SECTOR BROCHURE

Data Centres

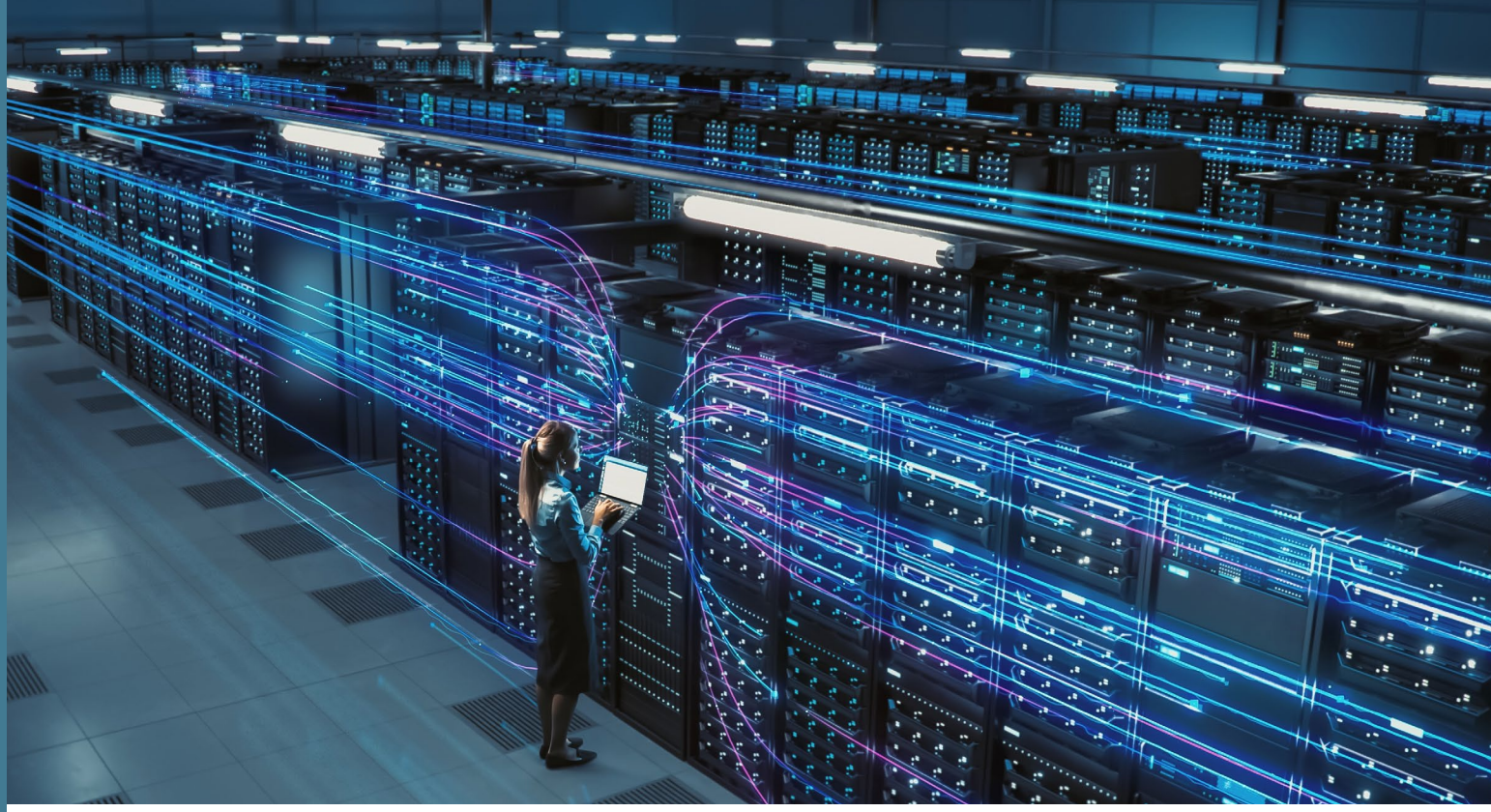
BG&E
Part of SYSTRA

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.



Data Centres

Data is the most important commodity in today's digital era. Across the globe, businesses and governments are grappling with the fast-growing volumes of data and how best to protect, access, store and manage it.

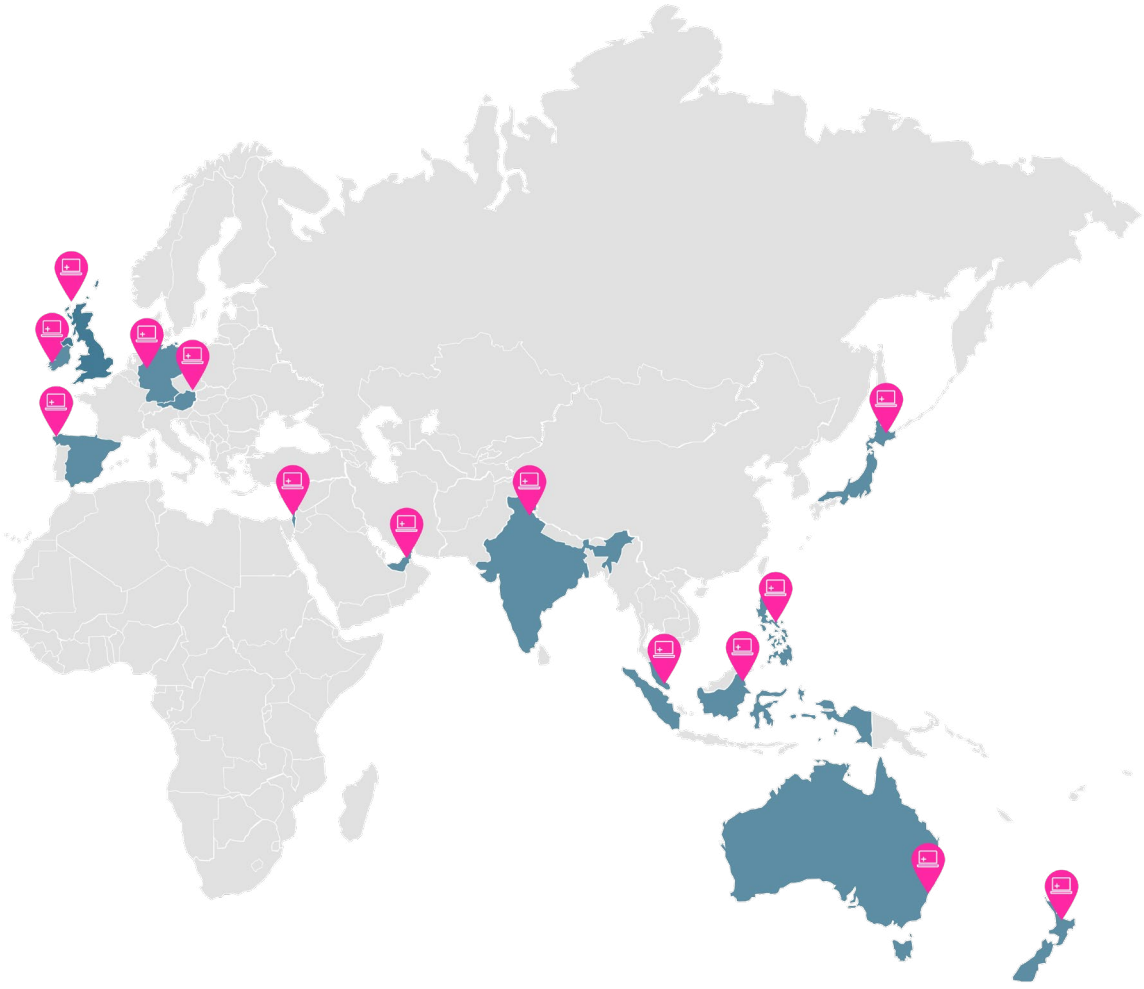
This challenge, combined with the rising risk of cyber security attacks, robust data privacy regulations, the mass transition of remote workforces, and increased usage of the Internet of Things (IoT), Artificial Intelligence (AI) and Augmented Reality (AR) — is driving the demand for data centres and mission critical facilities.

While data centres are often associated with leading technology giants offering cloud-based services, there is an increasing trend among governments and businesses to develop their own centres or adopt a hybrid approach to meet specific data protection requirements.

Regardless of facility type, they are home to the most critical and proprietary assets, and their importance to daily operations underpins why the security and reliability of the centres are a priority.

Our clients seek technical professionals that understand their business, industry and customers — and can design data centres and mission critical facilities that are secure, operationally resilient (providing continuity 24/7, including during crisis), energy efficient and scalable.

At BG&E, we have more than 50 years of experience providing innovative solutions for the built environment. Our teams have helped clients to design and deliver data centres in Australia, Asia Pacific, Europe, the United Kingdom (UK) and the United Arab Emirates.



BG&E's data centre projects.

Technical Excellence

By choice, we specialise in specific engineering sectors rather than being 'generalists'. We assist our clients with professionalism, technical skill, and competence in the following disciplines:

Structural Engineering

Civil Engineering

Construction Engineering (Temporary Works)

Flooding & Hydrology

Traffic Engineering & Transport Planning

Value Engineering

Digital Engineering (inc. BIM & GIS)

Façade Engineering

Geotechnical

Materials & Durability

Sustainability

Timber Design

STRUCTURAL ENGINEERING

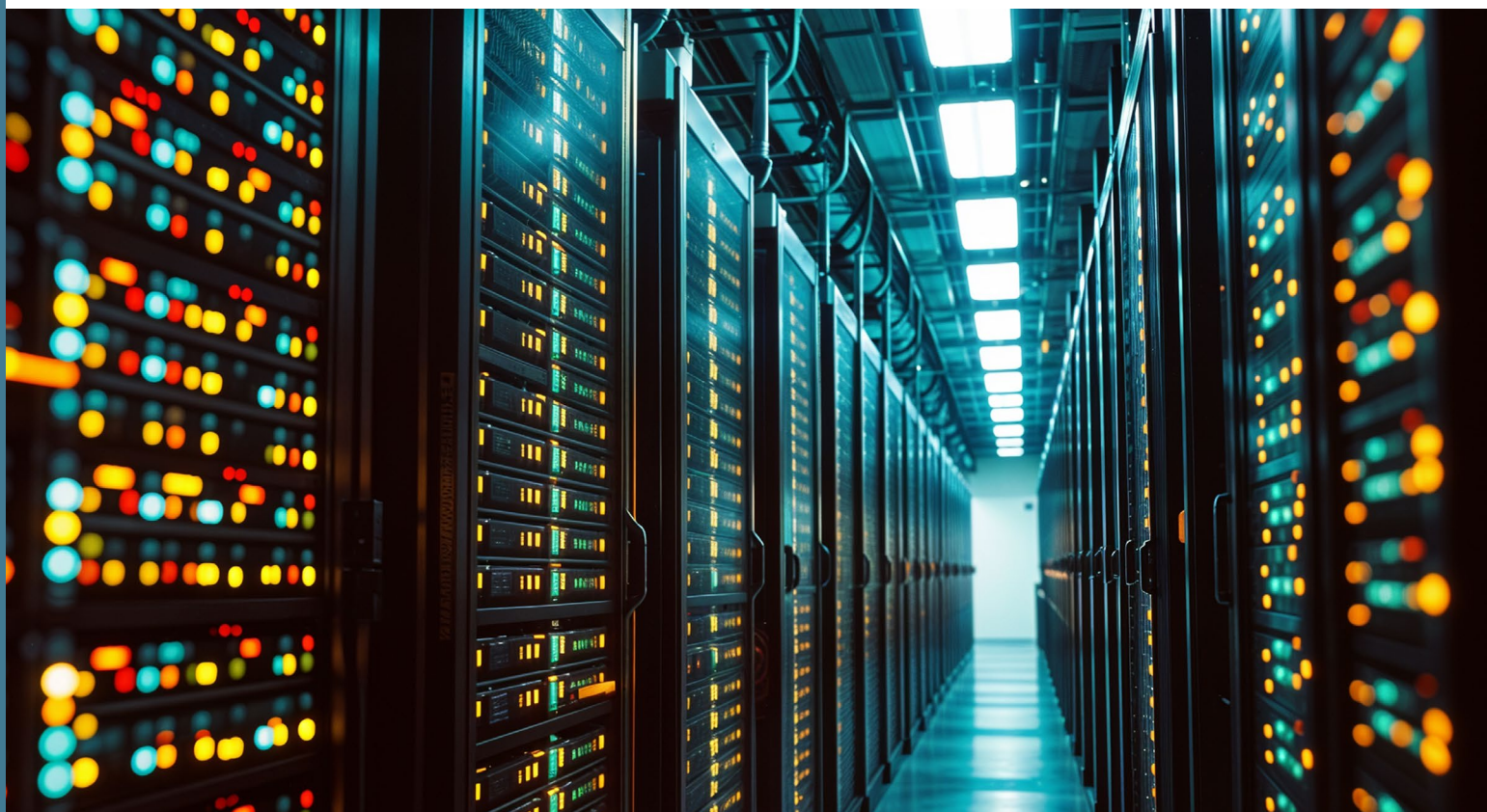
BG&E is one of Australia's leading structural engineering consultancies, renowned for delivering iconic, award-winning projects internationally. With over 50 years of experience, we have a storied history of providing efficient structures across various regions, utilising a range of materials and construction techniques.

We deliver our client's vision and create constructible structures by simplifying designs, embracing innovative approaches, understanding local design requirements — such as seismic design, and working collaboratively with stakeholders.

CIVIL ENGINEERING

We specialise in civil engineering for data centres — providing detailed modelling and coordination of all underground civil elements using BIM (including Civil 3D and Revit) to a high level of detail (LOD350). Our expertise encompasses stormwater management, sewer systems, site grading, fire water systems, telecom systems (including ducting and pits), electrical systems (including (LV/HV/LV ducting and pits) and fuel systems.

We also conduct early site due diligence, assembling specialists to assess viability and risks. Our comprehensive approach includes geotechnical, flood, traffic, and environmental studies, providing clients with all necessary information for informed decisions.



CONSTRUCTION ENGINEERING

We collaborate with data centre developers and contractors to deliver services including the design of temporary structures, permanent structures under temporary loads, and construction methodologies and sequencing.

Some examples of the scopes we have successfully delivered in the data centre sector include:

- Complex staging analysis and temporary stability design for a multi-storey hyperscale data centre.
- Integrating contractor methods and loads into permanent works design.
- Advising on temporary stability, propping and staging for precast concrete data centres.
- Value engineering redesign of permanent works to align with contractor methodologies.
- Designing traditional temporary structures such as crane bases, hoists, platforms and shoring.
- Minimising materials and construction time to add value.
- Value engineering redesign of permanent works to align with contractor methodologies.
- Designing traditional temporary structures such as crane bases, hoists, platforms and shoring.
- Minimising materials and construction time to add value.

FLOODING & HYDROLOGY

We believe that understanding flood risks is key to delivering positive outcomes. Taking a holistic approach, our team of water engineers, flood modellers and hydrologists ensures the delivery of resilient, effective and practicable infrastructure design. Our services encompass surface water and hydrologic investigations, flood modelling and floodplain risk management, integrated water management, and waterway structure and design.

TRAFFIC ENGINEERING & TRANSPORT PLANNING

Traffic engineering and transport planning considerations are fundamental to project development. In collaboration with our clients, we guide decisions in urban and regional transportation planning, growth management, and the establishment and maintenance of civic infrastructure. Our services also encompass transport infrastructure investment, traffic modelling and engineering, traffic management strategy and road safety.

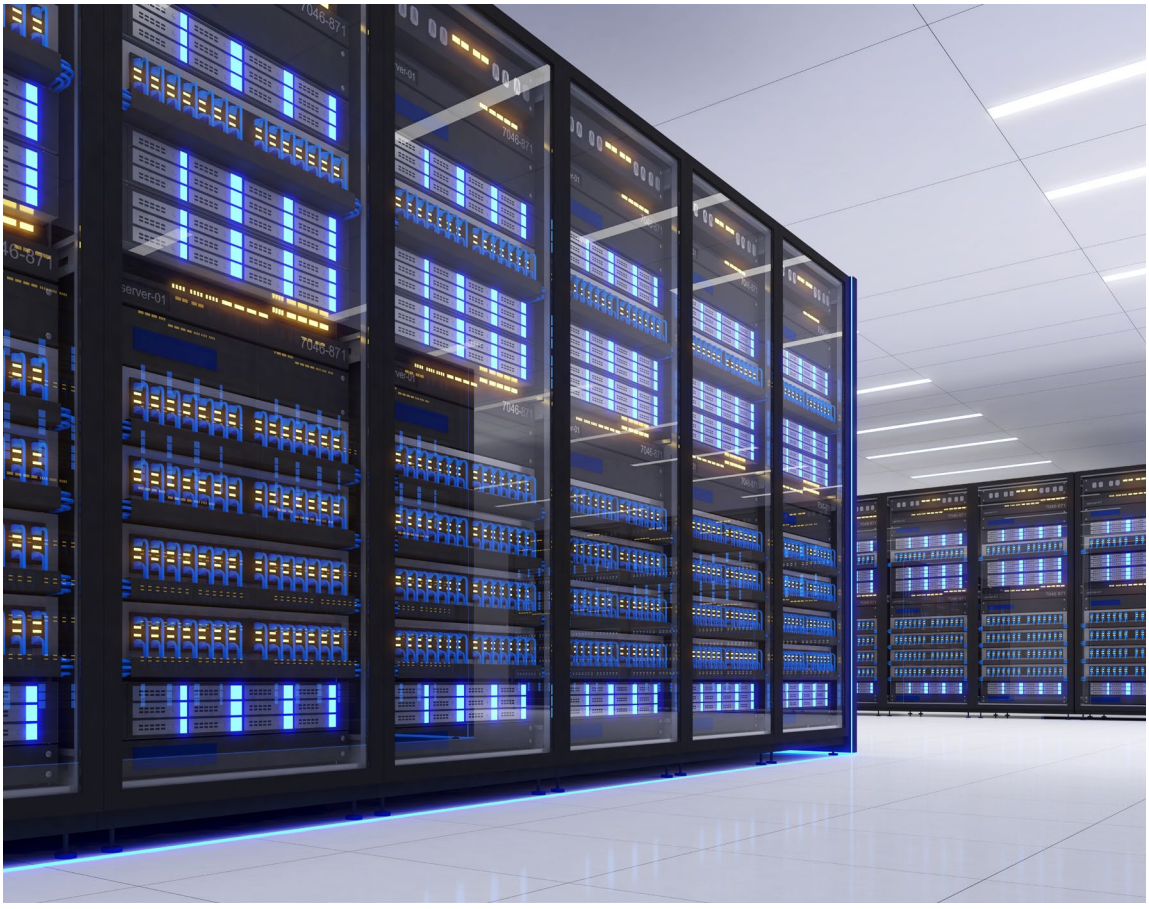
VALUE ENGINEERING

BG&E understands the critical importance of Value Engineering (VE) in delivering cost-effective solutions while maintaining innovation and quality, and we specialise in this important area.

Whether a contractor wants to explore an alternative structural system to facilitate faster cycle times, or a client looking for smarter and more cost effective ways of doing things. BG&E has significant experience working with both to identify and incorporate alternative solutions to drive value and ultimately provide a better outcome for our clients.

FAÇADE ENGINEERING

Internationally recognised for our innovative façade solutions, BG&E Façade Consultants provide pioneering façade design, architectural detailing and engineering, thermal performance, materials science, remediation and recladding solutions. Our team of structural engineers, architects, building physicists and designers seamlessly collaborate to realise beautiful buildings with optimal outcomes for owners, occupants, visitors and tenants alike.



DIGITAL ENGINEERING

BG&E recognises the significant advantages of implementing BIM in the design, construction, and long-term facility management and operation of a data centre. For over ten years, we've integrated 3D modelling and BIM into our design process, enhancing our capabilities in this area.

Using BIM provides several value-add benefits:

- Whole-of-life cost savings through comprehensive asset information.
- Early input from contractors improves construction sequencing and logistics.
- More accurate cost estimates and material lists.
- Better sustainability assessments with Environmental Product Declarations.
- Increased constructability and reduced risk with precise documentation.
- Higher efficiency and accuracy in design documentation.
- Enhanced collaboration and coordination through cloud-based tools like Collaboration for Revit and Autodesk 360.

GEOTECHNICAL ENGINEERING

We work closely with planners, engineers, and scientists from project inception through to the detailed design and construction in the building, rail, bridge, road, energy and ports sectors. Our services include desk studies, investigation scoping, site formation, slope and foundation design, deep excavation and numerical assessment.

MATERIAL TECHNOLOGY

To complement our engineering services, we offer an industry-leading specialist materials and durability service, providing extensive consulting and commercial experience across various construction and building materials. We have access to a wide network of academics, subcontracting services, and an advanced material testing laboratory — enabling us to diagnose defects and develop remediation strategies efficiently and effectively.

This capability serves the data centre sector by maximising design efficiency with material selection and ensuring long-term durability, minimising maintenance requirements. Our material testing capabilities can also determine the design properties of existing data centres undergoing extensions and modifications.

SUSTAINABILITY

One of the most significant enhancements of sustainability in construction is achieved through good design. This encompasses integrating sustainability goals as a fundamental aspect of the design process from the project's outset, where the greatest impact can be achieved.

Using a systems-based approach, BG&E looks at the wider context for each project and considers the long term. This holistic framework enables informed decision-making on pathways to improve outcomes that are not possible using more traditional approaches.

TIMBER

The capability of our Timber team combines BG&E's established presence and reputation for innovative structural solutions and materials science, with Timber Design Studio's (TDS) long history and expertise in mass timber construction, only found outside of Europe in a select number of countries.

Collaboration with Europe equips our team with a thorough understanding of certification and testing requirements for mass timber products in the United Kingdom and Asia Pacific region. It also facilitates the transfer of knowledge and expertise gained from Europe's advanced experience in mass timber construction, which is still unique to our developing southern hemisphere market.

Project Experience

	LOCATION	MW	STORIES	BG&E ENGINEERING SERVICES	TYPE
AUSTRALASIA	ACT, Australia	20	1	Structural, Civil & Traffic Engineering	Colocation
	ACT, Australia	60	1	Structural, Civil & Traffic Engineering	Colocation
	Auckland, New Zealand	12	2	Const. Support Temporary Works	Colocation
	Auckland, New Zealand	12	2	Const. Support Temporary Works	Colocation
	Auckland, New Zealand	12	5	Structural Engineering	Hyperscale
	NSW, Australia	35	6	Structural Engineering	Colocation
	NSW, Australia	48	3	Structural Engineering	Hyperscale
	NSW, Australia	35	6	Structural Engineering	Colocation
	NSW, Australia	60	3	Structural & Construction Engineering	Hyperscale
	NSW, Australia	40	2	Structural & Civil Engineering	Colocation
	VIC, Australia	58	1	Structural & Civil Engineering	Hyperscale
ASIA	Cavite, Philippines	24	3	Structural & Civil Engineering	Colocation
	Fairview, Philippines	124	5	Structural & Civil Engineering	Hyperscale
	Hyderabad, India	48	5	Structural & Civil Engineering	Hyperscale
	Johor, Malaysia	54	2	Structural Engineering	Hyperscale
	Kuala Lumpur, Malaysia	54	2	Structural Engineering	Hyperscale
	Kyoto, Japan	100	4	Site Due Diligence	Hyperscale
	Manila, Philippines	36	3	Structural & Civil Engineering	Hyperscale
	Manila, Philippines	22	4	Structural & Civil Engineering	Colocation
	Manila, Philippines	16	3	Structural & Civil Engineering	Colocation
	Osaka, Japan	32	4	Structural Peer Review	Hyperscale
	Pune, India	96	2	Structural & Civil Engineering	Hyperscale
	Saitama, Japan	48	5	Structural Peer Review	Hyperscale
	Singapore	16	6	Structural & Civil Engineering	Colocation

MIDDLE EAST	Abu Dhabi, UAE	60	3	Structural & Civil Engineering	Hyperscale
	Bahrain	48	2	Structural & Civil Engineering	Hyperscale
	Dubai, UAE	20	3	Structural & Civil Engineering	Colocation
	Dubai, UAE	20	3	Subject Matter Expert | Technical Advisor	Colocation
	Dubai, UAE	7.2	3	Structural & Civil Engineering	Colocation
	Israel	60	2	Structural & Civil Engineering	Hyperscale
	Israel	51	2	Structural & Civil Engineering	Hyperscale
	Israel	51	2	Structural & Civil Engineering	Hyperscale
	Israel	51	2	Structural & Civil Engineering	Hyperscale
EUROPE	Berlin, Germany	16	2	Const. Support | Temporary Works	Colocation
	Dublin, Ireland	4	2	Structural & Civil Engineering	Owner Occupier
	London, UK	96	5	Const. Engineering | Sequencing	Hyperscale
	Madrid, Spain	4.8	1	Structural & Civil Engineering | Const. Support	Colocation
	Vienna, Austria	4.8	1	Structural & Civil Engineering | Const. Support	Colocation

Partnering for Success

By partnering with industry leaders in the global data centre market, we ensure the formation of a comprehensive multidisciplinary team, capable of addressing every aspect of the project with excellence.

Acknowledging that BG&E specialises in specific engineering disciplines and do not encompass all the expertise required for data centre projects, we actively seek collaboration with renowned architectural and Mechanical, Electrical and Plumbing (MEP) consultants.

Our procurement strategy involves selecting partners who share our commitment to innovation, quality, and client satisfaction. Through strategic alliances, we leverage the collective expertise of each team member, fostering synergy and collaboration to deliver outstanding results.

Data Centre Clients

Microsoft

aws

EQUINIX

COMPASS GROUP

Khazna

stc

Evolution

STTelemedia Global Data Centres

PDG
Bringing Property to Life

HIVE DC

ePLDT

VANTAGE DATA CENTERS

DCI Data Centers

verizon

macquarie DATA CENTRES

Our Differentiators

We believe BG&E's key differentiator is our behaviours developed over a long period working closely with our clients, underpinned by our Corporate Values:

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.

DC_SEC_BR_R6_P0126

BG&E
Part of SYSTRA