DISCIPLINE BROCHURE

Traffic Engineering & Transport Planning

OPPORTUNITIES THROUGH EXCELLENCE

bgeeng.com

BG&E

Introduction

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

With a dynamic team 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.

As a 100% Australian and employee-owned company, BG&E stands out in the industry due to the responsiveness and flexibility afforded by our ownership structure. When partnering with BG&E, our streamlined business model means you can deal directly with our company's decision-makers - resulting in increased productivity and agility.

Leach Welshpool Alliance
Perth, WA, Australia

Shaping Tomorrow's Transport Networks

In collaboration with our Clients, we guide decisions in urban and regional transportation planning, growth management, and the design and operation of transport infrastructure.

As society evolves towards greater mobility, the traditional boundaries between public and private transportation are fading - simply building roads or rail lines is no longer sufficient to address these challenges. Meeting both current and future needs requires versatile transport systems.

Our team is involved from early in the project identification and development to secure funding for the delivery of infrastructure, facilitating opportunities for minor and major civil detailed design projects.

Throughout the next stages of project delivery, we provide traffic engineering support to inform functionality, minimise cost and optimise space. Our role is to ensure that the benefits defined at the project's inception are realised through our involvement throughout the project life cycle.

We provide traffic engineering and transport planning services across the following market sectors:

Active Transport Infrastructure

Urban Roads

Public Transport Infrastructure

Rail, Stations & Over Rail

Rural Roads

Motorways

Mount Lindesay Highway, Stoney Camp Road to Chambers Flat - Brisbane, QLD, Australia.

Our Capabilities

As urban and regional environments expand, we continuously seek better ways to meet increasing travel demand. Our team provides the full range of technical and strategic skills needed to realise fully integrated and effective transport networks.

TRANSPORT INFRASTRUCTURE INVESTMENT

- Policy evaluation and development.
- Investment strategies.
- Needs assessment and feasibility studies.
- Options analysis.
- Business case.
- Area and network master planning.
- Route and link planning and capacity.

INTEGRATED TRANSPORT PLANNING

- Transport planning to support road and rail infrastructure projects.
- Transport considerations for town planning.
- Movement and place assessments.
- Travel demand management.
- Behaviour change.
- Public transport planning studies.
- Planning and design for active transport infrastructure.
- Road hierarchy review.

IMPACT ASSESSMENTS

- Area and network planning.
- Site development.
- Traffic generation and distribution.
- Traffic and parking analysis.
- Network integration.
- Planning scheme and development code compliance assessment.
- Swept path and access review.

PRECINCT PLANNING

- Review and assessment of existing and future transport connections for cars, freight, public transport, walking, cycling and micromobility.
- Analysis of future transport accessibility requirements and strategic assessments of access requirements.
- Capacity analysis for roads, intersections and footpath networks.
- Parking needs assessment and strategy.

Yan Yean Road Upgrade (Stage 1) - Melbourne, VIC, Australia.

TRANSPORT MODELLING

- Microsimulation modelling using VISSIM and AIMSUN.
- Disruption modelling.
- Pedestrian modelling.
- Data analysis and analytics.
- Intersection modelling using SIDRA and LinSig.

TRAFFIC ENGINEERING

- Functional design for road corridors, links and intersections.
- Design of active transport facilities including provisions at intersections and local area traffic management devices.
- Design of public transport facilities including bus interchanges and bus stops.
- Preparation of traffic signal remodel plans for complex interchanges and nearby major arterial road intersections.
- Functional design for carparks.

TRAFFIC MANAGEMENT STRATEGY

- Investigation on the impact of road upgrade projects on traffic flows and traffic management requirements to mitigate disruption.
- Development of traffic management to mitigate the impact of road closures.
- Traffic modelling to quantify impact of potential closures.
- Development of traffic control plans.

ROAD SAFETY

- Road safety audits for existing conditions, prefeasibility, concept design, detailed design and post-implementation.
- Safe system assessments.
- Blackspot scoping reports.
- Crash analysis and development of mitigating works.
- Safety assessments for car parks, town centres and precincts.

Narre Warren North Road Upgrade –
Melbourne, VIC, Australia.

Project Life Cycle

1. ESTABLISHING THE PROJECT NEED

To confirm existing and anticipated deficiencies and establish a project's objectives, we conduct needs assessments for transport systems which includes:

- Reviewing policy requirements and government commitments.
- Undertaking deficiency, capacity and safety assessments.
- Evaluating the economic and social need.
- Engaging with key stakeholders to understand their priority issues and project requirements.

2. OPTIONS ASSESSMENT

The development and assessment of project options is often a multi-step process, where an initial wide list is qualitatively evaluated against project objectives to reduce the list of options. These are then evaluated quantitatively to enable the selection of the preferred option or options. Our team is skilled at managing the overall options assessment process, ensuring that the qualitative and quantitative impact or benefit associated with each option is clearly understood and evaluated.

3. BUSINESS CASE DEVELOPMENT

Our team understands what is required to successfully deliver a project business case: a clear narrative that identifies the project need, proposed solution, benefits the project will deliver, and expected cost – enabling our Clients and their key decision makers to reach an informed agreement on whether to proceed with a project.

4. DESIGN DEVELOPMENT

We work closely with the BG&E Civil, Rail and Buildings teams to develop value for money design solutions. Our input includes detailed traffic modelling, traffic engineering and road safety review to refine the preferred design in response to site constraints and technical surveys.

5. INFRASTRUCTURE ASSESSMENT

Post project implementation, we assist our Clients by monitoring and reviewing the project performance to verify the solutions are meeting expectations and gauge the level of project success. We achieve this through interrogation of transport surveys and census data, undertaking road safety audits and stakeholder feedback.

Why BG&E?

- Employee-owned and Australian-owned, allowing for high responsiveness and agile decision-making.
- Capability to support the entire project lifecycle.
- Collaborating with engineering design teams to inform robust planning decisions.
- Working closely with our in-house civil infrastructure and bridge team for infrastructure design.
- Combining with our in-house buildings team for precinct development.
- Recognised as the go-to consultancy for technically challenging projects, reflecting our commitment to technical excellence.
- Integrating social and environmental sustainability outcomes in projects from early in design.
- Providing value engineering with a ‘value for money’ price without compromising on optimal project outcomes due to efficient teams and low overheads.
- Innovating is central to our service.
- Effective stakeholder consultation and management.

Sectors We Service

Working with our Clients, we guide decisions in urban and regional transportation planning, growth management, and transport infrastructure design and operation across various industry sectors.

Aviation

Bridges

Commercial & Office

Defence

Education

Energy & Renewables

Healthcare

Industrial

Mining & Resources

Ports & Marinas

Sports & Recreation

Transport


OPPORTUNITIES
THROUGH
EXCELLENCE
bgeeng.com

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 1100 highly skilled people, in offices across Australia, New Zealand, South East Asia, 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.

OPPORTUNITIES THROUGH EXCELLENCE

bgeeng.com

BG&E

TETP_DIS_BR_R1_P1124