

2011



CELEBRATING THE YEAR OF
**HUMANITARIAN
ENGINEERING**

Engineering Queensland News, 2011 Edition 1



ENGINEERS
AUSTRALIA
Queensland Division

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**ENGINEERS
AUSTRALIA**
Queensland Division

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Content of this newsletter was correct at the time of printing. Please check the website for the most up-to-date listings of events and programs.

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Dedicated to a better Brisbane



QUEENSLAND PRESIDENT

Dennis Wogan FIEAust CPEng

Focusing on the contribution engineers make to our communities



It is a great honour and privilege to have the opportunity to lead the Queensland Division for 2011. I am humbled to have been given this trust by my peers. I come to this role having retired from full-time work after a long career in road engineering and the experience of working in many voluntary positions with Engineers Australia.

This is the Year of Humanitarian Engineering, a theme that has well and truly been brought into focus by the recent floods and cyclone. I am aware of the great effort that many members have already put into responding to these events.

My focus for this year will include building on the work begun over the last couple of years by the Queensland Division. In late 2010 we released the Infrastructure Report Card, which made a number of recommendations that we will be promoting during the year. The report gives us the vehicle to continue to influence the discussion on infrastructure planning and the future direction of the energy sector in Queensland. Transport, water and power will also be key areas impacting the profession and it is vital that our views are included in the discussions and planning in these areas.

We will continue to work with industry and the Board of Professional Engineers to develop a better understanding of the impacts of the amendments to the Professional Engineers Act. We will also continue to work to influence the education agenda to ensure there is an adequate

supply of well-trained engineers and that quality is not sacrificed for quantity.

We face the prospect of significant skills shortages in engineering over the coming years. Our 2010 President, Mike Brady, initiated the concept of an Overseas Qualified Engineers Support Group. There was an overwhelming response from overseas engineers. We will be working closely with this group to harness their energy and to find ways to ensure they are recognised and integrated into the engineering workforce of Queensland and into the various technical units of Engineers Australia.

One of the comments we often hear is 'What does Engineers Australia do for us?' The answer is: quite a lot actually. But the challenge we have is to ensure engineers across Queensland are aware of this value. We will be exploring how we can improve communication between the Division Committee, the various units, the engineering colleges and the whole engineering team. It is a vital area in which we need the best possible processes if Engineers Australia is to grow and achieve its broader objectives.

Our young engineers are a great source of energy and drive within our profession. Unfortunately a large number of graduates do not join as members. Engineers Australia promotes and cultivates the ethics of our profession and the practice of continuous professional development, qualities that are necessary for a healthy, competent and respected profession. We will be

working this year to increase our involvement with universities and students throughout their under-graduate years. The aim will be to make them feel part of the future engineering team and to understand the benefits to them and their chosen profession of continuing association with Engineers Australia.

This brings me to the key theme for 2011, The Year of Humanitarian Engineering. This will be a great opportunity to showcase to the community just what the engineering profession contributes to it. Our main focus during the year will be on the work engineers do in underprivileged, disadvantaged and disaster areas.

This year, I am looking forward to achieving significant outcomes in the areas I have outlined and to meeting many of you as I visit Local Groups throughout Queensland. The Year of Humanitarian Engineering is a great opportunity to *make it so* the community contribution of engineers is really recognised.

Congratulations

newly **Chartered** Queensland members

Abeynayake, Jagath
Adams, Gordon
Alam, Zahurul
Bancroft, Michael
Bekker, Hendrick
Borra, Satyanarayana
Bremer, Michael
Bugeja, Michael
Caneppelle, Sergio
Cheetham, Bryan
Coe, Richard
Corcut, John
De Silva, Suresh
Doran, Shane
Ellis, Richard
Finegan, Brian
Flick, Jason
Gabriel, Angelito
Gray, Lachlan
Hadzilacos, George
Harrison, Simon
Hartley, Shaun

Hesselberg, Dylan
Hodges, Robert
Hooper, Briony
Hunt, Mark
Ida, Gerson
Jackson, Kirk
Jayamanne, Anton
Kai Chai, Wing
Kelly, Paul
Martin, Scott
Marxson, Thomas
Menzies, John
Mihnea, Michael
Mortensen, Simon
Muldorff, Stephen
Nicholls, David
Nooru-Mohamed, M.
Pardeshi, Vasu
Peiris, Damitha
Pelz, Ulrike
Petersen, Brett
Ramachandran, M.

Rayaroth, Sajeendran
Reinhardt, Owen
Richardson, Stephen
Ryan, Michael
Sheehy, Tim
Singh, Prashant
Steinbach, Christophe
Sutton, Robert

Sweet, Darryl
Timms, Geoffrey
Vola, Mathias
Weerakoon, Senerath
Whitehead, Mike
Wijesooriya, Sirimath
Wood, Merle
Young, Dale



Working on interesting projects, facing challenges and achieving project goals in a team gives me great job satisfaction. I know I can rely on my team mates and colleagues in the networks I have created – something I haven't experienced in many workplaces. It gives me great satisfaction to work in an organisation that gives me the opportunity to enhance my technical knowledge and experience and also supports my personal career development.

Maren,
Principal Civil Engineer, Cairns

Maren has found her destination.
Where can we take you?

To view our current statewide technical and engineering vacancies please visit: thinkdifferent.com.au

Transport and Main Roads
Connecting Queensland

Toward 2
Tomorrow's Queensland

Queensland
Government

Performance of Queensland Division strengthened by volunteer office bearers



Welcome to our first newsletter for 2011. The start of the new year has provided many challenges for Queensland with floods and cyclones impacting on a vast number of communities. Our thoughts go out to all members, their families and communities that have been affected by these disasters.

Thank you to the many members who have worked tirelessly alongside other community volunteers to assist with the disaster response. These efforts are something the engineering team and the general community can be proud of.

We have recently undertaken an annual survey of the 45 Queensland Groups spread throughout our state. This survey measures the support provided through the division office in service and governance, as well as measuring the strategic intent and empowerment of our groups.

I am pleased to report that we have recorded improvements in all three of these major areas. Specifically, 88% of groups provided positive ratings of the overall service provided through the division office. 85% of our groups set measurable goals for the year, and 91% of groups feel empowered to achieve their aims.

There are several areas that still require attention, such as providing enhanced induction support to office bearers and delivering additional information on the strategic planning and budgeting cycles within the division. That said, the trends in these areas are tracking in the right direction.

Engineers Australia is run by its members and the efforts of volunteer office bearers are vital. Thank you to all of our volunteer office bearers throughout Queensland for their valuable contribution.

It was very pleasing to see that 18 nominations were received for the seven vacancies on the 2011 Queensland Division Committee. In addition, elections were also required for the Congress, Civil and Structural College positions. This increased level of engagement in office bearer positions is a very positive sign and I thank all of those who were nominated.

I welcome our 2011 Queensland Division Committee and encourage you to engage them to discuss any aspect of Queensland Division's strategic vision for the future.

Queensland Division Committee 2011

Dennis Wogan	President
Stephen Goh	Deputy President
Mike Brady	Immediate Past President
Andrew Chapman	Elected Member
Michael Egan	Elected Member
Blake Harvey	Elected Member
David Kirkpatrick	Elected Member
Simon Orton	Elected Member
Kelly Stallman	Elected Member
David Thorpe	Elected Member
Suzanne Burow	Appointed Member
Hari Krishnan	Appointed Member
Stuart Lister	Appointed Member

I encourage all members to consider becoming involved in their professional body. Please do not hesitate to contact me directly should you wish to discuss how you can make a contribution to your profession.

Ian McEwan
Executive Director
Queensland Division
imcewan@engineersaustralia.org.au

Your Code of Ethics: Integrity, Competency, Leadership and Sustainability



As engineering practitioners, members use their knowledge and skills for the benefit of the community to create engineering solutions for a sustainable future. In doing so, members strive to serve the community ahead of other personal or sectional interests.

Our Code of Ethics defines the values and principles that shape the decisions made in engineering practice. In July 2010 Engineers Australia adopted a new Code of Ethics that applies to all members. The new Code of Ethics outlines that in the course of engineering practice members will demonstrate integrity, practice competently, exercise leadership, and promote sustainability.

The related *Guidelines on Professional Conduct* provides a framework for members of Engineers Australia to use when exercising their judgment in the practice of engineering. The Guidelines are not intended to be, nor should they be interpreted as, a full or exhaustive list of the situations and

circumstances which may comprise compliance and non compliance with the *Code of Ethics*. Ethical engineering practice requires judgment, interpretation and balanced decision-making in context.

All members of Engineers Australia commit to practise in accordance with the Code of Ethics and accept that we will be held accountable for their conduct under Engineers Australia’s disciplinary regulations. If called upon to do so, members are expected to justify any departure from both the provisions and spirit of the Code. Members are encouraged to make themselves aware of their requirements under the Code of Ethics. A copy of the Code of Ethics is available at engineersaustralia.org.au/ethics.



Toowoomba Courthouse

Project Services’ electrical engineering on the Toowoomba Courthouse refurbishment included a lighting control system with motion sensors, digital time clocks and photovoltaic detection that controls the balance between internal and external illumination, and reduces energy consumption by up to 50 per cent.

It’s just another example of engineering excellence by Project Services, the 2010 RW Hawken Award winning professional design and building consultancy of the Queensland Government’s Department of Public Works.



Pathways to Chartered Status

Update from Queensland's National Assessors



Greetings to you all for 2011. It's been a massive 12-18 months for the Queensland Assessors and we've been working hard to help a significant number of Queensland engineers attain Chartered Status and RPEQ. For the 2009-10 financial year, we were able to deliver the below:

- 65 workshops attended by over 1,300 engineers (including workshops in regional centres Rockhampton, Mackay, Townsville and Cairns).
- 293 Engineering Practice Reports and 730 Career Episode Reports (CER) assessed for engineers and graduates on PDP programs.
- 170 Professional Interviews including several in Rockhampton, Mackay, Townsville and Cairns.
- Monthly Chartered workshops held at Engineering House in Brisbane.
- In conjunction with Queensland's Industry Manager, Megan Purdy, we also offered CER writing presentations to over 30 PDP companies.

Stage 2 Assessments involve three pathways for achieving Chartered Status:

1. Graduate or engineers with less than 10 years experience and either on a company or personal PDP agreement.
2. Engineers with three to 15 years experience.
3. Mature Pathway Applicants – experienced engineers with at least 15 years experience.

For more details on each of the pathways, visit the Engineers Australia website and follow the Chartered Status links from the homepage. We also encourage you to attend one of our monthly Chartered Status workshops held at Engineering House in Brisbane.

Since June 2010, the demand for assessments has increased dramatically. In the past five months we have done more than 240 Professional Interviews, which is more than the previous 12 months combined. This has been a phenomenal effort and it's only been achievable thanks to over 150 volunteer panellists.

With the recent resignations of Ron Black and long-serving Assessor Les Louis, we have recruited three new Assessors to now give Queensland a total of five National Assessors:

- Ted Wheel: Mechanical and Building Services
- Mike Garrett: Civil, Rail and Transport
- Don Muir: Civil and Roads
- Col Colquhoun: Civil, Construction and Project Mgt
- John Reid: Structural, Civil Building and Design

With a full team of Queensland Assessors now on board, our goals for 2011 are:

- Continue to present free monthly Chartered Status workshops at Engineering House.
- Meeting the agreed time frames for assessments and Professional interviews to allow this total time frame to be no longer than three months from start to finish.
- Support the regional Local Groups and the RPEQ Board in the communication of the requirements of the Queensland Engineering Act.
- Work with PDP companies in further developing the CER writing skills of their graduates.

CPD compliant research and skills development opportunity for engineers



Beyond Zero Emissions (BZE) is a not-for-profit research and education organisation which has a strategic partnership with the University of Melbourne Energy Research Institute to deliver the Zero Carbon Australia (ZCA) research project.

Early last decade Engineers Australia released three ground breaking reports on Sustainable Energy in Electricity Generation, Building and Construction, and Transport. BZE's ZCA project follows on from these reports demonstrating how we can meet our total national energy needs with zero emissions. The ZCA project consists of five plans: Stationary Energy (v1.0 now released), Buildings, Transport, Industrial Processes and Land Use.

Each plan is a detailed and costed technical report giving one scenario for the complete decarbonisation of that particular sector using current commercially available technology. This unique project is a collaboration between many engineering and technical experts volunteering their time.

The ZCA plan is helping to shift the debate on renewable energy in this country. It has set a benchmark for research into climate change solutions and is busting myths about the desirability, economic impact and technical limitations of renewable energy.

Beyond Zero Emissions is now looking for additional volunteers to work on the plans (including version 2.0 of the Stationary Energy Plan), and financial donations to enable the plans to be completed. Members of the engineering team are encouraged to satisfy part of their ongoing Continuing Professional Development (CPD) requirements by volunteering to work with Beyond Zero Emissions on the Zero Carbon Australia Project.

Many aspects of volunteering can contribute to your CPD record in accordance with the Engineers Australia CPD Policy for different CPD Types and Conditions [type IV (private study), type VI (preparation and presentation of material) and type VII (structured activity)]. Volunteer activities that are available are diverse and include primary and secondary research, report development, engineering reviews, technical presentations and industry liaison.

Engineers Australia National Deputy President, Professor David Hood, has contributed to BZE and helped arrange the ZCA Brisbane launch. 'The BZE ZCA Projects offer great opportunities for engineering team members to learn about renewable energy, add value to the project, and meet their CPD obligations,' David says.

For more information on the Zero Carbon Australia Project: zerocarbonplan.org. To contribute to the project as a volunteer: zerocarbonplan.org/contribute. To donate to the project: zerocarbonplan.org/donate.

STRUCTURAL ENGINEERING

Queensland Structural Branch
to expand its popular series
of free CPD events in 2011



Since late 2003, Queensland's Structural Branch has been working to promote structural engineering and provide CPD presentations to our fellow engineers. The majority of our sessions are held at the Engineering House in Brisbane and are open to all and free to attend.

We offer a technical seminar each month from February to December, plus a final-year University research project presentation in October (which involves most of the Queensland Universities offering a civil engineering course). The seminar topics cover all aspects of structural engineering from design to construction and encompass steel, concrete, glass and timber as structural elements. We also have members from Australian Steel Institute and Cement Concrete & Aggregates Australia offering technical seminars in their respective industries.

Our technical evenings occur on every second Tuesday of the month. Please see the Queensland Division website for up-to-date event information (<http://bit.ly/eTvf9e>).

The Structural Branch Committee comprises of practising engineers from major consultants and industrial bodies. However, we are missing a representative from the contracting sector and encourage any practising engineers working for contractors to join us and share your experiences.

In 2009, we established a series of structural engineering CPD learning workshops on: Highrise

Buildings, Water Retaining Structures, and Highway Bridges. These workshops were conducted as a trial involving a two hour lecture (providing background practical design information on the subject) plus two hours of interactive learning from groups formed by the attendees presenting their solution to some practical questions.

This CPD series proved to be highly successful and four more workshops topics were added in 2010: Silos and Bunkers, Forensic Engineering, Wharfs, and Footbridges. Due to popular demand, these CPD presentations are being re-offered in 2011 plus we will be organising for additional structural engineering topics to be added when suitable presenters are secured.

On the back of a successful program of events for structural engineers throughout 2010, one of our highlights in 2011 promises to be the one day Asia Pacific Forum on 7 July at Griffith University's Gold Coast Campus entitled *Structural Engineering for Extreme Events*. More information and registration on this CPD activity can be found under the Engineers Australia web link (<http://bit.ly/hapaBM>). Early bird registrations close on 31 March 2011. This timely event will feature seven internationally acclaimed speakers covering the essential role of structural engineers in disaster.

Peter Ho, Chair
Structural Branch/IStructE Qld Group
P.Ho@logicamms.com.au



Professional Development Program

The Professional Development Program (PDP) is a structured and supported pathway for Chartered Status, implemented in partnership between Engineers Australia and employers committed to the development of their engineering workforce. It provides an opportunity for continuous assessment and feedback while working towards Chartered Status.

While it has been developed for graduate engineers to assist in their professional formation, it also provides benefits for more experienced engineers wishing to pursue Chartered Status. The basis of the program is for engineers to record and analyse their engineering experience in terms of competency elements, usually based on their first three to five years of post-graduate experience.

Progress of engineers in attaining their competency elements is monitored by the employer organisation to ensure participants gain exposure to the required level of experience as well as building engineering capacity within the organisation.

Participation in a PDP is open to engineers across all fields and all types of enterprise. Currently, there are about 6,000 engineers with 300 participating organisations on an Engineers Australia PDP. Industries covered include: mining,

utilities, consulting, aerospace, defence, automation, information technology, telecommunications, processing, manufacturing, construction and federal, state and local government.

Shaun Nugent, Director of Operations and Capability with Parsons Brinkerhoff, considers Chartered Status important for their engineers and for their engineering activities. Shaun says, 'We value the PDP program because we find it a very useful method to provide guidance and support to PB's Chartered Status candidates'.

Engineers Australia provides support and resources to assist their PDP partners to implement a successful program. This includes:

- Gaining senior engineering and management buy-in.
- Enhancement of employer Graduate and Mentoring programs, assisting with organisational knowledge transfer.
- Embedding the competency standards in the structure and culture of your organisation.

If you would like to discuss a PDP partnership between Engineers Australia and your organisation, please contact your Queensland Industry Relationship Manager Megan Purdy by email mpurdy@engineersaustralia.org.au or mobile 0419 146 964.

work it



Leaders hit the mark during flood crisis

Simon Orton, Queensland Chair
Centre for Engineering Leadership and Management

What a start to 2011. For many of us in the Queensland, we have seen first hand the damage Mother Nature can bestow. Nothing could highlight more the valuable role of engineering and good leadership in the community than these events.

Engineers Australia members and the wider volunteer community have worked tirelessly to support those who have been in need and we applaud everyone who has stepped up. We have especially noticed the numerous pragmatic and dedicated leaders who have emerged during this crisis. Our Engineers Australia members continue to provide assistance to the relevant coordinating bodies and we will support any requests that we can to complement the official response strategies.

As leaders, it is inspiring to see the strength shown by councils, businesses, government, politicians, community groups, charities and residents across flood and cyclone clean-ups.

As engineers, it is inspiring to see technology being used in a practical manner during these emergencies. Media, web and viral networks were utilised quickly to disseminate information and reduce the risk of loss of life.

And, as people, it is inspiring to see the tens of thousands of volunteers donating time and resources to help homes and workplaces get back online, particularly around the Bremer River, Ipswich area, Goodna and other suburbs of Brisbane.

Thank you to everyone who has contributed to the ongoing united community effort or donated to the Appeals. As the recovery effort continues, Engineers Australia will continue to call upon our members to support a wide range of industries to overcome short and long-term challenges.

Upcoming CELMQ activities for 2011

Throughout 2011, CELMQ we will provide programs to develop members' leadership skills through competency-based assessment, mentorship and events.

Please check the Engineers Australia website for regular updates of our activities and programs. Events will include a series of presentations, breakfasts, dinners and other networking functions where you will hear from keynote speakers and be able to interact with peers from across the industry.

Monadelphous opens Mackay workshop

National engineering company Monadelphous Group Ltd has opened a new multi-million dollar workshop at Paget, in Mackay, to support its operations in the Queensland coal industry.

Monadelphous Managing Director Rob Velletri said the purpose-built workshop marked a significant commitment to Mackay, the Bowen Basin and the state's coal industry.

'Our operations have grown in Queensland in recent years and we have completed a number of major projects for big customers in the region,' Rob said.

'The decision to invest in building a facility like this in Mackay demonstrates we are serious about our involvement here.'

'The Queensland coal industry has tremendous opportunities ahead and Monadelphous is determined to contribute to the growth from a permanent base in the region,' continued Rob.

The Mackay workshop supports the safe, effective and on-time delivery of mine plant upgrades, shutdowns and maintenance and repair activities in the Bowen Basin and surrounding areas. It is operated by Monadelphous's Maintenance and Industrial Services division.

The facility will be part of Monadelphous's national operations which are focused on supporting resources and energy customers in regional areas. The company has a major office in Brisbane and more than 1000 employees in Queensland.

Monadelphous is committed to attracting and developing highly skilled project management, maintenance and engineering professionals as regional operations such as Mackay continue to expand.

jobswithus.com.au



IMAGES

Monadelphous Managing Director Rob Velletri, Member for Dawson George Christensen MP, and Monadelphous Maintenance and Industrial East General Manager Chris Tabrett at the opening of the Mackay workshop.



INTRODUCING

'As the youth of engineering, we have the energy, the enthusiasm, the education and the technical expertise to do something positive. This is our chance to make a commitment to creating healthier communities.'

Jillian Kenny, Queensland Chair 2011
Young Engineers Australia

Welcome to another year on behalf of Young Engineers Australia Queensland (YEAQ). I am both pleased and honoured to have been elected to the position of Chair for this group in 2011, the Year of Humanitarian Engineering (YoHE). This is a year to take up the humanitarian challenge, to step outside our comfort zone and to make a contribution. Many Queenslanders have already made a great start, assisting in the clean-up efforts in the wake of the South East Queensland floods and Cyclone Yasi.

Catastrophic events re-affirm our focus on what is really important to people. They can provide the engineering profession with a real opportunity to investigate and upgrade standards in design and construction so that we can reduce the devastation caused by such events. We can recall the legacy of Cyclone Tracy resulting in improvements to the wind engineering building codes. Although we can be very pleased with the progress that has occurred in emergency management and the built environment in many states, we must be mindful that the lessons learned still came at a heavy price to the community. It is not just when catastrophe strikes that we should strive to be humanitarians.

Every day of every week of every year there are people without access to the most basic of human needs, such as drinking water, sanitation and electricity. As engineers, we have the technical and managerial capabilities to tackle these issues. Though logistically difficult, consistent individual commitment to a cause can bring significant improvement into the lives of people that need it most.

YEAQ are committed to celebrating and promoting humanitarian efforts in engineering. To help achieve this, our group has teamed up with the local chapter of Engineers Without Borders (EWB) for 2011, a group well known for their humanitarian programs both within Australia and overseas. Throughout the year, YEAQ and EWB will co-host a variety of events to help celebrate and promote humanitarian engineering including:

- YoHE presentation evening showcasing past and present volunteers from EWB, RedR and iRAP
- Generational and gender exchange comedy debate co-hosted with CELMQ and WIEQ
- YEAQ Gala Ball, our highlight event for the year.

If you have a passion for humanitarian engineering or just want to find out more, check out the following sites to see how you can get involved in humanitarian projects: ewb.org.au and redr.org.au.

With 17 events proposed, 2011 will be a challenging year for both myself and the 22 dedicated YEAQ committee members. Organising, promoting and hosting events requires both voluntary and monetary support. We are very happy to announce that KBR has come on board as our new major sponsor for this year. There are still plenty of opportunities for organisations to sponsor individual YEAQ events throughout the year. With over 12,000 engineers aged under 35 years in Queensland, sponsorship of YEAQ events offers great exposure for organisations seeking to engage and enable the next generation of engineers. To learn more, please call the Division office or email us: yeaqld@engineersaustralia.org.au.

CONGRESS CORNER

Engineers Australia has decreed 2011 as the Year of the Humanitarian Engineer. This has received wide and strong support on the National Congress with recognition of the work already done in this area and the need for greater effort in developing countries.

However the recent disasters in Queensland have emphasised the need for engineering support across our own state. The engineering tasks, to rebuild those parts impacted by floods and cyclones, are enormous and have their own humanitarian message.

We congratulate former Congress representative Adjunct Professor David Hood on being elected as the National Deputy President at the last meeting. This will be another great opportunity for engineering in Queensland when David becomes the 2012 National President. We encourage all members to consider further participation in the leadership and management of Engineers Australia.

Congress members are working on projects for 2011 with sub-committees meeting and holding telephone conferences. The type of activities in 2011 will include:

- Continue with the implementation of the 2010-15 Strategic Plan developed by Congress in July 2010.

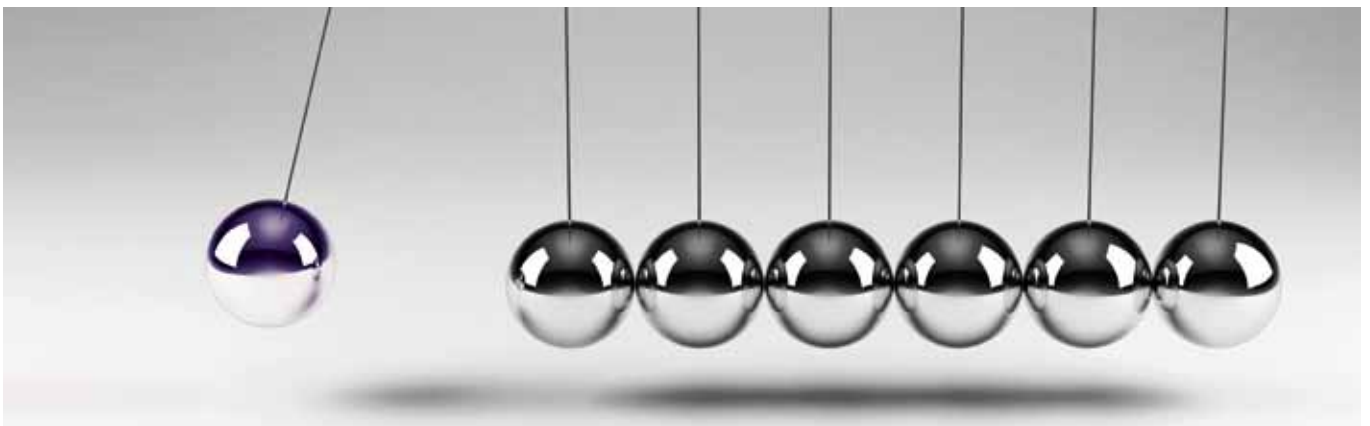
- Implement 2011 Royal Charter and Bye-laws and to ensure members support and understand our new documents.
- Continue with the implementation of the new Code of Ethics and disciplinary regulations.
- Establish a Reconciliation Action Plan for Engineers Australia. A lot more will be heard about this through the year.
- Further contribution to the Year of the Humanitarian Engineer.

In closing, your Congress representatives wish all members across Queensland the very best for 2011 as we all continue to engineer a better sustainable life for our communities. To those members impacted by floods or cyclone, we hope you have a speedy recovery at home and in business.

YOUR CONGRESS REPS

Geoff Haigh	geoffrey.b.haigh@tmr.qld.gov.au
Sam Fernando	samfernando87@yahoo.com
Andrew Chapman	qld@engineersaustralia.org.au
Hari Krishnan	hari.r.krishnan@tmr.qld.gov.au

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ENGINEER QUICK CHAT

with Blake Harvey
QUEENSLAND DIVISION COMMITTEE MEMBER



Engineering discipline/qualification? Electrical Engineer (Power Systems) BEng(Hons) CPEng RPEQ NPER MIEAust.

Current job title and function? Manager Alternative Energy Solutions – Rural, Remote & Isolated, Ergon Energy. I am responsible for the development and implementation of alternative energy solutions in the network west of the great Dividing Range. I also work with our generation groups in the isolated networks, and look after the SWER (Single Wire Earth Return) Improvement Group within Ergon Energy investigating new technologies specific to rural customers.

Why are you an engineer? I enjoy the combination of technical analysis, problem solving and working with people to find solutions. I also enjoy the constantly changing work environment and the knowledge that what I do supports our society.

Dream engineering job? To eventually become the engineering executive manager or chief executive of an energy or engineering business. I also come from a family of engineers and we have talked about one-day starting our own infrastructure consultancy.

What makes Queensland such a great place to be an engineer? Globally, it is hard to find a faster booming economy than Queensland and, as an engineer, it is great to be a part of that development.

Most challenging or interesting project you've worked on? Probably when I worked in Switzerland for six months for ABB on a research project developing an all electric ship. I was involved in building and testing the powerstack inverter that would be used to launch planes off the deck of the ship. The expertise of the engineers that I worked with, as well as the technology, were amazing.

Any advice for other young engineers starting their career? Focus on developing yourself and your skills first, to be the best engineer that you can be. Take every opportunity and in particular rise to challenging projects as they emerge. I also always recommend getting a good mentor.

If you weren't an engineer, what do you think you'd be doing? I would like to say professional cyclist or spear-fisherman, but probably something perverse like an accountant or economist.

How did you become involved with the Queensland Division Committee? I feel that EA offers so much but sometimes that is lost to the engineer in the regions. I think we have to refocus on engaging with our members and clearly demonstrate where we do add value, right across Queensland.

Favourite midnight snack? I'm not normally eating at midnight but if I'm still awake there could be a kebab and maybe some beers involved.

What was your first concert? Silverchair, Grinspoon and Jebediah when they came to Rockhampton on the Rollercoaster tour.

Something you miss most from childhood? Having spare time and nothing to worry about.

If the whole world was listening, what would you say? Take responsibility for yourself but think more about supporting others.

What's the most recent present you bought yourself? A new Swiss watch. I have a thing for watches.

You know it's not good for you, but you do it anyway? Drinking alcohol and staring at computer screens. Not normally together though.



WIEQ

showcasing leadership
lessons from the top



Women in Engineering Queensland (WIEQ) had a great 2010. We finished the year on a high with the keynote address at our annual breakfast being delivered by Kathy Rynders, Deputy Commissioner Special Projects Queensland Police Force.

Kathy joined the Queensland Police Service in 1975 during the last year of her university degree, abandoning her previous teaching ambitions. She is the longest-serving female commissioned officer in the Queensland Police Service.

The Deputy Commissioner entertained and empowered the audience with her insights into her own career and the role of females in the Queensland police workplace. Her speech was a beguiling and humorous address which offered the thought-provoking approach to career advancement in all types of workplaces. The three major impressions I took from the presentation were:

- Always keep your long-range goals in mind
- Choose your battles
- Use humour

With 2011 being the Year of Humanitarian Engineering, WIEQ are very proud to be involved in the 'Spark' Engineering Camp, a Youth Without Borders (YWB) initiative bringing together a variety of stakeholders to provide up to 50 school children with the opportunity to see what the university experience can provide.

The five day residential engineering camp is primarily for high school students who come from indigenous, refugee or otherwise disadvantaged backgrounds. The 'Spark' engineering camp is currently looking for sponsors for

the event. If you would like any further information please do not hesitate to contact me.

Forthcoming WIEQ events during the upcoming months are shown below, so I hope to see you at one or all of the events.

- May: Gen2x debate
- May: Regional 'Girl Talk' presentation
- June: 'Spark' engineering camp
- July: Annual trivia night
- August: Ground engineering technical presentation
- August: Transportation technical presentation
- September: 'Girl Talk' information evening for teachers and career advisors
- October: Golf pro event

We are still looking for corporate support to help us offer our events and activities during 2011. Sponsorship of our committee offers great exposure for organisations seeking to support the role of women in engineering. If you are interested to learn more, please get in touch.

Jamie Mullins, Chair
Women in Engineering Queensland
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SLOPE

STABILISATION

CASE STUDY: PARK ROAD NOOSA



THE CHALLENGE

Park Road at Noosa on Queensland's Sunshine Coast is the gateway to the Noosa Heads National Park for over one million visitors every year.

In the mid 1990s, a major rain event caused sections of the road to slip and temporary remedial works were undertaken to attempt to stabilise the slope. However, further investigative work in 2009 resulted in a recommendation that a permanent solution be found to stabilise this important lifeline for local residents and visitors. Finding a solution to stabilise the slope had to solve the following engineering and construction challenges:

1. Preserve the vegetation on the down slope area to retain visual aesthetics and protect important koala habitat.
2. Allow vehicle and pedestrian access through the site during construction.
3. Retain the slope and protect the road users from future slips.
4. The structure would need to support a new 3m wide cantilevered pedestrian boardwalk.
5. The structure needed to be free draining and handle a rising and falling water table.
6. The structure needed to protect road users and take the 100kN/m impact loads from vehicular traffic.

THE SOLUTION

An Australian first, the solution provided to both stabilise the slope and carry the applied loads was taken from technology used in the Alpine regions of Europe. An 'A frame' structure consisting of 320 high pressure grouted micro piles fixed at the apex by a concrete capping beam was adopted.

The triangular soil wedge within the 'A Frame' acts as a reinforced soil mass while the applied structural and geotechnical loads are carried axially within the piles. The piles were drilled into the underlying sandstone which was beneath the critical slip failure. The solution raised the factor of safety against failure from 1.01 (pre-construction) to 3 (post construction).

THE BETTER ALTERNATIVE

Originally designed using a series of 12m long 750mm diameter bored piers socketed 2m into the underlying bedrock and tied back with post tensioned earth anchors, PCA's alternative 'A Frame' micro pile wall approach was adopted by the Sunshine Coast Regional council due to the following benefits:

- Four weeks less construction time (18 weeks total).
- No spoil removal.
- Practically no tree pruning required. The vegetation in the adjacent National Park could remain due to the relatively small and nimble piling rig.
- Low impact on tree roots. The 90mm diameter drill bits could weave through the root systems of adjacent koala food trees unlike the 750mm diameter bored piers.
- No need for earth anchors which would have restricted future road construction and services.
- No impact on the deep drainage remedial works carried out in the mid-1990s.
- Significant cost savings and reduced risk of variation.
- No road closure. Piling rig could work from one lane leaving the second lane open under 24 hour traffic management.

Number of piles: 320
Capacity of piles: SWL 180kN compression and 211kN tension



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Engineering Excellence Awards

The Engineering Excellence Awards is the engineering profession's most prestigious event in Queensland and we encourage all Queensland engineering organisations to put forward a nomination for the 2011 program.

Projects that were completed from January 2009 to December 2010 can be entered for consideration in the 2011 awards. Entrants will receive valuable industry promotion:

- Peer recognition of your organisation at the prestigious awards event
- Inclusion in awards commemorative magazine, which is distributed to all Queensland Division members across the state
- Category winners will be featured in the Courier Mail supplement about the awards
- Category winners will be invited to submit their projects in the National Engineering Excellence Awards

IMPORTANT DATES 2011

Friday 3 June: 'Intent to enter' registrations close

Thursday 30 June: Entry fee payment deadline

Monday 1 August: Full submissions due

Friday 7 October: Engineering Excellence Awards

Personal Awards

Nominations are being accepted for our 2011 series of personal awards to recognise the achievements of Queensland's most outstanding engineers.

- Professional Engineer of the Year
- Engineering Technologist of the Year
- Engineering Officer of the Year
- Young Professional Engineer of the Year
- Young Engineering Technologist of the Year
- Young Engineering Officer of the Year

PERSONAL AWARDS JUDGING CRITERIA

- Financial member of Engineers Australia
- Engineering competence
- Demonstrated leadership skills
- Positive/notable engineering work outcomes
- Creativity/innovation
- Service to industry, the profession or the community

IMPORTANT DATE 2011

Thursday 30 June: nominations close

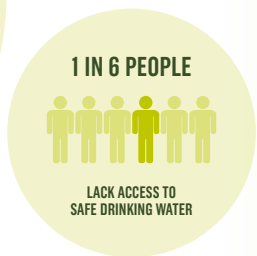
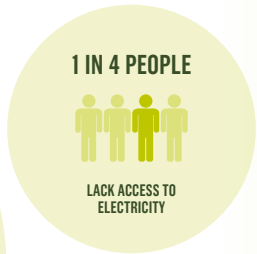
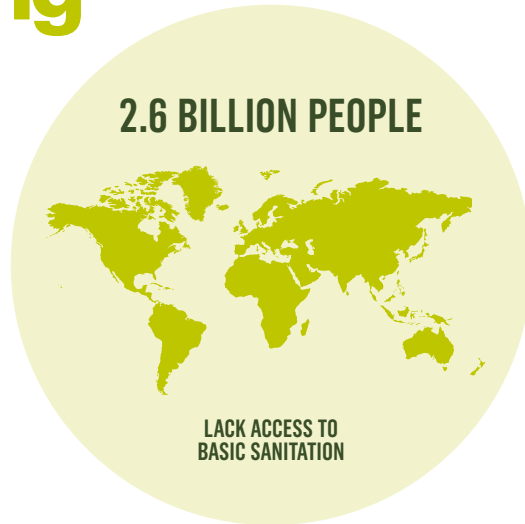
For detailed information about the 2011 Engineering Excellence Awards or Personal Awards, go to qld.engineersaustralia.org.au and follow the links to the Awards page.

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All statistics sourced from www.globalissues.org



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