



Bridges

Cardno's Bridges Expertise

What sets us apart is our commitment to your success, as an equal partner striving towards the same goal. Our expertise in bridge engineering is extensive, with local and international experience gained over 40 years.



As an integrated professional services provider, Cardno has had considerable success in the competitive Australian market and against international competitors in Asia.

Our bridging expertise is unparalleled, with international experience gained over 40 years. With our company rapidly expanding, every day we increase and enhance our skills. Our comprehensive experience and knowledge inspires confidence.

Our aim is to work collaboratively to find the best solution and build capacity over the long term. We understand the challenges of building robust transport networks.

We know that bridges connect people and places. Cardno links communities through cost-effective, locally-delivered solutions:

- > Cable-stayed bridges
- > Suspension bridges
- > Pre-stressed concrete girder bridges
- > Standard steel bridging systems
- > Steel composite girder bridges
- > Railway bridges
- > Pre-fabricated bridges.

Cardno plans, designs, develops and delivers bridge services tailored to suit your requirements. Your need determines our level of involvement.

- > Route and bridge site selection
- > Feasibility studies
- > Economic, social and environmental assessments
- > Preliminary designs
- > 2D and 3D static and dynamic analysis, including non-linear analysis
- > Advice on wind tunnel testing
- > Catchment hydrology and bridge site hydraulic studies

- > Detail design and documentation to international standards
 - > Independent proof checking
 - > Design review
 - > Construction engineering
 - > Temporary works design
 - > Assessment of existing structures
 - > Load capacity ratings
 - > Construction inspections
 - > Management of bridge subject to mining subsidence.
- Optimum performance and partnership is our recipe for success.

"Cardno are leaders in the area of bridge design and we've found them to be one of the leading consultants. Certainly, for bridge design and construction, they would be one of our first choices. They are responsive and have a high level of client understanding... they've always delivered. When you're confronted with time pressures, responsiveness is a factor that is very highly regarded by me and certainly by Baulderstone as well."

Hugh Bishop Project Director – Major Projects,
Baulderstone Pty Ltd

Key projects



Nambucca Heads to Urunga Pacific Hwy Upgrade

New South Wales

Cardno along with principal consultant Sinclair Knight Mertz (now Jacobs) provided services to the construction contractor, Lend Lease Engineering, for the Roads and Maritime Services (RMS) detailed design and construction of the Pacific Highway Upgrade. The section for which these services were provided spans between Nambucca Heads to Urunga, in New South Wales. Cardno's specialist bridge engineers, were responsible for the design of 15 single and twin carriageway bridges required for this project. Along the road alignment, three major interchanges, two major river crossings and a crossing over an existing railway have been designed. The bridges included along this are the twin bridges over Deep Creek and the twin bridges over the Kalang River Flood Plain.



ANZAC Bridge Maintenance Upgrade

Sydney, New South Wales

During 2011 to 2013, Cardno was engaged by the alliance contract for the ANZAC Bridge Maintenance Upgrade which had been established in order to address the main concerns of the rain, wind induced vibration (RWIV) of the stay cables and to provide improvements to the cable stay system, permanent access, fencing and the temporary works required. The design team developed a solution that consisted of hydraulic dampers at deck level and a helical fillet weld surface treatment that was applied remotely to the HDPE stay sheathing by robot in a world first. Cardno assessed the load capacity of the bridge for several load cases. As a result, the team was responsible for the Bridge Specific Assessment of Live Loading (BSALL), which is a probabilistic method based on the statistical analysis of traffic data that developed a live load model using the knowledge of fundamental concepts and principles.



Gateway Bridge Duplication

Brisbane, Queensland

Cardno worked with contractors Leighton-Abigroup during the tender, detailed design and construction phases as specialist bridge consultants to help deliver the new balanced cantilever bridge crossing of the Brisbane River. The three river span section is 584m long with a centre span of 260m, and although wider and stronger than the original bridge, through innovative and novel solutions it was constructed in less than half the time. The design, which has a 300 year durability design life, incorporates a new pedestrian and cyclist access and six lanes for vehicles. The overall deck width is 27.5m and is comprised of twin cell box girders 15.67m deep (max) x 15m wide. Cardno was also responsible for the design of the temporary works for the river span closure segments, including proof check of the launching truss for the approach spans.



Phu My Bridge

Ho Chi Minh City, Vietnam

Cardno worked for Bilfinger Berger Baulderstone Hornibrook Consortium on this 380m main span concrete cable stay bridge across the Saigon River. Cardno was responsible for the detail design of the approach structures, detailed design of major temporary works items such as the form traveller and pier table falsework, and Construction engineering for the stage by stage analysis of the bridge in conjunction with LAP from Germany. Cardno also provided a construction engineer on site for 12 months during the construction phase.

About Cardno

Cardno is an ASX200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno
ZERO
HARM
EVERY JOB. EVERY DAY.

Cardno's commitment to Zero Harm

Cardno's goal is to always conduct our business in a way that protects our people, clients, visitors and members of the public from harm. In an effort to move toward the ultimate objective of zero harm, we are committed to implementing safety systems and awareness throughout our operations globally.

Sydney Bridges Manager

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