

SECTOR BROCHURE

# Ports & Marine

*Port of Newcastle - Newcastle, NSW, Australia.*

OPPORTUNITIES  
THROUGH  
EXCELLENCE

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

BG  
&E



# Introduction

**BG&E is an international civil and structural engineering consultancy celebrated for its innovative, cost-effective, and award-winning designs.**

With a dynamic team of over 700 people spanning 15 offices worldwide - including Australia, New Zealand, South East Asia, the United Kingdom and Middle East - we unite local and international professionals to deliver practical solutions with a strong focus on constructability.

Our clients consistently return to us, attesting to our exceptional service, responsiveness, and track record for delivering tailored solutions for technically challenging projects. The quantity and scope of engineering awards we've received acknowledge our diverse industry contributions and the exceptional quality of the services we deliver across a host of regions, disciplines, and sectors.



# Ports & Marine

**With expertise in the port and marine sector, BG&E works with authorities, asset owners, and operators to deliver, upgrade, and expand multipurpose ports and terminals.**

Port developments face unique challenges – shifting coastal conditions driven by extreme weather events and rising sea levels, evolving regulations centered on risk assessment and management, and changing user demands. We address these alongside core project requirements such as cost-efficiency, operational performance, sustainability, durability, and functional requirements.

Our personalised service adds value through smarter design and thoughtful material use. Backed by strong technical skills in structural, civil, and marine engineering, we offer end-to-end support - from preliminary planning, feasibility, investigations, and stakeholder consultation to permits and approvals, design, documentation, and construction supervision.

**We support major infrastructure and industrial projects in capital cities and remote regional Australia, ensuring effective cross-discipline collaboration and seamless project delivery. We believe our subject-matter experts across various logistical mechanisms offer a great perspective on how these systems interface with our local ports.**

*Jurong Port Suction Pile Storage - Singapore.*



# Multi-Disciplinary Expertise



Bridge



Civil Engineering



Construction Engineering



Digital Engineering  
(inc. BIM & GIS)



Façade



Flooding & Hydrology



Geotechnical



Materials & Durability



Pavement



Rail



Structural Engineering



Sustainability



Timber



Traffic Engineering &  
Transport Planning



Water Infrastructure

# Technical Capabilities



## ONSHORE CIVIL INFRASTRUCTURE

- Access roads.
- Container yards and pavements.
- Flood protection systems.
- Flood studies and drainage systems.
- Land-backed wharves and quay walls.
- Railway marshalling yards, turnouts and connections.
- Storm damage remediation and disaster recovery.
- Utility services and associated civil works.



## MARINE STRUCTURES

- Jetties and piers.
- Piled foundations.
- Slipways and ramp facilities, including Ro-Ro.
- Wharves and quay walls.



## STRUCTURAL FACILITIES

- Container intermodal facilities.
- Control towers and administration buildings.
- Customs and inspection facilities.
- Temporary works and access.
- Warehouses and transit sheds.



## PORT FACILITY SITE INVESTIGATIONS

- Life cycle assessment and carbon emissions modelling.
- Master planning.
- Site selection and assessment.
- Stakeholder consultation.
- Supply chain modelling.

# Materials & Durability



## SUSTAINABILITY

Expertise in carbon reduction strategies across infrastructure and building projects, with capability in engineering design and materials selection for concrete, structural steel and timber.



## ADAPTIVE REUSE

Industry leaders in adaptive reuse, with involvement as lead Materials Specialist on major developments like QQT Sydney - one of the world's largest and tallest adaptive reuse projects.



## TESTING SERVICES

With a wide range of tools, we obtain objective data - from determining the pull-off strength of a newly bonded concrete, or the remaining thickness of corroded steel sections.



## CONSTRUCTION MATERIALS

Specialist knowledge in construction materials like concrete, steel, quarry products, cement, timber, admixtures and repair products - all vital for efficient and sustainable construction.



## COATINGS & TREATMENTS

Comprehensive knowledge and experience in coatings - including their properties, preparation and application, and performance on metals, concrete and other substrates.



## REMEDIATION

Proven capability in this specialised field with a deep understanding of the unique challenges and intricacies in supporting clients undertaking remedial construction projects.





*Toront Baths Jetty Upgrade -  
Toronto, NSW, Australia.*



#### **DURABILITY**

Extensive experience in durability planning and modelling across asset types - including tunnels, stations, bridges, rail corridors and water infrastructure.



#### **METALLURGY**

Extensive experience in steel and other metals - including structural and low alloy carbon steels, stainless steels, non-ferrous metals and metallic coatings.



#### **RISK ASSESSMENT & AUDITING**

Chartered professional engineers with civil and structural backgrounds apply specialist knowledge of construction materials to assess asset risk.



#### **EXPERT WITNESS**

Working with legal matters, particularly regarding the use of construction materials - including concrete and structural steel, on projects ("back end" work).



#### **QUALITY ASSURANCE & MONITORING**

Quality assurance and monitoring are critical elements of construction projects to ensure the durability, strength and safety of structures.



#### **ASSET INSPECTION & REMAINING LIFE ASSESSMENT**

Conducting thorough inspections and assessments to determine the remaining life assessments of assets - essential for maintaining asset integrity.

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At BG&E, we are united by a common purpose – we believe that truly great engineering takes curiosity, bravery and trust, and is the key to creating extraordinary built environments.

Our team of more than 700 highly skilled people, in offices across Australia, New Zealand, Singapore, the United Kingdom and Middle East, design and deliver engineering solutions for clients in the Property, Transport, Ports and Marine, Water, Defence, Energy and Resources sectors.



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