ENGINEERS
AUSTRALIA

AUSTRALIAN
ENGINEERING
EXCELLENCE
AWARDS

ICONIC INNOVATION

Celebrating Extraordinary Engineering

AUSTRALIAN ENGINEERING EXCELLENCE AWARDS

CANBERRA ENTRANTS 2018

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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.

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

Canberra

Engineering House

11 National Circuit
Barton, ACT, 2600

CANBERRA
PRESIDENT'S MESSAGE

This has been another exceptional year for the Canberra Division. We have made significate inroads with the ACT Government, with the confirmation of a Chief Engineer position and funding for an Engineer Registration Scheme.

I applaud the ACT committee and the Learned Societies for their considerable heavy lifting to ensure that we focus on the issues which matter to the ACT membership and through engagement we have short and long term plans, to focus on internal and external matters, which they wanted addressed.

As we stand on the cusp of the next Industrial Revolution, the Artificial Intelligence revolution, it is wholly apparent that it already impacts the way we live and the way industry does business. We continue to support academia and industry to ensure that the engineers created today, support the needs of industry of tomorrow. This is clearly evident in the calibre of the candidates and the breadth of projects submitted by ACT engineers. The submissions were outstanding and covered the entire spectrum of current and future engineering disciplines.

To all entrants, I congratulate you for your contribution to our profession and I hope you use the awards as the foundation for greater achievements in the future!

Nick Clarke MBE CSC TFIEAust CEng EngExec NER
Canberra President

CHIEF JUDGE'S MESSAGE

Canberra Division was again blessed with a suite of outstanding contenders for the 2018 Engineering Excellence Awards. Canberra as the Nations Capital is home to the many national institutions and icons designed to inspire Australians, often forgotten in the daily political media coverage. What was striking about the entrants this year was that they were Canberran engineers expressing what Canberra is and embracing a new spirit of entrepreneurship. This signals a fundamental shift away from a reliance on engineering excellence from our bigger cousins around the country.

All projects demonstrated pride in what engineering was achieving for all Canberrans, from highly visible works on Lake Burley Griffin to clever engineering supporting the expanding development of Canberra. Engineering is sometimes a forgotten element of our national narrative, so it is exciting to see the quality of the projects in this year's Excellence Awards influencing daily life in Canberra.

It is exciting to see Canberran engineers offer opportunity to future generations through insightful and clever engineering. It will help shape the future spirit of engineering endeavour for all Australians.

Neil Greet FIE Aust, CP Eng, EngExec, NER, APEC Engineer, IntPE (Aus)

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

Professor Charles Lemckert
FIEAust CPEng EngExec NER APEC Engineer IntPE(Aus)
Head – School of Engineering,
Mathematics and Statistics
University of Canberra

Shireane McKinnie
PSM, HonFIEAust, EngExec
Principal
Shireane McKinnie

Dr Therese Flapper
FIEAust GAICD
Associate Principal
Arup

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

PROJECT ENTRIES

BUTTER'S BRIDGE

Calibre

Butters Bridge is a true demonstration of innovative thinking. It boasts dual functions, conveying a 600mm diameter sewer, and provides a pedestrian and cycling link across the Molonglo River corridor. Rising to 27m above the river, the 242m long bridge is a vital piece of infrastructure in the development of the Molonglo Valley. It links Molonglo 2 on the south of the river to Molonglo 3 in the north, delivering timely sewer services for the new suburb of Denman Prospect. The new sewer will service upwards of 7,500 dwellings. The bridge also connects to Canberra's extensive cycle network.

CANBERRA VIRTUAL POWER PLANT

Reposit Power Pty Ltd

Reposit Power's smart technology makes the electricity system cheaper, cleaner and more reliable. It helps manage price volatility in the wholesale electricity market and protects network assets via Virtual Power Plants.

This technology empowers energy utilities to use consumer- owned batteries, and puts energy users back in charge.The first and largest of its kind in the world, the Canberra Virtual Power Plant uses this technology to put consumers in the driver's seat for delivering grid support services.

This project consists of more than 400 consumers in the Australian Capital Territory. It brings together the collaboration of innovative companies - world-leading energy management software provider Reposit Power, grid operator EvoEnergy, electricity retailer ActewAGL and SolarHub, the solar and battery installer, to deliver a fully operational Virtual Power Plant.

This VPP has successfully delivered in excess of 2MW of grid support over the summer 2017/18.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION (CSIRO) ACT CONSOLIDATION PROJECT

Laing O'Rourke

Laing O'Rourke delivered high-quality, modern facilities tailor-made for one of the world's largest research agencies.

The project included a new 15000m² building, office accommodations, PC2 laboratories, and associated infrastructure including car parking and landscaping.

An Experience Centre was built and operated for three months, allowing staff and researchers to view a range of open plan working, retreat, collaboration options and configurations.

The final design offered both efficient and sustainable solutions; a combination of mixed mode ventilation, thermal storage tanks, exposed services and building structure which provided optimised heating & cooling airflow, plant and equipment life within the office environment.

CONTAINER ROLL-OUT SOLAR SYSTEM (CROSS)

ECLIPS Engineering

The CROSS is a factory assembled, relocatable solar power array providing up to 2,175W of power per 20ft unit (CROSS20) and 4,350W of power per 40ft unit (CROSS40). It is delivered fully assembled and can be rolled out of a shipping container and setup in minutes. The PV array is spring assisted to allow two people to deploy the array without lifting equipment or special tools. The CROSS are inter-connectable with corner casting twistlocks and can be stacked up to seven high in an ISO shipping container during transportation or storage. It is a modular solution suitable for projects up to utility scale, and comes pre-wired to a DC isolator ready for connection to an inverter. The CROSS can be setup at 0°, 10°, 20° and 30° angles. CROSS is structurally certified for installation in AS/NZS 1170.2:2011 Wind Regions A to D, and qualifies for Clean Energy Regulator generation certificates..

HENRY ROLLAND PARK AND BOARDWALK

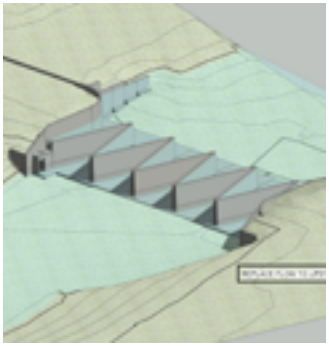
Chincivil Pty Ltd

The submission is the first two stages of the West Basin Development in Acton, ACT. The works have been project managed and delivered by Chincivil and its design partner Indesco through an Early Contractor Involvement (ECI) and Design and Construct (D&C) form of Contract. Stage 1 of the project comprised of the design and construction of 150m of lake edge boardwalk including; land reclamation, piling, precast concrete boardwalk, swim pontoons and timber marine structures. Stage 2 of the project comprised the design and construction of Henry Rolland Park including; retaining structures, a pedestrian/ vehicle shared zone and extensive landscape features.

ISABELLA WEIR UPGRADE DESIGN AND CONSTRUCTION MONITORING

SMEC Australia Pty Ltd

Infrastructure Finance Capital Works; Chief Minister, Treasury and Economic Development Directorate ACT Government



The project upgraded Isabella Weir spillway to maintain flood protection to downstream properties in Greenway. This involves doubling in size of the existing labyrinth weir to pass a flow of 1020 m3/s in a 1:10,000 year flood. The ACT Government worked closely with its consultants to design and document the works and to monitor construction through to the first filling. The design development of a methodology and sequence of construction, in a confined site, which maintained protection to the downstream population and minimised flood risk to the works and impact on the adjacent community and delivering significant savings for the ACT Government.

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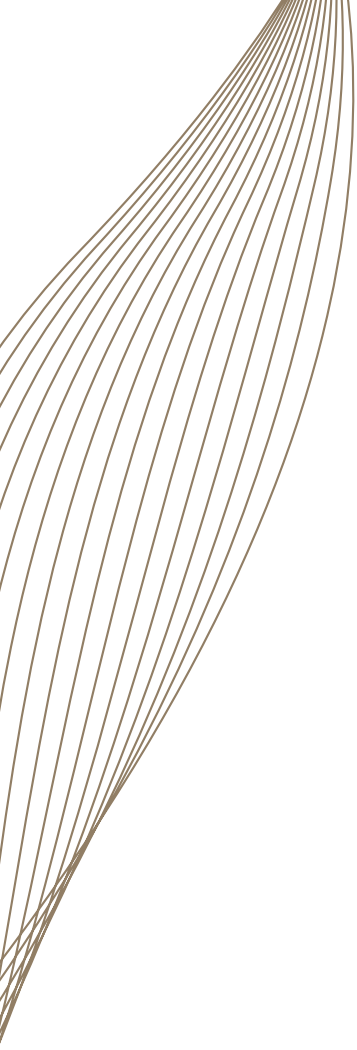
WE ARE THE GLOBAL HOME FOR ENGINEERING PROFESSIONALS RENOWNED AS LEADERS IN SHAPING A SUSTAINABLE WORLD.



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