

# 2017 ACENZ AWARDS OF EXCELLENCE





**building on a foundation**  
of excellence in roads  
bridges precast marine  
water land



*The Association of Consulting Engineers New Zealand represents business services and advocacy in the consulting industry for engineering and related professionals. We represent the Business of Consulting.*

ACENZ is...

- Over 185 Members directly employing in excess of 10,500 professional and technical staff.
- More than one and a half billion dollars turnover p.a. (total member firms) translates to between 15 and 20 billion dollars of completed capital plant and infrastructure.
- Nearly all consulting engineering firms in this country are ACENZ members.

ACENZ is "The Trusted Advisor" to government, public sector, member firms and their clients and we are committed to achieving 'public good' outcomes in association with its representation of member firms & industry interests and in promoting safety in design.

We provide an informed and representative role in the development of relevant public policy regulation and legislation. Demonstrably a leading and important contributor to goals of the national construction industry. ACENZ is fully committed to advocating and advising on health and safety in the workplace.

ACENZ believes in quality management and Quality Based Selection (QBS) for design services and provides guidance to Members to assist them in implementing appropriate standards, and to enable them in offering their clients a superior service.

We are an active proponent of consistent and robust processes, documentation, and terms of engagement in the engineering related consulting industry. We promote that

leadership values be demonstrated by professionals working in the built and natural environment and we advocate as the communal voice of the consulting and engineering voice for the industry.

ACENZ membership requires that Members subscribe to a code of ethics that requires them to be responsible professionals who consider the effect of their work on society, and who ensure that their advice is technically competent to ensure safe and sustainable outcomes. Our Members employ a range of professional staff, including engineers, surveyors, architects, planners and scientists and employ a versatility and broad experience allowing consulting engineering firms to offer a complete consulting service to their clients.



## ACENZ KEY WINS

- Launched the 2nd Edition of our state of the industry publication 'Our Business' at an event hosted in Parliament by Hon. Dr. Nick Smith.
- Caused unacceptable wording on several Design Certificates to be amended and re-issued
- Negotiated amendments to Ministry and Agency contract conditions for professional services
- Provided input and made submissions on draft bills including Construction Contracts Act, Standards and Limitations Act, and Earthquake Prone Buildings Act.
- Signed a Memorandum of Understanding (MoU) with the Ministry of Education, Consulting Engineering Advancement Society (CEAS) and soon to be signed MoU with Wellington Water whilst maintaining existing MoUs with NZTA
- Convinced a number of BCA's to use unrevised ACENZ Producer Statement documentation (e.g. Hamilton, Tauranga and Waikato Cluster of councils)
- Negotiated changes to contract forms in use by several local government entities
- Worked with Ministry of Education to produce revised Conditions of Engagement and procurement processes
- Continued a close relationship with Auckland Council to advocate robust and fair Conditions of Contract
- Circulated real-time member advisories and cautions regarding contracts/certificates
- Undertaken a major collaborative review of ACENZ Conditions of Contract for Consulting Services (CCCS) involving client groups and other industry sectors.
- Originated or contributed to many submissions into government and Commission processes
- Presentation to Government select committee relevant to the Construction Contracts Act Amendment
- Advised government ministries and agencies on matters of contract models and procurement practice
- Promoted Proportionate Liability with Government Ministers and Labour Cabinet members
- Promoted more activities within Regions coordinated by ACENZ Regional Chairs (formerly Area Representatives)
- Represented NZ internationally through FIDIC (International Federation of Consulting Engineers) at the CEOs Conference in Australia and at the global conference in Marrakesh
- Notable meetings with relevant ministers and regular senior level interface with government bodies
- Many private/public sector clients now frequently come to us for consultation before we contact them.



## TRANSFORM THE NORM... **THE ACENZ AWARDS**

The ACENZ Awards are informally known as our People Awards, recognising incredible personal achievement within and for the consulting and engineering industry. The people awards are designed to recognise significant contributors to the industry or rising young leaders who may influence the future of our profession. The awards include:

- AECOM / ACENZ Best Practical Work Report Award (for students)
- Tonkin & Taylor / ACENZ Future Leader Award (for young professionals)
- President's Award



## PRESIDENT'S MESSAGE

*Mike Kerr, Beca*

It is humbling to see the quality of the submissions again this year in the INNOVATE NZ Awards (project awards). What struck me is the ever increasing breath of what our members are involved in. Also, the rapidly changing technologies in both the tools we use and within the solutions we develop. In all cases the winners demonstrated just how much we influence our communities - whether it is safe drinking water, efficient highways, creative urban development or quality receiving water to name just a few.

However, the highlight for me was the sheer quality of our Young Professionals, showcased through the ACENZ People Awards and the Future Leader Award for emerging young leaders. Our industry and profession is being passed on to more than capable new leadership. Equally obvious is that some of our older operators need to get out of the way as we are

a risk of holding things up! Every year the judges struggle to select a winner for our Future Leader Award, but this year they even struggled to short list three finalists I see. I don't envy them the job.

The President's Award is bestowed on someone who has provided significance to our industry. This is not awarded every year, but this year there was an obvious recipient. This year I had the pleasure of presenting the award to Graham Chapman. Graham has made, and continues to make, a huge contribution particularly in the commercial environment we work in. He is a very wise and experienced man, but also a humble one. We have all unknowingly benefitted from Graham's hard work. As a recent example Graham has led the review of what is one of the most critical documents for our industry, Conditions of Contract for Consultancy services. Well done to you all, your outstanding project and consultancy work, strong future leaders, and ongoing contribution to your Association...you have lifted the hurdle yet again.



## **PRESIDENT'S AWARD**

*Graham Chapman, AECOM*

Graham Chapman is the Market Sector Director of Highway & Bridges for AECOM New Zealand. With a Bachelor of Science, Civil Engineering (Honours), Graham has professional registrations as a Chartered Professional Engineer in New Zealand and a Chartered Engineer in the United Kingdom.

He is a Fellow of the Institution of Professional Engineers and a Member of the Institution of Civil Engineers in the United Kingdom. Graham is also an active member of the Society of Construction Law in New Zealand. He further served ACENZ as a Past President, Board Member and continues to contribute to his professional on several volunteer Forums and Advisory Groups with the Association.

Graham has over 40 years' experience in consulting engineering and specialises in design and project management of transport infrastructure, preparation of professional services agreements and administration of construction contracts.

He recently chaired the committee of 25 local and central government department representatives, consultants, professional organisations (IPWEA, IPENZ and NZIA) and insurers reviewing the Conditions of Contract for Consultancy Services (CCCS).



## THE ACENZ / TONKIN & TAYLOR FUTURE LEADER AWARD

### *About the award*

Introduced by the association in 1998, the award was established to recognise and acknowledge the future leaders of our industry. ACENZ aims to empower young engineers and equip them with the management tools and training through the experiences of this award. The winner and finalists for this award have been identified as possessing a high standard of leadership abilities and great potential to be game changers within our industry. This award has been jointly sponsored by ACENZ and Tonkin & Taylor since 2015. We also want to thank our judging panel including Samir Govind, Rachel Wright, Lyall Green, and Doug Johnson.

### *Prize*

The winner receives an opportunity of a lifetime, including registration costs for the FIDIC Young Professionals Management Training Programme. This is run through webinars with young professionals from all over the world during the year with the final module to be completed at the FIDIC Annual Conference. The winner receives the prestige title "Future Leader Winner," a framed certificate, \$1,500 cash prize, conference registration and travel, and one year on the ACENZ Board.

Runner-up finalists will receive a framed certificate and \$1,000 towards an approved business management course.

### *About Tonkin & Taylor*

Tonkin & Taylor is an employee owned, New Zealand environmental and engineering consultancy that provides innovative, cost effective and sustainable solutions for a diverse range of clients. T&T has a strong reputation for technical excellence in the following discipline areas, civil, environmental, geotechnical and water resources. T&T are the proud sponsors of the Tonkin & Taylor ACENZ Future Leader Award for Young Professionals in the built and natural environment.





## **FUTURE LEADER AWARD WINNER**

*Clare Tolan, Harrison Grierson*

Harrison Grierson is a top 10 professional engineering and design consultancy, with 350 staff in six offices across New Zealand. As a multi-disciplinary consultancy, it employs licensed surveyors, professional planners, specialist urban designers, landscape architects and engineers.

Clare Tolan was appointed General Manager-Survey at Harrison Grierson in 2016. Her role is to lead and coordinate the survey discipline across the company to ensure it achieves its financial budgets and the company's strategic objectives.

A senior surveyor with 12 years of cadastral surveying and land development experience, Clare has worked in Hawke's Bay, Melbourne and Christchurch. She is now based in Auckland where she leads the company's 60 surveyors.

She is well noted within Harrison Grierson by senior leaders for her strategic thinking, pragmatic and determined focus, and her outstanding leadership abilities within the company. She has further been praised by clients for her impressive professionalism in challenging and often complex situations and scenarios, always keeping the best attitude and representing the profession well.

Clare holds a Bachelor of Survey from Otago University. She is a licensed cadastral surveyor, and is studying towards an MBA through the Edinburgh University School of Business.

She is a member of the New Zealand Institute of Surveyors, Consulting Surveyors New Zealand and the Property Council's Women in Property. Clare is also an active mentor of graduates at Harrison Grierson.



## FINALIST

*Stephanie McLeod, Stantec*

Steph McLeod commenced with MWH, now part of Stantec, in 2011 as a Project Manager and Geologist before being recognised as a future leader of the business and promoted to the role of Project Management and Commercial Leader for water business across New Zealand.

She is a qualified Project Management Professional and has completed the MWH University's Developing Future Leaders course.

Steph's previous managers all agree that she demonstrates the kind of leadership and commercial acumen that is well beyond her years. She continually translates the commercial and technical lessons she learns from working 'at the coal face' into commercial intellectual property that benefits herself, her clients and the company.



## FINALIST

*Catherine Morar, Aurecon*

Catherine is a Chartered Process Engineer with the Institute of Chemical Engineers, and specialises in Process Safety. She has had a 10 year career spanning the oil and gas industry in Australia, Malaysia and now New Zealand. In her role at Aurecon NZ, as Senior Process Safety Engineer, Catherine supports NZ and Australia businesses in the Energy, Resource and Manufacturing sector, to embrace Process Safety as an integral culture in their business. Catherine uses her leadership skills to continually improve the understanding and capability around Safe Design methodology in Aurecon and as a consultant in the Built Environment. Her goal is to be able significantly reduce the risks to personnel and the environment throughout a projects life cycle. Outside work Catherine is developing her leadership skills as the Chair of the ACENZ Young Professionals Group in Wellington, valuing the benefit of providing networking and leadership development opportunities to the future leaders in our industry.



## FINALIST

*Carla O'Donnell, Opus International Consultants*

Carla is the principal Commercial Manager for Opus' global business and also the acting Business Manager for the Dunedin office. Carla has a unique skill set as both a Chartered Accountant and a Lawyer. She has been working in the infrastructure sector for five years in a variety of roles with focus on commercial management. Carla has been with Opus International Consultants since 2015, after working abroad in London. Part of her role includes leading project teams through the internal governance process (Project Risk Committee) and supporting with risk and pricing reviews and commercial reviews of 'strategic projects' across the group in addition to managing the Dunedin office of 40 staff.

Carla is involved in the wider Wellington community through governance work as a Wellington Regional Councillor with CA ANZ and enjoys running with the WLG Scottish Harriers.



## THE ACENZ / AECOM BEST PRACTICAL WORK REPORT AWARD

### *About the award*

The student award was introduced by ACENZ in 1996. This award highlights the importance of written communication skills that are essential for report writing in the business of consulting and engineering, and promotes career opportunities within the consulting engineering industry. AECOM is pleased to sponsor this award jointly with ACENZ since 2015. Fourth year engineering students are invited to submit their practical work report as part of the Bachelor of Engineering Degree prescriptions. The entries are judged on report writing and the student's ability to describe the work they carried out and their experience gained, rather than on the duties undertaken. We also want to thank our judging panel including: Mike O'Halloran, Craig Davidson, and Dr Jan Kupec.

### *About AECOM*

AECOM is built to deliver a better world. They design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, AECOM connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, their work is transformative, differentiated and vital. It is the fusion of AECOM's global reach with local knowledge that enables our New Zealand team to deliver innovative solutions, technical excellence and support the nation's growth.

### *Winners*

- *Edward Hong, Auckland University of Technology (AUT)*
- *Hayley Byun, University of Auckland*
- *Michael Kennerley, University of Auckland*



WITHOUT  
LIMITS

AECOM

# SENTIMENT

INFRASTRUCTURE AND BUILDINGS CONSTRUCTION SURVEY  
NEW ZEALAND 2017

As a nation, New Zealand is looking towards a new era of growth. The way we plan and build our cities and regions is a key part of this.

For the past eight years, AECOM has surveyed the market to provide the industry with in-depth insights to meet the challenges ahead.

Our 2017 Sentiment Report is out now.  
[Visit aecom.com/nzsentiment](http://aecom.com/nzsentiment) to learn more.

THOUGHT LEADERSHIP THAT ADDRESSES  
THE BIG ISSUES OF TODAY AND TOMORROW

# Professional Indemnity insurance and risk management advice for ACENZ members and consulting engineers.

Aon is New Zealand's leading provider of insurance broking, risk management and associated services. We design and place insurance programmes for our clients and are a major supplier to both New Zealand and overseas insurance markets. We are proud to be a long-term supporter and sponsor of the **ACENZ Conference**.

To speak to an Aon Insurance Broker about Professional Indemnity insurance, contact:

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## ABOUT THE INNOVATE AWARDS

The INNOVATE NZ Awards of Excellence showcase and celebrate outstanding consulting service or innovative practice which raises the profile of the industry in the built and natural environment. All the winning projects have demonstrated excellence in either innovation or superior consulting service.

The INNOVATE Awards differ from others as the projects are evaluated individually on the merit of each project alone, so there may be more than one award in any of the given categories or none at all.

A project is not awarded a prize (being Gold, Silver, or Merit) for simply being a good project. The work, technology, service, and innovation must go above and beyond what is considered standard operating procedure for the industry. Often winning projects help to instate a new industry norm, which constantly challenges professionals to become better at consulting for clients and the public good.

This in turn helps the profession to grow, continually pushing the boundaries of what is accepted as standard practice or what is determined to be outstanding work in the consulting or engineering field.

*The Awards are about more than just “business as usual” or doing a good job. Consultants should be delivering a good job as a part of the standard. Winning is about producing an “above and beyond” result and setting a new standard of practice for the industry.*



## CONVENOR'S MESSAGE

*David Bridges, Good Earth Matters Consulting*

The business of consulting is about delivering excellence and adding value for our clients. ACENZ members are at the centre front working with clients to deliver outstanding projects within the natural and built environment. The Innovate Awards are an opportunity for the profession to showcase its work to a wider audience.

This year is no different. What is special about this year's awards is the number of entries received and the depth and breadth of the expertise being demonstrated across all aspects of the natural and built environment including Resource Management, Building Information Management, and Remote Sensing to name a few, along with magnificent building projects and roads of natural significance.

The standout projects are all characterised by good old

fashioned consulting excellence, great client relationships, and adding value for the client. It is a privilege to be able to share this excellence with you, and to be able to acknowledge with pride the contribution that ACENZ members are making to the built and natural environment.

I wish to acknowledge the contribution and commitment of my fellow judges, and their willingness to take the time out of busy schedules. Without such commitment there would be no awards. I would also like to acknowledge three long serving members of the panel, Alec McCulloch, Ernst Sansom and Gavin Still who are stepping down. Lastly, I wish to thank all the entrants for sharing their projects with us and congratulate the winners.

David Bridges, 2017 INNOVATE Awards Convenor



## THE PROCESS

What many don't fully realise is just what an intensive judging process the INNOVATE Award entries go through. It is by far one of the most thorough and rigorous awards processes in the country.

Written submissions are entered each year around March, each addressing a standard set of criteria and highlighting what the entrants feel is the most special or meritorious aspect of their projects.

From there, the Convenor reads each submission to assess which skill set will be most needed to evaluate the project to the highest of standards in a particular

discipline. The entire judging panel is composed of 25-35 judges in an array of specialist and general engineering experience. Our panel combined holds close to 1,000 years of experience and expertise to contribute to the evaluation of projects.

Each project is then assigned a specific judges team of 4-7 judges and includes one Lead Judge, one Judge, and up to four Readers for each project.

The teams then investigate the written material of each project, often conducting Client interviews, and where appropriate interviews with the Lead Contractor and sometimes Principal. The Lead Judge and Judge often conduct a physical site visit of the project to further investigate the meritorious aspects

of the submission. This preliminary evaluation period can last several months and culminates at a Final Judges Meeting where the full panel of 25-35 judges come together in one room over two days to debate and test the meritorious aspects of each project. The judges consider what the current industry standard or "norm" of delivery is and considers if these projects elevate the industry standard or have provided exceptional and superior consulting work. It's not good enough to just be good, but winners provide exceptional consulting work for their clients.

This robust process is what keeps the INNOVATE Awards as the pinnacle awards programme in the consulting and engineering industry.





## THE PANEL

### *2017 INNOVATE Judges*

Adam Thornton, Alec McCulloch, Alistair Cattanach, Allan Leahy, Andrew Charleson, Andrew Read, Ashley Wilson, Ben Holland, Bob Nelligan, Brent Meekan, Cam Wylie, David Bridges (Convenor), David Voss, Ernst Sansom, Gavin Still, Iain Rabbitts, Matt Spooner, Michael Simpson, Murray Spicer, Ray Patton, Rebecca Jackson, Scott Vaughan, Simon Drew, Steve Jenkins, Trevor Matuschka, Win Clark, Jim Dobbie, Nathanael Sterling, Angus McDonald, Ann-Marie Head, Tania Williams, Richard Neate, Hamish Nevile, Andrew Field, Steve Salmon, Catherine Chong (ACENZ Awards Coordinator), and Holly Morchat Stanko (ACENZ Awards Coordinator).



## CHRISTCHURCH: OUR UNDERGROUND STORY

*Phil Wilkins, Martin Coates*

Christchurch - Our Underground Story is the story of the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) and the rebuilding of Christchurch's in-ground infrastructure as told by engineers for children.

This is an amazing story brought to life in picture book form. It tells the story of the rebuild of Christchurch's in-ground infrastructure following the Christchurch Earthquakes.

The book seeks to educate and inspire young minds about the world of engineering, simplify the complexity of engineering and encourage a wider understanding to the importance of the work engineers undertake.

Written by BECA Engineer Phil Wilkins, and illustrated by BECA Engineer Martin Coates, this inspirational and inspiring book lifts the lid on our underground services, exposing the infrastructure with lift up flaps which tell the story.

The complexities of rebuilding infrastructure and returning life to normal after an earthquake are vast. The authors have used innovative techniques to present complex information in a simple way that is interesting, funny and easy to relate to.

*This book tells a remarkable story, dispels the myth that engineers can't communicate and opens young minds to new ideas and concepts. It is truly innovative and excellent.*



Credit: IPENZ Book Launch



Credit: IPENZ Book Launch





## TAUMANU RESERVE (ONEHUNGA FORESHORE)

*The Onehunga Enhancement Society (TOES)*

The Taumanu Reserve has been in gestation for around 35 years, since State Highway 20 was constructed in the mid-1970's. The motorway extended the Mt Roskill to Wiri Motorway across Onehunga Bay.

While the motorway added significant value to Auckland's infrastructure and growth, it cut off the community of Onehunga from the Manukau Harbour and foreshore. At the time of construction, there were plans to design and develop a new public space open with pedestrian connections to the foreshore.

However, due to funding restrictions, the enhancements and public foreshore project were never completed. From 1975 to 2009, Onehunga's community advocated strongly for the foreshore project to be revitalised. After some 30 plus years of

advocacy and petition, The Onehunga Enhancement Society (TOES) was successful in securing \$28 million from Auckland Council and NZ Transport Agency to finally complete the public space promised decades before.

Once funds were allocated, the council tendered the project through a design competition which was won by Fulton Hogan in partnership with lead consultants Tonkin & Taylor and delivery partners Isthmus and AECOM.

TOES' dedication and perseverance to restoring access to the beautiful foreshore reserve is a commendable victory for both community residents and visitors. By gathering the right stakeholders together and fostering a deep and passionate drive to see this project come to fruition,

*TOES has achieved great things which has cumulated in the Onehunga Foreshore restoration project becoming a reality, not just a dream.*



Credit: David St George



Credit: Fulton Hogan



Credit: Fulton Hogan



Credit: Fulton Hogan



Credit: Fulton Hogan

# ENGINEERING A BRIGHTER FUTURE

CHRISTCHURCH ADVENTURE PARK

GEOTECHNICAL  
ENVIRONMENTAL  
GEOLOGY  
HYDROLOGY



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## RE-CREATE THE CLASSICS... **THE GOLD AWARDS**

The premier award is the Gold Award of Excellence. This award acknowledges a superior project for innovative achievement undertaken by an ACENZ member or a group of Members acting as either Principal Advisor or as Secondary Advisor. It also is awarded for outstanding consultancy service to the client which goes above and beyond standard service delivery.

- Olkaria IV & 1AU Geothermal Power Project
- Project Takatu
- Skellerup Project Viking
- Arts Centre of Christchurch - C Block
- Taumanu Reserve (Onehunga Foreshore)
- Mason Brothers - Building Information Modelling



## OLKARIA IV & OLKARIA 1AU GEOTHERMAL POWER PROJECT

*Jacobs for Kenya Electricity Generating  
Company*

**KENYA**

The Olkaria IV and Olkaria IAU Geothermal Power Projects are an extension of an existing geothermal scheme that supplies reliable, sustainable and affordable electricity to the Kenyan grid. Kenya's electricity supply was being reduced by more frequent droughts affecting hydroelectric sources and

the high operating costs of diesel powered generators. In 2010 Jacobs was selected from an international competitive bidding process as the Project Manager and Owners Engineer for two separate power stations, each generating 140MW and to design the steam field system that linked geothermal wells to these power stations.

To meet the urgent demand for electricity, the design and construction of the steam field piping and separation plants had to start before the output from the geothermal wells was known.

Jacobs designed modular plants to separate the geothermal steam from the water phase, which allowed additional modules to be added if well performance was different than expected. Future wells can be added to the system.

The steam field piping design had the added complication of being within Hells Gate National Park. It needed to address the sensitivities of the communities living in the area and the natural wildlife movements through the park.

The consultants delivered a superb solution, in a challenging overseas location, which has resulted in a significant increase of affordable electricity to Kenya.







## PROJECT TAKATU

*AECOM for Christchurch International  
Airport*

### CHRISTCHURCH

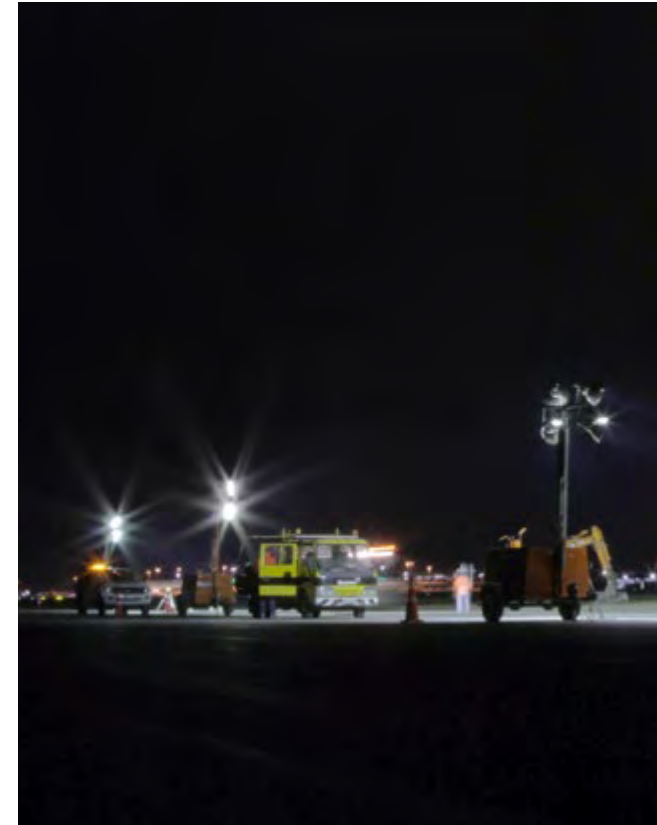
Christchurch International Airport's Project Takatu was not only a project to undertake routine maintenance but an opportunity to complete future focused work to ensure its operational capability for years to come. Christchurch Airport is one of only two runways in New Zealand that is rated to receive "Code F" aircraft. It must also be available to receive emergency medical flights or diversions at very short notice.

AECOM had a massive challenge to design for the remediation work to be undertaken without disrupting air traffic arrivals or departures. The project called for adding an additional 7.5 metres to each shoulder of the runway in addition to standard maintenance work.

The consultant was proactive with communication between the client, contractors and airline service providers to gather feedback and develop an extensive plan of action using a "conditions matrix". The matrix took into consideration various factors and other contingencies such as the scheduled flights for the day, size of planes, forecasted weather, and such. Because the variables changed every day, AECOM's challenge was increased by needing to develop a specific plan of work which was determined by 9am each day, confirmed by 6pm, with works beginning by 9pm each and every day.

Using the matrix, AECOM developed a thorough schedule to complete small incremental work by shifting the runway's "go zone" by a marginal amount each night. This allowed progressive works to be completed without halting operations to the airport.

AECOM has raised the bar of consulting performance by crafting an elegant and superior solution for the client amid challenging site and situational factors. Collaboration with partners, an intensive and detailed contingency matrix and responding intelligently to this critical project is truly award worthy.





## SKELLERUP PROJECT VIKING

*Beca, Calder Stewart Industries, Inovo Projects, and Skellerup Holdings for Skellerup Holdings*

### CHRISTCHURCH

Skellerup, a world leader in the design and manufacture of food grade dairy rubberware needed a new home after the Canterbury Earthquake Sequence. Their significant position in the global dairy market made completing this project on time and ensuring no problems or errors occurred critical to the

project's success. Any delay would result in reputational and market losses that would take years to regain.

Beca, working collaboratively with Calder Stewart Industries, Inovo Projects, and Skellerup's Project Team, delivered an elegant solution to a highly complex and critical project.

The team had to plan to move over 200 staff from two separate sites and 18 buildings, into a single building with room to grow, all with no halt to production. Multiple manufacturing processes needed to be carefully planned out to ensure the production streams and associated infrastructure was re-established in an efficient and effective manufacturing environment.

Beca provided the expertise in design, consenting, and building works. The team created a detailed BIM model which was used to practise scheduling and move orchestration in a very precise and tight space with no margin for error, which led to a successfully completed project.



Credit: David Alexander



## ARTS CENTRE OF CHRISTCHURCH - C BLOCK

*Holmes Consulting for Arts Centre of  
Christchurch*

### **CHRISTCHURCH**

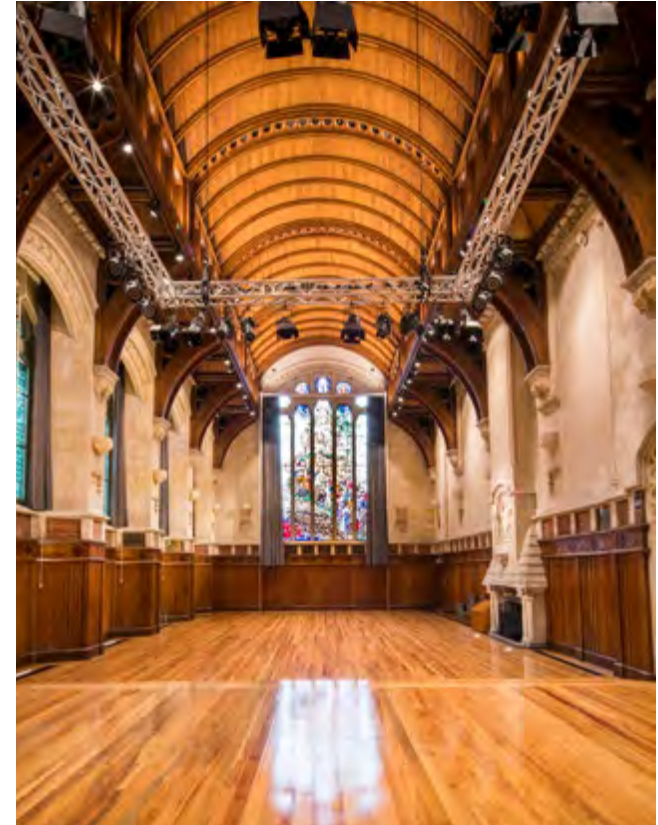
The Arts Centre of Christchurch is a nationally significant set of buildings with heritage status. The resulting damage from the Canterbury Earthquake Sequence instilled fear in the heart of the community as to whether this treasured facility would re-open for use.

The entire centre is a cluster of 23 neo-Gothic buildings, with a sub section known as "Block C" including the Great Hall, Clock Tower, Rutherford's Den and Bunsen Café. The various areas within Block C presented quite a challenge for Holmes Consulting tasked with the repair, restoration, strengthening and conservation of this treasured centre.

Each structure required different structural solutions, which needed to be invisible to the eye as much as possible, using the original stone and a variety of new materials to repair the extensive damage.

The unreinforced stone masonry limited possible solutions, as well as providing complex challenges to provide safe working conditions in a seismically active zone while maintaining heritage values and details of the buildings.

Holmes's award recognises a combination of technical excellence and sensitivity in restoring the heritage buildings to their former glory with a seamless solution that provides a great outcome for the client and the community.





## TAUMANU RESERVE (ONEHUNGA FORESHORE)

*Tonkin & Taylor for Auckland Council*  
**AUCKLAND**

In Auckland's south west, next to State Highway 20 (the South-western Motorway) is the Taumanu Reserve (Onehunga Foreshore). What was cut-off from the community by the motorway's installation in the 1970s is now a vibrant public recreational space including naturally engineered coastal infrastructure and bird refuge and roosting areas.

The redeveloped reserve occupies 6.8 hectares of land reclaimed from the Manukau Harbour. The site had multiple engineering constraints including existing infrastructure such as stormwater, wastewater, high tension power lines, a gas main, State Highway 20 itself and an active coastal environment.

Tonkin & Taylor led the design and consenting of this large scale design and build project. Excelling at creating a unique and sustainable coastal reserve, T&T delivered the technical functions in a dynamic marine environment with the feel of a natural New Zealand beach.

By stepping outside of traditional engineering and engaging with landscape architects, iwi, the community and flora and fauna experts, the consultants have delivered above and

beyond the industry standard to provide ecological function and engineered infrastructure that looks like it is part of the natural environment and all within budget.

This award worthy project has demonstrated a highly creative solution and superior consulting performance with a range of stakeholders.





Credit: Fulton Hogan



Credit: Fulton Hogan



Credit: Fulton Hogan





Credit: David Wiskiewski

## MASON BROTHERS BUILDING INFORMATION MODELLING

*Beca for Precinct Properties*

**AUCKLAND**

In the heart of Wynyard Quarter is the Innovation Precinct and the newly refurbished Mason Brothers Building, a three story commercial development with approximately 5,600m<sup>2</sup> of space. The vision of this building is to focus on creating a sustainable urban environment which fosters innovative thinking and supercharges economic development.

With that vision driving the developer, Precinct Properties engaged Beca to create an innovative cloud based mobile platform which integrates building data and services information from the contractors and various service providers into one place.

Harnessing the power of Autodesk's 3D and other modelling software, Beca integrated separate programmes into one easy to use digital platform that can be carried on site using mobile technology.

Asset owners, suppliers, tenants and other stakeholders now have an easy to use, "one stop shop" to access their building services needs. This saves the client time, money, and equips them with tools to adapt at the forefront of the building services industry.

This was a technically complex and challenging project that utilised off-the-shelf technology in a new and potentially industry changing way. Integrating mobile friendly devices and a platform that is easy to use for a variety of stakeholders and contributors, Beca has elevated the building services industry and the way that owners, landlords, suppliers and operations work together.

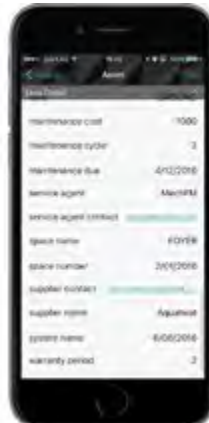
This project is award worthy for the superior consulting services delivered not only to the client, but becoming a trusted Advisor to a global engineering supplier raising the reputation and bar of performance for a consulting engineer.



Credit: David Wiskiewski



Credit: David Wiskiewski






# **We** make things happen

**At Beca, we're working together to transform the world with you – igniting ideas that change the lives of the people in our communities.**

Financial Review Client Choice Awards 2017 winner for Best Professional Services Firm\*;  
Best Engineering Consultant\*; and Market Leader: New Zealand. \*Joint award (revenue > \$200 million)



We're one of the largest employee-owned professional services companies in the Asia-Pacific, offering a rich pool of engineering consultancy services as well as business and technology advisory, architecture, planning and environment, project and cost management, and valuation services.

Through valued partnerships, our tenacious spirit and a passion for problem-solving, we make things happen.

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# ELEVATE EXPECTATIONS...

## **THE SILVER AWARDS**

The secondary award is the Silver Award of Excellence. This award acknowledges projects that clearly demonstrate an outstanding achievement and service to the client. It also is awarded for smart and innovative technology or project solutions.

- SKYCITY Generator Replacement Project
- The Majestic Centre
- Northern Winter Schedule Remote Stands - Stage 1
- Paraparaumu 220kV Upgrade
- The Aurora Centre
- Cashin Quay 2 Container Wharf Reconstruction
- Remote Bridge Monitoring
- Christchurch Bus Exchange
- Christchurch City Council Insurance Programme





## SKYCITY GENERATOR REPLACEMENT PROJECT

*Beca for SKYCITY*

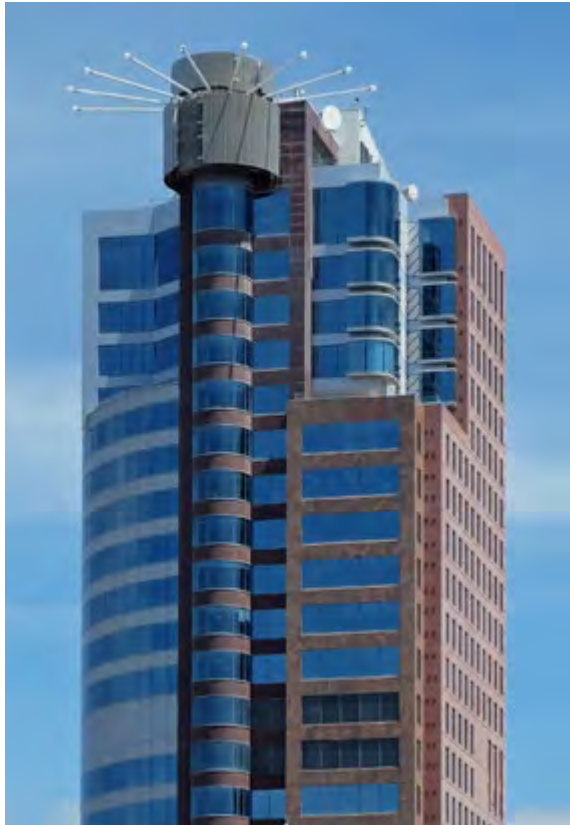
### AUCKLAND

Spurred on by the impending construction of the International Convention Centre in Auckland, SKYCITY needed to find a home for three new backup generators to replace the three existing sets which would impede construction. Working within existing spaces (a constrained site) and not consuming any revenue generating space, Beca was brought on board to provide engineering services for this complex and time sensitive project.

The consultants designed, installed, commissioned and integrated the three new generators by utilising void space within the existing layout of the building.

Careful acoustic engineering was needed as the proposed location was directly adjacent to a high revenue area of the hotel and daily operations could not be impacted. In addition, the installation could not impact the existing generators as a loss of backup power was not acceptable for the hotel and casino.

Working with several other stakeholders, suppliers, and contractors, Beca delivered the client an elegant solution in a tight time frame and on budget, providing a great example of what excellent consulting work looks like.



## MAJESTIC CENTRE

*Holmes Consulting for Kiwi Property Group*  
**WELLINGTON**

The Majestic Centre, true to its name is arguably the most iconic building in Wellington. Standing tall at 30 storeys, the undertaking to strengthen the city's tallest office tower, involved work across a gross area of almost 25,000m<sup>2</sup>.

Post Canterbury earthquakes, most of the country was prompted to check and revamp the seismic capability of commercial buildings. The owners, KiwiProperty decided to embark on an ambitious and technically complex strengthening of the Majestic Centre, engaging Holmes Consulting to deliver the seismic design.



Following thorough detailed analysis the strengthening solutions focused on critical elements of the building including the foundations, shear cores, transfer beams, perimeter frame ties, precast floor seating and other essential strengthening elements.

One of the largest challenges for the consultant was to find solutions that could be installed while the building remained almost fully occupied. This required intensive collaboration with contractor and client.

This meritorious project overcame numerous complex technical and commercial challenges and delivered the client an elegant solution through great consulting work.







## NORTHERN WINTER SCHEDULE REMOTE STANDS - STAGE 1

*GHD for Auckland International Airport*  
**AUCKLAND**

Auckland Airport is by far the busiest airport in all of New Zealand and the winter season sees a boom of overseas visitors looking to escape the Northern Hemisphere winter for our cozy climate. The client, looking to accommodate expected growth was seeking a team to deliver six additional remote stands (two Code E and four Code C).

On top of the existing challenges of designing and delivering a project amongst an active and fully operational airport, GHD delivered this feat in a staggering 11 week time frame.

The consultant went the extra mile, developing an innovative solution specific to the client's needs with specialist asphalt and epoxy mix, enduring a brutal static weight of up to 280 tonnes on 12 tyres, together with the demands of the airport traffic.

A proactive design, early contractor involvement and collaborative engagement was key to delivering this innovative solution specifically designed to meet the client's needs.



## PARAPARAUMU 220kV SUBSTATION UPGRADE

*AECOM for Transpower*

**KAPITI COAST**

As a part of the larger Transmission Gully Project, the Paraparaumu 220kV Upgrade was a critical and time sensitive project for the client, Transpower. AECOM was brought on board to tackle this challenging and important project to upgrade the existing 110kV station to a larger capacity 220kV station to better serve the region for many years to come.

Working around an existing and fully operational substation, AECOM expertly executed not only a complex technical

solution but also contributed to a collaborative environment which helped the project to finish 3 months ahead of schedule.

As a result of this excellent planning, suppliers were able to arrive on this tight spaced site with well-developed safety and site plan procedures already in place.

This project is award worth for the great consulting project delivered by AECOM for the client Transpower. Collaboration with partners, open and innovative communication, overcoming site constraints, while delivering a superb technical solution is what great consulting is all about.



## THE AURORA CENTRE

*Holmes Consulting for Kiwi Property Group*

### WELLINGTON

The redevelopment of the Aurora Centre in Wellington's CBD involved the straightforward demolition and rebuild of the adjacent Aurora Chambers and a new 5 storey addition over the existing carpark building. However upgrading the existing 18 storey Aurora House tower, constructed in 1968 before current seismic design procedures were conceived, required an innovative solution.

Holmes Consulting proposed the use of Fluid Viscous Dampers as part of the seismic strengthening work which was a first in New Zealand for an existing building. Two large diagonal

dampening braces in each orthogonal direction at every level act as shock absorbers to significantly reduce earthquake induced motion.

The consultants had to evaluate each floor of the 18 Storey building to assign the appropriately sized damper with each one required to be fully tested prior to installation. The three seismically separated buildings provide a new home for the Ministry of Social Development.

This technically challenging project has significantly improved the building, not only in appearance but also in seismic resilience.



Fantastic client delivery with a smart and innovative application of technology is what makes this project truly award worthy.



Credit: Lyttelton Port of Christchurch



## CASHIN QUAY 2 CONTAINER WHARF RECONSTRUCTION

*Opus International Consultants for Lyttelton  
Port of Christchurch*

### **CHRISTCHURCH**

Within the waters of Port Lyttelton is the Cashin Quay 2 Wharf. It was badly damaged in the 2010-2011 Canterbury earthquakes. Opus was engaged to design and provide advice during construction of a new container wharf.

The wharf is an important artery for South Island commerce. The design faced several challenges including updates to accommodate the next generation of 14.5m draft vessels at a site with weak soils vulnerable to strength loss when subjected to earthquakes.

The new wharf was designed to meet recent international seismic design standards which included consideration of multiple design earthquake load levels with different performance requirements.

Opus went above and beyond in delivery. This project is meritorious for the complex and state of the art design techniques Opus employed at a site with difficult geotechnical conditions and a number of logistical challenges to deliver a fantastic consulting job for the client, Port of Lyttelton.



## REMOTE BRIDGE MONITORING

*Opus International Consultants for NZ Transport Agency*

### CANTERBURY

Resulting from changes in legislation, the client New Zealand Transport Agency, was required to open main state highways to High Productivity Motor Vehicles (HPMVs). The client planned to open all of State Highway 1 which runs through the South Island. However, concerns over the older Rakaia and Rangitata river bridges led NZTA to engage Opus to conduct a safety investigation into the residual strength and resilience of these

older assets. The consultant responded well to this ambitious long term monitoring project by integrating their own R&D and innovative technology into a low cost, real time reporting system.

Opus created a bespoke solution utilising small and easily transportable equipment, able to run on solar energy. As a result of the advances in the technology used, the data can now be remotely transferred, in real time, to their Christchurch office.

Being able to continuously monitor bridge loadings has given both NZTA and Opus the confidence to conclude that expensive strengthening work to the bridges is not currently required resulting in savings of many millions of dollars for the client.

This meritorious project is great consulting including the innovative use of IT that has the potential to change industry methodology moving forward.



## CHRISTCHURCH BUS INTERCHANGE

*Aurecon for Architectus*

### CHRISTCHURCH

The Christchurch Bus Interchange was designed to provide a central terminus in the CBD combining sixteen bus bays, taxi and cycling parking, retail, and pedestrian access. The area, composed over a full city block was complex needing to embrace the traffic needs in a city recovering from the impacts of the earthquakes.

The design exceeded expectations, able to accommodate up to 96 bus movements per hour and significantly created a safe

and pleasant environment. Architectus and Aurecon were appointed to design this anchor project and embraced the vision for what could be achieved.

Facing doubtful stakeholders, the consultant really adopted the project and drove a great consulting solution. Highly invested in seeing success, Aurecon created a mock model including use of gaming to demonstrate how the novel approach could work and to train drivers for the reverse docking method. The design also integrated safety features for both passengers and pedestrians with rear positioned cameras and monitors as well as a directional flow through for maximum user safety.

This award worthy project demonstrated intense consultant commitment to deliver a creative and great solution for the client.



## CHRISTCHURCH CITY COUNCIL INSURANCE PROGRAMME

*Beca for Christchurch City Council*

### CHRISTCHURCH

Many know the devastation caused by the 2010 and 2011 Canterbury Earthquake Sequence and the recovery efforts that have been going since then. The client, Christchurch City Council, was no different, needing a change in their game plan to secure the next phase of payment from the insurers in order to continue critical rebuild work to the city's infrastructure and public assets.

Beca was brought on board to bring about that change and they successfully delivered for the client.

The consultant had to evaluate over 3,600 commercial assets that were widely varied and required different processing factors for each type.

Beca collected all the necessary evidence and tackled the complex array of challenges and stakeholders to develop the best case on behalf of the client. Their meritorious effort is a fine example of great consulting work.



Above left to right: Christchurch City Council Senior Insurance Specialist Adrian Seagar, Beca Principal NZ Service Lead Programme Management Greg Rozen, Christchurch City council Chief Executive Officer Dr karleen Edwards, and Beca Manager South Island Environments John Blyth.

# UPDATE TRADITIONAL... **THE MERIT AWARDS**

An additional award, called the Award of Merit, recognises projects or achievement that demonstrate a standard above that normally expected to be provided. These winners also excel in either innovative project works or great consulting services.

- ECan Project - 200 Tuam Street
- Paeroa WTP Upgrade
- Causeway Upgrade Project
- Southern Response Global Consent - NES
- Deans Head and Shag Rock Reserve Landslide Remediation
- Christchurch Adventure Park
- Auckland Light Rail Utilities Clash Detection Interactive Model
- Len Lye Centre
- Grand Central
- Temporary Fisherman's Wharf
- Opus House
- Local Path Design Guide
- Holcim Cement Imports Terminal
- Omaru Creek Stormwater Management Plan







## ECAN PROJECT - 200 TUAM STREET

*Quoin Structural Consultants for Environment Canterbury*

### CHRISTCHURCH

Environment Canterbury was looking for a new home that was seismically superior and visually stunning. Quoin Structural Consultants were engaged to deliver the structural design for the five storey office building at 200 Tuam Street in Christchurch.

Quoin were faced with several structural challenges including the client and architect's desire for a column free atrium feature, liquefiable and variable site soils, the need to eliminate traditional wide seismic joints, and an Importance Level 3 design.

The consultants delivered a beautiful solution which included hybrid concrete flight auger pile system and base isolation for sturdy seismic performance. This delivered for the client the architect's vision of column free space and a showcase atrium and stairwell feature.

This project is meritorious for the great consulting work delivered, responsive design, which inspired creative project solutions to be delivered.





## PAEROA WTP UPGRADE

*Harrison Grierson for Hauraki District Council*

### PAEROA

The Paeroa Water Treatment Plant Upgrade was designed by Harrison Grierson to provide compliance with current drinking water standards and to increase capacity for future growth. The consultant developed a treatment process which does not use chemical coagulation for the majority of time (chemical treatment options as a backup safety measure), the first operational plant that uses peroxide in conjunction with UV in New Zealand.

By utilising intelligent design and creative alternate systems, the consultant was able to reduce the volume of supply held on site and increase capacity within the existing infrastructure and asset layout.

This project is award worthy for going above and beyond industry standards to provide a tailored solution utilising existing technology in a new way for the client that is more efficient, sustainable and environmentally friendly.



## CAUSEWAY UPGRADE PROJECT

*The Causeway Alliance (Jacobs, AECOM, Coffey International, Fulton Hogan, and CPB Contractors) for NZ Transport Agency*  
**AUCKLAND**

The Causeway Alliance, comprised of AECOM, Jacobs, NZ Transport Agency, Fulton Hogan, CPB Contractors, and Coffey was appointed to deliver the State Highway 16 Causeway Upgrade. The New Zealand Government and Board of Inquiry approved the project, requiring a successful delivery

of solutions to complex project elements with time and cost certainty.

The Alliance method leads to greater diversification in project delivery methods and is a good example of what collaboration can achieve.

The SH16 Upgrade involved widening the motorway and raising by an additional 1.5-2.4 metres, raising the adjacent cycleway, complex traffic management, challenging additions to existing structures and protecting the sensitive Motu Manawa-Pollen Island Marine Reserve while works were undertaken.

The Alliance offered several innovations to the specimen design which minimized construction costs and had added environmental benefits. The Alliance contract promotes

collaboration and the team embraced this, demonstrating excellent consulting work through open communication and inclusion for the client, public, and other stakeholders



## SOUTHERN RESPONSE GLOBAL CONSENT - NES

*ENGEO Limited for Southern Response  
Earthquake Services and Arrow International*  
**CHRISTCHURCH**

Southern Response Earthquake Recovery Services is the government-owned company responsible for settling claims by AMI policyholders for the Canterbury earthquake damage. To date, they have settled an estimated \$3 billion in earthquake claims, needing repair or replacement of residential property.

A significant portion of the damaged houses were unknowingly built on old contaminated sites including uncontrolled fill, former municipal landfills, horticultural land, or land containing other localised contaminants (asbestos, lead paint, etc). This contamination risk presented a massive safety concern to owners and to the client, as well as representing significant commercial risk to the client.

The client required an efficient but robust solution to process the exorbitant amount of work to be done to identify and manage the risk of these sites. This work needed to be completed both in the context of the earthquake recovery as a whole and the enactment of the then new National Environmental Standard for Assessing and Managing Contaminants in Soil to protect Human Health.

ENGEO was engaged as the Technical Consultant within the team which obtained the first global consent under this standard which streamlined the assessment process at a very challenging time. Obtaining this consent required breaking new ground as well as gaining the trust of the Christchurch City Council (as the consent authority).

ENGEO has delivered as a Trusted Advisor to the client leading to great collaboration and technical delivery.



## DEANS HEAD AND SHAG ROCK RESERVE LANDSLIDE REMEDICATION

*Aurecon for Land Information New Zealand*  
**CHRISTCHURCH**

After the 2010 and 2011 Canterbury Earthquake Sequence, the city of Christchurch and surrounding areas were left with significant land and other damage. The Port Hills area was no exception, and the Deans Head and adjacent Shag Rock Reserve was identified as needing remedial works.

As a critical link to the Sumner area, the risk of rock fall, cliff collapse and landslide onto the Main Road was too great and Aurecon were engaged by Land Information New Zealand to remedy this.

The design comprised of over 50,000m<sup>3</sup> of landslide material which needed to be removed, on a seismically dangerous area with future rock fall or cliff collapse still an active threat to the team.

Using innovative and new technology at the time such as Unmanned Aerial Vehicles (UAVs or drones), photogrammetry and remote controlled excavators, the team safely inspected and remedied the Deans Head and Shag Rock areas.

Aurecon further employed the use of 3D terrain models to map and monitor the high risk areas and alert workers if rock fall risk was elevated. A very happy client and safe site was completed for the people of Christchurch.



Credit: Christchurch Adventure Park



## CHRISTCHURCH ADVENTURE PARK

*ENGEO Limited for Select Evolution and  
Port Hills Leisure*

### CHRISTCHURCH

The Christchurch Adventure Park is the world's first purpose built mountain bike facility accessed by chairlift. The outdoor adventure park covers 900 ha with mountain bike tracks, four zip-lines up to 1.1 km long, a café and retail and event space.

ENGEO impressed the client by delivering the geotechnical engineering, chairlift and zipline foundations, rockfall hazard

assessments, hydrological and environmental monitoring all in a constrained eight month time frame. ENGEO's approach was pragmatic and highly collaborative with both the client and contractor.

ENGEO demonstrated excellent client service and delivered on time and within budget. The consultant have excelled as a Trusted Advisor and proven their meritorious work with an elegant and collaborative delivery of consulting solutions.



## AUCKLAND LIGHT RAIL UTILITIES CLASH DETECTION INTERACTIVE MODEL

*Arup NZ and Jacobs for Auckland Transport*  
**AUCKLAND**

With a growth explosion that isn't showing signs of slowing, Auckland Transport is investigating the introduction of a light rail as a way to address the future transport needs of this booming metropolitan city.

Arup and Jacobs Joint Venture undertook the reference design for the proposed 29km route. To plan such an intensive new system amongst the existing infrastructure complexities presented a real challenge for Auckland Council. They needed a way to understand how the proposed route may affect or clash with any existing underground or other infrastructure utilities.

The consultants developed an innovative and new method of detecting potential utility clashes. By consolidating existing utility and asset information into a model, applying an intelligent algorithm, and upgrading the standards of new data collection, Arup and Jacobs have innovated a new modern way to save time and money for the client.



## LEN LYE CENTRE

*Holmes Consulting for Len Lye Centre*

### NEW PLYMOUTH

Len Lye (1901-1980) was a celebrated filmmaker, painter, kinetic sculptor, poet and one of the most inspiring and original artists of his time.

The stunning Len Lye Centre in New Plymouth, Taranaki, is a celebration of his work. The striking exterior and façade is only part of the many challenges that Holmes Consulting faced when designing a seismically robust solution to support the architect's vision.

The resulting solution was to design the internal layout of the building so that the exterior could be designed and constructed in parallel.

It is a great example of the way projects can and should work; through great communication, collaboration and a shared investment in the project vision.





## GRAND CENTRAL

*Aurecon for Grand Central (NZ) Limited*

### CHRISTCHURCH

The Grand Central building, located in Christchurch's central business district, is a fine example of the new developments that are helping to rebuild the city. A showcase of state-of-the-art and modern design, the building promotes an efficient working environment at a cost effective outcome for the client.

Sustainability is found in the design and construction principles employed by the team, while also providing high levels of seismic stability with base isolation.



This mixed-use development provides six levels of office accommodation, internal parking, and ground level retail space. Aurecon impressed the client, Grand Central Limited, to provide peak consulting performance and a proactive management of this multi-disciplined project.



## TEMPORARY FISHERMAN'S WHARF

*BVT Consulting for Memorial Park Alliance*  
**CHATHAM ISLANDS**

BVT was engaged for the Chatham Island Waitangi Wharf Upgrade by the Memorial Park Alliance (composed of NZ Transport Agency, AECOM, Downer, HEB Construction, and Tonkin & Taylor).

The wharf upgrade provided the Chatham Island fishing fleet continued access and infrastructure support to berth and offload catch facilities while other works with the MPA continued simultaneously. It was critical to deliver a fast,

effective, and quality solution for the fishermen of the area.

BVT provided concept, detail design and construction support in an incredibly short time frame, completing construction only five months after initial engagement.

The meritorious work of BVT includes high levels of communication, quick turnaround in tight construction timeframes, and a great solution for the community and client, from an SME firm.



## OPUS HOUSE

*Opus International Consultants for SSF One Limited*

### CHRISTCHURCH

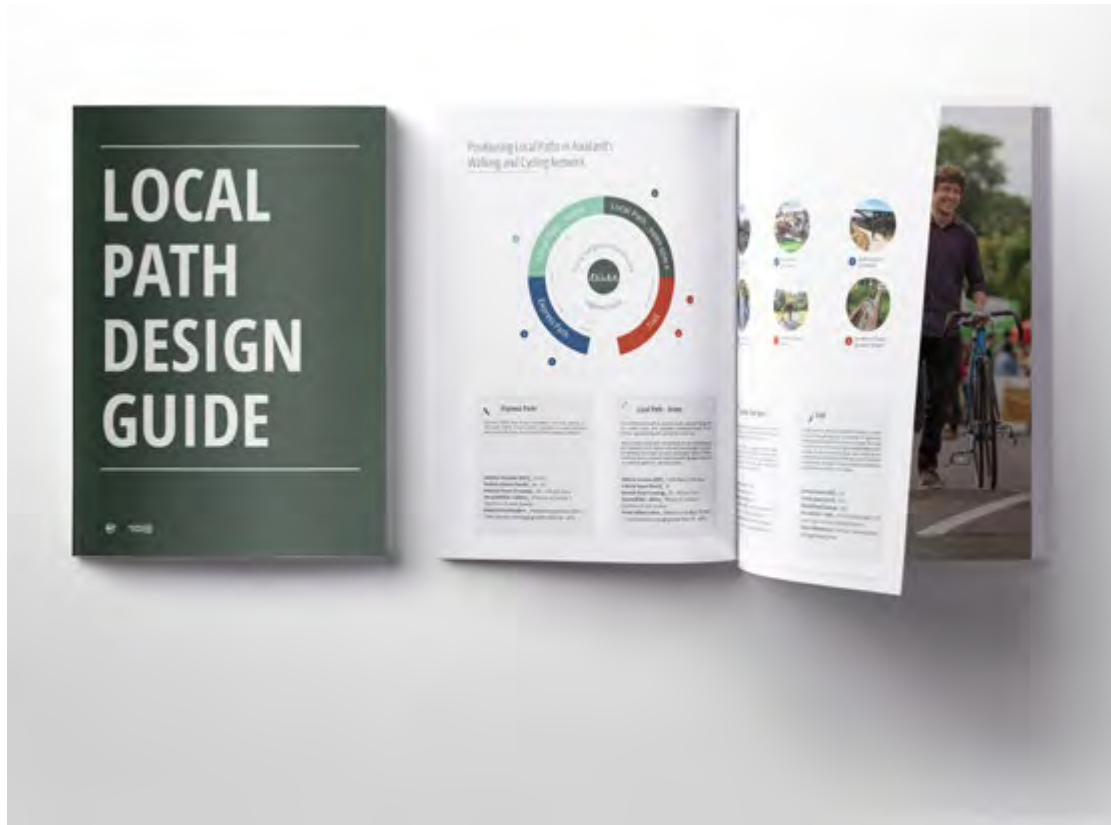
Opus House is a unique five storey office building constructed on a brownfield site overlooking Hagley Park, designed by Opus who is both the tenant (end user) and the design consultant to the client (building owner).

There was no better scenario to present the best of the best for this project. The building incorporates the Seismic Monitoring Asset Reporting Tool (SMART), developed by Opus which combines engineering analysis and assessment with

active measurement for immediate performance evaluation. Opus also utilised fluid viscous dampers, the first instance of use in a new build in New Zealand.

To further promote the future use of this relatively new seismic technology, Opus produced three publications for wider industry benefit and education.

This commitment to advancing the industry standard coupled with smart technology and good consulting is why this project is meritorious and deserving of an award.



## LOCAL PATH DESIGN GUIDE

*MRCagney and Resilio Studio for Auckland Council and Auckland Transport*

### AUCKLAND

The Local Path Design Guide was developed to provide best practice guidance for designing and developing successful local path networks. Also known as greenways or bike boulevards, these paths cross quiet streets with slow moving vehicles plus park routes. The easy adoption and development of local paths are important as they extend the usefulness of the core cycle network and provide an alternate means of transportation infrastructure in an ever congesting environment.

MRCagney developed the guide which provides a range of strategies and tools, for a range of audiences. This is the first resource that combines network planning advice, performance standards, and a toolkit of design solutions to implement greenways (paths) in a manner that communicates to all stakeholders both technical and non-technical alike.

This highly illustrative guide makes the information easily accessible for decision makers, community members and anyone else new to the concept. A fantastic piece of creative consulting that will benefit the industry for years to come.



Credit: Greg Kempthorne Photography



## HOLCIM CEMENT IMPORTS TERMINAL

*Beca, Holcim NZ, Downer, and Van Aalst Bulk Handling BV for Holcim NZ*

### AUCKLAND AND TIMARU

When Holcim's Westport facility had reached the end of its economic operating life, the client decided to change their business model from manufacturing to importing. This required dramatic modification to their operational facilities throughout the country. Beca, along with collaborative partners Downer, Holcim, and Van Aalst Bulk Handling BV delivered two separate facilities more than 900km apart.

The project was complex with many different aspects addressed including building new facilities to hold 30,000 tonnes of cement, truck and ship loading and unloading systems, new offices and utility systems.

Contemporaneous construction in the two separate locations compounded the challenges with one facility on the North Island and the other South Island.

The collaborative working group delivered a complex project ahead of schedule and under budget, as well as completing more than 250,000 hours of construction work with no lost time injuries or medical treatment.

The client was thrilled with the result which allowed them to take advantage of more efficient production facilities which

coupled with careful planning of the supply chain resulted in lower costs and less environmental impact than local production. Excellent collaborative consulting is what this project is all about.



## OMARU CREEK STORMWATER MANAGEMENT PLAN

*Harrison Grierson, Opus International  
Consultants, and Jasmx for the clients  
Auckland Council and Tamaki Regeneration  
Company*  
**AUCKLAND**

The Tamaki area is a priority growth area for Auckland, seeing the intense development and regeneration of the land to alleviate some of the growing pains of the region. The Tamaki Regeneration Company (TRC) is transforming the space used for 2,800 state houses into 11,000 new homes. With such a large scale undertaking, the need to evaluate specific stormwater requirements will be critical to the health and wellbeing of the future community.

Harrison Grierson, Opus and Jasmx were engaged by the Auckland Council Healthy Waters team to work in collaboration with the Council and the TRC to prepare the Omaru Creek Stormwater Management Plan (SMP) to provide the stormwater framework for this large scale brownfield development. The team faced several challenges during the SMP development as a result of changing requirements in the

new Auckland Unitary Plan.

The Unitary Plan, which imposed new and stricter regulation on stormwater discharges, was evolving through the consultation and hearings stages in parallel with development of the SMP.

The team delivered an innovative solution working around existing asset complexities and within a very tight time frame to delight the client with a great consulting outcome and providing a very readable and usable document that has now become the SMP template for Auckland Council.



## OTHER ENTRIES...

These projects are quality work produced by our Member Firms and highlight the consulting and engineering industry well. Read on to learn more about the other projects entered into the 2017 INNOVATE Awards.

- OnGuard Tank Anchor Development and Earthquake Response to the Wine Industry
- The Great War Exhibition
- PwC Centre
- Oropi Road ABS Pipe Replacement
- Cycling Network Guidance
- Advanced Numerical Analysis of Church Building
- Napier Police Station
- The Beacon System
- The Crossing Development
- Lamson Pneumatic Tube Extension Project
- Canterbury Earthquake National Memorial
- Hutt City Council Administration Building
- Vector Wero Whitewater Park
- Richmond Water Treatment Plant
- Mount Victoria Tunnel Refurbishment - Stage 2
- Mangawhai Water Treatment Plant



## ONGUARD TANK ANCHOR DEVELOPMENT AND EARTHQUAKE RESPONSE TO THE WINE INDUSTRY

*Structex for Yealands Estate and NZ wine growers*

### MARLBOROUGH

The OnGuard Tank Anchor System is a unique ductile anchor system, developed by Structex following the 2013 Seddon earthquakes. The design features a ductile, replaceable fuse which concentrates damage to these easily replaceable pin systems, thus protecting the more costly and valuable tanks and its contents.

The subsequent earthquake damage from the 2016 Kaikoura earthquakes has further tested the system and provided Structex allowed in service performance evaluation. The simple design allows retrofitting to be undertaken for most tank designs and this has contributed to the uptake of this system in California as well as throughout the wider wine industry within New Zealand



Credit: Mark Tantrum Photography

## THE GREAT WAR EXHIBITION

*Opus International Consultants for Wingnut Films Productions*  
WELLINGTON

The Great War Exhibition is an immersive exhibition, inspired to feel like a movie set, curated by Wingnut Films Productions. Commissioned by the Ministry of Culture and Heritage as well as the National Military Heritage Charitable Trust, the exhibition was designed to commemorate the centenary of the Gallipoli landings, taking guests on a journey from an ANZAC soldier's perspective year by year through to the First World War.

The exhibition site posed some critical challenges for Opus International Consultants, along with Fletcher Construction and the client designer, Wingnut Films Productions. Working within a tight 10 week time frame, the team had to plan and implement the installation of several extremely heavy tanks, artillery guns, planes, etc inside a Heritage 1 listed museum.

The floor in the Great Hall of the Dominion Museum is a suspended slab and beam floor, thus the team had to create a bespoke solution to house the exhibit elements while providing a safe and undamaged site. This highly agile team produced a stunning project through collaboration, sound structural design and planning





## **PwC CENTRE**

*Beca for Bridgewater Properties*

**CHRISTCHURCH**

The PwC Centre, at the heart of Christchurch's West End Business District is a unique and distinctive building. With a unique printed façade, it's a striking and high profile development with an A-grade design. Early Structural Engineering Involvement (ESEI) in the design process along with close collaboration with Warren and Mahoney Architects, Armitage Williams Construction, Pegasus Engineering (steel fabricators), and the client Bridgewater Properties, led to a beautiful building for the people of Christchurch.

In addition to early engineering involvement, a unique procurement methodology was used with state of the art structural technologies, to produce a low-damage design achieving a cost effective building with dependable seismic resistance. The anchor tenants, PricewaterhouseCoopers and Chapmann Tripp, along with the client have a striking landmark building for years to come.



## **OROPHI ROAD ABS PIPE REPLACEMENT**

*Harrison Grierson for Tauranga City Council*

**TAURANGA**

The Oropi Road ABS Pipe Network Replacement project resulted from a critical piping failure of a previous system. The Tauranga City Council commissioned Harrison Grierson to design the upgrade for the Oropi Road Water Treatment Plant. The upgrade included the Clean In Place (CIP) pipework, constituting a complete pipe network replacement in an existing and fully operational plant.

The consultants designed and replaced the currently leaking and defective pipework without disruption to operations. Additionally they handled the project management, design, tender, contractor selection, Safety in Design and several other factors leading to a successful project outcome.



## CYCLING NETWORK GUIDANCE

*Abley Transportation Consultants for NZ Transport Agency*  
**NATIONWIDE**

The Cycling Network Guidance project is an online framework developed by Abley Transportation Consultants for NZ Transport Agency. The project aimed to provide practitioners with interactive and on-line resources that enable them to plan and design various cycling networks with confidence. With a hefty commitment of \$333 million NZD being invested into the Government's Urban Cycleways Programme over a four year window, it was critical to get an easily accessible and user friendly platform going.

Abley Consultants brought together best practice advice and collected industry and user feedback to fill knowledge gaps. They built a single platform to allow users an easy way to find solutions to solve cycling challenges and share case studies. With a dynamic collection of information and a range of technical abilities from users, Abley did a great job developing the framework and an IT platform which was user friendly.



## ADVANCED NUMERICAL ANALYSIS OF CHURCH BUILDING

*Harrison Grierson for the Catholic Diocese of Christchurch*  
**GERALDINE**

The Advanced Numerical Analysis of Church Building project utilises a new modelling system for brick building assessment. Harrison Grierson was engaged by the Catholic Diocese of Christchurch to undertake a detailed seismic assessment of its 80 year old brick church in Geraldine.

The consultant used the proprietary Extreme Loading for Structures (ELS) software to model the church with 150,000 applied elements. The modelling of brick and mortar elements provided a detailed evaluation using time-history analysis. The combination of this new software and comprehensive data provides a clear picture of where to strengthen a building and where to put egress routes away from potential collapse areas.



## NAPIER POLICE STATION

*AECOM for New Zealand Police*

### NAPIER

The Napier Police Station is a modern, fit-for-purpose structure, designed as an open-plan single-storey rebuild. The previous site, in a 1960's building just wasn't cutting it for this importance level 3 structure in a highly seismic region. Due to the importance of the occupants (Police), particularly stringent requirements regarding structure, design efficiency, safety, security and accessibility needed to be addressed.

AECOM provided full design services which helped to streamline the process and work through the many complexities of this project. So many elements came together including the integration of primary aspects like architectural and engineering needs, along with specialities of structural, civil, electrical and mechanical were showcased in this project. Providing constant open dialogue, a collaborative working atmosphere blossomed between client, contractor and consultant which resulted in an excellent new home for the New Zealand Police.



## THE BEACON SYSTEM

*Beca for ANZ Bank*

### NATIONWIDE

The high demand for engineering assessment following past earthquakes has inspired businesses and our engineering consultants to become smarter and more adaptive to the inevitability of future shakes.

Beca has developed a real-time notification system to assess, manage and communicate potential asset risks for the client. By crafting a software application which combines comprehensive building information with the real-time data from Geonet, the Beacon System delivers a GIS based map depicting the location and likely risk or damage to assets in the area. Automated alerts are sent via text and email to key clients, and Beca contacts to ensure a quick and timely response can be prioritised. Both Beca and the client can then mobilise inspection teams quickly and effectively to provide critical information and crisis management from the field.



## THE CROSSING DEVELOPMENT

*ENGCO Consulting for The Carter Group*

**CHRISTCHURCH**

The Crossing Development in Christchurch is a four storey building implementing new steel joint technology. ENGCO (the consultant) along with John Jones Steel have designed a new and cost-effective beam-column joint system. Traditionally, buildings utilise a two-way steel moment resisting frame design, which can be costly and sometimes unsightly with exterior joints. The new system utilised concrete filled steel square hollow section columns and custom welded steel beams with through-bolted moment end plate connections.

While both the traditional and revised systems are structurally strong, the development by ENGCO represents potential cost savings over the traditional MRF system. This project represents a step forward for engineering design and is currently being reviewed by the University of Canterbury for more formal design guidance to the greater industry.



## LAMSON PNEUMATIC TUBE EXTENSION PROJECT

*Harrison Grierson for Bay of Plenty District Health Board*

**TAURANGA**

The Lamson Pneumatic Tube System Extension was designed to improve the link between critical care units at the Tauranga Hospital. Through this pipeline system, departments could quickly and safely transfer drugs, scripts, plasma and other lifesaving elements between units. The project included a 330m subterranean section which presented many challenges for routing and maintenance planning.

Harrison Grierson was responsible for key technical issues and handled many complex components including route selection, pipe material and protection, and developing a staging plan to minimise impact on the hospital. The first project to use this scale of buried duct, Harrison Grierson delivered a successful outcome for the client in this life saving project.



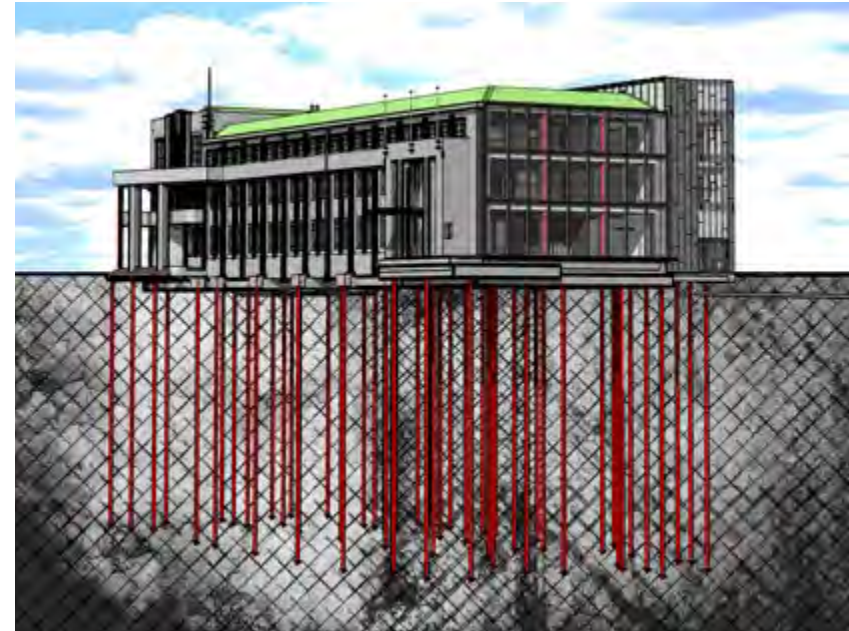
## CANTERBURY EARTHQUAKE NATIONAL MEMORIAL

*GHD Limited for Otakaro*

**CHRISTCHURCH**

The Canterbury Earthquake National Memorial is an open-air structure which follows the natural path of the Avon River through Christchurch. The memorial is a place for people affected by the devastation of the 2010 and 2011 earthquakes. The nature of this project demanded a high quality outcome to the community and stakeholders.

Working within site constraints close to the river, considering street services and ground conditions, as well as sensitive environmental, political and social conditions, the team produced a beautiful project to the design vision by Architect Grega Vezjak. The project delivery team, composed of GHD, Otakaro and Brian Perry Civil is a good demonstration of collaboration and comprehensive engineering consulting



## HUTT CITY COUNCIL ADMINISTRATION BUILDING

*Stephenson & Turner for Hutt City Council*

**LOWER HUTT**

The new Administration Offices building for Hutt City Council includes the use of Ground Source Heat Pumps (GSHP) and for the first time in New Zealand, the use of ground source pipework located within the structural piles, known as thermal or energy piles. These have been used in England and Europe but until now, not in New Zealand. The design, by Stephenson and Turner (S&T), uses closed loop pipework contained within the 72 new driven structural piles which were required as part of the structural strengthening of the building.

The system provides both heating in winter and cooling in summer, and the design lifespan of the ground source pipework is matched to that of the structure of the building. As a building of historic significance, there are no chimneys or outdoor rooftop chiller plant. A Soft landings service has been provided during the first year of occupation, with monitoring and adjustments carried out. The building's performance during this time has been excellent and it is expected that a NABERSNZ energy use rating of 4 - 5 stars will be achieved.



Credit: Simon Devitt

## VECTOR WERO WHITEWATER PARK

*Jacobs for Second Nature Charity Trust*

### AUCKLAND

The Vector Wero Whitewater Park is a world class recreational and training facility in the heart of South Auckland. Course layout designed by internationally renowned consultants, Whitewater Parks International, the project client, Second Nature Charitable Trust engaged Jacobs to provide the structural, mechanical, electrical and hydraulic engineering elements of this diverse and exciting park.

It consists of two whitewater courses, a 300m long international standard course and a 200m long recreational course, plus an artificial waterfall, the park is perfect for both professional competitors and recreational users. The variable water conditions this park can create were built to suit a range of user groups. Using a combination of stabilised clay lining and concrete design, and several variable speed drive pumps, the system can discharge the contents of an Olympic sized swimming pool every two minutes! This is a wonderful project to benefit Auckland and the people of New Zealand by attracting international competitors to our beautiful country.



## RICHMOND WATER TREATMENT PLANT

*Stantec (formerly MWH) for Tasman District Council*

### RICHMOND

The Richmond Water Treatment Plant is a new build, designed and constructed by Stantec (formerly MWH) along with Hawkins Infrastructure. Due to new drinking water standards, the Tasman District Council wanted to future proof this critical plant to ensure greater flexibility and operational delivery for years to come. Formerly, water was supplied from one of two networks; the Waimea Borefield and the Richmond Borefield.

By blending water sourced from both sites, it allowed a safer, larger, and more reliable water source that would then undergo treatment into the community's water system. The new plant was designed to run off one or both raw water sources and included a 15,400m<sup>3</sup> treatment plant, a 1,500m<sup>3</sup> balance tank and installation of over 4km of pipeline. An intensive project with critical outcomes for the region, delivered with good collaboration between consultant and contractor and a great result for the client and stakeholders.



## **MOUNT VICTORIA TUNNEL REFURBISHMENT - STAGE 2**

*Memorial Park Alliance (AECOM, Tonkin & Taylor, HEB Construction, NZTA, and Downer) for NZ Transport Agency*  
**WELLINGTON**

The Mount Victoria Tunnel Refurbishment, Stage 2 is the second major project for the Memorial Park Alliance (composed of AECOM, Tonkin & Taylor, NZ Transport Agency, HEB Construction, and Downer). This critical transport corridor is one of the main links between central Wellington and the eastern suburbs, including the airport and any delay or closure would severely impact public use and daily traffic.

A fine example of what collaboration can achieve, the Alliance completed several refurbishments and upgrades to the vital tunnel, three months ahead of schedule and under budget. Highlights included lighting modification, design upgrades, control room refurbishment, fire panelling installation, walkways for seismic activity and general strengthening. A comprehensive work schedule was put into place so that all works were complete at night with minimal disruption to neighbours between a 9pm and 5am window contributing to a good project outcome for the people of Wellington, the client, and all stakeholders.



## **MANGAWHAI WATER TREATMENT PLANT**

*Opus International Consultants for Kaipara District Council*  
**MANGAWHAI**

The Mangawhai Water Treatment Plant was in need of several upgrades to meet the new drinking water standards as well as expand output capacity for the surge of holiday visitors each year. Kaipara District Council engaged Opus International Consultants to design and implement this new treatment plant.

With changes to the original project schedule, Opus had to be flexible and agile to develop and deliver a new plan within just three months. Showing good consulting and collaboration work, they implemented a design-collaborate-refine-build model with other project partners to deliver the successful project ahead of schedule and under budget.



## 2018 DATES OF IMPORTANCE

We hope you have enjoyed learning about all the people and projects that were both entered and won in the 2017 ACENZ Awards of Excellence. The dates below are tentative but can be used as a good placeholder in your calendars to prepare for next year. We recommend you confirm the correct deadline dates on the ACENZ website, [www.acenz.org.nz](http://www.acenz.org.nz)

2018 INNOVATE Awards entries due - mid March  
2018 Future Leader Award entries due - Friday, 11<sup>th</sup> May  
2018 ACENZ and CCNZ Joint Conference - August 1st to 3rd  
2018 Awards of Excellence Gala - Friday, 3<sup>rd</sup> August

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ACENZ cannot accomplish what we do without the generous support of our sponsors and partners who contribute to the Association's activities. The Awards of Excellence Gala Dinner has proudly been sponsored by HEB Construction for four years and we want to thank them for their continued support of both ACENZ and the industry. Our other annual supporters and partners include AECOM who support the Best Practical Work Report Award (student award), and Tonkin & Taylor who support the Future Leader Award (for emerging young leaders), and Aon Insurance who are a Premium Strategic Partner with the Association. ACENZ is grateful to have such dedicated partners in transforming the future of our industry.



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Our 184 Member Firms can attest to the value and benefit they receive from ACENZ Membership. If you are interested in learning more, we encourage you to visit our website, [www.acenz.org.nz](http://www.acenz.org.nz) and click on the Membership tab.

Our Members subscribe to a Code of Ethics and at least one Director must be a Member of a professional body (such as IPENZ, NZIA, CEAS, etc). The Membership fees are based on the total number of Full Time Equivalent (FTE) staff.

In addition to advocating on behalf of our Members, ACENZ also provides tangible benefits such as Practice Notes (written guidance on a range of business related topics), real-time Member Advisories,

updates on the industry, clients and government bodies through our e-newsletter, discounts at various retailers for Members only, and so much more!

ACENZ also focuses on the future of the consulting and engineering industry by actively engaging and empowering Young Professionals (defined as any staff aged 35 or younger..or the young at heart). We have a healthy Wellington and Auckland committee established which provide feedback and event ideas to ACENZ.

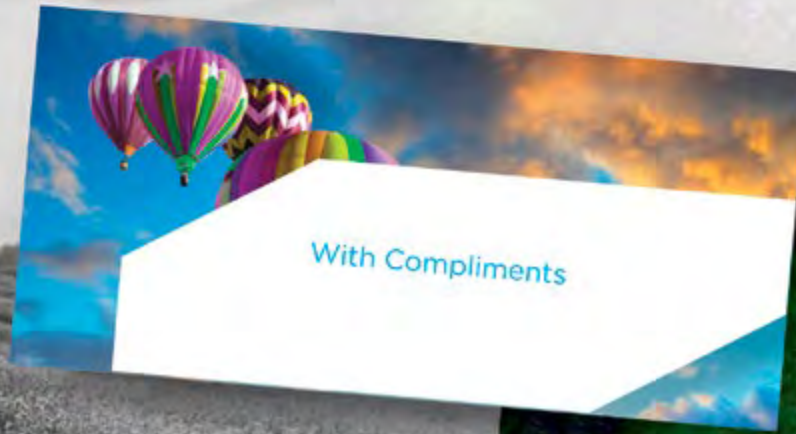
Don't hesitate and contact us now to learn more about becoming a Member. [www.acenz.org.nz](http://www.acenz.org.nz) or (04) 472-1202 and email us at [service@acenz.org.nz](mailto:service@acenz.org.nz).

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# Your team of experts

A journey's success depends on the right team navigating the right route. Through award-winning collaboration, expertise and innovation, our multi-discipline team is supporting our clients' journeys.



Peka Peka to Ōtaki Expressway - design management, environmental and stakeholder management, geotechnical design, stormwater design and ecology



North Canterbury Transport Infrastructure Recovery (NCTIR) - environmental management, planning, approvals, ecology, coastal and geotechnical engineering and geology



Pukeahu National War Memorial and Arras Tunnel - civil engineering, environmental services and geotechnical engineering

**Transportation capabilities:** Business case development + Civil engineering + CM4 level construction monitoring + Coastal impact assessments + Design management + Drainage + Dredging studies + Ecology + Environmental engineering + Environmental management + Geometric design + Geotechnical + Hydraulics + Hydrodynamic modelling + Maritime structure design + Pavement design + Planning and consenting + Port master plans + Rehabilitation of existing structures + Resource management planning + RMA consenting + Stakeholder management + Stormwater and hydraulic engineering + Structural design + Traffic and utilities designs + Traffic engineering +