



CLIENTS | PEOPLE | PERFORMANCE

# MARINE



GHD IS AN INTERNATIONAL PROFESSIONAL SERVICES COMPANY. OUR PEOPLE DELIVER INNOVATIVE SOLUTIONS BY COMBINING TECHNICAL SKILL AND EXPERIENCE WITH AN UNDERSTANDING OF OUR CLIENTS' OBJECTIVES AND ASPIRATIONS.

GHD's experienced professionals provide integrated solutions for your marine projects. Our capabilities span investigation, design and construction of port, harbour, coastal and marine projects.

#### OUR ENVIRONMENTAL COMMITMENT

Our clients seek to work with professional advisors who operate in an environmentally responsible manner.

GHD's Environmental Management System (EMS) aims to protect the environment from the potential impacts that may result from our office activities and from the projects we deliver.

The EMS was accredited in June 2005 to international standard ISO 14001 by NATA Certification Services International (NCSI).

The system drives improvement in both our office environmental footprint and the environmental footprint of the projects we deliver.

#### SERVICES AND EXPERIENCE

Integration of our services around the world translates to seamless delivery of your projects. These services include:

- ▶ Port planning and operations
- ▶ Port infrastructure delivery
- ▶ Coastal and oceanics
- ▶ Small craft and recreational marine facilities

GHD's global network of offices is underpinned by sophisticated information technology and data links. Our continued investment in information technology helps us to deliver projects in the most remote locations.

A winning combination of highly skilled professionals, state-of-the-art software, and specialists qualified in the application of this software, gives clients confidence that GHD has the resources to deliver.

#### PORT PLANNING AND OPERATIONS

GHD recognises the importance of supporting clients to deliver positive financial, environmental and social outcomes. Such results are achieved by working together with clients – from concept to delivery and operational phases of port infrastructure developments.

Our multidisciplinary teams provide the following services:

- ▶ Port masterplanning and transport planning
- ▶ Port and transport operational simulation
- ▶ Environmental assessment and monitoring
- ▶ Condition assessment and rehabilitation



Puerto San Vicente, Chile



Cairns Reef Fleet, Queensland



Sandringham Recreational Marine Facilities and Breakwater, Australia



## PORT INFRASTRUCTURE DELIVERY

Marine specialists combine years of experience with common sense, engineering skill and innovative technology to deliver economical solutions tailored to client and project needs.

GHD has a proven track record with the following types of projects:

- ▶ Project management and port infrastructure
- ▶ Dry bulk terminals
- ▶ Container and general cargo terminals
- ▶ Oil and gas terminals
- ▶ Naval facilities
- ▶ Marinas, small craft/tourist facilities
- ▶ Shipbuilding and repair yards
- ▶ Navigation, dredging and reclamation

## COASTAL AND OCEANICS

Understanding and working with ocean and coastal environments is critical to the successful delivery of projects in the marine environment.

Drawing on a vast pool of global talent and knowledge, GHD has provided the following solutions for over 75 years:

- ▶ Oceanics and numerical wave modelling
- ▶ Hydrodynamic modelling
- ▶ Physical modelling
- ▶ Site data recording
- ▶ Coastal management
- ▶ Breakwaters and coastline structures

## SMALL CRAFT AND RECREATIONAL MARINE FACILITIES

GHD is at the forefront of marinas and small craft facilities design with staff having a thorough knowledge of requirements and practical knowledge in how to deliver these projects on time and budget.

Typical projects include:

- ▶ Marinas and associated buildings
- ▶ Wave attenuators and / or breakwaters
- ▶ Boat ramps and jetties
- ▶ Slipways and vessel straddles
- ▶ Small boat harbours
- ▶ Slipways and similar
- ▶ Dry stack storage facilities
- ▶ Ferry terminals



HMAS Stirling, Western Australia



Capital Dredging at Dalrymple Bay Coal Terminal, Australia



Bintulu Container Terminal, Malaysia

## EXPERIENCE

### PORT PLANNING AND OPERATIONS

- ▶ Port Botany, Sydney Ports Corporation – Review container terminal expansion options and prepare a comprehensive multi-criteria analysis of expansion options
- ▶ Burnie Port Authority, Tasmania – Prepare a masterplan for development of the port for the next 20 years
- ▶ Alumina Smelter, Gladstone Port Authority – Assessment of infrastructure requirements for the import and export of products for the proposed Aldoga Aluminium Smelter
- ▶ Bintulu Container Terminal, Malaysia – Prepare a masterplan for development of a container terminal

### PORT INFRASTRUCTURE DELIVERY

- ▶ Comalco Alumina Refinery, Gladstone – Detailed design of the wharf and approach jetty
- ▶ Darwin East Arm Port, Darwin – Detailed design of the wharf and container terminal
- ▶ Jervoise Bay Development, Western Australia – Detailed design of infrastructure for the maritime industrial complex
- ▶ Bulk Liquids Wharf, Gladstone – Detailed design of the wharf to handle 80,000 DWT vessels and the approach jetty
- ▶ Woodside LNG Marine Terminal, Western Australia – Detailed design of jetty, a bend platform, a surge drum platform, a loading platform and berthing and mooring facilities

### COASTAL & OCEANICS

- ▶ Jerudong Harbour Project, Brunei – Wave modelling, hydrodynamic modelling, physical hydraulic model testing and detailed design of breakwaters, revetments, beaches and island
- ▶ Cocos Islands Seawall, Australia – Conduct site investigations, condition assessment and design a seawall to upgrade the existing seawall
- ▶ Hampton Beach Renourishment, Melbourne – Numerical modelling of the coastal processes and design the groynes for renourishment of the beach

### SMALL CRAFT AND RECREATIONAL MARINE FACILITIES

- ▶ Redevelopment of the Royal Brighton Yacht Club marina, stages 1 and 2
- ▶ Expansion of the Royal Yacht Club of Tasmania marina facilities
- ▶ Redevelopment of Royal Melbourne Yacht squadron's marina
- ▶ Parsons Marina redevelopment at Williamstown, Victoria
- ▶ Werribee Boating facilities near Melbourne
- ▶ Sandringham Yacht Club marina redevelopment (Stage 1)
- ▶ Pier 35 Dry stack storage (Yarra River)
- ▶ Altona Safe Harbour for the City of Hobsons Bay
- ▶ Gem Pier ferry terminal for Parks Victoria
- ▶ Redevelopment of Ferguson's Pier for Parks Victoria
- ▶ Apollo Bay wharf
- ▶ Port Fairy wharf redevelopment



## ABOUT GHD

GHD is an international professional services company. Our people deliver innovative solutions by combining technical skill and experience with an understanding of our clients' objectives and aspirations.

With more than 6000 people in a network of 100-plus offices throughout Australia, New Zealand, Asia, the Middle East, the Americas and Europe, we serve clients in the global market sectors of infrastructure, mining and industry, defence, property and buildings and the environment.

Central to our clients' prosperity and GHD's success are forward-thinking engineers, architects, planners, scientists, drafters, project managers, economists and supporting staff. Our people embrace the core values that have sustained the company since inception – **Teamwork, Respect and Integrity.**

Established in 1928, GHD is ranked as one of the world's leading engineering, architecture and consultancy firms. We are dedicated to our clients and their stakeholders, to being a responsible corporate citizen and to improving the quality of life around the world.

We contribute to the goals of sustainable development and are committed to managing the social, economic and environmental impacts of our operations and assisting our clients to manage theirs in the provision of our technical consulting services. We recognise innovation as the key to realising this objective.

As a member of the World Business Council for Sustainable Development (WBCSD), GHD actively participates in the public debate on the role business has to play in managing climate change, energy, development and ecosystems.

GHD operates under a Practice Quality Management System that is certified to AS/NZS ISO 9001:2000 and our Environmental Management System (EMS) is accredited to international standard ISO 14001 by NATA Certification Services International (NCSI).

For more information, visit [www.ghd.com.au](http://www.ghd.com.au)



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