

ENGINEERS AUSTRALIA WA DIVISION

YEAR IN *review*

2011



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ENGINEERS
AUSTRALIA
Western Australia Division

President's Report



Professor Mark Bush FIEAust CPEng

President, Engineers Australia WA Division

Western Australia obviously hosts a vibrant, energetic industrial scene, driven to a large extent by the mining and energy sectors, but also nurturing a range of innovative hi-tech industries in their own right. Despite the economic downturn of recent years, activity in WA continues to remain relatively high and is accelerating towards the next peak. This energy is reflected in the range and strength of activities in the Division. Measures of growth this year, to mention a few, include steadily increasing membership, increasing CPD activity, greater enrolment in the Chartered program, increased nominations for the Excellence Awards and, most pleasingly, a noticeable surge of interest amongst students and parents in engineering careers. These (and other) outcomes are a credit to the hard work and enthusiasm of the staff and volunteers of the Division.

The Division Office, Colleges, Committees and Groups have been busy conducting the core business of the organisation, aligned with the strategic plan introduced last year, while also reflecting the theme for the year, Humanitarian Engineering. This theme has provided a great opportunity to engage with the public. A range of activities and events were undertaken to reflect this theme, sometimes adapting a regular event to the cause and in other cases running special events to engage with the public. Collaboration with Engineers Without Borders (EWB) and Oxfam featured strongly this year in WA, serving to magnify the impact of EA's endeavours and strengthening our connections to these organisations.

Engineering Week was the main opportunity to publically celebrate the profession, and much of the focus on Humanitarian Engineering was concentrated in and around that week, although events and initiatives took place throughout the year. Some of the initiatives started this year will leave a lasting legacy. One example is a focus placed on pro-bono engineering in WA by the Division and EWB, including a study of how some WA companies are managing pro-bono work. This feeds into a broader national initiative to promote pro-bono engineering with the aim of making it part of the culture of the engineering profession.

While the Humanitarian Engineering theme has been a good opportunity to engage with the public, it has presented a challenge for some groups and committees to reflect the theme in one of more of their events, but several were able to do so and I thank them for their efforts.

I have written about Engineering Week activities and other Humanitarian Engineering activities in the monthly newsletters, which I will not repeat here. However, I will reiterate that this theme has allowed us to strengthen our strategic initiative

to engage more meaningfully and effectively with other organisations, most particularly EWB, Registered Engineers for Disaster Relief and Oxfam. We also continued and strengthened our collaboration with the Academy of Technological Sciences and Engineering (ATSE), by running a jointly sponsored workshop in September entitled Earth, Wind, Water and Fire: Engineering for Extreme Natural Events. I might also note that ATSE (WA) partly adopted our national theme this year by choosing a prominent and inspiring young engineer, Darren Lomman, of the Dreamfit Foundation, to be its Distinguished Speaker. Darren gave presentations to school students as well as the Academy fellows and the public about his work in adapting sporting equipment for use by people with disabilities, and in doing so was an outstanding advocate for the engineering profession.

The proceedings following the 2010 Ballot have been an unhappy feature of 2011, one that I trust has finally been put to rest. Now that the Governor-General has accepted the new 2011 Royal Charter and Bylaws, Engineers Australia can move into the future, continuing to evolve and adapt to the constantly changing environment and community expectations. The organisation has in fact been doing this for many years. In my view, the clearer, more relevant bylaws that have resulted from this process are just a reflection of that evolution. Our activities this year have certainly broadened our vision and our external connections, and it has been a pleasure to have the opportunity to serve as the President while this is happening.

Visits to several of the regional groups served to remind me of the advantages of living and working outside a large city, while also highlighting the challenges of maintaining a vibrant networking and CPD program in lower population density environments. The national theme next year is Regional Engineering, which I hope will result in greater understanding and support for regional group activities. I most recently visited the Mid-West group (Geraldton) and was astounded to see the range of industrial activity taking place in that region. The Peel area, centred on Mandurah, and South West region (Bunbury) are also very active industrial regions. The Great Southern region (Albany) is growing strongly and it is most pleasing to see the Great Southern Group being re-invigorated and becoming more active thanks to the efforts of the group's Chair and members.

I would like to finish by reiterating that all this activity has only been possible due to the volunteers who run various groups and committees, and support other functions of the Division, such as the excellence awards, accreditation, chartered/CPD, to name a few. It is a pleasure to be part of an organisation in which people give of their time and expertise so generously for the benefit of the profession, and I thank all the volunteers for their efforts this year. On the other hand, coordination and leadership for much of this activity is provided by the employees of Engineers Australia. They maintain a focus on the strategic plan and ensure that the efforts of volunteers are channelled to the greatest effect. We have the benefit in WA of being supported by an outstanding group of people, ably headed by the Division Director Leanne Hardwicke (from about mid year) and former Director Janice Lake. Leanne is supported by an excellent Division Office team. It has certainly been a pleasure for me to work with this team as President in 2011, and I thank them for their efforts.

Director's Report



Leanne Hardwicke

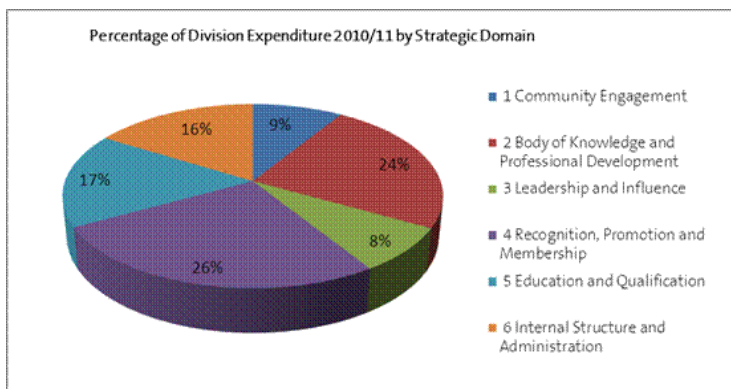
Director, Engineers Australia WA Division

2011 saw a change in Director for the Division, with the retirement of Janice Lake in February. Janice did an outstanding job as Director and the Division is certainly well placed for the future. Thank you for the very warm welcome from the members that I have met to date and I look forward to meeting more of you in the future.

Engineers Australia provides a home for many engineering disciplines and occupations. It provides a forum for members to learn and grow professionally and personally, and to interact with each other and other business, academic and professional people. Engineers Australia is also the preeminent voice of the profession on a variety of issues and delivers a range of educational outreach programs with the aim of increasing the number of engineering graduates. While the member service ethos underpins all staff contributions, Engineers Australia could not be what it is without its many enthusiastic volunteers who give their time and energy for the betterment of the profession. They are to be congratulated for the following results.

Membership growth continued during 2011, with a 7.9% increase for the year. At the end of October 2011, the WA Division membership totalled 13,239, including 4558 student members. 11.7% of our members are women and more than half our members are aged 35 or under.

The Division ended the 10/11 financial year with an \$86,000 surplus, primarily as a result of reduced staffing levels for a period, and unused funds provided to panels and groups for professional development activities.



Sponsorship funding provides valuable support to the diverse program of events run by the division. These events help to deliver our strategic objective of community and member engagement. The two year contracts for sponsorship signed in 2010 continue

to operate for the 2011 calendar year activities, delivering \$291,000 to support general Division activities. This has been supplemented with small amounts from some individual events and seminars and substantial funding support for the Science and Engineering Challenge. We thank all our partners and sponsors for their support, both financial and in-kind.

All Division activities are aligned with the five-year Strategic Plan. The Division's two key governance committees, the Division Committee and the Division Advisory Committee (DABWA), make a strong contribution to the operational plan so that the Division has a sound basis on which to budget for future activities. The Division Committee meets regularly to monitor the implementation of planned activities and to discuss and generate new ideas and improvements to member services.

Elections for Division Committee members and College Board Representatives for 2012 have been held, with around 7% of division members participating in the process.

CPD output figures for the last 12 months to end October 2011 were positive and the CPD offering included several fee paying seminars and conferences. Regional groups organised a number of local activities ranging from technical presentations and site visits, to schools programs and visits by the Division President.

The annual Face to Face Careers Expo for engineering undergraduates attracted 1040 students and over 73 companies. The Science and Engineering Challenge for year 9 students was extended into more regional areas. Approximately 2700 students, from 73 schools, participated and 350 volunteers gave their time and energy to assist. Members visited schools in the metropolitan and regional areas to talk to students and more than 240 certificates of achievement were presented to year 12 graduating students.

Throughout 2011, there were many events and activities themed around the year of humanitarian engineering. The main celebration of the theme was held in Australian Engineering Week. Student and parent information evenings attracted over 400 people, and other events included a public forum, breakfast launch and corporate luncheon. The newspaper lift out provided an opportunity to promote engineering to the community. The week wrapped up with the presentation of the 2011 WA Division Award for Excellence in Teaching.

The 2011 WA Engineering Excellence Awards attracted a record breaking 48 entries. The awards presentation evening, was a great success, with more than 650 guests attending. Individual awards were presented for Professional Engineer and Young Professional Engineer of the Year.

Throughout the year, a new Honorary Fellow for WA was announced, three Engineers Australia's Division Medals were awarded for service to the Division and six student medals were awarded for academic achievement.

Thank you to all the staff and committee members of the WA Division for making my transition to the position as Division Director an easy one.

Group Reports

Panels, branches and groups of the Division provide a focus for learned society activities in Colleges disciplines, technical specialities and special interest areas. Committees organise regular technical and broad interest presentations, seminars and conferences and may also prepare position papers on matters affecting the particular discipline.

Australia Geomechanics Society

Nina Levy MIEAust CPEng

The Australian Geomechanics Society (AGS) has had another busy year, with a full program of evening presentations and two daytime events. The topics presented at the evening sessions included landslide risk management, the effects of pile driving on marine life, pavement design and sustainable development of underground space. Perth also hosted two prestigious Rankine Lectures, by Professor Chris Clayton and Professor Tom O'Rourke.

Two awards evenings are held annually by the AGS, one for undergraduates from UWA and Curtin and the other for young engineers under the age of 35. Both of these awards involve the finalists delivering short talks on work they have undertaken, which are judged by a panel of practicing engineers. The winners were Tina Qiao (UWA) and Pauline Truong (Arup).

A fully booked course on Geotechnical Laboratory Testing was held in February, which was well received and will likely be re-run in 2012. In September, a one day seminar titled "Geotechnical Failures and Near Misses" was held, with presentations given by local and international speakers on a diverse range of topics.

One additional event was held this year, an evening presentation in Bunbury arranged in conjunction with the South West Group of Engineers Australia. The presentation by Fred Baynes titled "Managing Geotechnical Risk on Large Projects" was extremely popular, with a high number of attendees and a lively question time.

Australasian Tunnelling Society

Eric Hudson-Smith MIEAust

Since November 2010, the WA Chapter has held seven technical sessions:

- 10 September 2010 - Minibus tour to Binningup Desal 2 site approx 1.5 hrs south of Perth and inspection of TBM pipejack tunnels for ocean intakes and outfalls and onshore plant site.
- 26 November 2010 - Tour of Fremantle Prison Heritage tunnel system
- 10 February 2011 – Planning for a Rail Link to Perth Airport
- 18 August 2011- Constructing the Tunnels for the Victorian Desalination Project
- 1 September 2011- Latest developments with Singapore tunnelling projects

- 10 November 2011- Construction Monitoring of Crossrail Tunnel Project, London, UK

- 21 November 2011- Highlights and Challenges in Mechanized Tunnelling With Focus on Large Diameter TBM Technology

Three sessions have involved international speakers.

The WA Chapter Committee comprises of 6 members and meets monthly. The Chapter has over 60 individual members plus six company memberships registered in WA.

Centre for Engineering Leadership and Management

David Mofflin FIEAust CPEng

CELM began the year by hosting the launch of the Year of Humanitarian Engineering. The event saw us bring together two quite different speakers, representing the diversity of the humanitarian roles played by engineers within our community.

First there was Prof Caroline Baillie from UWA, who discussed how we can best prepare ourselves to contribute to solving the global challenges of poverty reduction and sustainability. Caroline was followed by Mike Husband from Maptek, who presented on how teamwork and broader thinking was applied to find a solution to rescuing the Chilean miners trapped at the San José mine.

The second CELM event was presented by Andrew Bellamy, Chief Executive Officer of Austal. Andrew used the example of Austal to describe how Australian businesses can succeed in the face of global competition. He described how Australian businesses create positions of global leadership, despite the headwinds of competing low cost overseas operations, and the rising Australian dollar.

The next CELM event was hosted during Engineering Week, and was presented by Dr Bob Every, the Chairman of Westfarmers. Bob shared his observations on the importance of culture in organisations and his experiences in leading change in culture, over the last 25 years of his career.

A black tie dinner was held in mid November, in recognition of the huge contribution that has been made by Dr Ken Michael to the engineering community in WA.

The final event for the year was another Industry Leaders Forum, building on the outcomes from last year's event. The Forum encouraged the profession to recognise that Engineers need to do more than to merely solve the problems that are presented to us. If we are to be truly effective in meeting the needs of our Communities, we also need to take on a much greater role in shaping the environment in which we work.

Chemical Panel

Professor Ming Ang FIEAust

The Chemical Panel committee conducts a monthly meeting on the second Tuesday of each month and on average we have hosted at least one activity per month.

Some of the events included the technical presentation by Gary Crisp entitled “Desalination: sustainably drought proofing Australia”, which was very well attended and well received, and Professor Rezaee’s “Unconventional Oil and Gas Processing”, which drew a diverse crowd.

On the whole, the year has progressed well and most functions were well subscribed. The committee has had a very busy and successful year and the new committee will be elected toward the end of the year.

Coastal, Ocean and Port Engineering Panel

David Taylor MIEAust CPEng

The Coastal, Ocean and Port Engineering Panel (COPEP) has had an active 2011 that has involved organising and co-hosting three technical sessions and also running two professional one day courses over the duration of the year. The technical sessions have addressed topics related to geophysical survey in the coastal zone, underway acoustics and protection from ocean inundation. In May 2011, COPEP together with the NCCOE hosted Steven Hughes from the United States as part of his tour around Australia where he discussed the highly topical issue of flood protection in coastal and riverine areas.

The two one-day courses organised by COPEP in 2011 had over 80 attendees and addressed port operability and modelling with the open source XBEACH system. COPEP also supported the 2011 Coast and Ports Conference held in Perth, which had more than 350 attendees.

Construction Panel

Leo Coci MIEAust CPEng

The Construction Panel consists of eight members and two corresponding members. Panel member Ben Gavranich was the Deputy Chairman of National Committee on Construction Engineering (NCCE).

The Construction Panel held one workshop, two technical sessions, one site visit and two joint events with other panels:

- Linton Pike facilitated the Workshop “Role of Construction Panel” for the panel.
- Professor Paul Hardisty presented “Sustainability issues of Construction Projects”.
- Paul Hurst of WaterCorp, Gerry Hofmann and Ben Johnston of Leighton Contractors presented “The Wellington Dam Story -Innovative Techniques for Building a Bridge on a Spillway to install the Largest Ground Anchors in the world”.
- Brookfield Multiplex hosted the site visit to “Fiona Stanley Hospital at Murdoch”.
- Co-hosted with the Transport panel EA, Brian Norris and Raymond Veitch presented “Reid Hwy/Alexander Dr and Reid Hwy/Mirraboooka Ave: The journey from Perth’s worst intersections to modern interchanges”.

- Co-hosted with the Institution of Civil Engineers UK, Dave Thomas of MRWA presented “Great Eastern Highway Upgrade – An insight into an extremely challenging MRWA project”.

Education Sub-committee

Andrew Yuncken FIEAust CPEng

The Education Subcommittee provides a forum for discussing issues related to Engineering Education, particularly those related to Western Australia. It meets three or four times a year. Its members comprise representatives from all four University Engineering Faculties, Institutes of Technology (TAFEs), design and technology teachers, secondary school teachers, Engineers Australia and industry.

The subcommittee has a focus on promoting science and maths education in schools. During the year it helped to arrange an interactive demonstration of a potential school science class workshop entitled “Water for Life” at the Science Teachers’ Association of WA (STAWA) conference in May. The demonstration was presented by Engineers Without Borders. Another STAWA conference is scheduled for December and the subcommittee plans to provide further support.

In April, Professor of Engineering Education at UWA, Caroline Baillie, gave a presentation to the subcommittee on her research project into engineering education for social and environmental justice. The subcommittee has set up a working group to assist her in promoting the introduction of social awareness units into engineering education.

The national conference of the Australian Association for Engineering Education takes place in December in Fremantle. The subcommittee is looking at ways to support and participate in this conference.

Electrical Engineering Panel

Paul Andriessen MIEAust CPEng

The WA Electrical Engineering Panel (EEP) meet on the first Tuesday of each month. The committee continues to have a core of experienced members, some of whom have been on the committee for many years, and some young members, including a student member.

This year the Panel was again represented by Ms. Tiina Ratamo on the National Electrical College Board.

There continues to be good ongoing interaction with the IET, IEEE, and ITEE as part of WA’s Joint Electrical Electronic Papers (JEEP).

Dan Norton has been co-ordinating the JEEP program for Engineers Australia for over a decade. With Dan’s tireless efforts the JEEP program has delivered many CPD hours.

Eminent Speaker Mr Ken Brown, who was awarded the 2010 National Electrical Engineer of the Year, spoke at a luncheon on the topic of “Impacts of Emerging Technologies on Power System”. This speaker and topic can be judged by the distinguished audience and numbers that attended.

This year's annual prize giving included the EEP Medals named after prominent West Australian Engineers. They were awarded to the best students at UWA, Curtin, ECU and Murdoch.

A sub-committee of the Panel has been Chaired by Mr Peter Willis. The purpose of the sub-committee was to establish a Standards Australia proposal to develop an Arc Flash Handbook.

The proposal has been completed and sponsor funding is being arranged.

Engineering Associates

Rob Williamson OFIEAust CEngO EngExec

I have the privilege of being part of the Division Advisory Board and Chair of the National Committee for Engineering Associates Australia. The Committee has very strong ties with Defence, Engineers Australia's largest PDP partner, with Army and Air Force representation. The Committee also has representation from around Australia, and the mining, education, public and private sectors.

Committee members are involved in professional development activities including site visits, Chartered status workshops, and the very successful Honeywell Engineering Summer School (HESS) managed by the Sydney Division. Associates are involved in EngQuest, the Solar Car Challenge, the National Engineers Registration Board (NERB), and are represented within Congress by the Immediate Past Chair of the Committee.

There are approximately 5,500 Associate members within Engineers Australia, with approximately 150 members holding Chartered status. Associates throughout Australia are very pleased with the new Royal Charter and By-laws, which became effective on 26 September.

On behalf of Associates, I would like to thank members and WA Division staff for your support throughout the year.

Engineering Heritage

Don Young FIEAust

As part of Engineering Heritage Australia's heritage recognition program, an interpretation panel describing the design and construction of the Mitchell Freeway Stage 1 was unveiled by Governor Dr Ken Michael and Main Roads Managing Director Mr Menno Henneveld at the Narrows Interchange site on March 18.

A nomination of the Western Australian Standard Gauge Railway link between Kalgoorlie and Perth (constructed 1962 – 1972) was prepared and it is anticipated that an interpretation panel describing that project will be dedicated in the first quarter of 2012.

Research is underway with a view to nominating Fremantle Fortress – Leighton Battery, Perth's First Public Water Supply and NASA Tracking Station and OTC Station, Brown Range, near Carnarvon, for heritage recognition in 2012.

Following the announcement that the Goldfields Water Supply had received National Heritage Listing, a bus tour for members of the public was organised during Australian Engineering Week to the No. 1 Pump Station Museum and adjacent Mundaring Weir. National Trust and EHWA volunteers acted as guides for

an appreciative group of participants who were given a specially prepared booklet briefly outlining the history of the project and highlighting the roles played by a number of engineers, in addition to C Y O'Connor, in the design and construction of the original scheme, and the operation, maintenance and upgrading of the pipeline during its lifetime.

Engineering Technologists

Will Neethling CEngT TMIEAust

There are approximately 150 Engineering Technologist members of EA in WA, and as a consequence, the level of activity is relatively low compared to other groups within EA.

Engineering Technologists are represented nationally on NCETA by Divisional representatives. The committee meets twice a year face to face, usually in the eastern states.

Will Neethling is the WA representative and also the chair. In addition, he is on the Civil College Board and the Structural College Board representing Engineering Technologists. In 2012 & 2013 he will represent Engineering Technologists at Congress, where he will be able to fly the WA flag strongly.

At Division level Will Neethling represents Engineering Technologists and Engineering Associates on the Division Committee, and also Engineering Technologists on DABWA. A successor for the Technologists rep on the Structural College Board is also likely to be from WA.

Technologists and Associates had a joint meeting in March 2011 and Technologists will meet once more before the end of the year. These meetings usually attract about 5% of the members, which is considered a good turnout.

Considering that Engineering Technologists work in a huge variety of disciplines, neither the Divisional groups nor NCETA arrange CPD. Members are encouraged to attend CPD independently.

NCETA focuses on the interests of Engineering Technologists and this year reviewed the Stage 1 Competency requirements, as well as liaise with the NERB and EA Council on proposed National Registration.

Engineers Without Borders

Alicia Brown GradIEAust

A year of amazing growth and development has been experienced by those involved with the EWB WA Chapter. With interest in EWB's local scale programs at an all-time-high, engineers and 'non-engineers' alike have been benefiting from an ever-more organised approach by our committee members and group leaders.

Stronger ties were built with the Roelands Indigenous community and this accommodated valuable EWB input in the form of an energy audit and water treatment plant redesign for those living in the community. Many EWB volunteers, not just those directly involved in this partnership, were given the chance to learn more about the Roelands Indigenous community and the important place it holds in WA's history.

The WA Chapter was very active with EWB Australia's overseas programs and prepared Biodigestor Preliminary Design Reports

for EWB's in-country volunteer (Rob Hughes). This is supporting the work being done to create sustainable solutions for waste of those living on the Tonle Sap in Cambodia. Volunteers from EWB Australia's overseas programs have returned from long-term placements in South East Asia, and contributed to the knowledge of local members.

This year has seen the UWA group more strongly establish themselves and they are now engaging in nearly all EWB activities, such as the newly launched "PC's for Refugees" project, which sees refugee families receiving rebuilt computers and training for their empowerment and better integration into modern Australian society. The UWA group is also currently home to the management team for the High School Outreach program, which has led to thousands of high school students hearing about the exciting and dynamic side of engineering from engineering students and professionals.

Of course, it wasn't all hard work - the WA Chapter of EWB helped throw the YoHE Ball in conjunction with Engineers Australia, Young Engineers Australia WA and Oxfam Australia - and from all accounts the Ball was "totally awesome!" The Chapter also took part in the YoHE public forum during Engineering Week.

Goldfields Group

Gunnar Denis Horn MIEAust CPEng

A vibrant Group committee facilitated this year's events, including Anna McLean, Anthony Kerr, Andries Venter, Gunnar Horn, Mahinda Kuruppu and Terry Moylan. AusIMM (Kalgoorlie Branch) members John Player, Mark Sampson and Rowland Whiting lent support.

A Chartered Status workshop was presented in February by Peter Brearley Engineers Australia national assessor.

In January, the Group conducted a member survey and developed a Business Plan; most goals were achieved.

In March, the Group chairperson attended the Country Groups Meeting and AICD Governance Training.

On 22 March the Group's annual meeting was held, co-hosted with GHD. Dr Chris Hertle GHD Global Leader – Water & Leah Sertorio GHD Senior Process Engineer Water and Wastewater delivered the presentation 'Integrated Water Management Within the Mining Industry'.

The Science and Engineering Challenge was conducted in May under WA Division's Ryan Smith's able direction at the Oasis Centre. Thanks to sponsors and volunteers, including Group members, for their help.

During Engineering week, together with AusIMM (Kalgoorlie Branch), the Group hosted the CEO of the GEDC Robert Hicks' presentation on The PortLink Transport and Services Corridor Project.

In September, Dr Tony Rickards from Curtin University delivered a presentation on Workforce Sustainability for the resources, science

and engineering infrastructure sectors including engagement in remote communities.

Great Southern Group

Andrew Barker MIEAust CPEng

2011 has been a varied year for the Great Southern Group. We had a flurry of activity at the beginning of the year with presentations on the new Waterfront Development by Landcorp in Albany, The Transport Scene in New Zealand and our first Chartered Status workshop for a few years. We also had a site visit to a local road reconstruction project using soil stabilisation due to the poor ground conditions. Although the committee meetings continued on a monthly basis, the presentations slowed up.

Our next main activity was the Science and Engineering Challenge where local members helped year 9 students from seven local schools through the challenges of this great day.

We then had our first Annual Dinner for six years at the Mt Romance Sandalwood Factory, where members and guests were treated to a tour through the factory, three course meal and speeches by Division President Professor Mark Bush and the CEO of the City of Albany, Faileen James.

In September, we contributed to the Year of Humanitarian Engineering with a talk by a local member Bart Wassink and his wife on their work in Kosovo and Uganda.

We still hope to fit in a trip to the Albany Port, and AGM at the local award winning Distillery and a sundowner before the end of the year. Thanks to the committee for all the help this year.

Hydrology and Water Resources Panel

Dr Neil Coles

On the back of one of the driest winters on record in our South-West, along with large summer flooding in the North-West and other parts of Australia, it is no surprise that the WA Hydrology and Water Resources Panel have had plenty to contemplate in 2011.

Monthly lunch time talks were primarily themed around the consequences of the drying WA climate and were literally sell-out events. Topics ranged from "Perth water supply situation and options for future expansion" to "El Nino and La Nina: Remote sensing and managing flood risk." Three graduate engineers also very ably presented, highlighting the quality of the next generation of water professionals.

Two eminent speakers from the eastern states were also invited to present. Dr Rory Nathan (SKM, Australian Civil Engineer of the year, 2000) talked on "January 2011 Floods – public perception, the media, and the reality". Rory enlightened us with his personal involvement in the Jan 2011 Brisbane flooding and then provided RORB training for two days. Professor Robert Keller (Monash Uni, Melbourne) discussed "Interdisciplinary River Projects – Stories from the front line" in November. He also ran four days of HEC-RAS training during his visit.

In addition to the above activities, the Hydrology panel has also been actively involved with the review of Australian Rainfall of Runoff – in particular providing valuable input from the WA

perspective. Several WA hydrologists, including panel members, also attended the 34th IAHR World Congress in Brisbane, which doubled as the 33rd Hydrology and Water Resources Symposium and 10th Conference on Hydraulics in Water Engineering. More than 800 delegates from over 40 countries provided a veritable feast of water related presentations. The WA team returned victorious with the Hydrologic Games Plastic Tap Trophy – for embracing the spirit of the games.

ITEE Panel

Peter Mauger MIEAust

The Information, Telecommunications and Electronic Panel (ITEE) meets as an elected committee to arrange technical talks that qualify as Professional Development for members and also to consider and make comment on policy matters that are relevant to its members.

The ITEE committee determined that its primary objective for 2011 should be to provide increased professional development opportunities to its members through technical presentations and seminars and that overall attendance would be its measure of success.

Some major highlights for 2011 were:

- A joint presentation with the Transport Panel brought the Director of the Nikola Tesla Museum, Vladimir Jelenkovic from Belgrade.
- Due to the continuing success of the ITEE/IICA events they were continued through 2011. Three presentations and one all day workshop were organised.
- The Software Engineering Forum has gone from strength to strength over the last few years. Along with the continued Monday meeting, the forum began the organisation of a lecture series to be presented by Dr Terry Woodings. The forum is running so well that similar groups have been started in South Australia and ACT and one is being planned for New South Wales.

The program for 2012 is shaping up well. Joint sessions with JEEP, IET, ATUG and IICA will continue and there are a number of possible presenters for the regular ITEE program.

International Engineers Group

Namvar Yaghooti MIEAust CPEng

The International Engineers Group (IEG) has successfully been running for around two years.

We have had many positive comments and stories such as our unemployed committee members finding suitable jobs using our networking event.

IEG had organised many events on helping and coaching international engineers on how to write with a professional CV or present for an interview.

All in all, we have been very active and positive and looking forward to a year full of events in 2012 when we can help more engineers.

Mechanical Branch

Mike King MIEAust

2011 has seen the Mechanical Branch forge a new partnership with the Australian Society for Bulk Solids Handling, who have provided some of the years' most prestigious technical presenters.

Hundreds of Engineers Australia members have benefitted from listening to materials handling gurus such as David Beckley, Colin Benjamin, Emeritus Professor Alan Roberts and the team at TUNRA.

The well rounded technical program also included an interesting mix of oil and gas, renewable energy and materials presentations. The national and WA mechanical committees have also taken an active interest in university education; participating in accreditation and teaching at various levels.

Oil & Gas Facilities Group

Julie Morgan

In line with our aims to develop, promote and support the professional development of engineers in the Oil and Gas sector via forums for communication between engineers and other stakeholders related to Oil and Gas Facilities, our presentations had a diverse range of topics.

Integrity issues were to the forefront with two extremely well attended sessions on piping vibration and fatigue failure (Jerome Howard, SVT Engineering Consultants); plus an update on pipeline surge concerns (Alistair Hewitt, Hydraulic Analysis Inc.); the latest on surfactant corrosion inhibitor film persistence (Professor Brian Kinsella, Ohio University, USA) and a joint session with the Australasian Corrosion Association on corrosion under insulation (Jaimie Shaw, International Protective Coatings).

Integrity was complemented by the application of "Safety and Lean Principles" to deliver operational excellence in the offshore oil and gas environment (Gavin Rainbow, Competency Based Solutions).

During the year we learnt the merits of a twin Integrated Production Modelling approach (Dr Martin J Watson, FEESA-IPM Pty Ltd); promoted the Year of Humanitarian Engineering, when Prof James Trevelyan spoke on "Landmines, Water and Sewerage", sharing his insights into engineering practices in South Asia; leading through to a summertime teach-in on the carbon dollars flowing through our economy (Brian Innes, Energetics).

Peel Group

Andrew Tennent MIEAust CPEng

The Peel Regional Group of Engineers Australia WA Division had an interesting year with a good mixture of technical sessions, site visits and networking with Engineers from the region.

We started 2011 with a session where we explored the theme of the Year, Humanitarian Engineering, with the Division President Professor Mark Bush. It was a good night and we combined it with our annual meeting.

A site visit to the Alcoa Kwinana Biological Oxalate Destruction facility combined with a technical talk from Dr Amanda Tilbury

about the facility was enjoyed in May. The facility won the EA Engineering Excellence Award in the Environmental category in 2010. The visit and talk was very successful and supported by Alcoa.

The Peel region hosted the Science and Engineering Challenge in Rockingham in June. Eight local schools were involved as well as many local engineers. This event continues to be well received and supported in the region.

In August a seminar on Leadership and Public Works in Local Government was held in Mandurah with the WA Professional Engineer of the Year, Mr Allan Claydon presenting a very interesting paper. Allan lives and works in the Peel region and has enjoyed a long career in local government. The evening was well received and supported by the City of Mandurah and CELM.

The group held a seminar with the Women in Engineering group in September titled, 'How to Improve Your Career Prospects in a Male-Dominated Organisation'. The speakers Mark Toner & Gunilla Burrows explored this topic with the members present in an interactive session that was well received.

A technical seminar was held in Kwinana during October exploring Renewable Energy in the Indian Ocean Territories. Jeff Bremer presented the findings of the work he has done reviewing a number of technologies that could be used as an alternative to burning diesel to provide electricity for the remote islands. The session was enjoyed by engineers from the region and beyond who had an interest in this topic.

The group continues to be active with the committee meeting regularly to plan events to encourage members. A Facebook page has recently been launched to assist communication.

The group looks forward to 2012 as the Year of the Regional Engineering Team to continue to engage with local industry and encourage engineers.

Retired Engineers Group

Mike Corboy FIEAust CPEng

During 2011, the Retired Engineers Group has held eight well supported functions that keep our members and their partners in touch with one another, with Engineers Australia and with developments within the community.

The functions included a presentation and demonstration of electric vehicles, a site visit to the floating dock at the Australian Marine Complex at Henderson, a trip to the historic town of New Norcia and an inspection of the Challenger TAFE Aquaculture facilities. Members and partners also visited the new State Theatre to see 'When the Rain Stops Falling' and to tour the new facility.

The guest speakers at the December lunch were Division President Professor Mark Bush and Engineering Heritage Chairman Mr Don Young who gave a presentation on the coastal defence facilities for Fremantle and Rottnest during World War II.

Society of Building Services Engineers

Terry Spiro MIEAust CPEng

Following our annual meeting in November 2010 the panel has continued its program of improvement in the services available to members and visitors alike.

The technical program, mainly organised through our strong links with CIBSE, has proved once again to be successful in drawing good attendances at functions. This is thanks to our committee members, Mike Garton (CIBSE Chairman), and our young engineer, Warrick Brown.

Examples of technical sessions arranged include: Visit to water treatment plant in February; Talk on 'Medical Gasses' in the auditorium; Australian Institute of Management visit in November; Talk on BIM in the auditorium. There are a number of talks and visits already planned for 2012.

SBSE have identified a need and established a Health Care and Hospital Building Engineering Services Committee. Our committee member Tony Bayliss is the coordinator. The inaugural meeting was held on 16 August 2011.

Chairman Terry Spiro has continued to develop a relationship with National Office to encourage the less active states in an attempt to reinvigorate SBSE activities. Currently the most active are in NSW and WA.

Both our young engineer committee members have been reviewing the potential for the use of 'Facebook' to advertise the activities of the panel in WA thereby generating interest within the younger members of EA.

Society for Sustainability and Environmental Engineering

Shan Sureshan MIEAust CPEng

The Society for Sustainability and Environmental Engineering WA chapter continued the core task of delivering professional development for our members through our technical seminars. All sessions have been well attended (with an average of 30 attendees) and have received positive responses. The technical seminars are presented in 2011 are as follows:

- March 2011 – Defining Your Discipline to Facilitate Curriculum Renewal in Undergraduate Programs (College of Environmental Engineering of Engineers Australia) by Professor David Dowling, Roger Hadgraft and Dr Julia Lamborn
- April 2011 – Real Time Management of Water Resources by Jessica Harris (Water Resources Scientist, HydroNumerics Pty Ltd.
- May 2011 – Sustainable Technologies for the disadvantaged community by Dr Wahidul Biswas (Programme Coordinator and Senior Lecturer, Centre for Sustainable Engineering, School of Civil and Mechanical Engineering, Curtin University).
- June 2011 – Energy Efficiency, Solar Power Options and Changes to Feed-in Tariffs by Mark Timson (Scientist in Sustainable Energy Management).

• July 2011 – ‘Theories of Change’ - a youthful, interactive and hands-on workshop exploring the mechanisms by which we bring about societal change by Nick Taylor (Mechanical Engineer, WA State Coordinator of the Australian Youth Climate Coalition).

• August 2011 – Perth’s Groundwater Replenishment Trial by Palenque Blair (Senior Environmental Engineer, Water Corporation).

• October 2011 – Is Clean Technology and Renewable Energy the Way of the Future by an international presenter from USA, Mr. James Poss (Founder and Chief Technology Officer).

The committee continues to focus on current and potential new members, for greater participation with SSEE activities now and in the future.

Structures Panel

Harry Backes MIEAust CPEng

The WA Structures Panel has had an active 2011, with regular monthly seminars and meetings.

There are currently 18 WA panel members, chaired by Harry Backes, with Raph Woon the incoming chair for 2012. Major projects and achievements over the past year have been:

- Over 4000 CPD hours have been provided to EA’s WA structural members for the calendar year 2011.
- Sponsorship has been received for about 50% of our regular seminars, typically from the main presenter’s company to cover food and drinks costs.
- ASEC2012 is in Perth from 11 to 13 July 2012, taking place at the Perth Convention centre and being organised by the WA panel under the chairmanship of Rob Rowbottam.
- The panel has had an active engagement with related associations including joint seminars with Cement Concrete & Aggregates Australia; Australian Steel Institute; Concrete Institute of Australia and IStructE.

Transport Panel

Bob Peters FIEAust CPEng

2011 was a busy year for the Transport Panel.

The first event was the ‘Graduate and Senior Engineers Workshop’ in February where graduate engineers from the Transport Portfolio heard and discussed careers with senior engineers – Kim Stone from the PTA, Alan Claydon from the City of Mandurah, and Des Snook and Leo Coci from Main Roads. A further 15 events occurred during the year, covering a myriad of transport topics. These were either arranged or co-badged with our partners including RTSA, AITPM, REAAA, IPWEA, CILT and the Construction Panel.

Some of the highlights included Chris Leatt-Hayter talking about Fremantle Ports and Geoffrey Thomas on issues confronting Perth

Airport. Ronnie Holtshausen’s talk on Port Hedland Port was well received as was Bob Peters’ talk on Cycling in Australian Cities. This is not to detract from the others, which were all exceptional and much appreciated by large audiences.

In the spirit of renewal, Chairman Bob Peters is to stand down at the end of 2011 after five years in the role. Well known and regarded Chris Fitzhardinge has indicated that he will be nominating for the position, and stalwart Flori Mihai has indicated that she is prepared to continue as Deputy. All being well, Secretary-Treasurer Phillip Yap will also continue.

Women in Engineering

Denise Hare GradIEAust

The Women in Engineering Committee has organised many exciting events over the past year, beginning with an evening golf lesson, which provided an opportunity to learn and improve golf skills in a relaxed environment, a resume skills session at Curtin University, which provided students the opportunity to meet with industry representatives and improve their CVs, a presentation from Yvonne Henderson, the WA Commissioner for Equal Opportunity, who discussed basic work rights and discrimination, and a workshop on “How Female Engineers Can Improve Their Career Prospects in a Male-Dominated Organisation”, presented by Mark Toner and Gunilla Burrows, which focused on the challenges and skills associated with working in a male-dominated industry.

At the IEEE conference in July, Gemma Hamilton produced a fashion parade exhibiting fit for work PPE for women. The fashion parade was well-received and is in high demand, which highlights the growing interest and necessity of providing women with appropriate PPE. The committee hopes to see the clothes going into production in the near future.

With the Year of Humanitarian Engineering in full swing, the committee ran a presentation featuring three female engineers who had worked in developing countries, Dr Carla Boehl, Amanda Best and Jamie Mullins. The presentations focused on the type of work they did and the challenges they faced working in a developing country. The presentations were very inspiring and highlighted the rewarding nature of humanitarian work.

Young Engineers

Andrew Bhatia MIEAust Vice Chair

2011 was another exciting year for the Young Engineers Western Australia division. This year’s presenters included Jorg Imberger from UWA, Mark Titley from Chevron Australia and a session jointly presented by Tony Lucey, Mark Bush and Gareth Forbes.

On the social side, the Young Professionals Ball held at the Parmelia Hilton in May saw an overwhelming attendance of guests from a variety of industries, get together to celebrate the Year of Humanitarian Engineering by raising funds for Oxfam Australia and Engineers Without Borders Australia. Other social events for the year included the annual quiz night at Osborne Park Bowls club and the annual ‘kick-off’ sundowner.

The last quarter of 2011 was just as busy with the biennial Young Engineers Summit held at the Perth Convention and Exhibition Centre on the 21st of November.

The committee has been especially active this year with record participation and effort put in from all its members. A special note of thanks goes to the outgoing Chair Luke Nofal (AECOM) as well as the committee's long serving secretary Gemma Hirst (Western Power) and wish them both well for their respective futures.

Professional Development Program

By **Alexandra Sparvell**

Western Australia continues to lead the country with implementation and activity on the Professional Development Program (PDP).

Over 1300 early career engineers are working towards their Chartered Status on a PDP and account for 30% of the total Career Episodes submitted nationally during 2010/11.

During the year, PDP organisations have produced 80% of newly Chartered engineers in WA. This is largely due to the support from senior engineers, active graduate groups and passionate human resources teams successfully promoting Chartered Status within their organisations.

In May, to support graduates taking a role in their development, we brought together the lead graduates from 16 of our larger PDP organisations to hear Woodside and WorleyParsons lead graduates present their strategies for supporting their own development and driving their internal Chartered programs.

Other activities in 2011 include:

- Presenting of Chartered Certificates at company events for young engineers who have attained Chartered through their PDP Program.
- Engineering Education Australia has delivered complimentary Influencing Skills training for PDP Coordinators
- Increased senior engineer information sessions to assist them to support their young engineers and to inform them of their own pathways towards Chartered Status.

Future developments include:

- In mid 2012, Engineering Australia will be introducing revised competencies and improved online processes which will assist companies to implement their programs.
- Relaunch of our Chartered Credential with the introduction of these improvements.

We look forward to continuing to develop new and existing partnerships with organisations to support the attainment of Engineers Australia credentials into the future.

2011 Division Committee

The Division Committee, led by the Division President, governs and guides the Division. The Division Committee: determines the strategies of the Division in pursuing Engineers Australia's objectives; provides leadership and direction to the division groups, division office bearers and division volunteers, and guidance to the division staff; provides advice to Council on behalf of the members of the Division; and provides a public voice for Engineers Australia within the Division.

Division President

Professor Mark Bush FIEAust CPEng

Past President

Professor Tony Lucey FIEAust

Deputy President

Barry Tonkin FIEAust CPEng

Vice President

Helen Pedersen FIEAust

Advisory Board (DABWA) Chairperson

Helen Pedersen FIEAust

Women in Engineering Representative

Denise Hare GradIEAust

Young Engineers Representative

Luke Nofal GradIEAust / Gareth Forbes MIEAust

Engineering Techs/Assocs Representative

Will Neethling TMIEAust CEngT

Committee Member

David Mofflin FIEAust CPEng

Committee Member

Richard Atkinson FIEAust CPEng

Committee Member

Lorie Jones FIEAust CPEng

Committee Member

Russell Byfield FIEAust CPEng

Committee Member via Correspondence

Matthew Taylor MIEAust CPEng



YEAR IN *review* 2011

ENGINEERS AUSTRALIA WA DIVISION

With thanks to our Partners & Sponsors

Engineers Australia WA Division would like to acknowledge the vital contribution of its Partners and Sponsors in enabling us to provide a range of services to our members and to promote the engineering profession to the wider community.

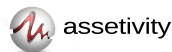
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