

DISCIPLINE CASE STUDY

Façade Consulting & Engineering



OPPORTUNITIES
THROUGH
EXCELLENCE

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BG
&E

1 William Street

BRISBANE, QLD, AUSTRALIA
CLIENT: CBUS PROPERTY

1 William Street is one of Brisbane's most environmentally efficient office buildings. The commercial tower was built and designed for the Queensland Public Service and occupies one of the most prominent locations in the Brisbane CBD, in close proximity to Parliament House Services.

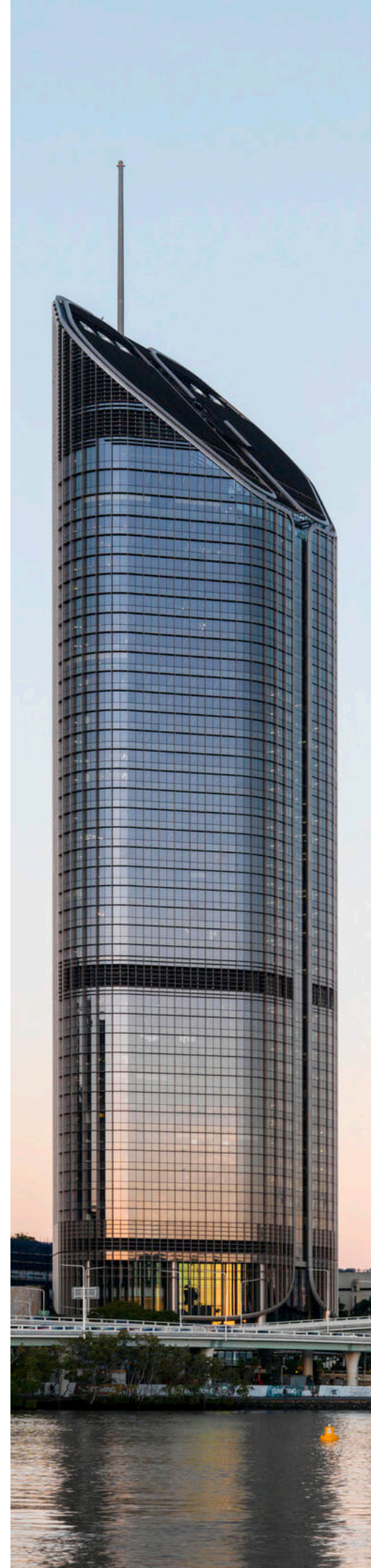
At 259.8 metres with 44 storeys above ground, it is the third-tallest building in the city and the 12th tallest building in Australia as of 2022. This premium grade office tower features an iconic lobby and A-grade finishes and services throughout the building.

BG&E Façade Consultants provided full façade service, including schematic design, design development, tender documentation and construction phase support.

The building has a 5 Star Green Star design rating, a 5 Star NABERS (Base Building) Energy rating, and a 3 Star NABERS Office Water rating - making it one of Brisbane's most environmentally efficient office buildings.

Completed in 2016, 1 William Street received the following accolades:

- 2017 – Concrete Institute of Australia - Commercial Buildings Category - Award for Excellence.
- 2017 – Commercial Building over \$50m - MBA Queensland.
- 2017 – Project of the Year - MBA Queensland.
- 2017 – Commercial Building over \$50m (Brisbane Region) - MBA Queensland.



205 North Quay

BRISBANE, QLD, AUSTRALIA
CLIENT: CBUS PROPERTY

205 North Quay is a \$600 million development located in Brisbane's CBD. The development of the commercial building is an iconic addition to Brisbane's internationally recognisable river-edge.

BG&E Façade Consultants provided full façade service, including schematic design, design development, tender documentation and construction phase support to the tower.

205 North Quay will offer world-class amenity, including a whole-floor wellness facility, 25 metre lap pool, public realm auditorium, outdoor terraces on every level, and rooftop collaboration and celebration facilities.

Designed by internationally acclaimed architecture firms Hassell, New York-based REX, and Brisbane's Richards & Spence - 205 North Quay is targeting a 6 Green Star rating and 5.5 Star NABERS Energy rating. As part of this goal, the design for the tower will:

- Efficiently reduce energy, waste and water usage.
- Control midday, afternoon and early evening sun through a highly articulated façade.
- Incorporate LED lights and sensors.
- Use regenerative lifts.

Construction has commenced, with completion anticipated for late 2024.



Queen Elizabeth II Jubilee Hospital Expansion

BRISBANE, QLD, AUSTRALIA
CLIENT: QUEENSLAND HEALTH



The QEII Hospital Expansion project is a significant investment into Queensland's healthcare system that will help to meet the growing demand for health services on Brisbane's southside and generate 1,120 construction jobs in the process.

The \$465 million expansion includes a new dedicated facility that is set over five storeys and will deliver 112 additional overnight beds to the precinct and significantly boost capacity for in-demand elective surgeries.

BG&E provided façade consultancy, structural engineering, civil engineering, and traffic engineering and transport planning services.

Midwater Apartments

GOLD COAST, QLD, AUSTRALIA

CLIENT: HERAN BUILDING GROUP

Nestled on the Gold Coast between Main Beach and Nerang River, Midwater is a luxury residential tower home to an exclusive mix of sophisticated and spacious two-, three-, four- and five-bedroom apartments.

BG&E Façade Consultants provided essential support during the construction phase of the development, providing façade consultancy services to ensure project compliance with statutory codes and regulatory standards.

This prominent addition to the northern end of the Gold Coast's coastline is slated for completion in early 2025.



West Side Place

MELBOURNE, VIC, AUSTRALIA
CLIENT: FAR EAST CONSORTIUM



Located in central Melbourne at 250 Spencer Street, West Side Place represents a \$2.5 billion development by Far East Consortium. This groundbreaking mixed-use development boasts four luxury towers, ranging in height from 63 to 85 storeys, offering a total of 2853 luxe apartments.

Connecting these four towers is a 10 storey podium that houses a ground floor lobby, 3,000 square metres of retail space, and basement car park facilities for visitors and residents alike.

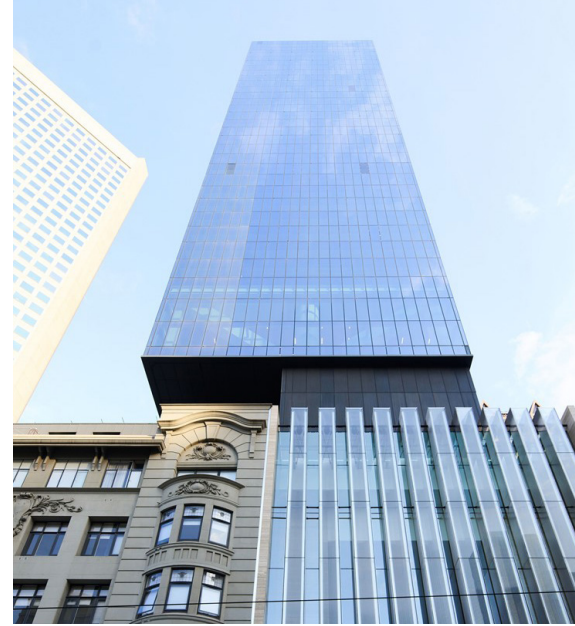
Among these towers, Tower One stands as a pinnacle, soaring at a height of 270 metres and earning its place as Melbourne's second tallest building. The upper 15 levels of the tower will become the flagship location of the Ritz-Carlton Hotel - complete with a majestic sky lobby. Below, the remainder of the tower will consist of high-end residential apartments.

Driving the visionary design of West Side Place is BG&E Façade Consultants. We have been engaged by Far East Consortium as the façade consultants for the towers, from early architectural concept development through to the design development and construction phases of the project. This project involves the delivery of complex and innovative façade typology, including tensile cable structures façades, different façades materiality and modular façade systems.

The façade itself is characterised by its tessellated articulation and consists of a complex unitised curtain wall with sloped and folded panel types. The podium façades, spanning over 11 thousand square metres, feature bluestone panels meticulously installed as a curtain wall system. Representing the largest bluestone façades installed in Australia to date, this achievement is the result of rigorous testing and innovative methodology to ensure the installation meets stringent structural and safety design requirements.



*West Side Place –
Melbourne, VIC, Australia.*



405 Bourke Street

MELBOURNE, VIC, AUSTRALIA

CLIENT: CBUS PROPERTY

Completed in 2021, 405 Bourke Street is now home to NAB, who occupy the entire 6,000 square metres of A Grade office space.

405 Bourke Street has transformed its corner of Melbourne's CBD with the addition of a commercial precinct - featuring a 40 level mixed-use office and retail building and Makers Lane - a bustling thoroughfare connecting Little Collins and Bourke Street and providing a mix of convenience, food and beverage options.

Known as 'the lantern', 405 Bourke Street is a luminous addition to Melbourne's skyline. The building's textured façade reflects the everchanging sunline, transforming it into an iconic and evocative softly glowing façade that distinguishes it from the neighbouring structures to the East and West.

The building's grand lobby space is adorned with a projected lantern façade, comprising V-groove machined glass and solid stainless steel plate mullions.

The building also features high levels of sustainability, having achieved:

- 6 Star Green Star Design & As-Built rating.
- 5.5 Star NABERS Energy rating.
- 5 Star NABERS Water rating.
- 5.5 Star NABERS Indoor Environment rating.

BG&E Façade Consultants is proud to have provided the full scope of façade consultancy services at 405 Bourke Street.

BG&E FAÇADE



Royal Children's Hospital

MELBOURNE, VIC, AUSTRALIA
CLIENT: BOVIS LENDLEASE

Regarded as one of the great children's hospitals globally, the Royal Children's Hospital (RCH) serves the entire states of Victoria and Tasmania, as well as southern New South Wales and parts of South Australia.

At the time of redevelopment - which was completed in late 2011 - the RCH project was the largest hospital redevelopment in Victoria's history, valued at more than \$1 billion.

The project comprised:

- In-patient facilities.
- Operating theatres.
- Pathology laboratories.
- Various specialised functions for state-of-the-art clinical care.

BG&E Façade Consultants were engaged to provide façade design services from commencement to completion. The façade treatments across the project were tuned to meet both the complex functional brief requirements and to fulfil the aspiration of delivering a world-class facility to the State of Victoria, capable of attracting the world's best to work at the new RCH.

BG&E Façade Consultants team was involved in the design and documentation of the façade across the whole project from design, factory inspections and site attendance.

Some of the works include:

- Prescriptive design and documentation for architectural precast concrete for the proposed new in-patient unit, laboratories and clinical care facility. The panels are stacked five levels high and restrained against the primary structure of the building. The design incorporates a range of colours, shapes and finishes to integrate the various brief requirements.
- Design development and analysis of external shading system for the main administration building. External shades were proposed in glass supported by steel bracketry interfacing with the curtain wall.
- Preliminary schematic design of suspended steel structure to support glass shades external to the main curtain wall.

*Royal Childrens Hospital –
Melbourne, VIC, Australia.*





Caulfield Grammar School

MELBOURNE, VIC, AUSTRALIA

CLIENT: CAULFIELD GRAMMAR SCHOOL

Established in 1881, Caulfield Grammar School is a leading independent co-educational school in Melbourne, Australia.

Located within the Caulfield Campus in St Kilda East, the new TL01 Teaching and Learning building is the first major project within the Caulfield Master Plan recommendation to be delivered.

Completed in mid-2024, this building has set a benchmark for the actualisation of the rest of the Caulfield Grammar School expansion masterplan. TL01 is Australia's first school to attain 6 Star Green Star Education and Gold WELL Certification.

BG&E acted as the Façade Consultant for the project, from schematic design through to construction phase.

Full façade consulting services were provided including a reflected glare assessment to assess and manage the potential impacts of the building's reflectivity on the surrounding environment as well as FP1.4 Weatherproofing consulting services.

435 Bourke Street

MELBOURNE, VIC, AUSTRALIA
CLIENT: CBUS PROPERTY



Architecturally designed by the multi-award-winning Bates Smart, 435 Bourke Street will set a new benchmark for sustainable office development and design, being one of the first office towers in the world to feature a 'solar skin' façade.

BG&E Façade Consultants were engaged from the early concept to completion of the project. We were closely involved with design specification, due diligence, proof of concept, and pretender prototyping of the solar skin to facilitate procurement of what is one of the largest BIFV installations in the world.

435 Bourke Street is one of the first all-electric A-grade commercial towers in Melbourne. The project had some very challenging sustainability targets with 6 Star Green Star and NABERS, as well as a Platinum WELL certified rating.

Part of the certification process required a 30 percent reduction of body embodied carbon emissions.

In line with Cbus Property's commitment to Net Zero Carbon, which has been fast-tracked to 2022, 435 Bourke Street is designed to achieve Net Zero Carbon in operation, with up to 20 percent of its fully electric base building electricity requirements generated on-site by its solar skin design. The balance of the building will be powered by offsite renewable electricity.

17 Spring Street

MELBOURNE, VIC, AUSTRALIA
CLIENT: CBUS PROPERTY



17 Spring Street is a luxury residential development comprising 74 apartments, with tenants enjoying uninterrupted views east over Treasury Gardens and sought-after access to the amenity of the Paris end of Melbourne CBD.

BG&E Façade Consultants played a pivotal role in the development - providing comprehensive consulting services from the project's inception to its completion in 2022.

The scope involved various architectural elements, including Glass Reinforced Concrete (GRC) slab edge spandrels, window wall glazing with GRC clad pilasters supported by a steel sub-frame, and a unitised curtain wall featuring integrated GRC spandrel panels.

35 Spring Street

MELBOURNE, VIC, AUSTRALIA

CLIENT: CBUS PROPERTY

35 Spring Street is a premium-grade residential tower, set in the Paris end of Melbourne's CBD. Soaring 44 storeys, the building homes 270 luxury apartments and hotel-quality facilities - a 25 metre swimming pool, gym, wine cellar, dining room and outdoor barbeque space.

BG&E Façade Consultants were engaged as the façade consultant from the schematic design stage through to construction.

Standing at over 40 storeys tall, the façade is a unitised curtain wall with prefabricated window wall modules and sliding door systems at recessed balconies. The façade is characterised by an external expressed framing system, composed of coated aluminium sections (mostly extruded aluminium sections).

The premium apartments benefit from large sliding door systems with generous balconies, glass balustrades and glazed wind canopies.

The project was developed by Cbus Property and was completed in 2017.





Fiona Stanley Hospital

PERTH, WA, AUSTRALIA

CLIENT: BROOKFIELD MULTIPLEX

Fiona Stanley is a leading Australian epidemiologist noted for her public health work and research into child and maternal health and birth disorders. The two billion dollar namesake healthcare facility was the largest health infrastructure project in Western Australia at the time of development in 2014 and encapsulates ambitious design, green vistas and a true sense of well-being and healing.

BG&E Façade Consultants played a significant role in the design and construction of the 232,000 square metre cohesive healthcare precinct, which includes:

- 783 bed, seven floor hospital providing surgical, acute care, emergency, and inpatient and outpatient services.
- Pathology and education facility that is formed by two individual two storey buildings, that sit over a 586-bay car park.
- 60 bed mental health building.
- Administration building, comprising two levels of office space and a plant room at the roof level.
- Four storey rehabilitation centre.
- Three storey central plant, plus a basement area that feeds into a buried service tunnel that supplies the other buildings.

BG&E Façade Consultants undertook the façade design, system costing, materials science assessment and material selection, shop drawings, and submission reviews, and conducted factory and site inspections.

The striking façade includes precast concrete panels with multiple finishes, curtain walling, aluminium clad and glazed canopies, composite aluminium cladding, skylights, external shading devices and glazed entrance walls.

BG&E also provided civil and structural design services for the hospital - specifically for the internal roads, main drainage infrastructure, carpark, roadway ancillaries, pedestrian paths, cycleways, path ancillaries, pavements, rigid concrete, spill resistance and segmental paving.

*Fiona Stanley Hospital –
Perth, WA, Australia.*





Lots 9 & 10, Elizabeth Quay, Ritz-Carlton Hotel

PERTH, WA, AUSTRALIA
CLIENT: FAR EAST CONSORTIUM

Elizabeth Quay's waterfront precinct has seen the transformation of Lots 9 and 10 into two striking towers, housing the prestigious 6-star Ritz-Carlton Hotel and luxury residential apartments and their accompanying amenities.

The façade for the towers is a high-performing unitised curtain wall system with high-performance glass and an integrated operable window system connected to the build monitoring system. These Lift Tilt Operable Windows (LTOWs) are the largest of their type in the world.

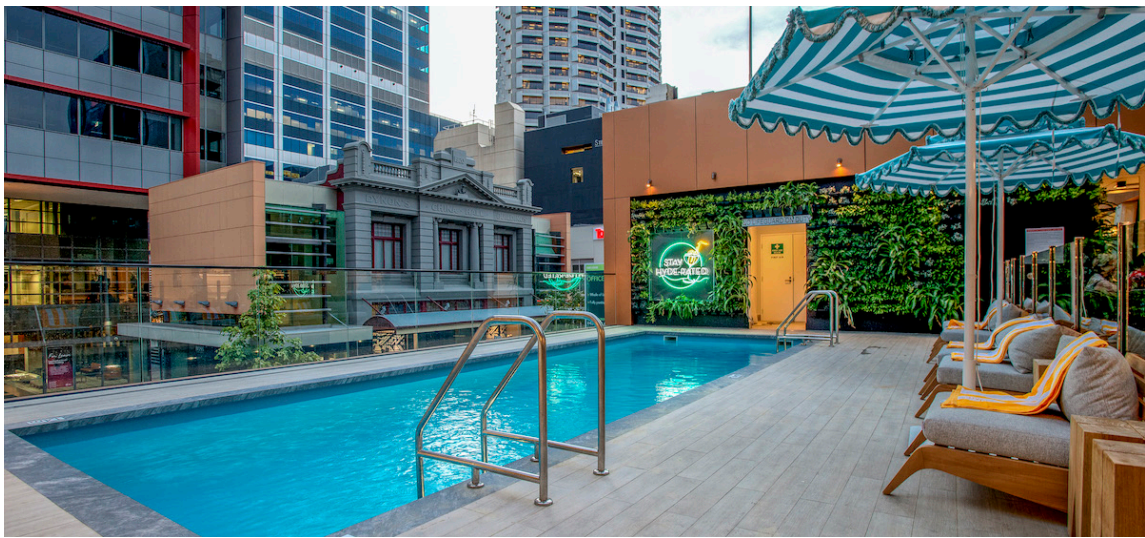
BG&E Façade Consultants provided services during the construction stage to assist the owner, Far East Consortium.

We were initially engaged during schematic design, and during the design development phase for the LTOWs, following which we provided extensive services during the construction phase to completion.

The development was completed and handed over in 2021.

Hyde Hotel

PERTH, WA, AUSTRALIA
CLIENT: KYKO GROUP



In 2023, the prime location of 37 Pier Street, situated in the vibrant heart of Perth CBD, was acquired for a sum exceeding \$20 million. Under new ownership, the hotel is undergoing a significant transformation into a lifestyle hotel with modern amenities that will attract both travellers and the local Perth community.

BG&E was engaged by Total Project Management alongside architects Hames Sharley to refurbish the existing hotel façade, implementing a contemporary glazing and cladding scheme. The façade's revitalisation will breathe new life into the hotel's exterior – aligning it with the upgraded interior and enhancing its capabilities in both aesthetics and performance – specifically, in acoustic and structural specifications.

BG&E FAÇADE

BG&E Façade Consultants provided the following services:

- Advice on façade design and interfaces.
- Wind assessment and base façade requirements.
- Review of contractor documentation and installation.
- Specialist advice on the façade system, enabling an FP1.4 performance solution pathway.

BG&E also provided structural design and engineering services, encompassing:

- Floor usage changes and loading assessments.
- Strengthening works, including provisions for load bearing wall removal, additional feature stairs, mechanical and plant upgrades, and additional event spaces.
- Seismic assessment of the existing and modified structure.
- Construction engineering advice and temporary works design.

As of mid-2024, this redevelopment is currently under construction.

*Hyde Hotel –
Perth, 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 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.

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