Marine and Coastal Engineering

Capability Statement

COMPETENCY
CAPACITY
COMMITMENT

BG&E
RESOURCES

Acknowledgement of Country

BG&E Resources acknowledges Aboriginal and Torres Strait Islander peoples as the first peoples of Australia and the Traditional Owners and Custodians of lands and waterways on which we work and live.

Our operations are conducted on the traditional lands of the Whadjuk people of the Noongar nation in Perth, the Bindjareb people in Mandurah, the Larrakia people in Darwin, the Kaurna people in Adelaide, the Gurambilburra Wulgurukaba, Bindal, Nywaigi, and Gugu Badhun peoples in Townsville, the Turrbul and Jagera peoples in Brisbane, the Awabakal people in Newcastle, the Gadigal people of the Eora nation in Sydney, and the Wurundjeri and Boon Wurrung peoples of the Kulin nation in Melbourne.

We honour the wisdom of, and pay respect to, Elders past and present, and we acknowledge the cultural authority of all Aboriginal and Torres Strait Islander peoples across Australia.

We also acknowledge the vital contribution made by our Aboriginal and Torres Strait Islander employees and we thank those who have guided our approach and generously shared their insights.

Image: Aboriginal artwork created by Jayda Sebire (Indigenous Artist and former BG&E Resources People and Culture Assistant).

Acknowledgement of Country

Technical Excellence

Marine and Coastal Engineering for Optimised Port Facilities

BG&E Resources (BGER) is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors.

With offices on the East and West coasts of Australia, we are majority owned by our employees and committed to helping clients decarbonise in a net zero economy.

Our fit-for-purpose engineering solutions enable mining and raw material proponents, energy and water utilities, and port authorities to optimise the performance of their assets, minimise operational disruption, improve safety and mitigate risks.

BGER's proven approach to deliver schedule and cost benefits through clever engineering and true collaboration is what sets us apart.

Our people pride themselves on providing smart and sustainable solutions to complex engineering problems; and importantly, on being great people to work with.

Technical Excellence

Our people are passionate about leveraging their technical ingenuity to solve complex problems.

Technical excellence is the bedrock of our business. It drives our people and propels the outcomes that we provide for clients, communities, asset owners and operators, and financiers.

Our dedicated professionals and subject matter experts focus on understanding our clients' business objectives, their desired project outcomes, as well as the latest industry research for the sectors in which we operate.

A Premium Client Experience

The success of our project work depends on leveraging the best expertise of our people. That's why we allocate the most qualified professionals to help realise our clients' development vision and bring their projects to life.

Our work is underpinned by strong engineering design principles, industry-leading technology and pragmatic advice to deliver exceptional outcomes, every time.

This approach provides the following benefits:

- Ease of understanding of regulatory frameworks
- Efficient navigation through the development approvals process
- Protection and preservation of our cultural heritage, the environment and waterways
- Healthy, transparent and trusted relationships are established with stakeholder groups
- Respectful liaison with Traditional Owners is undertaken
- Fair and equitable outcomes are achieved for First Nations' communities
- Project knowledge is retained, including lessons learned
- Innovation is embraced and deployed.

Technical Leadership Team

The quality and excellence of our world and ability to deliver the best technical and cost-effective solutions for our clients is guided by our Technical Leadership Team.

Led by the most senior members of our business, this team facilitates learning and knowledge transfer, professional collaboration and mentorship to drive continuous excellence in our technical capabilities. It also encourages our people to perform to high technical standards and rewards staff for incorporating innovation into projects.

Image: Steve Ash and Kanishka Pathirana at Paraburdoo Train Load Out Facility, Pilbara WA.

Safety is at the Heart of our Business

Our diverse and culturally aware teams embrace safe work practices that are environmentally sound.

Safety is integral to everything we do at BG&E Resources. We care about our people, clients, and the communities in which we operate, and strive for zero harm in everything we do.

Health, safety and quality are embedded in our work practices, while heritage and sustainability are considered throughout the entire project life cycle.

We recognise the importance of continuously reviewing safety in design issues at all stages of a project, from investigation, design, construction, operation (including maintenance), closure and rehabilitation.

Exceeding regulatory obligations, we leverage a formalised Health, Safety, Environment and Quality Management framework that allows us to analyse and implement practical measures to mitigate risks.

Leadership

- Understanding of client needs
- Technical Leadership Team governance
- Strong Chartered presence
- Adherence to Technical Standards & Regulatory Instruments
- Committed to Technical Excellence
- Striving for low-carbon impacts

Systems

- ISO Accredited Quality Management System (QMS)
- Design Assurance
- Engineering Verification Procedures
- Safety in Design
- Net Zero in Design
- Risk Mitigation & Management
- Project Governance (Action Tracking, Monitoring, Performance & Auditing)
- Continuous Improvement (Lessons Learnt)

Characteristics

- Client Centric
- Risk Adverse
- Reliable
- Accountable
- Innovative
- Simplification
- Community & Culture

Image: Lucy Nguyen at Cape Lambert Port Facility, Karratha WA.

Respecting, Protecting and Preserving our Cultural Heritage

Diversity across our workforce and our supply chain is vital.

Our clients trust in our ability to enhance their social license to operate, including through the provision of mutually rewarding cultural heritage consultation and management, healthy Indigenous partnerships, and ethical procurement from Aboriginal-owned and operated businesses.

Working with Traditional Owners, First Nations peoples, Indigenous Prescribed Body Corporates and Aboriginal Corporations, is seeded in early engagement as it enables our team to deliver benefits for today (across the life cycle of proponents' projects) and for future generations.

Early engagement underpins our approach to cultural heritage management as it enables us to understand the needs and desires of all stakeholder groups, as well as any existing Indigenous Land Use Agreements (ILUAs) which have been registered with the National Native Title Tribunal (NNTT).

We partner with highly experienced local archaeologists and ethnographic specialists to provide clients with access to an abundance of heritage site data, and to collectively undertake walk-throughs of proposed project sites.

From the Kimberley in the North to Esperance in the South of WA, across central Australia and along the Eastern seaboard – we engage with Traditional Owners and Custodians, Prescribed Body Corporates (PBCs), Aboriginal development corporations and First Nations communities to preserve their cultural heritage and when helping proponents and/or government agencies to deliver projects.

Cultural Heritage Management Capabilities

- Stakeholder consultation and engagement to help Traditional Custodians of the land and Native Title Claimants to establish IULAs, registration to the NNTT and compensation frameworks (among others).
- Advice for proponents regarding the application of legislation including the Native Title Act 1993, Heritage Act 1972 (Aboriginal Cultural Heritage Bill 2021) and Repeal Bill 2023.
- Developing scopes for archaeological and ethnographic surveys.
- Indigenous business contracting (including teaming with Aboriginal-owned and Supply Nation-certified businesses to develop First Nations regional workforces).
- Capacity building (including coaching, mentoring and career pathway development, etc. for First Nations peoples).
- Reconciliation Action Plans.

Respecting, Protecting and Preserving our Cultural Heritage

Image: Indigenous peoples' hands. Copyright approved via Shutterstock.

First Nations' Partnerships

We have a range of actions in place to increase Aboriginal and Torres Strait Islander employment and engagement in our business, to help First Nations communities become self-sustaining (current participation is approximately 1.5 per cent of our workforce and we are striving to increase that to three per cent by December 2025).

We proudly support Aboriginal and Torres Strait Islander owned businesses and have established a majority-owned Aboriginal company, TICS (WA) Pty Ltd (TICS). TICS is a NATA-accredited laboratory to ISO 17025, providing non-destructive testing (NDT) services.

Similarly, we have strategic partnering arrangements with several Aboriginal-owned businesses, including Karlayura Contracting, which provides design and construction support for clients.

We have also established a similar partnering agreement with i24s, an Aboriginal-owned and operated workforce company, providing security, civil works and commercial cleaning services for mine sites in remote locations across Australia, as well as for commercial premises in capital cities (their clients include BHP, Horizon Power and Cundaline Resources, among others).

Most recently, we also established a partnership with Pirrpala, a 100 per cent Aboriginal-owned and operated small scale project delivery provider.

Our partnerships also span the globe, specifically in China, for the procurement of equipment and professional services, including on Country inspections of fabrication, testing, compliance and design reviews.

Reconciliation

Review our Innovate Reconciliation Action Plan, Aboriginal and Torres Strait Islander Engagement Strategy, Human Rights Statement and Anti-Discrimination Policy.

Marine and Coastal Engineering

Offering expertise in the characterisation of marine site conditions for the optimal design of multipurpose ports and terminals.

As enablers of Australia's economic prosperity, our ports, marine and coastal facilities need to be resilient, functional and sustainable.

BGER has a successful track record in planning, designing and remediating bulk ports, container and cargo terminals, marine structures, and landside infrastructure. We also help our clients protect their coastal assets from shoreline erosion and sea level rise while safeguarding marine environments.

Capabilities

Port Planning
- Stakeholder Engagement
- Site Identification and Selection
- Master Planning including Strategic Staged Expansion
- Supply Chain Modelling Input and Interpretation

Marine Site Investigations
- Specifications and Interpretations
- Hydrographic Surveys
- Geotechnical Geophysical Investigations
- Metocean Investigations
- Design Criteria Determination
- Brownfield Site Inspections

Port Design Studies
- Numerical Modelling – Winds, Caves, Circulation and Sediment
- Physical Modelling
- Under Keel Clearance (UKC) Simulation
- Ship Handling Simulation – Desktop and Full Bridge
- Dynamic Mooring Analysis

Maritime & Coastal Engineering
- Navigation Channels, Dredging and Reclamation
- Marine Structures including Jetties, Wharves, Ro-Ro, Barge Ramps
- Coastal Protection including Breakwaters, Causeways and Seawalls
- Port Landside Infrastructure including Laydown, Buildings, Access Roads and Services, Breakwaters, Causeways and Seawalls

Image: Kwinana Port, WA.

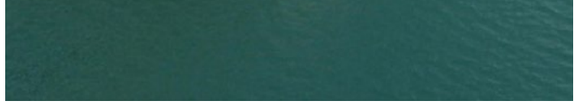
Multipurpose Ports and Terminals

Providing multidisciplinary services to design climate resilient assets, optimise and sustain performance, and increase productivity.

Image: Shiploader, Geraldton WA.

We have specialist expertise in designing a range of multipurpose port facilities and terminals including:

- Direct Loading Bulk Commodity Terminals – Liquids and Dry Bulk
- Transshipment Facilities
- General Cargo Wharfs
- Materials Offloading Facilities – Heavy Lift, Ro-Ro and LCT Ramps
- Cyclone Tug Havens
- Small Vessel Marinas and Boat Ramps
- Passenger and Ferry Terminals
- Ship Lifts and Maintenance Facilities
- Facility Asset Inspection and Maintenance



Asset Performance

Optimising the entire life span of an asset with a focus on durability, integrity and sustainability.

Sustainability

With our clients increasingly operating in a net zero economy, BGER is focused on providing holistic solutions to maritime challenges. From concept to realisation, we apply a sustainability lens to our work, ensuring we minimise environmental and social impacts. This is particularly important in selecting appropriate materials.

Durability Planning

Planning for durability governs how a structure will perform throughout its service life. Decisions made during the design and construction stage influence the total cost of ownership.

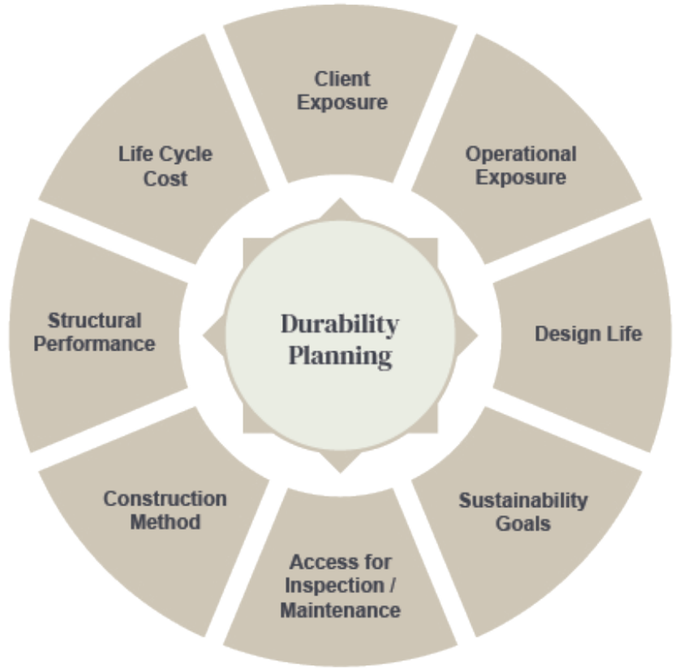
Our approach to durability is driven by our passion for sustainable development. We take a range of factors into consideration including the natural environment and operational context, maintainability, sustainability and risks.

Durability and Materials Capabilities Across Asset Life

Condition Assessment and Remediation

We help manage your existing marine and coastal assets by providing detailed condition assessments, remediation designs as well as management and maintenance plans.

- Condition Inspections of Steel, Concrete, Timber Structures and Protective Coatings
- Load Testing and Advanced Structural Analysis
- Modelling to Assess Remaining Service Life
- Non-Destructive and Destructive Testing
- Inspections of Protective Coatings
- Waterproofing Remediation
- Use of Novel Materials for Strengthening (Carbon Fibre Composites)
- Remediation Options and Detailed Design
- Repair Phase Support



Condition Assessment and Remediation

Image: Dampier Jetty Structural Inspection.

Breathing new life into existing marine assets to maintain and extend their lifespan.

Marine assets are subject to some of the most aggressive exposure conditions which directly impact condition and performance. BGER undertakes detailed inspections of assets to provide a comprehensive assessment of their health. We also provide remedial engineering services including structural engineering, detailed design, strengthening and more. Our work helps clients to manage their asset remediation portfolio in a consistent manner to minimise operational downtime from unplanned deterioration.

BGER's dedicated team of experienced engineers is focused on developing a deep understanding of the existing condition of our clients' assets. This involves predicting the remaining service life of the asset to develop a customised remediation strategy which considers multiple factors. These include; sustainability, safety, capital cost, operation/maintenance cost and impacts on operation as a result of remediation works.

Capabilities

- Macro and Micro Exposure Assessment
- Non-Destructive Testing
  - Visual Inspection
  - Hammer Tap Survey
  - Schmidt Hammer
  - Ultrasonic Pulse Velocity
  - Impact Echo
  - Ground Penetrating Radar
  - Thermal Imaging
- Destructive Testing
  - Half-Cell Potential
  - Chloride Profile Analysis
  - Carbonation Test
  - Compressive Strength Testing
  - Petrographic Analysis
- Service Life Prediction Modelling
- Condition Assessment Reporting
- Remediation Optioneering
- Remediation Design

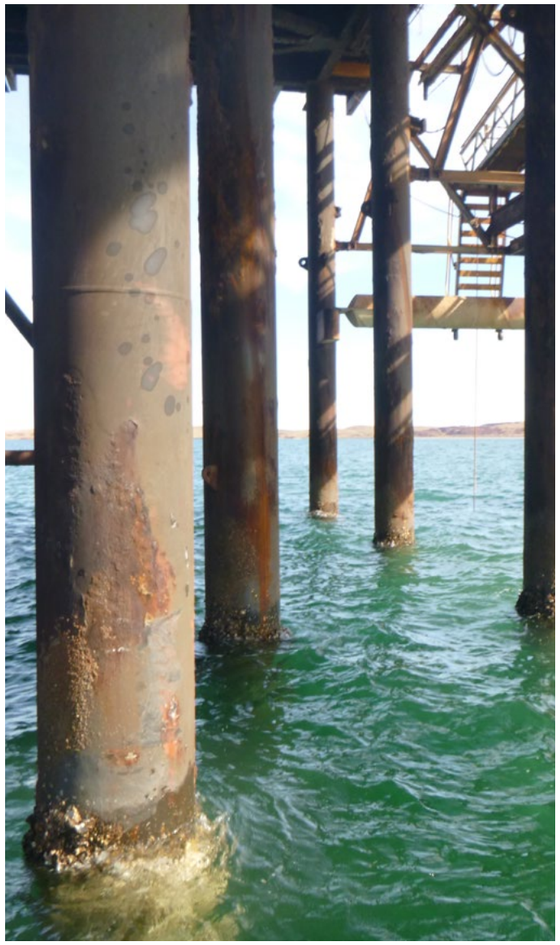
Risk Based Remediation Methodology

A combination of aggressive exposure environments with operational exposure conditions can result in rapid and unprecedented deterioration of marine assets.

Our risk-based methodology considers all aspects of an asset's remaining life incorporating structural utilisation, existing coating protection performance, local defects and predicted future deterioration.

Asset Life Extension

With the goal of minimising operational downtime, we apply a best-in-class approach to business case generation and justification to remediation works.



Structural Utilisation and Asset Condition

Rather than starting from a ‘repair all’ position, we review how the structural elements of assets are currently utilised, and incorporate information obtained from condition assessment inspections.

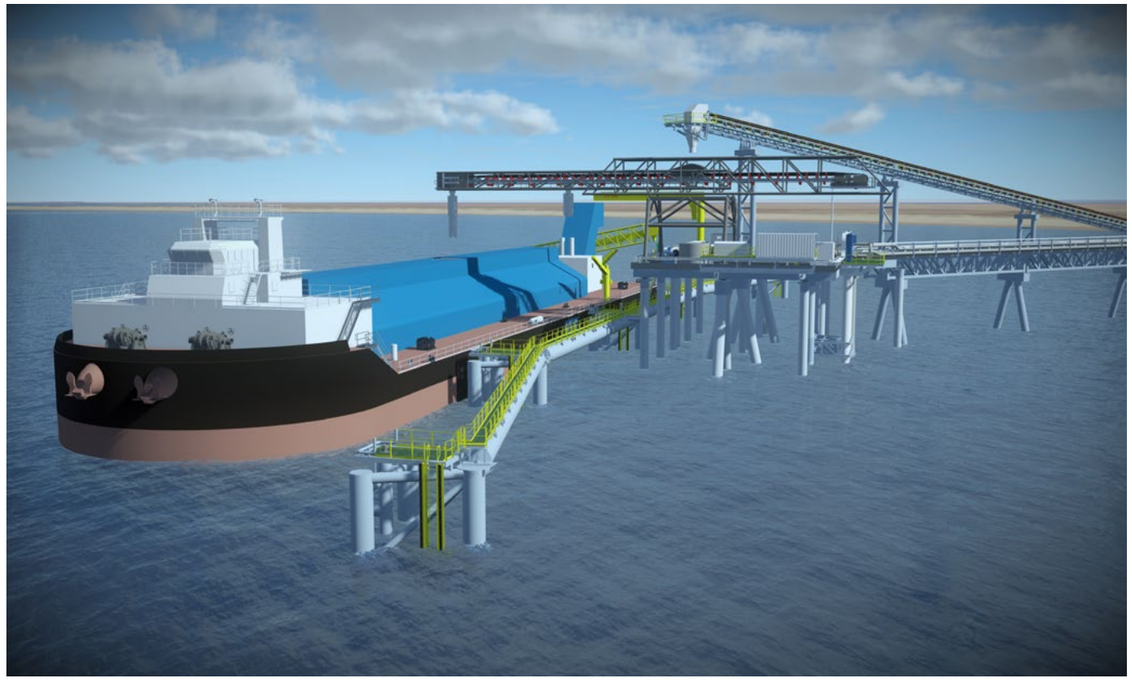
With this structural modelling approach, and an understanding of predicted future growth of defects, we provide time-dependent information to help our clients better understand when structural elements may become critical.

Capabilities

BGER develops Smart Working Models of assets incorporating:

- As Built Survey Information
- Inspection Survey, Photogrammetry and Cloud Point Information
- Asset Defects Registers
- Time Dependant Structural Utilisation Colouring
- Proposed Structural Repair Details

These models provide an overall desktop view of structures to reduce time spent on site by asset owners, consultants and contractors.



Cost Benefit Analysis and Solution Generation

We use our vast expertise in managing maritime assets to create customised remediation options that are most advantageous to asset owners.

We use the following tools to validate proposed remediation options:

- Multicriteria Analysis (MCA)
- Risk and Opportunities Assessment
- Life Cycle Cost Estimate and Net Present Cost (NPC) Analysis
- Constructability and Scheduling Assessments

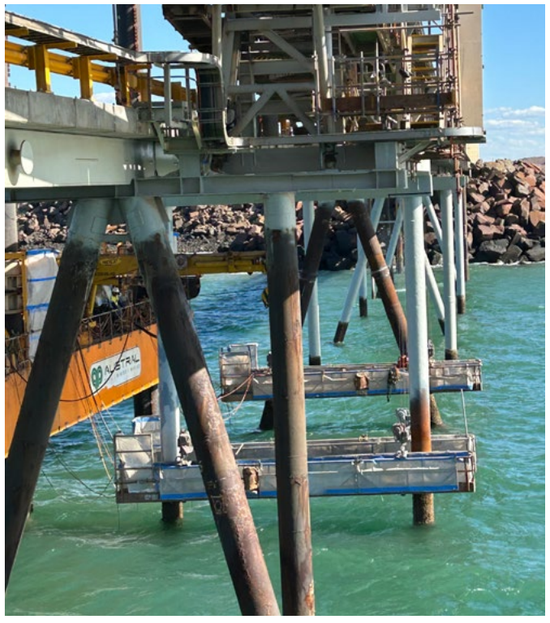


Image: Mid West Port Authority
EPCM Port Maximisation Plan –
Geraldton, WA.

Image: Cape Preston
Lift - Cape Preston, WA.

Project Phases

BGER offers services throughout the project life cycle covering concept, PFS, FS, Detailed Design through to construction and commissioning support.

Capabilities

- Concept Studies
- Pre-Feasibility Studies
- Bankable Feasibility Studies
- Front End Engineering Design
- Detailed Design
- Independent Review
- Construction Support
- 2D & 3D Design

Projects

Projects

Image: Newcastle Harbour, NSW.

Geraldton Port Maximisation Project (PMaxP)

Image: Geraldton Port Maximisation Project (PMaxP), Western Australia.

Client: Mid-West Port Authority (MWPA)

Delivered over four years, PMaxP is designed to facilitate growth and increase trade at Geraldton Port from 16 million tonnes per annum (Mtpa) to 25 Mtpa by 2026.

In May 2022, the State Government announced its investment into MWPA's PMaxP in response to growing demand from industry in the region.

The $350 million infrastructure project will enable MWPA to facilitate diverse and emerging trade opportunities and significantly increase throughput capacity over the next 10 years.

In September 2022, BGER was engaged to provide EPCM project delivery services.

Our teams have made great progress, advancing to detailed design to improve berth capability (Berth 1 & 6) to accommodate a shiploader and provide for additional trade.

Detailed design of the Lease 11 Truck unloader is now complete and features innovative water recycling techniques to ensure optimal water quality for washing down and maintaining the new facility.

Scope of EPCM works:

- Prepare design briefs and basis of designs for PMaxP elements
- Prepare designs to IFC Status
- Prepare works schedules and procurement delivery schedules
- Provide cost estimates of each of the work packages
- Prepared tender documents and assist with the tender process for work packages
- Offsite inspection of Procured Items including internationally procured items (including shiploader, steelwork, etc.)
- Configure and maintain project controls for the scope of work
- Undertake works Superintendence on behalf of MWPA
- Manage all the site works associated with the PMaxP to ensure they are delivered safely, to the required quality and in accordance with the established budgets and schedules
- Oversee commissioning and project handover to MWPA Operations.

Projects

Stanley Point 3 Port Expansion

Client: Roy Hill

We have played a key role in the expansion of one of the largest bulk commodities ports in the world, completing three engagements to date.

To support the long-term strategic planning of its existing mine and port infrastructure, Roy Hill commenced the detailed design phase of the proposed Stanley Point 3 Port Expansion Project to increase the current export capacity from 60-64 Mtpa to 102 Mtpa.

BGER was engaged to provide a range of multidisciplinary capabilities including civil, structural, mechanical, and electrical engineering.

Concept Engineering Study

We have completed this study and determined optimal solutions for magnetite handling from within the Ridley Development Envelope at Port Hedland, and into the Stanley Point 3 shiploading circuit.

As part of this study, our team provided a detailed assessment of the options including identifying and developing feasible conveying and transport routes. They also undertook a high-level assessment of the proposed assets and identified mitigation measures to prevent issues relating to handling the higher-density product.

Feasibility Study

Further to the Concept Engineering Study, we were asked to complete the Feasibility Study. Our team incorporated sufficient engineering definition (15%) to support a Class 4 cost estimate for a base case integrated stockyard and split yard solution.

Progressive delivery combined with 3DEGlobal's Indian Design Modelling Centre was effectively utilised to facilitate rapid development of the design documentation in an aggressive 16-week schedule to achieve the Financial Investment Decision milestone.

Energy & Power Feasibility Study

Our third engagement on this project helped to determine the overall power and energy demand for the new infrastructure planned for Berth 3.

The BGER NetZero in Design™ approach was integrated throughout the project life cycle to enable Roy Hill to achieve its targets as efficiently as possible.

Engineering design and approvals are now well advanced for the Stanley Point 3 expansion, which will support the rising demand in exports in the coming years for the global energy transition.

Lumsden Point

Client: Fortescue

We completed the Concept and Detailed Design for a temporary Materials Offloading Facility (MOF) at Lumsden Point.

The MOF was required to accommodate heavy lift vessels up to 165 m LOA offloading modules up to 40 m in length.

Our design consisted of a rock causeway approach to a piled combi wall with tiebacks. We worked closely with the marine contractor to optimise the design to fast-track the project.

By reviewing Fortescue's original concept design for this facility, BGER was able to reduce the costs of the facility by approximately $20 million due to removing the requirement for a large, ballasted barge.

Image: Materials Offloading Facility (MOF) Lumsden Point, WA.

Revetment Remediation

Client: Pilbara Ports Authority

Large waves and high storm surge associated with Tropical Cyclone Damian resulted in damage to the protective revetments behind the Dampier Cargo Wharf.

Pilbara Ports Authority engaged BGER to undertake a condition assessment of the damaged area and develop a suitable remediation concept for the Dampier Cargo Wharf.

The condition assessment included a multibeam survey below water coupled with 3D photogrammetry drone survey above water. The remediation concepts included staged implementation and consideration of future port expansion.

Projects

Onslow Iron Project

Client: Mineral Resources Limited

We developed the Concept and Detailed Design (marine works) for the new 30 Mtpa port and transhipping facilities at the Port of Ashburton.

The transformational Onslow Iron project is one of the largest under development in the Pilbara region of Western Australia. It will have the shortest pit to port distance in the industry.

We completed the concept design of the port facilities including:

- Haul Road
- Port Landside Civil and Drainage Works
- Lease Lot Pad or Truck Unloading, Storage Shed and NPI Facilities
- Rock Armoured Revetments
- TSV Loading Wharf, Approach Jetty and Abutment

Our team developed the necessary engineering documentation to support a Stage 3 Development Application submission to the PPA.

BGER also delivered the detailed design of the marine works for the port facility, including:

- Approach Jetty Trestle Including Access Ramp and Abutment
- Loading Platform Supporting a Fixed TSV Loader
- Mooring and Berthing Dolphins to Safely Secure the TSV for Loading
- Berth Pocket To -7m CD to Accommodate TSV During Loading

BGER is now providing construction stage support services.

Surveying Baseline Wharf Condition & Corrosion Protection

Client: Southern Ports Authority (SPA)

We helped SPA to better understand the condition of the Port of Albany's wharf and develop life cycle plans for Berths 1, 2, 3 and 6.

Southern Ports Authority (SPA) engaged BG&E Resources to better understand the condition of the Port of Albany's wharf and develop life cycle plans for Berths 1, 2, 3 and 6.

Located 400 km south of Perth in Western Australia (WA), the Port of Albany supports exports including grain, woodchip, silica sand and imports including fertiliser and fuel. In the past year, the port supported volumes of more than 5,273,541 tonnage and 161 ship visits.

Our Ports & Marine team undertook a Baseline Wharf Condition and Corrosion Protection Survey which included reviewing existing historical drawings and reports and previous condition assessment documents. They conducted a visual assessment of all elements of the four wharf structures, in accordance with Part 1 and 2 of the Ports Australia Wharf Structures Condition Assessment Manual (WSCAM). This assessment included a basic outline of load paths for each structure and identifying safety issues that must be addressed urgently.

We were also commissioned to develop Life Cycle Cost Models (LCCM) for the remaining life of the assets, including recommendations for future repair tasks, timeframes and cost estimates. This information will assist SPA with forward planning and budgeting.

The Port of Albany has been a thriving trade hub since 1826 when it was the first and only deep-water port operating in WA. Today, the port continues to generate social and economic benefits for Albany and the rest of the state – offering employment opportunities for locals while boosting the broader economy through its robust import and export activities.

Fuel Wharf Dolphins Remediation

Client: Undisclosed

We were engaged to action urgent repairs on dolphins suffering from corrosion above the water line.

A global mining giant engaged us after discovering that three existing mooring dolphins at one of its fuel wharves were in poor condition with significant corrosion to the steel above the water line.

Our specialist Ports & Marine team was quick to respond, undertaking a priority site visit within a couple of days. Timing was of the essence as the wharf was in the midst of undergoing refurbishments and upgrades.

On arrival, our professionals visually inspected the condition of the existing dolphins, performed a dive inspection of the piles below the water level, and undertook thickness testing. They also conducted an analysis of the existing dolphins to determine utilisation and assess remaining life.

Following this, we delivered a range of design services to enable repairs including electrical, hydraulic and civil engineering.

Our Ports and Marine Engineering Team

Gavin Wearne
Regional Director, East Coast and Director, Ports & Marine

20 years of experience in the Port and Maritime industry. Gavin's core technical speciality is ocean and coastal engineering with expertise in numerical modelling, physical modelling, metocean criteria determination, full bridge ship handling simulation and mooring analysis. Gavin is experienced in dynamic supply chain simulation and the preparation of capital and operating cost estimates in support of feasibility studies.

Ian Putt
Technical Director - Marine Structures

30 years of experience in structural design and construction of heavy infrastructure, including prestressed and reinforced concrete, steel/ concrete composite, and timber structures. He has been directly involved in large EPCM projects including the new port at Cape Preston for the Sino Iron project, Geraldton Berth 5 Project, Goro Nickel Project and Cape Lambert Wharf Upgrade Project.

Ben Knowles
Discipline Lead - Ports and Marine

18 years of experience in Maritime Engineering, being involved in various aspects of offshore structure design and analysis. His career has seen him working as part of a design team on both large and smaller scale projects. Ben has extensive experience in steel and concrete design and is proficient in static and dynamic mooring analysis.

Adam Bartle
Coastal Lead

17 years of experience in a diverse range of both technical and project management roles in the field of Coastal and Maritime engineering. Adam has developed strong Project Management skills from successfully managing multidisciplinary maritime and coastal projects ranging in CAPEX from $2M up to $150M AUD.

Udaya Kilgour
Materials and Durability Specialist

20 years of experience successfully delivering new build and structural remediation projects across various sectors including transport, water infrastructure, and commercial property in Australia, New Zealand, and the United Arab Emirates. She has extensive project management experience, with vast international experience being a trusted advisor to clients around the world.

Dhileep Abeygoda
Lead Marine Engineer

18 years of experience in materials handling, marine and infrastructure projects. He has completed design and analysis of steel and reinforced concrete structures using engineering software packages including SpaceGass, Strand 7 and SAP2000). Dhileep has experience with technical inspections and site supervision of civil, structural, and marine construction works.

Our Ports and Marine Engineering Team

Ray Eng
Lead Marine Structural Engineer

23 years of experience in steel and concrete structures with diverse capabilities in technical support for various stages of project, from studies, tenders, detail design to construction support, with demonstrated history in the marine, mining and resources industry.

Paulus Irawan
Principal Ports and Marine Engineer

25 years of experience in the concept and detailed design and construction of steel and reinforced concrete in diverse areas of applications, including mining and resources infrastructures. He also has experience in geotechnical design, including underground structures, vaults, tunnels, deep basements, shallow and pile foundations, and sea walls.

Kylie Wright
Principal Marine Structural Engineer

18 years of experience including design and analysis in civil, structural and marine engineering, project management, field engineering, client liaison, contractor management, consulting services through to major projects, concept through to detailed design, technical reports, specifications and proposals, dynamic simulation. She is skilled using SPACE GASS, Microstran, and Wallap.

Matthew Rooney
Principal Structural Engineer

14 years of experience in bridges, LNG tanks, marine, industrial, and commercial structures. Matthew's key skills include structural design of reinforced and prestressed concrete, steel and timber structures, detailed computer modelling and analysis of structures.

Andrew Bismire
Senior Ports and Marine Engineer

5 years of experience as a forensic engineer providing condition assessments and cause of failure reports. Extensive experience working with onsite project management teams for the construction a major civil infrastructure project in Victoria as well as minor projects in Queensland and the Pacific. Andrew has a thorough understanding of the design and refurbishment of jetties, wharfs, and bridge structures.

Richard Thickett
Lead Ports and Marine Engineer

16 years of experience in the ports and maritime sector. He consistently delivers quality work and maintains a high level of professional development. Richard has been involved in many multi-discipline projects including land-backed quays, wharves & terminals, boating facilities, tug pontoons, desalination structures, bridges and other onshore structures.

Our Ports and Marine Engineering Team

Tiffany Felstead
Senior Structural Engineer

18 years of experience in the mining and resources industry. Tiffany is experienced in the design of structures from concept through to detailed design stages for offshore and onshore projects. She has extensive experience in structural asset integrity management, including development of risk-based inspection plans for various facilities.

Luke Lyons
Senior Engineer

Luke is a Senior Maritime and Coastal Engineer with seven years of experience in structural and coastal engineering, having worked for engineering construction companies and consultancy firms in New South Wales, Western Australia and Tasmania. Luke has specialised expertise in structural design and analysis of marine structures such as moorings and navigation aids, coastal and port planning studies, and project management.

Tom Butterworth
Project Manager

10 years of experience in complex and technically challenging infrastructure projects such as Cross River Rail, and inner-city centre projects in major UK cities London, Birmingham and UK's largest sustainable retail development in Manchester managing large multiciliary design teams through construction and client management.

Shivashant Selvakumar
Marine Structural Engineer

4 years of experience working across numerous ports and marine focused projects such as conducting a WSCAM baseline survey for Albany Port and developing detailed repair scopes as a part of the Southern Ports Authority Asset Recovery program. He has also worked under a secondment to Southern Ports Authority.

Chris Janas
Marine Structural Engineer

3 years of experience in coastal engineering including numerical modelling of ocean waves, hydrodynamics, and dynamic mooring analyses. He has technical capacity in metocean design criteria development for coastal and nearshore structures, port and terminal operability studies and coastal processes modelling.

Darran Starbuck
Design Manager

30 years of experience in major Maritime facilities including the planning and detail design of bulk material wharves, LNG Loadout jetties and shiplift quays; Transportation projects including rail, road and foot bridges; Heavy industrial projects including material handling structures, rail loadout vaults and commercial structures; and Site experience including inspections of works and liaising with contractors and clients.

Our Experts

Our Ports and Marine Engineering Team

Paul George
Design Manager

20 years of experience working across civil, structural and maritime projects. He is a versatile professional with management experience on small and large multidisciplinary projects. Paul has the ability to oversee and manage teams while ensuring timely completion of project deadlines within allocated budgets.

Peter Longstaff
Design Manager

18 years of experience in the preparation and planning of both general arrangement and detail drawings for construction and maintenance and has a working knowledge of both client-based and in-house quality procedures for the preparation, checking, and submission of drawings.

Russell de Jong
Design Manager - Industrial

15 years' experience in engineering roles including draftsperson, senior civil designer, project manager and civil design manager. Russell specialises in thinking outside the box to provide practical solutions to complex engineering problems. As civil designer director, Russell's responsibilities include design and documentation of civil infrastructure including roads, rail, earthworks, retaining walls, stormwater, wastewater and potable water. In addition to the design and documentation Russell provides technical assistance throughout the project working closely with other disciplines top deliver a complete and coordinated product.

Adam Hawton
Lead Marine/Structural Designer

20 years of experience in structural drafting. He has a broad range of experience across marine, mining and infrastructure projects. He is proficient in drafting programs such as AutoCAD, MicroStation, and ProSteel.

Luke Cortez
Senior Marine/Structural Designer

14 years of experience in the 2D and 3D design and documentation of structural steelwork, reinforced concrete, piling, retailing walls, precast panels, suspended slabs and stairs.

Stewart Macleod
Senior Structural Designer

30 years of experience working as a structural designer. He has extensive experience delivering drawings for clients including MRWA, PTA, RMS, Laing O'Rourke, Chevron, Roy Hill, and FMG.

Our Experts

Our Ports and Marine Engineering Team

Niall Dixon
Junior Structural Designer

Niall is a Junior Structural Designer who has expertise in drafting commercial and residential buildings. He is proficient in Archicad and Autocad and can draw and interpret complete sets of residential construction drawings. Niall is skilled in 3D modelling and has basic knowledge of estimating and pricing of residential homes. He also has experience in commercial design and construction. Additionally, he has knowledge of design and construction codes

Matt Ortlik
Trainee Structural Designer

Matthew is a construction and engineering industry professional with seventeen years of skilled experience. Focusing on project system start-up, checklists, workflow administration, planning, and execution. Additional experience gained in the areas of multi-disciplinary engineering practices, progress reporting, responsibility for assisting staff and project management.

Heini Evers
Dredging Consultant

40 years of experience in all dredging technical matters including the development of dredging methods and programs, geotechnical investigations, design and long-term dredging maintenance. Heini has been involved in numerous ports and marine projects worldwide.

Capt. Steve Rabie
Master Mariner

30 years of experience providing high quality, strategic management and operational / technical consultant. With extensive experience in marine pilotage roles, Steve has had both operational and strategic responsibilities, dividing time between marine piloting for mission-critical or complex operations and contributing to business management, safety and development.

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