



## PRESIDENT'S REPORT

### Supporting our Volunteers

I am continually impressed with the work of our many office bearers and volunteers throughout the division, and always grateful for the time they give us. I was therefore very pleased to read the feature and cover story on volunteering in the February edition of *Engineers Australia* magazine.

The magazine feature included some inspirational stories and reported on an exciting new trend in staff volunteering programs. It announced our new volunteer support web site at [www.engineersaustralia.org.au/volunteer-support](http://www.engineersaustralia.org.au/volunteer-support). It also mentioned the free office bearer training workshops that are now provided, and which have been so well received over the last year.

The new web site includes an on-line induction process, role descriptions, and governance and operational information. It provides on-line brochures, which are also available in hard copy from the division office. It also helps members and their employers to discover the benefits of volunteering.

I strongly encourage not only our office bearers but all members who

may wish to get more involved in your division to familiarise themselves with the new web site, to use the resources, and to give us your feedback. In particular I ask current office bearers to ensure that our new recruits use the on-line induction process, giving them a good start in their new roles. When I commenced my division involvement the process was to learn as you go, I feel that the new material has filled a huge much needed gap and will go a long way in attracting new Tasmanian Division committee membership.

My first article was largely about myself and I now take the opportunity to address my omission to mention your Committee members who are:

<b>President</b>	Mike Green
<b>Vice President</b>	Mike Brewster
<b>Past President</b>	Geoff Brayford
<b>Treasurer</b>	David Brumby

### Committee

Rob Allen (Mechanical Branch)  
Jess Andrewartha (Young Engineers)  
Grant Atherton  
Richard Bevan  
Bruce Cole (Heritage Committee)  
Alan Coote  
Nick Dwyer  
Andrew Ezzy (Geomechanics)  
Staff Gill (Northern Grp)  
Ted Harrop (MESA)  
Henk Kremer  
Chris Letchford  
Keith Midson  
Andy Opanowycz (North West Grp)  
Dan O'Toole  
Graham Shepherd  
Phoebe Swift  
Women in Engineering Representative

### Why do members become involved?

### IN THIS ISSUE

#### President's Report

Julie Hammer to visit Hobart

Sustainability Workshop

New & Upgrading Members

Powercom News Update

CREPS receive \$50,000 Grant

Heritage Pages

Women in Engineering Pages

Young Engineers Pages

CPEng Workshops April 2008

Women & Leadership Seminar

Upcoming Meeting Notices

April/May Calendar

Well, I believe it's because they have a passion for engineering and a genuine desire to make a real difference to the engineering profession. You can get involved in everything from chairing international committees to contributing to a field-specific technical endeavour, from visiting schools to get kids excited about a career in engineering to contributing to policy setting agendas and lobbying state and federal governments. What about standards setting, contributing to a conference, hosting international delegations, competency assessments, awards programs and meeting a diverse range of industry leaders and achievers.... the list goes on. Office bearers and volunteers report the following benefits:

- Increased engineering network, professional reputation and industry knowledge
- Influence on the practice and future directions of the profession

## President's Report cont ....

- Development of management and networking skills
- Free training and continuing professional development (CPD) hours – volunteer work counts for CPD
- Professional satisfaction

Not only do our office bearers and volunteers obtain a lot from their involvement they have reported very real opportunities to increase their employer's corporate profile, influence and create networks for themselves and their employer while "giving something back". Our volunteers' employers are reporting the same sorts of benefits enabling them to:

- Strategically position their organisation to get the most from sponsorship opportunities, corporate programs, and awards programs
- Generate corporate social responsibility (CSR) outcomes for their corporate objectives
- Receive acknowledgment and publicity for their organisation through volunteer recognition programs
- Obtain continuing professional development (CPD) for staff - volunteer work counts for CPD hours.
- Secure a reputation as a progressive employer of choice.

Looking forward, now is the time to start to think about realising some of these opportunities. In the current times of skills shortages I understand that we are all probably over-employed and time is a very precious commodity. However, time commitment would be for you but getting involved is the first decision. Division elections are in November so there is plenty of time to consider involvement – do not wait to be asked – please contact myself or Geoff Harper and we will put you on the right path to rewarding experiences that are also fun.

**Mike Green, FIEAust CPEng EngExec**

# MEET OUR NATIONAL PRESIDENT

Members are invited to meet Julie during a Cocktail Party on

**WEDNESDAY, 23 APRIL 2008**

**5.30pm**

**Royal Engineers Building  
2 Davey Street, Hobart**

RSVP - by 16 April to 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)



**Air Vice-Marshal (Rtd) Julie Hammer AM Conspicuous Service Cross, FIEAust EngExec, National President Elect 2008**

**Julie is the first female President of Engineers Australia - 89 years after its foundation in 1919. An electronics engineer, she has had a distinguished career in the Royal Australian Air Force spanning 28 years. When Julie retired with the rank of Air Vice-Marshal in 2005 she was the most senior female officer in the military.**

## **“SUPPORTING THE DIVERSITY OF THE PROFESSION”**

Leadership and teamwork will be the focus of Julie's year at the helm of Engineers Australia.

If we are to be truly representative of the profession, then we must ensure that we span the diversity of the profession. We must provide for broad interests covering technical disciplines, leadership and management, and issues of public policy.

In promoting diversity of the profession, Julie was heavily involved in the Year of Women in Engineering and in preparations for 2008 being the Year of the Engineering Team.

She has been the Chair of the Engineering Team Taskforce, which was constituted in 2007 to examine the issues of concern to Engineers Australia's technologists and associate members. It has prepared a Preliminary Action Plan which will be evolved and implemented through 2008. Over time all these actions will contribute to building enhanced membership value for technologists and associates, and ultimately enable Engineers Australia to improve recruitment of these important members of the engineering team.

# DEVELOPMENT OF SUSTAINABILITY GUIDANCE FOR ENGINEERS IN THEIR WORKPLACE

**Members are invited to participate in a Sustainability Workshop, to be conducted at the Old Woolstore Auditorium, on Thursday, 1 May 2008 commencing at 5.00 pm**

## **Session 1 - Short presentations with Q&A hosted by Andrew Goelst & John Harrison**



**Andrew Carl Goelst,**  
MIEAust CPEng  
General Operations Manager  
cb&m Design Solutions

cb&m are committed to sustainable development – refer to their website at [www.cbmdesign.com.au](http://www.cbmdesign.com.au)

As general operations manager of cb&m Design Solutions, Andrew is responsible for overall company operations, business systems, quality, safety and engineering oversight. He has a staff of more than 60 including engineers, architects, technicians, tradespeople and administration. He is also a senior minister for the Tamar Valley Christian Church. He said his community focus started with supporting charities and fundraising during school days, and a strong Christian foundation has caused him to have a concern for social justice which has been the driving force behind his engineering career. This is further echoed in his involvement with the Caring Network Inc as chairman of the Board. Goelst has worked for the United Nations in East Timor, personally funded work in the rural Philippines and participated in cb&m's AusAid work in Vietnam. In 2004 he was Tasmania's Young Professional Engineer of the Year.



**John Harrison**  
Chairman - AASMIC

The Association for the Advancement of Sustainable Materials In Construction (AASMIC) are a linking organisation in the supply chain.

AASMIC were formed by a multi disciplinary group of concerned professionals to promote sustainable materials in construction and an understanding of each others roles in the supply and waste chains.

AASMIC encourage innovative sustainable new materials, disseminate information and stimulate discussion and debate about sustainable materials and sustainable materials in use and related issues. AASMIC also lobby governments and other agencies about the importance of materials for a sustainable built environment.

## **Session 2 - Open discussion on sustainability issues centred on the Discussion Paper**

### Background to the Workshop

In 2006 the Council of Engineers Australia established the Sustainability Committee, and tasked it to develop Engineers Australia's position on sustainable development in such a way as to provide the underpinning for Engineers Australia's national policies, and to provide a guide to engineers in their everyday work.

The Committee's work has now progressed to the point where the August 2007 Council formally agreed a position statement on sustainable development and a set of associated sustainability principles. This statement is Engineers Australia's *Sustainability Charter*. **A copy of the complete Charter is on page 4 of this newsletter.**

The Committee is now focusing on its second task, the development of sustainability guidance for engineers in their workplace.

A Discussion Paper has been prepared, outlining the work being done on guidance for engineers, and setting it in the context of the more strategic work we are doing in this field. The Workshop will invite member feedback on the Discussion Paper, enabling the Committee to complete its work in this, its final year.

The Workshop will be convened by Committee member, Adjunct Professor Don Fry AO,

**RSVP to Catherine Reading by no later than Monday, 28 April 2008 on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)**

# ENGINEERS AUSTRALIA SUSTAINABILITY CHARTER

## 1: POLICY

**1.1:** *Engineers Australia* believes that sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**1.2:** *Engineers Australia* believes that sustainable development should be at the heart of mainstream policy and administration in all areas of human endeavour. Selectively applying sustainable development principles to some areas but not to others is inappropriate. Similarly, sustainable development is about the balance between economic, social and environmental considerations. While from time to time, one of these elements may require additional attention to ensure that balance is achieved, persistent favouring of one element over the others is not sustainable development.

**1.3:** *Engineers Australia* believes that achieving sustainable development requires a fundamental change in the way that resources are used and in the way that social decisions are made. Accordingly, change will require time and a transitional process towards an aspirational outcome. This means that the process for achieving sustainable development becomes as important as the outcomes themselves. Regular reporting of progress towards sustainability outcomes is vital and should be conducted openly and transparently.

**1.4:** *Engineers Australia* does not accept its sustainable development policy means accepting major disruption to life in general and to the economy. There are sound economic underpinnings for sustainable development which show that disruptions and economic and social damage are more likely to occur when externalities are ignored, rather than internalised.

**1.5:** *Engineers Australia* favours the application of market principles to ensure the most appropriate allocation of resources, providing externalities and subsidies are properly addressed. Market mechanisms will in some circumstances be inappropriate.

## 2: OBJECTIVES FOR SUSTAINABLE DEVELOPMENT

**2.1:** Development should enhance individual and collective well-being while maintaining the viability of the planet.

**2.2:** Development should ensure equity within the present generation as well as for future generations.

**2.3:** Development issues and problems should be solved holistically and proactively.

## 3: REALISATION OF THESE ASPIRATIONAL OBJECTIVES

**3.1:** Sustainable development requires balanced improvement across economic, social and environmental objectives in an integrated short term and long term decision making process.

**3.2:** In circumstances where scientific information is incomplete, the precautionary principle and risk management practices should be used to ensure irreversible consequences are avoided and not passed on to future generations.

**3.3:** Renewable resources should be utilised within the limits of natural regeneration and non-renewable resource use should be limited to levels which can be offset by substitution with renewable sources or other forms of capital.

**3.4:** The release of hazardous or polluting substances to the environment should be limited by the capacity of the environment to assimilate them and in all instances such releases should be fully costed and attributed.

**3.5:** A strong, diversified and internationally competitive economy provides the basis for Australian participation in the global movement towards sustainable development.

**3.6:** Adjustment towards sustainability requires competitive neutrality in the Australian and international economies. Achieving competitive neutrality is already a major feature of Australian competition policy but has not been applied uniformly in all situations resulting in unsustainable outcomes. A precondition for sustainable development is that such implied subsidies are removed.

**3.7:** Policy, program and project solutions should be needs-based and not technologically driven with appropriate consideration being given to demand management and administrative solutions.

**3.8:** Planned risk managed, diversified, and proactive solutions, clearly articulated to all stakeholders and to the community at large, are preferable to reactive solutions.

# UPGRADING MEMBERS



**ERIN  
DRISCOLL  
MIEAust**

Erin Driscoll completed a Bachelor Degree in Civil Engineering from the University of Tasmania in 2004. During her studies she completed vacation work at the Glenorchy City Council which involved working within the Works Depot as well as the Roads and Recreation Branch on projects ranging from pump installation design work, traffic calming/threshold treatments, intersection design and road safety investigations.

Upon completion of her degree Erin commenced as a Graduate Engineer with Works Infrastructure, soon taking on the role of Project Engineer/Project Manager. Erin's responsibilities included project managing long-term maintenance contracts for the Tasman Bridge, Bowen Bridge and the Bridgewater Bridge for the Department of Infrastructure, Energy and Resources, as well as the Copping Landfill. During her time she also was involved in various road construction projects across the State, with her role also extending to include the management of various minor works contracts for pavement stabilisation and asphalt works.

For the past 19 months, Erin has worked as a Traffic Engineer at GHD, with her experience covering a broad range of traffic and transport related projects. Some of which include, Traffic Impact Assessments for small and large subdivisions, as well as industrial and commercial developments throughout Tasmania, transport modelling using Paramics

microsimulation software, various traffic and parking studies, and working closely with the Department of Infrastructure, Energy and Resources on various bridge maintenance projects, including secondment to the Program and Delivery Branch to assist with the development of a bridge maintenance contract encompassing five key bridge structures in the south of the State.

Erin was recently appointed Service Group Manager of the Traffic and Transport team within GHD, leading a team of around 5 people and responsible for the financial performance of group as well as marketing, business development, recruitment, administration, and associated tasks. Erin continues to also take on a technical role within the group.

Erin is currently undertaking a Masters Degree in Traffic through Monash University, and is keeping busy with roles on the Women in Engineering committee and within her netball club.



**MARK  
DAVIES  
MIEAust**

Mark has 25 years experience in the electric power industry beginning as a student apprentice at GEC Power Engineering (UK) in 1981. He graduated in 1985 with a B.Sc. (Commendation) in Electrical/Electronic Engineering and started work with GEC on the first high power electronic compensators to be applied on the AC transmission network of England & Wales.

In 1991 Mark began a part-time research degree entitled "Control Systems for Static Var Compensators" with Staffordshire University and GEC. The research was successfully completed in 1997 and Mark attained his Ph.D. degree. As part of the project, Mark was engaged in the development of the control and protection systems for the world's first high power multilevel converter, which used GTO devices. These converter types (known as STATCOM) were used for reactive power compensation of HV networks.

In 2000 Mark joined Siemens, USA to work on advanced voltage-sourced converters with both real and reactive power capabilities. In 2001 Mark was delegated to Germany to continue this work with high power IGBT converters – concentrating on full computer simulations in both real and non-real time. Between 2003 and 2005 Mark worked on the Basslink HVDC project and developed the simulation model (using PSCAD) of Siemens latest control platform – which was making its debut on Basslink. Mark was responsible for adjusting and developing the control system's algorithms to meet the stringent requirements of Tasmania's electrical power connection to the mainland. As part of this work Mark visited Hobart for Basslink's system interaction studies in 2005.

After several years of upheaval Mark felt that Tasmania would provide a stable and happy environment for his wife and young family to settle in. Fortunately, Mark was offered a position with Hydro Tasmania's consulting arm, which meant that as well as applying his skills to Tasmanian based projects he could continue his work in the field of high power converters. Mark is now also a casual lecturer in power engineering at the University of Tasmania and has recently become a freelance electrical engineer.

## CONGRATULATIONS / WELCOME

Members joining, rejoining  
or upgrading

### MEMBERS

Kyril Belle, MIEAust  
Stefano Conforti, MIEAust CPEng  
Mark Davies, MIEAust  
Erin Driscoll, MIEAust  
Andrew Fraser, MIEAust

### GRADUATES

Woon Chong, GradIEAust  
William Hanley, GradIEAust  
Samuel Henry, GradIEAust  
Pierre Daniel Hugo, GradIEAust  
Thomas Guy, GradIEAust  
James Kirkby-Jones, GradIEAust  
Shu Ling, GradIEAust  
Awak Mario-Ring, GradIEAust  
Shalini Verma, GradIEAust

### STUDENTS

(StudIEAust)

Daniel Burling  
Jack Facer  
Jonathan Galbraith  
Tim Gibson  
Dean Grannetia  
Tim Herron  
Cameron Horne  
Luke How  
Barnabas Muthiah  
Justin Merriel  
Nicholas Perrie  
Sean Perrie  
Shaun Pinnington  
Luke Roberts  
Liam Seymour  
Anthony Simmonds  
Thomas Tasker  
Chris Terry  
Francis Thornber  
Sam Van Brecht  
Uriel Walters  
Joshua Woolcock  
James Wright  
Wing Yap



## Commercialisation partnership announced between CSIRO & Tasmanian technology company The Powercom Group

Commonwealth Scientific and Industrial Research Organisation (CSIRO) and The Powercom Group, a Tasmanian based technology company, have agreed on a commercialisation plan for the CSIRO's Wireless Sensor Network technology known as 'Fleck'.

Wireless sensor networks are a key technology for a new generation of monitoring and management systems. The 'Fleck' technology enables an intelligent network of sensors to be created that enables real time monitoring, control and alarming of systems. For example, 'Fleck' can be used in forestry, irrigation, agriculture, aquaculture, water management, weather recording, power management and more – in fact the applications are almost endless.

### **Fleck will be a strong competitor in the worldwide market for Wireless Sensor Networks.**

The Powercom Group is proud to announce its partnership with CSIRO to commercialise the technology. The strength of The Powercom Group to research and design, manufacture, distribute, install, commission and commercialise high technology products was key in the appointment, as was the synergies 'Fleck' will find with the hi-tech Datacall telemetry system.

*"Our Datacall telemetry system utilises cellular mobile networks for communications. Datacall is ideal for collecting and transporting data derived from a network of sensors and 'Fleck' will enable us to offer a fully integrated sensor network that will be simple and inexpensive to deploy. This is an ideal partnership"* Phillip Tompson Chairman of the Powercom Group, said earlier.

*"This is truly a unique offering in the market. 'Fleck' will provide the agricultural sector with affordable intelligent telemetry for irrigation and soil monitoring systems and particularly rural and residential water metering applications. Furthermore, we will integrate the complete system allowing small to medium business operators to purchase a market targeted system solution for all their future telemetry needs..."* Damien Virieux, Group Sales Manager of The Powercom Group said about the potential for 'FLECK' in the market

Datacall Telemetry Pty Ltd (part of the Powercom Group) has been nationally recognised for excellence in developing technology, being awarded:

- 2007 Tasmanian Engineering Excellence Award by Engineers Australia.
- 2007 TasIT Inc award for innovation.
- Finalists for the 2007 C-Star Awards.

Datacall Telemetry Pty Ltd will be launching the Datacall system, and previewing the 'Fleck' concept to the Agricultural Sector at the 2008 Agfest at Carrick Tasmania on the 2<sup>nd</sup> of May 2008. For further information about 'Fleck', Datacall Telemetry or The Powercom Group contact Damien Virieux on (03) 6229 0588.

*Datacall Telemetry Pty Ltd is a member of The Powercom Group of companies - specialists in communications and electronics design and manufacturing.*

**MEMBERS ZONE**

KNOWLEDGE CENTRE  
inside the members zone

The best engineering resources in the world exclusive for Engineers Australia members

Looking for ...	use ...	which has ...
Formulas & definitions of terms	ENGnetBASE	175 handbooks online
International standards	IHS Australia's Global	Millions of standards and specifications
Papers & journal articles from around the world	Compendex	Over 5 million references
Our own publications & journals	ENGINE	Over 33,000 records

**Plus much more!**

Knowledge Centre is supported by our Librarian, Elena Vvedenskaia – contact her on phone 02 6270 6535 or email [library@engineersaustralia.org.au](mailto:library@engineersaustralia.org.au)

Register today at [www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

Note: Members Zone registration is free and exclusive for financial members of Engineers Australia.

## CENTRE FOR RENEWABLE ENERGY & POWER SYSTEMS (CREPS) RECEIVES \$50,000 GRANT FROM FRUCOR

The Centre for Renewable Energy and Power Systems (CREPS) has received a \$50,000 donation from Frucor, the producer of h2go bottled water, to support its research in renewable energy. This donation is the first stage in what is expected to be ongoing support from the company.

Director of CREPS, Professor Michael Negnevitsky, said that “The Centre intends to establish the University of Tasmania as a world class research institution in the area of renewable energy and power engineering”.

Renewable energy and power systems can be described as the field of engineering and scientific endeavour that covers techniques and methodologies for the analysis, measurement and optimisation of all components in the generation and delivery of power. In the broadest context, advanced renewable energy and power engineering encompass areas of engineering and science as diverse as wind pattern prediction, biological agents that detract from optimum water delivery to turbines, integration of wind, hydro, hydrogen and thermal power, remote area networks, process analysis and mobile applications such as hybrid powered land, sea and air vehicles and aeronautical and marine propulsion.

CREPS aims to enhance both fundamental (discovery-based) and applied (linkage-based) research in power and energy systems in Australia by the creation of an organised, coordinated structure in which research is focused into defined programs through proven research teams. CREPS is in a unique and powerful position as a fully integrated centre able to bring all engineering disciplines together under the one umbrella.

The ultimate objective of the Centre is to become an internationally recognised site for research and education on renewable energy and power systems by providing a sound platform on which to base applications for future major funding through competitive grant schemes, industrial funding programs, and partnerships with other research centers and institutions, both national and international.

For further information see: [www.creps.utas.edu.au](http://www.creps.utas.edu.au)

**MEMBERS ZONE**

LIBRARY  
inside the members zone

Engineers Australia's Library offers a range of services to members

<b>Inquiry service</b>	we can answer a wide range of Inquiries (bibliographic, statistical information etc)
<b>Inter-library loans</b>	we can arrange book loans from any library in Australia
<b>Full-text documents</b>	ordered for a small fee

Plus member-exclusive access to the world's best engineering databases, including Compendex, ENGINE, Australian Technical Bibliographic Databases etc.

For assistance please contact our Librarian, Elena Vvedenskaia on phone 02 6270 6535 or email [library@engineersaustralia.org.au](mailto:library@engineersaustralia.org.au)

Register today at [www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

Note: Members Zone registration is free and exclusive for financial members of Engineers Australia.

**MEMBERS ZONE**

PROFESSIONAL DEVELOPMENT (e-PDP)  
inside the members zone

e-PDP is available only to participants of Engineers Australia's Professional Development Program and enables electronic recording and monitoring of progress towards Chartered status. The features of e-PDP include:

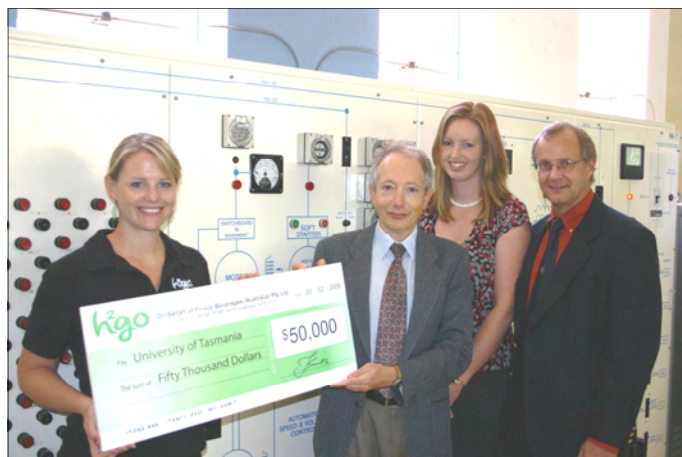
- Template for the creation of Career Episode Reports (CER) using paragraph box for narrative and dropdown box to indicate element being claimed
- Ability to create and save draft CER's for electronic feedback via a National Accredited Assessor
- The draft can be recalled and edited/rewritten. When the user is ready to submit the final for assessment the report is printed and signed by the Supervisor/Mentor and sent in hardcopy to the Assessor
- An endorsement log and Assessment report is available after the assessment showing the user the number of competency elements that have been approved by the Assessor

Register today at [engineersaustralia.org.au](http://engineersaustralia.org.au)

Note: Members Zone registration is free and exclusive for financial members of Engineers Australia. e-PDP is only available to registered PDP participants.

Register today at [www.engineersaustralia.org.au](http://www.engineersaustralia.org.au)

Note: Members Zone registration is free and exclusive for financial members of Engineers Australia.



*Carly Papandrea (Frucor Beverages), Prof Michael Negnevitsky (Director CREPS), Jess Andrewartha (PhD Student) & Prof Chris Letchford (Head of School of Engineering)*

# HERITAGE PAGE

## HIGH VOLTAGE TRANSMISSION IN TASMANIA

In September 2007, Mr. Bruce Longmore of Transend Networks Pty Ltd, treated 25 people to a presentation of the Tasmanian network's development, plus a fascinating glimpse into the future. Members of the audience had contributed some of the 180 photographs, and lots of memories were stimulated.

Tasmania had the first major high voltage (88 kV) long distance transmission line in Australia. It ran 100 km from Waddamana to Creek Road in Hobart in 1916. This situation arose because mainland generators were thermal power stations built alongside their customers. The second long transline ran from the Latrobe Valley to Melbourne, 132 kV in 1924.

The **1916 map** shows the first transmission line which supplied Hobart and EZ at Risdon (and the other unconnected private power stations around the State). The line crossed the Derwent River at the Bridgewater causeway.

Transmission line towers were required on both sides of railway crossings, but this practice ceased after an accident removed a tower, proving that the dual arrangement was not required. An 88kV wooden pole transline was built to the Carbide Works at Electrona in 1920.

By **1937**, the 88kV system had expanded to connect Longford-Hadspen-Launceston & Derby to the north, and Railton on the north-west. In the south, the single circuit line had been converted to a Shannon/Waddamana-Creek Road-Risdon-Waddamana ring.

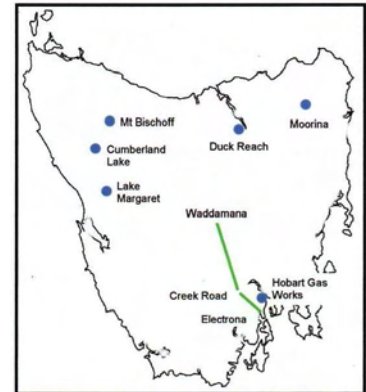
A second transmission network at 110 kV began with the construction of the Tarraleah Scheme in 1936. 110kV lines linked Tarraleah to Creek Road, Lake St.Clair, Queenstown and Rosebery. The Waddamana to Railton line was converted to 110 kV and extended to Burnie and Smithton. The original Waddamana-Creek Road 88kV line was converted to 110 kV as a single circuit Waddamana-Risdon-Creek Road line, and the remainder of the old ring became Waddamana-Boyer, at 110kV. The **1952 Map** shows the layout of both systems.

The Electrona 88 kV line was extended to Huonville. The introduction of K poles on the 110 kV line proved a failure on the central plateau under snow loadings, and they were replaced by standard towers. At Launceston, the completion of the new Trevallyn Power Station in 1955 permitted a dual 110kV supply to a new Georgetown Substation to supply the new Aluminum Smelter.

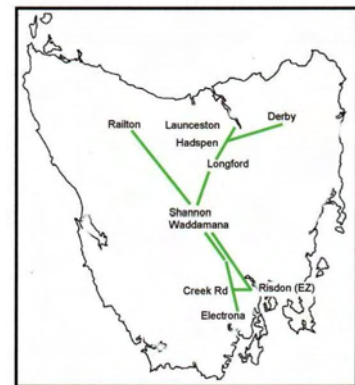
With the arrival of the first 110/220kV auto transformers, the HEC moved into a new era with the first 220kV line from Waddamana to Burnie, passing close to the future sites of Palmerston and Sheffield, as shown in the **1957 Map**

The 88 kV lines to Launceston were upgraded to 110 kV, leaving only Waddamana-Bothwell, Creek Road–Electrona–Huonville, and Trevallyn–Scottsdale–Derby Lines at 88 kV.

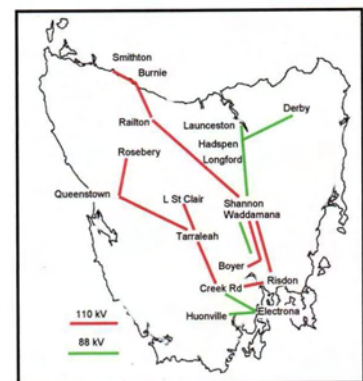
The **1964 map** shows the connection of new power stations at Liapootah, Wayatinah and Poatina to the 220 kV system and its extension to Georgetown in the north and to Chapel Street in Hobart.



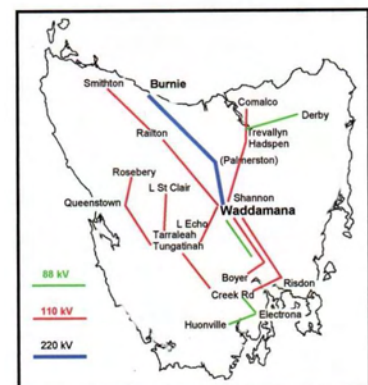
1916: 88 kV transmission line



1937: 88 kV system maximum



1952: 88 kV & 110 kV systems



1957: First 220 kV line

# HERITAGE PAGE

## HIGH VOLTAGE TRANSMISSION IN TASMANIA

These extensions involved major substations/switchyards at Georgetown, Palmerston, Liapootah and Chapel Street.

**1970s Map:** The addition of the Mersey-Forth scheme required the conversion of the old Nook Tee into a new switchyard & control centre at Sheffield to handle the management and remote control of the power stations. A new dual 220kV transline connected the Sheffield Control Centre to Georgetown.

In 1978 a double-circuit line connected Gordon Power Station to Chapel Street. The line used weather resisting steel towers in some areas to reduce the visual impact. Parts of this line have had problems in winter when snow loadings, icing and wind forces were severe. In recent times research into the development of icing on conductors and running the lines hot has reduced the incidence of outages due to weather conditions.

For the major load at Georgetown a significant restraint existed on the south/north transfer of power due to the capacity of the single 220kV line from Liapootah to Palmerston and the loading capability of the single 220/110kV auto-transformer at Palmerston.

The addition of the new power stations on the West Coast (see **1980-92 Map**) eased the pressure on the south/north transfer. A new major switchyard at Farrell brought a new double circuit 220kV connection to Sheffield, and these stations were controlled from Sheffield. The limitation was finally removed with the commissioning in the 1990s of a new 220kV line from Liapootah to Palmerston.

In 1998 the transmission system which Transend Networks inherited from the Hydro-Electric Commission did not meet national standards in all respects. To be part of the National Grid via Basslink, compliance became an absolute priority as any sub-standard lines would be closed down. The Transend Board gave the organization five years and sufficient funds to remove the deficiencies and upgrade the system.

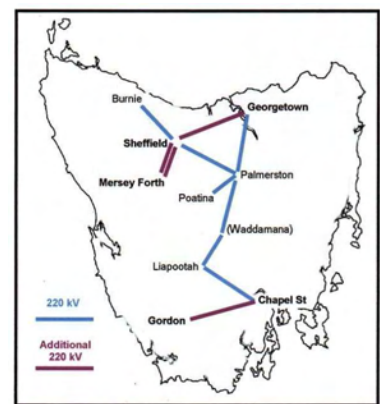
A major component of this work was increasing the height of towers to ensure adequate ground clearance under heavy current loadings in hot weather. Particular lines were given conductor temperature ratings up to which it was safe to operate. Work is continuing to increase the allowable temperature ranges. Actual conductor temperatures are measured and monitored remotely.

Bruce called the modern period the Era of Smart Technology. The ability to work safely on live lines is often needed to maintain supply. He said helicopters are in common use, particularly in live line activities, even holding up a tower top while an extension piece was fitted below the conductors. He showed the repair and maintenance of a transline in service by a workman sitting out on a helicopter platform. Amazingly the choppers are able to remain stationary in winds up to 30 knots. Other workmen protected by Faraday suits were shown attaching vibration dampers to live conductors.

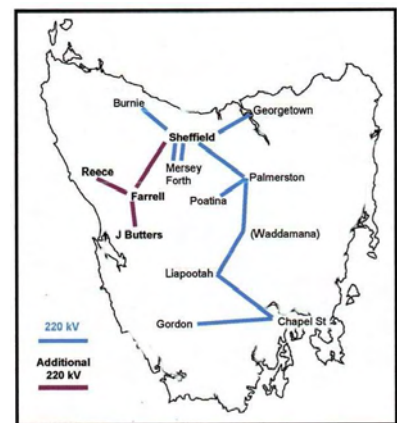
**Tony Lee, OMIEAust & Bruce Cole, FIEAust CPEng**  
Engineering Heritage, Tasmania



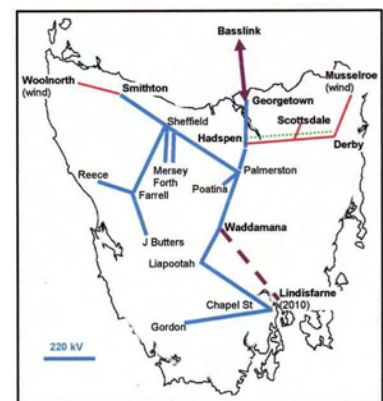
1964: 220 kV Poatina-Georgetown-Chapel St



1970s: 220 kV Mersey Forth & Gordon



1980-1992: West Coast



2004 - NOW



Vanessa King, MIEAust

# 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 member's aspirations to flourish.

**Thank you –  
and good luck!**



### Rebecca Tilbrook is heading overseas

Rebecca has been amazing in her role as Chair of the Tasmania Women in Engineering Committee over the past few years. She's enthusiastic, motivated, inspirational and organised – everything we want in our leaders.

Rebecca has revived the Committee – from a handful to the current 10 women; she has written fabulous strategy and planning documents (which were seen as ground breaking in the national and other state WiE groups); she has, with others, created really successful events. She has worked hard and achieved greatly.

The Committee, on behalf of the female engineers of Tasmania, thank Rebecca for her skills, energy and passion. Tasmania's loss is Hong Kong's gain!

## Coming Up

### Women in Leadership Seminar - 23 April 2008

Led by Julie Hammer – See advertisement on page 2 of this newsletter.

**Tasmanian Honour Roll of Women**  
The inaugural Tasmanian Honour Roll

of Women was launched in May 2005 by the Tasmanian Government. The Honour Roll now recognises 143 inspiring Tasmanian women from all walks of life and backgrounds who have **made an impact at local, state, national or international level.** BUT there are no engineers on the roll . . . even though there is a category called "Planning, engineering or architecture".

Do you know a female Tasmanian engineer who has made an impact? If so, nominations for this year close on Friday, 2 May 2008. See [http://www.women.tas.gov.au/honour\\_roll/index.html](http://www.women.tas.gov.au/honour_roll/index.html) for more details.

### Role Models for School Girls

Meredith McQueen is coordinating the committee's efforts to raise the profile of engineering among school girls – and she's looking for women keen to make a contribution. The time commitment can be as little as a couple of hours (once) – or as much as you would like to give. Please consider helping out – contact Meredith at [meredith.mcqueen@pda.com.au](mailto:meredith.mcqueen@pda.com.au) or on 6234 3217.

### Tasmanian Women's Register

The Tasmanian Government is keen to see more boards and committees draw on the expertise of Tasmanian women, and has established an on-line register to assist in increasing women's representation. There are currently around 200 Government boards and committees with more than 1500 members, so there are plenty of opportunities for all.

The Register assists in identifying suitable women who are skilled, experienced and interested in appointment. The Register is administered by Women Tasmania, in the Department of Premier and Cabinet. More information is available at <http://www.women.tas.gov.au/register/index.html>. Current opportunities include the federal Department of Agriculture, Fisheries and Forestry, Playgroups Tasmania and the Northern Tasmanian Migrant Resource Centre.

### UTas Women's Lunches

Lunches with female engineering staff and students are planned for May – contact [meredith.mcqueen@pda.com.au](mailto:meredith.mcqueen@pda.com.au) for more details.

### A little further from home - International Conference of Women Engineers and Scientists ; Lille , France; July 15-18, 2008

Under the theme of "A changing world : new opportunities for women engineers and scientists" , the conference is an opportunity for all participants to exchange ideas and information with outstanding professional and academic women working in an international and challenging environment, leading change and helping progress of cultural change. The program is diverse, and emphasizes the sustainable development, the role of

information technology and communication in industry, and different gender aspects in science, technology, engineering and mathematics.

You can find more details on the ICWES14 website [www.icwes14.org](http://www.icwes14.org) for registration and paper submission.

**Or if Europe doesn't appeal - the WFEO World Engineers' Convention 2008: Brasilia, 3-5 December 2008.** The Convention has a theme of "Engineering: Innovation with Social Responsibility", and a specific Women's Forum which will address issues including women's participation in positions of power. More information: [www.wec2008.org.br](http://www.wec2008.org.br)

## News

### International Women's Day Big Breakfast

On Thursday, 6 March 2008, the Royal Hobart Hospital Research Foundation and Women Tasmania hosted an International Women's Day Big Breakfast with guest speaker Kaz Cooke (award winning author & cartoonist). Kaz spoke about her new book, covering life skills for teenage girls – she was very funny, with some serious messages in the mix. It was a great event, with over 1100 women attending – an amazing experience to be in a room with so many, many women and few men.

## Reflection

### Careers Review of Engineering Women (CREW) – Revisited in 2007

The following is an extract from a paper given by J.E. Mills, V. Mehrrens, E. J. Smith and V. Adams of the School of Natural and Built Environments, University of South Australia, to Chemeca 2007 ([www.chemeca2007.com](http://www.chemeca2007.com))

*The Careers Review of Engineering Women (CREW) was a nationwide survey conducted by the National*

*Women in Engineering Committee of Engineers Australia in 1999. It showed that women were generally less satisfied with their engineering careers than were men, and that they were more likely to leave the profession. In 2007, which has been declared the Year of Women in Engineering by Engineers Australia, the CREW survey has been repeated.*

.....

*Given the increasing awareness by some engineering companies of diversity issues, and the increased introduction of family friendly policies such as paid maternity leave, it was hoped that there would be some improvement in women's engineering workplace experience since the first survey was conducted in 1999.*

*The 2007 study indicates that there has been some improvement in the percentage of women still working as engineers and overall workplace satisfaction has improved for both men and women. While reported sexual harassment has declined marginally, it is still unacceptably high.*

*Disappointingly, the incidence of workplace discrimination has actually increased since 1999, with gender being the overwhelming reason given for discrimination in all age groups of women.*

*Bullying, which was surveyed for the first time in 2007, is experienced by both men and women in engineering workplaces. Achieving an inclusive and supportive workplace culture in engineering organizations remains a significant challenge. ([www.engineersaustralia.org.au/learned-groups/interest-groups/women-in-engineering/publications-and-resources/publications-and-resources.cfm](http://www.engineersaustralia.org.au/learned-groups/interest-groups/women-in-engineering/publications-and-resources/publications-and-resources.cfm) for a link to the paper).*

How disappointing. In spite of the many intelligent and thoughtful men and women we work with, there are still a few who believe it's ok to treat women differently, and badly; who believe that women's contribution is less because they one day might have children, or do have children now. Who believes that people who work part-time are only playing. How do we deal with this? Any ideas? Any stories from the coal face here in Tassie?

Women in Engineering Committee Members: **Rebecca Tilbrook, Amanda Halley, Vanessa King, Meredith McQueen, Fiona Evershed, Sasha Ford, Rebecca Hindley, Hayley Young, Erin Driscoll, Cassandra Blazely.**  
Email: [wietas@gmail.com](mailto:wietas@gmail.com)



Saying farewell to Bec (far right) at Barcelona were Meredith, Fiona, Vanessa and Amanda



Jessica Andrewartha,  
GradIEAust

# YOUNG ENGINEERS

new minds.  
*new ideas.*

Young Engineers kicked off the year with a BBQ at the University (Sandy Bay Campus) during O-Week. Despite the cold rainy weather, 100 students and staff attended and enjoyed the chance to mingle and have a sausage and a beer or two! We signed up 60 new student members, which is possibly a record for the one event, and I am hopeful that they will get involved in our events and take advantage of all that is on offer.

**Our first Northern Event** for the year will be a Beer Tasting at the Royal on George on Friday, 4

April 2008. I'd like to invite all our young (and not so young!) engineers to attend this social networking event.

Do you want to learn how to network effectively? Not sure how to approach new people and start a conversation? Then attend our Speed Networking evening to be held in early May. Stay tuned for more details.

On another note, the **Young Professional Engineer, Engineering Technologist, and Engineering Officer of the**

**Year Awards** will be held this year. Check out the advertisement in this edition of Engineering Tasmania. I strongly encourage you to consider applying for this prestigious award, with the winner to be announced at the **Gen<sup>2</sup>X Dinner** on Monday, 4 August. This event will include guest speaker Patrick Hill, the 2007 National Young Professional Engineer of the Year.

Jess Andrewartha, GradIEAust  
Chair

[Jessica.Andrewartha@utas.edu.au](mailto:Jessica.Andrewartha@utas.edu.au)

## ...NORTHERN EVENT...

### Beer Tasting & Networking

*Finish the week with some relaxing local & international beers in a friendly atmosphere...*

*Meet some new faces & find out about Young Engineers Tasmania*



The Royal on George... 90 George Street, Launceston

Friday, 4 April 2008 @ 5.30pm

Cost: \$15 per head (includes beer tastings & nibbles)

RSVP: [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)

## JOINT YET & YPNT

### SPEED NETWORKING EVENING

**Tuesday, 6 May 2008  
5.30pm to 8.00pm  
Pickled Pear (Uni Club)  
Churchill Avenue, Sandy Bay**

YET and YPNT are pleased to announce a new event - **Speed Networking**.

Following a structure similar to 'speed dating', Speed Networking offers you:

- Tips on how to network more easily and effectively;
- A relaxed, friendly environment that encourages meeting new people;
- Contact with a diverse group of young and senior professionals;
- An opportunity to share ideas and experiences;

Free drinks and nibbles, and plenty of time to mingle. **This is an event not to be missed.**





## YOUNG ENGINEER OF THE YEAR NOMINATE NOW!!

Nominations for three prestigious awards are now open for 2008 in the following categories:

### YOUNG PROFESSIONAL ENGINEER OF THE YEAR YOUNG ENGINEERING TECHNOLOGIST OF THE YEAR YOUNG ENGINEERING OFFICER OF THE YEAR

The awards apply to practising engineers under the age of 35. They seek to acknowledge and reward young professional engineers, engineering technologists and officers who have:

- realised competence and significant achievement in community affairs
- a demonstrated understanding of the role and purpose of the engineering profession in society
- proficiency in the use of communication skills in engineering projects
- effective communication with public media.

These awards are recognition of excellence in engineering and are held in high regard both within and outside the Engineering community. State and territory winners will also be nominated for a national award.

#### *Nominations should include:*

- A cover letter
- A current CV
- Contact details for 3 referees  
(written references with referees contact details are highly desirable)

Nominations should be sent to Young Engineer of the Year Awards, Royal Engineers Building, 2 Davey Street, Hobart, TAS 7000.

**Nominations close Friday, 13 June 2008**



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



### **COMBINED**

**HOW TO GAIN  
CHARTERED STATUS &  
HOW TO WRITE A  
CAREER EPISODE**

## **NATIONAL ASSESSOR'S VISIT TO TASMANIA**

**HOBART - MONDAY, 28 APRIL 2008**

**Royal Engineers Building,  
2 Davey Street, Hobart  
5.30pm**

**LAUNCESTON - TUESDAY, 29 APRIL 2008**

**GPO Cafe,  
68 Cameron Street, Launceston  
5.30pm**

Bob Law, one of Engineers Australia's National Assessor's assigned to Tasmania, will be visiting the State in the last week of April and conducting two workshops on:

- How to gain Chartered Status
- how to write a career episode (CER);
- provide feedback on draft career episodes that you have written;
- answer any queries in relation to the Professional Development Program;

**These workshops aim to convince you that writing CERs are not such a daunting task as you may have first thought !**

There will be time at the end of the workshop for Bob to answer individual questions on a "one to one" basis.

Bob is one of the people who will assess your career episodes and your engineering Practice Report, so please take this opportunity to come and meet him in person and ask any questions that you may have.

Bob's functions as a National Assessor include:

- To assess applications for Chartered status
- To facilitate Professional Interviews for those applicants whose written submissions are satisfactory
- To assist potential candidates with their applications by personal advice and by the convening of workshops
- To liaise with Industry to ensure the structured career development of engineering graduates on the road to Chartered
- To advise and assist engineering graduates in the structuring of their careers

**To register, please contact Catherine Reading on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) by no later than Thursday, 24 April 2008**

# NORTHERN GROUP

- DATE:** Tuesday, 8 April 2008
- TIME:** **5.30 - 6.00pm** Networking & drinks with hot finger food  
**6.00 pm** Group business and notice of future activities  
**6.15 pm** Presentation followed by questions /discussion
- PLACE:** Launceston Function Centre  
Lower Charles Street
- SPEAKER:** **CHRIS ZIDAK**  
City Architect, Launceston City Council

## “LAUNCESTON REGIONAL AQUATIC CENTRE”

This project has had a somewhat prolonged gestation but is now underway with construction commencing last October.

Both the indoor and outdoor elements of the facility are extensive and include:

- an indoor 8 lane X 51.5 m pool with moveable boom
- fixed grandstand seating
- indoor hydrotherapy pool
- indoor spa pool
- indoor leisure pool with beach entry
- outdoor 5 lane X 25 m lap pool
- a 60 m long waterslide

As such it will cater for a broad cross section of the northern Tasmanian community.

Chris has been involved with the project from day one and currently is responsible for overseeing the project. As such he is well positioned to speak to the topic.

**RSVP:** by COB Friday 4 April to Chris Luck on 6323 1926, 0417 349 688 or [cluck@pittsh.com.au](mailto:cluck@pittsh.com.au)

**THIS MEETING WARRANTS 1.5HRS CPD**

# WOMEN & LEADERSHIP SEMINAR

Proudly supporting the advancement of women in Engineering.

**HOBART**

**Wednesday, 23 April 2008**

**Henry Jones Art Hotel**

The Engineers Australia Women & Leadership Seminar has been developed by the Centre for Engineering Leadership and Management (CELM) in collaboration with the Women in Engineering National Committee to support the progression of women into formal leadership roles.

## OVERVIEW

### *The Impact of Your Leadership Style*

What do leaders do to get the best out of people? The reality is leaders use many different strategies, drawing on a range of skills, techniques, strengths, habits and ideas. By exploring their own leadership styles and preferences, participants will identify which styles they use most often and when they are at their most effective.

### *Dynamic Communication*

All levels of communication are essential to create a bond of familiarity with a person or group of people. The ‘gift of rapport’ far exceeds the ‘gift of the gab’ when we are building relationships and needing to influence outcomes. Participants will learn the key concepts of Transactional Analysis and how to use this approach to communicate optimally as a leader in the workplace.

### *A Leadership Journey in Focus*

Whilst there is no substitute for first hand experience, we learn a great deal from the experiences of those around us. One of the best ways to map your leadership journey is through identifying and learning from great role models. In an inspirational session, an accomplished leader will share some pivotal moments and challenges from their career.

### *‘Power Session’ with the Experts*

A panel of experts will guide participants through and interactive, high impact session around three key leadership themes: networking, mentoring and flexibility.

**A more detailed information and registration brochure can be downloaded at:**

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

# CALENDAR 2008

## APRIL

**Tuesday 1 - Electrical** - Aurora Energy's Recloser Control Using NextG Modems - Nick Whittle - 5.30 for 6.00pm - Royal Engineers Building, 2 Davey Street, Hobart - Register with Catherine Reading on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to this page)

**Friday 4 - Young Engineers** - Beer Tasting in Launceston - The Royal on George - 5.30pm - \$15 per person (includes beer tasting & nibbles) - Register with Catherine Reading on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 12)

**Tuesday 8 - Northern Group** - Launceston Regional Aquatic Centre - Chris Zidak (LCC) - 5.30 for 6.15pm - Launceston Function Centre - RSVP to Chris Luck 6323 1926 or [cluck@pittsh.com](mailto:cluck@pittsh.com) (refer to page 15)

**Wednesday 23 - Women & Leadership One Day Seminar - Henry Jones IXL - 8.30am - Refer to page 15**

**Wednesday 23 - MEET THE NATIONAL PRESIDENT - HOBART** - Cocktail Party at the Royal Engineers Building, 2 Davey Street - RSVP to Catherine Reading by 16 April on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 2)

**Tuesday 29 - Joint Electrical** - Modern Developments in Transmission Technology and their Impact on the National Electricity Market - Brian Pokarier (General Manager, PowerLink Transmission, Qld) - 5.45 for 6.00pm - Centenary Lecture Theatre, University of Tasmania, Hobart Campus (Refer to this page)

**Monday 28 - Wednesday 30 - CPEng Workshops - HOBART & LAUNCESTON - Bob Law, (National Assessor)** - If you are interested in attending, please contact Catherine Reading on 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au) (Refer to page 14)

## MAY

**Thursday 1 - SUSTAINABILITY WORKSHOP** - 5.00 to 8.00pm - Merino Room, Old Woolstore, 1 Macquarie Street, Hobart (Refer to page 3)

**Tuesday 6 - Joint Young Engineers & Young Professionals Network Tasmania - SPEED NETWORKING EVENING** - 5.30 to 8.00pm - "Pickled Pear" (Uni Club), Churchill Avenue, Sandy Bay (Refer to page 12)

**Tuesday 13 - Geomechanics** - Civil/Geotechnical Engineering Projects at the Savage River Open Pit Mine - Bruce Hutchinson (Aust Bulk Minerals) - 5.30 for 6.00pm - Royal Engineers Building, 2 Davey Street, Hobart - Register with Andrew Ezzy 6221 3740 or [AREzzy@skm.com.au](mailto:AREzzy@skm.com.au)

## ELECTRICAL BRANCH MEETING

**DATE:** Tuesday, 1 April 2008

**TIME:** 5.30 for 6.00pm

**PLACE:** Royal Engineers Building  
2 Davey Street, Hobart

**NICK WHITTLE, GradIEAust**

### "AURORA ENERGY'S RECLOSER CONTROL USING NextG MODEMS"

Aurora has changed the remote control of most of its reclosers from CDMA modems to NextG modems using dialup, and is shortly to implement IP communications.

Nick will speak on the implementation of this project and on distribution automation.

**RSVP:** Catherine Reading 6234 2228 or [creading@engineersaustralia.org.au](mailto:creading@engineersaustralia.org.au)

**THIS MEETING WARRANTS 1.5HRS CPD**

## JOINT ELECTRICAL MEETING

**DATE:** Tuesday, 29 April 2008

**TIME:** 5.45pm Refreshments  
6.00pm Presentation

**PLACE:** Centenary Lecture Theatre  
University of Tasmania, Hobart Campus

**MR BRIAN POKARIER, FIEAust CPEng**  
General Manager,  
PowerLink Transmission, Queensland

### "MODERN DEVELOPMENTS IN TRANSMISSION TECHNOLOGY AND THEIR IMPACT ON THE NATIONAL ELECTRICITY MARKET"