

## WHY I WANT TO BE A PROFESSIONAL ENGINEER.

Peter Molloy

Over the last few years I have realised that my interests, natural inclinations and areas of enjoyment revolve around the applied sciences and, in particular, engineering. Therefore I wish to enter the field of engineering by studying towards a Bachelor of Engineering at Canterbury University, and to fulfil the criteria for recognition as a 'professional engineer'.

I have been drawn to construction and problem solving since childhood, when Lego was my favourite toy. It gave me opportunities to be creative as well as to learn through play about structural concepts. At home I enjoy physically engaging construction projects. These have given me a practical knowledge of structures, including what gives them strength and stability.

It is important for me to gain a sense of accomplishment from my efforts. I find it immensely satisfying to see my work go into the production of a tangible creation. When involved at home in projects such as building concrete walls, compost bins, retaining walls, bookshelves and even a seven metre long bench for a model train layout, being able to look at the finished product as the culmination of a day's work assured me that my work was both productive and worthwhile. I expect that engineering will provide a similar sense of achievement.

At this stage I am still considering which branch of engineering I wish to enter, but I look forward to clarifying this choice during my intermediate engineering year. However, various fields of engineering present opportunities to satisfy different interests of mine.

I am an academically grounded student and relish intellectual challenges, especially solving complex problems and finding creative solutions to new challenges. I love the elegant nature of physics and calculus: the way all the concepts and equations neatly fit together.

This year it has been fascinating to learn about applications of ideas explored during physics lessons, for example, use of the Doppler effect on known frequencies of light to calculate the velocities of stars. Also, the sheer pragmatism of applying electromagnetism and induced voltage to detect whether a car is positioned at a set of traffic lights intrigued me. A career in mechanical or electrical engineering, where one is involved in the process of creating new technology, would stimulate and engage my attention.

I am particularly interested in the development of new materials and new technologies. I enjoy chemistry and the complexity of the world at a molecular level. At present I have summer holiday employment with an agrichemical manufacturing company, working as a chemistry assistant in an applied research laboratory. I am enjoying using Gas Chromatography and the challenges of figuring out what my results are indicating in a project examining the release properties of microencapsulated agrichemical ingredients. This work is confirming my interest in a career in science and technology, and makes chemical engineering a real possibility for my future.

Another broad interest I have is in the operation and development of our society. The complexities of thousands of people living in a city, and the systems developed to tackle the obstacles which arise, fascinates me. I can envisage working as a civil engineer involved in developing new living spaces and considering all the necessities: roads, infrastructure, water, wastes and electricity.

A further attraction that civil engineering presents is the opportunity to be involved in aid work in a third world country. As a civil engineer I would be equipped to work on projects involving irrigation, access to clean water, buildings, bridges and waste management.

Working in an environment full of challenges stimulates my mind, and there are sure to be many challenges in our future society. For example, climate change will necessitate innovative energy sources, forms of transport, infrastructure and products. The idea of working at the forefront of technology, creating original solutions to new challenges, is very attractive.

I also enjoy the arts. Painting is a great outlet for artistic thought and an opportunity to express myself. Preparing my painting portfolio for NCEA level three and the Scholarship Examination showed me that art can be a form of investigation, just as we have historical, numerical or scientific investigation. Engineers in New Plymouth have talked to me about how projects can become pieces of art, involving both scientific and artistic thinking. Pictured above is a bridge on the Ahukawakawa Track on Mount Taranaki. This beautiful bridge is, in my opinion, the only piece of infrastructure on the mountain which fits in well with its environment. In the future I would love to be involved in similar projects where aesthetic values and structural integrity are combined.

This mix of science and art entices me. In early 2009 I was involved in a SCANZ (Solar Circuit Aotearoa New Zealand) residency. SCANZ is an international network concerned with interdisciplinary creativity. During this time I was involved in a project with Brett Stalbaum, a lecturer at the University of California, San Diego. We created a “locative narrative” using a hiper GPS/walking tools platform. This involved triggering audio and image files on GPS-enabled mobile phones by pre determined geographic coordinates. I was very interested in this creative, art focused and yet technologically based project, and it is my hope that engineering will provide other opportunities for such a hybrid of science and creativity.

In summary, I am drawn to engineering as an intellectual, scientific, artistic and social occupation, and wish to qualify as a professional engineer.

I am energised and enthused when interacting with other people. While I enjoy the freedom of independent work, I also appreciate the value of a cooperative effort and networking. This has the advantage of encouraging people to hold one another accountable for high standards of workmanship, productivity and professionalism. After graduating, I would seek membership of IPENZ to receive such support and encouragement, as well as advice from more experienced engineers. I also hope in time to support other engineers and offer my services where possible.

I wish to pursue a career as an engineer for all of the above reasons. I aim for the highest standards of performance and see becoming a professional engineer as achieving a high degree of competence and proficiency. I look forward to an exciting future as a professional engineer and as a member of IPENZ.

**Peter Molloy**