

Why I want to be a professional engineer

Qi-Wern Lim

I am embarrassed to admit that as a child, I was under the misconception that engineering is all about building roads and bridges. My father is a civil engineer and his work seemed rather dull to a young girl like me. However as I grew older, my perception of engineering has changed completely. I now know that it is an interesting, important and exciting field, in which I aim to have a career.

It was only quite recently that I decided on engineering as my future career. When deciding on a career I confess that engineering was not one that instantly came to mind like, for example, being a doctor. This is not because engineering is any less important a profession. It is just that the work that engineers do is more “behind the scenes” and not clearly in the public eye. Over this summer holiday I have been working at the Palmerston North City Council with my father. Through this experience I’ve gained an appreciation for all the work that is involved in keeping a city running smoothly. For example, on the floor on which I work at the council, a team of engineers are constantly working hard to ensure that the wastewater and water supply systems are running efficiently and will continue to do so, and another team is focussed on maintaining and improving the city’s roads. The work that they do goes largely unnoticed and unappreciated by the public. We take it for granted that when we turn on our tap, clean, clear, safe water will come streaming out, and when we flush the toilet, its contents (and smell) will speed magically away out of sight and out of mind. We do not realise that this requires complex monitoring systems, engineers’ input in planning, operation and maintenance to deliver the service safely and effectively.

The work that engineers do is just as important (or indeed even more so) than any other profession. In fact, without engineers, other professions would not be able to do their job properly. This is because engineers are involved in almost every aspect of our world today. What makes engineering so exciting is that it synthesises mathematics, science and creativity to design innovative solutions for real-life problems. While science strives to understand the world around us, engineering goes a step further, applying this knowledge to create a better world. The creativity and innovation that is involved in engineering was another thing which impressed me while working at the City Council. One instance of this was a video we watched of an ingenious robot designed to fix cracks and other faults in underground pipes. Engineers are responsible for not only our roads and bridges, but our food products, electronic devices, hi-tech materials and medical equipment too. All these are essential in providing and maintaining a high quality of life for our society today.

At high school I was unsure as to what career I would pursue when I leave school. I had no idea what I wanted to be “when I grow up” so I followed the sound advice of my parents and stuck with the subjects I enjoyed: science and mathematics. I believe that to be successful at anything, you have to enjoy it, and to have a successful career I believe that you have to be really passionate about what you do. From an early age I have been passionate about science and maths, and possessed a desire to help people. I entered into competitions such as the ICAS (formerly NSW/Australasian) Science, Mathematics and English Competitions where I consistently received High Distinction and Distinction Awards, and the Manawatu Science and Technology Fair receiving a number of prizes. I found the atmosphere of challenging inter-school competitions irresistible and have been a member of school MATHEX and BP Technology teams. At Palmerston North Girls’ High School I was involved in many activities within the school community. I have been a peer tutor in Science and Maths, and was a member of numerous committees. As my school’s 2008 Science Prefect I ran a peer tutoring scheme, advised students of science opportunities, and organised science activities.

I also have a need to be challenged constantly. Through engineering I will always be learning new things to keep up with evolving technologies, be challenged continually and will be using not only my knowledge of a range of subjects, but my creativity as well. I have always dreaded being stuck with a boring old desk job where every day is an exact replica of the last. Engineering is such a dynamic profession that there is certainly no fear of this at all.

In January I had the privilege of attending the 2008 Rotary National Science and Technology Forum in Auckland. A number of the lectures and workshops were held at the University of Auckland. Through these I discovered what a wide range of specialisations there are in engineering. This is due to the fact that the principles of engineering are so fundamental that they can be applied to many things in our world. For example, a similar calculation is used to calculate flow through a wastewater pipe and an artery. The universality of engineering reinforces just how important engineers are and why many more of them are needed.

I became especially interested in the exciting new field of biomedical engineering after attending the 2008 BioFutures Forum in Brisbane. The make-up and design of the human body particularly fascinates me and I am eager to learn more about it. I think that it is incredible how nature has designed organisms that function in such a complex yet efficient way, and this can be modelled by calculations, equations and programmes as if they were man-made machines. Biomedical engineering will allow me to use my passion for science, mathematics and health to help people in a practical way. Biomedical engineering also has a wide range of specialisations within itself which adds to its appeal as it provides the opportunity to incorporate my other interests such as sport.

I am extremely excited about becoming a professional engineer. I know it will not be easy and I will face many challenges, especially in this unstable modern world of climate change, terrorism and depleting resources. However, it is these challenges that make it an even more interesting, exciting and indispensable profession.