



Entries for the New Zealand Engineering Excellence Awards are now open. These are the premier awards for engineering professionals in New Zealand and they are presented in two major areas: Awards Recognising People, that recognise leadership, innovation, entrepreneurship and our young engineers; and Product and Project Awards that recognise achievement in the various industry areas.

For more information on awards categories and how to enter go to [New Zealand Engineering Excellence Awards](#)

Water, Waste and Amenities Award

In 2009 MWH took out the New Zealand Engineering Excellence Water, Waste and Amenities Award for Project Storm 2: Dynamic Model Engineering, a model of the Auckland waste water network.

MWH undertook development of a hydraulic model of the Auckland wastewater network - capable of predicting the size, frequency and quality of overflows from the wastewater network under a variety of weather and population scenarios, in order to improve understanding of where capital investment would be most effective.

'This was a massive project expertly undertaken and a model submission to our awards committee' says judge Warwick Bishop.

Important features of the project were its sheer scale, which made the formulation of the model a complex task requiring rigorous control of data quality, and the application of the leading edge knowledge of hydraulic modelling and software for implementation.

The results of the modelling contributed to \$200 million in capital investment.

The Water Waste and Amenities Award recognises exceptional activities associated with reliable supply of services to communities or the distribution of water, water storage, wastewater, flood works or community amenities.

For more information on awards categories and how to enter visit www.nzeeawards.org.nz

Transportation Infrastructure Award

Opus International Consultants Ltd, Beca Infrastructure Ltd, Aurecon New Zealand Ltd and Fletcher Construction Company Ltd, worked together to win the 2009 New Zealand Engineering Excellence Transportation Infrastructure Award for Auckland's popular Northern Busway.

The high-profile Northern Busway project required bus lanes to be constructed adjacent to a busy Auckland motorway. Variable ground conditions in an environmentally sensitive site required the design of complex foundations.

'This was a major project with very complex planning design and construction logistics, it was executed skilfully and the best thing is bus patronage has increased by 300%' says awards judge Warwick Bishop.

The Transportation Infrastructure Award recognises exceptional activities associated with the development or operation of any form of land, sea or air transport, including infrastructure assets and transportation services.

To enter your project in the 2010 New Zealand Engineering Excellence Awards visit www.nzeeawards.org.nz

The Sustainability and Clean Technology Award

Engineering consultants Beca and Dunning Thornton won the 2009 New Zealand Engineering Excellence Award for Sustainability and Clean Technology for their joint efforts on the Meridian Energy Building in Wellington's Kumutoto Plaza.

The Meridian Energy building headquarters, on the Wellington waterfront, was designed to exemplify good practice in sustainability. It has a five-star green building rating, and benefited greatly from the continuous and genuine of the architectural and engineering design teams.

Freshwater consumption was minimised through the use of rainwater recycling, waterless urinals and water-efficient fittings and controls. The building has exceeded targets for low energy use through a highly automated and integrated internal climate control system, whilst achieving a high user satisfaction score for the comfort and health of the internal environment. There is zero fossil fuel used on site.

The Sustainability and Clean Technology Award recognises outstanding activities associated with the minimisation of non-renewable resource use and waste, or improvements in sustainability.

To find out more about the other categories, or to enter your project visit www.nzeeawards.org.nz

The Information, Communication, Electronic and Electrical Technology Award

Opus International Consultants took out the 2009 Engineering Excellence Information, Communication, Electronic and Electrical Technology Award.

When the new '3G' equipment was to be installed in New Zealand's over-crowded telecommunications exchanges, increasing the 50-volt supply was both too expensive and logistically difficult to achieve within space constraints.

Higher-performance equipment was considered but significantly increases the need for cooling and requires seismic load changes, so this was also a consideration. The chosen solution uses a 200-volt DC supply feeding 50-volt rectifiers at the equipment. This has led to lower costs, compared with extending the existing power supply, and to superior performance during power outages.

'The solution was a world first' says IPENZ Chief Executive Andrew Cleland, 'the approach Opus took, will have a wider application in the global telecommunications industry'

The Information, Communication, Electronic and Electrical Technology Award recognises outstanding activities associated with the development of improved or new communication, hardware, software, embedded systems, broadcasting, telecommunications, electrical or electronic products or parts.

Find out how to enter the New Zealand Engineering Excellence Awards at www.nzeeawards.org.nz

Chemical, Bioprocess and Food Award

Aurecon New Zealand Limited were the winners of the 2009 Engineering Excellence Chemical, Bioprocess and Food Award for their world-leading Hautapu lactose Evaporator.

The Hautapu Lactose Evaporator has increased the production capacity and yield of edible grade lactose. Through pilot trials with a small-scale unit and then a successful scale-up, a novel design that overcomes previous process issues has been achieved. Significantly, fouling of the heat exchange surface was lessened through improved control of the evaporating process, reducing localised overheating.

'This is a good solid piece of practical engineering that has lifted NZ's exports significantly while reducing costs at the same time' says awards judge Warwick Bishop 'It's world leading stuff'

The Chemical, Bioprocess and Food Award recognises exceptional activities associated with the development of improved or new bioprocess technology involving chemical or biological processes, food processing, storage and specialised transport, and materials handling.

Find out how to enter the New Zealand Engineering Excellence Awards at www.nzeeawards.org.nz

Energy Systems Award

Wellington engineering design company Intellex Limited won the 2009 Engineering Excellence Energy Systems Award.

In 2007 Weta Digital identified the need for a new dedicated supercomputing facility (data centre) as a key part of its operations and opted to buy computer hardware from international suppliers, but chose local engineering design company Intellex Limited to lead the design for the data centre. Intellex delivered a unique high density, low energy design that rivals anything built in the world to date.

The supercomputer uses less than a quarter of the floor area and typically only a third of the average data centre cooling energy. Thanks to some innovative choices; a high efficiency plant, a sophisticated control system and a design that takes advantage of Wellington's cool ambient temperatures for 'free cooling', Intellex engineers have saved Weta Digital hundreds of thousands of dollars in electricity each year.

'This is a leading edge example of energy efficient design - a large super-computer in global terms ' says awards judge Warwick Bishop, 'Yet it's using only 20 to 25% of the typical floor-space and 33% of the cooling energy' .

The Energy Systems Award recognises outstanding activities of projects associated with the development or implementation of improved or new products or services for generation, transmission, reticulation or use of gas, electricity and engine technology.

To find out more about the other categories, or to enter your project visit www.nzeeawards.org.nz

Building and Construction Award

Opus International Consultants won the 2009 New Zealand Engineering Excellence Building and Construction Award for their work creating a foundation system for the Gisborne Police Station.

Difficult ground conditions and a constrained site were overcome through the use of steel screw piles and a concrete raft foundation. This combination allowed the heavy structure, which included a precious historic facade, to be supported. 'This was an innovative foundation solution that worked very well for the client and the community' said awards judge Warwick Bishop, 'It's an international first and the engineering content is highly important'

The Building and Construction Award recognises outstanding activities associated with the design and constructions of buildings and structures.

To enter your project or to find out more about award categories visit www.nzeeawards.org.nz

Mechanical and Manufacturing Award

Aircraft Hangar Maintenance Docks designed by Beca and in use at the Air New Zealand Maintenance Base in Christchurch won Supreme Award at the 2009 New Zealand Engineering Excellence Awards, as well as winning the Mechanical and Manufacturing category.

Air New Zealand is the leading Oceania maintenance provider for 'narrow body' aircraft, including the Boeing 737 and Airbus A320 ranges. In order to sustain their own facilities they carry out maintenance services for other carriers. Despite this there are insufficient numbers of any one aircraft type to justify a stand-alone facility, as is common in the Northern Hemisphere. On top of this the Christchurch maintenance teams often need to bring aircraft into the hangar at an angle in order to squeeze more in.

Air New Zealand wanted a set of mobile maintenance docks to service 12 different aircraft from two different manufacturers' ranges, with 4 different wings, powered by 6 different engine types, and configured differently to suit individual operators' requirements.

Consulting engineering firm Beca met that comprehensive wishlist with a clever design. Using electro/mechanical screw-jacks, telescopic and trombone sections, roll-out panels and parallelogram stairs, maintenance staff can now work on the fuselage. Drawbridges allow the wings to be removed while the docks are in position, and retracting tail dock towers enable tail fin removal using the hangar overhead crane. The docks were designed from Beca's Caterbury office and fabricated by Southern Cross Engineering in Christchurch. 'The maintenance docks are our hangar masterpiece', says base manager Viv De Beus.

The result of these innovations is a marked improvement in productivity and is good news for the local economy. A total of 500 people are directly employed at the Christchurch facility, and a significant number are employed indirectly. The success of the project has also led to further contracts for the maintenance base including servicing the US Antarctic support fleet and work for military operators such as the RAAF.

'This innovation is recognised internationally, came in well under budget and the on-going savings could be a million dollars a year' says awards judge Warwick Bishop.

The docks exceed all of Air New Zealand's expectations'.

For information about how to enter your project visit www.nzeeawards.org.nz