



GUIDED TECHNICAL TOUR



Regional Engineering Showcase

PROGRAM



BENDIGO | 23 - 24 NOVEMBER 2019



Welcome to Engineers Australia's Regional Engineering Showcase.

Following on from the 2019 World Engineers Convention, the Showcase will explore engineering in the region, showcasing the breadth and impact of the multi-disciplinary field in the heart of Bendigo and its regions.

The weekend, themed 'Anything is possible: past, present and future of regional engineering', features site tour streams focusing on infrastructure, mining, manufacturing and defence. Professional based presentations, lectures and networking opportunities will abound, and the highly anticipated Engineering Leadership Dinner is sure to be a highlight.

This is an opportunity to support and engage with the region's vibrant engineering community, network with peers, and celebrate the past, present and future of engineering in the regions.



GUIDED TECHNICAL TOUR



DAY ONE: SATURDAY 23RD NOVEMBER

9:00am – 10:00am: Registration

Meet at the Chinese “Golden Dragon” Museum for registration and light refreshments between 9:30am and 10:00am.

Those who arrive early are welcome to go for a Heritage walk through the old centre – walking maps with self-guided routes will be available at the registration desk.

10:00am – 10.30am: Welcome

The Showcase will officially commence with a warm welcome from the Bendigo Regional Group followed by a traditional cultural welcome ceremony before guests are directed to their buses for the guided technical tours.

10:30am – 1:00pm

Guests will depart on one of two tours:

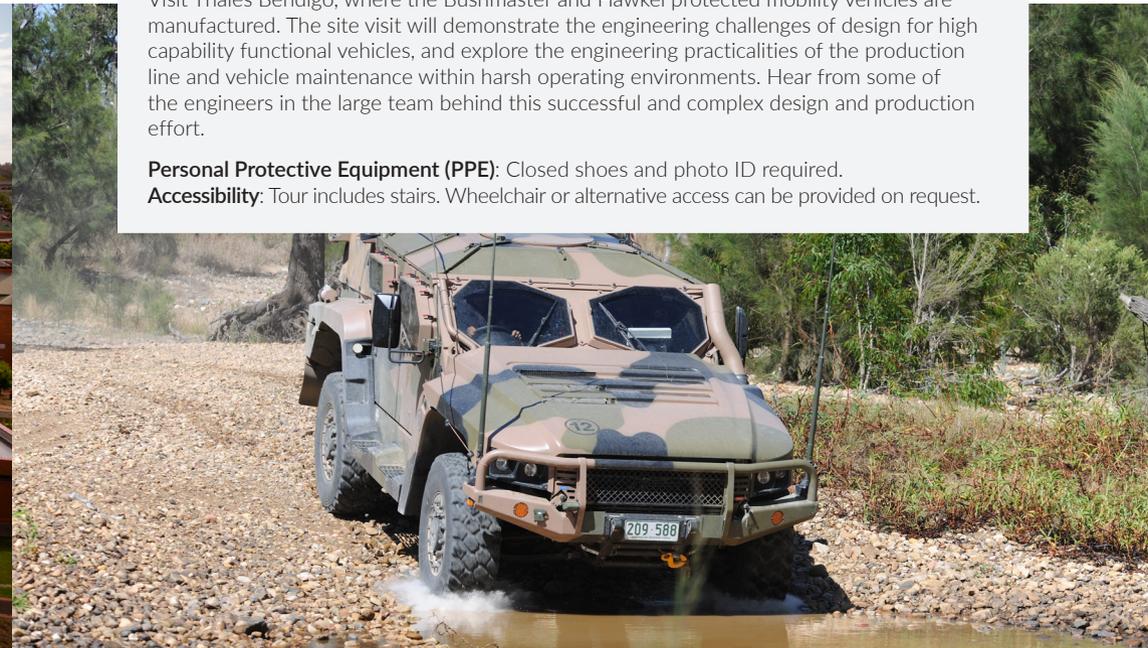
Thales Manufacturing Tour

Engineering theme: Manufacturing

Visit Thales Bendigo, where the Bushmaster and Hawkei protected mobility vehicles are manufactured. The site visit will demonstrate the engineering challenges of design for high capability functional vehicles, and explore the engineering practicalities of the production line and vehicle maintenance within harsh operating environments. Hear from some of the engineers in the large team behind this successful and complex design and production effort.

Personal Protective Equipment (PPE): Closed shoes and photo ID required.

Accessibility: Tour includes stairs. Wheelchair or alternative access can be provided on request.



Tram Tour and Tram Workshop Tour

Engineering theme: Mechanical

Let Bendigo Tramways take you on a ride in history on one of their vintage trams and discover the colourful history of its fleet on a guided tour of the depot and workshop. Bendigo Heritage Tramways has an extensive and diverse fleet, ranging from trams that have been used for housing and hospitality, carried Royalty or survived two world wars. See first-hand the craftsmanship and techniques that are involved in restoring these trams to their former glory and learn about the unique characters of the Tramways.

Personal Protective Equipment (PPE): Closed shoes required.

Accessibility: Site accessible for everyone.

1:00pm – 2:30pm: Lunch

All guests will be transferred from their technical tours to lunch at the new engineering building at the Bendigo campus of La Trobe University, where they will enjoy a relaxed lunch with a series of speeches and presentations celebrating engineering in the region.

Guests will also have the option to be guided through the new state of the art, Bendigo Tech School's engineering building, located on the top floor of the University.

2:30pm – 5:00pm

Guests will depart on one of three tours:



Bendigo Hospital Tour

Engineering theme: Infrastructure

The Bendigo Hospital is a modern hospital, having completed a major construction project within the last few years. This tour will introduce the hospital and provide guests with insight into challenges faced during construction. A key focus of the hospital modernisation project was the digitisation of many paper-based workflows. Guests will hear more about this process from tour host Bruce Winzar, who has led a team through this major effort over the last few years. There will be time for smaller groups to tour some physical elements of the hospital, within the boundaries of the operating hospital environment.

Personal Protective Equipment (PPE): Closed shoes required.

Accessibility: Site accessible for everyone.

Mining in Bendigo: Past, Present and Future

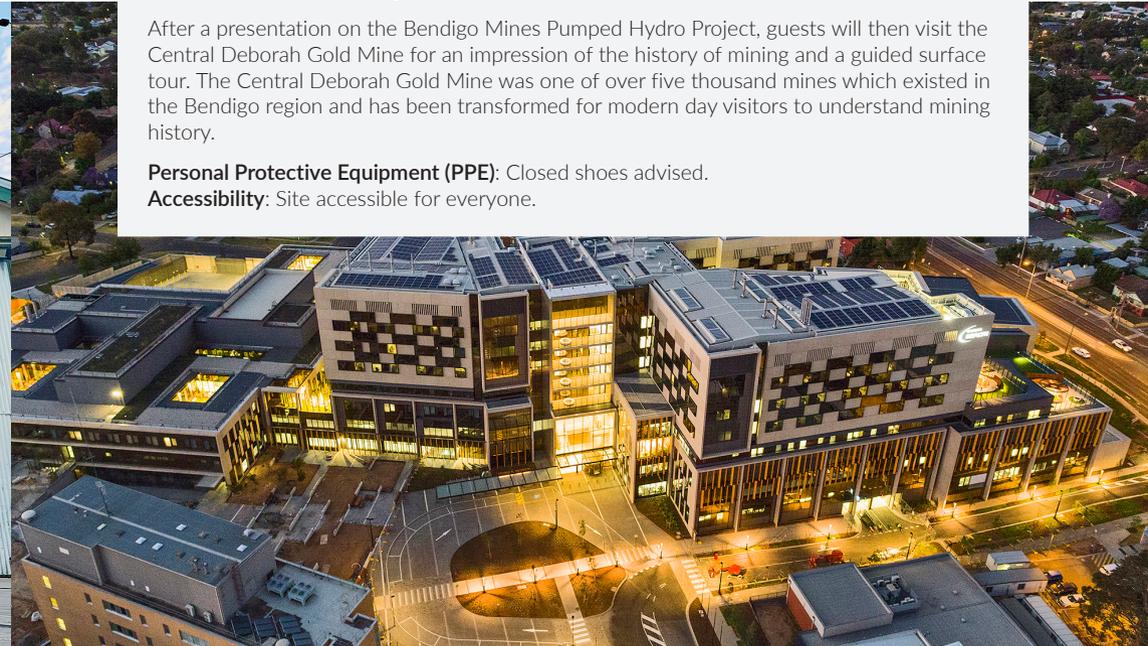
Engineering theme: Mining

Bendigo was settled after the discovery of gold in 1851, which resulted in the “gold rush” that transformed the colony of Victoria’s population and economy, and saw Melbourne become the richest city in the world in the 1880s. During this presentation, hear from Fosterville Gold Mine on how the endowment of nature has endured over the centuries and allowed it to become the largest gold producer in Victoria. Discussion will also include engineering challenges from a mining perspective and how the mine is leveraging modern mining techniques to establish its future foundations of digitisation, automation and electrification in the underground space.

After a presentation on the Bendigo Mines Pumped Hydro Project, guests will then visit the Central Deborah Gold Mine for an impression of the history of mining and a guided surface tour. The Central Deborah Gold Mine was one of over five thousand mines which existed in the Bendigo region and has been transformed for modern day visitors to understand mining history.

Personal Protective Equipment (PPE): Closed shoes advised.

Accessibility: Site accessible for everyone.



Coliban Water: Epsom Wastewater Treatment Plant

Engineering theme: Infrastructure

The Recycled Water processing facility at Epsom is designed to produce 'Class A and B' recycled water, with a purpose-built pipe taking the recycled water back to Bendigo where it is mainly used to irrigate public, open spaces. Some of the recycled water is also allocated for rural non-potable use. On this tour, guests will see the technology for themselves and learn more about how it benefits the region. Note that guests will be exposed to heights on this tour.

Personal Protective Equipment (PPE): Closed shoes required (no heels).

Accessibility: Uneven surface, not accessible by wheelchair. Please advise tour guide if uncomfortable with heights.

Tours will finish at 5.00pm at the All Seasons Hotel, via the Chinese museum for guests to pick up their vehicles where applicable.

7:00pm: Engineering Leadership Dinner, All Seasons Hotel

Arrive at the All Seasons Hotel from 6:30pm for networking drinks, with dinner from 7:00pm.

During a special three course dinner, guests will hear from keynote speaker and sustainability leader **Professor Veena Sahajwalla** and honour our future leaders and newest regional Fellows and Engineering Executives.



DAY TWO: SUNDAY 24TH NOVEMBER

9:00am – 9:15am

Meet at All Seasons Hotel Bendigo for tour pick up.

9:30am – 12:00pm

Guests will depart on one of two tours or the “Sustainability Challenge” activity:

Engineering Heritage tour

Engineering theme: Infrastructure

The Bendigo Historical Society has developed a special tour to provide an insight into the work of Sir John Monash and Joseph Brady in the Bendigo area. The bus tour will drive past several Monash bridges, with a few stops for a closer look. The tour will arrive at Crusoe Reservoir and No 7 Reservoir, designed by Joseph Brady around 1858, where guests will enjoy a guided walk. Much of this site, which was Australia's first filtered water supply, remains intact, and the expert tour guide will explain the revolutionary design.

Personal Protective Equipment (PPE): Closed shoes required.

Accessibility: Site accessible for everyone.

The Great Stupa of Universal Compassion Tour

Engineering theme: Infrastructure

The Great Stupa of Universal Compassion situated near Bendigo, is about to become the largest Buddhist Stupa in the western world. With a base area of 50m x 50m, the Great Stupa is the same size and design as The Great Stupa of Gyantse in Tibet. While final construction works are still in progress, this tour will look at a fascinating engineering project that combines ancient religious and cultural requirements with modern construction techniques.

Personal Protective Equipment (PPE): Respectful clothing required (no shorts or uncovered shoulders).

Accessibility: Site accessible for everyone.

Sustainability Challenge: STEM Power – a Smart Bendigo

Public event: free to attend

Our cities and the places we are living are changing. The World Economic Forum has predicted that by 2030 we will have driverless cars picking us up from our homes. It is expected that our fridges, coffee machines and even our bedroom windows will be connected with the Internet of Things and help us get ready for our day. It is an exciting time of innovation, powered by people in STEM!

This session, made up of two workshops will explore these future challenges and opportunities for the city of Bendigo and how STEM can solve them. Participants will create, innovate and design solutions to enable Bendigo to be a future ready city.

Join Engineers Australia and our influential speakers, detailed below, who will engage and inspire the next generation to create practical solutions to real-world problems. Workshop 1 goes big and explores drivers of change for our future world and our future Bendigo. Participants will address one of 100 predicted challenges and use design thinking to create solutions and pitch their ideas. Workshop 2 will focus on a specific challenge of the future – sustainable. As participants design, build and test an energy solution of the future by creating their very own wind turbine, who will be able to create the most power from their design?

Everyone is welcome and the workshop can be tailored to primary school students, high school students, parents and teachers. No prior engineering knowledge is required. Dr Collette Burke, Victoria's Chief Engineer, will also be in attendance to lend a hand.



Felicity Furey



Dr Jillian Kenny



Jemily Sweet

THE
**POWER OF
ENGINEERING**
CREATE YOUR FUTURE

Challenge Presenters

Felicity Furey: Co-Founder, Power of Engineering

Superstar of STEM Felicity Furey is an award-winning inspirational speaker, entrepreneur and engineer passionate about diversity. As a founder of two social enterprises, Felicity has shifted the perception of engineering with thousands of young people and companies. Felicity was named one of Australia's '100 Women of Influence' at just 26 years old.

Dr Jillian Kenny: Co-Founder, Power of Engineering

Dr Jillian Kenny's commitment to creating value in the world and providing opportunities for non-traditional entrants into STEM professions has led her to establish both Power of Engineering and Maths In Real Life. Dr Kenny has challenged audience perspectives through speaking in the UK, USA, South Korea and Australia.

Jemily Sweet: STEAM Learning Designer, Bendigo Tech School

Jemily Sweet is a STEAM Learning Designer at the Bendigo Tech School and alumnus Civil Engineer from LaTrobe University Bendigo. She has worked in the engineering industry for the last five years delivering water and wastewater solutions around Australia whilst tutoring VCE students in maths and physics

Personal Protective Equipment (PPE): Nil.

Accessibility: Site accessible for everyone.

12:00pm:

Lunch at Town Hall, including display of Thales protective vehicles

During lunch, guests will be able to look at exhibition stands from local businesses, as well as a display of Thales trucks.

1:45pm – 3:00pm:

Public Forum - Anything is possible: Engineering a Smart Bendigo for future liveability

This year's Joseph Brady Public Forum, open to local industry and the community, will feature a panel of speakers exploring how we can engineer a prosperous regional future. Moderated by former Victorian Premier the Hon. John Brumby AO, the panel will explore strategies to enhance future liveability in expanding regional cities, with topics spanning infrastructure, transport, economics, sustainability and more.

Panel Moderator:

The Hon. John Brumby AO: Chancellor, La Trobe University

The Hon. John Brumby is the former Premier of Victoria (2007-10), and has immense experience in public life. The Hon. John Brumby AO is current Chancellor of La Trobe University in Bendigo and an Enterprise Professor at the University of Melbourne.

Panelists:

Dr Collette Burke: Chief Engineer of Victoria

As the inaugural Chief Engineer of Victoria, Dr Collette Burke provides advice to the Government on major project design and delivery and leads key engineering initiatives. Dr Burke has more than 25 years' experience in the Engineering and Construction industry, working across telecommunications, road, tunnel, rail, building, marine and other major infrastructure.

Dr Bronwyn Evans: CEO, Engineers Australia

Dr Bronwyn Evans is the CEO Engineers Australia, and has a wealth of leadership, commercial and policy expertise, gained across a career spanning both corporate and not-for-profit roles in Australia and globally. Dr Evans was recently the CEO of Standards Australia, and was recognized as one of Australia's 100 most influential engineers in 2014 and 2015.

Professor Veena Sahajwalla: Scientia Professor, University of New South Wales

Professor Veena Sahajwalla is the Director of the cutting-edge Sustainable Materials Research and Technology (SMaRT) Centre at the University of New South Wales, and is internationally recognised for revolutionising recycling science. Professor Sahajwalla's approach to tackling some of the world's biggest problems focuses not only on sustainability and the environment, but solutions that can also provide social and economic benefits.

Peter Seamer AM: Director, Planning Strategies Pty Ltd

Author of *Breaking Point, the Future of Australian Cities*, Peter Seamer AM has a wealth of experience in urban planning, infrastructure, finance and management. Mr Seamer was the CEO of the Victorian Planning Authority for ten years, the CEO of Federation Square during its building phase, and has been the CEO of several cities.

3:00pm: Showcase end

Meet our presenters:



The Hon. John Brumby AO



Dr Collette Burke



Dr Bronwyn Evans



Professor Veena Sahajwalla



Peter Seamer AM



Tim Dunlop





CENTRAL DEBORAH
GOLD MINING CO. N.L.

NO PARKING
IN THE RED ZONE
EXCEPT
EMERGENCIES

