



Whitsunday Sewage **Treatment Plant Upgrades**

The upgrade of two treatment plants at Proserpine and Cannonvale are to serve growing communities and meet the most stringent effluent discharge requirements to protect the Great Barrier Reef. They will also provide benefits to the local community by reducing sewage overflows, and improving noise and odour.

Overview

PROPONENT:	Whitsunday Regional Council
CONTRACTOR:	Tenix (now part of the Downer Group)
INFRASTRUCTURE TYPE:	Sewerage
RATING TYPE:	As Built
LOCATION:	Whitsundays, Queensland
CAPITAL VALUE:	\$45 million
START DATE:	May 2012
PRACTICAL COMPLETION:	May 2014
STATUS:	Certified
CERTIFIED DATE:	4 August 2015
RATING LEVEL:	Excellent

Pursuing and achieving the IS ratings on the Whitsunday project allowed us to identify and unlock substantial economic, social and environmental value, which has been shared with our client and local communities

- Martin Smith EGM, Health, Safety, Quality and Sustainability

Our story

owner is committed to designing, delivering and operating more sustainable infrastructure.

Downer (Tenix) believed that the Infrastructure Sustainability (IS) tool showed considerable merit. Given its involvement with one of the initial pilots, the company was confident that an actual rating would drive sustainability innovation and value for a project, and the organisation as a whole.

We wanted to use the rating to clearly articulate sustainability performance and achievements using a robust, thirdparty verified and industry-accepted mechanism. These reasons, together with a supportive client and highly environmentally sensitive location, cemented the decision to pursue Design and As Built ratings for the project.

Downer (Tenix) found that the benefits of pursuing and achieving the ratings have outweighed the costs at

least fivefold. While it is fair to say that some initiatives would have been pursued regardless of the ratings, it is equally reasonable to say that many would not have been.

The experience that Downer (Tenix) gained from the ratings has instilled confidence within Downer and, for Downer, the IS value proposition has been proven.





CATEGORY	SCORE	ACHIEVEMENTS
General		 First project to achieve Design and As Built ratings First As Built rating for a STP project
Management Systems	6.86/ 10.5	 Good management systems integrating the IS rating tool into practices Knowledge sharing clearly demonstrated with a number of internal and external events/initiatives undertaken to share sustainability lessons learnt
Procurement and Purchasing	1.67 / 5	Strong commitment to and application of sustainable procurement including local procurement: • 61% of total spend in the Whitsunday region • 20% of total spend in greater Queensland
Climate Change Adaptation	4.17 / 5	Completed a formal climate change risk assessment and implemented controls to reduce 22 'high' or 'very high' risks to a 'moderate' or 'low' rating
Carbon and Energy	6.61 / 10.5	$21,\!000\text{tCO}_2\text{e}$ reduced through the implementation of carbon and energy reduction strategies over the life of the asset
Water	3.11 / 7	43 per cent total life cycle water saving for the Tenix Design over the Base Case Design. This represents a volume saving of approximately 3 GL. This saving is almost entirely due to more efficient use of recycled effluent.
Materials	4.42 / 7	1,500 tCO2e saved through optimised designReduction in 4189 tonnes of concrete.
Discharges to Air, Land and Water	4.67 / 10.5	 During construction, the project did not receive any noise or vibration complaints Vibration causing activity was only conducted during normal weekday hours to minimise impacts on residential receivers No recurring or major exceedances of odour criteria during construction
Innovation	5/5	Tenix developed parallel nitrification and denitrification (PND) technology for the Proserpine Plant. Patents have been granted for the PND technology in Australia, the United States, Singapore and New Zealand. Compared to BAU technologies, this world-first process: • significantly improves nitrogen removal • is more compact • uses less construction materials • is more energy efficient.







Enlarged Cotter Dam

An Enlarged Cotter Dam has been built downstream of the existing dam to increase the Cotter Reservoir's capacity from four gigalitres to 76 gigalitres. The Enlarged Cotter Dam forms part of Icon Water's continued response to ensuring a secure water supply for the Australian Capital Territory region, and to address drought, climate change and variability.

Overview

PROPONENT:	Icon Water (formerly ACTEW Water)
CONTRACTOR:	Bulk Water Alliance (Icon Water, Lend Lease, John Holland Group, GHD)
INFRASTRUCTURE TYPE:	Water supply
RATING TYPE:	As Built
LOCATION:	Cotter Dam
CAPITAL VALUE:	Projected as \$299 Million
START DATE:	2009
PRACTICAL COMPLETION:	August 2013 October 2013
STATUS:	Certified
CERTIFIED DATE:	1 August 2014
RATING LEVEL:	Commended

6ACTEW Water [now Icon Water] was delighted to receive the coveted IS rating as part of the Bulk Water Alliance. This construction project has received several national and international awards for its innovation and sustainability, and is one of the most significant infrastructure projects in the Australian Capital Territory •

Chris Webb **General Manager Safety and Business Solutions**

s a Founding Member of ISCA, it was essential to Icon Water that the Enlarged Cotter Dam was built incorporating worldclass sustainable design. Using the Infrastructure Sustainability (IS) rating scheme framework and

methodology kept sustainability front of mind during all stages of design, construction and operation, and helped to optimise environmental, social, and economic outcomes over the long term.

Three world firsts in construction and design, as well as significant environmental, social and economic benefits, and numerous innovations in management and safety, were delivered through this project.





CATEGORY	SCORE	ACHIEVEMENTS
General		 This was the first ever project to register for a rating Equal first (with Googong) project in the Australian Capital Territory to achieve a rating First As Built rating in the Australian Capital Territory First dam to achieve an IS rating
Management Systems	6.22 / 11.11	 Good management systems in place Sustainability incentivised through KPIs Risk and opportunities were identified and assessed Sustainability opportunities were identified and tied to KRAs and KPIs YouTube videos were developed to share sustainability knowledge with the public
Procurement and Purchasing	1.76 / 5.29	 Implemented a set of sustainability commitments as part of the procurement process Sustainability was considered and addressed during supplier identification
Water	4.12 / 7.41	 100 per cent of potable water use has been replaced by non-potable water The location of the existing dam on site provided a readily available source of non-potable water to the project Ultraviolet technology was used to treat dam water to supply drinking water for site workers and offices
Materials	6.62 / 7.41	 Through optimised design materials choices, the project achieved a significant reduction in the life cycle environmental impact of materials use, reducing embodied carbon emissions by 23 per cent (37,000 tonnes of carbon dioxide equivalent (CO₂e) emissions) and ecopoints by 28 per cent This was primarily achieved through increasing fly-ash content in concrete, and sourcing aggregates from on site
Discharges to air, land and water	7 / 11.11	 For all 'environmental' discharges issues, baseline studies have been completed, impacts have been monitored and measured, and, finally, management measures have been implemented
Heritage	5.29 / 5.29	 An education program was developed for the Australian Capital Territory school curriculum, which included sustainability themes such as environment, engineering, Indigenous and European heritage, sustainability and water supply Partnerships with key stakeholders were formed through the project, including Representative Aboriginal Organisations (RAOs), Australian Capital Territory Heritage Unit, Icon Water, Bulk Water Alliance (BWA) and Parks, Conservation and Lands. The Cotter Dam Discovery Trail was developed to provide ongoing local promotion and enhancement of project-related European and Aboriginal heritage values RAOs participated in the field survey program and salvage fieldwork







North West Rail Link Early Works

The \$8.3 billion North West Rail Link is Australia's biggest public transport project, and a priority infrastructure investment for the New South Wales Government. It is the first stage of Sydney Rapid Transit, the city's new rapid transit railway network.

he North West Rail Link will deliver eight new railway stations, 4000 commuter car parking spaces, and five

existing stations upgraded to rapid transit standards. When the North West Rail Link opens in the first half of 2019, there will be a train every four minutes in the peak - that's 15 trains per hour.

As Australia's first fully automated railway, customers won't need a timetable - they'll just turn up and go.

There are four packages of work registered for IS rating: Early Works; Tunnel and Station Civils; Surface and Viaducts Civils; and Operations, Trains and Systems.

About Early Works

Lend Lease was Managing Contractor for Early Works on the North West Rail Link project, undertaken for Transport for NSW (TfNSW). Early Works

activities included environmental investigations, demolition works, road and traffic adjustments, service relocations and the provision of highvoltage power construction of the rail tunnel.

Areas of focus for the project in relation to sustainability management and enhancement included procurement, waste management, heritage protection and stakeholder participation. A major highlight of the project was the discovery of the ruins of the colonial era White Hart Inn, located in the rail corridor. The Kellyville site has revealed numerous artefacts, and has now been permanently preserved by adapting to the find, and modifying the skyrail section of the project.

Overview

BRODONENT	Transport for NSW
PROPONENT:	Transport for NSW
CONTRACTOR:	Lend Lease
INFRASTRUCTURE TYPE:	Rail
RATING TYPE:	As Built
LOCATION:	Sydney, New South Wales
CAPITAL VALUE:	\$80 million
START DATE:	March 2013
PRACTICAL COMPLETION:	January 2014
STATUS:	Certified
CERTIFIED DATE:	1 August 2014
RATING LEVEL:	Commended

Lend Lease is extremely proud to achieve an ISCA rating. This project demonstrates that with the right planning and team in place, infrastructure delivery, environmental objectives and heritage protection don't have to be competing aims – you can achieve all of them

- David Saxelby, CEO of Lend Lease's Construction Business





Lend Lease's commitment to sustainability been extremely beneficial for our site goes beyond protecting the environment. We see the protection and preservation of cultural assets for the enjoyment of future generations as equally important in creating the best places.

That's why we adopted the ISCA rating as a voluntary activity on this project from the outset. This process has

management team, and has reinforced the value of planning activities early, keeping good records and maintaining good working relationships with our client, our suppliers, the regulators and the community.

With this planning, the team was able to successfully adapt the design and

construction program, and deliver the project without delays and increased costs.

From a sustainability perspective, we have enhanced the heritage value of this site well beyond its original designation, and preserved a very important part of western Sydney's history.

CATEGORY	SCORE	ACHIEVEMENTS
General		 First rating in New South Wales (counting Googong as the Australian Capital Territory) First heavy rail rating First of four packages on NWRL to be rated
Management Systems	6.17 / 12.43	 Sustainability commitments embedded in contracts and made publicly available Lend Lease has been proactive about sharing its lessons learnt and information related to sustainability on this project throughout their organisation. This has included in-house IS Foundation training and presentations The NWRL Early Works staff has also participated in sustainability forums with the other NWRL package contractors and TfNSW
Procurement and Purchasing	3.45 / 5.92	 Supplier evaluation included quantitative consideration of sustainability aspects. This was documented through supplier questionnaires and a transparent scoring sheet Supplier performance has been managed through corrective action registers
Waste	4.83 / 8.28	Excellent waste management systems with good solid data presented
Heritage	5.92 / 5.92	• A great case study on the White Hart Inn – the remains of which were uncovered and documented during the works. This was probably the highlight of the project
Stakeholder Participation	2.47 / 5.92	 The NWRL project and the EW package have implemented a thorough and comprehensive stakeholder engagement strategy This included implementing measures to manage stakeholder concerns and also an internal audit of the stakeholder engagement approach and outcomes





Infrastructure for a growing city

s Australia's sixth-largest city, the Gold Coast faces significant transport and road congestion issues associated with large cities. The initial stage of the Gold Coast Light Rail Project between the new Gold Coast University Hospital and Broadbeach provides a key piece of public transport infrastructure to address the needs of a growing city.

Cardno has been operating on the Gold Coast for more than 50 years, and the experience gained over this time proved crucial to being selected to work on this project. Cardno was engaged by GoldLinQ consortium to provide subsurface utility engineering, landscape and urban design,

building structures, building services and fire engineering, as well as managing subconsultants for architecture, signage and way finding, and building certification.

'One of the most significant challenges posed to the project was managing the existing underground services. The Gold Coast was developed 40 to 50 years ago, so some of the existing infrastructure was old, needing replacement or protection as part of the GCRT project. In the early days of the Gold Coast the area developed so rapidly that some of the infrastructure was not constructed as it should have been from an engineering perspective, or its location was not accurately recorded - this

added to the challenge of our role,' says Mark Ricketts, Cardno's Project Director.

For the GCRT project, Cardno provided the full suite of Subsurface Utility Engineering services, including detection and mapping of underground services, design of new services, relocations and protection works, and liaison with the myriad of service authorities. The work allowed GoldLinQ to avoid utilities where possible and resolve conflicts and relocations.

When the first passengers stepped aboard the Gold Coast light rail system in July 2014, it was clear that this project would play a crucial role in unlocking the city's transport system. •



CardnoKnows how to get things moving

Cardno is proud to be shaping the Gold Coast's future, working alongside GoldLinQ on the Gold Coast Light Rail

On this ambitious project, Cardno provided subsurface utility engineering, landscape & urban design, building structures, building services, fire engineering as well as managing sub-consultants for architecture, signage & way finding and building certification.

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.

For more information contact:

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Gold Coast Light Rail

The project relates to the development of a light rail system that passes through the key activity centres of Southport, Surfers Paradise and Broadbeach. The 13-kilometre Stage One corridor, along with any future stages, promises to significantly improve the livability of the Gold Coast by improving accessibility, while reducing the effects of congestion that come with a rapidly growing city. It is one of the most important pieces of transport infrastructure ever undertaken on the Gold Coast.

Overview

PROPONENT:	Queensland Government, Gold Coast City Council, Translink, GoldLinQ
CONTRACTOR:	McConnell Dowell
INFRASTRUCTURE TYPE:	Light rail
RATING TYPE:	As Built
LOCATION:	Gold Coast, Queensland
CAPITAL VALUE:	\$437 million
START DATE:	July 2011
PRACTICAL COMPLETION:	May 2014
STATUS:	Certified
CERTIFIED DATE:	Excellent
RATING LEVEL:	64.4



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CATEGORY	SCORE	ACHIEVEMENTS
General		 First light rail rating First project to pursue IS and Green Star ratings (the latter for the depot building) Scored in 47 out of 52 credits in the rating tool, showing a very good performance across the board This score is the highest rating score achieved to date Winner Infrastructure Sustainability (IS) Project/Asset Award 2014
Management Systems	6.29 / 10.5	 Good scores on most credits Strong commitment to sustainability including to 'make a positive and meaningful difference to the health and wellbeing of the community' Particularly good examples of knowledge-sharing (toolbox talks, discussion forums, series of YouTube web episodes for use within the Australian schools curriculum, including sustainability) Full scores for risk and opportunity management, inspection and auditing, management system accreditation





CATEGORY	SCORE	ACHIEVEMENTS	
Procurement and Purchasing	2.92 / 5.0	 Level 2 achieved for all credits except for Pro-3, which achieved a level 1 score Comprehensive Subcontractor Evaluation Questionnaire asks for information about sustainability, environmental and corporate social responsibility performance, materials sourcing, packaging, and GHG emissions Short-listed suppliers and subcontractors are interviewed to ensure that sustainability aspects are adequately covered 	
Water	3.5 / 7	Water saving opportunities were implemented, including: • water-efficient devices in permanent and temporary facilities • xeriscape landscaping • collection of rainfall from depot roof • 70 per cent recycled water used for light rail vehicle (LRV) washing • stormwater harvesting – for example, rainwater tanks on crib huts • sourcing non-potable water for dust suppression and compaction activities • smart metering was installed at the LRV depot	
Materials	6.26 / 7	A significant reduction in materials' life cycle environmental impact was achieved through design development phase and modified construction practices. Examples include: • significant design changes to the alignment passing through the former Gold Coast City Council depot site, which was sited on a closed landfill. The design changes significantly reduced the volume of contaminated material requiring excavation, avoided the realignment of sewer mains, and provided a track solution with a longer life • re-use of materials on site, including bedding sand around services, as well as temporary construction pads and compounds • minor modifications to track alignments to avoid Telstra service relocations through Broadbeach • replacement of retaining structures with earth batters • reduction in slab thickness for the track • the use of exchangeable switchblades and track curves, which limits the amount of excavation and replacement concrete required • relining pipes that are of sufficient capacity for future demands • use of direction drilling/pipe jacking and other less intrusive methods of installing pipes – more than 2.5 kilometres completed without the need for large excavations	
Discharges to Air, Land and Water	9.53 / 10.50	• Level 3 achieved for all these credits. No exceedances of noise, vibration or air-quality monitoring goals	
Land	5.08 / 7	 More than 75 per cent of the land used for the project is previously disturbed. The project footprint is primarily within an existing road corridor and, as such, 87 per cent of the project land has been assessed as previously disturbed 	
Waste	5.83 / 7	 Good waste management practices. Achieved very high diversion rates from landfill, including that: all spoil from the project was either re-used on site or is trucked offsite to a recycling site for re-use or reprocessing the project achieved a recycling rate of 89.7 per cent for inert and non-hazardous wastes. office recycling rate was 63 per cent 	
Community, Health Wellbeing and Safety	3.5 / 5.0	 Early consultation identified local employment opportunities during construction as a priority issue for the local community The project set a stretch target of recruiting 82.5 per cent of project personnel from the extended Gold Coast area (including Scenic Rim, Brisbane City, Redlands, Logan and Ipswich) and actually achieved 96 per cent. The project also set a target of providing 188,000 hours of deemed training to green labour and upskilling of the local workforce. This target included providing 50 traineeships, apprenticeships and/or cadetships. Again, this was overachieved with 250,000 hours of deemed training and 80 traineeships and cadetships 	
Urban and Landscape Design	3.33 / 5.0	Followed a thorough process of urban design from context analysis through to site planning, urban design and ongoing management	





Gateway WA

This billion-dollar project, the largest infrastructure project undertaken by Main Roads Western Australia (MRWA), involves a major upgrade to the road network surrounding Perth Airport, and the freight and industrial hubs of Kewdale and Forrestfield.

Overview

PROPONENT:	Main Roads Western Australia
CONTRACTOR:	Gateway WA Alliance
INFRASTRUCTURE TYPE:	Road
RATING TYPE:	Design
LOCATION:	City of Belmont, Western Australia
CAPITAL VALUE:	\$980 million
START DATE:	November 2012
PRACTICAL COMPLETION:	Feb-May 2016
STATUS:	Certified
CERTIFIED DATE:	5 April 2013
RATING LEVEL:	Excellent

Gateway WA is committed to contributing positively towards the local environment, the community and the greater economic development of the state across the life of its infrastructure

- Tim Orpen, Alliance Director, Main Roads Western Australia, September 2014



Our story

sing the IS rating scheme in our large infrastructure projects demonstrates our ongoing commitment to sustainability. The Infrastructure Sustainability (IS) rating scheme provides us with a good framework for sustainable outcomes on projects, and helps to drive improved sustainability performance across all our projects.

The IS rating scheme has encouraged the Gateway WA delivery team to seek project decisions and practices that maximise benefits and minimise negative impacts across the spectrum of environmental, social and economic influence. This approach has helped to deliver some tangible outcomes, particularly in the area of reducing the life cycle impact of our construction materials.





Highlights

CATEGORY	SCORE	ACHIEVEMENTS
General		Second rating achieved by MRWA (with alliance partners)
Management Systems	6.79 / 10.5	 Generally good management systems in place Excellent integrated decision-making process that considers sustainability aspects Publicly stated commitments to sustainability and restorative actions Undertook sustainability knowledge-sharing initiatives with the wider industry
Procurement and Purchasing	3.33 / 5	 Suppliers requested to address sustainability, environmental aspects and apprenticeships
Water	3.89 / 7.00	Water for construction was entirely sourced from approved groundwater extraction
Materials	7/7	 Reduced materials life cycle environmental impact by 58 per cent through: negotiating airport requirements to allow an altered design that reduced the depth of excavation for some sections of the road using C600 binders, which reduced the quantity of asphalt by 10 per cent updating pavements specs and working with the Public Health Advisory Committee to lift a veto on the use of recycled materials because of concern over asbestos contamination. This allowed significant use of crushed recycled rock and waste quarry materials (sand replacement)
Community, Health, Wellbeing and Safety	3.5 / 4	 Consideration of crime prevention through environmental design (CPTED) throughout the design phase, including application on seven pedestrian underpasses that are being constructed as part of the project. Principles have been applied to reduce blind corners and provide end-to-end visibility
Stakeholder Participation	1.65 / 5	 Comprehensive and thorough stakeholder engagement strategy Stakeholder participation on negotiable issues was undertaken at an 'involve' level. The project team involved a number of stakeholders, and its consultation groups, in particular the Community Liaison and Freight and Road User Groups (including Kewdale Business Group), on a range of key aspects of project development and design
Urban and Landscape Design	5/5	 An urban and landscape design plan has been developed Strategies were applied to the Australian Urban Design Protocol, which includes design principles for people (livability) and design principles for place (productivity and sustainability) Plans were independently reviewed by the Western Australian Office of the Government Architect
Innovation	3.33 / 5	 LED lighting for highway roads is being implemented, which is a first for Australia. This saves 1400 tonnes of carbon dioxide equivalent (CO₂e) emissions over the asset's life cycle

Gateway WA is committed to delivering sustainable landmark road infrastructure around the Perth Airport and the Kewdale Freight Precinct through integrated and positive economic, environmental, and social outcomes across the life of the infrastructure •

Leo Coci,

Executive Director Infrastructure Delivery, Main Roads Western Australia





Googong Water Treatment Plan Chemical Facility Upgrade

A new secure chemical unloading, bulk storage, handling and dosing facility is currently under construction to replace the existing systems, which will be fully decommissioned and removed. The new facility will reduce workplace safety risks and hazards, comply with dosing requirements for public water, improve treatment processes and capacity, provide sufficient system redundancy, and increase operational efficiency.

Overview

PROPONENT:	Icon Water (formerly ACTEW Water)
CONTRACTOR:	AAT Alliance (Icon Water and Tenix)
INFRASTRUCTURE TYPE:	Water supply
RATING TYPE:	Design
LOCATION:	Googong New South Wales
CAPITAL VALUE:	\$9.5 million
START DATE:	March 2013
PRACTICAL COMPLETION:	July 2017
STATUS:	Certified
CERTIFIED DATE:	1 August 2014
RATING LEVEL:	Commended

Our story

he chemical dosing facility at Googong Treatment Plant is a typical project that Icon Water undertakes as part of its capital program. Adoption of the IS tool in the design phase allowed Icon Water to investigate areas for improvement and innovation early in the planning phase. It also enhanced awareness and knowledge base for the project team on technologies that could be used on this and future projects, such as solar cells, geothermal technology for humidity, and temperature control and lighting systems.

Chris Webb, General Manager of Safety and Business Solutions at Icon Water, said, 'The IS ratings for Googong as well as the Enlarged Cotter Dam are fantastic recognition of the excellent sustainability outcomes achieved in the development of both projects. 'There's so much the industry is still learning about sustainable infrastructure, and it is a significant achievement to have contributed to that work.'

CATEGORY	SCORE	ACHIEVEMENTS
Management Systems	3.33/ 11.67	Clear commitments to mitigating negative environmental, social and economic impacts are present and embedded within KPI-based targets, which are also included in contractual arrangements. Good knowledge-sharing information and practices have been presented, including the use of a knowledge-sharing plan and three main delivery methods: written (reports, fact sheets, newsletters), spoken (conferences, lectures, workshops) and the internet (intranet, website).
Procurement and Purchasing	2.78/ 5.56	Pro-1: Strong commitment to considering sustainability within procurement. Pro-2: Strong evidence showing environmental considerations are explored and assessed throughout procurement. Evidence included: questionnaires (including prequalification), evaluations, tender documents, contracts).
Climate Change	2.78/ 5.56	A number of climate change initiatives were considered, the risk assessment considered indirect risks, and a multidisciplinary team participated in identifying climate change risk issues. Also, adaptation options to treat all extreme and high-priority climate change risks were implemented.
Energy and Carbon	3.89/ 11.67	Demonstrated some good first steps in addressing the requirements for each of the energy and carbon credits. By meeting level 1 across all credits, it is shown that energy use has been monitored and reported on; opportunities to reduce energy have been identified, evaluated and implemented; and the use of renewable energy has been also been fully investigated.
Materials	7.78/ 7.78	The project achieved a significant reduction in materials life cycle environmental impact of steel and concrete use through optimised design, which reduced steel and concrete use. The project achieved the following reductions: • 275 tonnes of carbon dioxide equivalent emissions • 346 ecopoints • 16 tonnes of steel half the use of crushed rock.
Land	4.63/ 5.56	The physical footprint of this building is entirely within the existing wastewater treatment plant facility; therefore, the project is being executed on land that was 100 per cent previously disturbed.

Member directory

Company

A=COM

arrium

www.aecom.com

AECOM is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM, a Fortune 500 company, delivers solutions that create, enhance and sustain the world's built, natural, and social environments.

Arrium Limited (Onesteel)

1800 178 335

Arrium Limited is an international diversified mining and materials company with three business segments: Arrium Mining, Arrium Mining Consumables and Arrium Steel. These Arrium businesses encompass a global portfolio of iron ore, mining consumables, recycling and steel assets. Arrium's operations are underpinned by its commitment to safety and delivering on its customer promise.

Arup is an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services. Founded in 1946 with an initial focus on structural engineering, Arup first came to the world's attention with the structural design of the Sydney Opera House.

Ash Development Association of Australia 02 4228 1389

The Ash Development Association of Australia (ADAA) was formed in 1990, with the primary objective being to conduct industryrelevant research and technology transfer to develop market opportunities in the use of CCPs for members, stakeholders and the wider

Aurecon provides engineering, management and specialist technical services for public and private sector clients globally. Aurecon has responded to broader sustainability and immediate climate change challenges, encourages innovation, and supports sound scientific and engineering research into enhanced energy, building, water and infrastructure solutions that meet community needs.



Australasian (iron & steel) Slag Association

The Australasian (iron & steel) Slag Association was formed in 1990 by members representing producers, processors, marketers, customers, and suppliers of iron and steel slag to conduct research, and to present technical information to support the beneficial usage of slag materials and other potential end-use avenues.



Australian Asphalt Pavement Association

The Australian Asphalt Pavement Association (AAPA) is a progressive and innovative representative industry association. Formed in 1969 as a non-profit organisation, AAPA has maintained as its major objective 'To disseminate technical knowledge aimed at continual improvement in asphalt and bitumen-bound technology, and economic use based on commercial grounds'.



Founded in October 2007, the Australian Society for Concrete Pavements (ASCP) is an Australian not-for-profit organisation that aims to facilitate improvements in the design, construction, and quality of concrete pavements in Australia through education, technology transfer and research.



BlueScope Steel www.steel.com.au

BlueScope is a global leader in advanced steel building products and solutions, employing more than 16,000 people globally, and is committed to developing sustainable steel products and solutions in Australia for Australian conditions. BlueScope's portfolio contains well-known brands including COLORBOND® Coolmax® steel, COLORBOND® steel with Thermatech®, ZINCALUME® steel, DECKFORM® steel, TRUECORE® steel and the LYSAGHT® range of building products using 100 per cent Australian steel.



Capital Metro Agency

Clayton Utz

In July 2013, the Australian Capital Territory Government established the Capital Metro Agency to deliver light rail for Canberra. The Agency is responsible for the ongoing planning, design and delivery of the first stage of a possible Canberra-wide network. The first stage will link the city to the developing suburbs of the Gungahlin district in the north.



The Civil Contractors Federation (CCF) is the peak body representing Australia's civil construction industry, supporting members' businesses and providing a unified voice to all levels of government. CCF has branches in all states and territories, supporting around 2000 members nationally. CCF's members construct and maintain Australia's civil infrastructure, including roads, bridges, pipelines, drainage and ports, as well as commercial and housing land developments.

02 9353 4751 Nick Thomas.

Partner, Sydney

CLAYTON UTZ

Clayton Utz is one of Australia's largest and most respected independent full-service national law firms, with offices in Sydney, Melbourne, Brisbane, Canberra, Perth and Darwin, as well as Hong Kong (in association with Haley & Co). A consistent track record and a team of highly motivated and skilled lawyers are central to Clayton Utz's performance, and are fundamental to the reason that clients retain Clayton Utz



Colonial First State Global Asset Management

www.cfsgam.com.au

Colonial First State Global Asset Management (CFSGAM) is the consolidated asset management division of the Commonwealth Bank of Australia. With more than A\$170 billion (as at 30 June 2013) in funds under management, CFSGAM is a world-class asset management business with a global footprint, incorporating environmental, social and corporate governance issues in all of its investment processes.



Department of Planning, Transport and Infrastructure South

www.dpti.sa.gov.au

The Department of Planning, Transport and Infrastructure South Australia (DPTI SA) works as part of its community to deliver effective planning policy, efficient transport, and social and economic infrastructure. This is done by harnessing the diversity of DPTI SA's purposes and its people to improve the lifestyle of all South Australians. By working together with the community, DPTI SA capitalises on a unique and powerful opportunity – to connect with every part of its community and deliver positive outcomes every day.



DownerTenix

Downer Tenix is a leading delivery partner to owners of gas, electricity, water, wastewater, and heavy industrial and mining assets across Australia, New Zealand and the Pacific. Downer Tenix designs, constructs, operates, maintains and manages electricity, gas, water, wastewater and other network assets. The company's vision is to be the leading sustainable infrastructure solutions, services and delivery partner. Downer Tenix works collaboratively with its customers to achieve shared goals and sustainable outcomes.



Edge Environment

Downer

Edge Environment is a dynamic research, consultancy, education and etools business. Edge Environment provides practical solutions to sustainability issues, based on sound science, and prides itself on its technical capability and the pursuit of positive change. Edge Environment offers services and solutions on strategy and supply chain, climate change and adaptation, policy and reporting, infrastructure, and the sustainable built environment.



Environment and Sustainable Development Directorate – Australian Capital Territory Government

The Environment and Sustainable Development Directorate (ESDD) has a strong commitment to ensuring a sustainable future for Canberra. ESDD brings together the key policy levers and service delivery areas that assist the Australian Capital Territory Government to deliver its ambitious sustainability policies and targets across a range of areas, including climate change, waste, heritage, planning policy (including transport planning), development, natural resource management, energy and water.



www.etoolglobal.com

eTool is a world-leading life cycle assessment and design consultancy that optimises building design for lower environmental impact and high performance. Using its unique software, eToolLCD®, eTool works with architects, engineers and developers to measure and improve the life cycle impacts of buildings, surpassing industry standards. eToolLCD® makes sustainable development easy to achieve and cost-effective for all sizes of project, from residential and commercial building, to land development and infrastructure.



Fremantle Ports

08 9430 3555

Fremantle Ports is a Western Australian Government trading enterprise that strategically manages Fremantle Port, the state's biggest general cargo port and Australia's fourth-largest container port. Fremantle Ports operates on commercial principles to ensure that the needs of importers and exporters can be met in a sustainable way with the support of customers and the community.



GHD

GHD is one of the world's leading engineering and environmental consulting companies. Established in 1928, GHD employs more than 5500 people across five continents. Wholly owned by its people, GHD is focused exclusively on client success. Our network of professionals collaborates to deliver sustainable outcomes to communities and clients in the global markets of water, energy and resources, environment, property and buildings, and transportation.



Greater Shepparton City Council

03 5832 9700

Greater Shepparton, Greater Future – a thriving economy in the food bowl of Victoria with excellent lifestyles, innovative agriculture, a diverse community and abundant opportunities. Greater Shepparton provides and maintains urban and rural infrastructure to support the development and livability of communities in conjunction with strategic social, environment, economic, and governance goals.



www.hamessharlev.com.au

08 9381 0200

Hames Sharley is an award-winning design firm with more than four decades' experience in architecture, interior design, urban design and planning, and landscape architecture. With offices located in Adelaide, Brisbane, Darwin, Perth and Sydney, Hames Sharley has established itself as one of the leading design firms in Australia, boasting a portfolio of work that is diverse and innovative.



Holcim Australia Pty Ltd

www.holcim.com.au

02 9412 6600

Holcim has been delivering construction materials in Australia since 1901, originally under the well-known Readymix and Humes brands. Today, Holcim is one of the world's leading building materials producers, and continues to operate across Australia supplying high-quality construction materials such as readymix concrete, aggregates, engineered precast and pre-stressed concrete solutions



Holding Redlich

Hyder Consulting

07 3135 0500

Holding Redlich provides innovative commercial legal advice. Their reputation for delivering excellent results for clients has developed over nearly 40 years, with offices in Melbourne, Sydney and Brisbane. Holding Redlich understands its clients' commercial issues, and, coupled with its impeccable application of the law, Holding Redlich delivers results.



Hyder is a leading multinational design and engineering consultancy that has a reputation for working on some of the world's most iconic projects. Hyder's work is characterised by the highest standards of engineering and design, a reputation for innovation, and results that stand the test of time. Hyder works with clients in the resources, transport, water, energy, environment and property sectors.



Icon Water

Icon Water owns and operates the water and sewerage assets and businesses in the Australian Capital Territory, Icon Water provides safe, efficient, and reliable water and sewerage services, and operates in accordance with environmental and sustainable practices.



Jacobs Engineering Group Inc.

Jacobs Engineering Group Inc. is one of the world's largest and most diverse technical, professional and construction services, including all aspects of engineering, architecture and construction, operations and maintenance, as well as scientific and specialty consulting. Jacobs serves a broad range of companies and organisations, including industrial, commercial and government clients across multiple markets and geographies. The company's global network includes more than 200 offices in more than 25 countries, with operations in the Americas, Europe, the Middle East, India, Australia, Africa and Asia.



John Holland, a wholly owned subsidiary of Leighton Holdings Limited (ASX: LEI), is one of Australia's leading engineering, contracting and services providers to the infrastructure, energy and resources and transport services sectors. Operating across Australia and in New Zealand, South-East Asia and the Middle East, John Holland's business is driven by its collaborative approach to project delivery and its diversity of skills and capabilities.

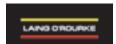




KMH Environmental

02 9468 9300

KMH Environmental is dedicated to providing high-quality environmental and sustainable outcomes for its clients. The KMH team delivers practical sustainability outcomes for major infrastructure projects across Australasia. KMH partners with designers, constructors and project owners to deliver project approvals, and support the design, construction and operations of infrastructure projects.



Laing O'Rourke

With a 50-year history in Australia, and a decade of project delivery under the Laing O'Rourke banner, Laing O'Rourke is Australia's largest privately owned construction company, and is part of an \$8 billion global engineering enterprise. Laing O'Rourke is proud to have been at the helm of some of Australia's largest and most technically complex projects in the oil and gas, transport, building construction, airports, mining, marine and civil and social infrastructure sectors. Laing O'Rourke was recently named number eight on the BRW Most Innovative Companies index. Follow Laing O'Rourke on its journey to challenge and change the construction industry: laingorourke.com. au and @Laing ORourke.



Leighton Contractors

www.leightoncontractors.com.au

Leighton Contractors, a wholly owned subsidiary of Leighton Holdings Limited, is one of Australia's leading contracting and project development groups. Employing more than 14,000 people in Australia, New Zealand, Papua New Guinea and Africa, Leighton Contractors delivers projects for clients across the infrastructure, mining, telecommunications, civil construction, industrial, energy, health and services sectors.



Lend Lease Engineering

capabilities/engineering

02 9499 0999

Lend Lease's Engineering business provides one of the most comprehensive and experienced civil engineering capabilities in Australia. Drawing on the significant resources of the Lend Lease Group, it offers whole-of-life services for civil infrastructure assets, including design, development, financing, construction and long-term operation and maintenance. Lend Lease Engineering's focus includes roads, bridges and tunnels, rail and civil infrastructure.



Linking Melbourne Authority

03 8562 6800

Linking Melbourne Authority (LMA) is a special-purpose statutory authority, responsible for managing complex road projects on behalf of the government and the wider community. Under the guidance of a highly experienced Board, LMA uses its project management, engineering, commercial and communications capabilities to facilitate major road project delivery on behalf of the government.



Main Roads Western Australia

Main Roads Western Australia is responsible for Western Australia's highways and main roads, which represent almost 30 per cent of the state's total assets. Main Roads Western Australia is one of the largest geographically spread road agencies in the world, covering 2.5 million square kilometres, and is committed to achieving the state government's vision to provide the best opportunities for current and



McConnell Dowell

www.mcconnelldowell.com

03 9816 2400

Formed in 1961, McConnell Dowell is a major engineering, construction, building and maintenance contractor. With the ability to deliver end-to-end projects, the company prides itself on its engineering excellence in three key industry sectors: building (commercial and industrial, social and public, defence); infrastructure (power, transport, water); and resources (mining, oil and gas, petrochemical).



Metropolitan Redevelopment Authority

www.mra.wa.gov.au

08 6557 0700

The Metropolitan Redevelopment Authority is driving the regeneration of Central Perth and key centres around the metropolitan area. Its role enables the Authority to build Perth's capacity by providing new commercial, residential retail and public spaces, and transform urban spaces to meet the challenges of a growing city by creating successful communities where people want to live, work and visit.



NSW Public Works

www.publicworks.nsw.gov.au

NSW Public Works provides expert advice and professional services to enable government agency clients to deliver their services to the community. Expertise and experience in planning, design, delivery and maintenance of building and engineering projects enable our clients to maximise value, minimise cost and manage risks in infrastructure programs and asset management



Office of Environment and Heritage

02 9995 5000

The Office of Environment and Heritage is an office of the New South Wales Department of Premier and Cabinet, supporting the Premier, the Minister for the Environment and the Minister for Heritage. We work to ensure that the people of New South Wales have a healthy environment and are supported to access, protect and enjoy their natural and cultural heritage.



Opus International Consultants (Australia) Pty Ltd

Opus has worked on some of the largest and most iconic engineering projects in Australia, and is currently providing services on leading infrastructure projects for both the public and private sectors. Opus offers fully integrated asset development and management services at all phases of the life cycle, from concepts to planning, design, procurement, construction, commissioning, operation, maintenance, rehabilitation and upgrading. Opus's collective experience and the collaborative way of working across disciplines and with clients provide robust, cost-effective solutions in the infrastructure space.



Plastics Industry Pipe Association of Australia

02 9884 7400

The Plastics Industry Pipe Association of Australia (PIPA) is the peak body representing the interests of Australia's plastics pipe and fittings industry. PIPA promotes the correct use and installation of reliable, safe and environmentally responsible plastics pipe systems. PIPA has a long history of successful involvement in major urban and regional infrastructure projects across all pipe and conduit applications, including power distribution, communications, gas, water, wastewater and stormwater. PIPA has built strong relationships with key stakeholders such as ISCA, GBCA, industry groups, major contractors, utility agencies and governments at all levels.



pitt&sherry

1300 748 874

pitt&sherry is a leading multi-specialist infrastructure consultancy that has been delivering intelligent and sustainable solutions to industry, government and communities for more than 50 years. With a relentless client focus that adds value to businesses, governments and communities, pitt&sherry services a range of markets including transport, industrial, mining, energy, food and beverage, and community infrastructure.



Port of Melbourne Corporation

www.portofmelbourne.com

1300 857 662

Port of Melbourne Corporation (PoMC) is the strategic manager of Australasia's largest maritime hub for the efficient movement of automotive and containerised cargo. Responsible for the integrated management and development of land and maritime functions, PoMC is charged with managing its operations in a sustainable manner to ensure that it continues to provide economic and community benefits now and in the future.





Queensland Department of Transport and Main Roads

07 3066 7202

The Department of Transport and Main Roads is a Queensland Government agency that plans, manages and delivers Queensland's integrated transport system to achieve sustainable transport solutions for road, rail, air and sea. The Department is responsible for road and transport infrastructure, road safety, regulation and licensing, passenger transport timetables and ticket pricing, maritime safety and regulation, and the electrification of rail transport. The Department connects people to opportunity – that's how it delivers transport for prosperity throughout Queensland.



Roads and Maritime Services

Roads and Maritime Services (RMS) is a service delivery agency for Transport for NSW. RMS is responsible for building and maintaining the New South Wales road network, regulating and licensing road vehicles, commercial and recreational boating, and marine safety. RMS is also responsible for the management of submerged lands in Sydney Harbour, Newcastle Harbour, Botany Bay and Port Kembla.



RPS Australia and Asia Pacific

www.rpsgroup.com.au

02 9248 9800

RPS is an international consultancy providing world-class, local solutions in energy, mining, infrastructure, urban growth and natural resource management. RPS employs more than 5000 people globally on a diverse range of projects. With local knowledge and national expertise supported by international experience, RPS has the capability to deliver first-rate services where and when they are needed.



www.salini-impregilo.com Salini Impregilo

Salini Impregilo is an industrial group specialising in the construction of major, complex projects. Salini Impregilo is a global player in the construction sector and the leading global infrastructure company in the water segment. Dams and hydroelectric plants, hydraulic works, railways and metro systems, airports and motorways, and civil and industrial buildings are the sectors in which the group has been operating in for more than 100 years. The management and the entire group are committed to operating in accordance with environmental, ethical and professional principles, which comply with the highest international criteria for corporate governance and citizenship.



0403 834 470 www.start2see.com.au

start2see is an environmental consultancy specialising in life cycle assessments (LCA) and environmental product declarations (EPD). With more than 15 years of experience in life cycle services, and a focus on the building and construction sector, start2see increases understanding of the full life cycle of your products, and uses this information to improve business outcomes, from product development to procurement, and from sustainability reporting to improving access to markets.



Sustainable Built Environment National Research Centre

www.sbenrc.com.au

08 9266 4788

The Sustainable Built Environment National Research Centre (SBEnrc) is a key research broker between industry, government and research organisations servicing the built environment industry. The three research streams focus on environmental, social and economic sustainability – areas identified by national industry stakeholders as the key areas that will drive productivity and industry development in the built environment industry.



Sustainable Engineering Society

Thiess

02 6270 6189

1800 912 226

The Sustainable Engineering Society (SENG) is a technical society of Engineers Australia. SENG strives to provide national focus and leadership to engineering and sustainability professionals. Membership is open to anyone with an interest in, and a desire to contribute to, the advancement of environmental and sustainability issues.



Thiess plays a pivotal role in building vital infrastructure, delivering for the resources sector, and providing essential services for communities. Today, the company has amassed enormous depth and breadth of experience and capabilities, to become one of Australia's leading construction, mining and services contractors



Transport for NSW 02 8202 2200

Transport for NSW is responsible for improving the customer experience, planning, program administration, policy, regulation, procuring transport services, infrastructure and freight. Transport operating agencies have been freed up to focus on service delivery – providing safe, reliable, clean and efficient transport services.



WestConnex Delivery Authority

Value Adviser Associates

WestConnex Delivery Authority (WDA) has been established to manage the delivery of the 33-kilometre WestConnex motorway. The work of WDA is overseen by a board, reporting to the New South Wales Minister for Roads and Freight. WDA's core responsibilities include procuring and managing contracts relating to the development, construction, funding, operation and maintenance of WestConnex; developing and making recommendations on scope, staging and any other matter in connection to the WestConnex scope of works; seeking planning approval, management of environmental assessments and related community consultation for each stage; and administrating agreements relating to the development, construction, funding, operation and maintenance of WestConnex.



03 8656 8900 Transurban

Transurban manages and develops networks of urban toll roads in Australia and the United States. Transurban is an ASX Top 50 company, and has been in business since 1996. Transurban is focused on being an infrastructure partner of choice for government, providing effective and innovative network solutions to support the growth and wellbeing of our cities.



08 9355 1500

Utilibiz Pty Ltd is a professional Perth-based consulting service specialising in transaction advisory and implementation services, including the procurement of infrastructure development projects and operations, and maintenance arrangements. Utilibiz offers specialist



expertise in all forms of project planning, procurement and contract development strategies.



Value Adviser Associates is a leading Australian valuation and advisory practice offering services to investors, developers and operators across a broad spectrum of industries, with a particular focus on infrastructure. Our profile and scale provides high-quality client service through sustained and intimate carriage of engagements from start to finish, while our valuation specialists have extensive experience incorporating ESG considerations into infrastructure asset valuations.



WSP | Parsons Brinckerhoff www.wspgroup.com

At WSP | Parsons Brinckerhoff (WSP-PB), engineering is a science, a mission, an art, a vocation. WSP-PB's projects shape everyday life on a global scale, as the company puts itself in the shoes of the designer, the builder, the contractor, and the community. WSP creates buildings that amaze, sustainable environments that thrive, and transport corridors that flow. But, most importantly, they create ideas. They've designed a new kind of engineering, and the best is yet to come.



Industry partners



Asset Management Council

The Asset Management Council (AMCouncil) is the peak professional body in Australia for the discipline, science and practice of asset management and maintenance. The AMCouncil is a notfor-profit, mostly volunteer organisation whose mission is to create a broad awareness of the value of asset management, to nurture a common understanding of asset management, and to provide a portal to asset management knowledge and resources. AMCouncil's first objective is to strengthen and enhance the asset management and maintenance engineering capabilities of asset management practitioners and organisations.

For more information: www.amcouncil.com.au



Consult Australia

Consult Australia is the leading not-for-profit association that represents the business interests of consulting firms operating in the built and natural environments. The association does this at a commercial, community, industry, and government level through collaboration, education, support and advocacy. Consult Australia's member firms' services include, but are not limited to architecture, cost consulting (quantity surveyors), engineering, environmental science, landscape architecture, planning and project management.

For more information: www.consultaustralia.com.au



Green Building Council of Australia

Launched in 2002, the GBCA is a national, not-for-profit organisation that is committed to developing a sustainable property industry for Australia by encouraging the adoption of green building practices. It is uniquely supported by both industry and governments across the country.

For more information: www.gbca.org.au



Infrastructure Partnerships Australia

Infrastructure Partnerships Australia is the nation's peak infrastructure body. Its mission is to advocate the best solutions to Australia's infrastructure challenges through facilitating open dialogue and genuine, enduring partnerships between government and the private sector. It is through these perspectives that Australia can be best equipped with the facilities and services we need to secure enduring and strong economic growth and high living standards. For more information: www.infrastructure.org.au



Institute of Public Works Engineering Australasia

The Institute of Public Works Engineering Australasia (IPWEA) is the professional organisation supporting its 3500 members in the public and private sectors that manage and deliver public works and engineering services to the community both in Australia and New Zealand. Members enjoy benefits such as accreditation of qualifications, advocacy, training, networking and exchange of specialist expertise. IPWEA is a technical society of the Institution of Engineers Australia. For more information: www.ipwea.org



Roads Australia

Roads Australia (RA) is a not-for-profit, non-political industry association, the members of which are drawn from all corners of the Australian road sector. RA champions the interest of a vital national asset- Australia's road transport system - and provides a forum for policy development, networking and communication.

For more information: www.roads.org.au



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OUR VISION IS TO CREATE THE BEST PLACES.

Lend Lease's Engineering business was a joint venture partner in the Bulk Water Alliance, which constructed the Enlarged Cotter Dam and provided other works to enhance the water supply in the ACT region.

We are proud this work achieved an ISCA rating as a sustainable project.

