

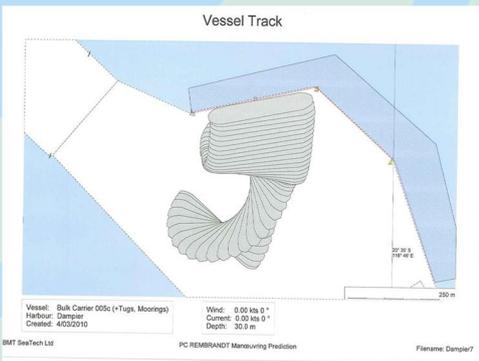
“Where will our knowledge take you?”

# General Port and Harbour Engineering

## Channel Design



“ BMT JFA has experience in developing and optimising design for channels, berth pockets, turning basins, and ship manoeuvring areas for small to large maritime facilities. ”



For development of new harbours and for the expansion of existing port facilities for larger ships or increased ship traffic, a common requirement is the deepening or widening of navigable waterways. High costs for capital dredging works, ongoing maintenance dredging requirements, environmental impact mitigation works, and regulatory approvals can significantly control project feasibility. Aside from cost, development of a design with strong appreciation for local coastal processes, metocean conditions, geotechnical characteristics, operators' requirements and safety is paramount. Channel availability relating to both tidal windows and traffic flow is a key consideration for the design, as is the dredging methodology.

In addition to collecting and modelling geotechnical and environmental data for input into channel design, BMT JFA can provide simulation modelling to test and confirm key parameters for the channel and vessels. With support and input from experienced ship pilots for the largest ocean going vessels,

BMT JFA staff can model ship manoeuvrability and port layout options using desktop simulator PC Rembrandt. Additionally, BMT JFA engineers also work with full bridge simulators to provide 3D testing of channel options to optimise channel design, as well as with under-keel clearance (UKC) modellers, to determine optimal channel depths for design vessels.

### Key Capabilities

- Channel design for large ports, harbours, and small craft facilities
- Ship pilotage simulations
- Under-keel clearance design.

### Related Projects

- Southdown Magnetite Project/ Albany Port Berth 7 Expansion
- Oakajee Port Development
- Esperance Pre-Feasibility Port Expansion Study
- Bunbury Berth Options Study
- Various small craft harbours and waterways.

### Services Offered

- Management of under-keel clearance studies
- Desktop level ship pilotage simulations
- Management of full bridge ship pilotage simulations
- Siltation and metocean studies for channel design
- Channel design drawings, specifications, and dredging tender documents
- Support for permitting and approvals.

### Software

- PC Rembrandt.