
SECTOR BROCHURE

Residential

AURA by Aqualand — North Sydney, NSW, 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.

*One Pearl Sky Bridge —
Singapore, SEA.*



The Residential Market

BG&E is known in the industry as the trusted go-to engineering consultancy for the design and delivery of residential developments in an increasingly regulated sector.

With over 50 years of experience in residential markets, our structural, civil and façade engineers are highly skilled across all stages of the project lifecycle. Our specialist in-house construction engineering, materials and durability, and digital engineering teams support these functions, as well as our sustainability and timber disciplines — both rapidly emerging focus areas in the sector, driven by evolving regulatory expectations and increasing environmental performance standards.

Success in the residential sector relies on balancing design while optimising efficient construction. The complexity of the structure can greatly affect construction rates. BG&E understands value engineering and delivers efficient designs and structural solutions — taking developments from planning to construction.

The introduction of the Design and Building Practitioners Act (DBPA) in NSW, signals a broad shift, with similar initiatives likely to roll out across other Australian states.

*St Ives Carine Retirement Village —
Perth, WA, Australia.*

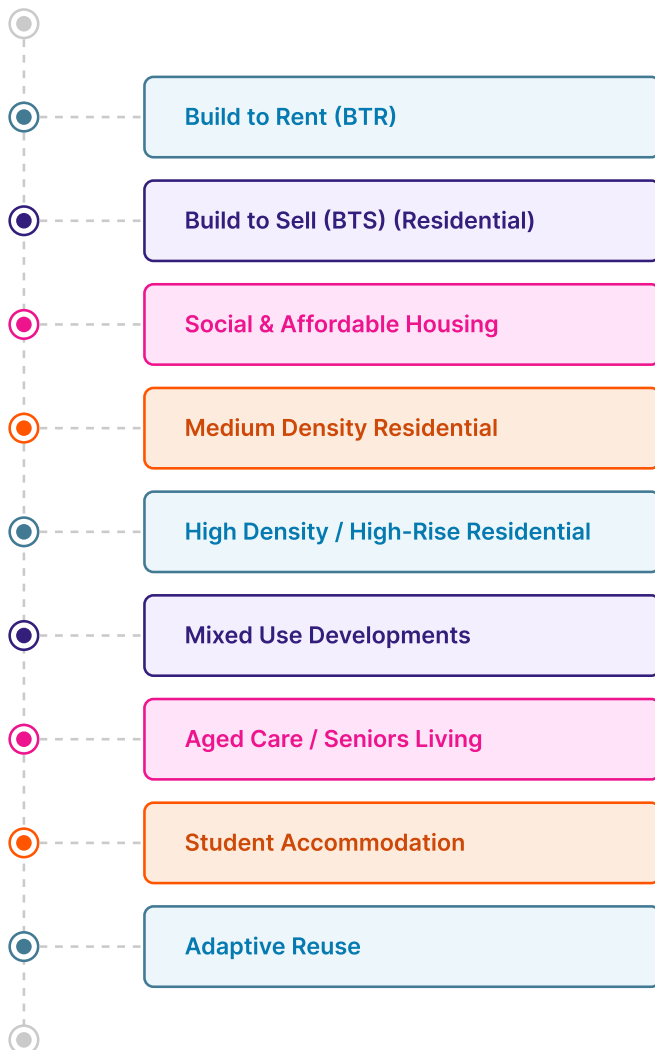


Multi-Disciplinary Expertise



Residential Project Experience

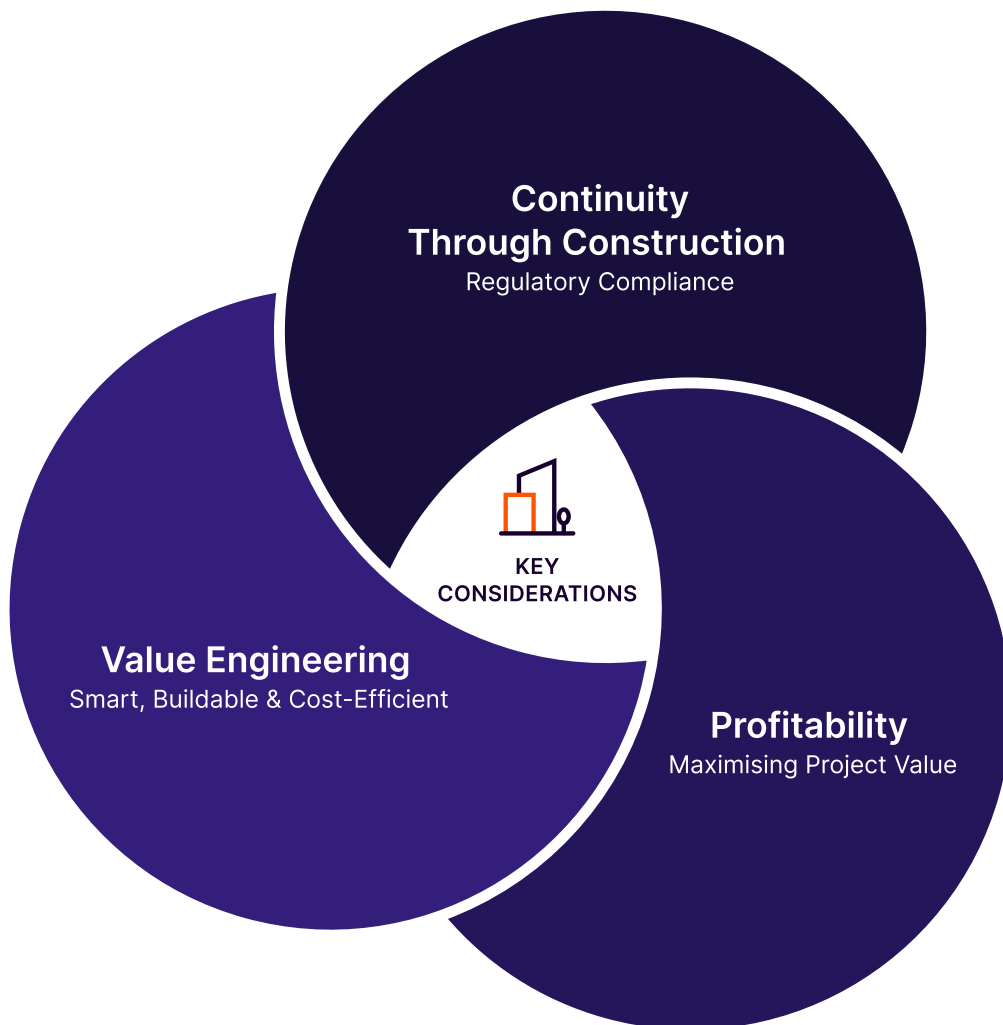
We provide engineering services across the full spectrum of residential development – from low-density housing to complex high-rise, mixed-use and adaptive reuse projects.



Bayz101 —
Dubai, UAE.

Value Engineering & Continuity Through Construction

BG&E are highly attuned to the financial model of residential developments — ensuring regulatory compliance while expertly balancing design and project complexity in the finely tuned residential market.





Lots 2 & 3 Elizabeth Quay —
Perth, WA, Australia.

— VALUE ENGINEERING

BG&E has a proven history of simplifying complex, multi-faceted issues to ensure the delivery of optimised, cost-effective and buildable designs.

Value Engineering Mindset

Crucial during the early design stages, our design and peer review teams approach the nomination of structural systems with this mindset to ensure value-for-money outcomes.

Establishing Benchmarks

Presenting and assessing feasibility options during the concept stage as appropriate for comparison and to establish benchmarks.

Introducing Project Costs

Delivering an optimised design within project functional, technical, construction and staging project requirements that will have a focused and managed intent of maintaining the project budget. Assisting the architect and builder in minimising primary structural costs to maximise the available project budget for aesthetic and functional purposes. The early concept studies — including the selection of a primary column grid — are central to this effort.

Quality Documentation

Presenting documentation and specifications that are comprehensive and tailored to the project requirements to minimise future contract variations and additional project costs.

Analytical Approach

Utilising full building analytical methods to justify the avoidance of building movement joints within large plan buildings exceeding traditional benchmarks, including commercial offices, hospitals and open deck parking structures.

The SYSTRA Group — a global engineering and consultancy leader with 11,000 people worldwide — is now strengthened by BG&E’s international buildings capability, complementing SYSTRA’s long-established expertise in transport and mobility infrastructure.

Building on BG&E’s reputation as a leading structural engineering practice delivering iconic, award-winning projects, the Group provides building solutions across complex and commercial developments, healthcare, education, data centres, adaptive reuse, and transport-related facilities worldwide.