
SECTOR CASE STUDY

Healthcare & Laboratories

Fiona Stanley Hospital — Perth, WA, Australia.



**BG
&E**
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Fiona Stanley Hospital

STRUCTURAL | CIVIL | FAÇADE CONSULTING

PERTH, WA, AUSTRALIA

CLIENT: BROOKFIELD MULTIPLEX

BG&E was engaged as the civil, façade and structural design consultant for the landmark Fiona Stanley Hospital, collaborating with the Department of Health and stakeholders on the project brief. Following this, we joined the project under a design and construct contract with Brookfield Multiplex.

Named after prominent Australian epidemiologist Fiona Stanley, the two billion dollar Fiona Stanley Hospital, completed in 2014, was WA's largest health infrastructure project upon its completion, blending innovative design with green vistas to promote well-being and healing.

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

- 783 bed, seven floor hospital providing surgical, acute care, emergency and inpatient and outpatient services.
- Pathology and education facility, 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.

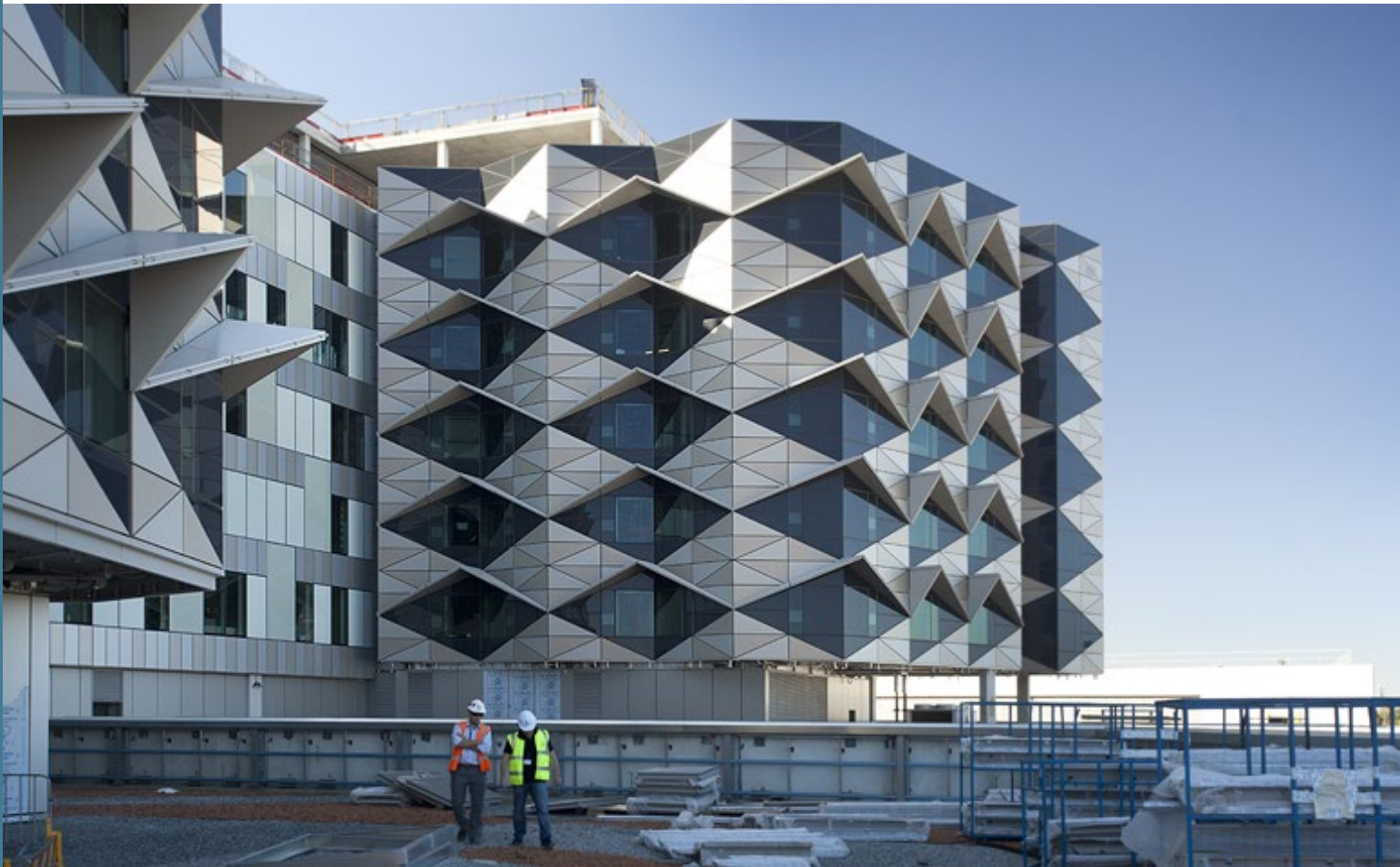
Façade services included:

- Façade engineering, including façade design, system costing, materials science assessment and material selection, shop drawings, submission reviews and conducting 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.

Civil and structural services included:

- Site coordination, including bulk earthworks, public roads, car parks and full servicing deriving the overall precinct stormwater drainage strategy.
- Stormwater drainage strategy, including buildings and site discharge via a combination of local on-site detention, trunk systems, and major infiltration basins and wetlands including pollution controls.
- Civil engineering, including the design and documentation of internal roads, main drainage infrastructure and car parking facilities within the super lots created within the health care precinct.
- Collaboration with the hydro-geological sub-consultants in the development of a precinct water balance study to determine the effect of the installation of the large infiltration and detention tanks and basins on the regional groundwater levels, quantity and quality.

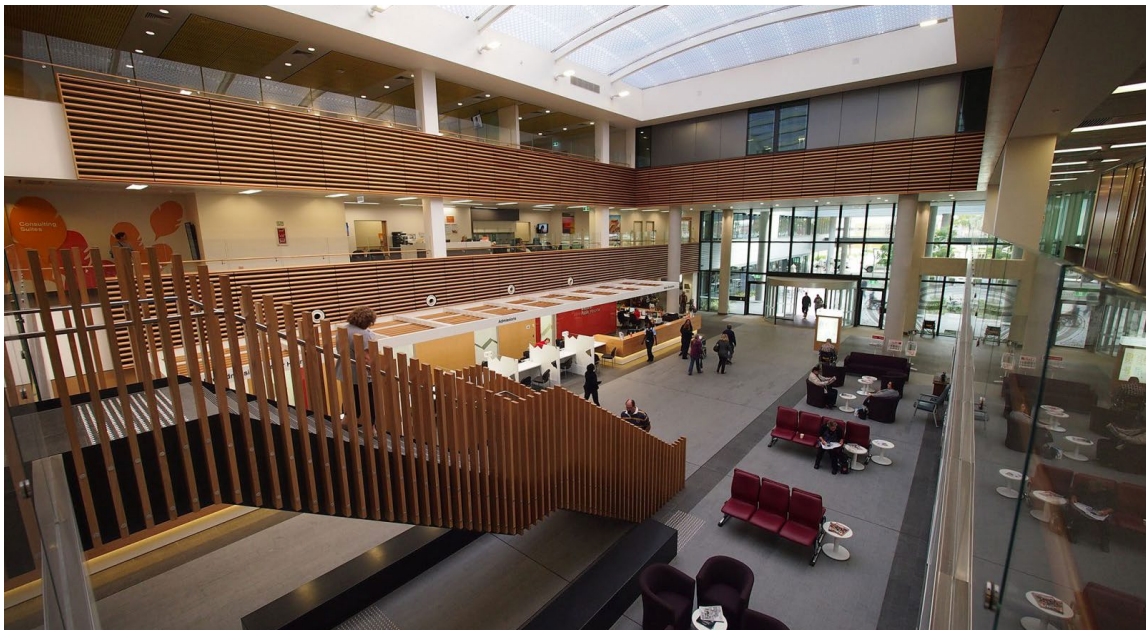
*Fiona Stanley Hospital —
Perth, WA, Australia.*



Midland Public & Private Hospital

STRUCTURAL | CIVIL

MIDLAND, WA, AUSTRALIA
CLIENT: MULTIPLEX



BG&E provided structural and civil engineering services for the \$360 million healthcare facility — the first new hospital in Perth's North Eastern corridor in more than 50 years.

Operating under a private-public partnership with the Western Australia government, the 307-bed hospital features 31 different types of health pods that are fit-for-purpose with pre-fitted handrails, catheter hooks and points for emergency nurse call buttons. The different types of pods meet the clinical care for assisted living, birthing, aged care and mental health patients.

The ground conditions of the site were difficult and included contaminated soil and reactive clays. A pile foundation design was developed to control the potential long-term movements. The five storey building has banded slab floor systems and column grids that are approximately ten metres by eight metres. Lateral stability is provided via in-situ reinforced concrete core and shear walls.

Busselton Health Campus

STRUCTURAL | CIVIL

BUSSELTON, WA, AUSTRALIA
CLIENT: MULTIPLEX

The new Busselton Health Campus redevelopment replaces the existing hospital facility which was aging and not flexible enough to meet the future demand of the Busselton catchment area.

BG&E was engaged to provide the structural and civil engineering for the redevelopment which comprises:

- A new 14,700 square metres hospital, providing:
 - » an expanded Emergency Department,
 - » an expanded day ward, including 84 beds and day surgery facilities,
 - » two operating theatres,
 - » two birthing suites,
 - » a surgery room,
 - » an expanded dental clinic, and
 - » medical imaging, outpatient and pathology facilities.
- Community Health Centre.
- Community Mental Health Centre.

The civil works comprise bulk earthworks, internal roads, external roads, car parks, stormwater drainage, services coordination, preliminary construction phasing and construction support.

In addition, the increased traffic volumes resulting from the hospital development necessitated the upgrade of the Bussell Highway-Mill Road intersection from un-signalised T-Junction to four-way signalised intersection. The upgrade of the intersection involved relocation and redesign of major services such as vacuum sewers, water mains and drainage lines, which are all critical to the surrounding community.

The redevelopment supports smaller regional health facilities and provides residents in the South West with greater access to health services closer to home.



SJG Midland Private Hospital

STRUCTURAL | CIVIL

MIDLAND, WA, AUSTRALIA

CLIENT: ST JOHN OF GOD

Planning for the new St John of God Midland Private Hospital is well underway, with BG&E engaged to deliver civil and structural engineering services for the site development and proposed building design.

The new hospital will be located approximately 300 metres from the current St John of God Midland Public and Private Hospitals campus, on a site previously earmarked for this purpose. It will provide a full-service, standalone private hospital experience, offering comprehensive medical and surgical services, some of which will be offered for the first time in the region.

The new 17,000 square metre facility will include:

- 96 overnight inpatient beds, including a six bed critical care and high dependency unit.
- A 24 bed (plus six chair) short-stay and day procedure unit.
- Four general theatres.
- Two procedure rooms.
- A cardiac and vascular catheter laboratory.

Services provided by BG&E include:

- Review of key performance criteria.
- Assessment of existing geotechnical and environmental conditions
- Design of the new hospital building structure.
- Site-wide civil engineering.

All designs were completed in line with the St John of God Project Brief, relevant Australian Standards, NCC/BCA 2019 (including Amendment 01), and the WA Health Facility Guidelines (WAHFG 2021).

Curtin University B316 Sciences Building

STRUCTURAL | CIVIL

BENTLEY, WA, AUSTRALIA
CLIENT: CURTIN UNIVERSITY

The Curtin University B316 Sciences Building will house research and teaching laboratory facilities for science-oriented faculties and the Western Australian School of Mines on the Bentley Campus. The building is designed across five levels: one basement, a suspended ground floor, and three additional suspended levels with a roof above.

As a unique facility, B316 Sciences will include specialist research and teaching laboratories that require stringent structural performance, particularly regarding vibration control, to support the highly sensitive equipment housed within these spaces.

As of 2025, the project has progressed to the Early Contractor Involvement (ECI) phase, with Lendlease engaged as the contractor. BG&E is providing structural and civil engineering services for this development.

Spanning approximately 20,000 square metres, B316 Sciences will be key in supporting Curtin University's goal to expand its STEMM (Science, Technology, Engineering, Mathematics, and Medicine) research and education programs.





Queen Elizabeth II Central Energy Plant

STRUCTURAL

NEDLANDS, WA, AUSTRALIA

CLIENT: BROOKFIELD MULTIPLEX

The Queen Elizabeth II (QEII) Central Energy Plant (CEP) project forms the new energy plant for the QEII Medical Centre precinct, south west of Perth.

It replaces the previous plant building for two major hospitals (the existing Sir Charles Gairdner Hospital and the New Children's Hospital) and will also service the planned Women's Hospital.

Spanning six storeys and a total gross floor area of 11,500 square metres, the CEP consists of:

- The CEP, a stand-alone building housing a major mechanical, electrical, fire and hydraulic engineering plant.
- Industrial workshops and waste management facilities.
- The service crossing tunnel that connects all major buildings to the CEP building.

The CEP building is comprised of a six metre deep basement and a structural steel superstructure supporting topped precast concrete hollowcore floors. The basement was constructed with contiguous pile perimeter walls and concrete columns supporting an insitu reinforced concrete ground floor slab. The flue stack was constructed using a structural steel work frame, designed and detailed to facilitate modular construction. The façade was constructed from precast concrete panels supported off the structural steel framing and designed by BG&E.

The industrial workshops and waste management facilities replace the existing workshops and are comprised of a hybrid of structural steel and in-situ concrete construction.

The 500 metre service tunnel, measuring five metres deep and eight metres wide, was constructed with contiguous piles and an in-situ concrete floor, the tunnel is designed to support traffic loads above.

*Queen Elizabeth II Central Energy Plant —
Nedlands, WA, Australia.*





Curtin University Resources & Chemistry Precinct

STRUCTURAL | CIVIL

BENTLEY, WA, AUSTRALIA

CLIENT: CURTIN UNIVERSITY OF TECHNOLOGY

The Curtin Resource and Chemistry Precinct project consists of two adjacent five storey structures joined by a four storey glazed link structure. The fifth level on each of the adjacent wings is a plant room that services the floors below in this state of the art research and teaching facility.

BG&E provided structural and civil engineering services for the Curtin Resource and Chemistry Precinct, a state-of-the-art research and teaching facility.

Comprising two adjacent five storey structures joined by a four storey glazed link structure, the fifth level on each of the adjacent wings is a plant room that services the floors below.

The rectangular floor plates for each wing are in the order of 1,600 square metres each and are supported on concrete columns down each long axis at 6.8 metre centres, and by two rows of adjacent columns down the centre of each wing, creating a three span frame with a 10.0 metre central span. Floor plates are constructed in reinforced concrete with reinforced band beams spanning across the building at 6.8 metre centres.

Key design features include:

- Exposed structural steel is a feature of the facility. The structural mullions to the Entry Foyer in the link structure are three stories high and are shaped to provide an architectural feature whilst remaining structurally competent.
- “Walking” steel tube columns to the underside of the cantilevered north elevation of the northern wing provide an architectural feature to that elevation whilst appearing to also provide structural significance.
- There are a number of zinc sheet-clad feature wall panels used on all elevations. These are related to vertical service rises in the building and provide a dramatic contrast to the masonry, concrete, steel, and glazed cladding generally used in the building.

The link structure is framed in structural steelwork, much of which is exposed. Floor slabs are composite steel and concrete and serve a bank of lifts whilst providing a mezzanine affect at first floor level, thus increasing the volume of the link at entry level.

*Curtin University Resources & Chemistry Precinct —
Bentley, WA, Australia.*



Hollywood Private Hospital South Block & Emergency Department

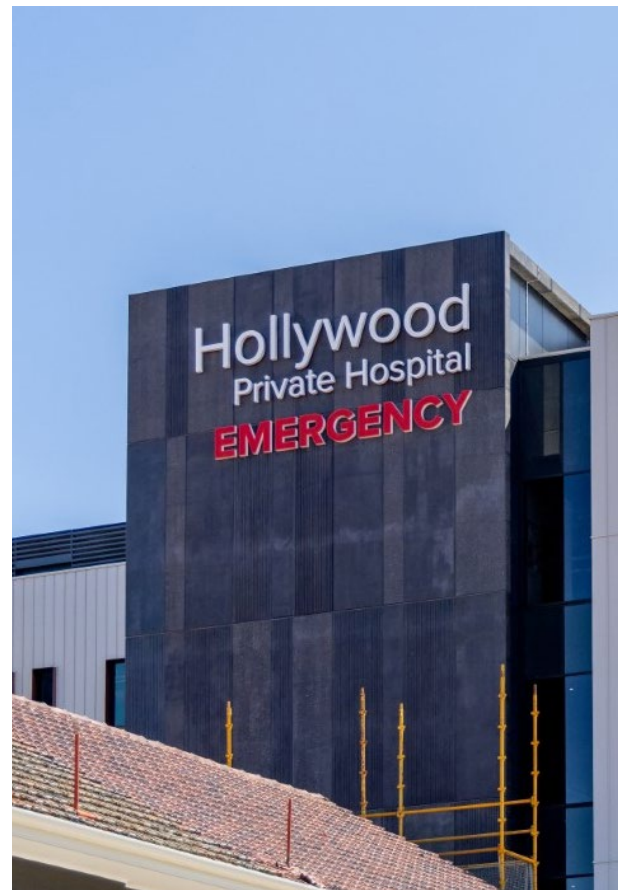
STRUCTURAL | CIVIL

NEDLANDS, WA, AUSTRALIA
CLIENT: RAMSAY HEALTHCARE

Valued at \$67 million, the project comes off the back of the successful delivery of the Hollywood Private Hospital Consulting Centre and Mental Health Unit in 2021.

Providing both civil and structural engineering services, the scope of work included:

- Design of a new emergency department at the Nedlands campus that comprises:
 - » the emergency department on the lower ground level,
 - » one level of specialist tenancy spaces,
 - » two levels of 30-bed wards,
 - » a shell space on the third level provisioned for a future 30-bed ward, and,
 - » three individual plant rooms on the top level to complete the building.
- Expansion of the current radiology unit.
- Design of the associated car park.





Hollywood Private Hospital Consulting Centre

STRUCTURAL DESIGN CONSULTANT

NEDLANDS, WA, AUSTRALIA
CLIENT: RAMSAY HEALTHCARE

The first private cancer centre in WA, the new \$48 million Hollywood Consulting Centre is a world-class facility that brings together a suite of cancer services, positioning itself as the leading one-stop cancer treatment facility.

BG&E was the structural design consultant for the Hollywood Private Hospital medical centre extension, which includes a new Cancer Consulting Centre, gastroenterology unit and mental health unit at their Nedlands premises. BG&E also provided the project contractor, Georgiou, with assistance on the construction sequencing to maintain full operations of existing services for the hospital during construction.

The five storey concrete framed structure comprises multiple levels of car parking, ward or suit levels, a gastroenterology unit and two oncology bunkers.

The addition of cancer services at the Hollywood Consulting Centre allows the hospital to provide quality cancer care to a greater number of patients and is also a major benefit for people living in Perth who now have access to timely private emergency care close to home.

SJG Subiaco East Hospital Redevelopment, Site Energy Plant & Multi-Storey Car Park

STRUCTURAL | MATERIALS & DURABILITY

SUBIACO, WA, AUSTRALIA
CLIENT: ST JOHN OF GOD

St John of God Subiaco Hospital, the flagship for one of Australia's largest private hospital operators, is undergoing a major redevelopment to expand and elevate its service offering and patient experience.

The three stage, campus-wide transformation involves various upgrades, refurbishment, and new build works, as well as the replacement of ageing hospital infrastructure.

BG&E was engaged to provide structural and materials engineering for Stage 3 of the redevelopment, delivering:

- A new Site Energy Plant and site water plant.
- Multi-storey car park remediation.
- Secondary and tertiary engineering upgrades.
- A site-wide lift replacement program.





ECU Health Science Building

STRUCTURAL | CIVIL

JOONDALUP, WA, AUSTRALIA
CLIENT: EDITH COWAN UNIVERSITY

BG&E was engaged to provide structural and civil engineering services for the Edith Cowan University (ECU) Health Science Building — a five level structure that includes 2,500 square metres of laboratory space over two floors.

The building's laboratories are large-scale and purpose-built to an Australian safety standard for handling and studying potentially hazardous materials.

The building's façade features the elements of the periodic table in an homage to the teaching, research and scientific industry happening within.

A further 3,600 square metres over two floors are available for ECU's scientists and students to engage with the cyber security industry. This engagement space will provide a focal point Perth, WA, and Australia's growing cyber security industry.



WA Museum Collections & Research Centre

STRUCTURAL | CIVIL

PERTH, WA, AUSTRALIA

CLIENT: WA AUSTRALIA STATE GOVERNMENT

The WA Museum Collections and Research Centre (CRC) accommodates the majority of the Museum's collections and research facilities. BG&E provided structural and civil engineering services for the construction of the new two storey CRC, positioned adjacent to an existing administrative building.

Key features of the new CRC building include:

- A steel framed section with insulated cladding panels to house the valuable collection specimens.
- A concrete framed section with precast wall panels to house the research labs, and administrative and plant areas.
- Development of a new access road and carpark, and separate outbuildings for electrical services, generator, and ethanol storage.
- Refurbishment and adaptive reuse of existing buildings on the site, incorporating the installation of new services to meet modern amenity.

Key design issues included:

VIBRATION

The new CRC building includes large compactus storage for the collection of specimens, many of which are susceptible to damage from excessive vibration. The site is positioned in close proximity to Leach Highway and Orrong Road, which are subject to high volumes of traffic that represent a significant source of vibration through the ground.

Site measurement of vibration was conducted within the existing facility for assessment of acceptable levels, and the design of the ground slab upon which the compactus units are mounted included provisions for additional thickness and mass to mitigate the transfer of ground-induced vibration to the collection specimens.

Reciprocating plant and machinery were mounted on vibration isolation pads to avoid transfer of excessive vibration to the storage and research areas.

FIRE RESISTANCE

The large volumes of ethanol housed within the CRC building for preservation of the collection specimens represents significant Dangerous Goods implications, particularly towards onerous fire resistance requirement for the structure of up to four hours.

This was addressed through the use of various reinforced concrete load-bearing elements, including precast walls, in-situ columns and pre-formed in-situ wall (Ritek) systems. Joints and interfaces between various elements were carefully detailed to achieve the required fire-resistance, spill-proofing, and structural movement requirements.



*WA Museum Collections
& Research Centre —
Perth, WA, Australia.*

VALUE ENGINEERING

The original budget was not adequate to meet the requirements of the project brief, and extensive value engineering was required to develop alternative solutions to prevent excessive cost over-run.

As part of this process, the new building was tied to an existing building to overcome fire separation issues to allow the sharing of facilities and reduce the extent of the façade. The structural form of the new building was tailored specifically to the functional requirements, to provide a steel framed insulated enclosure for the collection storage area, and a concrete framed fire-rated enclosure for separation to sensitive habitable areas.

PROTECTION OF EXISTING FACILITY & OPERATIONS DURING SITEWORKS

Construction of the new CRC building occurred whilst the site was occupied by WA Museum personnel, including storage of collection specimens within the existing warehouse building and ongoing research activities.

The specimens and research activities are sensitive to excessive vibration, and thorough consideration for staging and sequencing of the works was necessary to minimise the impact of the siteworks.

Significant excavations were required near the existing buildings, and a detailed assessment of the extent to which buildings may be undermined was necessary. Where excavations could not be suitably managed, existing foundations were to be underpinned using permeation grout injection techniques.

*WA Museum Collections & Research Centre —
Perth, WA, Australia.*



The Royal Children's Hospital

FAÇADE CONSULTING

MELBOURNE, VIC, AUSTRALIA
CLIENT: LENDLEASE



Regarded as one of the great children's hospitals globally, the Royal Children's Hospital (RCH) serves the entire states of VIC and TAS, as well as southern NSW and parts of SA.

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

Australia's greenest hospital, it combines new facilities, innovative models of care and leading-edge research and education.

The project comprised:

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

BG&E was 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 capable of attracting the world's best to work at the new RCH.

Our team was involved in the design and documentation of the façade throughout the whole project, including 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 the 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.

*The Royal Children's Hospital —
Melbourne, VIC, Australia.*



New Melton Hospital

STRUCTURAL | CIVIL

MELTON, VIC, AUSTRALIA

CLIENT: VICTORIAN HEALTH BUILDING AUTHORITY & EXEMPLAR
HEALTH CONSORTIUM

The new Melton Hospital in Melbourne's outer west is being delivered under a Public Private Partnership between the Victorian Government — VHBA and Exemplar Health Consortium and will support the growing and diverse communities of Caroline Springs, Rockbank, Melton, Bacchus Marsh and Gisborne.

BG&E is providing structural and civil engineering services for the project, with construction due to be complete by 2029.

To ensure the hospital meets future demand, the design team is involved in a masterplan to ensure future flexibility and future expansion for Western Health.

The new healthcare facility will include:

- 395 Points of Care (274 beds).
- 24-hour emergency department and intensive care unit.
- Maternity and neonatal services.
- Mental health services.
- Radiology services.
- Ambulatory care.
- General administration, breakout spaces.
- 1000 public and staff car parking.





Royal Adelaide Hospital

CONSTRUCTION PHASE FAÇADE CONSULTING SERVICES

ADELAIDE, SA, AUSTRALIA

CLIENT: SOUTH AUSTRALIA HEALTH DEPARTMENT

BG&E Façades was engaged as the façade consultant for the New Royal Adelaide Hospital — the largest building project in South Australia — located on the edge of Adelaide’s CBD. Our role was to review the brief and tender documentation and to ensure the appointed façade contractor met the project requirements.

Delivered by the HYLC JV, the development consolidates healthcare facilities from across a number of sites in Adelaide, creating a single major hub for the city’s healthcare needs into the 21st century.

The façade is characterised by a demanding technical performance brief that includes detailed requirements for extremely high levels of acoustic performance, structural requirements exceeding the current Australian Standards and a seismic performance brief for a post-disaster functionality.

Following a detailed review of the project documentation, the façade was rigorously tested for acoustic, weathering, structural, and seismic performance to ensure compliance with all specifications.

Lake Macquarie Hospital Expansion

STRUCTURAL

LAKE MACQUARIE, NSW, AUSTRALIA
CLIENT: QUICKSMART HOMES

The extension of Lake Macquarie Private Hospital attracted national and international attention in the healthcare sector, as it was the first project of its kind in 2011 to use modular technology to deliver a two level, 31 bed orthopedic and surgical ward — completed quickly and cost-effectively.

BG&E provided structural engineering services to the project, with the key component being the use of prefabricated steel modules used as ward rooms. Each module had to be developed with unique connections to satisfy structural, construction, transport and handling criteria. The modules were prefabricated off site and delivered ready to be installed and connected to services — which allowed for rapid installation and minimal time on site.

With the Hunter region recording a rapidly growing an ageing population, the Lake Macquarie Private Hospital extension significantly boosts health services in the area and allows the facility to meet the demands of the community now and well into the future.



Armidale Hospital Redevelopment

STRUCTURAL

ARMIDALE, NSW, AUSTRALIA

CLIENT: HEALTH INFRASTRUCTURE, NOVATED TO RICHARD
CROOKES CONSTRUCTION



Situated in the Northern Tablelands of NSW, the \$60 million Armidale Hospital Redevelopment has transformed the existing hospital into a modern facility.

BG&E provided structural engineering for the redevelopment, which included the refurbishment of an existing hospital wing and the addition of a new four storey hospital.

A slew of new amenities were delivered, including an emergency department, intensive care unit, surgical department, and day surgery and critical care units, which will benefit staff and patients alike.



Inverell District Hospital

STRUCTURAL | CIVIL

INVERELL, NSW, AUSTRALIA

CLIENT: HEALTH INFRASTRUCTURE & RICHARD CROOKES CONSTRUCTION

Located in northern NSW, Inverell Hospital underwent a comprehensive \$60 million upgrade, completed in 2021. BG&E was engaged by Health Infrastructure for the civil and structural concept, schematic, and detailed design phases, and were subsequently contracted to Richard Crookes Construction for the construction phase.

The project had heritage considerations, as the new three storey building is adjacent to and connected with the existing brick hospital building.

The construction included both piled and pad footings, slab on ground, post-tensioned suspended slabs, and lightweight steel roof framing. Changes to the scope, which included additional CT scanning rooms and facilities, required rapid design incorporation and a high level of coordination with other consultants. The hospital building included offices in addition to clinical facilities, with a high level of service coordination and 3D modelling.

BG&E has also completed the concept, schematic, and tender design phases for Inverell Hospital Stage 1B, which involved the modification of the existing brick and timber hospital building for community health usage, with wards reconfigured into consultation rooms and offices. Existing load-bearing brick walls were removed to suit the new layout with limited space for the new structure, which posed design challenges. Additionally, the structure needed strengthening for AS 3850 seismic strengthening requirements.



Surgical, Treatment & Rehabilitation Services (STARS)

STRUCTURAL PEER REVIEW

BRISBANE, QLD, AUSTRALIA
CLIENT: AUSTRALIAN UNITY

STARS is the first building to be completed as part of the transformation of Herston Quarter, which will become a mixed-use community, advancing wellbeing and establishing vibrant community life, in South East QLD.

STARS is a nine storey health facility, with 184 in-patient beds, seven operating theatres, three endoscopy rooms, selective specialties and covered parking.

BG&E provided peer review services for STARS, including review of slab design to ensure compliance and structural requirements were met, in addition to review of the rectification method to ensure the structures met adequate standards.

STARS delivers a best practice health facility, designed to improve both patient experiences and outcomes. Patients will benefit from natural light and exposure to green spaces, as opposed to a traditional clinical environment.

Queen Elizabeth II Jubilee Hospital

STRUCTURAL | CIVIL | FAÇADE DESIGN | TRAFFIC ENGINEERING

BRISBANE, QLD, AUSTRALIA

CLIENT: QUEENSLAND HEALTH

BG&E's seamless integration of civil, structural, façade and traffic engineering delivered an under-budget final cost for Queensland Health in an escalating market.

The Queen Elizabeth II (QEII) Hospital Expansion project is a significant investment into QLD'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.

BG&E provided structural engineering, civil engineering, façade consultancy, and traffic engineering and transport planning services to assist the delivery of the new facility.

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





Meadowbrook Private Hospital — Australian Unity Health Precinct

STRUCTURAL | CIVIL

BRISBANE, QLD, AUSTRALIA
CLIENT: HUTCHINSON BUILDERS

BG&E provided structural and civil engineering services to the \$150 million Meadowbrook Private Hospital and health hub development.

The first stage of the Meadowbrook development delivered 90 inpatient beds, nine operating theatres, 60 specialist consulting suites, an on-site pathology laboratory and a diagnostic imaging centre.

Located opposite the existing Logan Hospital, Meadowbrook Private Hospital is set to ease pressure on medical and surgical services in the City of Logan. It will also attract doctors, nurses, specialists and healthcare operators — creating new local jobs and supporting regional health capability.

Recent Council upgrades have enhanced pedestrian access and public transport connectivity to key services, positioning Meadowbrook to become a major health and wellbeing precinct upon project completion.

St. Luke's Health

TIMBER

LAUNCESTON, TAS, AUSTRALIA
CLIENT: ST. LUKE'S HEALTH



The St. Luke's Health building, situated in Launceston, Tasmania, stands as the first carbon-positive structure in the state.

This building for the healthcare sector is a hybrid construction — comprising two levels of concrete, five levels of mass timber, and a steel-framed roof.

As a part of the project design team, Timber Design Studio (TDS) provided the timber design services, including timber structural engineering, procurement guidance, cost planning, LOD400 modeling of the timber structure, and collaborative construction planning with the Early Contractor Involvement contractor.

TDS undertook the independent LOD400 model to allow the builder the competitive opportunity to tender to the market without the fabricators having to take on any Design and Construct responsibilities. This led to the Glulam being supplied from Germany, and two separate Cross Laminated Timber fabricators supplying the project.

Due to the high degree of design and coordination, the project was able to achieve a 50% reduction in construction time in the structure and will see this project completed in just under 12 months in duration, in 2023.

This project was delivered by our partner, Timber Design Studio (TDS). In 2023, TDS merged with BG&E after more than two years of partnership — to leverage TDS' long history and expertise in mass timber construction in the advanced European market.

*St. Luke's Health —
Launceston, TAS, Australia.*



Alcon Phase 3: Pharmaceutical Facility

STRUCTURAL | CIVIL

TUAS, SINGAPORE
CLIENT: EXYTE

BG&E provided full civil and structural engineering design services for a leading optometric pharmaceutical manufacturing facility.

The facility features a steel composite structure with a large span and heavy loading requirements. Notably, 20 metre steel columns were erected overnight in a single 24-hour window without any joints.

This facility consists of 2 phases:

- Phase 2 involved the conversion of the existing Singapore Replenishment Centre building into a manufacturing building and the construction of a proposed new utility building with a total ground floor of approximately 8,000 square metres.
- Phase 3 involved the construction of a new manufacturing building and a proposed utility building and other support facilities, with a total ground floor of approximately 16,000 square metres.



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.