earliest possible juncture. Impacted by seawater over an extended period, the degree of corrosion of the piles was unknown. By confirming this through initial trials, it was possible to refine the approach taken. For this task, the team used a vibro hammer sheet piling machine on all 120 piles, with ongoing adjustments to the technique adopted depending on specific conditions of the individual pile.





In addition to the extensive pile removal activity at the HLO, there was also significant concrete removal works associated with the ALF. Limited drawings meant the condition of all in situ concrete was not identified prior to works commencing, a factor which influenced the project duration and other project works being undertaken in conjunction with the demolition. Concrete was processed in situ and reused onsite, enabling recycling objectives to be achieved on the project.

Although there were considerable challenges associated with working on a site characterised by extreme marine and weather conditions, the team completed demolition successfully.

## CHALLENGES

- Challenging marine environment**
  - The project site was located at an operational multi purpose port, which had high volumes of scheduled and unscheduled cargo ship traffic. This required detailed logistics planning around tides and berthing schedules. Tidal patterns were also a factor, which impacted completing activities to be undertaken on or in the water. Throughout the project, however, the team remained responsive to abruptly changing conditions at the port, ensuring project works remained on track.
- Working Conditions** – Apart from the wind factor and challenging marine conditions, the crew were required to work under extreme heat conditions. With the works conducted during the wet season (November to May) and a large portion of works involving manual labour, worker safety remained a priority.
- Logistics and location** – With the Port of Dampier located 1,540 kilometres by road from Perth, mobilising the team to site required extensive planning, as well as understanding fatigue management during delivery of the work.
- Condition of aged / decommissioned sheet piles** – Due to the sheet piles' exposure to saltwater, corrosion of the piles presented a challenge. As there was no way of knowing the integrity of the pile unless removal works commenced, the team remain patient and focused until piles were removed successfully.