WHY I WANT TO BE A PROFESSIONAL ENGINEER.

Rachel Arthur

I decided to be a professional engineer two years ago. I chose this path because in following it I will use technology to design intelligent solutions, help people, apply my abilities, and work in an environment that suits my preferences. In 2009 I had four experiences that demonstrate my reasons for deciding on this career. I entered the Energise Your Future Challenge, attended the Open Day for the University of Auckland, took part in the New Zealand's Next Top Engineering Scientist competition, and went to a programme hosted by the engineering firm Beca.

The Energise Your Future Challenge, set up by Canterbury University, asked three students to spend several months designing a system to provide renewable energy for the Hydropolis hotel in Dubai. I entered it because I thought it would be interesting and I was pleased when we received fourth prize. The competition was challenging, but it was definitely worth it because of the huge amount I learned about cooperation, report writing and energy production. To fulfil the brief, we had to research new developments in solar cells, wind turbines and hydropower, and work out how to integrate them effectively. I have always been interested in new technologies – my favourite section of The Economist is invariably 'Science and Technology' – and I derive great satisfaction from problem solving, both mathematical and practical. The Energise Your Future Challenge gave me a taste of what it might be like to combine the two as an engineer. I am now certain that engineering is a career I will enjoy, due to my love for technology and desire to create useful products.

When I visited the University of Auckland Open Day, one of the fourth year students' projects was an improved respirator for newborn infants. I stood there reading the poster and thinking, 'I want to make something like this'. I would love to help patients through my work. There were other projects on display, all of which interested me. They inspired me to think more about the possibilities for work as a professional engineer. Another aspect I would love to be involved in is systems or designs that help the environment, such as renewable energy sources or efficient buildings. Changing humanity's energy needs may make the difference between survival and extinction of our species. Additionally, such developments will benefit New Zealanders by reducing reliance on imported petrol and on coal, which will both run out eventually. One of the most important things to me is that engineering would give me the opportunity to work on medical machines, environmental aids, and many other projects, all within one lifetime. This variety is not present in many professions.

I entered the New Zealand's Next Top Engineering Scientist competition, organised by the University of Auckland, with three of my classmates. We had a single Saturday in which to determine whether New Zealand could avoid building a new power station by reducing households' energy usage through energy-efficient appliances. I enjoyed it as much as I did the Energise Your Future Challenge, and I was able to apply skills gained through one task to the other. When the results came out, I was proud that my group were Highly Commended for our report. Discussing it afterwards, my classmates and I commented on the strengths shown by different team members. One of mine was writing the report clearly and quickly. Many engineers have told me that an ability to communicate is in demand amongst engineers, so I decided to do my Bachelor of Engineering as a conjoint with a Bachelor of Arts in English. As an engineer, my combination of ability in both the sciences and the arts will be well-utilised.

My chance to speak to engineers came when I visited the firm Beca during a programme for secondary students considering engineering. We were able to speak to the young and older engineers about their working life and projects. I was pleased to get this

chance because it answered several questions I had about what working as a professional engineer is like, and convinced me that I wanted it as a job. Quite importantly, the engineers I met seemed like the kind of people I would be happy to work with. I enjoy working with people, and so cooperating with other engineers and consulting clients would fit my personality. As I have mentioned, I am always excited by the prospect of finding solutions to problems. At Beca we were also given presentations about all the different types of engineering they do, the structure of the company, and the different projects they have worked on. One of the aspects that attracted me was how a single company could be involved in a wind farm, the new airport buildings, and also much smaller scale work such as laptop designs. I love to keep learning and facing new challenges, so this was a positive point. I would like to someday work within a company culture like that present at Beca.

I am keen to become a professional engineer because I love problem solving, working with people, and new technology, because I want to be involved in creating medical equipment and environmentally friendly systems, and because I look forward to facing the challenges involved. In 2009 I deliberately gained as much experience as possible of engineering as a job. All my knowledge has only reinforced the desire to become a professional engineer and I enter university determined to do so. I would love to be awarded an IPENZ Foundation Engineering Scholarship to help me achieve my goal.

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