



AUSTRALIAN ENGINEERING WEEK 2013

Engineers make it happen



Meet two of the Goulburn Valley's brightest young engineers – Gemma Maffei and Hayden Ivory.

As part of Engineering Week 2013, we profile some of the region's newest engineers and some who have spent their whole career in the industry.

Their respective journeys show how important engineering is in the Goulburn Valley and how it has changed and developed over the past 50 years with so many technological innovations.

The engineering profession is imperative in developing new technologies and delivering solutions that enable the world to work faster and better.

Engineering feats range from enormous structures such as the Hoover Dam in the United States and the International Space Station, to simple everyday objects such as phones, roads and bridges.

In 2013, Engineering Week is acknowledging the role engineers play in helping to develop and improve society with the theme 'If you can imagine it, engineers make it so'.

Engineering Week runs from August 5 to 11 and celebrates the profession through a series of events across Australia.

• See page 16 for Gemma Maffei and Hayden Ivory's stories.

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Careers span decades of change

Engineering gave Shepparton's John Sach and Vincent Wood almost five decades of satisfying, diverse work.

They did the theoretical part of the five-year fitter and turner apprenticeship together as teenagers at Shepparton Technical School.

Mr Sach did his apprenticeship at ED Parsons and Mr Wood did his at SPC Ardmona. Both stayed at the respective businesses their whole careers.

They witnessed huge changes in the industry such as machines becoming more complicated and including more computers, and the increasing importation of components and machines.

Mr Sach started as a fitter and turner at ED Parsons Engineering and as the firm got bigger and needed a draftsman, he took on the role.

He helped build fruit and vegetable handling, grading, pre-packing and packing equipment.

He said it was thrilling to watch machines he had drawn be made and then see them working.

"If anything wasn't successful, we would turn it into a success," Mr Sach said.

"If there was a machine that didn't do a job properly, we would make it work because it was a private company and we could just dump machines in the back."

He also enjoyed selling and servicing pre-packing equipment for potatoes which was imported

from the United States.

"They took off like wildfire and resulted in about 170 machines being sold Australia-wide."

He saw "massive changes" and remembers the day computers started talking back.

Mr Sach said one asked him, "Are you sure?" and even though he knew it was programmed to do so to avoid mistakes, he was still taken aback.

During his 48 years at ED Parsons, the firm grew from six people to about 50 and diversified to deal with a wider range of machines.

Vincent Wood also saw big changes during his 49 years working at SPC Ardmona.

Mr Wood said he enjoyed the fact that the role was always changing and required people to have hands-on skills and be switched on.

Early in his career, he learned from many "exceptional" tradesmen, as well as people who held tradesmen's rights certificates. One of the major changes Mr Wood experienced was the growing need for academic qualifications.

He also saw SPC Ardmona transition from manufacturing lots of components — such as gears — in-house to buying them in. Machines also became much



Retired engineers Vincent Wood (left) and John Sach (right) saw many changes during nearly 50 years in the industry.

more complicated and included more sophisticated electronics and pneumatic controls.

During almost five decades at SPC Ardmona, Mr Wood worked

in the machine shop, maintenance, planning and design, can-making, processing and even helped set up and run a cannery in Western Australia, before financial

pressures saw the company close it down.

He was engineering manager at SPC Ardmona for about 15 years.

Enjoying the challenges engineering presents

If you wonder how things work when you walk down the street, engineering might be the career for you, Josh Poyner said.

"I like the challenge of problem solving and coming to a solution that suits a client's needs," Mr Poyner said.

The engineer works for multidisciplinary consulting firm Chris Smith & Associates in Shepparton.

He said because the firm provided professional advice, design and services to the land development and infrastructure industries as well as to government and service authorities, the work was varied.

Since joining Chris Smith & Associates at the end of last year, Mr Poyner has worked on sewerage and drainage infrastructure projects.

In June, he also worked on a tender to construct a rural low-density housing estate in Grahamvale.

"I like that with a smaller firm you get to work on a variety of

different projects," Mr Poyner said.

He completed a double degree of Civil Engineering and Commerce at the University of Melbourne, and then worked for two years in construction for a company mainly building infrastructure for government.

After travelling to the United States and Mexico, Mr Poyner decided he did not want to return to working in Melbourne.

He grew up in Nullawil in the Mallee and said he was "over" living in Melbourne.

He said there were many engineering jobs in regional and rural Australia, and a regional city such as Shepparton offered varied work for engineers.

Mr Poyner said civil engineering was a broad field and he would consider doing more study in the future, for example in architecture or materials, to specialise his qualifications.



Engineer Josh Poyner studies plans and looks for solutions.

See engineering in action

Goulburn Valley residents are invited to discover the work of engineers at Goulburn Valley Water's Shepparton water treatment plant as part of Australian Engineering Week.

The free tour will be held on Wednesday, August 7 between 3pm and 4pm at the Welsford St plant.

Engineers Australia Goulburn Valley Group has organised the tour so people can discover the engineering behind a water treatment plant filtration system.

Goulburn Valley Water recently commissioned an upgrade of the plant to the dissolved air flotation (DAF) filtration system.

The site tour will involve a briefing by operational staff on the upgrade works and a review of the operation efficiency.

A light afternoon tea will be provided.

The tour will be limited to 50 visitors so registrations are essential.

To register, visit www.engineersaustralia.org.au/events/shepparton-water-treatment-plant-upgrade-site-tour



Engineering has a strong future in the Goulburn Valley, according to the region's Engineers Australia chair Steven Nash.

Engineers turn ideas into reality

Behind every building, bridge, electronic gadget and mechanical component is an engineer working tirelessly to bring new ideas to life.

In 2013, Engineering Week is acknowledging the role engineers play in helping to develop and improve society with the theme 'If you can imagine it, engineers make it so'.

The theme aims to reflect the fact many things in everyday life are only possible through the art of engineering.

Engineers Australia Goulburn Valley Group chair and Goulburn Valley Water operations manager Steven Nash said there were a number of industries and organisations in the region which relied on engineers, including councils and the water and food sectors.

From projects creating functional drainage systems to building the Nagambie bypass on the Goulburn Valley Hwy, engineering has helped shape the Goulburn Valley.

Engineering-based industries and

vocations are expected to increase in demand during the next five years, and Mr Nash believes the Goulburn Valley has a strong engineering future ahead of it. "There'll always be a new opportunity that comes along," he said.

"One of the greatest advantages of working in a regional area is that you can see the projects you're working on every day and see the benefits of them and how they affect the community."

Mr Nash said the group was dedicated to encouraging

young engineers to return to the Goulburn Valley to work, and organised a yearly maths and science competition to encourage local secondary students to continue with further study in the area.

He said the engineering field offered so many opportunities for international or Australia-based work, and the diversity of the field was something that attracted people to the industry.

As a continually changing and evolving industry, Mr Nash said there were always opportunities for

further learning and development with engineering.

He said engineering was based on creating viable solutions for problems.

"The role of an engineer is often to make an idea work and bring it to reality."

The Engineers Australia Goulburn Valley Group will celebrate Engineering Week, which runs from August 5 to 11, with an annual networking dinner on August 1 and a tour of Goulburn Valley Water's treatment plant on August 7.

Good night planned

Australian musical comedy duo Rusty & The Other Guy look set to have the region's engineering community in fits of laughter during Australian Engineering Week.

The duo will appear at Engineers Australia Goulburn Valley Group's AGM dinner on Thursday, August 1 at the Quality Hotel Parklake, Wyndham St, Shepparton.

The evening will give members the chance to network with fellow engineers, hear an update on projects the group has been working on and enjoy a three-course meal.

Rusty Rich spent 20 years as half of musical comedy duo the Scared Weird Little Guys.

Rusty (the little one) now performs with musical theatre performer and



improviser Mike McLeish who played Paul Keating in the musical *Keating!* for three years.

Together they continue the tradition of high energy musical skill, harmonies and quick-witted improvisation and song parodies.

Engineering group members and interested people can register for the dinner at www.engineersaustralia.org.au/events/agm-grand-meeting-goulburn-valley-engineers

Awards encourage career path

Year 11 students have been invited to enter the Engineers Australia – Goulburn Valley Group 2013 Math/Science Awards.

The annual awards have been held since 1998 to promote engineering as a career and recognise the achievements of high-performing Goulburn Valley students.

The awards recognise achievement in maths, science, physics, chemistry and food sciences, and include the Hannam Award for Best Female Student and the Campbell's Soups Food Science Award for Outstanding Performance in

Food Science or Chemistry.

Winners will be presented their awards by a Member of Parliament at a presentation ceremony in October where they will have the opportunity to meet leaders from the Goulburn Valley engineering industry.

Award submissions should include:

- curriculum vitae;
- letter outlining career ambitions;
- letter of recommendation by a teacher or peer; and
- any documentation to support the application, including copies of awards or folios demonstrating achievements.

Students should submit their application to their school's careers adviser prior to Wednesday, August 28.

The 2012 award winners were:

- Zeynep Ergunen, Shepparton High School
- Anthony Kremor, Goulburn Valley Grammar School
- Dermot Nichols, Cobram Secondary School
- Tim Wall, Rushworth P-12 College
- Hussain Alamein, Shepparton High School
- Nicole Weller, Goulburn Valley Grammar School
- Mike Pauw, Cobram Secondary College



Campbell's Soups manufacturing co-ordinator Gemma Maffei loves the diversity her engineering career brings.

Shepparton local Hayden Ivory took up an engineering position with Campbell's after finishing university.

Job's diversity keeps it interesting

Discovering the diversity and potential of careers in the engineering industry was a light-bulb moment for Gemma Maffei.

After realising she had an aptitude for maths and physics in secondary school, Ms Maffei decided to focus her career aspirations in the engineering field.

"I guess there weren't many females in engineering so I thought it would be an advantage," she said.

Ms Maffei studied a Bachelor of Engineering at Swinburne University of Technology, majoring in product design and minoring in advanced manufacturing.

Ms Maffei started with Campbell's Soups two-and-a-half years ago and has recently completed a two-year graduate program with the company.

She said the graduate program supported personal development and helped her gain a wide insight into the industry in general and the company through a five-department rotation.

Based in Campbell's Soups' manufacturing division as a manufacturing co-ordinator, Ms Maffei is responsible for safety, quality control and general manufacturing issues.

"I wouldn't be in this position if I didn't have an engineering or science degree," Ms Maffei said.

The tree change from Melbourne to Shepparton was an easy decision to make, with the lure of only travelling several minutes instead of an hour-long commute proving irresistible.

Ms Maffei said the challenging nature of her role was one of the best things about her job.

"New problems arise daily and it's fast-paced," she said.

"As I'm still fresh out of university, I've had to quickly adapt to the fast-paced environment and learn many lessons on the job; however in saying this, the company strongly focuses on personal development."

Ms Maffei said the diversity of the industry meant there were many varied career paths.

"Once you have an engineering degree, you can pursue a wide range of careers."

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Head for maths leads to engineering career

From his early interest in mechanics and physics, it was a natural progression for Shepparton's Hayden Ivory to consider a career in engineering.

Mr Ivory graduated from Swinburne University of Technology last year with a degree in mechanical engineering.

Returning to Shepparton during university holidays Mr Ivory gained casual engineering work experience at Campbell's Soups for the past two years, which helped fast-track his career, further develop skills and build a solid relationship with the company.

After completing his degree, he was offered a job with the company's engineering department.

He now works mainly in project management and drafting.

"I always wanted to work in the country ... and (Shepparton's) my home town and all my friends and family are here," he said.

Mr Ivory encouraged aspiring engineers to get as much practical work experience as possible.

"It opens a lot of doors when you graduate," he said.

Mr Ivory said physics had been his favourite subject at school, especially applying that knowledge to a real world problem, and was one of the contributing factors in his decision to study engineering.

He encourages anyone considering an engineering career to choose as many maths and science subjects

as possible during their school years.

The former Notre Dame College student said mechanical engineering was a natural career choice after spending his childhood around cars and bikes.

He said one of the appealing factors about engineering was its varied and challenging nature.

"There's always a lot to learn because things are always changing," he said.

"There's a new challenge every day and there's a lot of problem-solving in my role."

Despite being one of the younger graduates, Mr Ivory said age wasn't an issue because Campbell's Soups provided plenty of support from experienced co-workers.

Engineering streams

Engineering covers a broad range of disciplines, some of these include:

- Civil Engineering
- Mechanical Engineering
- Chemical Engineering
- Environmental Engineering
- Software Engineering
- Biomedical Engineering
- Electrical Engineering
- Geomatics
- Informatics
- Mechatronics
- Computer Science

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