



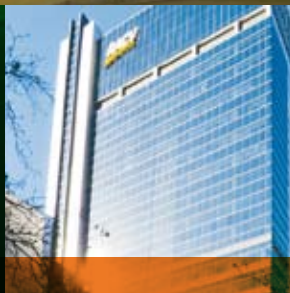
**Cardno
Grogan Richards**

Shaping the Future

BUILDINGS



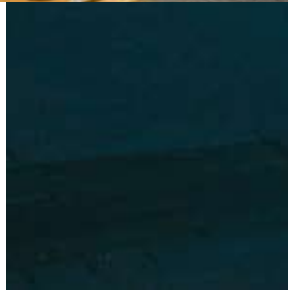
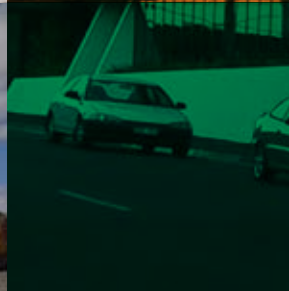
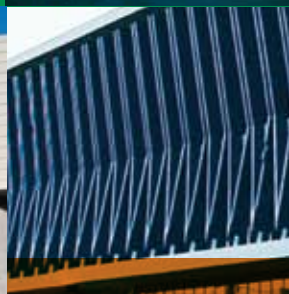
From initial concept to completed project, Cardno Grogan Richards' Buildings Group offers a coordinated approach by balancing elegance and affordability, creativity with common sense.



Cardno Grogan Richards' Buildings Group has worked with Australia's leading developers, architects, builders and project managers as well as an impressive list of government departments and authorities.

Our teams are experienced and qualified in the design, documentation and inspection of building structures and services. We work closely with allied professional teams to satisfy legal requirements, minimise costs and achieve the project design objectives. We manage mechanical and electrical services through our alliance consultants to ensure that all building services are integrated into the delivery of your building.

With our world class engineers, a dedicated team of support staff and the assurance of senior management involvement at every stage, Cardno Grogan Richard's Buildings Group has the skills to manage your next project... and beyond.



- RETAIL
- LOW AND HIGH RISE RESIDENTIAL
- INFRASTRUCTURE / BRIDGES
- LOW AND HIGH-RISE OFFICES
- AGED CARE FACILITIES
- INDUSTRIAL
- PHARMACEUTICAL AND MEDICAL
- EMERGENCY SERVICES
- PETROL FILLING STATIONS
- ENTERTAINMENT / RECREATIONAL
- TOURISM
- EDUCATIONAL
- COMMUNITY FACILITIES
- MULTI-STOREY CAR PARKS
- COMMERCIAL TRADE WASTE TREATMENT AND DISPOSAL
- ECOLOGICAL SUSTAINABLE DEVELOPMENT (ESD)



Structural design documentation
Construction phase inspections
Complex analysis of lateral stability for multi level buildings
Deep foundations including driven piles, cfa piles and bored piers
Retention systems for multi level basements
Traditional reinforced, post and prestressed concrete
Steel framing, precast concrete walls and column elements
Fire protection systems including hydrants, hose reels, extinguishers, sprinklers and specialist fire suppression systems
Gas (natural and LPG) storage and reticulation
Hot, cold and warm water reticulation, conservation and management
Irrigation using potable or reclaimed water sources
Non-potable water reticulation
Pool hydraulics and water features
Roof and site stormwater drainage, retention and re-use
Water sensitive urban design solutions
Wastewater treatment plants and re-use systems
Sanitary drainage and plumbing
Siphonic roof drainage
Water treatment and purification

CONCEPT

Excellence in schematic and concept design is our first objective. To achieve an innovative and efficient end result for each project, we apply our broad knowledge base to investigate and document a range of engineering alternatives.

For projects of every size, our appreciation of all building and service elements allows for a coordinated solution. It's an approach that allows Cardno Grogan Richards to meet the needs of the structure itself as well as all necessary service zones and reticulation considerations.

Our skills encompass the knowledgeable use of various building materials. Traditional reinforced concrete, post and prestressed concrete, steel, timber, structural glass facades as well as precast concrete wall, floor and column elements.

DESIGN

During the design development phase, engineering concepts are evaluated and coordinated. This process takes place within the context of value engineering principles to ensure buildability and budget compliance.

Preparation of comprehensive and accurate designs makes the documentation process as seamless as possible. In-house certification completes the checking and design phase.

Because of our high degree of involvement, our engineers are in a position to provide valuable advice throughout the tender period.

We respond to contractor queries in relation to our documentation and, where necessary, assess alternatives.

CONSTRUCTION

We understand the importance of concise and immediate communication throughout the construction phase. On-going liaison with the builder/contractor is vital to effectively resolve any issues that could slow construction.

To ensure compliance with the design intent, the structural works inspection process starts with a comprehensive review of shop drawings and continues with on-site involvement until project completion. We adopt a team approach to all construction projects and work closely with the developer, architect and builder to deliver projects within tight programs.

FULL-SERVICE

Cardno Grogan Richards Building Designers offer an array of expertise, quality, and service. Our Buildings team boasts:

- Accreditation with all the major water authorities
 - Registration as Structural, Civil, Mechanical and Fire Engineering Building Practitioners with the Victorian Building Commission
 - Accredited Certified Professionals with the Green Building Council of Australia
 - Licensed Supervisors with the Building Service Authority
- This range of qualifications is rarely found within the one office.

Cardno Grogan Richards Structural and Building Service Engineers create efficient design solutions for every type of building. We can manage structures and services for your entire project, delivering detailed design and documentation or providing niche services such as specialised audit and due diligence reports, feasibility studies or preliminary and concept design. Our clients set the program and we assist them to achieve their goal. Our clients range from architects, developers, project managers, builders, private investors, local and federal government.

Cardno Grogan Richard's diverse experience and commitment benefits our clients, whilst we maintain our core values in design and management skills with technology, individual contribution, talent, discipline, reputation, integrity and teamwork.

PRINCIPALS

Tony Growse

Tony joined Grogan Richards in 1997 as a senior structural engineer. The fact that he was made a director just two and a half years later speaks for itself. His astute design and documentation skills for major commercial and retail projects position Cardno Grogan Richards at the forefront of structural engineering for this sector.

Anthony Snyders

Anthony joined Grogan Richards in 1998 as a senior structural engineer. He has over twenty years structural experience spread across commercial, retail, residential, industrial, marine, tunnelling and other civil engineering projects.

He was promoted to Director of Grogan Richards in 2004 and Principal of Cardno Grogan Richards in January 2007.

Joe Bruno

Joe joined Grogan Richards in 2004 as a contract engineer and six months later accepted a senior staff position. With his many years of experience as a structural engineer, Joe has delivered a wide range of significant structural projects across a number of commercial, retail, residential, and government sectors.

Joe was promoted to the position of Principal with Cardno Grogan Richards in 2008.

ASSOCIATE

Lakei Varveris

Lakei's vast knowledge in Building Services Engineering has evolved through years of project management and design of major projects including commercial, health, industrial, residential & retail developments.



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