

# Engineer Your Career

Information from Industry for Student Engineers

Issue 115



Vista Entertainment Solutions is the world leader in cinema management software. With an estimated 38% global market share, our set of integrated and scalable software modules are installed worldwide. We live and breathe cinema, and are the heart of the publicly-listed Vista Group of companies that offer solutions across the wider film industry.

Our success is built on recognising the importance of our employees. We are a company that looks after our own, with many of our team being part of Vista for more than a decade. We offer a collaborative workplace and encourage people to share their views and experiences. Our mission is to enhance the cinema experience for all.

With offices in Auckland, LA, London, and Shanghai, and software installed in more than 60 countries, Vista provides opportunities for career growth and travel.

Meet two of our Software Developers: Charu Wadhwa and Conrad Johansson - University of Auckland Software Engineering graduates, Vista interns, and now, full-time Vista employees!

## Why Vista?

"When you think of cinema, the first word that



pops into your mind is entertainment. But to be able to understand cinema from another dimension is what really excited me." (Charu)

## What does a day at Vista look like?

"Day-to-day I work on creating new software for our customers. At Vista, the opinions of all members of the team are valued, which means being involved in the design of the solution and the development approach. This provides a great opportunity to continue improving and learning from others." (Conrad)

## What projects do grads get exposure to?

"I was involved in updating Vista's software so that it met the rules and regulations of cinemas in France. This was a big deal from a company standpoint as it allowed Vista to expand into new territories. I also developed complex linking and updated our database schema to support the creation of movie marathon schedules. This was an interesting technical challenge and resulted in learning a lot about the existing software and the way the cinema industry deals with these kind of events." (Conrad)

## What training and development opportunities are there at Vista?

"Vista always offers opportunities for continued learning and improvement; not only do you get



the benefit of working with other skilled developers every day, but online subscription-based resources are provided to all staff. Vista also enables entry to events and conferences such as Microsoft TechEd and Codemania, AND they provide the opportunity to take additional courses in subjects such as SQL." (Conrad)

## What do you enjoy most about your job?

"I enjoy working with a talented group of individuals and learning from them. Undeniably, there are challenges, but that makes the day worthwhile!" (Charu)

## What advice do you have for students considering a career in Software Engineering?

"There's software installed in almost every device that we use, keeping us in demand. In this field, there are many opportunities right through from design, development, and testing. You aren't limited to one role. The degree is challenging but the rewards are huge, paving the way for a solid career." (Charu)

Vista has graduate and internship opportunities for Developers, Test Analysts, Business Analysts, and Software Services Consultants. To register your interest and for more information visit us at [www.vista.co](http://www.vista.co)



# Faculty of Engineering at the Post Graduate Fair.

**Wednesday 20 May 2015**  
**5.30-7.00pm**  
**Level 0**  
**Owen G Glenn Building**  
**City campus**  
**Grafton Road**

Come and visit us at the Postgraduate Fair and learn about our wide range of postgraduate study options. Our programmes offer practical insight and experience that will support your goal to become a future leading light in your field.

## Why chose the Faculty of Engineering at the University of Auckland?

We are New Zealand's pre-eminent engineering faculty for research and ranked #66 in the 2014 QS World Ranking®

We offer opportunities to work with or be taught by world-renowned researchers and teachers reflecting today's crucial themes: energy, infrastructure and environment; innovation in materials and manufacturing; technologies for health.

We have a wide range of programmes across offering practical insight and experience as you study as well as getting involved with the activities of the Auckland Bioengineering Institute, the Centre for Advanced Composite Materials, the Centre for Healthcare Robotics, the Geothermal Institute, the Yacht Research Unit and the Energy and Fuels Research Unit.

Our programmes are designed to respond to the needs of those aspiring to both academic and professional careers. We offer postgraduate certificates, postgraduate diplomas, taught and research masters degrees and PhD.

### Mercedes Santos

**Senior Project Manager. NZTA, New Zealand.**

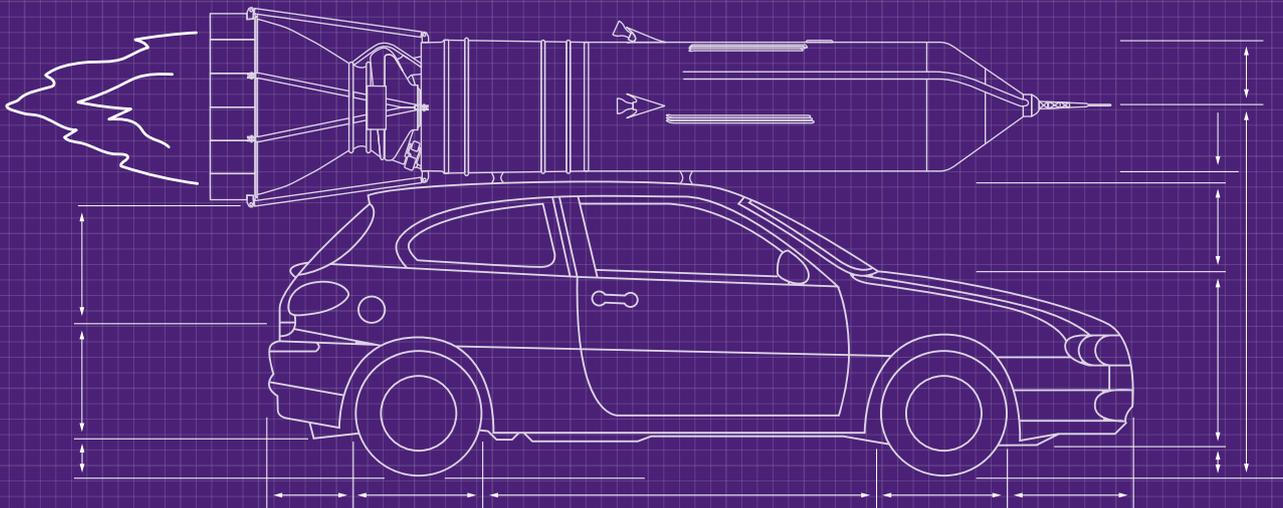
**PMINZ Project Manager of the Year, 2014**

**Master of Engineering Management (MEMgt)**

Mercedes Santos graduated from the University of Auckland in 2012 with a MEMgt. Her work on the Waikato Expressway for the New Zealand Transport Agency saw her become the Project Management Institute's (PMINZ) Project Manager of the Year 2014.



*"Engineering project management is a very exciting career. The sacrifices prospective students might make to complete the course are well worth the effort; they'll learn a lot and make friends along the way, so I would encourage everyone to do it," she says.*



## Get there faster

Boost your career prospects and achieve mastery with an Engineering masters degree at New Zealand's leading Engineering faculty.

Visit our Postgraduate Fair on 20 May 2015

For more information: [engineering.auckland.ac.nz/achievemastery](http://engineering.auckland.ac.nz/achievemastery)



live your  
ideas.



Recently I have been working on the Auckland City Rail Link, the Western Ring Route motorway project, and McKays to Peka Peka (M2PP) roading project which is part of the Wellington Northern Corridor that runs from Wellington Airport to Levin.

Other notable projects I have worked on include the Otahuhu Bus and Train Interchange where I was the main designer for designing the concourse structure of the interchange and where I developed the financial tracker, an internal budget recorder.

I also worked on the 4G upgrades for Spark LTE (then Telecom). I was involved in the whole process including site visits with the client to record detailed information needed for the engineering design as well as design assessments to work out how we could upgrade the towers structurally.

One of my greatest achievements to date has been working for our client KiwiRail around developing the Auckland Possessions

## Hekai Kevin Wang

### Structural Engineer at Aurecon

I guess you could say that I go with the flow of life. I had already passed the required papers for studying engineering with excellent grades and most of my mates were studying it, so a career in engineering seemed like a logical path for me.

During university I worked as a labourer at a workshop for a company that manufactured retractable bleachers. Although not strictly engineering, it was the skills I gained here that helped me land my summer internship at Aurecon where I interned for two summers. The internship was part of Aurecon's Vacation Programme which is for third and fourth year engineering undergrads who work alongside graduate and senior engineers during their summer university break.

**“What set me apart from other candidates were the communication skills I had developed which are really important to have when working with clients.”**

I have worked as a civil engineer in the Bridges Team at Aurecon for two years now and have already had the opportunity to work on a variety of projects.

Programme for the metro network. This involved assessing the work bank and determining when teams at KiwiRail could efficiently undertake the work to minimise impact on train services.

Because KiwiRail was so impressed with our work, we were asked to develop a scheduling tool for their track inspection car. This maps out the programming of the test for the whole country plus can automatically update the programme should there be any changes.

At Aurecon I'm involved in a variety of sport teams such as basketball, Ultimate Frisbee and touch. I'm also on the committee for Limelight which is Aurecon's Emerging Professional's Programme for engineers. This involves helping members attain higher accreditation with IPENZ and organising events such as Limelight Week, a week of planned events to encourage networking with other young professionals in the industry.

My advice to any aspiring engineer is to find your own way to make engineering enjoyable. Engineering is about problem solving and therefore it can get really analytical. It's about the small things that keep you motivated, such as building a design model that works or finishing a design calculation.

I'd also encourage you to build relationships with your colleagues. Working with my colleagues at Aurecon is really what motivates me. The atmosphere is really friendly; even with the more technical challenges everyone is willing to help you.

## Your story starts here . . .

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**Vacation student applications open 4th May 2015**

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WHERE DO YOU SEE YOURSELF?



**ADAM PENDLETON**

*Mechanical Engineer, Auckland  
Bachelor of Engineering (Hons)*

Since starting with AECOM as a Graduate for the Energy team in Auckland in January 2013, I have been involved in a variety of projects including the design of small to large-scale mechanical and piping systems, a hydropower electromechanical plant, a biogas cogeneration plant, oil and gas power generation, pressure oxidation processes, chemical processing, reciprocating engines and steam systems.

These projects have led to opportunities for me to travel around New Zealand, as well as to Korea and the Philippines. Most recently, I was seconded to a client in Papua New Guinea, where I am leading an engineering team of 12 people working to optimise processing plant systems and helping to develop local engineering expertise and procedures.

*“Working for a global company means I have the opportunity to work on a variety of local and international projects.”*



STAND TALL WITH AECOM



**TERYLL LEPPER**

*Graduate Transportation Planner, Auckland  
Bachelor of Resource and Environmental Planning (Hons)*

I started at AECOM as part of the Graduate Programme in 2014 in the Transport Planning and Advisory team. We sit in the design phase of projects, where we work with clients to plan a feasible, efficient and effective outcome for a whole range of different transportation projects, such as cycleways, public transport networks, Roads of National Significance, and master planning for regional transport networks.

I’m involved in a number of cycleway projects and corridor master plans around the Auckland region, but also get the chance to work on the bigger projects like AMETI, and smaller more localised projects like school travel plans. There are so many opportunities to put your hand up for a new project, or try your hand at new skills; there’s a limitless supply of enthusiastic colleagues who are excited to help you perform to your best.

The AECOM Growing Professional Skills programme is a huge asset. You’re surrounded by other motivated, hardworking grads, where you learn skills, like project management, consulting dynamics, networking, and more. You definitely feel excited and willing to contribute to a company that puts time and effort back into you as well.

*“I love coming to work because everyone really cares and is passionate about the work they’re doing, and keen to divulge that knowledge.”*



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# Transport your Career



## Infrastructure Development Engineer at Auckland Transport



**Shamir Ali**

Infrastructure Development Engineer

**A**fter leaving high school, I decided to pursue a medical career, but soon realised that it wasn't for me. After talking to civil engineers in the industry I decided to take up a career in civil engineering and I've never looked back. I am currently working full time for Auckland Transport, as well as doing post graduate study part time.

After graduating with a BE Civil, I was fortunate enough to join the Project New Grad rotation programme with Fulton Hogan, GHD and Auckland Transport. This gave me a great insight to the world of contracting, consulting and client environment.

I started work with Fulton Hogan as a structural engineer on the Lincoln Road interchange project which gave me great insight and invaluable experience

in the world of contracting. I did quantity take-off's for the Henderson Creek bridge and I also looked after the retaining walls along with some physical works on the Lincoln Road bridge. You learn a lot as a contractor as you are able to see designs on paper become a reality and ultimately become a multi-million dollar asset.

My next rotation was with GHD where I worked as a consultant on various design projects from cycle ways to CBD optimisation, as well as the Abu Dhabi strategic way finding project. During my time there I also worked as a structural engineer where I did earthquake analysis for various commercial buildings and some design checks for the structural integrity of buildings for the water team.

I am now working for Auckland Transport delivering several projects as a project manager. My job allows me to project manage different projects and special consideration is paid to the level of quality that I deliver. I have also done internal design work for several projects and I was also fortunate enough to be involved in introducing a new form of contract for minor safety works across the region.

I am currently project managing six projects towards delivery. The best part of my job is that I get to design or assist in the design of projects, manage any problems or constraints that we encounter, and manage the delivery of the projects. This allows me to see the project from start to finish.

Auckland Transport has provided many career development opportunities for me in terms of support, training and encouragement to achieve IPENZ accreditation. I am absolutely amazed at the level of support I get from all the staff and especially from my managers. They have a wealth of experience and knowledge and are always eager to help out. The office environment is extremely friendly and you gain some amazing friends.

Auckland Transport has an excellent mentoring system in place to support your development. I have gained a wealth of knowledge and experience by working on various projects and the level of support that I get from the senior staff and managers has helped me to fast track my career. Auckland Transport is a great professional place to work and I would recommend it to anyone. ■

For further information on opportunities with Auckland Transport, visit [careers.aucklandtransport.govt.nz](https://careers.aucklandtransport.govt.nz) or come and see us at the University of Auckland Engineering Careers Fair.



## Christy Tan

### Process Engineer

Carter Holt Harvey Pulp & Paper (CHH) produces about one million tonnes of pulp and paper annually and is Australasia's leading forest products company, with substantial assets involved in the manufacture of pulp, paper and packaging. Recently, we have become part of the Japanese company, Oji Holdings, which is the 5th largest pulp & paper company in the world.

I knew little about the pulp and paper industry during my chemical engineering study in Massey University. My first encounter with CHH was at a careers fair when I spotted the free gifts at their stall. The friendly lady introduced us to CHH and the exciting processes involved in pulp and paper manufacture. This sparked my interest in kick-starting my career in this industry because understanding and analysing processes are the reasons I undertook the chemical engineering degree.

I joined CHH's Kinleith Mill, in the South Waikato, as a graduate process engineer in 2012. The 2 year graduate programme has provided a great transition from the university to this industrial working environment. The programme started by introducing the pulping, chemical recovery and energy production processes to all the in-coming graduates including electrical, mechanical and chemical engineers, commerce and chemistry graduates. We, the young and fresh-faced new employees, enjoyed each other's company during the training, tours and also the after work activities!

As part of the Pulpmill technical team, in the first few months, I was involved in various troubleshooting and process analysis jobs, involving production and quality issues across 3 different pulp production processes. Doing these jobs got me familiar with the process analysis tools, plant operations, and the production and maintenance management systems. The plant operators, managers and my engineering team members were always happy to answer my questions and even offered to search for the answers if they didn't know! Even the "old hands", who have been at Kinleith several decades, say "you never stop learning at Kinleith"!

My first and most memorable major project as a graduate was called the "Heat Exchanger Fouling Reduction Project" in the batch digester fibre line. This might not sound interesting but it was a big deal for me, as I had to understand how the heat exchangers operated, why they were fouling more frequently, and how to improve the cleaning operation. Minimising the fouling problem also meant less work for me, as I was made the "acid queen" and put in charge of cleaning the heat exchangers! I had to research the literature on scale formation and investigate the batch digester process, mechanical design, cooking chemistry, pump systems and plant instrument. I then used the information obtained to carry out some plant trials to look for the best way to resolve the issue. The work also involved budgeting, investment and return analysis to select the best improvement option and to justify my recommendations. As well as the technical skills I gained, I learnt the importance of planning and communication. This project has given me insights on managing and

resolving real production issues that can be worth many hundreds of thousands of dollars. Last year, I got even more mileage out of this, my first project, when I entered and subsequently won the New Speakers contest at the annual pulp & paper industry technical association conference in Rotorua. It was so exciting and a tremendous moment in my career when I received the prize; I have put the prize money towards a process modelling training course in the USA later this year!

So my time at CHH has already given me some exciting milestones in my career. I have found CHH Kinleith to be a supportive workplace that has exposed me to a range of engineering dimensions that will be important to my future development. One key learning is that young engineers should never stop asking questions!

If you are interested in a career at CHH Pulp & Paper please register your interest on our recruitment website: [www.chhpulppaper.com](http://www.chhpulppaper.com) and go to current opportunities/careers.



### Amanda Ling

#### First-year Engineering graduate at Auckland Council

I enjoyed both maths and science at school so studying Engineering at university was the next natural step for me – I wanted to see how the two subjects are applied in the real world. I learnt about the many areas of engineering and found my passion in environmental engineering. While at a careers fair I saw the Auckland Council graduate programme being advertised and decided to apply so I could see first-hand how engineering would affect my backyard. I was excited to join a supportive environment where I could learn and develop my skills and have career opportunities. Going from university straight into an engineering job would have been much more daunting – I’m glad I’ll have time to learn the ropes!

I’m currently in the Engineering and Technical Services team, specifically the Design and Technical Guidance (DTG) team. We are responsible for producing documents that provide technical design advice to engineers in Auckland and assist with compliance to the proposed Auckland Unitary Plan. For example documents outlining water-sensitive design and stormwater devices which help raise awareness of the environmental impact of a project. We aim to keep these guideline documents up to date with the latest management practices.

So far I’ve been involved with the publication of the DTG team’s first guideline document and I’ve visited stormwater facility sites such as those in Stonefields. I’ve also done a project management health and safety training course where I learnt about construction site hazards and safety procedures on site, for example if you have someone working in a man-hole.

It’s great because I feel like the work I’m involved in here will have far reaching impacts on the future of Auckland. I’m hoping I can take the skills I’ve learnt and the contribution I’ve made here on to all my future jobs.



### Linlee Tram

#### Second-year Building Control graduate at Auckland Council

I am one of five graduates who joined the Building Control team in 2014. I am a Bachelor of Engineering (Honours) graduate and have a passion for the building environment, in particular the impact it has on our health and well-being.

Following my time studying, gaining work experience in engineering and doing some travel, I discovered my desire to work hands on and be directly involved in shaping our city. The Auckland Council graduate programme has given me the chance to do this.

My first placement was with the Building Inspection team in Papakura. They are a fantastic team of friendly people who have a wealth of knowledge, making it a great environment to learn in. I am looking forward to future rotations into a variety of different functional teams and different area offices across my two-year programme. The graduate programme is a great platform for learning and I can’t wait to make the most out of the opportunities that come up in the next two years and beyond.

#### About our engineering graduate programme

Auckland Council is a professional development partner under the IPENZ training scheme.

Our engineering graduate programme is designed for enthusiastic, talented engineers to learn and grow with us, and to embark on an exciting and challenging career.

Our four-year programme will provide opportunities to rotate through the key functional areas, depending on business need and career interests.

During the first two years you will participate in a range of complex projects. In the following two years you can choose a specialist area to work in and apply for intermediate level engineering roles.

#### Rotations

- Engineering and technical services
- Stormwater
- Development engineering
- Building control

**Applications for our 2016 engineering graduate programme are open from 28 April to 13 May – visit [www.aucklandcouncil.govt.nz/graduates](http://www.aucklandcouncil.govt.nz/graduates) for more information and to apply.**



# Leading the World Compac Summer Internships and Graduate Opportunities



Have you ever stopped to consider how all the apples in the bin at the supermarket are the same size and colour, or how you know that a specific brand will be sweet and crunchy, and how do they know those little apples will fit perfectly in a tube?

Welcome to Compac. World leader in accurate, high speed packhouse technology for the fresh produce industry. We sort fruit. And we need the best and the brightest to do it.

In this time of unprecedented global growth for our company we are looking to grow almost every team across a wide range of engineering disciplines. International travel, the ability to learn from the very best in their field and the opportunity to work on a wide range of projects and real

world challenges are just some of the reasons you should talk to us about your next internship or graduate role.

We take on students from all year levels for both practical and sub-professional work. Compac was home to 33 student interns over the 2014/15 summer period and this number is set to increase for the 2015/16 intake. Also joining us this year is a bright new team of 10 engineering graduates employed as Field Service Engineers (just one of the roles where you'll travel the world on us).

A big thank-you and well done to all our interns for the 2014/15 period and congratulations to the four outstanding students who walked away with a Compac Tertiary Scholarship -each receiving \$3,000 toward their studies, an overseas trip with Compac and 3 months guaranteed work.

## Software Internships with a Difference Ben Goodger – SW Developer – Sizer Team

Not only was travelling a great experience, and a lot of fun, being able to work directly with the customers who are using your software can be a fantastic learning experience.

I've been interning each summer since 2012 and have been given the opportunity to work part time while I complete my studies. What keeps me coming back is the great people, interesting work and awesome opportunities. I started assisting Sales Engineering with pricing models and some programming, before moving to the Research and Development team working on the software that controls our machines. With our larger machines sorting up to 400 pieces of fruit a second, there is no shortage of technological challenges in computer vision, signal processing and even cloud based reporting systems.

My part four project was on "Optimised Apple Packing" and enabled me to apply the skills and knowledge from my Engineering Science degree to a real world problem that Compac was facing. I was also lucky enough to receive one of the first Compac Tertiary Scholarships in my final year, which included a contribution to fees and an opportunity to travel. Right from the start you are given ownership of your project, which is not always the case as an intern. While at Compac I've had the chance to travel to customer sites in the USA twice and also closer to home in the Hawkes Bay. Not only was travelling a great experience, and a lot of fun, being able to work directly with the customers who are using your software can be a fantastic learning experience. I'm looking forward to what the future with Compac holds!



Ben Goodger, BE (Hons)/BCom

“ One of the best things about Compac is that it often doesn't feel like work – getting to spend time on mechatronics projects and using tools in the workshop was really just a lot of fun.”

Nick Finch, 3rd year mechatronics,  
Global After Sales intern 2014/15



Gus Shade, Nick Finch, Matt Bradley



Come see us at the Engineering Careers Fairs!

[compacsort.com](http://compacsort.com)



**CUBIC™**  
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## Opportunity to learn and develop at Cubic Defence New Zealand Ltd

### Timothy O'Brien

#### BE Hons (Electrical and Electronics Engineering)

I have enjoyed two internships followed by one year of graduate work with Cubic Defence New Zealand. As a Graduate Engineer I was introduced to Cubic's Mentoring Programme. My mentor and I tailored the programme to best fit my personal needs. The programme helped me adapt to professional work, teaching me how to manage my projects, and follow company processes.

With the nature of Cubic's business, short runs of complex equipment are often required to be designed and manufactured on compressed schedules. This offers a truly unique graduate experience, where accelerated product development, high responsibility, and a wide scope of work is the rule, rather than the exception.

A year into my position I face my greatest challenge yet: I will be the primary hardware designer for one of our newest products. With guidance from my mentor and help from the rest of the hardware team, I am looking forward to this exciting opportunity.

### Jagmohan Singh Jaura

#### BE Hons (Electrical and Electronics Engineering)

In November 2014 I was privileged to become a part of the Cubic family as a Graduate Embedded Software Engineer. Since CDNZ is a part of Cubic, a global organization with an ever increasing footprint I knew that I was in for a treat. As Cubic is at the forefront of providing combat simulation technology to many countries around the globe, this is my opportunity to explore and learn exciting new things.

Every task that I have encountered at CDNZ has been an exclusive challenge in itself, thus driving me to "think outside the box" to come up with a unique and yet an effective solution.

### Jonathan Clark

#### BE Hons (Embedded Systems)

From my first interview I learnt that not only would I be doing the embedded development that I enjoyed, I would also be working with an



Jagmohan Singh Jaura and Jonathan Clark



Tim O'Brien



CDNZ 2014 interns with managers

amazing and unique range of products.

I was first tasked with enhancing the tools used in the testing of a laser transmitter. I was able to create my own method of building and sending messages to the hardware which was integrated into the testing tool to allow rapid development of new features.

I am now part of a new project in which I will be able to follow through the entire development process from initial planning, writing the code, and then the final preparation to send it to the customer. I'm developing my skills and enjoying doing the job I always wanted to do. I'm working with a more amazing product range and team of engineers than I ever expected.

### Internships

The CDNZ Summer Internship Programme provided internship opportunities for 8 keen engineering students to work on 6 challenging research projects. Each intern had a mentor to help guide them through their projects. Feedback includes: "Overall my experience at Cubic has prepared me more for working in the industry than I ever expected. It has given

me much more than something to put on my CV; it has fundamentally influenced my work process." Jacques Footitt

"Working at Cubic helped me to discover what working at a real workplace is like, how large scale projects are conducted, and how the tools that help systems in large companies work." Joshua Cranch

### More about Cubic Defence

Cubic Defence New Zealand (CDNZ), based in Auckland, works with a range of state-of-the-art technologies to develop advanced "laser tag" type training systems used by defence and security forces around the world. Our systems focus on providing realistic battle scenario training and include communications and position tracking capabilities to provide real time monitoring and control of exercises. The company is part of Cubic Corporation which is a global leader in defence and transportation systems with offices worldwide.

[www.cubic.com/Careers/Worldwide-Work-Locations/Eden-Terrace-AK](http://www.cubic.com/Careers/Worldwide-Work-Locations/Eden-Terrace-AK)

Email: [cdnzcareers@cubic.com](mailto:cdnzcareers@cubic.com)

# DOWNER YOUR FUTURE



**We offer a comprehensive graduate programme, hands-on summer work experience and a selection of scholarships that will help you acquire the experience you need to succeed in engineering.**

The Downer Graduate Programme is three years in duration and we work to bring Washington Accord degree-level engineers into Downer to develop their skills and become our future leaders. You can expect:

**Rotations through the business**

We aim to develop well rounded, highly skilled professionals by exposing you to the wider business before you specialise in one area.

**Dedicated mentor programme**

Downer has an established network of mentors across the country. As a graduate who joins Downer, your Manager will identify and engage an experienced colleague who has time to meet with you on a regular basis.

**Young Professionals Conference**

Every year we invite graduates to participate in the Young Professionals Conference. This event incorporates professional development, team building, networking and technical updates.

**Professional Development**

We run Professional Development Forums to provide support and guidance and keep your professional accreditation on track. Downer will pay your IPENZ Graduate membership and our senior engineers are on hand to provide direction and feedback as you develop your portfolio of evidence.

## OWN YOUR CAREER

**George McGregor  
Graduate, Auckland University Alumni**

Working on a high profile project in Auckland CBD is just one of the many projects our Graduates are assigned to. George joined the Beach Road project as a Graduate as part of his work rotation experience.

In Downer we get graduates involved in people management from day one. On this project George was assigned a leadership role by senior supervisors. George had to hit the ground running with an established crew. "The site crew accepted I was learning and were always keen to answer any questions I had and to assist me in filling gaps in my knowledge."



**I believe the strength of the Downer graduate programme is that it presents graduates with the opportunity to have exposure to a wide array of work experience to grow your core understanding of the construction industry.**



*George McGregor*

Further details about our application process, key dates and opportunities to meet with us are set out below.

**Go to our website to apply!  
[www.downercareers.co.nz](http://www.downercareers.co.nz)**

## KEY DATES





## Clemens Berndt

### Solutions Architect, EROAD

I look after the solution and design aspects of EROAD's engineering work and business applications. I am also involved in the overall governance of that work and making sure that all these systems actually fit together and deliver the expected business value for EROAD.

I really enjoy the opportunity to work on systems and solutions that have the potential to positively impact the lives of people I might never meet.

One of reasons I enjoy working at EROAD is that its products and applications present a really wide range of very interesting problems. EROAD is unusual among New Zealand companies in that its scale problems go much beyond what you'd normally find with normal business applications. This means I get to solve problems that can be very technically challenging.

To put that into perspective, in New Zealand alone, EROAD collects more than 400 million source records each month, which then go on to create further data volumes that need to be processed. This gives us some really interesting challenges and I get to oversee the design of the solutions that solve these problems. I also work with engineers who are the best in their field, to enable EROAD to deliver what the market needs.

I did a conjoint degree at Auckland University - a BCom and BSc, then a BSc (Hons). That enabled me to follow both of my passions: the business side as well as the technical aspects. Being able to bridge that gap is one of the key aspects of the solutions architect role.

Software engineering's a great field to go into because it involves lots of great theoretical problems as well as practical problems, so it's mentally invigorating.

I would advise anyone starting out in this field to follow their passion and study something that they also enjoy doing in their spare time.



## Robin Shucksmith

### Embedded Developer

I work in a team of algorithm developers, embedded developers, testers plus the product owner. I work on new features as well as fixing bugs - the work varies anywhere from the kernel level, all the way up to new features, like developing touchscreen apps that will be used on EROAD's in-vehicle hardware devices.

I graduated from the University of Auckland with a Bachelor of Engineering, specialising in computer systems. I'd had a reasonably good idea since leaving high school that I wanted to be an engineer but it wasn't until I had to choose my specialisation in second year that I made up my mind I wanted to get into software.

After I graduated I worked for a telecommunication company in Sydney for two years and joined EROAD at the end of 2014.

Working for a technology company like EROAD you get to meet creative, talented people and every day is a little bit different and exciting. It's technically challenging and sometimes quite high pressure and fast paced but that's part of the attraction. There's a nice balance between having fun at work, and being professional and getting the job done. One of the best things about it is being able to work with a wide range of people in varied roles.

My advice for anyone starting out in this field is to get a really good technical foundation but also pay attention to soft skills. Things that you may not think are super important for a software development role - like team work and communication skills - really do make a difference and the best way to develop them is probably through extra-curricular activities. Then work hard, get that first job and get your foot in the door working with people you're going to learn from. That's key.

[careers.eroad.co.nz](https://careers.eroad.co.nz)

## A first choice for Electrical Engineering

Ergo aspires to be the first choice electrical engineering consultancy in New Zealand. Established in 2003, we are already a leading player, with a focus on primary and secondary design in the power sector and control and automation in the water sector. Our strategy for the next five years, "2020 Vision", is to build on the successful platform we have created by providing expert services to infrastructure and large industry organisations across New Zealand and South-east Australia.

There are two distinct engineering teams within Ergo:

- Power Systems, specialising in high and medium voltage electrical design for power generation and distribution companies, and large electricity users. This work includes substation, generation, protection and earthing design which directly impacts the safe and secure supply of electricity to New Zealanders.
- Control Systems, delivering low voltage electrical, instrumentation, automation, telemetry, and process control solutions for public utility, local government and large industry clients. We especially work closely with Water and Wastewater, and the effect of this work is easy to see when your turn on the tap.

When choosing between employment opportunities, you have to put your career first. Ideally, you'll want a job that provides opportunities to gain experience, a place you feel you fit in, are valuable and can make a difference. At Ergo we take the development of our graduates seriously! Ergo provides structured training, understands the importance of career goals and the opportunity to fast-track your

career. You can count on support for relevant further education, including attaining chartered engineering status. As Ergo is a Professional Development Partner of IPENZ (Institute of Professional Engineers in New Zealand) we're committed to supporting our Engineers in their professional success.

## Graduate Profile

### So'o Fagamalo

#### Control Systems

#### BE (Hons) Electrical and Electronics

"I enjoy working at Ergo because it places great emphasis on the development of its people. I have the great privilege to work with engineers who are passionate about their work, and are also more than happy to take the time to help me learn. Ergo encourages an atmosphere of fun and camaraderie that I've found to be quite infectious"

I first heard of Ergo Consulting in my fourth year at the University of Auckland, when I heard about their Graduate Recruitment Programme. After asking around, and doing my own research, I thought that Ergo's culture and commitment to graduate development was exactly what I was looking for in my first job.

The work I've been involved with:

I've been heavily involved with the design and implementation of electrical and control systems in the water and wastewater industry for infrastructure organisations and local councils.

Projects I've worked on include:

- Design of electrical control systems for mobile dosing containers
- Design for the replacement of obsolete control systems
- Design for new and upgrades of electrical and



control systems at water and wastewater sites

- What I enjoy about work:
- Seeing my designs being built and improving the day-to-day lives of the local population.
- Working with a great bunch of people who are keen and motivated to deliver a good job.
- Interacting with clients to ascertain their needs to deliver a design that is economic and fit for purpose.

My involvement outside of work

During my studies at University of Auckland I was heavily involved with SPIES (South Pacific Indigenous Engineering Students). This provided me with relevant experience when I entered the workforce, where I am now involved with professional groups, such as serving as an IPENZ Engenerate Auckland committee member, and attending AUEA and ACENZ events. I've also been involved with Ergo's social soccer, indoor netball and Round the Bays teams. Ergo really encourage their staff to succeed in whatever they do, and I am glad I chose to be a part of their Graduate Programme.



We are a leading designer, manufacturer and marketer of a range of innovative healthcare devices, that improve patient care. Our products & systems are exported to over 120 countries globally for use in respiratory care, acute care and the treatment of obstructive sleep apnoea.



### Rhys Evans

**BE(Hons) Mechanical Engineering  
Process Development Engineer, RAC,  
Circuit Process Development**

My role involves designing the manufacturing capability for our products. Currently I'm working on a production line for breathing circuit kits - specifically the flow from final assembly, testing, to packaging the complete product. Depending on where we're at in the project, this could involve a variety of things. Conceptual design can involve visiting our manufacturing space to see how similar operations are approached. Next there's a lot of CAD work as you bring your design to life. Currently I'm liaising with suppliers to fabricate my stations and produce documentation for handover to our Operations Engineers.

The grad programme has been great, there was a focus on getting us to gel as a group through lots of activities. Everyone's pretty friendly, and the culture encourages good balance between work & play. We have great resources here and being able to use the company equipment is pretty handy. I'm building up a new mountain bike frame at the moment, so I've been using the workshops to knock up custom bearing presses on a lathe!

You have the chance to work in some really interesting areas. I've grown more confident in handling responsibility for aspects of a project.



### Sophia Johnson

**BE (Hons) Mechanical Engineering  
and BSc Computer Science  
Product Development Engineer, OSA  
Research Team**

Working in the research team my focus is on the background R&D to go into a variety of mask products. My work is quite varied, from completing CFD projects modelling flow and noise, creating prototypes of designs and completing verification testing and reporting, as well as working with the IP team to protect our designs. It's interesting work and some of the projects I'm involved with are top secret!

I applied to Fisher & Paykel Healthcare as I chose to pursue a career in engineering with the aim of designing products that would improve people's lives, what we do here gives me the opportunity to make that a reality.

I get to work with, and learn from some very interesting people and there is a real culture of investing in our professional development. In the two years I have been here I've had the opportunity to pursue my masters, as well as complete courses in CFD, plastic design and statistics which have been funded by the business. I have also gained experience working within a quality system and the documentation that goes along with that.



### Matt Peacock

**BE(Hons) Mechanical Engineering  
Product Development Engineer  
RAC, Optiflow Team**

A normal day for me might include a brainstorm session to discuss ideas or solve a problem, CAD design work, machining a mold tool, injection molding a plastic part or testing our product to ensure it meets requirements. One of my first projects was to design and prototype a small part for our product. It took four months from conceptual work to having a final prototype in hand and I've learnt some invaluable skills. If trials are successful I will be able to see my design in a final product which is cool!

My skills have developed greatly since at FPH. To be specific, I have gained skills in CAD, CAM, injection molding, testing and statistical analysis. I've worked with CNC mills, CNC lathes, 3D printers, 3D scanners and laser cutters which has been awesome, and because I've been part of a team almost since the start of a project, I've gained knowledge about the design processes required to get a product to market.

**We have Graduate and Intern opportunities in Product Development, Operations and Process Development. Register your interest at [www.fphcareers.com](http://www.fphcareers.com)**



At Fulton Hogan, we've built up more than 80 years' experience in the transport infrastructure, water, energy, mining and land development sectors across Australasia. Our engineering graduates are our future, set to become leaders playing a pivotal role in the ongoing success of Fulton Hogan.

Throughout our 18-month programme, graduates learn the science of producing asphalt and other raw materials to maintain infrastructure surfaces along with the technical know-how to tender for and estimate jobs. They also gain valuable experience working on infrastructure projects building project management skills whilst focussing on safety, quality, and sustainability.

## Simon Kemp and Tumanako Hona

### BE BCOM

We joined Fulton Hogan as graduate engineers after completing our Bachelor of Engineering degrees at the University of Auckland in 2013.

Right from the start we hit the ground running, being placed in the Surfacing Department as Contract Engineers for commercial and residential paving. With a great team of two engineers, a supervisor and a paving crew of ten men, we had wide exposure and quickly learnt about the different aspects of the business.

The opportunity to be key players in the Whangarei State Highway 1-14 intersection rebuild and overlay gave us insight into both the practical methodologies and financial aspect of a large scale project. We also gained tendering experience which helped us understand the total project lifecycle including the planning process.

Another project we worked on was resurfacing the clip on lanes of the Auckland Harbour Bridge. This involved a six month planning process of programming work, providing labour, machinery and cost estimates and engaging suppliers and subcontractors. Having up to seventy employees and subcontractors onsite at any one time taught us to manage the workloads, quality assurance and safety of our crew. Because the project could only be completed between Christmas and New Year period, it was also a great opportunity to develop leadership and decision making skills.

Starting our careers in the surfacing division at Fulton Hogan has allowed opportunities &



insight into the operational business as a whole. The collaboration between paving, chip sealing, milling and traffic control has showed how many key aspects of business rely on each other to achieve a successful outcome.

We have felt privileged to be part of the Fulton Hogan Graduate Programme; working with great people, pushing further growth and development into our careers. Our experience working on a range of projects and learning from experienced colleagues has made the transition from student life to working as a

young professional a memorable and enjoyable experience.

Fulton Hogan is a fast-paced company with many exciting contracts and industry relationships. Their work positively impacts the communities around them and their clients, which for us is what engineering is all about.

Applications are now open for our Graduate Programme. Learn more at [www.fultonhogan.com/Careers](http://www.fultonhogan.com/Careers)



**Bradley Schwalger**  
**Structural engineer**  
**BE (Hons) – Civil Engineering**

My pathway to becoming a structural engineer started with my family. Our house is just full of engineers, and the television has been permanently glued to shows like *'Build it Bigger'*, *'Mega Structures'* and *'Top Gear'*. Choosing a career in engineering was easy; the hardest part was selecting a discipline. As a summer intern at GHD I experienced the ever growing field of transportation engineering. However when looking back at those childhood days of building with Lego I knew I had a passion for structural engineering. Making the change to structural engineering at GHD was a breeze. The diverse field of structures is awesome and I haven't looked back since.

Not only do I get to design a wide range of structures (from motorway gantries to multistory buildings), I'm out and about and I feel like I'm making New Zealand a better place. I wade along foreshores to inspect bridges, crawl through the ceilings of earthquake-prone buildings and stand inside massive cages of steel before concrete filling. There's always something to be inspected or monitored, to ensure it won't fall down or is being built correctly. I never have to say that I have a boring desk job.

Something I really enjoy about GHD is that the company has a family atmosphere, their values

and people are what make day to day work fun. They reward your hard work and do everything to help you grow your professional career. Their social activities, sporting events, and variety of projects make work life enjoyable while maintaining a great reputation in the global market.

I really feel I have been integrated into the GHD family and I look forward to getting more involved with our members around the world.

**Joe Harris**  
**Water Engineer**  
**BE (hons) – Civil Engineering**

I ended up where I am today because I like to be challenged; this is why I studied engineering. In my last years of university, I maintained a general balance of subjects in civil engineering. After completing my last semester in 2012 on exchange to Canada, I travelled and picked up some casual work for the year of 2013. In 2014 I started at GHD and have loved it ever since.

I am in the water team in GHD's Auckland office, my role is all about learning and adding value to a variety of water projects in any way I can.

I have been involved in a range of fieldwork so far, including:

- Supervision of pipe commissioning water flushing
- Supervision of directional drilling and potholing
- Site inspections, checking traffic management plans, environmental plans and health and safety procedures.
- Water testing for chlorine and turbidity in before pipe commissioning
- Farm surveys
- Geotechnical investigations, data logger data extraction, rising head tests

**Some of my office highlights include:**

- Producing drawings of pipelines, pump stations, and process & instrumentation diagrams.
- Scope definition and management of subcontractors for a sound barrier installation assessment at Ellerslie train platform
- Working with hydraulic modelling software to develop a water infrastructure plan for



the Cook Islands. I am going to present on my work at the New Zealand Modelling Conference in Wellington this month.

- I surveyed approximately 55 farms, to quantify their different waste streams and where they end up. The survey was conducted by GHD, and we produced an agricultural waste survey for the Waikato/ Bay of Plenty district.

**Why should Auckland University students strive for GHD?**

- The workplace culture is very professional. This helps everyone at GHD to learn excellent work habits.
- The business is very flexible – it is easy to put your hand up for work in a variety of teams.
- GHD has a great culture. It is very easy to make new friends, and expand your personal and professional networks both locally and globally.
- GHD is a highly regarded global company on the rise, providing frequent opportunities for international work.
- It is a great business for graduates, providing exposure to a variety of different projects.

Additionally, GHD really looks after its staff, with great office facilities including fancy coffee machines and lots of fruit available daily!

Jacobs is one of the world's largest and most diverse providers of technical, professional and construction services across multiple markets and geographies. Our global network includes 70,000 employees in more than 30 countries. We have more than 50 employees currently on the Jacobs Graduate Program; here are some thoughts from three of them

## Alana Scott

### Graduate Surface Water Engineer, Wellington

I graduated from Griffith University (Brisbane, Australia) in 2011, and started working for the Surface Water team in Jacobs (then SKM) at the beginning of 2015. I remember panicking about my knowledge and skills the night before my first working day - what if they'd made a mistake in hiring me? What if my technical knowledge was insufficient for the work I would be expected to do? All my fears were unfounded. My new team recognised the learning curve I would be undergoing and took care to ensure I gained a deep understanding of my technical discipline.

The Surface Water Team often focuses on flood studies, understanding flood risk in various catchments, developing solutions to minimise this risk and assisting Councils implement these solutions. When I assisted in designing bridges for part of the Australian Pacific

Highway upgrade, I saw how vital flood studies were for infrastructure works. Now whenever I drive to Byron, I get excited crossing the waterways I studied!

What I've come to love most about my job is the obvious positive impact of my work on people's lives. In 2013, I was offered the chance to work in Wellington for six months. The Jacobs' team was busy analysing flooding in Christchurch after the 2011 earthquakes dramatically changed the drainage network and land settlement. I was actively involved in determining what structural works could reduce the number of houses being flooded above floor level.

My time in Wellington was incredibly exciting. I was very glad when, in 2014, I was again offered the opportunity to work out of Wellington. When I graduated, I wouldn't have believed you if you told me where my career was going to take me!

## Paul Connor-Woodley

### Graduate Structural Engineer, Wellington

One of the best things about working at Jacobs is the chance to work on and lead small local projects, while also working on large New Zealand-based and international projects.

Since joining Jacobs as a graduate structural engineer in 2011, some of the local highlights include undertaking the design of the Vodafone Events Centre - Stage II in Manukau, Wellington Zoo's Asia Precinct redevelopment, seismic

upgrades of infrastructure and heritage buildings, and the destructive testing of a two-storey building to determine its capacity to resist seismic loads. International highlights include a wastewater treatment plant in Western Australia and a geothermal power plant in Kenya. One aspect I have really enjoyed is seeing the difference that new and more resilient infrastructure makes to the wider community, and it is great to have contributed to it.

The team I work with is technically strong, providing me with significant mentoring and the opportunity to learn on technically challenging projects. I have also been able to lead a number of projects and take responsibility for ongoing relationships with clients and contractors.

In addition to the technical and on the job training I have received, the Jacobs' Future Network and Graduate Development Programme has provided me with a diverse range of skills and opportunities, and I have been lucky enough to attend development conferences in Australia, Malaysia and Singapore.

## Sarah Hall

### Graduate Transport Engineer, Christchurch

The stand out of working at Jacobs for me is the level of investment in my interests and career path. I specialised in Engineering Science at The University of Auckland, graduating in 2013. As a student doing my work experience here, I was encouraged to chat to people all over the company to find where I'd best like to apply my modelling skills, a great commitment to my career development.

As a graduate, Jacobs helped me relocate to Christchurch, where the transport modelling technical lead works, so that I could sit beside him and learn what I was most interested in.

Day-to-day I work with land use projections, converting them to trips on transport networks and analysing the effect of new infrastructure on the transport network. I've learnt how to apply my modelling outputs into the bigger picture.

I've also picked up transport planning skills, and am excited by the projects my team works on which look at different modes of transport: public transport, cycling and walking.

I think Jacobs is a great place to work because the people here care about each other and the quality of the work we do.



Paul undertaking seismic testing

Milmeq custom designs, engineers and manufactures systems for primary food processing, chilling and freezing and materials handling for processors within primary food markets, including red meat, poultry, dairy, seafood and horticulture.

Our solutions-focus and can-do approach has seen us pioneer a number of new technologies, many of which have gone on to become industry standards. We have developed plate freezing technology to extend the shelf life of meat product being exported long distances. We have since gone on to build the world's largest plate freezers which are used across Australasia and are becoming popular in Europe.

If you want your career to tick all the boxes:

- ✓ From concept to commissioning;
  - ✓ International focus;
  - ✓ Working alongside industry experts;
  - ✓ Deliver customer-focused solutions;
- Milmeq is seeking engineers with a knack for problem solving and a can-do attitude.

### David Woodward: Project Engineer



*I joined the Milmeq team late 2014 as a project engineer to further my engineering career, this was a great opportunity for me to work beside a multi-disciplined team on international projects. I have a passion for engineering and not just from behind a desk, I enjoy getting fully involved from the design process all the way thru to onsite commissioning. Milmeq provide numerous products to the primary food processing industry which keeps the work place interesting as I am exposed to a wide variety of projects, I also really enjoy that the majority of*

*manufacture is completed in-house which allows me to get more involved with the process.*

### Vladimir Sbitnev: Automation Engineer

*I joined Milmeq after completion of my Master's Degree (Mechatronics) in 2013. As I was experienced in industrial robotics I had an opportunity to use my skills gained from the past work experiences and theoretical knowledge learned from my studies. I have been involved in a few cutting edge robotic innovations in primary food processing which I found challenging, requiring creative and innovative thinking as well as a solid well-structured engineering approach. I look forward to these developments being integrated throughout the industry bringing safe, reliable and efficient operation to food processing operations.*



### Opportunities at Milmeq

Milmeq supports Engineering Undergraduates through the Auckland University Faculty of Engineering Milmeq scholarship (Code No. 422) as well as targeted graduate internships.

For more information email [recruitment@milmeq.com](mailto:recruitment@milmeq.com) or go to [www.milmeq.com](http://www.milmeq.com)





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**BUILDING A BETTER WORLD**



## Jamie Pye

Graduate Electrical Engineer

Bachelor of Engineering (Honours) Electrical and Electronic Engineering

Growing up I never quite knew what I wanted to be, a doctor, a professional athlete. I didn't think that I would become an engineer.

I've always been fascinated with how things work and had a natural curiosity about the world around me. So when I was deciding what to study at University, engineering instantly appealed to my natural inclination for problem solving and curiosity and the University of Auckland was my first choice.

I first heard about MWH through my networks at University, and was persuaded by a friend to apply.

Since starting with MWH in 2015 as part of the Asia Pacific Design team, I have been able to work

on a range of projects around Auckland with clients such as Watercare. One of the best things about the Graduate Program is that MWH fast tracks your career by moving you right into your area of interest. By starting my career in my area of interest immediately, I was able to immerse myself in projects both small and large. Another great thing about being thrust into your area of interest meant that I was learning a lot more on the job than I would have been if I had been put through a formal rotation program. At MWH there is an emphasis on the people.

MWH places an importance on maintaining a work/life balance and has a number of resources available to staff such as the Social Club, the Young Professionals Group, and a number of sports teams among other things. There is also the MWH University which is an internal professional development program, which all employees have access to for courses in subject areas ranging from Project Management and Leadership right through to Compliance and Technical walkthroughs.

*Building a Better World* is more than a tagline.

***"MWH is a consultant of choice around the world because of our reputation in the market as a company that cares and a company that consistently delivers for our clients. I am proud to work for MWH."***

MWH graduate applications will be open from 27 April through to 29 May 2015 for the 2016 graduate intake.

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## Designing Creative and Innovative Solutions



### Boshi Wang

#### BE Hons (Civil) 2013

*"Wastewater processing is the most interesting because you use critical thinking to design creative and innovative solutions."*

Since starting work last year, I have really enjoyed the practical side of engineering. I've also been doing my Masters, so have been helping with a variety of projects. In my first week I analysed the performance of a water treatment plant to see how it could be improved. It was great to be doing real work with real data.

I've also been responsible for the stormwater drainage design of an anaerobic lagoon. I consulted our internal experts, then analysed the rainfall data and considered relevant council guidelines. Once my design was accepted, I put it out to tender and will soon be able to see it built. It's great to get involved in something from beginning to end. Another project involved researching the options and feasibility of different methods of sulphide removal within the meat processing industry. I've also been working on hydraulic pipe design, construction supervision of a water intake structure and analysing the potential groundwater impacts of certain projects.

PDP is a mid-size consultancy, which is an advantage because you pick up responsibility quickly and get experience with different types of projects. But it's also large enough to have good systems and procedures to ensure you learn systematically. This year I'm looking forward to finishing my Masters, as well as



helping to tender for a big design project. Long term, I want to become a Chartered Professional Engineer.

### More about PDP

PDP is an environmental consultancy providing engineering, scientific and planning services. We are dedicated to finding environmental solutions that work for both our clients and the environment. At PDP you will be working with other high calibre Civil and Environmental Engineers and Scientists at all levels, and professionals who are leaders in their field. We are a mid-size consultancy employing about 100 people nationwide.

Talk to us on campus at the Engineering Careers Expo on 29th April.

Presentation Evening: 6 May 2015 @ pm in Room 3.404

Come along to our Presentation Evening when we will give you more insight into the work we do in Environmental Engineering.

#### Applications Close: 31 May 2015

Send your application to: [employment@pdp.co.nz](mailto:employment@pdp.co.nz) including your Cover Letter, CV and Academic Transcript.

#### [www.pdp.co.nz/careers](http://www.pdp.co.nz/careers)

Check out our website and download our booklet 'Launch Your Career at PDP' for more graduate profiles, information on working at PDP and how to apply.



**Prendos is a long-established property and construction consultancy servicing all sectors throughout New Zealand. We have a variety of interesting and high profile engineering projects, and are seeking top engineering graduates to help shape the future of our thriving structural engineering team.**

A career at Prendos has much to offer. With us you can:

- > work for a dynamic, growing, and long established firm
- > work alongside professionals from other disciplines
- > work on projects from concept to completion
- > work in varied locations throughout New Zealand
- > have career choices and varied pathway options
- > attain professional accreditation
- > mix with fellow local and international graduates
- > be mentored by industry leading figures
- > get hands on experience with a variety of work
- > discover your area of professional interest
- > un-tap your potential

**To find out more about graduate opportunities at Prendos, please contact:**

**Maree Stevenson HR Manager** [marees@prendos.co.nz](mailto:marees@prendos.co.nz)

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Phone: 0800 PRENDOS / 0800 773 636

## David Cooney Graduate Structural Engineer

MEng (Civil), BEng (Ord), GMIPENZ



In July 2014 I started working with Prendos as a graduate structural engineer. Over the past eight months I have been involved in a challenging variety of work including structural design for both existing and new buildings, initial and detailed seismic assessments as well as structural damage assessments of earthquake affected properties in Christchurch.

My primary role involves remedial structural design of educational and residential buildings. I find working with existing structures brings a

multitude of challenges not faced with new builds. Ingenuity and sound engineering judgement are required to create robust and cost effective design solutions that do not infringe on existing layouts and aesthetic features. I get involved in projects from the initial concept design through to the construction phase and final hand over to the client.

One of the key projects I have been involved with to date is the upgrade and seismic assessment of a 64 dwelling residential estate. Constructed in the 1960's many properties had a number of critical structural weaknesses from a seismic perspective, including unreinforced masonry inter-tenancy walls and chimneys. For each dwelling I carried out an initial investigation, destructive testing, detailed design and construction monitoring of the works. Being involved from start to finish ensures a great sense of self-satisfaction upon completion of the project.

Each new project entails new challenges that ensure I am gaining experience at a rapid pace and increasing my confidence level. Prendos places a strong emphasis on training and professional development. I work under the supervision of senior IPENZ chartered structural engineers who provide expert guidance and mentoring towards my chartered professional engineer membership. Working in a multi-disciplinary environment with such a wealth of varied experience has expanded my knowledge of the construction industry.

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## Graduate Profile

### Josh Brajkovic

#### Transportation Engineer

I first encountered TDG after working in the transportation engineering field at the ground level, surveying vehicle volumes for various companies throughout 2014. In late 2014 I applied for a full time graduate position at the Auckland TDG office and was successful. I was excited to begin my career in transportation engineering in January 2015. This was just after completing my final set of exams as part of my Civil Engineering degree at The University of Auckland.

Primarily, my role involves working with project managers to assess what are the key objectives of any given project and to complete the required tasks. Some of the tasks I have undertaken in my time include site visits, managing surveys, analysing traffic data, report writing, and modelling of traffic flows. Even during the short amount of time I have been with TDG I have learnt a lot and have realised that I still have much to learn and probably will continue to have much to learn for the rest of my career.

There is much more to TDG than just work. I have been part of touch and cricket teams as well as joining the office social club. Not far from my desk there is a table tennis table where I tend to spend the majority of my breaks. At the time of writing I am currently in the semi-finals of the inter-office tournament, and am keen on taking it out. There is also the weekly Monday lunch meeting, and the Friday afternoon drinks where someone will do a brief presentation about something (not necessarily work related) but leading to a greater understanding of various topics.

TDG believe that the strength of the firm lies in the quality of its staff. Training, mentoring and personal development are important as well as career development. Therefore it is not uncommon for staff at various times to be sponsored to attend training events and conferences. I have already been given the opportunity to attend a traffic control course and I am now a qualified Level 1 Traffic Controller and have attended various other courses in my short time.

TDG have offices nationwide and to enable contact with members of other offices, TDG have social regional and national events where it is possible to meet the rest of the TDG staff that we may not see on a daily basis. At the end of



February, the TDG national weekend was held. Staff and family from all the TDG offices throughout New Zealand met in Wellington. The trip included various activities all over Wellington, as well as dinner, drinks and the annual sports day for the TDG trophy. Needless to say, the Auckland office took this out for 2015.

My favourite part of the job is being able to work on a project from inception to completion, and

see the results first-hand. The ability to contribute to a successful project, and provide output that is of a constructive nature, is a great feeling.

In short, I have enjoyed my first few months at TDG. This is attributed to the fantastic work environment, and being involved in a company that is positively contributing to the traffic issues around the country.



## Ruane Seumanutafa

**Bachelor of Engineering, majoring in Electrical and Electronic Engineering**

## Carmen Lo

**Bachelor of Commerce/Arts conjoint, majoring in Information Systems, Finance and Economics**

*"Life at Vodafone is lively with a people oriented culture. I love the flexible working style where I can just pick up my laptop and sit wherever I want, whether I'm at a collaboration table with five others, in a quiet room or on the couches. We work really hard but we have a lot of laughs as well."*

Ruane first heard about the Discover Graduate Programme at Vodafone through the Maori and Pacific mentoring and tutoring network, Engineering Tuākana and started her career with Vodafone at the start of this year.

She knew she'd made the right decision choosing Vodafone's graduate programme over others during the first week with her team. *"Life in the corporate world is so different from university. It can be quite daunting but my team made me feel so welcome. They don't mind taking the time to explain things to me and they really value my input."*

For Ruane, every day is about learning something new. *"Since starting, I've had so much hands on experience. At Uni I did a lot of electrical work but so far I've dealt with servers, IP addresses and worked on site with a customer, and I'm just getting started!"*

As a graduate at Vodafone, Ruane has the opportunity to rotate around different teams every six months over the course of two years to gain full exposure to the business.

Carmen knows the excitement Ruane is experiencing as she was a fresh faced graduate just like her in 2014. Carmen is currently completing her second and final year on the graduate programme and says the rotations across all of the different functions are really insightful. *"I started out in the Networks team, learning all about our cell tower technology. Then I worked on the rural broadband initiative and a project focusing on State Highway 1 coverage as well as RAN design and security."*



Carmen Lo and Ruane Seumanutafa

Carmen is currently working in the Product Delivery team. *"It's a mix of business analysis and experience design. That means I make sure a product has been successfully delivered to market and is fully embedded across our customer channels."*

Sharina Nisha, Head of Platforms Design and Delivery at Vodafone is delighted to see both of the girls doing so well. *"Encouraging more young women into careers within technology is so important for diversity and gender inclusion. Women make up roughly 49% of the world's population, so to better understand our customers and provide solutions that fit the needs of close to 50% of our customer base, we need stronger representation from women across all of our technology teams."*

Sharina leads a group at Vodafone called WiT (Women in Technology). *"We've spent the last few years supporting and promoting careers in technology in high schools and tertiary institutions to lift awareness of the vast career options and development opportunities in technology. Our Local WiT team have also hosted internal events to empower our female employees to aim higher by providing the*

*chance to network with our technology leaders."*

After Ruane and Carmen have completed the Discover Graduate Programme, they will have the opportunity to decide where in the business they would like a permanent position. *"I'm looking forward to gaining a wide range of knowledge and building relationships with experts along the way"* says Ruane. Ultimately, she is excited to experience all of her rotations across Vodafone.

To be successfully selected as a Vodafone Discover Graduate, Ruane and Carmen's advice is to be flexible and keep an open mind. *"Branch out of your comfort zone and gain lots of different experiences that set you a part from every other graduate looking for a job."*

Keep an eye out for Vodafone on campus during the year and watch this space for information about applications [www.facebook.com/VodafoneNZCareers](http://www.facebook.com/VodafoneNZCareers)

We're at our best when you're at yours. Power to you.



# WorleyParsons

resources & energy



## Ben Helm

BE (Hons) Mechatronics, MEM  
Graduate Instrumentation and Controls (I&C) Engineer

### WorleyParsons New Zealand

WorleyParsons New Zealand designs, builds and maintains industrial plants for New Zealand and international customers in the power generation, oil and gas, refining, petrochemical, dairy, food and beverage, forestry and minerals processing industries.

Our core business is to manage complex project and contract issues and deliver safe, reliable facilities at the most sustainable cost. We specialise in the delivery of projects through the integration of teams with both a diverse and optimum mix of skills, experience and locations.

### Role of an I&C engineer and Initial Experience

At WorleyParsons an I&C engineer is responsible for the design and implementation of systems which:

- Keep process variables such as pressure and temperature within the required process envelope;
- Systems which enable the process to be put into a safe state if the process escapes the desired envelope;
- Systems that mitigate the consequences if the process is unable to be put in a safe state.

I joined WorleyParsons as a Graduate I&C Engineer in the Taranaki office just over two years ago. This role involved assisting with minor tasks on existing projects such as completing technical datasheets for purchasing equipment and assisting with site surveys.

### Secondment to Customer

After 2 months at WorleyParsons, I was seconded to Shell Todd Oil Services (STOS) one of our major customers. Here I was tasked with assisting

STOS engineers in updating their maintenance procedures for Instrumented Protective Functions (IPFs). IPFs are instrument controlled functions that return an out of control process to a safe state, for example, abnormally high pressure is detected in a vessel and a signal is sent to a central control system that causes all possible pressure sources to that vessel to be shut off.

One of the most interesting aspects of these reviews was the method in which the reliability or risk reduction requirement for a particular IPF is calculated. This involved calculating a probability of a certain event occurring, e.g. a vessel rupturing from high pressure. This probability looked at all possible causes of such an event and then all the other levels of protection that exist. Once the probability of an event occurring has been determined this is then correlated to a consequence e.g. the released gas causes an explosion resulting in multiple fatalities. These two factors are used to determine how reliable a particular IPF must be which in turn determines things like maintenance frequencies and redundancy requirements.

In addition to the technical competencies gained from the secondment, being immersed in a customer's organisation, getting to know their engineers as well as the organisation's culture was very beneficial when delivering projects for STOS once I was back in the WorleyParsons office.

### Offshore Experience

Coming back to the WorleyParsons office after my 11 month stint at STOS I was fortunate enough to be involved with (among other things) two offshore based projects. The first of these was the design and implementation of a nitrogen blanketing system on a diesel tank on the fixed production platform Maui A off the southern coast of Taranaki. The second was the design and implementation of a drilling data acquisition system on both Maui A and the semi-submersible drill rig the Kantan IV as part of STOS's recent drilling campaigns off the Taranaki coast.

As part of these projects I was able to spend a lot of time out on the rigs, which meant exciting prospects like completing the Basic Offshore Survival Induction and Emergency Training (BOSIET) course which involved helicopter crash survival and basic firefighting training.

Offshore hydrocarbon based engineering is one of the most challenging environments an engineer can work in on the planet due to the unique risks posed by doing even the simplest of tasks.

### Additional Experience

One of the key things that WorleyParsons is able to offer their engineers, is the chance to be involved in later stages of projects, such as construction and commissioning. These opportunities have been invaluable in making me a better discipline design engineer as you are able to see firsthand how the work you produce in the office is used and implemented in the real world on site. This advantage is due to WorleyParsons offices being located relatively near to the sites that they deliver projects for.

### WorleyParsons Graduate Development Programme

The WorleyParsons Graduate Development Programme (GDP) is an initiative run within the company by graduates for graduates. Its primary focus is turning recent graduates into well rounded and competent engineers who are well on the way to professional accreditation by the time they finish the three and a half year programme. In addition to graduate training and development the programme also organises social events both company-wide and specifically for graduates. I have found the GDP to be excellent in terms of providing a support network within the company and also outside of work as being new to Taranaki I didn't know too many people before moving here.



## Where are they now? Catch up with 3 former WEN girls, now Professional Engineers.



**Camille Cowley**  
**Software Engineer**

Working in engineering and science are passions for me. Really I know many people are blasé about that phrase but I see the world in patterns, materials and optimization routes. Systems and the manufacture of materials excite me. I was deciding between fine arts versus science. A toss up between oil paints and hydraulic fluids. The decision I choose focused on the key point: I could always enjoy the freedom of expressing myself creatively, whereas there is no pathway for an armchair scientist to utilize the tools for design without a large amount of money and experience.

The next decision was whether to go for an apprenticeship or a Bachelor of Engineering degree initially. Experience from many colleagues showed that those who did an apprenticeship first had a better grasp of the backend principles and an easier pathway to a career afterwards. I did so, and got experience in the manufacturing and consultancy industries later on. The mechanical engineering industry was really enticing with complex systems and materials so I chose this specialization. After seeing a few industries downsize I saw a trend and moved into a conjoint with a Bachelor in Science majoring in Computer Science. Even later I changed to a Bachelor of Engineering specializing in Mechanical, conjoint with a Bachelor of Science double majoring in Computer Science and Mathematics.

What education in engineering provided was a set of skills that enable career mobility across countries, professions and industries. As a software engineer I have worked in games, cloud services, network infrastructure, and web services. There is a constant push of new research into current practices which encourage me to continue learning. It is a shame not to be able to practice as a mechanical engineer but as a software engineer I have a dynamic career and great rewards.



**Annaclaire Klette**  
**Director of DBS (Continuous Improvement)**

As a mechanical student I was introduced to lean concepts, especially in manufacturing systems and design. During the ten years since graduating my career has continued build on this foundation and continuous improvement has become my way of life.

When I joined Fisher and Paykel Appliances as a Graduate Engineer in 2005 I could not imagine the journey I was about to take. I have barely had a year in the same role, or spent an entire year in the same country. Leaving for the bright lights of London, I thought I would try my hand at management, and it wasn't long before I became the Production Manager for a repair workshop of accident damaged service station dispensers with Gilbarco Veeder-Root (GVR). GVR are a manufacturer and service provider of all forecourt equipment. Little did I know the challenge I was about to face in this first role, where the average age of my team of men being over 55, and myself only just in my late twenties. However it was my engineering background that ensured we soon had a mutual respect and together transformed our workshop culturally, physically (introduced flow) as well as dramatically improved performance.

I progressed quickly becoming the Operations Manager in January 2009. In September 2009 I became the Danaher Business systems Leader (DBSL) and part of the Senior Executive team, reporting to the Managing Director for the UK business. The Danaher Business System (DBS) is essentially a continuous improvement system that has its roots in the Toyota Production System. In 2012 I completed an Executive MBA with Kingston University in London, and on returning to NZ became the Director for DBS for Gilbarco's Australian and New Zealand businesses, as well as working with the operations team at Postec Data Systems (a subsidiary of GVR).



**Deepika Jaduram**  
**Civil Engineer**

I chose to study civil engineering firstly because I liked the idea of contributing to infrastructure and the built environment as it is so important for modern society in terms of health, amenity, and wellbeing. Secondly, I've always been interested in engineering and engineering design since I was a little kid because my dad is a civil engineer and he used to take us out on school holidays and point out dams, and structures and projects he worked on and explain how it worked, so I grew up with an appreciation for what engineers. Very few non-engineers fully appreciate the extent to which we as a profession influence life including access to water, sanitation, software and phones, transport etc.

I enjoy civil engineering because it has such a breadth of applications with regards to the industries it influences and the communities it serves. It extends from water, to property and buildings, to roads and transport and urban design, and everything in between.

In my current role I work within a Water Resources team doing Water Sensitive Urban Design work, irrigation design and consultancy, and water related projects for council and local government. I also work in our asset services group doing asset management. In addition I project manage jobs including oil and gas jobs, as well as working in the stakeholder engagement space. I also sit on the company's Women in GHD committee which looks at diversifying the workplace and acknowledging the benefits of a fully balanced, diverse workforce (in terms of gender but also race/culture etc.). I also do some graphic design work in pulling together stakeholder communications – non-technical representations of often technical subject matter, so non-engineers can easily digest the information. This is especially important when the projects are of public significance or highly political. I have worked on water treatment, desalination and water recycling projects, including concept and functional design of a plant in Mexico.