



# + Ports and marine





# Gateway to the World



Port terminals are the gateway to the global economy, carrying over 90% of world trade. In the ports sector today, you face complex challenges on multiple fronts: aging infrastructure, lack of investment, competition, regulation, and climate change. To address these effectively, you need a comprehensive and innovative approach to problem solving.

Our ports practice professionals have a world of experience and can help you fulfill the functional requirements of your port development, from site selection and master planning through to the design and construction of wharves, piers, coastal structures and terminal infrastructure.

**If you are considering any of the following, we can support you:**

- Liquid Bulk Terminals
- Dry Bulk Terminals
- Container Terminals
- Operational Performance
- Multipurpose Terminals
- Gateway Logistics
- Master Planning
- Coastal Engineering
- Marine & Environmental Permitting
- Marine Structures
- Due Diligence
- Project Management & Procurement Services
- Construction Management

# Global presence local focus

- Hatch offices
- Selected ports & marine projects



## 1 Neptune Bulk Terminals Capacity Upgrade

Vancouver, British Columbia, Canada

An existing potash export system was expanded to include a new conveyance system and surge bin, increasing capacity and reducing operational costs.

## 2 Port Tampa Bay Eastport Development

Tampa, Florida, USA

Florida's biggest port, which handles more than 34 million tons of cargo every year, will benefit from the major upgrade and expansion being designed by our experienced team.

## 3 Halifax Shipyard Modernization

Halifax, Nova Scotia, Canada

State-of-the-art infrastructure-engineering design enabled the construction of North America's most modern shipbuilding facility, with a new shipbuilding hall, berthing and vessel launching facilities, a breasting pier, a 500-car parking structure, and site services.

## 4 Saquarema Breakwater Rehabilitation

Rio de Janeiro, Brazil

To rehabilitate the Saquarema Breakwater, which was destroyed by storms, a rubblemound breakwater was designed, armoured with tetrapod concrete units and a toe-protection innovation.

## 5 Transnet Expansion Program

Cape Town, South Africa

More than 27 port infrastructure projects are under development and being actively managed, revitalizing Cape Town's port and preparing it for a planned increase in trade volume.



**6** Huanghua Port Improvement Projects  
Huanghua City, Tebei Province, China

A benchmarking study and a scope definition study were completed for the Shenhua Group, the largest coal exporter in the world, and 15 priority projects were implemented to help achieve “best practice” at the Huanghua Port.

**7** Gorgon Liquid Bulk Terminal  
Barrow Island, Australia

After undertaking the pre-FEED and FEED studies for the Gorgon project, the largest, single-resource development in Australia, we were directly involved in the project planning and execution, plant infrastructure engineering, procurement, supply and logistics, and construction management and planning.

**8** Newcastle Coal Infrastructure Group Coal Export Terminal  
Newcastle, Australia

Beginning with prefeasibility and feasibility studies and continuing through to EPCM services, this massive three-phased project enabled NCIG to increase the terminal’s capacity to 66 million tonnes per annum.



Gorgon Project, Chevron  
Australia (Operator), Australia



Neptune Bulk Terminals Capacity  
Upgrade, Vancouver, British  
Columbia, Canada

### Liquid Bulk Terminals

Major oil and liquid-natural-gas projects in Australia, North America, and South America have all faced challenges to effectively mobilize and deliver their products. For over 30 years, our engineering, procurement and construction services have provided world-class solutions to plan, design and manage the construction of some of the world's largest liquid-bulk terminals.

### Dry Bulk Terminals

Copper-export terminals in Chile. A \$12 billion rail-and-port infrastructure expansion program in South Africa. Every major coal-export terminal along Australia's eastern seaboard. Potash expansion programs in Canada and the USA. We've been involved in major terminal developments across the globe. We're ready for yours.



## Container Terminals

All over the world, port operators, port authorities, and construction companies on container-terminal projects rely on our experience and expertise. From due diligence to the design of quayside berths; from ship-to-shore crane-support structures and container-storage yards, to simulation modeling and operations analysis. Time and again, our container-terminal specialists have proven their value in assessing, planning, designing, and constructing balanced, flexible container terminals.

## Operational Performance

Port facilities and maritime infrastructure are critical business operations. They need significant capital investment and steady funding to remain viable and meet ongoing operational and maintenance requirements.

We work with you, developing strategic operational-performance programs that can boost your bottom line. We find smarter, more efficient solutions for terminal operations. Then we follow up with support across the full business life cycle, from concept to closure. Across the full value chain, from exploration to market.



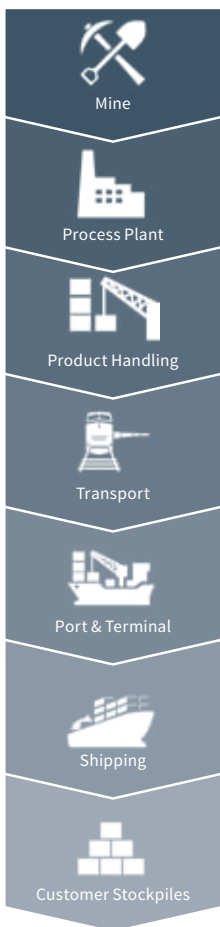
The Philadelphia Regional Port Authority enlisted our help to provide technical advisory services for developing an existing land parcel into the Southport Marine Terminal Complex

Over 60 projects were identified to enable performance improvements to existing operations as well as expansion plans at Shenhua's Huanghua Port in China





Transnet Expansion Program,  
Cape Town Container Terminal,  
Cape Town, South Africa



### Multipurpose Terminals

Multipurpose and specialized terminals such as autports require facilities that can handle heterogeneous cargoes. They not only require special handling equipment, but also need the flexibility to specialize when the market's supply and demand pattern changes. With a partner who's completed a number of multipurpose terminals around the world, you'll gain extensive experience in master planning. It's a important area of expertise that will help ensure success – whether yours is a specialized or multipurpose terminal facility.

### Gateway Logistics

It's always imperative to consider the entire logistics-supply corridor, starting at the mine or production facility and working through transportation modes, terminals, ports and shipping. Our unique approach draws on our in-depth expertise and well-rounded

knowledge of commodity production and logistics supply chains. Using dynamic simulation, we can make the most of your capital and operating expenditures, working with your budget to find the best possible return on your investment.

### Master Planning

With the right plan, the path from today to tomorrow comes into clear focus. Master planning is critical to charting the course for a port's short- and long-term development and operations.

Our port planners and engineers have the right kind of knowledge. They make the most of international and local port-operating practices in each region. The result is sustainable and economically viable port developments that meet the industry's capacity demands...and your precise needs.





Eastern Passage Auto Dock Wharf Replacement, Canadian National Railway, Canada

## Coastal Engineering

With state-of-the-art analysis methods and design tools, we're your partner. We deliver innovative, cost-effective, and constructable projects. Our coastal engineers have expertise in all of the following areas:

- Wind and wave climate analysis
- Vessel hydrodynamics and berthing
- Sediment assessment
- Hydraulic (physical and numerical) modeling
- Navigation simulation
- Site investigation planning
- Coastal protection
- Breakwater design
- Dredging design

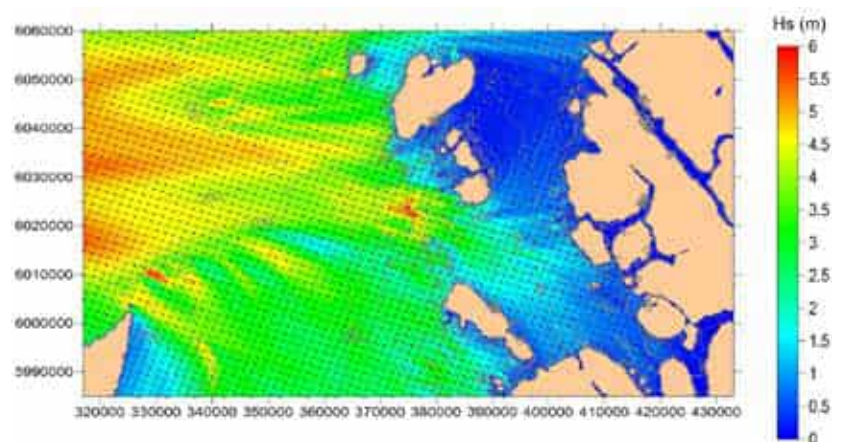
## Marine & Environmental Permitting

Today, the world is your backyard. We help you protect it, with extensive experience in environmental design and regulatory permitting.

Our expertise includes oyster-reef technology, estuary restoration, floodplain reconnection, fish-passage optimization, living shoreline development, bioengineered shoreline protection, and environmental permitting.

## Marine Structures

Successful ports depend on a variety of marine structures, including piers, bulkheads, coffer cells, revetments, and approach structures. You can trust us with all of your marine structural requirements, including above-water and underwater inspection supervision, coastal process modeling and wave force analysis, mooring and berthing analysis, marine structural design, and construction cost estimating.



Numerical modeling of wave propagation from the Pacific Ocean to the Pacific Northwest LNG Export Terminal in Canada was performed to predict the berth operation's downtime percentage



Engineering services, permits, and regulatory support were provided for the Puerto Punta Chungo copper concentrate shipping terminal in Minera Los Pelambres, Chile



Guided by your vision, we challenge conventional thinking. We innovate together to create a better future.

### Due Diligence

Our services extend to all types of investment and business planning – the evaluation of business and commercial issues, technical processes, capital projects, and maintenance operations.

Investors, owners and sponsors of proposed projects routinely come to us for thorough technical and economic due diligence and techno-economic appraisals. Our clients have trusted us to conduct assessments of some of the largest and most diverse mining and process plants in the world.

### Project Management & Procurement Services

You need projects delivered reliably and efficiently. Our international knowledge, experience, and technical expertise are your assurance. We manage capital programs and process-area construction projects for major industrial facilities and terminals all over the world.

You'll have the full range of procurement services, provided competently and thoroughly. From the selection and management of contractors and suppliers, to the arrival of material to the project site, we deliver. On schedule. Within budget.

### Construction Management

Some of the world's most challenging major-resource and industrial developments have been developed by our experts. Our integrated approach to construction management makes the best use of people, places and things.

With state-of-the-art technology and innovative construction methodologies, there's consistency and predictability across the entire range of your operations. The highest standards of safety, performance, quality, cost and schedule are always top-of-mind.

Newcastle Coal Infrastructure Group  
coal export terminal Kooragang  
Island, Port of Newcastle, New South  
Wales, Australia





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## About Hatch

Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 9,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

[hatch.com](http://hatch.com)