

ENGINEER YOUR CAREER

Information from Industry for Student Engineers



MAKING MORE FROM

WE ARE AN INTERNATIONAL DAIRY COMPANY, WITH ONE OF THE LARGEST INTEGRATED INFANT FORMULA SITES IN THE WORLD.

Our head office is in the heart of Canterbury, but we also have a Blending and Canning facility in Auckland, and Research and A Development Centre in Palmerston North, and we're currently building a brand new Dairy Processing Plant in Pokeno, Waikato.

Synlait started production in 2008 and has quickly become a global competitor in the international milk powder and infant formula markets. We have grown exponentially and now have over 600 staff, and an impressive portfolio of facilities.

We're pursuing two new categories -Everyday Milk and Adult Nutrition - so there is no shortage of opportunities for the best graduates to contribute to our rapid growth. We combine expert farming, with state-of-the-art processing, to produce a range of value added nutritional milk products that provide genuine benefits for health and wellbeing.

And we want you to join us!



GROWING GREEN

You might have seen our recent announcement showing just how committed to sustainability we are. Sustainability underpins the purpose of our company, and we're set on reducing our environmental impact significantly over the next decade.

The commitments were revealed at our annual conference in Christchurch at the end of June and we plan to;

- Reduce our greenhouse gas emissions by 35% on-farm and 50% off-farm by 2028
- Reduce our water consumption by 20% and nitrogen loss onfarm by 45% by 2028
- Significantly boost support for best practice dairy farming through increased Lead With Pride[™] premium payments (including a 100% PKE-free incentive!)
- Never build another coal-fired boiler and work hard to address existing coal infrastructure
- Build New Zealand's first large-scale electrode boiler in January 2019
- Become a Certified B
 Corporation and adopt several of the United Nation's Sustainable
 Development Goals
- Establish a social investment fund to boost support for communities, organisations and initiatives aligned to our sustainability goals

We're stepping up to take responsibility for our business and demonstrate leadership in the primary industry that will benefit all New Zealanders.

Can you help us do this?

FUTURE LEADERS AT SYNLAIT

At Synlait we know that young people are our future, and we're doing everything we can to attract the brightest talent out there. Our Future Leaders programme lets us select final year students we think could become our shining stars, and then develop them towards being our future senior leaders.

It's a three year programme rotating you through a variety of roles whilst you receive worldclass leadership training.

The programme culminates in you being placed in your first leadership role, and you'll continue to receive mentorship and guidance to accelerate your development.

It's a great way to kick-start your career.

Could you be one of our future leaders?



futureleaders@synlait.com

ENGINEERING YOUR SUCCESS

We have a huge range of roles for engineers at Synlait, with a number or exciting and unique opportunities.

We currently have engineers working in a wide variety of roles including Commercial Manager, IT Manager, Master Scheduler, Dryer Operator, Continuous Improvement Specialist, Process Engineer, Capital Projects Engineer...and many more.

Your qualification as an engineer opens an endless number of doors, and can take you on an amazing journey with our fast growing company.

Based on our current projections, we need to recruit more than 300 people in the next 12 months – are you one of them?

Just take a look on our careers website, and you'll see the vast variety of jobs we have here.

We have a role for you!







JADE

Product Development Engineer Biomedical Engineering

What does a day-in-the-life of Jade look like?

I start the day with 'a large soy flat white with a vanilla shot, please' from our in-house barista, and greet the friendly faces while weaving down the usual trajectory to my desk through the open-plan office. I'm a Product Development Engineer and I get to work on designing hospital masks from project conception all the way to product release. The remainder of my day is really shaped by which phase of the product cycle I'm currently at. I could be visiting nurses at a hospital to get first-hand feedback to understand what really matters to

them, CADing up a plastic component on SolidWorks and programming the tool paths for it to be milled in the CNC mill, or working on a tricky quality problem to ensure that our mask design complies to our Quality Management System. My days are incredibly varied; I do everything it takes to bring a product to life! I end my day with maybe a game of Turbo Touch or a 5 km run.

What is your favourite thing about being an engineer?

I personally think that the very best thing about being an engineer is that you have the ability to create something which will improve someone's life.

How did you get to where you are now? Why F&P Healthcare?

Being a Biomedical Engineering undergrad led me to my first graduate job at Fisher and Paykel Healthcare. I've moved teams

three times which has exposed me to different product groups. From reusable respiratory tubing, where working with materials that can be reprocessed was the biggest challenge to heaterbases, where understanding the humidity control algorithm in the current software version was key, to finally, non-invasive mask interfaces, where I could hone my project management skills. Four years in and I'm still here! Aside from the medical application of F&P Healthcare, which aligns with my degree and interests, and the vast opportunities you have for learning, I have to say that the thing that keeps me going is the people. You'll hear that all the time if you talk to enough of us. You're constantly surrounded by intelligent, kind and like-minded people that will always be there to help you, and that become your life-long friends. From my experience, that makes a huge difference when it comes to choosing a workplace.



Each year we have Internship and Graduate Programme Opportunities for Bachelor of Engineering, Science or Technology students in the following disciplines:

MECHANICAL, ELECTRICAL/ELECTRONICS, SOFTWARE, MECHATRONICS, BIOMEDICAL/BIOENGINEERING, CHEMICAL & MATERIALS, PHYSICS, COMPUTER SCIENCE







Who are we?

Aurecon is a global engineering and infrastructure advisory company.

As engineers and advisors, we blend what is with what might be to create what is possible. Using innovation and design, we bring our clients' ideas to life to shape the future.

Complexity inspires us. Ambiguity energises us. We believe that together, we'll solve some of the world's most complex problems. All that's needed is to start seeing the world differently, today.

At Aurecon, we are passionate about partnering with our clients, and believe that our diverse and inclusive workforce drives innovation. In 2017, we were honoured to be named 'Large Firm of the Year' by Consult Australia, and we were ranked #5 in the Australian Financial Review's Most Innovative Companies list.

Our graduate programme

Aurecon has challenged the traditional approach to graduate programmes, creating an environment where you can pursue your personal career interests, instead of being locked into a rigid rotation schedule where you spend several years in different areas of the company.

At Aurecon, you can express your interest in a preferred team, play to your strengths, and fast track your experience and development. You will also work alongside industry leading professionals, mentors and peers. If you'd like to experience numerous areas of Aurecon's business, then we can facilitate that too.

Bringing ideas to life at Aurecon is about being creative, grabbing onto new opportunities and getting the support you need to find your niche.

Find out more

Visit: www.aurecongroup.com/graduates



Michael Xu Graduate Electrical Engineer

Location: Auckland, New Zealand Time at Aurecon: 2 years Degree completed: Bachelor of Engineering (Electrical), University of Auckland Strongest Aurecon Attribute: Inquisitive

To be honest, I was unsure what I wanted to do after school. Luckily, I chose engineering! Soon after starting my studies, I realised how fascinating and multifaceted electrical engineering can be. Seeing how critical my work is in various structures, devices, and industries also turned my interest into a real passion.

When the time came to find summer work experience, I was looking for a workplace that designed larger than life projects. Furthermore, I wanted to join a company that helps clients create important community infrastructure such as a new hospital or a school. That's why I chose Aurecon.

Aurecon fosters a culture of human-centric design, creativity and innovation; and its engineers collaborate well to create meaningful solutions for their clients. Even as an intern, I got a taste of what will be in store for me when I graduated.

Of all my projects, I am most proud of my work on a new tertiary education building here in Auckland. Sure, it may just be another new building for some, but for me, the new building means students now have a space to learn, and lecturers have more resources to bring their lessons to life. It's humbling and rewarding to know I helped to create a new place for Aucklanders to learn.

My most important piece of advice for graduates is to apply for companies that will allow you to gain a wide variety of experience. When I graduated I had a broad idea of what I'd like to do, but it's only been through delivering a wide variety of projects, that I have learnt what I truly enjoy. I'd also encourage everyone to take their time to find their 'dream company', and not to settle. That way, you'll be engaged from your first day.



SCORE THE INTERNSHIP OF A LIFETIME

As technology continues to rapidly unlock new worlds of possibility, it's an exciting time to join Gentrack, one of the globe's fast-growing software providers to utilities and airports.

Our business comprises 500+ amazing people in offices in New Zealand, Australia, Singapore, the UK and Europe, who collaborate to service over 200 customer sites across 30 countries.

And now we're on the lookout for top techies to take part in our software engineer internship programme from November 2018 to February 2019.

Multiple paid intern positions are up for grabs at our Auckland HQ, offering you the chance to deepen your knowledge of all things tech and gain invaluable hands-on work experience.

Check out the profiles of two of last summer's interns, who were lucky enough to bag permanent roles with us in the end. They do what they love in a place they can thrive — don't miss your chance to! For internship eligibility criteria and to apply now, head to www.gentrack.com/internsandgrads. The deadline for applications is 5:00pm on 10 August 2018. Good luck!

INTERN PROFILE

OLGA DEVIATOVA Full-time Graduate Software Developer (Utilities) | Auckland



Qualifications: BE(Hons) in Software Engineering and Postgraduate Diploma in IT.

Why did you apply for an internship?

After four years of maternity leave, I wanted to restart my career and return to the occupation that I love. That's why when Gentrack offered me the internship, I accepted it at once!

What did you get involved in as an intern?

The main project that I want to outline was the performance testing benchmark, which involved the use of Amazon Web Services, Boto3, Jenkins and Plotly for Javascript. I worked alongside two other interns on this exciting project.

How has the internship impacted your professional development?

The internship was a very interesting and exciting experience as it gave me the opportunity to practically apply to real

projects the theory that I was taught during my postgraduate programme. It was also very interesting to learn about the local work culture and organising processes. I was lucky to be part of an awesome team, and, I liked how we organised tasks, shared expertise and collaborated with each other.

Did the internship meet your expectations?

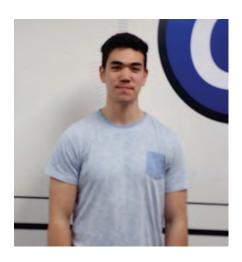
I'm delighted to say that the internship exceeded my expectations.

What do you love about working at Gentrack?

Just in one word: people.

Do you have any tips for future Gentrack interns?

Don't be afraid to express your opinions or share your ideas. Also, remain keen and curious



Qualifications: Currently studying Bachelor of Computer Systems Engineering.

Why did you apply for an internship?

A course I enjoyed before the internship was in software design, so I was curious to see what working as a software engineer would be like. I was looking to work in a complex and challenging environment — Gentrack ticked that box.

What did you get involved in as an intern?

I worked on two major projects, the first of which was to develop a mobile app that ground staff at airports could use to manage flights. This involved researching mobile development tools and a trip to Auckland Airport to meet future users of the app. It was eventually deployed to the Google Play Store and was even showcased at overseas trade shows. The second project was to give keyboard navigation and screen reader support to Gentrack's Airport 20/20 application, which entailed web development work and provided valuable experience in working with legacy code. These projects were separate from what the wider development team were working on, but they provided plenty of support and shared their

How has the internship impacted your professional development?

An important skill for any software engineer is the ability to quickly understand and work with code someone else has written. As an intern, I learned techniques to understand and work with legacy code — something uni projects don't cover. I also gained experience in writing

cleaner, more extensible code and honed my collaboration and communication skills

Did the internship meet your expectations?

It exceeded my expectations. Many companies give tedious or unimportant tasks to interns, but Gentrack is the opposite. A fellow intern and I worked on exciting projects and were given the freedom to make development choices. We were trusted to make smart recommendations throughout the development process.

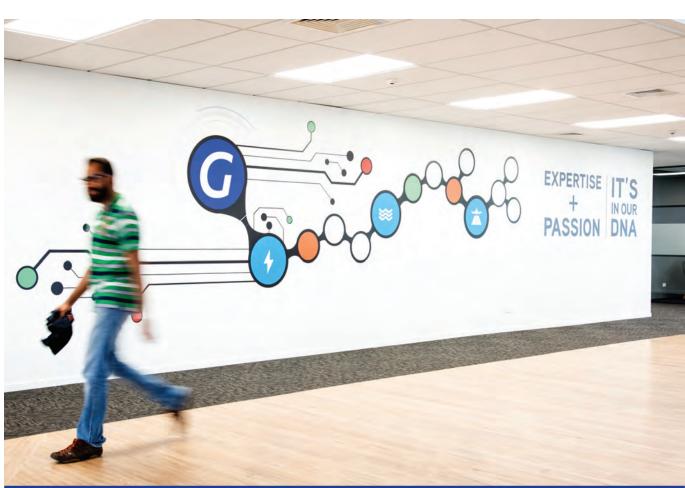
What do you love about working at Gentrack?

The best thing is the culture. There isn't any feeling of hierarchy at Gentrack, and it has a casual atmosphere and dress code. One of my most memorable moments is when our general manager shot a game-winning three-pointer against me on our basketball court.

Do you have any tips for future Gentrack interns?

Ask as many questions as possible. There's plenty of talent here, and you can really get a lot out of the role if you're passionate about tech and love to challenge yourself.

Follow us on: Twitter @Gentrack and facebook.com/gentrack





How did you get the job at T+T?

During my first year at university I met a civil engineering student in the year above me who had received the T+T scholarship, completed his internship there and had really loved his time there. Following his advice I applied for multiple scholarships in my second year, including the T+T scholarship, which I was awarded. This scholarship offered me both financial support in my studies and the opportunity to intern with T+T during my summer holidays. Through the internship programme I was able to experience what the world of geotechnical engineering is all about and decided this was the area I wanted to specialise in. During my final year I worked part-time at T+T and applied for a full-time graduate position which I accepted.

What do you actually do?

As a geotechnical engineer I'm concerned with how the soil is behaving and how to ensure the proposed structure is stable. To achieve this I have to design an engineering structure or system which interacts with the soil. This can include anything from foundations design, retaining wall design, slope stability to landslip remediation to name a few. The best thing about being a geotechnical engineer is that no two jobs are the same because the soil is not linear in its behaviour or properties and every problem requires a combination of lateral and logical thinking. For this reason my job includes both: time in the office - writing reports, doing analysis using computer software and doing calculations, and going out to site - undertaking investigations or observing construction.

It's hard to describe a typical week because I often have three to ten different projects on the go, all at various stages of development, which require a lot of flexibility. I might be in the office for some of the day and then out on site for site investigations or construction observations.

How has T+T supported your career?

The internship programme was an invaluable opportunity to learn the practical side of geotechnical engineering, which I would never have received at university. This allowed me to put into practice what I had learnt at university in an environment where I was supported and had time to understand the engineering principals, which really set me up for my graduate role.

At T+T there is a very strong collective thinking culture, facilitated by the open plan office arrangement and jovial atmosphere between colleagues. This often means someone will hear you discussing an issue and offer to help or point you in the right direction, which makes asking questions and getting different perspectives on a problem really easy.

What's the best thing about working for T+T?

The best thing about working at T+T is both the diversity of interesting projects and the culture. During my time at T+T I have become good friends with a large number of staff, which makes coming to work every day enjoyable.

What advice do you have for current students?

Take initiative and always ask questions if you don't understand something because there's never a wrong question, only wasted time.



Exceptional thinking together www.careers.tonkin.co.nz

Make a positive impact on the **environment** and your **community**





Dana Gardner

Dana is a valued Engineer in our Sustainable Development Team

BSc (Eng)

Describe your path to Engineering

I always wanted to be an engineer and had a special interest in environmental engineering, as it allowed me to combine my love of science with engineering design to solve problems in the environment.

After completing an undergraduate study in Biological Systems Engineering in the USA, I moved to NZ to pursue a higher education in Civil and Environmental Engineering.

Currently I'm completing a PhD in Environmental Engineering at Auckland University, researching the protection and management of Auckland's drinking water supply reservoirs. Receiving the University's Doctoral Scholarship has helped fund my research and allowed me to follow my passion in the environmental engineering field.

How did you start working at Morphum Environmental?

I had heard about Morphum from a professor at University, who thought they would be a good fit for me, given their environmental focus and expertise in water quality management.

After viewing the project work on their website, I decided to apply for a vacancy, as the work looked interesting and complimented my research. Initially I worked part-time to allow time for my studies and have since become full time.

Why Morphum Environmental?

Morphum applies a holistic approach to engineering and environmental solutions, they are more than just a civil and environmental engineering firm, they care about sustainability and the balance between engineering and nature.

I also liked that Morphum is a smaller company, where people can be seen and heard and given opportunities to collaborate across teams and projects. The fact they are just down the road from University was a positive, to help juggle work and study.

What opportunities have you had?

I have been fortunate to work on a broad range of interesting and diverse projects, and see some beautiful landscape in the process. The work I have done around drinking water treatment and environmental protection is directly related to my research, particularly the complex connections between land use and water quality. It's great to see the practical application of my studies, and how the work benefits both the environment and the community.

What do you enjoy about your workplace?

I love that its positive and vibrant! You get to work with likeminded individuals who are friendly, open and social, who all share a passion for the environment. The culture is open and supportive, you always feel comfortable to approach the directors and team leaders.

Your work is also recognised and valued, and they celebrate success. I recently received the Morphum Mauri Award, in recognition of my work on small water and waste water projects.

From a personal growth perspective, I appreciate the opportunity to be able to step up when senior engineers are on leave and that the training budget is there to support my chosen path and what interests me.

Contact us today regarding current and future opportunities www.morphum.com/careers

Our Branches: Auckland | Warkworth | Hamilton | Wellington | Nelson | Melbourne





MARINE ENGINEERING OFFICER (MEO)

Marine Engineering Officers are the Navy's experts on ship structure, propulsion, power generation, hydraulic, and habitability systems. Marine Engineering Officers on board ship lead teams of skilled hands-on technicians who operate, maintain and repair this diverse range of equipment. The Marine Engineering Officer is the critical decision maker in the ship's response to fire-fighting and damage control.

A diverse range of shore-based positions include management of complex projects, equipment procurement, ship system and physical upgrades and performance analysis. Your career will be managed so that you are rotated regularly through these roles, ensuring you develop a broad understanding of Marine Engineering. Professional development is a key part of a Marine Engineering Officer's career.

MEO - BE(Hons) in Mechanical, Mechatronics or Electrical Engineering.

BEngTech in Mechanical or Electrical Engineering.

WEAPON ENGINEERING OFFICER (WEO)

Weapon Engineering Officers are the Navy's experts in weapon systems, communication, sensors, and combat management systems. Weapons Engineering Officers on board ship lead a team of skilled technicians who maintain and repair the sophisticated equipment that provides our fighting capability.

Weapon Engineering Officers are also involved in complex multi-million-dollar project management, equipment procurement and upgrades, system optimisation, and maintenance planning. Your career will be managed so that you have a comprehensive and full understanding of all the aspects of Weapon Engineering.

WEO - BE(Hons) in Mechanical, Mechatronics, Electrical, Electronics or Computer Engineering.

BEngTech in Mechanical, Electrical or Electronics Engineering.

UNDERGRADUATE - CHATHAM SCHEME

Entrants into the Chatham Scheme are able to study at a university of their choice while the Navy pays for all course fees and a living allowance (approximately \$9,000 per year) and a \$500 textbook allowance. Bonuses of up to \$2000 are awarded for a minimum Agrade average.

There is a year-for-a-year Return of Service attached to this scheme.



UNDERGRADUATE - TANGAROA SCHEME

Entrants into the Tangaroa Scheme are paid a full Midshipman salary (\$32,000) to study at The University of Auckland, Massey University (Albany Campus) or Auckland University of Technology.

There is a year-for-a-year Return of Service attached to this scheme.

GRADUATE - AMOKURA SCHEME

Entrants into the Amokura Scheme are able to study at a university of their choice, and on completion of their degree, have their course fees paid back over the same duration as their degree.

There is no Return of Service attached to this scheme.

Year of Service	3 Year Degree	4 Year Degree
	(annual sum)	(annual sum)
1st	\$3,000	\$4,000
2nd	\$6,000	\$8,000
3rd	\$9,000	\$12,000
4th	\$12,000	\$16,000
Total	\$30,000	\$40,000

Entry into RNZN as Midshipman \$32,000 - \$51,000 Promotion to Sub Lieutenant \$63,000 - \$84,000

Promotion to Lieutenant **\$77,000 - \$103,000**

0 months 6 months

2 years

_____ 3.5 years

Junior Officer Common Training

On-the-Job Experience (Ship/Ashore)

Systems Engineering Management Course Portsmouth, United Kingdom

^{*}The above career progression model is a guideline only - it is subject to the individual's qualifications and aptitude and is also subject to change



ENGINEERING OFFICER

You will actively manage the engineering and maintenance of RNZAF aircraft and its mechanical, avionics and armament systems. You will be responsible for the safety, airworthiness, and availability of the aircraft.

You will need to be a flexible, multi-disciplinary leader across all areas of engineering with a keen eye for detail. Engineering Officers work across all engineering disciplines, including the research and development of aircraft, equipment modifications, managing budgets and financial systems, and designing structural repairs. You will monitor engineering standards, manage aircraft maintenance and oversee maintenance of mechanical, avionics, and armament systems. You will be provided with ongoing training to keep you at the forefront of engineering development.

 EO - BE(Hons) in Mechanical, Mechatronics, Electronic, Electrical or Aeronautical Engineering.
 BEngTech in Mechanical, Electrical or Aeronautical Engineering. As an Engineering Officer you will be employed in a number of areas within the Air Force. These are:

FLYING SQUADRONS

Each Flying Squadron has a maintenance section led by an Engineering Officer known as the Maintenance Flight Commander (MFC). A large squadron will usually be aided by a junior Engineering Officer. The MFC's role is to manage the day-to-day maintenance of the squadron's aircraft; a combination of both scheduled preventive and routine maintenance, and unscheduled repairs.

BASE ENGINEERING SQUADRONS

Each RNZAF base has specialist engineering squadrons to perform more in-depth maintenance on aircraft and components. Your work is demanding in terms of engineering knowledge and managing personnel and resources.

On each base, the engineering squadron has a senior Engineering Officer in charge and one or two Junior Engineers to look after various workshops.

UNDERGRADUATE SCHEME - RUS

RUS is available to Undergraduate and Year 13 students. The Air Force will fund your engineering studies and provide an annual living allowance

There is a year-for-a-year Return of Service attached to this scheme.



GRADUATE INCENTIVE SCHEME - GIS

Engineering Graduates and Final Year students are eligible for the Graduate Incentive Scheme. In addition to your normal salary as a Pilot Officer, you will receive annual payments totalling \$40,000 over four years (for a four year degree).

There is no minimum time to serve, or return of service.

Year of Service	3 Year Degree	4 Year Degree
	(annual sum)	(annual sum)
1st	\$3,000	\$4,000
2nd	\$6,000	\$8,000
3rd	\$9,000	\$12,000
4th	\$12,000	\$16,000
Total	\$30,000	\$40,000

Entry into RNZAF as Officer Cadet \$32,000 - \$43,000

Promotion to Pilot Officer \$52,000 - \$68,000

Promotion to Flying Officer \$63,000 - \$84,000

months

6 months

1.5 years

2.5 year

Initial Officer Training Course

On-the-Job Experience (Squadron)

General Engineering Officer Training Course

The above career progression model is a guideline only - it is subject to the individual's qualifications and aptitude and is also subject to change.



DOWNER YOUR FUTURE

Our Downer Graduate Programme welcomes our young professionals to the team from day one. Our graduates might just be starting out in their careers, but they are encouraged to think about how they can role model the Downer values and deliver on the Downer pillars - Safety, Thought Leadership, Delivery and Relationships.

Your first job is not just about technical development. It's also about how you fit in the culture and how you can contribute to that as a future leader.





Zero Harm is embedded in Downer's culture and is fundamental to the company's future success.

"I contribute to the Downer Zero Harm culture by making sure that every single person who enters our construction site is well aware of the potential site hazards. I constantly work towards improving the overall on-site health and safety by attempting to eliminate, minimise and isolate critical risks through innovative construction methods.

Safety is important because I truly care about my work crew."

Isaac, Auckland University Graduate

DELIVERY

We build trust by delivering on our promises with excellence while focusing on safety, value for money and efficiency.

"Great delivery is important. We are rebuilding Western Springs College around a live school, and sometimes need to cut off critical services for upgrades. These have to be planned meticulously to ensure minimum disruption.

Delivery is also important in our costs. It is essential we compare all prices to ensure value for money without compromising on quality."

Michelle, Auckland University Graduate





THOUGHT LEADERSHIP

We remain at the forefront of our industry by employing the best people and having the courage to challenge the status quo.

"I work to promote a sustainability culture. Last year, I was a Downer Leadership Award winner for development of an Engineering Sustainability Hackathon, #HackOurFuture. Working with Downer and UoA society- the Sustainable Future Collective, we brought together 32 students to solve a sustainability-based challenge. The event saw some awesome ideas generated for the future of a more sustainable business."

Dalong, Auckland University Graduate

RELATIONSHIPS

We collaborate to build and sustain enduring relationships based on trust and integrity.

"The relationships you build are so important because you need to establish a good rapport with your colleagues to work alongside them. Collaboration is key when we are challenged and need to create a solution as a team.

I am also proud to connect with the SPIES group. Being a part of the alumni means I can provide some guidance and share the lessons I've learnt from my experiences."

Havea, Auckland University Graduate

