

RICHARD BODENHAM
CIVIL ENGINEER (FFOD)

University College Cardiff, BSc Civil and Structural Engineering

Member of the Institution of Civil Engineers, 1977

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Richard is a civil and structural engineer with over 30 years' experience in: the design and construction of new ports; marine feasibility studies; planning and assessments of ports; and he now specialises in assessing and advising on Fixed and Floating Object Damage (FFOD) in ports. He spent three periods in the Middle East supervising the construction of ports including a three year period as Resident Engineer.

Richard has nine years of experience of engineering, economic and environmental feasibility studies for ports including site selections for new ports, studies to complete abandoned and problematic ports, technical development options for new ports, repair and upgrading of deteriorated ports and technical support during the design and construction of new ports. This has included managing the specialist design of fender and mooring systems, navigation channels and vessel turning circles, harbour wave simulations and both numerical and physical models of port layouts and vessel manoeuvring in ports.

For ten years Richard's speciality has been in surveying vessel impact damages to port infrastructures (i.e. FFOD), assessment of consequential costs and how the liabilities can be mitigated and provision of technical support to enable an arrested vessel to be released. He also has extensive experience in the development, and negotiation, of cost effective repair solutions and assessing the cause and effect of vessel impacts and advising on unsafe ports. Furthermore, Richard's expertise also covers mechanical equipment including assessment of damages to port cranes, managing the repair or dismantling of container cranes, loaders and mobile cranes, assessment of damages and minimum repairs to Chiksans and other loading arms, linkspans, locks and floating docks.

Richard has also provided written and oral expert evidence in an arbitration and a mediation.

SPECIALIST PORT SKILLS

- Surveying, analysing, advising and reporting on port fixed and floating object damage (FFOD)
- Reviewing port procedures and facilities, and actions of the vessel, to assess for an Unsafe Port
- Derivation and evaluation of consequential costs to the port due to temporary loss of facilities
- Development of repair options, and presentation of mitigation measures to minimise overall costs

RECENT WORK - FFOD

- Vessel damage to jetties, dolphins, navigation aids, Ro-Ro ramps and breakwaters in over forty countries. Cases typically include presentation of mitigation measures to reduce costs
- Jetty damage, crane collapse, port operations review, mitigation measures, settlement negotiations (Philippines)
- Mooring failure investigation determined inappropriate port procedures resulting in repeated high risk to vessels, Unsafe Port designation and rejection of claim (France)
- Linkspan damage assessment, justification of a reduction in scope of repair, working closely with the port to minimisation repair costs (France)
- Container crane damage and repair (UK, Thailand, Iran). Iran claim reduced from of \$32M to £7M
- Container crane and mobile port crane dismantling (Ecuador, Algeria)
- Moored vessel storm damage to a berth (Italy)
- Aids to navigation buoy and seabed submarine tracking module damage assessment (China)
- Barge explosion, fire damage and repair costs to berths, storage tanks, buildings, and settlement negotiations (USA)
- Breakwater repair costing review following vessel grounding (Puerto Rico)
- Breakwater repair cost review following barge grounding then critical review of barge mooring procedures to minimise risk of another mooring failure (Turkey).

RECENT WORK – PORT DAMAGE ASSESSMENTS

- Hurricane damage to port facilities (Jamaica)
- Wave surge damage to a jetty (Columbia)
- Condition survey of corroded and damaged reinforced concrete ferry jetty (Philippines)
- Fender rubber inspection, maintenance review, rubber testing and rejection of claim (Brazil)

RECENT WORK – PORT PLANNING

- Port planning and inspections for port owners, operators and users
- Petroleum import/export jetty and land tank storage facilities (Mauritania)
- Berth utilisation and port expansion (UAE)
- Project management and model studies for a new gas terminal (Nigeria)
- Concept planning of major construction harbour (Nigeria)
- Assessment of berth, pipelines and storage tanks (Sierra Leone)

EMPLOYMENT HISTORY

2015 to Present	Solis Marine Consultants Ltd, United Kingdom Fixed and Floating Object Damage (FFOD) Specialist
2012 to 2015	HR Wallingford Ltd, United Kingdom Principal Engineer for major Oil and gas Projects
2004 to 2012	Cwaves Ltd, United Kingdom Director/Engineering Consultant/FFOD and Crane Specialist
2002 to 2004	London Offshore Consultants Ltd, United Kingdom Fixed and Floating Object Damage (FFOD) Specialist
1975 to 2002	Jacobs Engineering Ltd, United Kingdom Project Manager and Engineer for Port Studies and Design