

# Why I want to be a professional engineer

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Engineers have a lot to answer for. When bridges collapse, power systems fail or space shuttles burn up on re-entry, it is invariably their fault. However, more often than not, ships don't sink, mines don't collapse and DVD players do what you tell them to. It's easy to forget about them when everything is going smoothly, but engineers have a hand in all facets of society. By way of example, consider a bottle of milk. An engineer would have been involved every step of the way from farm to fridge, from the drainage systems in the fields to the design of the plastic bottle. In every sense of the phrase except the literal (at least, not yet), engineers make the world go round.

A society obviously can't have too many engineers, and probably would be better off with more of them and less of certain other professions which shall remain unidentified. However, what piqued my interest in engineering as a career? Well, my father is an engineer, so there's a start. Of particular significance, I think, was the copy of *e.nz magazine* that turned up in our letterbox every two months (or, when I was a lot shorter, every month). The articles were well-written and enjoyable to read, even for someone without much technical knowledge. They showcased the cream of the industry in New Zealand. Most importantly (for a young kid – and even a not-so-young kid), they were accompanied by cool pictures. From then on the seeds had been sown. Engineers didn't all wear hard hats, were involved in a diverse range of activities from agricultural to aeronautical, and there were a lot more of them out there than I first suspected.

In choosing a career, it makes sense to play to your strengths. I have always considered mine to be mathematics and science, that is, physics and chemistry. It also makes sense to be doing something you enjoy. Not surprisingly, these were areas I also particularly enjoyed studying whilst at school. I think there are two reasons for my affinity towards these subjects. Firstly, I have always harboured a desire to find out 'how stuff works'. In our garage are a number of objects – from toy trains to telephones – that I had taken apart to see what they look like on the inside (and put back together with varying degrees of success). Science is, after all, primarily concerned with explaining 'how stuff works', whether it be biological, chemical or physical phenomena. The second reason is my love of problem solving – not just maths or physics problems on a page, but real-world problems as well. Engineering is an ideal synthesis of these two interests. I recall seeing engineers referred to on occasion as 'soluters' because they are producers of solutions., professional problem solvers. Moreover, it is the perfect profession to be in to be able to find out exactly how things work and be involved in their design and production.

A view prevalent amongst many is that maths and science are subjects suited to people with 'logical' minds, whereas English and the arts are for the creative types. In my experience, there is just as much room for creativity on the maths/science side, only it occurs under the moniker of 'innovation'. This is one of the reasons why I find engineering attractive – innovation isn't just permitted, it is encouraged, and often, required. There are always ways to improve a process or design – sometimes they are minor adjustments on what has been done or used in the past, other times they are radical shifts in traditional thinking. Innovation is often bred through necessity: having to cope with limited resources or situational constraints demands that solutions be creative. This is especially pertinent to New Zealand where our geographical location and size means that innovation is critical to be competitive on a global scale. New Zealand has a tradition of producing innovative engineers and I am looking forward to continuing that tradition.

One of my biggest fears is being stuck in a job doing essentially the same thing day-in-day-out. An engineering career is a dynamic career, and this can be put down to two factors. Firstly, no two projects are ever the same – requirements and circumstances may vary subtly or drastically. Secondly, new technologies are constantly being developed and adapted, so you constantly have to be learning to keep up with the play. A common theme of speeches by guest speakers brought in to address school students (and I've sat through my fair share) is that learning doesn't stop just because you've left school, or university. It is a lifelong process, and an old boy of my school involved in the technology industry went as far to say that 'when you stop learning, you stop living as a person'. An engineering career requires that you continue to learn to stay abreast of evolving industries. Electronics, a particular area of interest to me, is along with biotechnology one of the fastest areas of development. Just the other day it was announced that plastic microchips are one step closer to rendering silicon-based products obsolete. Such new and exciting technologies provide endless opportunity for the development of innovate applications. Whilst scientists may have developed them, it will be engineers that bring them to the people, and I want to be a part of that.

In my mind, the difference between engineering and science is that engineering by its very nature is driven by the direct and immediate needs of society, whereas science is one step removed. This is why I find an engineering career so attractive – as an engineer I will have the opportunity to contribute to the advancement of society. This obviously comes with a lot of responsibility – as is exhibited by the fact that it appears a significant part of engineering in the 21<sup>st</sup> century will be concerned with fixing the damage we've done in the 20<sup>th</sup>. Civic responsibility is an essential quality for any engineer, and one that I am proud to possess.

We are fortunate to live in interesting times, when technology is progressing faster than it ever has before. I look forward to being an engineer in such times and playing a role in shaping the future.