



ROAM MARINE

Z Marine Pty Ltd
ABN 52 144 660 702
11/20 Churchill Avenue
Subiaco, WA 6008, Australia

Mb 0413 933 163
Phone 9381 9091
Email zmarine@roam-marine.com
Web www.roam-marine.com

CAPABILITY AND RELEVANT EXPERIENCE

In 1998 Mark Hannaford left Clough after 17 years to start a marine division of Roam called Roam Marine. In 2010 it became a separate company- Z Marine – which still trades as Roam Marine. The company provides structural design consulting services for marine projects, structural work and temporary works design. It specialises in the design/project management of marine structures such as jetties, piling and offshore structures: design of temporary works, construction methods and lift engineering. Key projects by Roam Marine are summarised below and more details are available on our website www.roam-marine.com . Major clients include Austral, Rio, Leighton, BAM Clough, DPaW, John Holland, Barclay Mowlem, Marine & Civil, Dampier Port Authority, Albany Port Authority, Mermaid Marine, Lend Lease, Westerfeld, Advisian, Decmil, TAMS and RMD.

Please refer to our website for curriculum vitae of the key personnel.



Marine project management & engineering management

- Preliminary design of MOF for import of stackers at Dampier
- Design of line boat pontoon at Cape Lambert and gangway landing platform at Dampier
- Engineering review of all Lend Lease marine works drawings and interfaces with civil and services for BHP tug harbour including 6No pontoons at Port Hedland. Site assistance including lift studies, method statements with commissioning and maintenance manuals
- Seconded to FMG to manage marine works. Responsible for design development, approvals, consultants, award of wharf and dredging contracts, management of the design and construct marine contractor (\$200million) and all interfaces with other contracts and FMG operations
- Seconded to Mermaid Marine as Project Managers for \$34million of marine works including replacement of barge berth, two extensions of the wharf, two pontoons, wharf deck plates, pump platform and landing barge ramps. Responsible for all project management, engineering, procurement and construction.
- Design and construction of tug harbour pontoons, access gangways/catwalks and services at Dampier, Port Hedland and Cape Lambert.
- Engineering manager for the Dampier bulk liquids berth for the bid period and the initial 3 months of the construction contract.
- Design management and piling engineer for the construction of Berth 2 Port Hedland.
- Design and project management of the construction of an LPG import jetty in Bangladesh

- Seconded to Evans Peck to review and coordinate designs by GHD, URS and Baggerman for the Dampier Port Authority land backed wharf, dredging and small boat harbour.



Marine temporary works:

- Access scaffolds decks, lifts etc for TAMS
- Pile bracing and temp works for Brady Marine including assessments of min pile penetrations
- Design of 20m high piling frame on skate beams to drive 1.5m piled combi wall at Webb Dock
- Constructability design changes, gantry crane, piling gates, loadout jetty, method statements and lift studies for replacement of dolphins at Rio's EII wharf.
- Access platforms, lifts, seafastening and crane verifications for wharfs at Inpex and Wheatstone
- Temporary works design for Cape Lambert B Wharf including dolphin piling frame, access scaffolds, boat landings and lift engineering.
- Design of barge access ramp for 80t trucks, jackup barge access, crane boom rest and 40m personnel gangway for Gorgon LNG wharf construction.
- Constructability design reviews and temporary works design for a large coal import jetty in Malaysia. Work included alternative precast wharf designs, matts for a 300t crawler crane on the wharf, method statements, formwork, falsework, temporary jetty, scaffold, access platforms, lifting equipment, and barge strengthening.
- Design of miscellaneous temporary works including temporary jetty, 400t test pile and access structures for Tiebaghi jetty New Caledonia
- Design of scaffolds for wharf piling and two 200t crane travelling gantries in Mackay



Bridge temporary works:

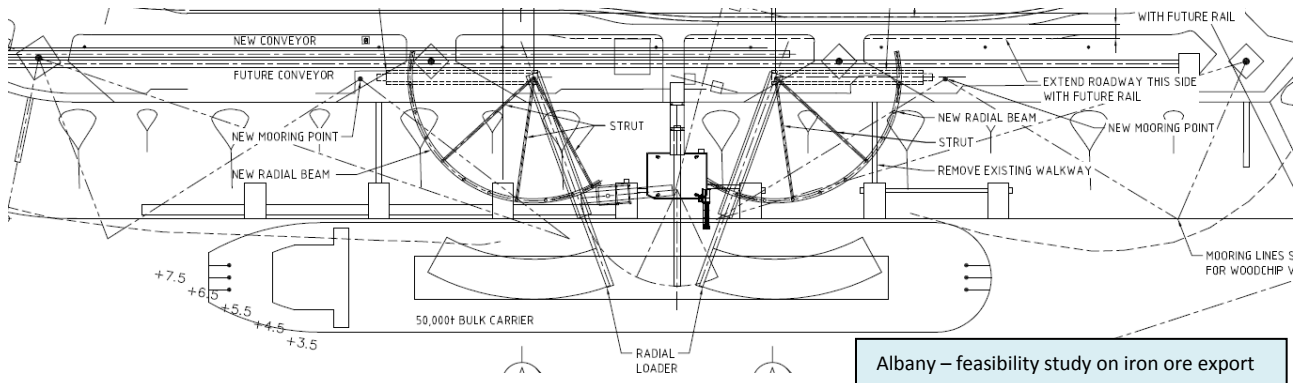
- Temporary works at Elizabeth Quay including verification of arch lift, scheduling of complex 3d rebar cage, review of sheetpiled cofferdam and design of rebar support jigs and access.
- Design of numerous temporary works for the construction of the Narrows Bridge including access structures, lifting beams and fender piling in the river.
- Design and fabrication of piling gates for the Narrows rail bridge, design of T shaped piling barge for the Mount Henry rail bridge, design and fabrication of 400t pile tension test frame + supply of piling engineer.
- Temporary works design for a Harvey dam construction including a 30m span bridge for 90t trucks.



Heavy Lifts:

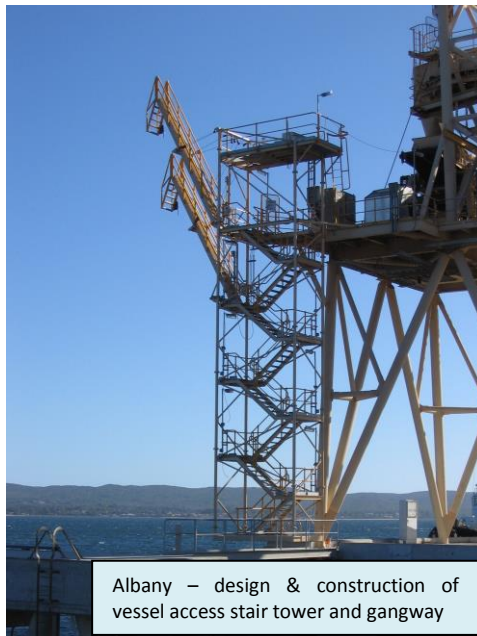
- Lift studies for Roy Hill erection
- Lift engineering for erection of an 1800t reclaimer and two 700t stackers. Lifts up to 300t including dual crane lifts and use of a 600t crawler with superlift.
- Engineering for erection, weighing, loadout, lift and transport of two 1300t shiploaders.

- Design of heavy lift and loadout for 350t shiploader for Tiebaghi jetty in New Caledonia
- Vessel lifts studies for construction of an oil refinery in PNG
- Certification of a 400t lift jacked at Harvey Dam and design of support steel for a jacked lift of 700t Perth Airport control tower.
- SPMT transport of 1500t deck, 600t jacket, 800t crusher and 60t buildings
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Port feasibility:

- Concept development and/or review for proposed wharfs for Wheatstone LNG, Browse LNG, Anketell Point iron ore and BHP iron ore.
- Port feasibility studies for iron ore in Liberia including transshipment, bauxite in Solomons, iron ore at Cape Preston and woodchips, iron ore and grain in Albany.
- Feasibility studies and conceptual designs for new wharfs in Port Hedland, Darwin, Brunei and Fremantle.



Miscellaneous

- Review of the design of an LPG spread mooring in Darwin and assessment of upgrade options.
- Fabrication of formwork tables for a 25 floor high rise building in Perth.
- Design of a 120t mid depth buoy and 210t gravity base for the Timor sea.
- Design and construction of a multilevel gangway access tower for ship access at Albany.