

# Engineering Tasmania

October 2011



ENGINEERS  
AUSTRALIA  
Tasmania Division

Newsletter of Engineers Australia, Tas Division - Royal Engineers Building, 2 Davey Street Hobart  
Telephone (03) 6234 2228, Fax (03) 6234 2216 or E-mail [tasmania@engineersaustralia.org.au](mailto:tasmania@engineersaustralia.org.au)

## IN THIS ISSUE

### President's Report

2011 Alan Burn Memorial Lecture

New & Upgrading Members

Position Vacant - Structural Engineer

Attention ITEE & Electrical Engineers

Education & Industry Manager Pages

Chartered Status Forum Invite

Young Engineers Pages

Women in Engineering Pages

Invite to Transport Museum Heritage

Marker Ceremony

Upcoming Meeting Notices

October/November Calendar

## PRESIDENT'S REPORT



As members of the engineering team we have a responsibility to be engaged with the community on issues relating to our profession. The efficient and effective planning and delivery of critical infrastructure is one of those issues.

The **Southern Tasmanian Councils Authority**, which is made up of 12 Councils across the region, have appointed an independent panel of

experts to review the structure, and develop options for improving the performance, of local government in Southern Tasmania. Because of the importance of these issues to the delivery of infrastructure, we should voice an opinion on them.

This year I have already gone on the record, both in my monthly President's column and at public presentations, urging reform of local government. This was in order to address the recommendations contained in our **2010 Tasmanian Infrastructure Report Card**. I have also given my personal opinion that council amalgamations should be considered. Whatever your views on this issue, it is clear that we can no longer afford the current fragmented approach to planning and delivery of local infrastructure.

Local Councils have key responsibilities for the provision of some of our critical infrastructure. This includes stormwater and local roads. The challenges to improving stormwater infrastructure include:

- Building a comprehensive knowledge of the existing assets.
- Implementing the State Stormwater Strategy.
- Maintaining appropriate stormwater expertise within local government, and
- Obtaining sufficient funding to maintain and improve asset quality.

In order to improve our local road infrastructure our councils must:

- Improve the planning and delivery of local roads: Local roads are facing a series of challenges that result in considerable variability in road quality. These include the need to:
  - Develop comprehensive and comparable asset management data across the state;
  - Develop awareness and cooperation between neighbouring councils regarding capital works programs in order to reduce inefficiencies and costs; and
  - Implement significant reforms to local road provision to improve efficiency.
- Achieve integrated land use and transport planning outcomes
- Obtaining sufficient funding to maintain and improve asset quality.

These actions can best be achieved when we recognise the inherent inefficiencies of dividing the state, and each region, along suboptimal council boundaries. Not only does this unnecessarily impose additional cost but it unduly limits our ability to provide the most efficient and effective infrastructure solutions across the state. If we wish to improve the planning and delivery of infrastructure, then we need to apply, as much as possible, a truly

We thank our  
2011  
Engineering  
Excellence  
Award Sponsors



consistent, state-wide approach. We can no longer afford to do anything less. Hard issues such as the requirement for a single state wide planning scheme, centralisation of infrastructure delivery responsibilities and even consideration of the possibility of local council amalgamations, must be faced. Some level of amalgamation of the Councils in the Southern Region would therefore be a step in the right direction.

Engineers Australia Tasmanian Division has provided a submission to this review. If you wish to have your own say and for further details on this review please go to;  
<http://stca.tas.gov.au/future/>

### **The 2010 Engineers Australia Ballot**

In the recent Engineers Australia magazine, a communiqué approved by myself, Grant Atherton and every other current and immediate Past Divisional President was published. It read:

As current Division Presidents and Immediate Past Presidents we wish to comment on the recent, unsolicited, negative communications and public comment surrounding the 2010 Engineers Australia ballot.

**We are proud** that, at the dawn of the 21st Century, our Institution undertook a review of our Royal Charter and By-Laws to ensure that they reflected the needs of our members in a 21st Century profession.

**We strongly support** the transparent, measured and consultative process that Congress undertook before deciding by a vote of 44 to 2 to put a new Royal Charter and By-Laws to a membership ballot.

**We acknowledge** that Council established an open process that carefully detailed the need for change, widely canvassed opinions and encouraged open debate.

**We are supportive** of the contemporary electronic tools and

independent professional services that Congress and Council elected to be used to conduct the debate and ballot.

**We are proud** that Congress and Council had the courage and vision to review our Code of Ethics, with wide stakeholder engagement. Not only is the Code contemporary, but reflects best practice and reaffirms our professional status.

**We reiterate** that the ballot was conducted professionally and that the result reflected the democratic wishes of our Members with a resounding 'YES' vote of 63%. When challenged, our Council subjected the ballot to independent, professional review that confirmed the integrity of the process and the legitimacy of the vote.

**We are confident** that the majority of our members are equally proud that the Members of our great Institution democratically voted "Yes" for the new Royal Charter and By-Laws to ensure the organisation is a 21st Century organisation.

The new **Royal Charter and By-Laws** represent a very positive step forward for Engineers Australia, considering that the documents had become out-dated and contained anomalies from past ad-hoc modifications. While it is important that individual members' views be expressed and that the Institution considers this professionally, we believe that this review has taken place and that we must now ensure that the views of the majority hold. It is time to move on.

**Greg Walters, FIEAust CPEng EngExec**

Please send any comments and feedback to:

[TasPresident@engineersaustralia.org.au](mailto:TasPresident@engineersaustralia.org.au)

## **CONGRATULATIONS/ WELCOME**

**Members joining, rejoining  
or upgrading**

### **FELLOWS**

Ron Bessell, OFIEAust  
Jane Sargison, FIEAust

### **MEMBER**

Prakash Gautam, MIEAust

### **GRADUATE**

Oliver Giudici, GradIEAust

### **STUDENTS**

(StudIEAust)

Christopher Arvier  
Alexander Clifford  
Sean Fisher  
Jamie Goodwin

## **Continuing professional development online**

Engineers Australia has more than 500 webcasts available for continuing professional development covering all areas of engineering.

To access the webcasts visit:  
[www.engineersaustralia.org.au/  
search/events/mediavision](http://www.engineersaustralia.org.au/search/events/mediavision)

Some of the recent additions to the site are:

[Risk Management Software User  
Experiences of Readily Available  
Packages](#)

Speakers: Chris Beale, Jeff Jones,  
Michael Payne

[Overview of AS1170.4 - 2007](#)  
Speaker: John L Wilson

[Don't Abuse It - Reuse it An insight  
into recycling of construction  
materials](#)

Speakers: Jon White, Rick Ralph &  
Delwyn Jones

The President,

Greg Walters FIEAust CPEng Eng Exec

invites you to attend the



ENGINEERS  
AUSTRALIA  
Tasmania Division

## 2011 ALAN BURN MEMORIAL LECTURE

### DECHLAN ELLIS, FIEAust CPEng



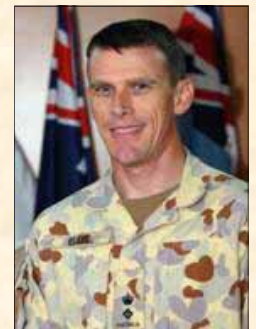
Dechlan is currently Sinclair Knight Merz's manager for buildings and infrastructure in South East Australia responsible for leading 360 staff delivering consulting services to transport infrastructure, Defence and social infrastructure clients. Since joining SKM, Dechlan has held roles including client management responsibility for the Australian Department of Defence and project management of the \$623M HNA Edinburgh Defence Precinct Facilities Project in Adelaide. Dechlan was appointed as a Senior Associate with SKM in 2007 and is past member of the Board's Risk Committee, and a past Chairman of the Australian Society for Defence Engineering, Victoria.

Dechlan joined Sinclair Knight Merz in March 2005 after a distinguished 20 year career in the Australian Army. He retired at the rank of Lieutenant Colonel having held a range of regimental and command appointments in the Royal Australian Engineers, including command of the 21<sup>st</sup> Construction Squadron and operational service with the United Nations in southern Lebanon and Israel. He also served in Army Headquarters, 3<sup>rd</sup> Combat Engineer Regiment, 6<sup>th</sup> Engineer Support Regiment and 12<sup>th</sup> Chief Engineer Works in Mendi, Papua New Guinea. He has experience as a Project Manager and Project Director within Corporate Services and Infrastructure Group and the Defence Materiel Organisation. He is a graduate of the Australian Defence Force Academy, the Royal Military College, Duntroon and the Australian Command and Staff College.

Dechlan was recalled to active service in September 2009 and completed a 6 month tour of duty on operations in Afghanistan and the Gulf States. He was the inaugural Chief Engineer in Joint Task Force 633 on OPERATION SLIPPER responsible for engineer support to all Australian forces in the Middle East Area of Operations.

### “CONTRIBUTION OF MILITARY ENGINEERS TO HUMANITARIAN AND RECOVERY OPERATIONS”

Contrary to traditional notions of 'peace' and 'war' being mutually exclusive, military engineers work across a full spectrum of operations. This spectrum encompasses humanitarian and disaster relief engineering through to armed conflict and the recovery operations that follow as nations transition to peace. Drawing on his experiences as an engineer working in remote Aboriginal communities, in Pacific Island nations and more recently in Afghanistan and the Gulf States, Dechlan will explore the contribution that military engineers make in this Year of Humanitarian Engineering.



#### HOBART

**DATE:** Monday, 10 October 2011  
**TIME:** 5.30 for 6.00pm  
Finger Food provided  
**PLACE:** Old Woolstore Theatrette  
1 Macquarie Street, Hobart  
**RSVP:** Catherine 6234 2228  
[creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)

#### DEVONPORT

**DATE:** Tuesday, 11 October 2011  
**TIME:** 5.30 for 6.00pm  
2 Course meal - \$15 EA Members  
- \$25 Non Members  
**PLACE:** Gateway Inn  
16 Fenton Street, Devonport  
**RSVP:** Catherine 6234 2228  
[creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)

## UPGRADING MEMBERS



**VERE COOPER,  
FIEAust CPEng**

P Vere Cooper graduated from the University of Tasmania in 1969 with a Bachelor of Engineering (Civil) and in 1996 from the Deakin University with a Graduate Diploma of Management (Technology Management). Vere also obtained Tasmanian certificates of competency - Hydraulic Engineer (1976), Municipal Engineer (1977) and Building Surveyor (1983), plus a Haestad Methods A+ water modeller certificate (2003). He is also a fellow of the Institute of Public Works Engineering, Australia.

Vere joined the Hydro-Electric Commission Tasmania in 1969 and worked on the construction of the Mersey - Forth Scheme at Mackenzie Dam and Fisher River Penstock, and on the repair of the Lemonthyme Tunnel.

In 1971 Vere transferred to the field of Consulting Engineering and worked on municipal and mining projects around Tasmania for R. M. Foster & Associates. This was followed by a two year stint as a self employed consulting engineer and part time teacher at the Devonport TAFE.

He became a local government engineer for St Leonards Council in 1980. This work also included some building surveying and planning responsibilities. Following a council

amalgamation in 1985, Vere joined the new enlarged city of Launceston. Here he introduced the mainland concept to Tasmania of requiring developers to provide onsite detention storage, to overcome limitations in the City drainage system. He also analysed the three separate water systems of the enlarged city, designed the necessary upgrade components to allow them to be interconnected and supervised the construction. This work took 15 years to complete. The old city water system was based on larger diameter pipes, while the two former council systems had smaller pipes which were subject to significant diurnal pressure changes.

Vere moved back to Devonport, in mid 2000, to work for Devonport City Council on construction and developmental works. The development spurt of 2003 put increased pressure on Council's sewerage system and some developments could not be approved due to lack of peak flow capacity. Vere introduced the concept of developers being able to offer Council a contribution to upgrade the system and thus avoid peak flow problems.

In 2009 the management of water and sewerage assets was transferred by the Tasmanian Government to three regional corporations. Vere, as Devonport Water and Sewerage Manager, transferred with his team to Cradle Mountain Water.

Vere has served on the Engineers Australia North West Committee for the past eleven years, including five years at Chairman.

He is married to Cheryl, and between them they have five children from their previous marriages. His spare time activity is grazing cattle on King Island.



**PRAKASH GAUTAM,  
MIEAust**

Prakash gained a first-class Bachelor of Engineering degree in Mechanical Engineering from Kathmandu University (KU), Nepal in 2005. Upon completion he immediately joined as a research assistant working alongside Professor John K. Cannell, of Kathmandu University, on the research project, "Pico turbines testing and development for rural community." After working for approximately a year, in July 2006 he was appointed to the Prof. Badoux HHF research fellowship, working at KU. The fellowship involved research on a 800W Pico Propeller turbine, again, working under Professor Cannell. This project led to the building and calibration of the pico test laboratory. Prakash and the research team designed and built a turbine testing laboratory where they successfully tested the 800 W propeller turbine. He is still involved in the process of designing an efficient 1.5 kW turbine for rural communities in Nepal.

Prakash moved to Tasmania with his family in November 2008 to join Tyco Flow Control Tamar as a Mechanical Engineer on a 457 Visa sponsored by the company. He then received a RSMS permanent visa in 2010. Since 2008 he has been involved in various projects as a Mechanical and Turbine Development Engineer. His major duties include, design and

development of different turbine types, 3-D modeling, QA and engineering design calculations and analysis.

Prakash was involved in designing and building a 3.3 MW Turgo turbine for the Lower Lake Margaret Mini Hydro power station located in Queenstown, Tasmania. This project was awarded a Highly Commended by Engineers Australia in the Engineering Excellence Awards in July 2011. He has also been working on the design and development of an efficient spear valve profile for impulse type turbines at Tyco Tamar. As part of a Masters Research project in association with the University of Tasmania, Prakash has been involved in the design and manufacture of a Francis type test model turbine.

Prakash has undertaken a significant amount of mechanical design and Finite Element Analysis (FEA) on different turbine components, including turbine cases, shafts, bearing housing, deflectors, inlet pipe bifurcation, nozzles, draft tubes and other associated turbine components. Major projects in which Prakash has been involved with are the Sugarloaf Mini Hydro (4.5 MW Turgo) in Victoria, Lower Lake Margaret Mini Hydro (3.3 MW Turgo) in Tasmania, Prospect Mini Hydro (3 MW, Kaplan) in New South Wales, Burra Creek Mini Hydro (1MW Turgo) in Canberra, Laiagam Mini Hydro (400 kW Turgo) in PNG and the North Head Mini Hydro (2.1 MW Francis) located in New South Wales.

Recently Prakash has been involved in the designing an efficient hydro turbine, which would be suitable to a wide range of high water flow and ultra low head applications.



## POSITION VACANT

## STRUCTURAL ENGINEER

A position exists for a professionally qualified structural/civil engineer with a minimum of 3 years post graduate experience principally in building structure and minor civil works in Australia.

The position will require a knowledge of the regulatory system and a detailed knowledge of the Australian standards and codes of practice and be able to oversee the production of all appropriate documentation required for building approval.

The company is a small to medium sized consultancy based in Ballarat with offices in Tasmania.

Project work is drawn from all states and concentrates on general industrial, commercial and residential projects with special interests in modular, light weight building construction including high density housing systems.

The work offers exposure to a wide range of experiences, projects and opportunities to develop skills and knowledge of innovative building concepts, materials and methods.

Salary is negotiable and a company car will be available.

**Interested persons should call Carlton on 6424 1611 or Jessica on 5327 7414**

## ATTENTION ITEE & ELECTRICAL ENGINEERS

**The Tasmania Division would like to hear from members and non members alike with interests in the fields of information, telecommunications, electronics, and electrical systems, towards reforming a combined ITEE and Electrical Committee, which can include representatives from other relevant professional and technical groups in Tasmania.**

**The aims of the Committee are not final but could be to organise occasional technical presentations, report on news and events, and promote the achievements of people working in these domains in Tasmania.**

**Please register your interest with Catherine at the Division Office on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)**





David Pointing,  
PhD MIEAust

dpointing@engineersaustralia.org.au  
Tel: 6234 2228

## Industry Portfolio

I'm excited to have recently been appointed as the new Engineers Australia Industry Manager for Tasmania, in addition to my work as Education Manager. As Industry Manager, my role is to develop relationships and enhance collaborations with engineering employers in Tasmania and to work with industry stakeholders to support the development of engineering professionals. Key elements of my job include promoting understanding of the importance of professional development and mentoring, and the value of professional credentials and membership – including Chartered Status and the various possible pathways to accreditation.

*“Chartered Status is the globally recognised assessment of professional competence for ethical and independent practice”*

Tasks tied to my role include presenting to members and industry on the details and value proposition of **Chartered Status as a competency tool and as a development pathway**. The Young Engineers Tasmania group have kindly kicked things off by initiating a **Forum on the 2 November** in Hobart on the **“how and why of Chartered Status”** in Tasmania. I encourage anyone with an interest in Chartered Status (pursuing it, have it, wonder where the value is) to attend (see page 9). I will be there and hope to learn a lot about the current status quo (thoughts

and experiences) in Tasmania. I expect to hold similar events, linked to more formal briefings on Chartered Status, in northern Tasmania early in 2012.

I also facilitate the visits by the national assessors who are assigned to Tasmania (but based in Victoria) and visit a few times each year to speak about writing the Career Episode Reports that underpin the Chartered Status process. Bob Law visited late in September, delivering presentations in Burnie, Launceston and Hobart (on a Friday and Saturday). He attracted “record” audiences totaling more than 50 people over 4 days! Clearly there is some interest in Chartered Status in Tasmania at the moment and it is my job to support this interest **so please get in touch if you have any comments or questions**. Copies of Bob’s presentation notes are also available.

One of my first tasks was to meet with the other members of the National Industry Team in Canberra and be briefed on many of the exciting developments underway within Engineers Australia which will influence the delivery of member services and important programs such as Chartered Status. This includes significant upgrades to the practical infrastructure that supports members, such as the IT systems to distribute information to members via web and email, but

also a renewed focus on member services.

Rupert Grayston, acting Chief Executive, explored these issues in detail in the September 2011 Edition of Engineers Australia magazine.



I am currently contacting key industry stakeholders who have Professional Development Program (PDP) agreements with Engineers Australia. PDPs are a structure platform for engineering professionals to achieve Chartered status and are currently being used by more than 15 companies in Tasmania. My short-term goal is to ensure that all PDP companies have a clear understanding of how the program should run and the resources that Engineers Australia can provide (including the first Tasmanian-based Industry Manager, who also happens to be an engineer and who is also pursuing Chartered status).

# Education Portfolio

The Engineering Initiative – our mentoring program for high calibre year 10 students - is approaching completion and the students will visit the Australian Maritime College as a group in mid-October. It has been as successful year (illustrated by the comments below from mentors), despite a few upsets.

“The calibre of students I have encountered on this scheme from inception has been very high, and it has been an absolute delight to come in contact with so many bright, eager and inspired students”.

“The overworked comment stands that 'it gives me confidence in the future etc etc.....' “

“[the student] fitted right in and was smart enough to bring in a cake on the first morning, so they won over everyone straight away!! In fact they have continued to bring in cakes, so it proves that engineers can cook as well as being creative!!”

I have started planning for the 2012 Initiative, and will begin engaging with mentors in the next few months so that students can be placed “bright and early” in the new year. If you are interested in participating in the 2012 Engineering Initiative, please contact me and/or join us at the mentor networking night this month.

### Interested in the Engineering Initiative?

**Attend the networking evening on Monday, 10 October @ 4.30pm (before Alan Burn lecture)**

There will be an informal networking night for mentors (and some students and parents) in Hobart on the 10th October (just prior to the Alan Burn Memorial Lecture) at the Royal Engineers Building from 4.30pm - 5.30pm.

**Please join us** if you are interested in learning more about the Initiative and the broader education program, or want to join in recognising the important contributions of the engineering professionals who act as Mentors in the program (RSVP to David by Wednesday, 5 October).

### Engineering-related education events:

The Model Solar Challenge, a competition that focuses on developing an interest in science and engineering in schools through the use of photovoltaics for vehicle propulsion, is another program supported by Engineers Australia. The 2011 Tasmanian Championships for the Challenge will take place at New Town High School on Sunday, 16 October from 9.00am to 3.00pm. Tasmania will also host the 2011 Australian-International Challenge competition at UTas (Sandy Bay) on November 26 & 27. Visit [www.tassolarchallenge.org](http://www.tassolarchallenge.org)

The cream of School Robotics in Australia competed at UTas in late September for the Australian finals of the Robocup Junior Competition, with ~160 teams and over 400 competitors. Visit [www.robocupjunior.org.au](http://www.robocupjunior.org.au) for details (results not available at time of printing).

### Want to get involved?

Represent the engineering profession and inspire students to become engineers by serving as an interviewer in Rose Bay High’s mock interview event for Year 10 students. Outcomes for the students include knowledge of interview preparation and execution, improved communications and employability skills, increased self-confidence and self-awareness, and a better understanding of what employers are looking for.

**Below are volunteer opportunities that would benefit from your assistance.**

**Contact David Pointing at [dpointing@engineersaustralia.org.au](mailto:dpointing@engineersaustralia.org.au) if you are interested.**

Role	Event	Audience	Location	Date	Commitment
Interview panelists	10 min mock interviews	150 Yr 10 students	Rose Bay High School, Hobart	Wednesday, 26th October	.5 or full day, (8.30am – 3pm)



### Highlighting your pro bono project

As part of the Year of Humanitarian Engineering, Engineers Australia is investigating pro bono engineering projects. If your company has taken on, completed or even preliminarily looked into providing engineering services pro bono, we want to hear about it. We will be collating stories to share with the industry at the Humanitarian Engineering Conference and beyond.

Please send a synopsis of the project and your company's involvement to [sarah.j.purcell@gmail.com](mailto:sarah.j.purcell@gmail.com), or contact Sarah Purcell at (03) 9329 1166. Those sent in by mid-October will be in the running to be featured on exhibition posters, follow-up interviews and profiled in presentations.

### What is the legacy of the Year of Humanitarian Engineering within Tasmania?

The challenges and need for humanitarian engineering solutions will obviously not go away with the end of the Year of Humanitarian Engineering. Having succeeded in raising awareness through events in 2011, the question arises of what Engineers Australia Tasmania Division should do next in regards to humanitarian engineering. A number of Tasmania Division members have expressed an interest in exploring further how they can contribute to humanitarian engineering issues, and have suggested a workshop to identify levels of interest, areas of expertise, and potential approaches to establishing a Tasmanian team to collaborate on a humanitarian engineering project. These issues will be explored at the YOHE conference in December and would help to guide Tasmanian interest and effort.

**Are you interested in attending an event in Tasmania in 2012 to follow-up on the YOHE conference?**

**If interested, please contact David Pointing [dpointing@engineersaustralia.org.au](mailto:dpointing@engineersaustralia.org.au)**



engineers  
without  
borders  
australia



ENGINEERS  
AUSTRALIA

Engineers Australia, Engineers Without Borders and RedR are presenting the 2011 Humanitarian Engineering Conference, in this, the Year of Humanitarian Engineering. The 3 day event builds upon a series of workshops that were held around Australia (but excluding Tasmania) in 2011, and will include Technical Workshops, Interactive Sessions, and Networking Opportunities.

Outcomes from the state-based workshops and will be summarised at the conference and serve as a foundation for further knowledge sharing on topics related to "Humanitarian Engineering", such as:

Response and Stabilisation Actions ; Responses to International Disasters; Responses to Domestic Disasters; the Pivotal Role in United Nations Response to Disaster and the Ongoing Demand to Building Community Resilience; Humanitarian Outcomes in the Acute Phase of Disasters, Conflict and Complex Emergencies; Engineering and Logistics providing Humanitarian Outcomes; and Industry Support to Humanitarian Engineering Responses to Disasters and Conflict.

Visit <http://makeitso.org.au/year-of-humanitarian-engineering/conference> for details.

Questions about the event can be directed to Nick Byrne [n.byrne@ewb.org.au](mailto:n.byrne@ewb.org.au)

# Chartered: To Be or Not to Be

Hear from Tasmanian industry leaders, and have your say,  
at the Division's 2011 Forum on Chartered Status



- Who:** Anyone involved in or considering the Chartered Status process – Chartered Status participants, Professional Development Program Co-ordinators, Chartered Members
- Where:** Gretel Room, Hobart Function Centre, Elizabeth Street Pier
- When:** Wednesday, 2 November 2011
- Time:** 5:15pm – 6:45pm (followed by networking)
- Cost:** FREE!

The event format will be a panel presentation and open discussion on:

1. The **value of Chartered Status** – as an indicator of competency, and as a competency and professional development tool;
2. The **implementation and support** of Chartered Status programs within organisations; and
3. The **challenges and solutions** that have been encountered.

Light refreshments will be served at the end of the session.

The forum will be facilitated by David Pointing, our new Industry Manager for Tasmania Division.

**Participants are encouraged to propose questions for discussion (see RSVP)**

RSVP to Catherine Reading by Monday, 24 October 2011 to [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)

**Please state with your RSVP:**

1. Your involvement with Chartered status (e.g. participant, co-ordinator of a development program or other) and
2. Any questions you wish to be discussed on the night

# YOUNG ENGINEERS



*Sandra Thaow, MIEAust CPEng  
Chair,  
Young Engineers Tasmania*

new minds  
*new ideas.*



## YEANC Meeting

Our National YEA representative, Mike Sylvester, was unable to attend the August meeting of the **National Committee of Young Engineers Australia** (YEANC) in Adelaide so I attended as his proxy. It was the first time that I have attended a YEANC meeting as a representative and as Mike often says in his reports, the two-day agenda was packed!

At the last meeting it had been identified that students did not have formal voting rights and could not be office bearers of EA due to the structure of the EA by-laws. Since May, YEANC representatives have been working in conjunction with EA's legal counsel to prepare a paper to the EA Council to request equal rights for student members. The paper was submitted to the EA Council at their August meeting where they approved the right for students to vote and hold positions on committees.

YEANC members also attended a one day Corporate Social Responsibility (CSR) workshop with representatives from Engineers Without Borders and EA Council to attempt to identify what CSR is, what it means to EA as an organisation and what it means to our members and the profession. The outcomes of the workshop will feed into EA's position on CSR and actions moving into the future.

A conference will be held in Victoria from 30 November to the 2 December to cover items such as CSR and pro bono engineering. At the time this conference was discussed the agenda had not yet been set but more information regarding this event can be found on the EA website as it becomes available.

Another item of discussion was around the topic of **Chartered status**. Some of you may recall that earlier this year YEAT hosted a CPEng focus group with young engineers on behalf of YEANC to determine:

- What participants thought was the value of being Chartered,
- What participants understood about the process and the different avenues to achieving CPEng,
- What difficulties did participants run into,
- Whether participants value become Chartered, and

- How the process of becoming Chartered could be changed to encourage greater up take.

The results of these focus groups held around Australia and an online survey were collated by YEANC representatives who are members of a special EA committee looking into the value and the process of Chartered status. The results revealed a 50/50 split between members that valued Chartered status and those that didn't. It was also found that of the people that valued Chartered status, many did not understand why they valued it, just that they did.

A number of recommendations were identified from these results and submitted to EA Council for consideration from the special committee but YEANC have yet to receive any feedback regarding these recommendations.

There was also a large amount of discussion around the **2012 Engineering Leadership Conference** (ELC 2012). The conference organisers are seeking sponsors to sponsor sessions and events at the conference as well as scholarships and mentoring packages. The scholarships are worth \$2,000 and will cover the participant's registration, travel and accommodation and selected workshops and pre-conference tours. Mentoring packages are worth \$600 and will cover the participant's registration fee. If your organisation is interested in sponsoring any items at the ELC 2012, please go to the conference website <http://www.elc2012.org/>

We also had the opportunity to catch up with Julian O'Shea, YEA's **International Representative to the World Federation of Engineering Organisations (WFEO)**. WFEO is an international, non-governmental organisation that represents the engineering profession worldwide. It has a number of standing committees, one of which is Engineering on Capacity Building, which is dedicated to assisting developing countries to engage effectively in the global marketplace through technical capacity building.

In 2009 the Committee on Engineering Capacity Building agreed to establish a new task group known as **Young Engineers / Future Leaders (YE / FL)** with young engineering representatives from around the world. The purpose of this Task Group is to recruit the enthusiasm of young engineers worldwide in developing and applying engineering to the benefit of humanity.

Last year was the first meeting of the YE / FL group, which Julian attended informally, where they established the Charter and appointed a Chair for the group. The next YE / FL meeting has just recently been held during September in Geneva, Switzerland. Hopefully Julian will submit a report on the meeting which I will be able to make available.

The **National Committee of Engineering Technologists Australia (NECTA)** is also currently seeking nominations for a YEA representative to join their committee. If you are interested in applying, please go to the YEA website to find the application form.

### Other News

I would like to congratulate **Dr Jane Sargison** on her invitation as a Fellow to Engineers Australia. A much deserved nomination.

The University of Sydney's Warren Centre for Advanced Engineering has opened nominations for the **2012 Innovation Heroes Award**, bestowed upon individuals or team that have created successful products or services from brilliant engineering ideas and inventions.

Designed for the engineering/technology space, the Innovation Heroes Award recognises the Australian individuals, teams and/or companies behind innovations that were conceived and developed in Australia and that have been profitably commercialised or otherwise delivered real value.

Nomination forms are available on the Warren Centre website at <http://sydney.edu.au/warrencentre>

We are also seeking expressions of interest from any members that would be interested **reviving a combined Information, Telecommunications and Electronics Engineering (ITEE) and Electrical Committee in Tasmania**. The ITEE College aims to support and promote the work of engineers in the fields of communications, computer systems, electronics, information and software engineering. Please send expressions of interest through to Catherine Reading at [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (refer to advertisement on page 5)

### Upcoming events

The Centre for Renewable Energy and Power Systems (CREPS) and the School of Engineering are holding a **Research Evening** on Friday, 21 October to highlight the School's recent research achievements. The event will be held at the University Club and run from 4.00 pm (4:30pm start) with light refreshments. Any interested parties need to RSVP by Friday, 14 October to Mary Dixon at [Mary.Dixon@utas.edu.au](mailto:Mary.Dixon@utas.edu.au)

YEAT and the Tasmania Division of Engineers Australia will be hosting a **Chartered Professional Status Forum** in November.

The purpose of the Forum is to understand what EA on a Tasmanian level can do to better support people involved in this process and provide participants with the opportunity to meet others in the same situation to hear how challenges have been overcome.

This Forum is open to all parties involved in the CPEng process, from CPEng participants to PDP coordinators and mentors, and will provide an opportunity for discussion around:

- The value of Chartered Engineering Status – the badge as well as the Chartered process;
- The implementation and support of Chartered Engineering programs within organisations; and
- The challenges and solutions that have been encountered.

The event will run with a panel discussion on each of the above topics, followed by an open floor discussion and opportunity for any questions and answers. As time for discussion will be limited, any parties interested in attending should send through any items that they would like discussed on the night at the time of RSVP.

**More information regarding this event can be found in the advertising flyer on page 9.**

YEAT will also be holding an **end of year event** in the first week of December. This is a joint event with other EA groups to celebrate the year and introduce to our members the important face for next year.

More details of this event will become available closer to the date.

**Sandra Thaow, MIEAust CPEng**  
YEAT Chair





Nyssa Muir, GradIEAust

# WOMEN IN ENGINEERING

**Women in Engineering, Tasmania**  
**Attract. Support. Develop. Celebrate.**  
*Our mission is to increase the participation of women in the engineering profession and allow our members' aspirations to flourish.*

## Events

### Nyrstar Technical Site Visit



Come along and find out about the intriguing world of the Hobart zinc smelter, get a glimpse of the casting process and hear about recent innovations being introduced to improve efficiency of zinc production. Upon completion of the site tour a light lunch will be provided, with opportunity to network with the tour group as well as female Nyrstar employees. **Numbers strictly limited to 12 only - Book Early**

- Date:** Wednesday, 12 October 2011
- Time:** 11:15 am for an 11:30 am start until 2:00 pm
- Venue:** Risdon Road, Lutana. Meet at reception for sign in.
- Bring:** PPE (safety boots & hi-vis vest).
- More info:** See flyer on opposite page

### VIC/TAS 2011 NAWIC Awards for Excellence



This awards night promises to be an inspiring and exciting chance to see the amazing projects women have contributed to in 2011.

- Where:** NAWIC Awards Dinner Savoy Ballroom, Grand Hyatt Melbourne.
- When:** Friday, 7th October 2011.
- Time:** 6.30 pm (for 7.00 pm)
- Dress :** Lounge Suit / After 5
- Cost:** Members \$150, Non-Members \$170  
Students \$120, Table of 10 \$1600
- More info:** <http://www.nawic.com.au/>

## Hobart Leadership Journey



- Date:** Thursday, 27 October 2011
- When:** 8:30am to 5pm
- Where:** Grand Mercure Hadley's Hotel
- Cost:** \$420.00

The Hobart Leadership Journey 2011 has been designed to be an inspirational and rewarding program for both new and experienced leaders. New leaders benefit enormously from connecting with more senior leaders and gaining valuable exposure to issues they may encounter on their leadership journey.

Experienced leaders benefit from the chance to revisit their experiences and strategies. Senior leaders also gain valuable insights into contemporary challenges for those women reporting to them.

**More info:** [http://www.wla.com.au/events/dm/11/lj/The\\_Leadership\\_Journey\\_Hobart\\_271011.pdf](http://www.wla.com.au/events/dm/11/lj/The_Leadership_Journey_Hobart_271011.pdf)

## News

### ICWES15



All the photos and papers from the ICWES15 conference are now online for your perusing pleasure at [www.engineersaustralia.org.au/wie/icwes15](http://www.engineersaustralia.org.au/wie/icwes15)

### Congratulations to Dr Jane Sargison, FIEAust

As of 12 September 2011, Jane became a Fellow of Engineers Australia (FIEAust).



On behalf of the WIE Tas Committee, we say many congratulations to Jane. Her incredible efforts, hard work and contributions to the industry have made her more than worthy of such an honour.

## Reflection

### A long way to go...

During the Prime Minister's attendance at the Pacific Islands forum in New Zealand last month, she was refused entry onto the delegates bus and told to board the 'spouse's bus' instead.

While this is embarrassing for the bus driver and the PM Julia Gillard, it highlights how far society has yet to go to see that it should be NORMAL for a woman to be a Prime Minister, or a Lawyer, or an Engineer. Women in male dominated professions should not be regarded as an oddity or as special, they should be respected as befits their profession.

Society has a long way to go before men (and women too) recognise that women make up half the population and so we can expect that it is reasonable half of all the careers AT ALL LEVELS can be filled by women too. Obviously, there are certain exceptions to this lofty ideal, however, there is no reason why in the future, more of Australian engineering jobs cannot be filled by women.

Currently only 12% of engineers (including students) are female according to Engineers Australia. That percentage drops to 5% if you do not include female students.



### Quote of the month

*"Life is like riding a bicycle. To keep your balance you must keep moving"*

Albert Einstein





**WOMEN IN ENGINEERING**

**NYRSTAR ZINC SMELTING AND ALLOY OPERATION**

**TECHNICAL SITE TOUR**

Come along and find out about the intriguing world of the Hobart zinc smelter, get a glimpse of the casting process and hear about recent innovations being introduced to improve efficiency of zinc production.

Upon completion of the site tour a light lunch will be provided, with opportunity to network with the tour group as well as female Nyrstar employees

Numbers are limited, so get in quick to secure your position

---

**Date:** Wednesday 12<sup>th</sup> October 2011  
**Time:** 11:15 am for an 11:30 am start until 2:00 pm  
**Venue:** Risdon Road, Lutana. Meet at reception for sign in.  
**Cost:** FREE for EA members  
**Personal Protective Equipment:** Steel cap boots and safety vest. Other necessary items will be provided by Nyrstar

---

RSVP by **Wednesday 5<sup>th</sup> October 2011** to:  
 Catherine Reading,  
 Engineers Australia, Tasmania Division  
 Royal Engineers Building, 2 Davey Street, Hobart Tas 7000  
 Tel: (03) 6234 2228  
 Fax: (03) 6234 2216  
[creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)



**Women in Engineering Committee Members:**

Meredith McQueen, Fiona Evershed, Erin Jackson (nee Driscoll), Cassandra Blazely, Nyssa Muir and Sarah Kube.

Email: [wietas@gmail.com](mailto:wietas@gmail.com)

**Volunteers provide invaluable support within Engineers Australia**

Voting for vacant **Division Committee, College Board and National Congress** positions for 2012 will open from Monday 3 October, 2011 – 5:00pm (AEDT) on Friday 28 October, 2011.

For details about the election process visit the website at [www.engineersaustralia.org.au/elections](http://www.engineersaustralia.org.au/elections)

[www.engineersaustralia.org.au/elections](http://www.engineersaustralia.org.au/elections)



# Risk & Liability Management

This **two-day** course presents how current and emerging risk & reliability tools and techniques can be used to achieve engineer diligence for organisations and projects. It is based on the very ethical position of the common law, namely, that all reasonable precautions are in place based on the balance of the significance verses the effort required to achieve it.

The first day focuses on risk philosophies including the ideas and implications of the Rudd Government's model Safe Work Act 2009. The second day provides an overview of risk and liability management techniques and explains the strengths and weaknesses of them and when each is most appropriate to use.



**26 & 27 October 2011**  
**Salamanca Inn, Hobart**  
 Download flyer at:  
[www.engineersaustralia.org.au/tasevents](http://www.engineersaustralia.org.au/tasevents)

**Target Audience** For risk advisers in major engineering organisations, regulators, lawyers, general managers, responsible project managers and those who wish to improve current approaches to risk management.

## Course Outline

Taxpayers and shareholders expect critical assets to work reliably and safely. Boards, Government Ministers and CEOs need to ensure that the precautions put in place to manage threatening, critical issues are effective and appropriate. The reasoning to achieve this outcome should be transparently documented in a way acceptable to shareholders, taxpayers, regulators and the courts, if required.

This was never easy in a complex, technological society like Australia. But in a global recession errors in technological judgment can easily be fatally amplified. In order to address such concerns, engineering due diligence is required.

This course provides an overview of risk philosophy, existing and emerging risk management techniques, key tools and techniques to identify, manage and minimise technical risk. It explains the strengths and weaknesses of each technique and when the use of each is appropriate.

This course is based on extensive risk management experience applied to engineering projects of all sizes within Australia and abroad. The theoretical basis of the ideas is documented in the provided Risk & Reliability Associates (R2A) text, currently in use at four Australian universities. The course covers the first two parts of the R2A Text.

### Risk & Reliability Concepts

Insurance risk versus speculative risk philosophies; business risk verses safety risk; historical perspective; relationship of risk to reliability and quality.

### Risk Management Paradigms & Safety Cases

Asset management approaches like HazOp and RCM; threat based SWOT or vulnerability assessments; market based risk as variance approaches; best practice versus hazard based risk management; computer simulated neo-Darwinism; risk culture approaches.

### Legal Liability

Common law principles & due diligence; inquisitorial versus adversarial legal systems; human law versus laws of nature; adversarial legal system contradictions; the consequence driven nature of the courts.

### Causation

A view of the future of risk: minimalist legal human error approaches; time & energy sequence approaches; culture/hazard versus vulnerability versus pathogen based; rise of the risk society in a context of globalisation.

### Risk Criteria

Use of probabilistic criteria in Australian jurisdictions; societal risk criteria; environmental criteria; insurance criteria; ethical criteria.

### Top Down Techniques

SWOT assessments vs threat and vulnerability assessments; risk characterisation systems & AS/NZS 4360: 2004; risk profiling processes & residual risk allocation; use & limits of risk audit systems; enterprise vs project risk profiling; risk ranking registers; acute OHS hazards; property underwriting; integrated risk based investment approaches.

### Bottom Up Techniques

Technical risk assessment techniques HazOps; FMEA, FMECA and RCM; QRA; HACCP; different approaches.

### Modelling Techniques

Reliability block diagrams; cause-consequence modelling (fault & event trees); threat barrier diagrams; risk based availability modelling; human reliability analysis.

### Generative Techniques

Generative interview techniques; generative solution techniques; independent rapid risk reporting techniques.

## Course Objectives

At the end of the course participants will be able to:

- Gain an appreciation of what constitutes common (case) law due diligence
- Understand why target levels of risk or safety and supporting Quantitative Risk Assessment (QRA) cannot survive post event legal scrutiny in Australia
- Explain how to show fiduciary responsibility for technology, especially in essential service organisations
- Understand criticality, risk and reliability concepts in a common law context
- Appreciate the different risk management organisational 'sign-off' paradigms
- Apply top down risk management techniques to organisational and project risk issues
- Understand the strengths and limitations of bottom up techniques like Failure Mode and Effect Analysis (FMEA) and Hazard and Operability Studies (HazOps)
- Apply a more comprehensive approach to risk management

“ Good explanation of risk management and the diversity that it involves. Well presented by Richard's knowledge and experience. ”

Director  
 Thwaite & Associates

Recognised for Continuing Professional Development (CPD) by Engineers Australia [refer to EA CPD Guidelines]

**EEA**

**\$792 EA Members**  
**\$990 Non Members**

[www.eeaust.com.au](http://www.eeaust.com.au)



# INVITATION TO MEMBERS

## HERITAGE RECOGNITION CEREMONY TASMANIAN TRANSPORT MUSEUM, GLENORCHY



On **Tuesday, 15 November 2011** the Governor of Tasmania and National President Merv Lindsay will unveil an Engineering Heritage Marker at a ceremony starting 3.30pm. Members of Engineers Australia and their partners are welcome to attend. If you would like an invitation, please advise Catherine Reading on 6234 2228 or email her on [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) by **no later than Wednesday, 19 October**

**The Museum will be open for free inspection and train rides from 2pm.**

The Museum exhibits include numerous rail and road transport vehicles including:

1. First mainline diesel electric locomotive to operate in Australia,
2. Hobart's only tram preserved in original and operating condition,
3. The only original vertical boiler locomotive preserved in Australia,
4. The oldest preserved Tasmanian railway carriage,

and many other items of historical interest. The Tasmanian Fire Service Museum will also be open for inspection. Afternoon tea will follow the ceremony.



# CALENDAR 2011

For up to date information on these and other events,  
please visit [www.engineersaustralia.org.au/tasevents](http://www.engineersaustralia.org.au/tasevents)

## OCTOBER

**Monday 10 - ALAN BURN MEMORIAL LECTURE - HOBART** - Dechlan Ellis, FIEAust CPEng (SKM Pty Ltd) - **Contribution of Military Engineers to Humanitarian and Recovery Operations** - Old Woolstore Theatre, 1 Macquarie Street - 5.30 for 6.00pm - Light refreshments available - **FREE SESSION** - RSVP to Catherine Reading 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 3)

**Tuesday 11 - ALAN BURN MEMORIAL LECTURE - DEVONPORT** - Dechlan Ellis, FIEAust CPEng (SKM Pty Ltd) - **Contribution of Military Engineers to Humanitarian and Recovery Operations** - Gateway Inn, 16 Fenton Street - 5.30 for 6.00pm - 2 Course meal \$15 EA Members or \$25 Non Members - RSVP to Catherine Reading 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 3)

**Tuesday 25 - Geomechanics** - Anticipating Engineering Properties and Behaviour from Geological Knowledge - Alan Moon (Senior Principal, Coffey Geotechnics) - 5.30 for 6.00pm - UTAS Sandy Bay Campus, Main Engineering Lecture Theatre 201 - No RSVPs required (Refer to this page)

**Wednesday 26 & Thursday 27 - EEA 2 DAY COURSE - Risk & Liability Management** - Salamanca Inn - 8.30am to 5.00pm - **HOBART** - \$792 (EA Members) - \$990 (Non Members) - Download registration form at [www.engineersaustralia.org.au/tasevents](http://www.engineersaustralia.org.au/tasevents) (Refer to page 14)

## NOVEMBER

**Wednesday 2 - Young Engineers - CHARTERED STATUS FORUM** - "Chartered: To be or not to be ...." 5.15 to 7.30pm - Gretel Room, Hobart Function Centre, Elizabeth St Pier - Light refreshments will be offered - **FREE** Event - RSVP to Catherine Reading 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 9)

**Tuesday 15 - Heritage Recognition Ceremony for the Tasmanian Transport Museum** - to receive an invitation contact Catherine Reading 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 15)

**Monday 28 - DIVISION ANNUAL GENERAL MEETING** - 4.30pm - Royal Engineers Building, 2 Davey Street, Hobart

## Australian Geomechanics Society (Tas Chapter)

**Tuesday, 25 October 2011**

**5.30 for 6.00pm start - 7.30pm finish**

**University of Tasmania (Sandy Bay Campus)  
Light refreshments will be offered in the Main  
Engineering Lecture Theatre 201**

### **"ANTICIPATING ENGINEERING PROPERTIES AND BEHAVIOUR FROM GEOLOGICAL KNOWLEDGE"**



Skills in interpreting and understanding the geological origins of soil and rock masses, their defects, fabric and anisotropy are essential in the development of high quality ground models on which our ground engineering decisions are based. Alan's talk will use case histories to show how important engineering properties and behaviour of the ground can be anticipated from geological knowledge.

The case histories will include projects involving tunnels, dams, foundations, and slopes in Australia and overseas. The talk will end with discussion on what lessons can be learned on how we approach and carry out geotechnical site investigations.

### **ALAN MOON**

**Senior Principal, Coffey Geotechnics**

Alan Moon is an engineering geologist with over 35 years experience of engineering site investigations for civil and mining projects. He has worked in a wide variety of geological environments in Australia, New Zealand, Papua New Guinea and South East Asia. Alan is a Senior Principal with Coffey Geotechnics based in their Adelaide office and has recently completed a four year term as Australasian Vice President of the International Association for Engineering Geology and the Environment. Alan has helped organize and present the AGS field based "Geology for Engineers" course and has also been involved in part time teaching at several universities.