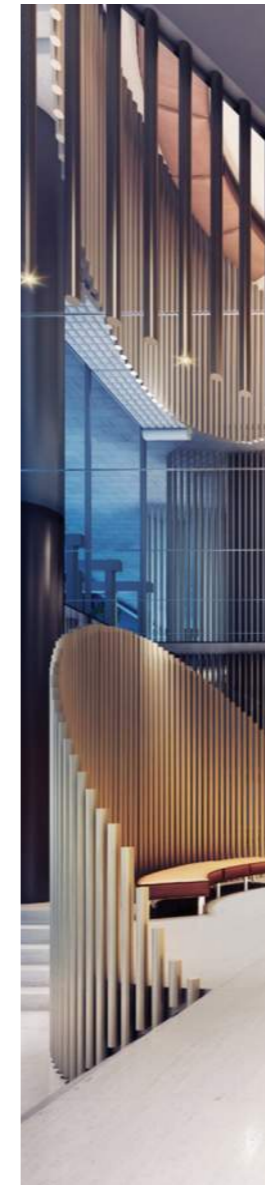


RICKARD

ENGINEERING

SYDNEY • LONDON • DUBAI • DENVER
MELBOURNE • CANBERRA • SHANGHAI



SKYE BY CROWN GROUP
North Sydney, NSW, Australia

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ABOUT US



Charles Rickard

MANAGING DIRECTOR

CEng, FIE (Aust), FStructE, MIPENZ, MSc

Charles Rickard is one of Australia's most sought-after engineers who has built a solid reputation through delivering quality, trust and innovation within his field.

Charles Rickard graduated from Surrey University, UK with a Master of Science in Structural Engineering in 1975, having completed a Bachelor of Science in Civil Engineering the previous year.

Charles undertook three years of engineering training with Taylor Woodrow, the international engineering group. By 1982, after an 18-month stay with Alan Baxter & Associates, he had achieved the position of London Associate with White Young Consulting Group (now known as White Young Green). His major responsibility with them was the engineering design and site supervision of construction for the \$100 million (1980 value) Phase 2 Basildon town centre development in the UK. Charles also did a three month stint in Qatar, where he designed a new palace for the Emir.

In 1984, Charles moved to Australia and set up Rickard and Partners Pty Ltd, subsequently known as Bonacci Rickard, then Rickard Hails Moretti Pty Ltd (RHM).

In 2004, Charles amicably left RHM and after a short spell working with Connell Wagner in Neutral Bay on contract.

In 2006, Charles established Rickard Engineering, also located in Neutral Bay.

Today, the company has grown to include 4 Directors and 25 engineering staff in Sydney, Melbourne, and Canberra offices. Rickard Engineering has representatives in Denver (US), Shanghai (China), Dubai (UAE), and London (UK), with a new office soon opening in Southeast Asia.



Amir Naderi DIRECTOR

NER, RPEQ, CPENG, MIEAUST, MENGSC (GEOTECHNICAL), MENGSC (STRUCTURAL), BENG (CIVIL)

With over 20 years of expertise in façade and structural engineering, Amir has built an exceptional portfolio of prestigious and technically complex projects across the commercial and residential sectors, both nationally and internationally. Holding a Master of Structural Engineering and a Master of Geotechnical Engineering and Engineering Geology from the University of New South Wales, Amir is a Chartered Engineer (NER), a Design Practitioner under the DBP Act, and is also registered in Queensland and Victoria. Since joining Rickard Engineering in 2014, Amir has played a pivotal role in major projects worldwide, including: Australia 108 (VIC), Amazon Tower (VIC), Wynyard Train Station (NSW), The Ribbon (NSW), Chevron Tower (WA), Australian Parliament House (ACT), Oman Convention Centre (Oman), Rosewood Towers (Qatar), Singapore Zoo (Singapore), and Royal Caribbean Group Headquarters (Miami, USA). His comprehensive expertise spans all facets of façade engineering, including conceptual design, prototype PMU and VMU testing, site inspections, and as-built design certification. With a strong technical foundation and a global project footprint, Amir remains at the forefront of innovation and excellence in façade engineering.



Noman Ali DIRECTOR

APEC ENGINEER, INTPE(AUS), NER, CPENG, MIEAUST, MSC (SEISMIC), MENGSC (STRUCTURAL), BENG (CIVIL)

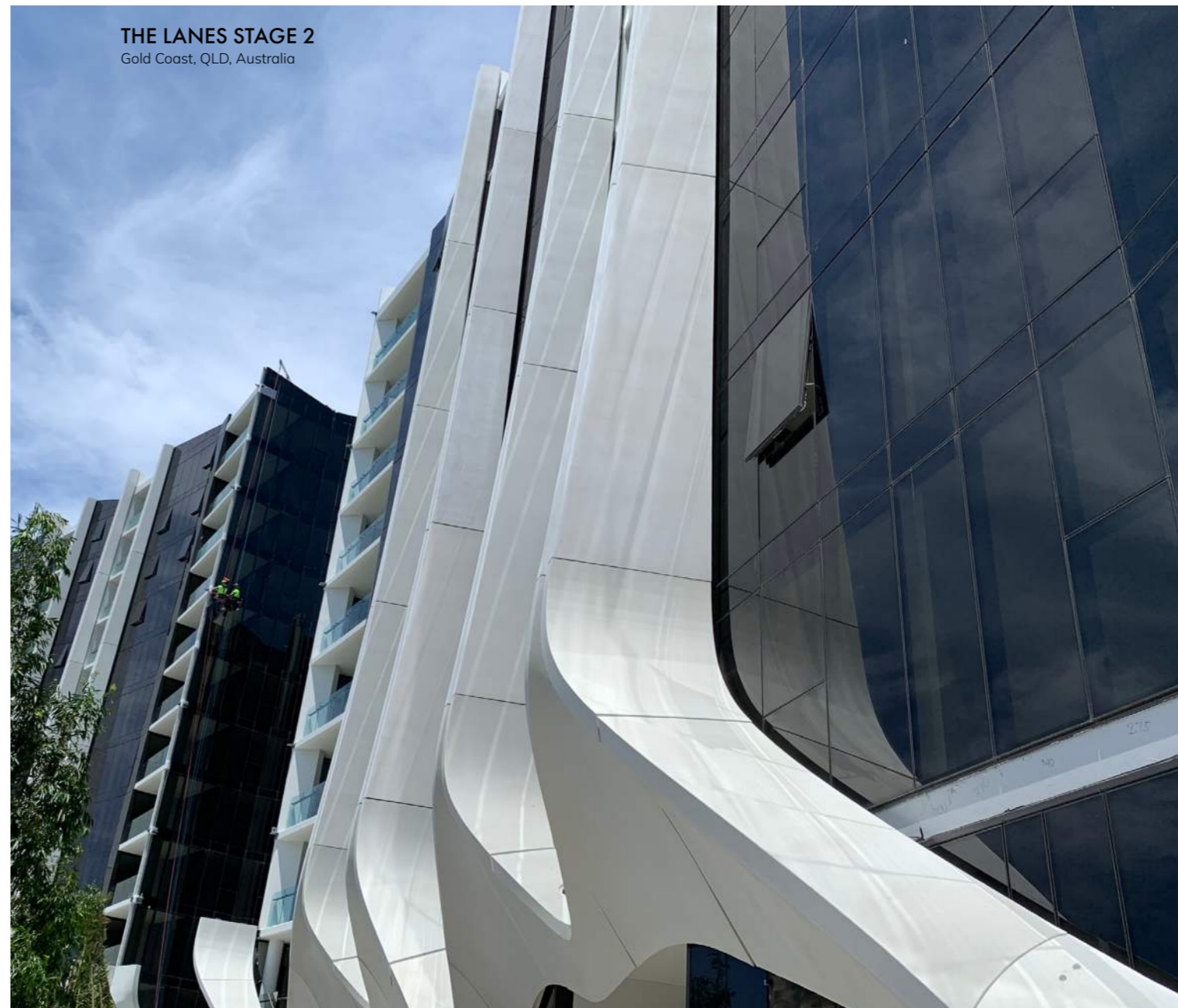
Noman is a globally experienced Civil and Structural Engineer with a specialised focus on seismic risk and complex infrastructure. With a strong academic foundation, holding degrees in Civil Engineering and Structural Engineering in Pakistan, and a Master's in Seismic Risk from the University of Rome, Noman brings a deep, technical understanding to every project. Since joining Rickard Engineering in 2017, Noman has played a key role in delivering major projects across Australia, the Middle East, and South Asia. His portfolio includes work on blast design for Melbourne Metro (VIC), New Footscray Hospital (VIC), 380 Lonsdale (VIC), Ahmad Bin Ali Stadium (Qatar), India International Convention & Expo Centre (India), Four Seasons Resort and Residences AMAALA at Triple Bay (Saudi Arabia), Infinity by Crown (NSW), Destination Gold Coast (QLD), and many others. Known for his precision, adaptability, and collaborative approach, Noman combines global engineering standards with innovative problem-solving to drive successful outcomes on landmark developments.



Szymon Fujak DIRECTOR

NER, PE, CPENG, MIEAUST, AIJ, PHD (STRUCTURAL), MSC (STRUCTURAL), BSC (CIVIL)

Szymon was born in Poland and attended Wroclaw University of Technology, where he earned a BSc and received *the Prize for the Best Bachelor Thesis* titled "Analysis of Long-Span Steel Roofing Solutions" (2013). Later he studied in Belgium (Vrije Universiteit Brussel and Université Libre de Bruxelles), Germany (Universität der Bundeswehr München), and Japan (Tōhoku University). His Master's thesis was related to the effectiveness of mass dampers with differing dynamic characteristics applied to tall buildings; he was awarded "The Best Graduate of the Department" and took second place in the Best Graduate of the University (2015). In 2022 he finished his PhD at Tōhoku University with a doctoral thesis focusing on elastic and elastoplastic capacities of I-beams. Szymon joined K2 Structural Engineering in the final year of his Master's degree, working in an office specialising in complex steel design. During this time, he contributed to major projects including Gliwice Arena, a 14,000-seat sports hall with a post-tensioned roof, and Wroclaw Station, one of Poland's major railway stations. In 2015, he joined Rickard Engineering as a Junior Engineer and, in 2024, became a Director of the firm.



THE LANES STAGE 2
Gold Coast, QLD, Australia

SERVICES

Façade Engineering
GRC
GRP
Commercial Design
Residential Design
Structural Engineering
Swimming Pools
Sports & Entertainment
Temporary Works Support
Civil Engineering
Product Development
Project Evaluation
& Value Engineering
Diagnostic Engineering
Building Dispute Resolution &
Expert Opinion
Condensation Analysis
Thermal Analysis
Blast Design
Façade Testing



FAÇADE ENGINEERING

The design of high-rise building façades requires careful and detailed analysis. It is necessary to consider the “design intent” of the architect together with structural limitations and possible implications for construction. Concept design is essential to provide thermal analysis, ascertain likely wind loads, negative pressure, water-tightness and construction methodology and to work closely with owners, architects, contractors and other engineers.

Over many years we have become experts in the design of virtually every form of façade treatment including, but not limited to:

- Curtain wall and window wall certification
- Precast concrete and GRC/GRP cladding
- Metal cladding and rainscreen systems
- Stone and terracotta cladding
- VMU and PMU testing
- Fibre cement sheet cladding
- Glass awnings and skylights
- Thermal and condensation analysis of façade systems
- Blast-resistant design and analysis
- Façade testing





Client
Gallery Commercials

Contractor
Multiplex

Architect
Kosloff Architecture

18 INNOVATION WALK
Melbourne, VIC, Australia

GLASS REINFORCED CONCRETE (GRC)

Charles Rickard is recognised globally for his expertise in Glass Reinforced Concrete (GRC), also known as Glass Fibre Reinforced Concrete (GFRC), a lightweight and durable material widely used in façade and architectural applications due to its strength, versatility, and ability to be moulded into complex forms.

Rickard Engineering has extensive experience in the design and application of GRC systems internationally. During his time as Technical Secretary to the Cement & Concrete Association in the 1990s, Charles authored the Australian Code of Practice for GRC. His pioneering use of continuous glass filament significantly improved the strength of GRC façade structures and has since been widely adopted internationally.

GLASS REINFORCED PLASTIC (GRP)

Glass Reinforced Plastic (GRP), also known as Fibreglass Reinforced Polymer (FRP), is a lightweight, high-strength composite material known for its durability, flexibility, and corrosion resistance. Its excellent strength-to-weight ratio and mouldability make it ideal for façades, architectural features, infrastructure, and specialised industrial applications, while its waterproof and fire-retardant properties allow for both indoor and outdoor use.

Rickard Engineering has extensive experience in the design and application of GRP systems. The company designed the first free-standing fibreglass swimming pool requiring no structural support from surrounding soil or adjacent structures.

Since the 1990s, zero-rated fibreglass has also been used in applications where fire performance is essential, including the Tangara train seats, for which Rickard Engineering designed the injection moulds.

Additional commissions have included grandstand seating at Randwick Racecourse, the canopy for the lookout tower in Newcastle, and agitation tanks used in the manufacture of gelatine.



AHMAD BIN ALI STADIUM
Al-Rayyan, Qatar



Client
CPB Contractors and John Holland (CPBJH Joint Venture)

Contractor
CPBJH Joint Venture

Architect
Aurecon and Jacobs (AJ Joint Venture)

WEST GATE BRIDGE
Melbourne, VIC, Australia

COMMERCIAL DESIGN

Commercial building construction requires a large-scale and fast-paced design approach that provides adaptable design solutions to suit a variety of floor plan configurations with efficient construction methodologies. Highly-designed podiums that create a strong public impression require particular attention to detail in achieving the architectural vision for the space. Rickard Engineering brings proven expertise in delivering high-quality engineering execution on each project.

555 COLLINS STREET

Melbourne, VIC, Australia

555 Collins Street is a landmark commercial development in the heart of Melbourne's CBD. This 36-storey tower features a highly sophisticated façade combining flat and curved GRC panels at the podium, sandstone panels, intricately stepped curtain wall panels, and striking 3D aluminium and glass feature elements. Commencing in 2019 and completed in 2023, the building rises 152 metres and now stands as a distinctive addition to Melbourne's iconic skyline.

Client
SRG Global (Podium),
CPB Contractors
(Tower), Lendlease
(Sandstone Cladding)

Contractor
Lendlease

Architect
COX Architecture,
Gensler



THE GLADSTONE

Melbourne, VIC, Australia

The Gladstone Street Project by Greystar Real Estate Partners is a large-scale Build-to-Rent development comprising a podium and three towers, delivering approximately 700 apartments, extensive resident amenities, and 850 sqm of retail space. Rickard Engineering was engaged by Icon to design and certify the brick façade to the podium across all three towers, incorporating brick veneer, cavity brick, hit-and-miss brickwork, brick slips, and textured brick walls. Our approach focused on practical, buildable solutions that deliver high performance and aligned with the architectural intent.

Client
Icon

Contractor
Greystar

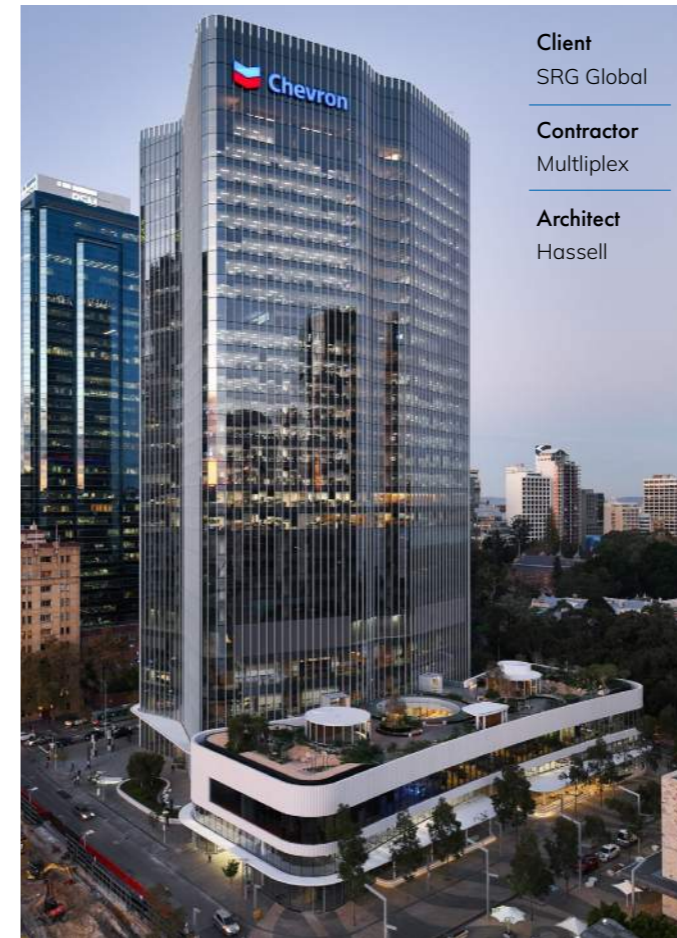
Architect
Studio SC



ONE THE ESPLANADE

Perth, WA, Australia

One The Esplanade, also known as Chevron Tower, is a landmark commercial high-rise in the Perth CBD, distinguished by its refined architectural form and highly articulated façade. Rickard Engineering was engaged to deliver the full façade structural design and certification across both the concept and detailed design stages. Our scope included the development of the glass curtain wall system for the tower and the GRC façade system for the podium, ensuring seamless integration across varied façade typologies. The result is a sophisticated façade solution that reinforces Chevron Tower's presence as a premier addition to the Perth skyline.



Client
SRG Global

Contractor
Multiplex

Architect
Hassell

HOME SOUTHBANK

Melbourne, VIC, Australia

Home Southbank is a modern residential tower contributing to the evolution of Melbourne's Southbank precinct. Rickard Engineering was the project's façade engineer, delivering coordinated, efficient engineering across the full building envelope. Our scope included the curtain wall, window wall systems, feature façade elements, and modularised brick panels at the podium, ensuring strong performance, constructability, and alignment with the architectural vision. Through close collaboration with Icon and Guangdong Kete Facadeteck, we provided practical, buildable solutions to support successful project delivery.



Client
Guangdong
Kete Facadeteck

Contractor
Icon

Architect
Bates Smart



Photo by Chris Cook Photography

RESIDENTIAL DESIGN

Whether a single residence or multi-residential project, we provide expert advice on local, overseas and bespoke design solutions, tailored to align with the architectural intent while meeting performance benchmarks such as thermal efficiency and weatherproofing, all within budget parameters. We take a proactive role in coordinating with stakeholders and consultants to ensure well-resolved and coordinated designs prior to construction. Our continued support throughout the build process safeguards construction integrity and ensures lasting value for both future residents and the client.

PARAMOUNT ON PARKES

Sydney, NSW, Australia

We are proud to be contributing to Paramount on Parkes, a future landmark on the Parramatta skyline, one of Sydney's fastest-growing urban centres. As part of this high-rise development, we have been engaged to design the glazing, window systems, and aluminium features of the building in collaboration with Lidco. Our work also includes supporting Lidco through AS 2047 testing for customised window systems to ensure full compliance and exceptional performance.

Our scope covers façade structural design, system selection, performance solutions, thermal analysis, design coordination, and the issuance of a Design Compliance Declaration under the Design and Building Practitioners Act 2020 (NSW).

Designed to elevate luxury living within Sydney's evolving urban metropolis, Paramount on Parkes will stand as a signature addition to the future Parramatta skyline, and we're proud to help shape it.

Client

Lidco

Contractor

Aland

Architect

SJB Architects,
Stanisic Architects,
Sketch Design Group

OZONE CRONULLA

Sydney, NSW, Australia

A Class 2 residential building featuring conceptual, detailed façade design and certification, incorporating integrated performance solutions, and certification. The scope includes curved natural sandstone cladding to the ground floor lobby and slab edges, aluminium privacy screen louvres, aluminium cladding, glazed façades, soffits, and skylights, all delivered in full compliance with the Design and Building Practitioners Act 2020 (NSW).

Client

Ozone Cronulla

Contractor

Versatile Group

Architect

PBD Architects



DOWNTOWN ZETLAND

Sydney, NSW, Australia

Designed for our client Deicorp, this mixed-use development comprises four distinct buildings that balance aesthetics and functionality. A standout feature is the glazed brick breezeway in Building A, constructed with an intelligent brick slip system and highlighted by black punched-out windows that contrast beautifully with the deep red glazed brick.

Client

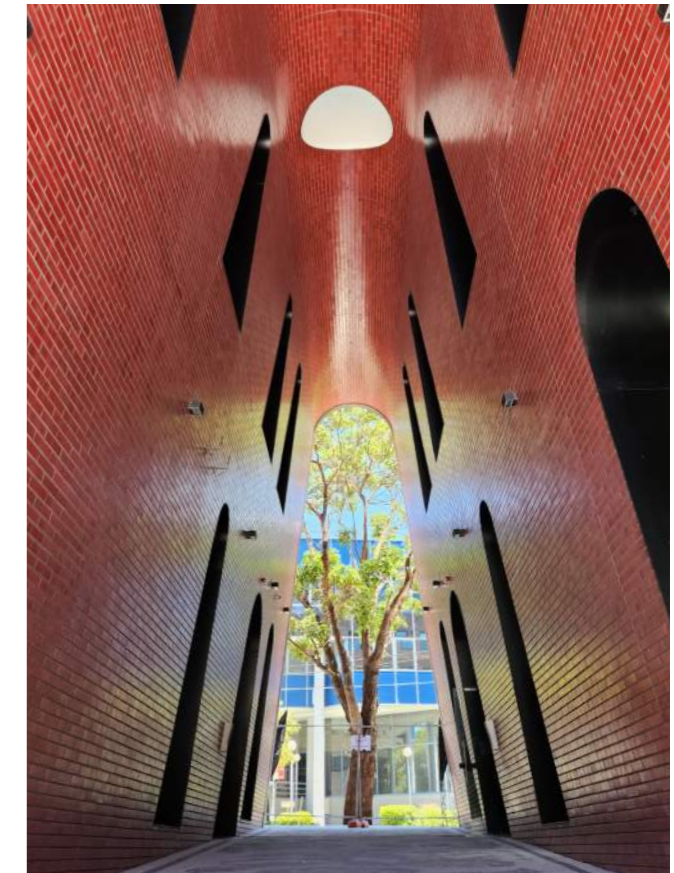
Deicorp

Contractor

Deicorp

Architect

Nordon Jago
Architects





PACIFIC SQUARE
Sydney, NSW, Australia

STRUCTURAL ENGINEERING

Our services cover all classes of buildings: commercial, residential, industrial, retail, car parks, pre-fabricated and modular structures, demountable buildings, education facilities, and materials handling facilities.

Works include design in steel, concrete, and timber materials, specialising in:

- Conceptual and schematic design
- Wind analysis review
- Lateral stability optimisation
- Earthquake engineering
- Detailed design and construction documentation
- Site support
- Peer reviews and value engineering

Our staff are trained to ensure that all structural design is appropriate for purpose and to be conscious both of construction cost and construction time.

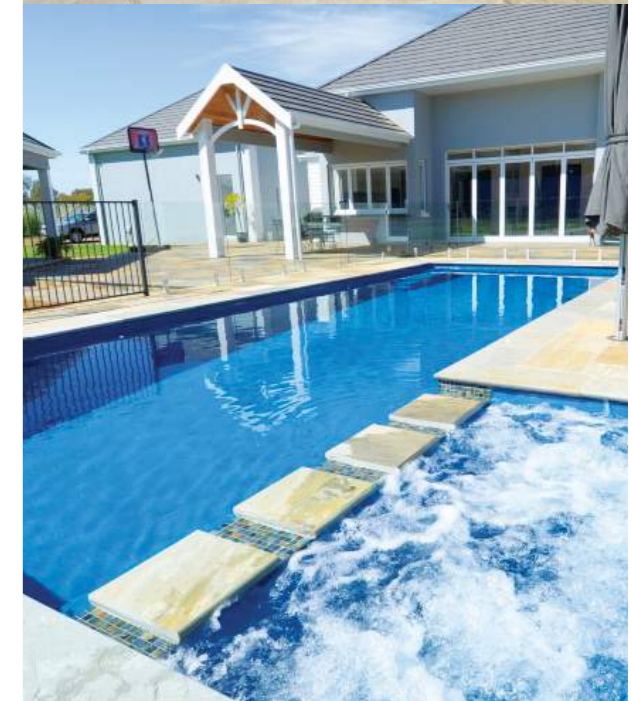
SWIMMING POOLS

Charles Rickard has arguably the broadest experience in the design of swimming pools in Australia. Charles has enjoyed a professional relationship with Crystal Pools since 1984, building concrete pools. If one considers the design of fibreglass pools, he has no peer. He has also been Compass Pools Australia's engineer since 1984.

In 1987, Charles was technical secretary to Standards Australia for the major overhaul of the Fibreglass Pool Codes, AS 1838 and AS 1839. In 1993, he won the Australian Design Award for the first free-standing fibreglass pool "Compass Maxi".

A selection of aquatic projects include:

- Gordon Fetterplace Aquatic Centre – Bradbury, NSW
- Colmslie Aquatic Centre – Brisbane, QLD
- Eagle Vale Central Swimming Pool – Eagle Vale, NSW
- Hilton Hotel – Melbourne, VIC
- Mount Annan Leisure Centre – Mount Annan, NSW
- Next Generation Club – Canberra, ACT





OPTUS STADIUM
Perth, WA, Australia



ALLIANZ STADIUM
Sydney, NSW, Australia



AHMAD BIN ALI STADIUM
Al-Rayyan, Qatar

SPORTS & ENTERTAINMENT

Sports and entertainment venues require robust structural solutions to accommodate large crowds, long spans and, complex architectural forms. These projects demand careful coordination between design, construction and operational requirements.

Rickard Engineering has contributed structural expertise to a number of major venues, working closely with architects and project teams to deliver practical and efficient structural outcomes. Our approach supports the creation of safe, durable, and high-performing spaces for sport, events, and public gatherings.

PCYC NORTHERN BEACHES

Sydney, NSW, Australia

Façade structural design, engineering certification, and technical support related to the feature entry glazing, including the 7 m high x 2.4 m wide glass panels at PCYC Northern Beaches, located on the edge of the Dee Why town centre.

Client

Firm Glass and Aluminium

Contractor

Prime Constructions

Architect

fjstudio



OUTWARD BOUND SINGAPORE

Coney Island, Singapore

Concept design, detailed design, and engineering support for climbing walls, including cliff walls, caves, and cliff jumps within an outdoor adventure training campus, including a 170 m long, 20 m high GRC cliff structure with integrated obstacle routes.

Client

Pico Play

Contractor

National Youth Council (NYC),
Ministry of Education (MOE)

Architect

Ramboll





PORT BOTANY CONTAINER PARK
Sydney, NSW, Australia

TEMPORARY WORKS SUPPORT

Rickard Engineering regularly provides advice to building contractors on means of stabilising existing structures during major redesign and/or refurbishment works.

Temporary works may include the design of back-propping, infill slabs, adjunct footings and foundations, and other related structural components.

CIVIL ENGINEERING

Our team of professional engineers has disparate yet complementary skills enabling us to confidently design:

- Retaining walls
- Underground pits
- Deep trenches including ground stabilisation walls
- Concrete and steel tanks
- Foundations including piling and piers
- Pavements
- Civil works
- Stormwater controls

Staff involvement in completed projects includes:

The new container parks at the Ports of Sydney and Brisbane, the runway pavement alterations at Sydney Airport, the design of the Dubai dry docks and the Newcastle coal terminal at Kooragang Island, the largest coal port in the world.

PRODUCT DEVELOPMENT

Rickard Engineering has been involved in the design and development of numerous products which are integral to both construction and engineering. We have designed a number of proprietary aluminium products for the exclusive use of contractors in building façades, a range of GRC drainage pits for Mascot Engineering, and a fire-resistant GRC decking system for use in bushland areas.

We have in-house design skills to meet most challenges for the design of specific products.

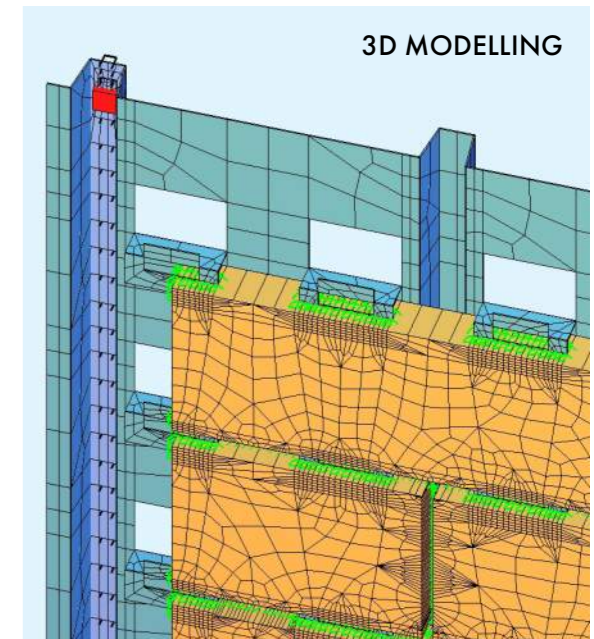


PROJECT EVALUATION & VALUE ENGINEERING

Project evaluation generally occurs post-design. Value engineering is generally conducted pre-design or during the design process.

Overdesign of structural engineering elements by some practitioners is, unfortunately commonplace. A peer review by an experienced structural engineer can identify whether a structure has in fact been overdesigned. Rickard Engineering's strict adherence to economical design within its own practice provides it with the ability to audit the work of others, leading if necessary, to recommendations on design amendment and cost minimisation.

Rickard Engineering, both with project evaluation and value engineering, works in conjunction with Robert Hart who has over 50 years' experience working with architects, engineers (in all disciplines), builders, and developers.





BOURKE STREET PUBLIC SCHOOL
Sydney, NSW, Australia

DIAGNOSTIC ENGINEERING

Rickard Engineering has been providing engineering diagnostic services in Australia since 1984 and has strong ongoing relationships in the public sector, in particular, the NSW Department of Education.

Every year, Rickard Engineering inspects an average of one school every calendar week. Rectification of cracking in old buildings requires pragmatism combined with a sound understanding of soil mechanics in relation to masonry and timber frame structures.

We also look at issues related to residential strata when the enquiry is specifically to do with engineering. Such experience is also invaluable when evaluating the cause of building defects, which can become a matter of a building dispute.

BUILDING DISPUTE RESOLUTION & EXPERT OPINION

Lawyers know the law, we know building construction.

Building and construction disputes can be costly, stressful for both parties, and often unnecessary. In many cases, the underlying cause of the dispute can be traced to poor design or inadequate supervision rather than workmanship during construction.

Rickard Engineering provides independent technical expertise to analyse complex construction issues and identify the allocation of design, management, and construction responsibilities relevant to a dispute, without resorting to litigation.

We confer with both parties to understand the issues from their respective points of view. We then undertake a process known as Early Neutral Evaluation, an independent early-stage technical assessment used to clarify dispute issues before litigation, to establish an initial factual basis for the claim for both claimant and defendant.

On completion of our review, we provide independent and unbiased engineering advice to assist in resolving disputes efficiently and at a fraction of the cost of litigation.

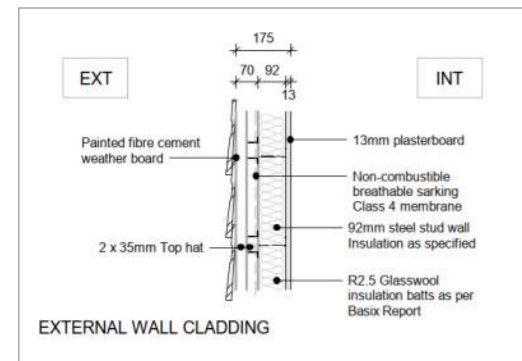


DEE WHY RSL CLUB, OCEAN GROVE APARTMENTS
Sydney, NSW, Australia

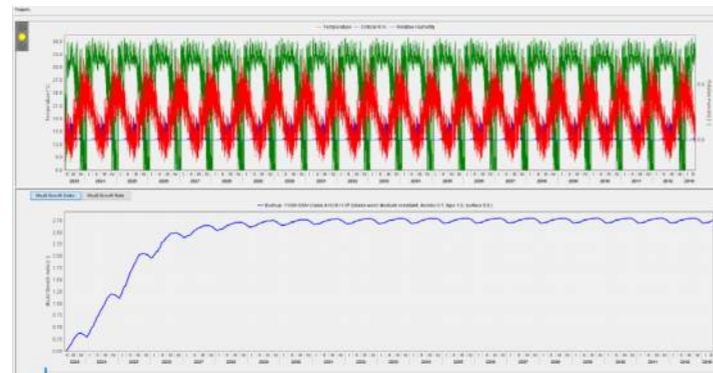
CONDENSATION ANALYSIS

Rickard Engineering examines how heat and moisture move through walls, roofs, and façades, helping to prevent hidden condensation that can lead to mould growth, reduced insulation efficiency, or structural damage. Using advanced WUFI software for hygrothermal modelling, we simulate real climate conditions and different material choices to identify potential risks early and recommend design solutions that keep buildings healthy, durable, and compliant with Australian Standards.

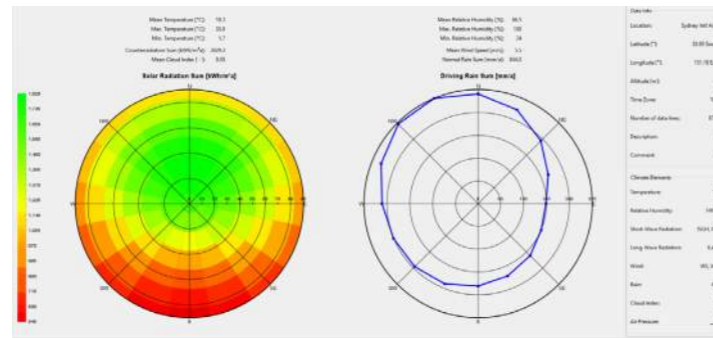
We combine rigorous modelling with practical guidance, giving clients confidence that their buildings are designed to perform over the long term. From residential projects to large-scale commercial developments, our approach ensures moisture issues are managed effectively, protecting both the building and its occupants.



FC CLADDING WALL



MOULD GROWTH INDEX OF SOLID CONCRETE WALL OVER 20-YEAR PERIOD

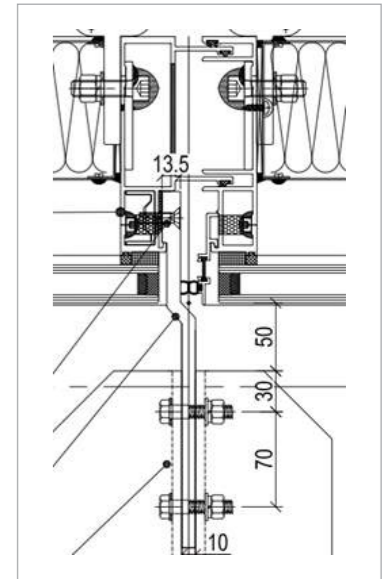


OUTDOOR CLIMATE CONDITIONS

THERMAL ANALYSIS

Our thermal analysis looks at how heat flows through building façades, identifying potential energy loss, cold spots, or overheating. By modelling different materials and design options, we can highlight thermal bridging risks and recommend solutions that maximise energy efficiency, comfort, and green-building performance.

Using advanced tools and best-practice methods, our team verifies that façades meet Australian Standards and perform reliably over time. From hospitals to commercial offices and residential developments, our analysis supports durable, energy-smart, and sustainable buildings that are built to last.



MULLION AT VISION GLASS WITH BRACKET/ BRIDGING ELEMENTS

ID # 136

Name Blg D CW Typ. Panel 1.2x2.8m

Mode NFRC

Type Custom Single Vision >>

Width 1222 mm

Height 2800 mm

Area 3.422 m2

Tilt 90

Environmental Conditions NFRC 100-2010

Total Window Results

U-factor 2.510 W/m2.K

SHGC 0.226

VT 0.201

CR N/A

Click on a component to display characteristics below

Frame

Name Building D CW Mullion@Vision + NEW t >>

ID 121 Uedge 1.773 W/m2.K

Source 2 Edge area 0.165 m2

Ufactor 9.217 W/m2.K PFD 50.0

Area 0.136 m2 Abs 0.700

VISION PANELS

U-Factors	U-factor W/m2.K	delta T C	Length mm	Rotation	Projected in Glass Plane
SHGC Exterior	5.8372	39.0	90.0298	90.0	Projected in Glass Plane
Edge	1.7347	39.0	63.5	90.0	Projected in Glass Plane
Frame	7.3450	39.0	50.0000	90.0	Projected in Glass Plane

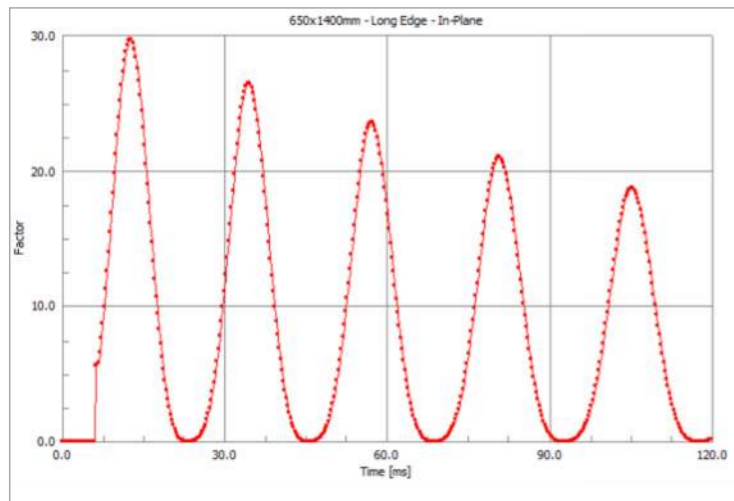
MULLION U-VALUES

BLAST DESIGN

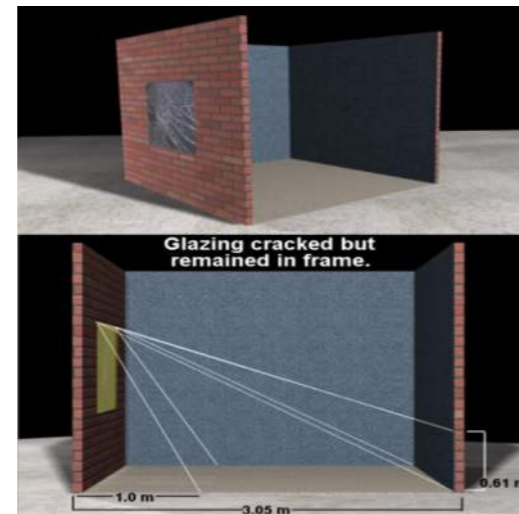
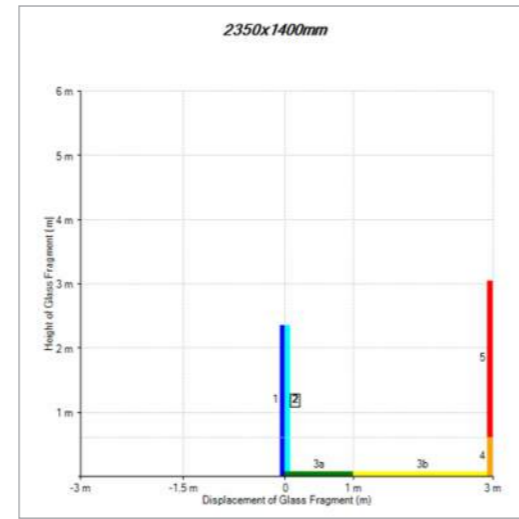
Rickard Engineering provides blast design consultancy for façades and building elements subject to extreme loading. We support project teams in developing engineered solutions that address safety requirements while remaining practical and buildable.

Our services include modelling and analysis of façade panels, glazing, cladding and supporting framing systems under blast pressures. We engineer load paths and connection details to ensure forces are transferred safely into the primary structure.

Designs are developed with consideration of ductility, fixings, energy absorption and overall system behaviour, allowing risks to be identified early and solutions to be refined. Our experience across blast-sensitive projects enables us to deliver reliable and efficient engineering outcomes that contribute to safer built environments.



DYNAMIC ANALYSIS METHODOLOGY

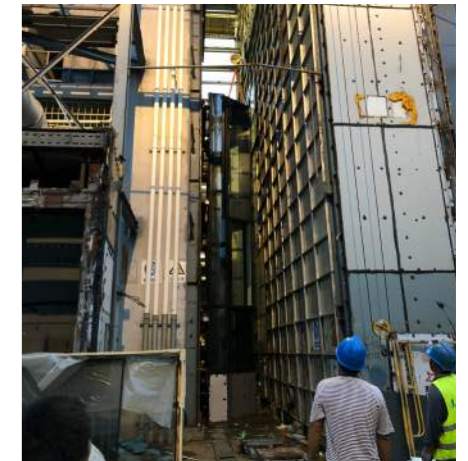


GSA PERFORMANCE CONDITION

FAÇADE TESTING

Rickard Engineering provides a comprehensive suite of façade testing services designed to ensure that every façade system meets the highest standards of visual quality, structural integrity, weather performance, and regulatory compliance. Our team combines industry-leading testing methods with deep technical expertise to give clients confidence that their façade will look exceptional, perform reliably, and stand the test of time.

- VMU (Visual Mock-Up) Assessment**
 Rickard Engineering delivers full Visual Mock-Up assessments to validate aesthetic quality, finishes, material transitions, and overall design intent before construction proceeds, ensuring clear stakeholder alignment and reducing design risk.
- PMU (Performance Mock-Up) Testing**
 Rickard Engineering conducts comprehensive Performance Mock-Up testing at specialist facilities, exposing façade systems to controlled simulations of air infiltration, water penetration, structural loads, wind pressure, and thermal performance to confirm durability and compliance before installation.
- AS 2047 Witness Testing for Windows & Glazed Doors**
 Rickard Engineering provides full AS 2047 witness testing, covering essential performance criteria including deflection, operating force, air infiltration, water penetration under static pressure, and ultimate strength, ensuring windows and external glazed doors meet mandatory Australian Standards.
- AAMA 501.2 Site Field Water Testing**
 Rickard Engineering performs AAMA 501.2 diagnostic on site hose-spray testing to verify the quality of workmanship, integrity of joints, gaskets, and framing connections in newly installed façades prior to fit-out.



PMU TESTING



VMU ASSESSMENT



SITE FIELD WATER TESTING

FEATURED WORK



AUSTRALIA 108

Melbourne, VIC, Australia

The tallest residential building in the Southern Hemisphere, Australia 108 is a landmark residential development in Melbourne, completed in 2021. Rickard Engineering was engaged as façade engineer for Minesco, who delivered the aluminium and glass curtain wall system.

The building's complex curved geometry and significant structural movements required careful consideration of façade–structure interaction, with tailored solutions developed to accommodate building displacement while maintaining façade performance and integrity.

A defining architectural feature is the “Starburst” zone between Levels 69 and 72, a highly complex structure comprising aluminium and glazed panels supported on steel trusses, forming a striking visual element within Melbourne’s skyline.

Some of the unique design features of this development include:

- Double-storey spanning glazed curtain wall and window wall systems, delivering expansive, light-filled spaces
- Aluminium cladding fixed to steel trusses with zero tolerance installation requirements, demanding exceptional precision in design and construction
- Custom-designed stainless steel mullions for double-storey winter gardens, combining structural performance with a refined architectural expression

Client

Minesco

Contractor

Multiplex

Architect

Fender Katsalidis Architects

380 LONSDALE

Melbourne, VIC, Australia

380 Lonsdale is a landmark mixed-use development located in the heart of Melbourne at 380 Lonsdale Street. Designed by Elenberg Fraser and developed by Brady Group, the project comprises two residential and hotel towers, with the North Tower rising 67 levels to 217.5 m and the South Tower reaching 51 levels at 166.5 m. The development accommodates a combination of residential apartments and hotel rooms, establishing a prominent addition to the Melbourne skyline.

Rickard Engineering was engaged to deliver façade structural engineering design and certification for both the tower and podium façades, supporting the realisation of one of Australia's most technically advanced façade systems, including the country's first curved unitised curtain wall. Services included:

- Concept and detailed façade design
- Thermal analysis and performance optimisation
- Façade movement and performance coordination
- Prototype testing attendance and factory inspections
- Shop drawing review and certification
- Construction-phase engineering services

Client
SRG Global

Contractor
Multiplex

Architect
Elenberg Fraser





SKYE BY CROWN GROUP

Sydney, NSW, Australia

Skye by Crown is a distinctive luxury residential project in North Sydney, characterised by its flowing form and refined architectural presence. The development's visual identity is strongly shaped by its expressive façade, which required a high level of technical resolution to translate design intent into a buildable outcome.

Rickard Engineering was engaged to design the project's curvilinear façade system, incorporating detailed aluminium tubular sections that create depth, rhythm, and a sense of movement across the building envelope. The scope demanded careful consideration of geometry, fixing strategies, material, and dynamic performance to ensure durability and constructability without compromising the architectural vision.

Working collaboratively with the architect, façade contractor, and wider consultant team, Rickard Engineering developed coordinated solutions that supported efficient fabrication and installation while maintaining the precision required for a premium residential development. Skye by Crown demonstrates Rickard Engineering's expertise in façade engineering for complex architectural forms, and its ability to deliver high-quality, innovative outcomes on landmark projects.

Client

Crown Group

Contractor

Crown Group

Architect

Koichi Takada Architects

INFINITY BY CROWN GROUP

Sydney, NSW, Australia

Asurco Contracting in Adelaide engaged Rickard Engineering to design the GRC cladding, seats, and planter boxes for the Green Square project, Infinity.

This is a unique project, involving a curved ribbon-shaped façade and a ski-slope roof feature. The unique geometry and panel types are designed for construction, with a support system on the slab edge.

Client
Asurco Contracting

Contractor
Crown Group

Architect
Koichi Takada Architects





1



2

Photo by Mike Chorley Photography



3



3

TARONGA ZOO

Sydney, NSW, Australia

- 1 Amphibian & Reptile Conservation Centre
- 2 Wildlife Retreat
- 3 Institute of Science and Learning

Rickard Engineering was appointed by Taylor Construction as the design engineer for the façade at the Taronga Institute of Science and Learning.

It is a global centre of excellence for conservation science and learning, and it is considered the first of its kind in the Southern Hemisphere. The original design concept was done by NBRS Architecture and further developed by BKA Architecture. Rickard Engineering worked closely with Taylor Construction, BKA Architecture, and Locker Group to bring the architectural ideas to life.

Rickard Engineering was responsible for the design of the perforated hexagonal panels, glass balustrades, and perforated horizontal and vertical sunshades. The biggest challenge was designing the hexagonal panels to achieve a 3D effect due to them not being on the same plane.

The facility achieved a 6 Star Green Star rating.

Client

- 1) Stainless Services NSW
- 2) Hi-Tec
- 3) Taylor Construction

Contractor

- 1) Stephen Edwards Construction
- 2) Taylor Construction
- 3) Taylor Construction

Architect

- 1) DWP
- 2) COX Architecture
- 3) NBRS Architecture (concept), BKA Architecture

THE LANES STAGE 2

Gold Coast, QLD, Australia

The Lanes Phase 2 is a recently completed residential development involving two towers on the waterfront of Mermaid Waters, Gold Coast. Rickard Engineering provided the engineering input, from concept and detailed design to certification, for the GRC podium panels and GRC fins up to the roof for this project.

The project involved a range of irregular 3D curved shapes and, hence, variations in connections to cater to them, making it both appealing and complex. Transportation, lifting, and installation also presented challenges because of the unique geometry and considerable panel sizes.

By adopting a better GRC scheme, Rickard Engineering significantly reduced the heaviest panel weight from over two tonnes in Stage 1, which was designed by others, to about one tonne.

Client

Hutchinson Builders

Contractor

Hutchinson Builders

Architect

Contreras Earl Architecture





123 ALBERT STREET

Brisbane, QLD, Australia

123 Albert Street is a commercial office development in Brisbane, Australia, which was completed in 2011. This repositioning project included substantial cutting-edge smart technology upgrades, ensuring the tower remains a leading property in Brisbane's premium-grade office market. Rickard Engineering is proud to be the façade engineer for the replacement and upgrade of the existing building façade with GRC cladding, from concept and detailed design to certification. This is a complex project with active coordination with the builder and existing tenants to ensure continued operations. This is achieved by designing the GRC panels with the fixings to suit the erection method and sequence.

In addition to the GRC cladding, Rickard Engineering also designed a combination of **crystal satin** and frosted **finish glass bricks** for two of the columns on the street frontage, maintaining the building's heritage, with a modern twist to suit the vibe of the existing laneway and surrounds.

Client
Buildcorp Queensland

Contractor
Buildcorp Queensland

Architect
Hassell (overall), Cameron & Co (Laneway only)

AHMAD BIN ALI STADIUM

Al Rayyan, Qatar

Rickard Engineering provided the engineering input for the new 'Ahmad bin Ali' Football Stadium in Qatar. The scope included the façade of the arena, perforated ceilings, together with the GRP roof panels for the eight "dune" buildings which surround this monumental Stadium, where the 2022 FIFA World Cup games were held.

Ahmad bin Ali Stadium is a fascinating and complex project with regard to the differing GRP shapes designed, and hence variations in connections to cater for the variety of shapes. Each of the mashrabiya panel types (12 in total) has a strong connection with local history and tradition. This display was possible thanks to the use of the GRP, which is a very versatile material. Ahmad bin Ali Stadium is the only sports object built for the 2022 FIFA World Cup that utilised GRP, but the numbers are impressive - the total area of the façade is about 28,000 sqm, which consists of 3,500 panels.

- 28,000 sqm of GRP cladding across the full stadium envelope
- 12 primary mashrabiya panel types with multiple trimmed variants
- Typical module size of approx. 2.8 x 5.6 m
- Average assembled unit weight of approx. 400 kg
- 800 tonnes of steel utilised for the supporting sub-framing

Client

Al Tasnim Enterprises LLC

Contractor

Al Balagh and L&T

Architect

Pattern Design, KSS





ROYAL ADELAIDE HOSPITAL

Adelaide, SA, Australia

Australia's largest and most advanced hospital development, and South Australia's single biggest infrastructure project, costing around \$2 billion.

Yuanda Australia was the façade contractor for all of the aluminium and glass componentry.

Rickard Engineering was the independent certifying engineer for the façade project. Its involvement commenced in 2013. The last revisions were certified in 2017.

Client

Yuanda Australia

Contractor

Hansen Yuncken, Leighton Contractors

Architect

Silver Thomas Hanley in joint venture with Design Inc

OMAN CONVENTION CENTRE (OCC)

Muscat, Oman

The Oman Convention Centre (OCC) is a landmark development in Muscat, distinguished by its iconic roof form inspired by natural geometries. Rickard Engineering delivered the design and certification of the signature GRC "petal" roof system and the associated glazing façade.

Comprising complex Glass Reinforced Concrete panels supported on a steel structure, the sculptural roof creates a striking architectural identity while achieving high performance in a demanding climate. The result is a refined integration of engineering precision and design expression on one of the region's most prestigious projects.

Client

Al Tasnim Enterprises LLC

Contractor

Shapoorji Pallonji, Oman Shapoorji Company

Architect

SSH Design





INDIA INTERNATIONAL CONVENTION CENTRE (IICC)

Delhi, India

Rickard Engineering was approached by L&T Construction during the design phase regarding the GRC elements for the IICC. Area-wise, this project represented one of the largest applications of GRC in India.

Due to the significant perforation and complexity of the shapes, the composite action between GRC and the steel frame was utilised. Special attention was paid to thermal movement in the high-temperature, humid climate.

The panels were produced locally and internationally by Al Tasnim Enterprises, Mahesh Prefeb, and Sanderson Theme Construction

Client
L&T Construction

Contractor
L&T Construction

Architect
CP Kukreja Architects IDOM,
ARCOP Associates



SINGAPORE ZOO

Mandai, Singapore

Client

Pico Play

Contractor

Obayashi Singapore

Architect

RSP Singapore

Our team provided the structural analysis for a major upgrade at Mandai Wildlife Reserve, including the penguin tanks and the GRC waterfall complex. We ensured that the penguin tanks can withstand water pressure up to 80 kPa, guaranteeing their water-tightness, durability, and safety for years to come. This project is a significant milestone, as it integrates five zoological parks into a cohesive and innovative wildlife reserve. The project aims to offer a wide range of sustainable and ethical wildlife experiences, making it a unique destination for visitors from around the world.

The success of this project is a testament to our commitment to creating spaces that are not only functional but also enhance the visitor experience while promoting conservation and education.

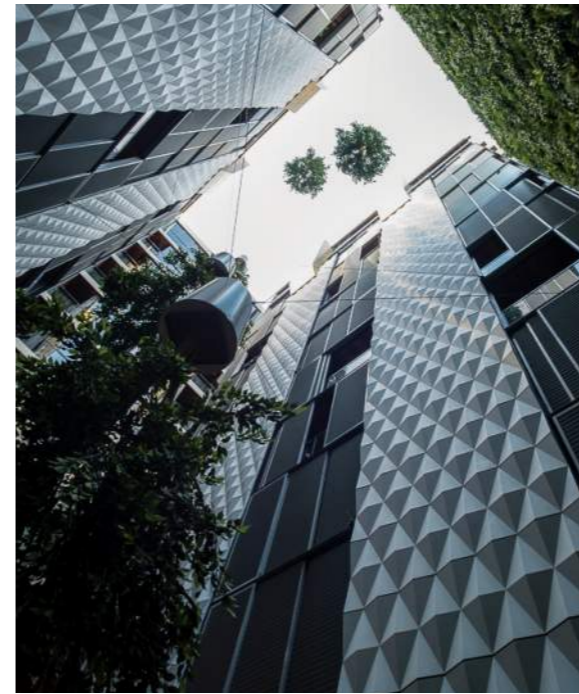


MUSEUM OF CONTEMPORARY ART (MCA)

Sydney, NSW, Australia

Construction for a major extension to the Museum of Contemporary Art (MCA) commenced in 2010 and opened in 2012. The competition design winner was architect, Sam Marshall. A major feature of the building design was the GRC façade.

The main contractor was Watpac Constructions, the GRC panels were manufactured by Precast Concrete of Brisbane to a design by Rickard Engineering. The panels were the largest precast GRC panels ever constructed in Australia, and probably in the world. The largest panel size was 11 m x 3.4 m with a 1.5 m return, supplied in a variety of different sealed stained colours. The panels incorporated a unique fixing detail to accommodate the seasonal movement in such a large panel, developed specially by Rickard Engineering. They were the subject of a paper presented by Charles Rickard at the GRCA World Conference in Istanbul in 2012.



108 FLINDERS STREET

Melbourne, VIC, Australia

108 Flinders Street is an office development in the heart of Melbourne. The panels do not contain any structural frame, which highlights the unique ability of the GRC material to create fine detail. Designed by Rickard Engineering, the panels were built by GRC Environments for the building, which was completed in early 2014.

Client
GRC Environments

Contractor
Merkon Constructions

Architect
Fender Katsalidis



Client
Glen Industries

Contractor
Watpac Constructions

Architect
Sam Marshall



80 COLLINS STREET

Melbourne, NSW, Australia

Rickard Engineering were engaged by Gallery Commercial and Minesco for the impressive 80 Collins Street in Melbourne. Our scope of works for Gallery Commercial included the GRC panels with patterns. We also provided services for Minesco, and the scope of works for the podium included the curtain wall, window wall, glazed shopfront and the perforated cladding. This four-part project was made up of a new commercial tower, boutique hotel, renovation of the existing commercial tower and a podium base that links the entire block.

Client
Minesco,
Gallery Commercial

Contractor
Multiplex

Architect
Woods Bagot

SCG STAND SYDNEY

Sydney, NSW, Australia

Client
SCG Trust

Contractor
A W Edwards

Architect
COX Architecture

The North Stand at the Sydney Cricket Ground was designed by COX Architecture and built by builder A W Edwards. It was opened in 2014.

The aluminium external façade was supplied by Townsend Group, designed by Rickard Engineering.



ALLIANZ STADIUM

Sydney, NSW, Australia

Rickard Engineering provided structural design and certification services for the Allianz Stadium upgrade, covering grandstands, vomitories, pitch, suites, concourses and surrounding windscreens, spanning approximately 2,500 linear metres.

Our scope included reviewing design documentation and producing calculation packages for structural glass in the grandstands and along the pitch. We also designed structural glass, stainless steel and acrylic polymer (PMMA) elements in accordance with Australian Standards, ensuring durability, safety and aesthetic quality across the stadium.

Client
Stainless Services NSW

Contractor
John Holland

Architect
COX Architecture



ROYAL CARIBBEAN

Miami, Florida, USA

Client

CGA Stone Casting, LLC

Contractor

Turner Construction

Architect

HOK (Hellmuth,
Obata + Kassabaum)

The new Royal Caribbean Headquarters in Miami, Florida features a GFRC/GRC façade that defines the architectural character of the development. Rickard Engineering delivered the complete detailed design for this complex façade across two primary buildings, engineered to withstand extreme wind pressures of up to 16 kPa (335 psf) while preserving the project's bold architectural vision. Our scope included the full structural design and optimisation of the GRC panel system, integrating all architectural features - edge treatments, soffits, parapets, oculus forms, and expansive canopy geometries, into a cohesive, high-performance façade solution with carefully coordinated steel framing, brackets, and primary-structure connections.

Prominently positioned along the Miami skyline, the headquarters is set to become a signature landmark, an architectural statement that reflects Royal Caribbean's innovation and the vibrancy of Miami's coastal identity.



SIRIUS BUILDING

Sydney, NSW, Australia

Client

ARC Roofing

Contractor

JDH Capital, BVN,
Richard Crookes Construction

Architect

NSW Government Architect

The Sirius Building in Sydney, an iconic Brutalist landmark overlooking Circular Quay, has been carefully revitalised to preserve its architectural significance while integrating high-performance contemporary façade systems. Rickard Engineering was engaged as façade engineer to deliver the design and certification of the external cladding, highlighted by the innovative use of ultra-thin 0.5 mm copper cladding, requiring specialised engineering to ensure durability, constructability, and long-term performance while maintaining the building's original design intent. Our scope included:

- Wall and awning cladding assemblies
- Balcony pod wall and ceiling claddings
- Roof parapets and interface detailing
- Balconies perforated stainless steel tiles

Through precise detailing and careful coordination, we enabled the successful application of this refined and lightweight copper solution, balancing material efficiency, aesthetic quality, and façade performance on one of Sydney's most iconic heritage projects.



THE WINX STAND

Sydney, NSW, Australia

Client

Hi-Tec Windows

Contractor

Taylor Construction

Architect

COX Architecture

The Winx Stand is one of the Sydney's world-class venues located at the iconic Royal Randwick. Named in honour of the legendary racehorse Winx, this state-of-the-art facility is a stunning two-level space, boasting a \$46.6 million investment in excellence.

Designed with precision, the Winx Stand features intricate structural and thermal designs for its impressive windows and doors, designed by Rickard Engineering in collaboration with Hi-Tec. The remarkable 2.5 m wide windows are not just a feat of engineering; they enhance the venue's ambience, flooding the space with natural light while providing stunning views of the surrounding landscape. It was a complex design, and we had to introduce special stiffeners to make the mullions work.

Photo by Mike Chorley Photography



OPTUS STADIUM

Perth, WA, Australia

Client

Yuanda Australia

Contractor

Multiplex

Architect

Hassell,
COX Architecture,
HKS Architects

Rickard Engineering team was engaged to provide expertise and technical support on the issues related to the as-built state of the Optus Stadium façade. Originally known as Perth Stadium, but currently known as Optus Stadium due to sponsorship reasons, it is a multi-purpose stadium with a total capacity of more than 60,000 spectators. The stadium's façade features a bronze anodised aluminium wrap placed in front of the curtain wall. The wrap reflects the unique geology of Western Australia. At night, it is illuminated with a 15,000-light LED system, showcasing team colours and creating a vibrant atmosphere.

The Rickard Engineering team is thrilled to have been part of this landmark project, bringing our vision to life and contributing to the vibrant community of Perth.



COBURG STATION

Melbourne, VIC, Australia

Client
Minesco

Contractor
John Holland

Architect
Wood Marsh

Rickard Engineering, in collaboration with Minesco, has successfully delivered an innovative structural solution for tall window wall panels spanning up to 9.0 m, a true engineering challenge turned into architectural beauty.

To make this ambitious design work, we incorporated custom-engineered stiffeners, ensuring structural integrity without compromising aesthetics. The feature circular windows add a visual element, celebrating the fusion of bold geometry and refined engineering.

Photo by Peter Bennetts



BELL AND PRESTON STATIONS

Melbourne, VIC, Australia

Client
KBR

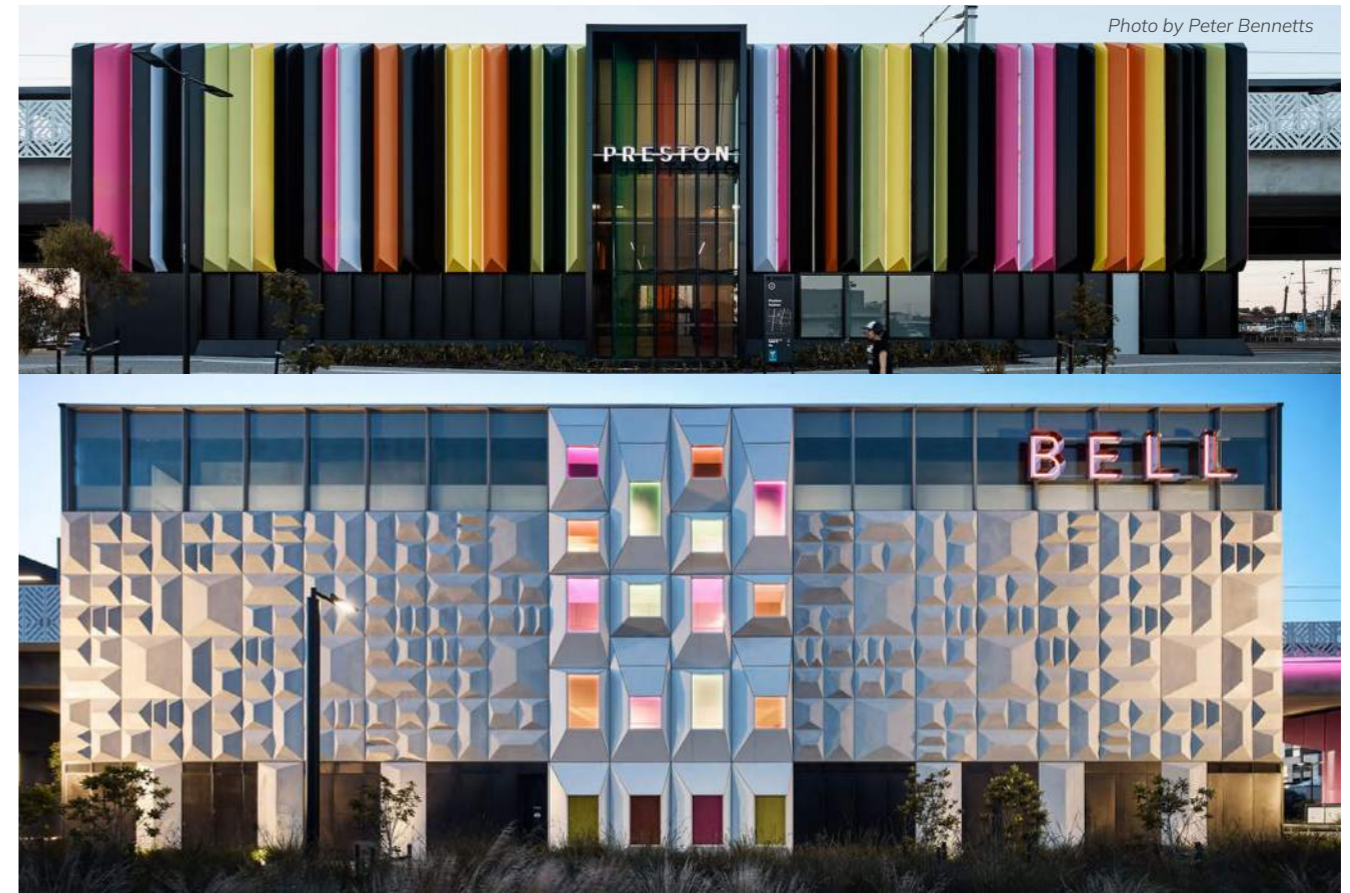
Contractor
John Holland

Architect
Wood Marsh

Rickard Engineering, in partnership with KBR and Wood Marsh, has delivered a technically advanced façade design for Bell & Preston Stations, blending architectural creativity with engineering precision.

Key innovations include: 7 m cladding panels for seamless aesthetics, Free-standing glazing for unobstructed views, Custom precast panels for optimised durability, and aluminium cladding with glazing for a unique hybrid system. As façade consultant, Rickard Engineering has ensured performance, durability, and architectural execution.

Photo by Peter Bennetts



ARDEN STATION

Melbourne, VIC, Australia

Arden Station is a key part of the Metro Tunnel Project and a landmark of civic infrastructure. Rickard Engineering was engaged to provide the façade engineering design and certification for the station's sculptural tile cladding system, integrating architectural expression with robust engineering performance.

We have also designed the metal cladding inside the station and the stonework at the entrance and at the skylight, along with feature GRC columns. Blast resistance was considered for all elements in the design.

Client

Cross Yarra Partnership (CYP)

Contractor

Cross Yarra Partnership (CYP)

Architect

Hassell,
Weston Williamson + Partners,
Rogers Stirk Harbour + Partners



Client

ABS Façade,
F&D Normoyle Engineering

Contractor

Laing O'Rourke Australia

Architect

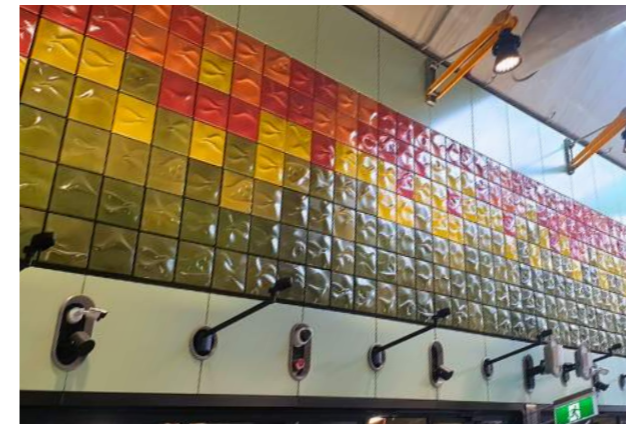
Woods Bagot

CENTRAL STATION

Sydney, NSW, Australia

Central Station was a primary element of the Sydney Metro City & Southwest upgrade, covering about 10,000 square metres. Rickard Engineering delivered structural design and certification for areas including Central Walk, Grand Northern Concourse, Chalmers Street Entry, Eastern Suburbs Railway, North-South Concourse, and Intercity, Suburban and Metro platforms.

Our scope included detailed design calculations, shop drawing approvals, and structural solutions for extreme loading, such as blast. We also designed structural glass, aluminium and steel elements in compliance with Australian Standards. This upgrade enhances connectivity, safety and passenger flow at one of Sydney's busiest transport hubs.



Client

Cross Yarra Partnership (CYP), Minesco

Contractor

Cross Yarra Partnership (CYP)

Architect

HASSELL,
Weston Williamson + Partners,
Rogers Stirk Harbour + Partners

PARKVILLE STATION

Melbourne, VIC, Australia

In collaboration with Minesco, Rickard Engineering undertook the design and certification of the GRC, glass panels, and metal cladding systems at Parkville and Anzac Stations. These engineered systems were meticulously developed to comply with safety requirements, with blast resistance integral to their design.

At Parkville Station, Rickard Engineering also partnered with CYP to certify the vibrant tile artwork, reflecting community spirit and artistic expression. Collectively, these elements exemplify the seamless integration of architectural innovation and resilient performance within Melbourne's landmark Metro infrastructure project.

WYNYARD WALK

Sydney, NSW, Australia

Situated in Sydney's CBD, Wynyard Walk is a pedestrian walkway that connects Barangaroo with Wynyard train station. Rickard Engineering designed the glass canopy and glass façade, stainless steel, aluminium and sandstone cladding with provision for the potential impact of a bomb explosion.

Some other design work included the glazed façade, awnings and perforated stainless steel façade of the Clarence Street building, including the glazed canopy, glass lift shaft and sandstone cladding of the Western Portal. We also designed the perforated stainless steel ceiling and glass balustrade of the Pedestrian Bridge over Sussex Street, alongside the perforated stainless steel ceiling of the main tunnel.



Client

Townsend, CPB Contractors

Contractor

CPB Contractors

Architect

Woods Bagot



ANADARA AND ALEXANDAR APARTMENTS

Sydney, NSW, Australia

Anadara and Alexander Apartments are positioned on the waterfront within the Barangaroo precinct. Rickard Engineering designed and detailed the curved sliding screen panels, adjustable louvres, and the bifold sliding screens. We were responsible for the façade engineering and certification of both the Anadara and Alexander buildings at Barangaroo South.

Both buildings feature manually operated perforated sliding shutters on the balconies, thus not obstructing balcony space. The Anadara building also has motorised sliding shutters. The most distinguished part of the Anadara building is the Cloud, the curved portion of the building with a façade comprising manually operated sliding perforated screens which stack in parking bays. Rickard Engineering was also responsible for the vertical and horizontal adjustable louvres, as well as the wall and ceiling cladding.

Client

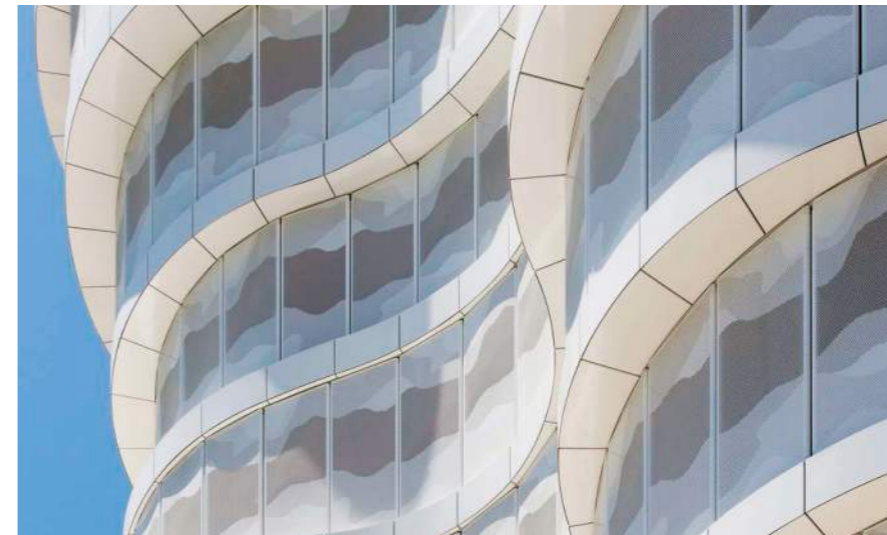
Townsend

Contractor

Lend Lease

Architect

FJMT (Anadara Building),
PTW Architects (Alexander Building)



CEREMONIAL COURT

Ar-Rayyan, Qatar

Client

Redco

Contractor

Qatar Foundation, Redco

Architect

Arata Isozaki

Charles Rickard first visited Qatar in 1980. His first project was a royal palace for the Emir built around 1980. Working for White Young in London, Charles spent time in Rome working with architect Sandro Petti. The palace was built on a new island just off the coast of Qatar. Since that time, he has revisited Doha on many occasions.

In more recent years, his involvement has been related to GRC. The Ceremonial Court was part of a technical educational facility project for the Queen. Built by Redco, a local Qatari GRC company, Charles undertook the design on behalf of Rickard Hails Moretti in 2005.



ROSEWOOD

Doha, Qatar

Setting the benchmark for ultra-luxury hotels in the region, Doha's Rosewood is a key focal point of the city's skyline. Rickard Engineering is proud to have provided the structural design for the GRP façades of the two towers, which were inspired by the coral reefs in the seas surrounding them. The complex is one of the city's most dynamic culinary and hotel destinations and introduces 300 residences boasting modern luxury.

Client

Gulf GRC Trading Co

Contractor

Arkaz Investment

Architect

Ibrahim Jaidah Architects & Engineers



ST LEONARD'S COLLEGE

Melbourne, VIC, Australia

Client
Asurco Contracting

Contractor
ADCO Construction

Architect
ARM Architecture

Rickard Engineering's scope of works was the design and certification of the GRC façade for the new buildings. The large, curved panels are designed to clad the buildings with a watertight joint in the GRC panel. 10-metre-long GRC panels are strengthened with steel frames to withstand applicable wind loads.



DESTINATION

Gold Coast, QLD, Australia

Client
Hutchinson Builders

Contractor
Hutchinson Builders

Architect
DBI Design, Cottee Parker

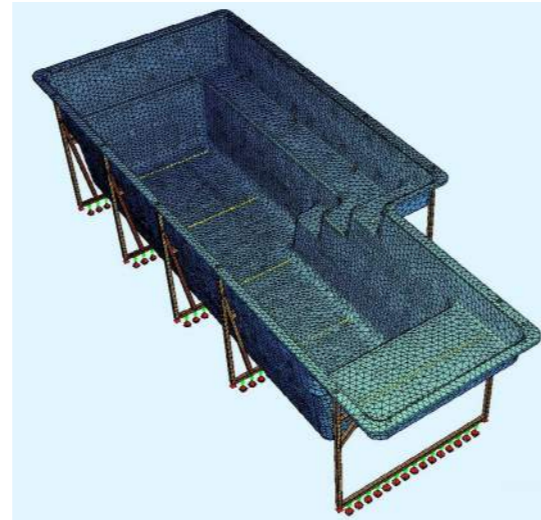
Rickard Engineering delivered concept through to detailed design for the Glass Reinforced Concrete (GRC) podium façade on the Destination, showcasing our expertise in complex, architecturally driven façades. The project featured uniquely curved GRC panels, some reaching up to 4 m x 4 m, requiring innovative engineering to address transport, lifting, and installation challenges. Rickard Engineering developed efficient solutions for panels of varying shapes and sizes to achieve the intended fluid architectural form.

The system comprised a steel primary frame supporting a GRC skin, combining structural performance with refined aesthetics. In collaboration with Precast Concrete Brisbane for shop drawings and manufacture, Rickard Engineering ensured a seamless transition from design to delivery, resulting in a durable façade that highlights our capability in delivering bespoke GRC solutions.



POOLS

When it comes to the design of swimming pools, Charles Rickard is an acknowledged expert in the field. His expertise covers both fibreglass and concrete pools, and his designs include over 20 aquatic centres in Australia and Asia.



COLMSLIE SWIM CENTRE
Brisbane, QLD, Australia

CAR PARKS

NSW / VIC / ACT, Australia

Canberra Hospital / Liverpool Hospital / Padstow Railway Station /
Wollongong Railway Station / Sydney Domestic Airport

Rickard Engineering has provided design support for a large number of car park projects throughout NSW, VIC and the ACT.

One example is the Canberra Hospital car park, built in 2012. Others include the Liverpool Hospital car park built in 2012, Padstow Railway Station in 2015, Wollongong Railway Station in 2012, Revesby car park in 2012 and the Sydney Domestic Airport car park No. 3, built in 2013. Other significant manufacturers and installers with whom we continue to work include Minesco, Hitec, Façade Concepts, Gallery Façades, Windtech Façade Solutions, Lidco, Yintec, Ambianz and Concept Windows.

Façade design in car parks plays a critical role in balancing functionality, durability, and visual integration within the built environment. Car park façades are typically expressed as porous, metal-panelled systems that provide natural ventilation while incorporating subtle design elements to enhance architectural interest and elevate the overall appearance. Achieving a cohesive outward expression requires careful coordination between architectural intent and engineering constraints. Designers must address challenges such as cantilevered panels, varying support conditions across sloping ramps, vehicle impact loading, and efficient installation methodologies. A well-resolved car park façade not only ensures safety and performance but also contributes to the building's identity, delivering a consistent, robust, and aesthetically refined outcome.



WOLLONGONG RAILWAY STATION CAR PARK
Sydney, NSW, Australia



CANBERRA HOSPITAL CAR PARK
Canberra, ACT, Australia

THE MERLION
Singapore



BIG PRAWN
Ballina, NSW, Australia



BIG OYSTER
Taree, NSW, Australia



BIG MERINO
Goulburn, NSW, Australia



ICONIC GRC PROJECTS

Australia, Singapore, UK

The Merlion / Big Prawn / Big Oyster /
Body Zone / Big Merino

Commencing in 1984 with the “Big Merino” in Goulburn NSW and continuing on with projects such as the “Big Prawn” in Ballina, the “Big Oyster” in Taree in 1987, and the 37-metre-high “Merlion” on Sentosa Island in Singapore in 1993, Charles Rickard became recognised as an expert in free-form GRC, resulting in him being responsible in 1999 for the GRC element of the “Bodyzone” in the Millennium Dome, Greenwich, London, as part of the Millennium celebrations.

Client
MAB Corporation,
GRC Environments

Contractor
Baron Forge Contractors

Architect
McBride Charles Ryan

Artist
Callum Morton

Landscape
Oculus



MONUMENT PARK
Melbourne, VIC, Australia

GRC & GRP



**THE ROTHSCHILD
ROSEBERY**
Sydney, NSW, Australia

Client
Deicorp

Contractor
Deicorp

Architect
Candalepas & Associates

Client
GRC Environments

Contractor
Buxton Construction

Architect
Smith + Tracey Architects



MORGAN GLEN IRIS
Melbourne, VIC, Australia

Why GRC & GRP

Glass Reinforced Concrete (GRC) was invented in the 1960s by the Building Research Establishment (BRE) in the UK, though it dates back to Ancient Greece and Rome, who used horse hair to reinforce mortar. They found a way to coat glass fibre in "zirconia" to make it resistant to alkali attack. Pilkington Bros Ltd was the company that created a commercial product ready for market, but only after exhaustive testing around the world was completed.

Client
CPB Contractors and John Holland
(CPBJH Joint Venture)

Contractor
CPBJH Joint Venture

Architect
Aurecon and Jacobs (AJ Joint Venture)



WEST GATE BRIDGE
Melbourne, VIC, Australia

GRC can be used as

- Flat façades on a new building
- An over-cladding renovation over an old façade on existing buildings
- Permanent formwork on which you pour concrete, thereby gaining a very durable, long-term soffit surface to your slab
- Form sculptured structures: the 37-metre-high Merlion on Sentosa Island, Singapore or the Big Ram, the Big Prawn and the Big Oyster in Australia
- Awnings or sunscreens on the face of a building
- In- or above-ground drainage pits; oil or grease separators
- Robust on-the-ground service ducts
- Planter boxes
- Street furniture
- Computer flooring systems

A big attractive advantage of the material is that you can create a fire-resistant structural product to suit any shape, subject to engineer approval.



INDUS HOSPITAL
Lahore, Pakistan

GRC advantages

GRC is typically produced at 12 mm thickness, using either a steel frame or integral ribs. This results in a panel weight of less than 50 kg per square metre, compared to 360 kg for a 150 mm reinforced concrete panel, making GRC approximately seven times lighter.

It can achieve a fire rating of up to one and a half hours as a single skin. A higher rating of up to three hours can be achieved by using a Styropor core to form a sandwich panel, in line with PCI, GRCA or NPCAA codes.

GRC is highly durable with a typical compressive strength of 60 MPa, and does not contain steel reinforcement, eliminating the risk of spalling. The Crédit Lyonnais Bank building in London demonstrates its longevity, with its GRC façade still in excellent condition after 50 years.

As a moulded material, GRC allows for complex forms and innovative designs that make full use of its capabilities. With recent advancements, it can also be used in structural applications, and overcladding in GRC can improve the energy performance of a building.



THE RIBBON
Sydney, NSW, Australia



447 COLLINS STREET
Melbourne, VIC, Australia



SOFRANA HOUSE
Auckland, New Zealand

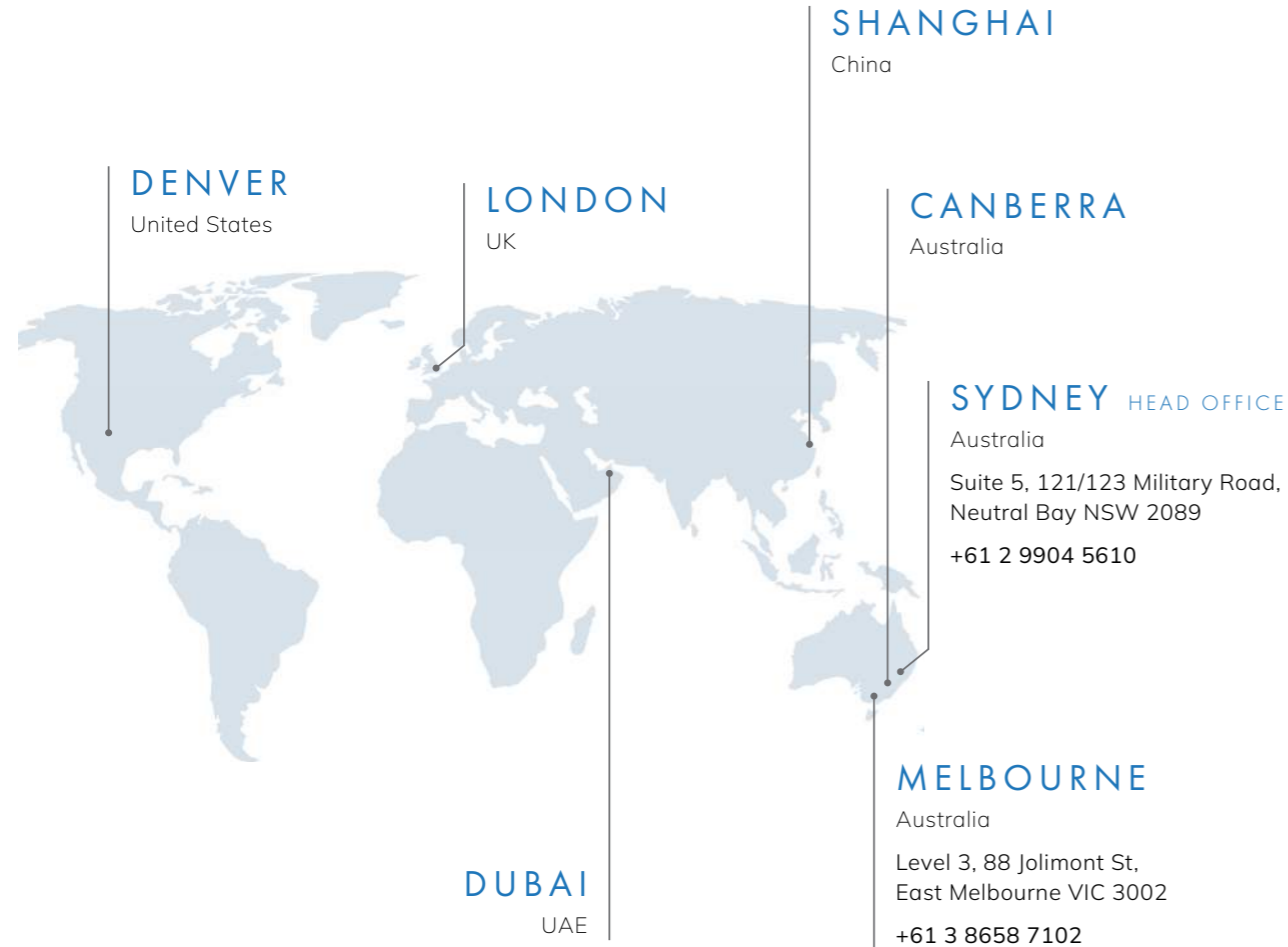


MONASH UNIVERSITY – CHANCELLERY BUILDING
Melbourne, VIC, Australia



MONASH UNIVERSITY – CHANCELLORS WALK
Melbourne, VIC, Australia

CONTACT US



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MELBOURNE • CANBERRA • SHANGHAI

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