



ENGINEERS  
AUSTRALIA



AUSTRALIAN  
ENGINEERING  
EXCELLENCE  
AWARDS

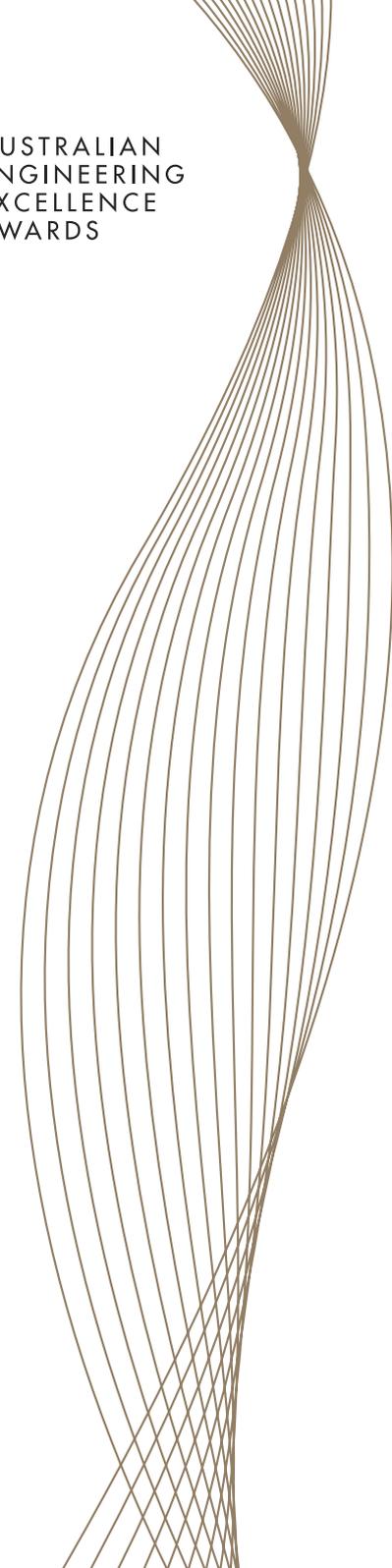
# ICONIC INNOVATION

Celebrating Extraordinary Engineering

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AUSTRALIAN  
ENGINEERING  
EXCELLENCE AWARDS

**NORTHERN  
ENTRANTS 2018**



## OVERVIEW

Engineers Australia recognises outstanding achievement in engineering and the invaluable contribution engineering makes to the economy, community and the environment.

The Australian Engineering Excellence Awards (AEEA) inspire and encourage engineering distinction through teamwork, innovation, and technical excellence.

The AEEA is an integrated program resulting in awards at National level once local finalists are determined. To enter the AEEA, entrants are required to submit project nominations at the relevant local level, depending on the project's location.

Excellence, distinction, merit, perfection and quality are the characteristics that winning entries exhibit. View the 2018 entrants.



**ENGINEERS**  
AUSTRALIA

### **Northern**

9 Cavenagh Street  
Darwin, Northern Territory  
0800, Australia

## PROUD NORTHERN SPONSORS





## NORTHERN PRESIDENT'S MESSAGE



It's no secret that our country and society would not succeed without engineers. The enormous impact that engineers have had on every aspect throughout history to our modern day lives is a testament to the creativity and innovation our sector proudly achieves.

The 2018 Australian Engineering Excellence Awards are an opportunity to showcase the admirable work accomplished by Northern Territory engineers who, in true Territory style, 'punch well above their weight' and show levels of resourcefulness to overcome the obstacles faced in the Northern Territory.

The engineering profession is expected to produce excellent results as a matter of routine and it is in this high achieving environment that we can sometimes grow a little blasé about what we do. It has, therefore, been humbling to have the privilege of assessing the many Awards entrants. The quality of projects I have assessed reaffirms my belief that the engineering profession is in good hands for the future of our nation.

I commend all entrants in the Awards, offer my appreciation to my fellow judges for their time in volunteering for this challenging task and sincerely congratulate the winning entrants.

**Chris Lugg** FIEAust CPEng EngExec  
NER APEC Engineer IntPE(Aus)

President Northern

## CHIEF JUDGE'S MESSAGE



I am honoured and privileged to be participating as the Chief Judge in the judging of the Engineering Excellence Awards 2018, EA Northern.

It is a privilege for me to assess and evaluate the best engineering projects completed during the previous year.

The task of assessing is of course not mine alone. I was honoured to be judging

the entrants with my fellow judges namely Chris Lugg, Katherine Winchester, Sumesh Dhir and Grant Chorvat who gave up their valuable time to be part of this very important event.

I must say, the team work within the judging panel was second to none.

We had a great number of entrants in 2018 and had a challenging task of assessing and recommending the winners.

As everyone knows, the Northern Territory offers many challenges when it comes to engineering. Some of these challenges include working through our annual wet season where cyclones could form at any time as well as the logistical issues that engineers must overcome when roads are cut off. Even at the best of weathers, the logistical challenges that engineers in the transport industry face are great, yet they always overcome obstacles and provide solutions.

I congratulate all entrants on the quality of their written submissions and their support for the works they were involved with.

As always, these awards would not be possible without the organising ability and dedication of Engineers Australia staff; Mark Monaghan, Jaimi-Leigh Acres, Jen Mahony and Leena Hirani.



**Jaswant Deo** CEngA AFIEAust EngExec NER CPPM MAIPM  
MAIRAH MIAMA Accredited Mediator NMAS Qualified Arbitrator  
and Registered Adjudicator

Chief Judge



## JUDGING CRITERIA

### **Actual or potential contribution of the work to the economy**

Contributes to the local, regional or national economy by reducing whole of life costs or adding to the efficient use of existing engineering construction, manufacture, maintenance or application.

### **Impact of the work on the quality of life of the relevant communities**

Contributes positively to the communities using it in respect of cost, time, environment or general amenity of the community.

### **Significance of work as a benchmark of Australian Engineering**

Sets new benchmarks or continues current high standards thereby raising the standard and standing of Australian Engineering.

### **Extent to which the work represents world best practice**

Can be matched against similar engineering achievements to represent world best practice.

### **Other considerations**

The environmental impact of the work, the sustainability of the project and the work health and safety consideration. These must outline the effect on those directly or indirectly involved and members of the community in general.

## JUDGES 2018

### **Jaswant Deo – Chief Judge**

CEngA AFIEAust EngExec NER CPPM MAIPM  
MAIRAH MIAMA Accredited Mediator NMAS Qualified  
Arbitrator and Registered Adjudicator

### **Chris Lugg**

FIEAust CPEng EngExec NER APEC Engineer IntPE(Aus)

### **Grant Chorvat**

FIEAust CPEng NER APEC Engineer IntPE(Aus)

### **Katherine Winchester**

Chief Executive Officer, Northern Territory Seafood  
Council

### **Sumesh Dhir**

FIEAust CPEng NER APEC Engineer IntPE(Aus)

**Thank you to our panel of judges who  
generously volunteered their time and effort  
to review all entrants, and select our Northern  
Winners and AEEA Finalists.**

## PROJECT ENTRIES

### ANGURUGU SEWERAGE RETICULATION UPGRADE

Power and Water Corporation

NCP Contracting Pty Ltd and GEBIE Civil & Construction Pty Ltd

Northern Territory Government and Department of Housing & Community Development

Tonkin Consulting Pty Ltd and Wallbridge & Gilbert RFP



This is a project to replace the existing asbestos cement CED system with new gravity sewerage reticulation system. The site of work is at Angurugu Aboriginal community located about 630km from Darwin.

Access to the site is either via barge or light plane flight. The limited access

presents logistical challenges to deliver the project within time and budget.

### MULTI USER BARGE RAMP FACILITY

Aurecon

Land Development Corporation

Northern Territory Government and Department of Infrastructure, Planning & Logistics



The Multi-User Barge Ramp Facility is a unique marine logistics facility at East Arm, Darwin, that is designed to cater for everything from Defence's beach landing craft to the 824 DWT Bhagwan Roller barge, and load any type of cargo including two 68 tonne Abram's Tanks concurrently. To meet

its Defence role the ramp has been designed to service the new Royal Australian Navy LHD flagship, the HMAS Canberra, and be accessible during almost any tide and weather condition.

Overcoming the concept's extensive challenges, the final design realised a 60 per cent cost-saving from the original concepts, without compromising durability or whole-of-life costs. The success of this project can be attributed to many factors including the out-of-the-box thinking and innovative design and construction techniques. However, the greatest contribution to the success has come from the high level of collaboration between the key players: client, sponsor, delivery, design and construction.



## ALICE SPRINGS - LEADING THE CLEAN ENERGY TRANSFORMATION

**Aurecon**

**Territory Generation**



Territory Generation is on a journey towards a renewable future, and Aurecon is helping to lead their clean energy transformation for Alice Springs. Two transformational projects are the expansion of the Owen Springs Power Station, and implementation of a 5

MW Battery Energy Storage System near Alice Springs. These projects demonstrate next generation integration of energy options, while meeting community expectations for the future of energy supply.

Implementation involved extensive engineering, complex modelling, robust project development processes, and extensive community consultation. The new equipment will better service the community's current power usage, and allow for the future integration of more renewable and alternative energy into the Alice Springs network. Territory Generation and Aurecon, together with the project contractors, have modernised power generation for the people of Alice Springs.

## OWEN SPRINGS POWER STATION EXPANSION PROJECT

**Clarke Energy (Australia) Pty Ltd**

**Territory Generation**



The Owen Springs Power Station (OSPS) expansion project is the construction of a nominal 44 MW gas fired power station including all required mechanical, electrical, controls and civil/ structural and balance of plant.

The fuel source for the Project is natural gas sourced from a number of different fields and supplied via pipeline to the Site. The Power Station is designed to operate automatically, continuously, safely under all Site climatic conditions whilst connected to and supplying power to the Alice Springs Network.

## COX PENINSULA REMEDIATION

**Ventia Utility Services Pty Ltd**



A 120-year legacy of Commonwealth maritime, Defence and communications activities had left contaminated sites across 4,700 hectares of the Cox Peninsula, located west of Darwin Harbour. The Cox Peninsula Remediation Project was required to clean up the site and

help resolve the Kenbi Land Claim, the longest-running in Australia's history. Ventia was contracted by the Department of Finance for the project.

Three different remediation methods were used: pesticide-contaminated soils were treated by direct thermal desorption, lead-contaminated soils were chemically immobilised, and asbestos and general wastes were contained in a 27,000m<sup>3</sup> purpose-built cell.

Ventia worked closely with the Kenbi Rangers and attained a 35% Indigenous workforce against a Commonwealth target of 15%. Skilled project management overcame the challenges presented by seasonal impacts and the site's remoteness. The project was completed in March 2017, eight months ahead of schedule. The land has since been returned to the Traditional Owners, the Larrakia People.

## SOLAR ENERGY TRANSFORMATION PROGRAM (SETuP)

**Power and Water Corporation**



Power and Water Corporation is transforming the way power is delivered to remote Aboriginal communities by incorporating solar power to reduce reliance on diesel. With the support of the Northern Territory (NT) Government and the Australian Renewable

Energy Agency (ARENA), Power and Water is delivering a wide-scale rollout of 10 MW of solar systems across 26 remote communities. The \$59 million Solar Energy Transformation Program (SETuP) is a four year program launched in 2014, and is changing Power and Water's remote community energy supply portfolio, making solar energy an established part of future power station design.



## SHADY CAMP BOAT RAMP

Flanagan Consulting Group



The Shady Creek Boat Ramps and barrage is an iconic site for recreational sports fishing and access to the Mary River in the Northern Territory. Prior to the upgrade, the facility provided two narrow boat ramps situated upstream and downstream of the barrage, camping area, day use picnicking area, car parking and two sets of composting toilet facilities.

The condition and form of the existing boat ramp limits its availability and safe usage, particularly during low tides or during flooding. Safe access to and from the water is vital given the high density of crocodiles known to inhabit the waterway.

The uniqueness of the project with respect to its remoteness, environmental constraints, habitat values, limitations on capability and materials, extreme weather events, and delivery within a world renowned crocodile domain presented a suite of challenges that required application of engineering problem solving that was best practice.

## GATEWAY SHOPPING AND HOMEMAKER CENTER (STAGE 1 & 2)

Hutchinson Builders

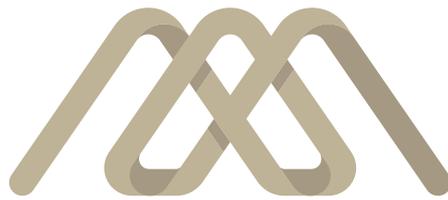


Gateway Shopping Center (Stage 1) was Design and Construct and ran for approximately two (2) years. There were nine (9) consultant teams engaged throughout the design phase. The construction phase had 32 subcontract companies engaged and approximately 2,200 people were inducted

onto the site. ICN tracked local content involvement for the project at 94% which given the sheer size and complexity of the project this was a massive achievement.

Securing stage one of the new master planned shopping centre project in Palmerston epitomises much that Hutchinson Builders has come to represent in the industry: tenacity, collaboration, and solutions orientation. Stage 2 being the Gateway Homemaker Centre comprised of 7000m<sup>2</sup> of Bulky Good Stores, with 450 carparks for the 14 tenancies. Associated High Voltage, Stormwater, Water Main and Sewerage upgrades were required and the relationships with local authorities ensured these services were upgraded without conflicts.

The project was completed 1 month ahead of schedule and on budget. To achieve this required constant monitoring and manipulation of our accelerated construction program. The challenges of the Darwin wet season and supplier delivery timeframes needed to be closely managed.



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These awards recognise and promote new and innovative ideas that are brought to life in ways that bring fundamental change to our society.



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