
DISCIPLINE BROCHURE

Rail & Rail Infrastructure

Nebo Rail Maintenance Facility — Nebo, QLD, Australia.



**BG
&E**
Part of SYSTRA

BG&E is an international civil and structural engineering consultancy recognised for delivering **innovative, award-winning designs** that prioritise practicality and constructability.

With a team of more than 800 people across 16 offices — spanning Australia, New Zealand, South East Asia, the United Kingdom, and the Middle East — we deliver the highest standard of service across our disciplines.

Clients consistently return to us for our responsiveness and proven ability to provide tailored solutions on complex and challenging projects. This is reflected through industry recognition, client commendations, and numerous awards.

In 2025, BG&E joined forces with SYSTRA, a global leader in public transport and mobility engineering. This partnership expands our technical capability, strengthens our international networks, and support long-term growth across major infrastructure markets and the complex buildings sector.

*Parke Logistics Terminal —
Parke, NSW, Australia.*





*BHP Iron Ore RGP5 Mainline Rail Upgrade —
Pilbara Region, WA, Australia.*

Rail Solutions

BG&E's Rail team is a leading provider of comprehensive rail engineering services, tailored to meet the unique requirements of different sectors and geographies.

We pride ourselves on adhering to the highest engineering standards and local regulations, delivering sustainable and reliable rail solutions.

Our local expertise, innovative approach, and unwavering dedication to providing high-quality solutions have established us as the preferred partner for clients seeking excellence in rail engineering.

With a proven track record and decades of experience, BG&E has successfully collaborated with rail operators, transport authorities, infrastructure developers and Engineering, Procurement, & Construction (EPC) contractors to deliver innovative and cost-effective solutions that enhance rail efficiency and safety.

Our reputation for delivering efficient, cost-effective solutions is a testament to the strength of our team. Comprised of individuals selected for their ability to develop fit-for-purpose solutions and their solid commitment to client satisfaction, our people and company culture is the driving force behind our engineering excellence.

Areas We Service

With a proven track record in engineering excellence, we are passionate about transforming railway infrastructure into efficient, safe and sustainable networks.



Freight



Passenger



Heavy Haul



Intermodals



Railway Stations



Maintenance Facilities

*Avon River Bridge —
Stratford, VIC, Australia.*





*Nevertire Siding Extension —
Regional NSW, Australia.*



*St Marys Intermodal Facility —
Sydney, NSW, Australia.*



FREIGHT

In the dynamic space of freight type railway, BG&E exemplifies a commitment to precision and efficiency. Our team use advanced engineering and sustainable practices to address the unique challenges within the freight rail environment.

From precision-engineered rail alignments to robust terminal infrastructure, our designs are meticulously crafted to accommodate the diverse needs of freight transportation, ensuring seamless connectivity and operational excellence.



INTERMODALS

BG&E has extensive knowledge and experience in the design and engineering of intermodal terminals, seamlessly integrating various modes of transportation for efficient cargo handling.

Our expertise extends beyond conventional boundaries — planning and designing intermodal facilities to optimise logistics, enhance operational efficiency, and accommodate diverse modes of transportation.

With a commitment to innovation and functionality, BG&E ensures that every intermodal terminal is conceived as a strategic asset for seamless connectivity and operational excellence.



HEAVY HAUL

Our engineering expertise is tailored to the unique demands of the mining and heavy haul industries — facilitating the successful delivery of projects involving rail sidings, turnouts and connections to ensure efficient ore and metal transportation.

BG&E understand the critical role of efficient transportation in mining operations and is committed to delivering innovative and cost-effective railway solutions that enhance productivity and safety.

*Eliwana Mine Bridges —
Pilbara, WA, Australia.*



PASSENGER & STATIONS

BG&E has significant experience in the delivery of passenger rail and railway station projects.

Our work has incorporated design and documentation of all structural aspects — including platforms, buildings, overpasses, underpasses, complex bridges, heritage structures and crash protection.

We have also worked extensively on all civil and contract administration aspects — including carparks, drainage, earthworks, and traffic engineering.

*Yanchep Rail Extension — Metronet —
Perth, WA, Australia.*





MAINTENANCE FACILITIES

BG&E specialises in designing rail maintenance facilities critical for supporting operations and logistics activities, ensuring optimal functionality and longevity for rail and rolling stock assets.

From light to heavy maintenance provisioning, our expertise spans multiple areas — including the development of new facilities, master planning, conceptualisation, feasibility studies, and upgrades for both greenfield and brownfield sites.

We pride ourselves on having a thorough understanding of the requirements of maintenance facilities, which is developed into constructable, functional and efficient designs.



*Nebo Train Maintenance Facility —
Nebo, QLD, Australia.*

Scope of Services

We combine rail engineering expertise, practical insight, and modern technology to create innovative and cost-effective infrastructure designs customised for clients and projects.

Our scope of services includes:

- Bridges and culverts.
- Drainage and scour protection.
- Formation and earthworks.
- Geotechnical investigation and design.
- Hydrology and waterways.
- Infrastructure design.
- Pavement design.
- Rail alignment.
- Rail maintenance access roads (RMAR).
- Track structure.
- Electrification and power systems.*
- Operational modelling.*
- Overhead wire and traction power.*
- Signalling, power and telecommunications.*
- Surveying.*
- Utilities and services.*

* Delivered in partnership with specialist partners.

Sydney Metro —
Sydney, NSW, Australia.



BG&E offers services throughout the following project life cycle.



Project Planning & Design

- Feasibility and concept design.
- Operational and systems capacity modelling.
- Cost estimation plans.
- Engineering support for procurement activities.
- Detailed design and engineering services.
- Independent design verification and review.



Asset Management

- Inspection of track assets, bridges and culverts.
- Scoping, specification and tender management for maintenance projects.
- Review and verification of contractors works.
- Construction and maintenance quality control and quality assurance verification.
- Asset management and maintenance strategy development.



Construction

- Temporary works.
- Construction phase services.
- Project construction support.
- Independent certification and verification.

Why BG&E?



Excellent safety record with zero Lost Time Incidents (LTI) — achieved through good leadership, systems and behaviour.



High level of responsiveness, that results in clients re-engaging with us.



High-quality, fit-for-purpose engineering solutions and services that consider both client and project requirements.



Services at a “value for money” rate without compromising on **optimal project outcomes**, achieved through a skilled team, low overhead costs and commercial flexibility.

*Roy Hill Mine Infrastructure —
Pilbara, WA, Australia.*





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 800 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.