WOMEN IN STEM DECADAL PLAN

POWER OF ENGINEERING RESPONSE

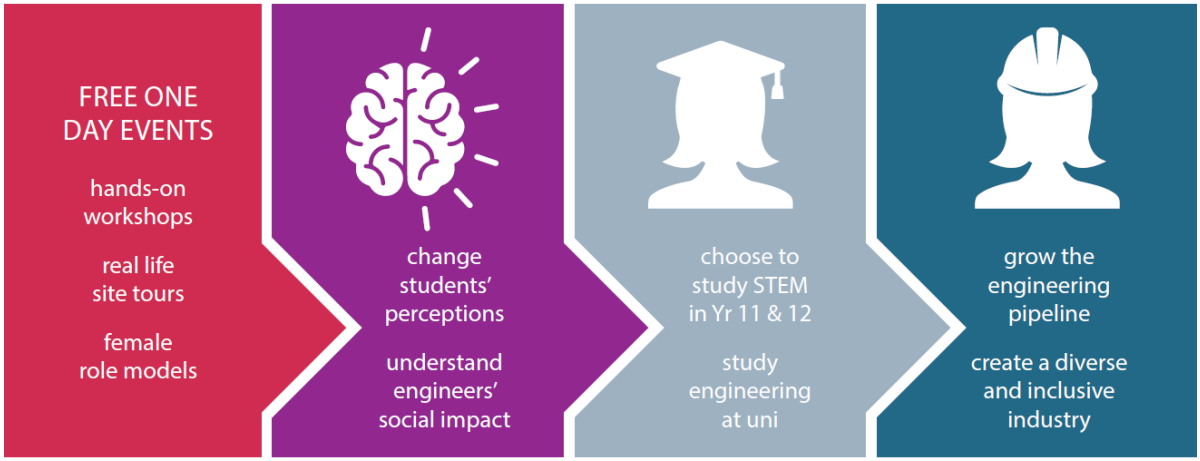
OCTOBER 2019

POWER OF ENGINEERING

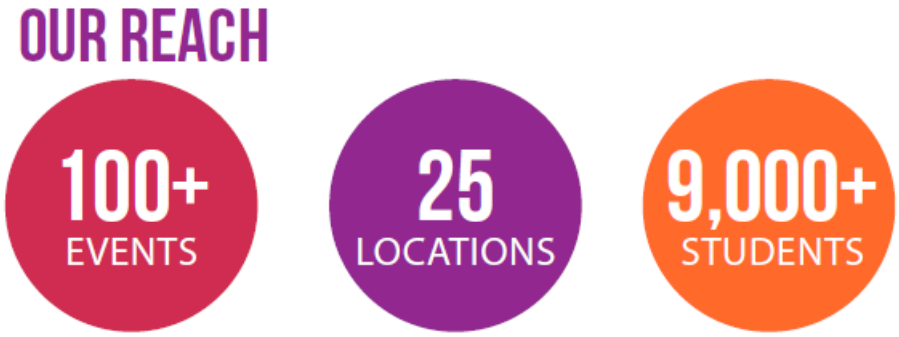
Power of Engineering is a not-for-profit organisation that aims to shape a diverse engineering workforce through practical and creative experiences.

We do this by running one-day events for Year 9 and 10 high school students (prior to subject selection) demonstrating that they have the power to change the world through engineering, in collaboration with universities and industry.

Our events target girls who have never considered engineering, who take part in hands on workshops and real world site tours, and are inspired by female role models. During the event, girls can imagine themselves as an engineer, see the social impact they can make in their community, and understand the diversity within engineering disciplines, leading to more girls choosing to student engineering, and ultimately, create a more diverse and inclusive industry.



Power of Engineering started in 2012 in Queensland and has now expanded to run events in New South Wales, Victoria, Western Australia, the Northern Territory, and Tasmania.



In 2020, Power of Engineering will launch a new product, Engineering In-A-Box. Engineering In-A-Box turns Power of Engineering's signature event into series of lesson plans that can be sent to schools across Australia. The lessons follow a real world engineering project across a number of challenges, including an introduction to engineering, managing stakeholders and community impact, project analysis, and design.

THE POWER OF ENGINEERING
CREATE YOUR FUTURE

RESPONSE TO DECADAL PLAN OPPORTUNITIES

EVALUATION

We know the program works from measuring our impact from over seven years of program data and using research into global best practice for engaging girls in STEM.

Short-term impacts are captured by surveying students immediately before and immediately after attending an event. These surveys allow us to capture the following types of information:

- Increased % of attendees who will consider an engineering career after attending an event
- Increased % of attendees who positively change their mind from a 'no' to a 'yes' when asked if they would consider an engineering career
- % of attendees who are satisfied or very satisfied with the event

Long-term impacts are captured by conducting follow-up surveys at least one year following the event with students and teachers, allowing us to capture increases in students who choose STEM subjects in Years 11 and 12.

In 2018, the first cohort of Power of Engineering alumni graduated from engineering degrees after being inspired during our events in 2012.

Our findings are publically available on our website (http://www.powerofengineering.org/impact) and are published in our Annual Report in December each year. Annual Reports can be downloaded from our website (http://www.powerofengineering.org/reporting).

77%
OF STUDENTS
who would not consider engineering before the event, changed their mind after attending

80%
OF STUDENTS
would consider engineering after an event

Engineering In-A-Box will also capture short-term impacts through surveys at the conclusion of each series of lessons, including how many students of each gender have attended the classes and qualitative outcomes of how their perceptions of engineering has changed.

VISIBILITY

Power of Engineering events incorporate keynote speakers, workshops, and site tours, and aim to maximise the number of young, female role models leading these sessions. This leads to more opportunities for students to see themselves as an engineer and to change their perceptions of what a successful engineer looks like.

As well as the positive impact on students attending events, the female engineers volunteering at the events are promoted on Power of Engineering's social media to improve their visibility within their professional networks.

Engineering In-A-Box is partially delivered through videos as they are designed to be run without needing in-person volunteers at the location. Videos include a diverse range of engineers, including different genders, races, levels of experience, and discipline. This is designed to align with Power of Engineering events where students can see the diversity within engineering and relate to at least one of the engineers on the screen.

EDUCATION

Power of Engineering works with both schools and universities to encourage girls to study STEM in high school and eventually engineering at university.

School engagement is focused on schools in a location where we are hosting an event, and generally through a STEM teacher at the school. Events are aimed at Year 9 and 10 students before they choose subjects for their High School Certificate in Year 11 and 12 to show them a potential outcome of continuing STEM education. If students choose to continue STEM education in high school they are more likely to meet requirements to study engineering at university.

Power of Engineering engages with universities as both hosts of events and for engineering student volunteers for the events. Engineering student volunteers are able to answer the high school students' questions on what an engineering degree is like, as well as how studying STEM in high school has helped them be successful in their degree.

The Engineering In-A-Box product is aimed at high schools and is designed for the same year groups as the in-person events. A benefit of Engineering In-A-Box is that schools are not limited to 20-25 students per school for an event as the lessons can be reused for multiple classes, so all students in a year group have the opportunity to learn about engineering.

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