

WORK WITH US TO HELP CREATE THE ENGINEERING GRADUATES THAT NEW ZEALAND NEEDS

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FROM THE CHAIR ...

ENGINEERING E2E is expanding its international connections. Last month we hosted Professor Julia Clarke when she visited Wellington to talk about the degree apprenticeship programmes at Manchester Metropolitan University (MMU). Her presentation was highly engaging and I was very interested to learn that implementation of the apprenticeships by the university has had a positive effect on increasing student diversity. We talked with Professor Clarke about collaboration and the possibilities of being part of the evaluation of MMU's degree apprenticeship programme.



SIR NEVILLE & EEA EXECUTIVE DIRECTOR PETER BERRY

Earlier this month Engineering e2e signed a memorandum of understanding with the Electricity Engineers Association (EEA). EEA is committed to providing the New Zealand electricity supply industry with expertise, advice and information on issues affecting the electricity industry. Part of EEA's communication strategy is to raise the profile of electricity industry infrastructure engineering careers. Together we plan to collaborate on initiatives to help increase engineering graduates and share information about any initiatives that might be relevant to achieving our mutual goals.

Sir Neville Jordan
 Chair, Engineering e2e Steering Group

My Degree Apprenticeship Experience
 Charley Denny - AstraZeneca



Degree apprenticeships – an international connection

Engineering e2e is borrowing from a UK approach to establish a degree apprenticeship in engineering. This work-based degree integrates academic learning with on-the-job practical training. It's a model we think could have application in many sectors.

In June 2015, Professor Jane Goodyer, Massey University, advised us on the viability of the apprenticeship model in New Zealand. A key finding of her research was that to be successful, the curriculum development process needed to be driven by employers with support from educationalists.

Jane investigated the effectiveness of degree apprenticeship models offered in the UK and began work on a New Zealand pilot. The plan is to adapt the UK model for use in New Zealand.

During the first phase of the pilot, Jane worked with the New Zealand division of the Institution of Public Works Engineering Australasia who represent engineering workers in councils throughout the country. She guided this group of employers as they developed a standard for a degree apprenticeship focused on asset management.

EMPLOYER RESOURCE PORTAL

Business NZ and Engineering e2e have launched a resource portal that gives engineering employers a single access point for the latest tools to recruit, retain and grow employees. There are national and international examples of good practice that support the development of a diverse engineering workforce. The portal is a form of 'how to' guide, with examples of what others have done.

See www.ree.org.nz





WelTec and Otago Polytechnic have recently submitted a proposal for the pilot's second phase – the implementation of the degree. Their proposal was reviewed favourably by Manchester Metropolitan University (MMU), the largest provider of apprenticeship



degrees in the UK. MMU noted that the proposal aligned with what was found to be essential to success in the UK, most notably the need to be employer-led.

In discussion with MMU, Professor Julia Clarke offered to visit New Zealand as part of a trip to Australia. Julia met with Tertiary Education Commission (TEC) staff, representatives of other government agencies and engineering educators to talk about MMU's approach to degree apprenticeships and the costs and benefits to the institution, employers and learners.

For a pdf of Professor Clarke's PowerPoint presentation, please email us at engineeringe2e@tec.govt.nz

Check out YouTube videos of apprenticeship degrees in the UK, including:

- www.youtube.com/watch?v=FqUBNJeN_EE
- www.youtube.com/watch?v=JhsDVeHUo6g

TEC & WELLINGTON ICT GRADUATE SCHOOL'S STUDENT HACKATHON

In February, Engineering e2e helped to run a two-and-a-half day hackathon for students from Wellington high schools and the local ICT graduate school.

The hackathon introduced students to opportunities in ICT through a highly engaging experience. TEC and the Wellington ICT Graduate School organised the event with support from WelTec's engineering school. "While not strictly our 'bread and butter'," says Sir Neville Jordan, Engineering e2e Steering Group Chair, "this initiative gave us the chance to trial another of the recommendations from the McKinsey report **Education to Employment: Designing a System that Works.**"

Each hackathon team had students from the high schools and the graduate school. They had to think about what makes science difficult to learn, and to see if they could solve this problem in some way. The students used their own skills and resources to develop solutions, supported by a team of mentors who are experts in science, IT and team work.

The top prize went to a team of students from Wellington High School, Onslow College and the ICT-Graduate School. Each team member won a \$2,000 scholarship to study at Victoria University of Wellington. Their winning solution was a web-based program to help teach Chemistry. Called Crackerjack, the program enables students to try chemistry experiments by dragging and dropping coloured flasks of virtual chemicals to combine them in different ways. A successful mixture results in rockets



Hackathon students discuss their work with Sir Neville

exploding across the screen. Taita College students received a special award for their school by developing a kit of easy-to-make, low cost practical science activities for science students. "I had a lot of fun and it was a fantastic learning experience," said Wellington East Girls' College student Jasleen Ghuliani.

The judges commented that the standard of all the ideas presented was very high. They were impressed by the level of commitment shown by all the teams, how well they worked together and the diversity of the solutions. Judge Brendan Kelly said that the participants' enthusiasm and commitment was clear. "The teams had fun and all the solutions we saw had potential."

Mr Kelly also noted that "the skills exhibited by the students would be valued by any future employer."