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PRESIDENT'S REPORT



It has been just over 12 months since we released the Engineers Australia Tasmanian Infrastructure Report card 2010. It is therefore appropriate that we reflect on what progress has been made in addressing the infrastructure shortfalls identified in the report.

At the recent Taswater11 Conference I was invited to present an engineering perspective on the progress of reforms in the local water sector and what further needs to be done. A summary of my assessment requires us to first look at the rating given to our critical water infrastructure given in the 2010 report card.

WATER	2005	2010
Wastewater	D+	C
Potable water	D+	B-
Stormwater	C-	C-
Irrigation	-	B-

When we assess progress over the past 12 months it is clear that whilst the reform

process has begun, that the momentum must be maintained. There is much more to be done and many challenges that still need to be addressed. It is worth noting that the rating of our infrastructure was on the basis that the regulatory and structural reforms required would be undertaken and that sufficient funding would be provided to allow them to be implemented.

Infrastructure renewal and expansion

We must recognise that a significant program of infrastructure renewal and expansion is currently being undertaken. However, when the Water and Sewerage Corporations (WSC) were established, the Tasmanian Government stated that the funding required to address, both the water and sewerage infrastructure requirements, over the next decade was \$1 billion. The final amount invested was to be driven principally by the profitability of the WSCs, the Tasmanian Government investment, and contributions made by the Australian Government. Under the current charging arrangements securing the required funding has proven difficult. I note however that even if the required funds were currently available, we do not yet have a state wide 10-year plan for infrastructure investment, as an aggregate of plans, let alone as a unified document. **A state wide infrastructure plan is required.** Let's look at the individual sectors.

Potable Water

The rating of B- recognises that the current infrastructure is largely adequate and the 2009 reforms of the water sector would significantly improve water services, **provided that the committed funding materialised.**

Challenges that still remain to improving potable water infrastructure include:

- Determining appropriate standards of service in the outlying urban areas.

- Developing regional and state wide master plans for urban and regional water services
- Eliminating unsafe water supplies to communities
- Developing comprehensive state wide asset knowledge
- Understanding and managing climate change impacts on reliability of potable water supply systems.
- Securing the required level of investment

Wastewater

The C rating recognises that improvements have been made in recent years to infrastructure in problem areas and that there have been significant increases in the volumes of recycled water used. It is expected that the 2009 reforms of the water and sewerage sector will continue to improve sewerage services, **provided the committed funding materialises.**

Challenges that still remain to improving wastewater infrastructure include:

- **Managing the decentralised WWTPs to achieve their compliance standard.**
- **Utilising wastewater for productive purposes.**
- **Addressing climate change risk for sewerage infrastructure.** The risk of climate change needs to be assessed for Tasmania's entire water infrastructure.
- **Reducing the frequency and impact of sewerage system blockages and overflows due to stormwater infiltration.** Addressing these problems will be difficult due to the high mitigation cost.
- **Increasing the level of asset knowledge, focusing on improving outcomes and funding.** Whilst the level of engineering and technical expertise in the state to deal with potable water issues is quite good, the number of 'wastewater' engineers within both the public and private sector to manage wastewater issues remains limited.

Stormwater

The C- rating recognises that significant localised stormwater initiatives have been implemented and the application of water sensitive urban design (WSUD) is becoming widespread. However, the State-wide stormwater strategy has not yet been effectively implemented across all jurisdictions.

Challenges that still remain to improving stormwater infrastructure include:

- **Building comprehensive asset knowledge.** Comprehensive information on stormwater assets does not exist across Tasmania. Until this exists, it will be difficult for local governments and the State Government to identify and justify significant investments in upgrading priority areas.
- **Implementation of the State Stormwater Strategy.** Implementing the procedures, enforcement regime, etc. as defined by the stormwater strategy may take a number of years.
- **Obtaining sufficient funding to maintain and improve asset quality.** Local governments need to look at funding using outside grants to effectively manage stormwater in the future.
- **Maintaining appropriate stormwater expertise within local governments given the recent transfer of water expertise from local governments to the regional water and sewerage corporations.**
- **Accelerating the implementation of Water Sensitive Urban Design as a way of increasing the quality and use of stormwater.** Some inroads have been made in WSUD in Tasmania however, in a State-wide context only a relatively small number of stormwater and WSUD-based projects exist.

Irrigation

Tasmania is one of the very few Australian States where an expansion of irrigation is possible without reducing environmental flows materially, or where climate change will significantly reduce rainfall and runoff volumes.

The B- rating for our irrigation infrastructure recognises that there has been a significant expansion in irrigation infrastructure and improved irrigation practice. However, there are concerns about the sustainability of the expanded irrigation systems.

Challenges that still remain to improving irrigation infrastructure include:

- Preventing water over-extraction and irrigation causing land degradation
- Ensuring that drought and climate change impacts on water resources can be catered for within the water allocation and licensing arrangements
- Delivery of the large capital works programs effectively and efficiently.
- Finding public investment partners for the smaller schemes.

Summary

There are some consistent themes in this assessment. There is a need to understand the impact of climate change on all of our water infrastructure systems.

Some of the other consistent requirements threading through our assessment of what still needs to be done are:

- Developing comprehensive **state wide asset** knowledge
- Developing and implementing **state wide** planning and project delivery
- Securing the level of investment required

My view is that these requirements can best be met when we recognise the inherent inefficiencies of regarding our state as three separate regions. Not only does this unnecessarily impose additional cost but it unduly limits our ability to provide the most efficient and effective infrastructure solutions across the state.

A final comment - The report makes the following observation:

“The necessity of maintaining three separate WSCs plus Onstream will need further examination to ensure that it offers the most effective way of delivering water and wastewater services.”

If we wish to improve the report card on our critical water infrastructure, perhaps now is the time to make that examination.

Greg Walters FIEAust CPEng Eng Exec

Please send any comments and feedback to:

TasPresident@engineersaustralia.org.au

UPGRADING MEMBERS

CONGRATULATIONS/ WELCOME

Members joining, rejoining
or upgrading

AFFILIATE

Thomas Thompson, AffilIEAust

MEMBERS

Mao Cheng, MIEAust
Terence Ling, MIEAust
Tim Sutton, MIEAust
Vincent Tang, MIEAust
Alok Varma, MIEAust
Karl Walker, MIEAust
Alan White MICE MIEAust CPEng

GRADUATES

Vincent Butler, GradIEAust
Christina Dale, GradIEAust
Dylan Imms, GradIEAust
Mark Petrusma, GradIEAust

STUDENTS

(StudIEAust)

Kate Cowen
Natanaraj Ramachandran



MAO CHENG, MIEAust

Cheng completed a Bachelor Degree in Civil Engineering (with Honours) from the University of Tasmania in 2007.

During his studies he completed his vacation work as an assistant site engineer responsible for the supervision of sub-structure construction work for a multi storey car park and a 33kV substation in Malaysia. His main responsibilities were the supervision of the construction of building foundation (concrete pile and micropile), and ensuring work complying with requirement and drawings.

Cheng joined Biolytix Water Australia in 2008 upon completion of his studies as a project engineer where he was part of the engineering team responsible for the design, research and development of an improvised Biolytix de-centralised wastewater treatment system. His general responsibility included the design of an integrated wastewater disinfection unit, sub-surface drip irrigation design, pump selection, and process instrumentation for the new system. He was also responsible for the design and feasibility studies of large residential sub-division pressure sewer network project in Australia, Fiji and New Zealand. His role also included risk management, creating a maintenance plan and providing engineering support in tender preparation.

In March 2010, Cheng joined the Hobart City Council as their Design Engineer, responsible for preparation of detail design and drawing for a variety of civil and local government projects such as pavement reconstruction, retaining wall design, roundabout design, flood levee wall design, traffic calming and pavement stabilisation work. Among the projects involved were the reconstruction of Mt Stuart Roundabout, Brushy Creek Flood Levee Wall, and Swanston Street Pavement Stabilisation. He also provides technical support on an array of issues such as geotechnical, structural assessment (bridges) and drainage issues to internal clients.

Cheng moved to a different position within the council as a Stormwater Engineer in October 2010. His current role involves preparation of Master Drainage Scheme for the city of Hobart which encompasses evaluation of existing drainage system, establishment of hydraulic model, identification of locations in which drainage systems are deficient, preparation of ultimate

drainage system plan, economic and social assessment of potential flood damage, upgrade costing, and incorporation of result in council's 10 years capital works program.



**TERENCE LING,
MIEAust**

Terence graduated from University of Tasmania in 2005 with Bachelor of Engineering major in electronics and communications. He began his career with TOPS integrated Technology Solutions. He worked on design, project management, installation and documentation of audio visual, ICT, telecommunication and lighting automation system for commercial buildings, education, museum and entertainment industry. Projects included University of Tasmania audio visual upgrade, Tasmania Museum and Art Gallery modern visual installation, Wrestpoint Casino lighting control, Federal Law Court audio and lighting system and Tarraleah AV and PA system installation.

Between 2009 and mid 2010, Terence worked as renewable energy engineer at NuEnergy. He worked on installation of photovonic grid system for domestic, commercial building, education and hybrid power station. He specialised in system diagnostic and integration. Such projects include Cape Barren Hybrid Power Station installation and National School solar PV program in various schools in Tasmania.

In mid of 2010, Terence was invited to join the teaching staff in school of engineering at the University of Tasmania. He tutored and supervised 2nd and 3rd year engineering students. At the same time, he joined Andrew Sutherland Consulting Engineers and

commenced the role of building services engineer. Current project involvement included HVAC upgrade of Rosny Collection and Research Centre, Royal Hobart Hospital emergency generator installation and Parliament House Disaggregation project.



TIM SUTTON, MIEAust

Tim began his career in the electrical industry with Russell-Smith Electrical as an Apprentice Electrician in 1999. In addition to his trade certificate studies, Tim worked part-time toward a Diploma of Electrical Engineering through TAFE Tasmania. After completing his four-year trade qualification and working a further year as a technician, Tim decided to pursue engineering full-time and enrolled at the University of Tasmania in 2004.

In his second year Tim was the recipient of an Aurora Energy scholarship, which involved summer vocational work with the company's Network Services Division for the remainder of his studies. Tim graduated from the University of Tasmania with a Bachelor of Engineering (Electrical Power) with First Class Honours in 2007.

Tim commenced employment with Aurora's Network Division on their Graduate Program in 2008. During this time Tim worked for different work teams on projects such as the pole-mounted capacitor bank trial on the Tasman Peninsula, improving capacity constraints at a Hobart substation involving critical infrastructure and an automated power restoration scheme in the state's North East.

In late 2009 Tim gained a substantive position as Network Engineer in the System Performance team, where he

worked on a number of supply reliability improvement projects across the state. He became involved in planning and analysis work for Aurora's upcoming pricing submission to the Australian Energy Regulator, and also performed technical assessments for customer embedded generation applications.

In early 2011 Tim moved into his current position with the Network Development group, where he undertakes capacity planning work at low voltage, high voltage and substation levels across Tasmania.

Tim has been a member of Engineers Australia since university and a Committee member of Young Engineers Tasmania since 2010. Tim is presently working toward attaining Chartered Status and hopes to have sign-off by the end of the year.



VINCENT TANG, MIEAust

Vincent graduated from Nanyang Technological University, Singapore in 1995 with an honours degree in Bachelor of Engineering (Civil/Structural). While working as a design engineer in KKT Consultants. He further obtained a post graduate degree in Masters of Science (Civil) from the National University of Singapore in 1999.

In KKT consultants, he was involved in the design and construction of residential, commercial and industrial structures in Singapore. One of the key projects he designed was the "Aquarius by the Park" condominium project which includes 10 blocks of multi-storey apartments with underground basement car park.

Vincent joined the Building Control Unit of Land Transport Authority in 1997 and

was responsible for auditing the design and construction of rapid transit systems in Singapore. He reviewed designs of permanent underground structures and bored tunnels for the 20km long North East Line and the 35km long Circle Line projects. As a delegate of the Commissioner of Building Control, he also ensures that the temporary works and ground instrumentation for the deep braced excavations for underground stations and cut & cover tunnels are safe and designed in accordance with the requirements of the Building Control Act and Regulations.

In 2005 he immigrated to Australia with his family and started work as a Senior Engineer at GHD Consultants in Hobart. He has been involved in project management, design and supervision of local and overseas projects. Some of the interesting projects that he was involved included the Ras Az Zawr Aluminium Smelter in Saudi Arabia, Newcastle Port Wharf Refurbishment, Brighton Bypass Northern Section and the Tasman Bridge Bearings Investigation.



**KARL WALKER,
MIEAust**

Karl graduated with a Bachelor of Engineering with Honours majoring in civil engineering in 2005 from the University of Tasmania. After graduating Karl joined GHD, an international professional services company, as a civil/structural engineer and job manager.

Karl gained experience in a number of civil engineering areas early in his career; however, quickly realised that structural engineering was his preferred specialisation. Although at times heavily orientated around maths and understanding the indecipherable Australian standards, Karl enjoys the challenges of structural engineering.

His experience includes industrial structures, bridge, commercial and residential design using steel, concrete and timber construction materials.

Whilst at GHD, Karl has had the opportunity to work on a number of interesting projects, both locally and internationally. Notable projects include rating the Bridgewater Bridge, which involved development of a three-dimensional SpaceGass model of the entire bridge superstructure from which structural design actions could be obtained. Following this project, Karl was a bridge engineer and a member of the design team for the Brighton Bypass Northern Section where he undertook the structural design of a single span integral bridge and twin span T-Roff bridge as well as preparing the durability plan report for all the bridges for a 100 year design life. More recently, Karl has been involved in the structural design of an aluminium rodding plant in Saudi Arabia using high strength British steel sections and the formidable Eurocode Standards (many long days and weekends trying to understand this standard!)

Although working as a structural engineer in a consulting company can be somewhat time consuming, too which his fiancé will testify, outside of work Karl enjoys bushwalking, going to the gym and spending time with friends.

The highlight of his personal life (apart from getting engaged of course!) was trekking through the Himalayas' and climbing to Everest Base Camp in October last year.



**AUSTRALIAN
ENGINEERING
WEEK**



**WE WOULD LIKE TO THANK
OUR SPONSORS:**



TRANSEND



ALL MEMBERS ARE CORDIALLY INVITED TO ATTEND THE

**GALA DINNER FOR THE
ANNOUNCEMENT & PRESENTATION OF THE
2011 ENGINEERING EXCELLENCE AWARDS**

**WREST POINT CONVENTION CENTRE
FRIDAY, 29 JULY 2011**

7.00 for 7.30pm

Dress: Black Tie

**\$100.00 per person (all inclusive)
or \$950.00 per corporate table (10 people)**

MANAGER, EDUCATION PROGRAMS

The Engineering Initiative program, which targets Year 10 students from public schools across Tasmania, is a key component of the Tasmania Division's annual education activities.



The 2011 Initiative is now well underway, kicked off as Susie reports with a visit by all students to Hobart to visit the University and the Antarctic Division, the Brighton Bypass and Transend's control centre.

Visiting Transend's Control Room

As the Thank You letter on the right from one of the students shows, even these first components of the Initiative have a big impact on the students, exposing them to engineering as a career and providing inspiration to continue with Maths and Science studies in College. A big thank you to Jeremy Bonnice (Australian Antarctic Division), Gary Baird (John Holland) and Colin Sharp (Transend Networks Pty Ltd) for their support in making these site visits possible.



Having fun at the Antarctic Division

I have been busy for the past few months setting up the next stage of the Initiative, which is linking each student with an engineering mentor for 5 – 10 days of work experience over the coming months. This mentoring activity is key to the success of the Initiative and is only possible through the generous contributions of time and energy by the mentors. Their support is greatly appreciated and I will identify the mentors in the coming months of ET to further acknowledge their efforts.

I've also been speaking with current and past mentors to gain valuable feedback on the past 3 years of the program, and based on this have begun planning important revisions for next year that will enhance the value and impact of the program for students and mentors alike.

I will be travelling to several events in Devonport and Launceston in the coming few months and will use these trips to meet with Mentors and anyone else interested in learning more about the Initiative or to discuss other aspects of my role.

Inspecting the Brighton Bypass



dpointing@engineersaustralia.org.au
Tel: 6234 2228



Australian Government

Department of Sustainability, Environment, Water, Population and Communities
Australian Antarctic Division



*David Pointing,
MIEAust*

Below is a "Thank You" letter we have received from one of the students who participated in the first stage of the Program

To the sponsors and participating supervisors/organisers of the "Design Your Future – an Experience in Engineering".

I would like to thank you for making the experience for me, and the other students involved in this year's program, possible. Having already participated in the first stage of the program, I have gained a lot from the experience already. I have learnt and experienced different types of engineering in the camp; some I didn't know existed or I knew very little about. This experience has helped me with deciding my future pathways, gives me an idea of what is involved, and assists with structuring my future educational goals and requirements. Actually touring some engineering sites also gave me an insight of a day-to-day life of some of the different engineers. I found some branches of engineering fascinating and am considering looking into them further. This camp has opened up to me future career options I had not considered before and has helped me find some interesting career fields. Another valuable thing I learnt in the camp was how the maths I am currently doing in Maths Methods 3 at Hellyer College is used in the real world. Seeing this maths applied in the work place was a valuable experience. I am looking forward to the rest of the program, and am grateful I have been chosen to be involved.

Again, thank you for making this experience possible for me.

Regards

Jessica Woolnough



VALE
Professor Charles Harcourt Miller, FIEAust CPEng
(26 February 1921 – 8 April 2011)

Charles Miller, Chair of Tasmania Division Committee in 1975, died on 8 April 2011 aged 90.

He was educated at the Friends School in Hobart, matriculating with maximum grades in all 8 subjects and 5 prizes. At the University of Tasmania, he graduated BE in electrical and mechanical engineering in 1942, receiving prizes in every year. He was Vice-President of the Student's Representative Council and editor of the student magazine *Togatus*.

In January 1942 he joined the Australian Army as an Engineering Lieutenant in charge, after training at Ingleburn outside Sydney, of radar and telecommunications sections in various field workshops.

Charles was awarded Tasmanian Rhodes Scholarship in December 1945 and spent two terms in 1946 studying third year Science at UTas. Travelling by ship to England, he enrolled for a post-graduate research degree at St John's College Oxford. His DPhil thesis was entitled "Measurements on Molecular Absorption Spectra", later published as a Research Paper in the Proceedings of the Royal Society of England. He had been involved in developing automatic recording spectrometers and spectrometers with higher resolution.

In 1950 Charles began work as a Radio Engineer in the Research Laboratory of Amalgamated Wireless Australia in Sydney. He went to England in 1953 to set up a small electronics laboratory for S E Opperman. Returning to Sydney in 1956 he married Margaret Poole in March and worked again for AWA, engaged in the design of television receivers.

He moved to the CSIRO National Standards Laboratory in 1957 where he was occupied with electrical measurements of the highest accuracy.

His academic career began in 1961 at the University of NSW as Senior Lecturer and later Associate Professor, with a research interest in modulation of audio and radio frequencies, and the amplification of audio signals using switching signals.

He was appointed Professor of Electrical Engineering at

the University of Tasmania in 1966. There he was not only Head of Department in his discipline but took on wider roles in University administration as Dean of the Faculty of Engineering, Chairman of the Professorial board, Pro-Vice Chancellor for 2 years, Acting Vice-Chancellor and even Director of Environmental Studies for a short time.

One of his referees wrote "*I believe Dr Miller possesses in a high degree the rare combination of good scholarship and practical engineering application of it; this combination is something I have seen, to the degree that he has it, in very few individuals in 25 years of contact with engineers and physicists working in the field of electronics.*"

Outside the University Charles was an Associate Commissioner of the Hydro-Electric Commission (1984-92), Electorate Vice-President for Denison for the State Liberal Party (1979-83), and Honorary Secretary of the Association of Rhodes Scholars in Australia (1976-80). He was an enthusiastic Ham radio operator transmitting in Morse Code, and was reputed to have the best made amateur radio transceiver in Tasmania.

After his wife died in 2001 Charles continued to live in his Tarooma home, ensuring it was well maintained and arranging several improvements. He enjoyed the high definition of plasma TV. Suffering from limited mobility, he had a stair-climber installed so that he could return home after a stint in hospital.

Bruce Cole, FIEAust CPEng(Ret)

**16th Engineering Heritage Australia
Conference - Hobart - November 2011**

Registrations are now open.

Full information on the website

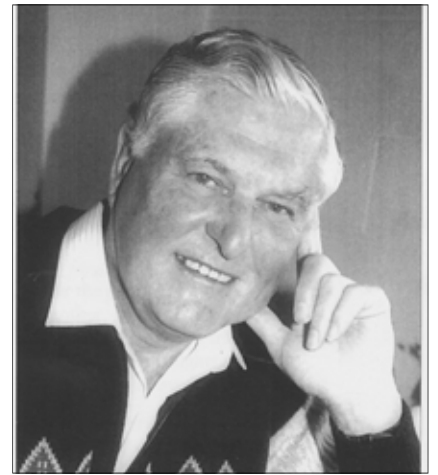
Register on line at

www.cdesign.com.au/ehac2011

Early bird registrations close 31 August 2011

VALE

**Reginald Seymour Gee, MIEAust CPEng OAM
(27 June 1928 - 21 May 2011)**



Reg was born on the 27 June 1928 and attended North Sydney Technical Boys High School where he gained an appreciation and love of mathematics. In 1949 he obtained a Bachelor of Engineering Degree and a Diploma in Town and Country Planning from the University of Sydney.

His long association with Tasmania began when as a student he was sent for work experience with the Hydro Electric Commission at Tarraleah where he was engaged on the building of Butlers Gorge Dam and the expansion of Tarraleah power station.

He became a Student member of Engineers Australia in August 1950. In the same year he commenced work in the Bridge Section of the Department of Main Roads in NSW.

In 1955 Reg moved to New Zealand where he married his wife Vina and established himself in Hamilton on the North Island where he worked as a structural engineer. He became MIEAust in June 1955. He returned to Sydney with his growing family in 1959 to work with the Standards Association of Australia.

In 1965 with the lure of Tasmania beckoning he reacquainted himself with the Hydro Electric Commission and moved to Wayatinah as a construction planning engineer where he learnt about 'critical path planning' a method that he continued to use later in his career. He transferred to Hobart in 1966 where he joined the Hydro's Industrial Engineering section.

While living in Wayatinah, Reg bought a block of land in Flinders Esplanade, Taroona and designed his own house (completed in 1974). This proved to be the beginning of his long and active association with Taroona and the Kingborough community.

In 1968 Reg decided to establish his own engineering consulting practice. For a 'new boy' in town this was a bold move on his part and he made an allowance of twelve months to build the practice. From a humble beginning he went on to become one of a small group of successful 'sole trading' consulting engineering firms in Hobart.

There are many buildings and structures in Tasmania that are now part of his legacy.

Reg held the position of Chairman (1977-79) and then Secretary (1979-82) of the Tasmania Chapter of the Association of Consulting Engineers. He was an active member of the Tasmania Division of the Institution, as a Committee member from 1979 to 1982, Vice Chairman in 1983-84 and Chairman in 1985.

In addition to his busy engineering, family and sporting life, Reg participated and contributed to a wide range of community and civic duties over many years. A short selection follows:

Member/President, Tasmania Branch AFS Student Exchange 1975-80 and National Vice-President 1978-80.

Member of Kingborough Council from 1985 to 1999 including the position of Warden/Mayor from 1992-99. Reg was awarded a Municipal Merit Award, by the Kingborough Council in 2003.

Chairman, Hobart Regional Water Authority 1997-2002. President, Southern Tasmanian Bowls Association, 2000-03 and President Tasmanian State Bowls Association 2002-03.

Member of University of the Third Age, Hobart Division 1995-2011 including holding the position of President 2003-06.

In 2006 Reg received further community recognition by being awarded an Order of Australia Medal for his "*service to local government, to engineering and to the community of Taroona*".

Reg leaves his wife Vina and sons, Philip, Gavin and Martin and six grandchildren all living in Tasmania.

Phil Mathers FIEAust CPEng(Ret)

YOUNG ENGINEERS



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

new minds
new ideas.



YEAT and YPNT hosted a joint **Finance Forum** on 7 June where over 80 young professionals from various professions attended the event at the Salamanca Inn. Jarrod Jeremiah from Genesys Wealth Advisers spoke for an hour on budgeting and debt management, growing your wealth and protecting your wealth.

Jarrod spoke about how Australians are older now than we've ever been and that we're living longer and earning more but we're saving less and taking on more debt. He spoke about using a budget to help you keep track of your expenditure and control your expense and the difference between good debt – debt that the ATO allows you to claim a tax deduction on – and bad debt – home loans, personal loans and credit cards and the need to prioritise repayments of bad debts.

Jarrod then covered some basic investment principals of:

- Compounding – reinvesting investment returns, allowing investments to grow, increasing regular investments over time;
- Dollar cost averaging – investing a fix sum at regular intervals so that you take the guesswork out of the market and benefit from price fluctuations;
- Gearing – borrowing to invest;
- Diversification – reducing your risk by investing in a variety of areas
- Ownership – your name, your spouse's name if you spouse has a lower taxable income, joint ownership, trusts and superannuation funds.

He said that it all comes down to what your individual risk appetite is and that you need to determine what your risk profile is so that you can achieve your goals comfortably.

Jarrod also highly recommended that people have defensive strategies in place such as income protection and life insurance as all savings plans and wealth creation strategies rely on the a person's ability to earn income and repay debt. His explanation was simple – if you're willing to insure your car, why wouldn't you be willing to insure yourself? Are you worth less than your car?

If you're interested in finding out more, Jarrod's presentation and an audio recording of his presentation can be located on the Tasmania Division website at www.engineersaustralia.org.au/tasresources

Genesys Wealth Advisers also have a monthly newsletter – please contact Genesys Wealth Advisers via their website if you wish to be added to their mailing list www.completewealth.com.au

Jenny O'Donovan, Engineers Australia's Careers Manager, will be in the state this month on the 12 & 13 July conducting presentations and one on one career development sessions with members. Jenny will also be holding a public evening session on 12 July that will cover:

- Career planning;
- Performance reviews;
- Salary information and negotiation tips;
- Networking advice;
- Mentoring – what to expect from a mentor and as a mentor

Please see the **advertisement on page 16** for session details. To book into this session or for a one on one with Jenny, please contact Catherine Reading at the Engineers Australia office on creading@engineersaustralia.org.au or 6234 2228.

This month also sees the first heats of the **Science and Engineering (S&E) Challenge** around the state. For those that don't know, the S&E Challenge is an annual event that aims to promote science, engineering and technology to high school students in a fun and competitive environment. Teams of between 24 to 40 students from years 9 and 10 undertake a eight half and full days challenges to score points for their school.

Challenges involve activities such as cracking codes, sending coded messages via fibre optic cables to a base, controlling the power supply to a bustling city and building hover crafts, war machines and bridges. At the end of the day the school with the most points across all the activities proceeds to the semi finals of the challenge (The Super Challenge), where the cycle repeats again. The winning school from the finals can then elect to participate in the National S&E Challenge final (The Grand Challenge) against the winning schools from the other states

The reason why I mention the S&E Challenge is that the Challenge **relies on the support of volunteers** to assist in supervising the activities. Volunteers can elect how many days they would like to assist for and whether they can assist for a full day or half day.

The S&E Challenge is a fantastic opportunity to contribute back to the community and see students enjoying science and engineering. **If you would like to volunteer please refer to Susie Haley's article on page 6.** Volunteers are required to attend a pre-competition briefing the day before the first heat in each region

The first week of August is also **Australian Engineering Week (AEW)** – a week to promote the contribution that the engineering profession makes to society and the important role that engineers play on a local and global scale.



Meet your Young Engineers Tasmania Committee

Introducing Andrew Boyd, GradOIEAust

Andrew Boyd joined our YEAT committee this year to assist our group with promoting engineering at both the Burnie Polytechnic and the recently commenced engineering course through UTas Cradle Coast Campus. Andrew brings with him over 5 years experience with the EA NW Tasmania Committee where he has served as both a Treasurer and Secretary, and is now on the General Committee.

Andrew's background is in the Electrical and Industrial Automation fields where he is a dual trade qualified electrician and instrumentation technician. In the area of engineering Andrew has completed an Associate Diploma of Electrical Engineering and also an

Advanced Diploma in Control System Engineering along with other engineering and trade qualifications. He is currently employed in a technical support role with the local Caterpillar dealer where he responsible for supporting Caterpillar autonomous and remote machines along with telemetry and product health systems. Previous to this he spent 6 years with Caterpillar and a joint venture team developing from concept to commercialisation of Caterpillar's autonomous laser-guided loader system where he travelled extensively around Australia and overseas to numerous underground mine sites. Andrew has also worked on fixed plant projects such as the Line 1 and 2 upgrades at Savage River where the existing control system was replaced by PLC's and SCADA system along with similar upgrade projects at Port Latta including the Furnace No. 1 rebuild.

With less travel, he now enjoys spending more time at home with his wife Amanda, and two children, Bethany 5 years, and Caleb 6 months - although ALOT of this free time is now taken up with calculus and statics after deciding to further his engineering qualifications through

UTas this year. His other interests include following the V8 Supercars (Fords of course) and enjoying the AFL now that the Bombers are playing some good footy again! To relax Andrew enjoys taking Bethany to the local school to ride her bike or on Sunday mornings to the pool where she is learning to swim.

Andrew is looking forward to being actively involved this year promoting engineering and activities through both Young Engineers and the NW Group Committees, along with the Science and Engineering Challenge and Robotics in Schools program.



Andrew and his daughter Bethany, "Childs Play" - Remotely operating an underground loader from the surface.

A number of events will be run across the state to promote engineering as a profession during this week, one of which is a **Casual Networking evening** at the University of Tasmania on 2 August. This will provide a fantastic opportunity for our budding future engineers to meet members of the profession in a casual environment. **Please see the advertisement to the right** for more details. I hope to see many of you at this event.

YEAT will also be organising a casual networking evening in Launceston, speakers for the Australian Maritime College in conjunction with Women in Engineering and running presentations and social events in the north west with Engineers Australia's North West group.

A list of Australian Engineering Week activities available in Tasmania can be located at:

www.engineersaustralia.org.au/aew/divisions/tasmania

Save the Date: Casual Networking Event

When: Tuesday, 2 August 2011

Time: 5.30 pm to 7.30 pm

Where: The Metz, 217 Sandy Bay Road, Sandy Bay

What: Light refreshments, good company, a chance to casually network with your peers.

Lucky door prize – remember to bring your business cards!

RSVP: by Thursday, 27 July for catering purposes

Email: creading@engineersaustralia.org.au

Phone: 6234 2228

This is an all ages/all experiences event: UTAS students are encouraged to attend and meet some professionals. Senior professionals are encouraged to attend and bring their junior staff. Junior professionals are encouraged to attend and bring their senior managers.



ENGINEERS
AUSTRALIA
Young Engineers



**Mike Sylvester, MIEAust CPEng
Young Engineers Tasmania**

YOUNG ENGINEERS

REPORT FROM THE NATIONAL YOUNG ENGINEERS COMMITTEE MAY MEETING

The National Committee of Young Engineers Australia held its May quarterly meeting in Perth. It was an occasion of farewells as the term of three Committee representatives came to an end. Carla Cher (past Chair), Michael Engelaar (South Australia) and Andrew Baird (Newcastle) have served the committee and professional well and we thank them for their contributions.

As usual, the Committee had a two-day action packed agenda and we managed to cover all items. One of the most important topics that we discussed was the sustainability of both the National and respective Division committees. It is of vital importance that we have healthy numbers on each of the Division Committees and those groups have options to support the National Committee. New people bring new ideas and this helps add diversity, which at both the Tasmania division and national committee, is much needed. The National Committee has commissioned some marketing to raise the profile of YEA with the goals of engaging new members and attracting existing members to support their local committees. Please seriously consider your ability to contribute to the local Tasmanian Division Committee.

Some of you may have seen the YEA Blog that was recently updated. This is a good communication mechanism to all YEA members and I encourage everyone to take the time to read and respond to blog articles. Visit the EA website, find the YEA blog and sign up to receive blogs via e-mail.

The next big-ticket item on the EA agenda is CSR – Corporate Social Responsibility. CSR, as the name suggests, is about corporate entities acting responsibly with respect to social matters and covers most aspects from their contribution toward society to the sustainable management of

their workforce. YEA has been asked to contribute and we welcome this opportunity. This topic is in its infancy and we are expecting announcements soon on the formal manner in which our members can provide input. It is the young engineers of today that will be the corporate leaders of tomorrow so our contribution to this subject is very appropriate and much deserved.

It has come to the attention of the National Committee that under the EA by-laws, students do not have formal voting rights and cannot be official office bearers of EA. We found this unusual as we gladly welcome the involvement of student members and have previously had student members on a number of working committees, not least the National Committee from time to time. The National Committee has rallied EA and we are under the impression that we can seek the views of our membership base and present the consensus to EA with recommendation. This will be a work in progress over the coming weeks so if you have strong views on the subject of student voting rights please make contact with the local Division Committee and have your views heard.

Much of the National Committees attention has been diverted to the 2012 Engineering Leadership Conference. We remain committed that this YEA/CELM organised event will be as successful as the last as that it becomes a highlight in our forward calendar as the premier event of engineering leadership development. It is suggested that you make the effort to attend some or all of this event and hear of the leadership contribution from Australia's leading professionals.

EA has just released its draft Reconciliation Action Plan. The Rap is EA's response to closing the gap between indigenous and non-indigenous Australians. At our February meeting

we were discussing this topic with Merv Lindsay. Through this discussion it became apparent the young engineer does not have the emotional attachment to the subject that our more senior peers have. This could be due to the fact that we have not lived through the divide or it could be that the society of today is generally more accepting of ethnic differences. Either way, this is a very important topic and its successful implementation is paramount for the ongoing transition of our modern society. All EA members have been asked to read and comment on the draft RAP and I encourage the young engineer membership base to do the same to ensure that our views are duly represented.

Each year the National Committee allocates funding to support the local Division Committees. This year \$10,000 was budgeted and I am glad to say that the Tasmanian Division was successful in securing \$1,500 towards our nominated event, being the launch of the Year of the Regional Engineer, to be held during 2012 in the north of the State. The Tasmanian Division of young engineers will be working over the next eight months to make this event as successful as the southern events have been in recent times.

The meeting of the National Committee coinciding with the annual ball of the West Australian Division. This is their premier annual event and it was a great opportunity for us to participate. I made the poor judgment of going from the ball and heading straight to the airport for the midnight flight to Melbourne under the apprehension that I would get some sleep...I wont be doing that again!

If anyone would like further information about the National Committee please do not hesitate to contact me on michael.sylvester@hydro.com.au or 0409 014 397.

National Reconciliation Week - Reconciliation Action Plans

On 30 May 2011 the Centre for Engineering Leadership and Management (CELM) hosted the forum "Reconciliation Action Plans – What are they, Why are they & What is the Profession doing about it?" at the Old Woolstore in Hobart. This event was timed to take part during National Reconciliation Week (NRW). This year's NRW theme was "Let's talk recognition". Four panel members discussed various aspects of Reconciliation and Reconciliation Action Plans.

Leah Armstrong, CEO of Reconciliation Australia, spoke about Reconciliation Action Plans (RAPs). Reconciliation Australia is an independent, not-for-profit organisation that was established in 2000 by the former Council for Aboriginal Reconciliation. They are the peak national organisation building and promoting reconciliation between Indigenous and non-Indigenous Australians for the wellbeing of the nation. Reconciliation Australia work is informed by findings of the Australian Reconciliation Barometer. The Barometer is a national research study that looks at the relationship between Indigenous and other Australians. Designed to be repeated every two years, the Barometer explores how we see and feel about each other, and how these perceptions affect progress towards reconciliation and closing the gap.

There are four key areas for reconciliation:

1. Expanding awareness and knowledge of facts
2. Take actions that shape values and behaviours and change attitudes
3. Understanding what we think of each other
4. Take actions that support reconciliation

The aim of a RAP is to change good intentions into actions. Over five hundred organisations are implementing or forming RAPs. It is estimated that these RAPs will influence twenty percent of working Australians. The eleven largest companies on the Australian stock exchange have RAPs. One quarter of the members of the Business Council of Australia are involved with RAPs.

Many different types of organisations are involved with RAPs. From schools to sporting clubs to community groups to big business, each RAP is developed and owned by the group that writes it. All RAP organisations report annually to Reconciliation Australia. Generally organisations take twelve months to form a RAP. They require strong commitment by boards and CEOs and align with core business objectives to be successful. They also contain measurable actions along the themes of Respect, Relationships and Opportunities. Included is a section details how progress will be tracked and reported. Some organisations also choose to include the additional theme of Learning/Education.

For more details on RAPs refer to <http://www.reconciliation.org.au/>

Bill Lawson, from Sinclair Knight Merz (SKM), is Tasmanian representative on the PM's Select Committee examining changes to the constitution to recognise indigenous Australians. He spoke about his experiences as an engineer with Reconciliation and the relevance of a RAP within an engineering organisation. Specifically he spoke about SKM's RAP, which was launched in 2009, and some of the actions SKM is undertaking. These actions include Indigenous Cadetships, introducing Cultural Awareness training, and educating clients about RAPs. He also mentioned that generally engineers like guidelines, standards, rules, and things that can be measured. Having a RAP with measurable actions is one such way engineers can help achieve reconciliation.

Rodney Dillon, Member of the Federal Government's Australian Heritage Council and an eminent elder within the Tasmanian Aboriginal community, was the third panel member. He spoke about his experiences with reconciliation and the relevance of RAPs from an indigenous person's perspective. He spoke about the importance of



*Adela Parnell, GradIEAust
Young Engineers Tasmania*

Education. Few Aboriginal children make it through Year 12, with many dropping out in Grade 5. The ones that do complete Year 12 are generally succeed, such as with organisations that have RAPs. It is during these earlier years of education where other organisations (such as the Beacon Foundation), have a role to play. If the playing field is made more even, Aboriginal people will excel.

Housing, health and education are areas that Aboriginal Australians fall behind "white" Australians. In general Aboriginal people rent their homes. When the elders of the family pass away, there is no material legacy to pass on. Therefore is no steady wealth creation or increase prosperity through the generations.

Any form of reconciliation is good. Australia is a nation where there is a very old culture and a very young culture. RAPs formed by organisations are one step on the journey towards harmony between these two cultures.

Greg Walters, Division President and a member of National Council's RAP Committee, spoke about what Engineers Australia is doing to implement our own RAP. Members are invited to comment on the Draft Engineers Australia RAP that is available for viewing on the EA website. The RAP will be Engineers Australia's contribution to Australia's "Closing the Gap" strategy, which aims to reduce indigenous disadvantage with respect to life expectancy, child mortality, access to early childhood education, educational achievement and employment outcomes.

http://www.engineersaustralia.org.au/about-us/role-activities/rap/rap_home.cfm



Nyssa Muir, GradIEAust

WOMEN IN ENGINEERING

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

Events

15th **International** Conference for Women Engineers & Scientists



This is an international forum and Australia is fortunate is host it in 2011.

This conference has attracted some very big sponsors and influential speakers so far.

When: 19 – 22 July 2011

Venue: Adelaide

More info: www.icwes15.org

News

Visit by WIE to the Friends School

On the 16th May WIE Committee members, Sarah Kube and Meredith McQueen joined forces with Susie Haley (the new Outreach Officer for the UTAS School of Engineering) to make a presentation to 140 Grade 9 students about the Engineering profession.



Susie, Sarah and Meredith (L to R) outside the Friends School

Their visit was very well received and will hopefully result in a few more engineering degree enrolments!

If you would like to present at your old school in Tassie, please let us know at wietas@gmail.com and we can organise this for you!

The World's Five Most Dangerous Countries for Women



Last month the British TrustLaw Foundation released an expert poll on the five most dangerous countries to be female. From rape and domestic violence to lack of healthcare and education, millions of women experience daily peril, but nowhere more than in these five countries;

1. Afghanistan,
2. Democratic Republic of Congo,
3. Pakistan,
4. India
5. Somalia

The statistics are shocking and makes one so grateful for living in Australia where women are **people** rather than chattels or slaves.

To read more:

<http://www.trust.org/trustlaw/womens-rights/dangerpoll/>

Reflection

The Panama Canal – the most awesome shortcut in the world

Well, it's been a pretty slow news month and given the temperature drop (you know it's cold when your clothes pegs freeze together) I thought I'd write about my recent trip to the Panama Canal.



died due to yellow fever (OHS WorkSafe award? Anyone?). Instead of a sea level canal, a lock system was constructed raising ships up to 23m.

The Americans ran the canal until the 1960s when the Panamanians wanted a piece of the pie and student riots lead to the signing of a treaty giving Panama full control of the canal on the proviso that the canal zone remain neutral territory. This treaty came into effect in 1999.



So, you can stop reading now if you DON'T want to hear about Caribbean seas, pirate history, underhanded politics and an amazing feat of engineering (and persistence).



Nowadays the canal is efficiently run (it is worth too much money to be inefficient!) by the Panama Canal Authority. There is an excellent museum at the Miraflores locks (near Panama City) that is well worth your time and the admission fee of \$8USD (\$7.60AUD hahaha!).

In 1534 Charles the fifth (Holy Roman Emperor and King of Spain) first proposed the idea of a canal because the British privateers (or 'pirates' Yaaarrr!) were giving the Conquistadors no end of trouble and the Spanish were looking for control and dominance of the Caribbean (spoilsports). It remained just an idea for three and a half centuries, but the seed had been planted.

When I went, I spent all day there. The museum is very well run and has fantastic exhibits. I highly recommend a visit there if you are going to Central America. There are plenty of viewing galleries where you can watch the passing of the container ships (called Panamax ships because they are built to the specifications of the locks, leaving less than 2 ft clearance!). Each shipping container is charged \$82USD to go through which may not sound like much, however a Panamax can carry up to 4,400 of these. Thus a full ship is charged \$360,800 to go from the Atlantic to the Pacific (or vice-versa).

It wasn't until the French came along in 1880 looking to build a sea-level canal. A Frenchman by the name of Ferdinand de Lesseps who was famous for the Suez Canal thought it would be a piece of cake. He was wrong. So wrong. The French began without proper geological surveys and a healthy dose of common sense. After 9 years and 22,000 dead workers later a bankrupt French project gave up and went home.

This may sound like a lot of money, but there is always the long way round...

Quote of the month

"Life is either a daring adventure or nothing at all"

- Helen Keller, 1957

Five years later in 1904, the Yanks purchased the Canal rights from the French at a bargain price of \$40 million and after a lot of haggling, pride saving and political underhandedness (which resulted in Panama separating from Columbia) construction began again.

This time steam locomotives and excavators were used and the construction pace accelerated. And, *only* 5,600 workers

Women in Engineering Committee Members:

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

Email: wietas@gmail.com



Engineering Your Career

Ever feel like this when it comes to career planning? If so, step right up!

What: Young Engineers Tasmania Career Development Evening

Where: Royal Engineers Building, 2 Davey Street Hobart

When: Tuesday, 12th of July 2011

What time: 5:30 pm for a 6:00 pm start

Who: Jenny O'Donovan, Engineers Australia's Careers Manager

Cost: Free to EA members

Jenny's presentation will cover:

- Performance reviews;
- Salary information and negotiation tips;
- Networking advice;
- Mentoring – what to expect from a mentor and as a mentor

Light refreshments will be served on the night.

RSVP to Catherine Reading by Friday the 8th of July 2011

CReading@engineersaustralia.org.au or 6234 2228



Jenny is also available for one on one sessions on Wednesday the 13th of July. Places are filling up fast so book in today!

Brought to you by



NORTH WEST GROUP

Event – Open to the Public

NAVAL ENGINEERING

DATE: Wednesday, 20 July 2011

TIME: 5.30pm Assemble for pre dinner drinks
6.00pm Dinner
7:00pm Presentation
8:30pm Close

PLACE: Gawler Room, Ulverstone Civic Centre

Meal Cost: \$15 Members and partners
\$25 Non Members.

Attendance for the presentation only is free of charge at 7.00pm

RSVP: Chris Martin on 6428 3994 or by email chris@csetas.com.au

THIS MEETING WARRANTS 1.5HRS CPD



Ray Howe, MIEAust CPEng is currently the Plant Engineer at Botanical Resources Australia's Ulverstone Processing Plant.

Having grown up on the North-West Coast, Ray began his engineering career as a Marine Engineer in the Royal Australian Navy (RAN). His ten years of service commenced with Engineering studies at the Australian Defence Force Academy, followed by sea-going postings to the tanker HMAS *Westralia* and frigate HMAS *Darwin*. The stint on *Darwin* included a war service deployment in the Persian Gulf in 2005.

Project Earned Value Management

This **one-day** course defines project earned value management and incorporates case studies and workshop exercises to ensure practical learning in the context of 'real' engineering projects. It has been developed for Project Managers who are seeking more in-depth information on *earned value management* or, as it is sometimes referred to, *performance management* of projects.

The course does not assume detailed knowledge but does require some understanding of good project management processes and the Project Management Body of Knowledge (PMBOK). The course will also address implementation issues around putting an earned value system and capability in place.



\$528 Tas Div Members
\$660 Non Members

Target Audience This course is suitable for all those who have a working knowledge of project management practice including the PMBoK and who are seeking further insights and practices in using earned value project performance management and measurement techniques. A working knowledge of WBS methods and scheduling tools will be an advantage. Some graphics and chart methods and spreadsheet functions will also be useful. It will address the Australian Standard (AS4817-2006) in earned value and is suitable for program and senior managers considering the improvement of project governance and reporting methods and systems.

Course Outline

Introduction

- Course outline
- Expectations
- AS4817-2006

Definitions and Basic Concepts and Tools

- Definitions
- Concepts
- Tools
- The benefits... The flaws...

EVM Detailed Process – Planning

- Steps 1 to 6
- Case work application

EVM Detailed Process – Executing and Controlling

- Steps 7 to 11
- Case work application

Derivatives Charts and other Interpretative Tools

- Derivative formulae
- Charts and other representative tools
- Reporting

Software applications

- What is available (simple spreadsheets to full systems)
- What is available (costs vs benefits)

Implementing Earned Value Performance Management

- Issues, strategies and lessons learned from the literature and experience

Course Objectives

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

- Define earned value performance management
- Understand and apply the principles and 11 steps in two key processes in a case study
- Able to use standard earned value formulae and develop key display charts of the main concepts and tools
- Identify where software systems add value and the way they operate
- Examine the issues involved in implementing earned value in an organisational project management setting
- Implement earned value management over the life of a specific project
- Consider wider application in their organisation, and be able to develop an implementation plan for the adoption of earned value systems and processes for wider use

13 July 2011
Salamanca Inn, Hobart
Download flyer at:
www.engineersaustralia.org.au/tasevents

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



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Contract Management

This **two day** course covers the contemporary legal frameworks and issues in which procurement and contract management operate.

Practical tools and techniques are presented and applied during the course to ensure that participants gain a better understanding of their own real contracts and how to achieve required outcomes, products and services.

Case studies are an integral part of the course and provide a practical application to the content set out in the participants workbook.

This course applies Contract Law to engineering and is in accordance with AS2124 and AS4000.



Target Audience For those who are seeking a better understanding of contract management and how it applies to engineering.

Course Outline

Introduction to the Legal System

An introduction to the legal framework in which contracts operate.

Contract Requirements

What is necessary to create a contract;
What a contract isn't.

Issues Surrounding Contracts

Remedies if the contract does not work out as planned; Different terms of contracts; How to minimise the risk of your contract being unenforceable; Implied statutory warranties in contracts; Liquidated damages.

Negligence

Recent CASE STUDIES involving negligence in the engineering context; What we can do to minimise our exposure.

Disclosure in Contracting

Legal obligations regarding disclosure; What we can expect by way of disclosure from the other side; Ways to protect your interests.

Anti-Competitive Aspects of Contracting

Dangerous practices in relation to contracting including collusion; Bid rigging; Refusing to deal with particular businesses; Requirements to share infrastructure with competitors.

Outsourcing vs In-house

We will have a ROUND-TABLE DISCUSSION of current experiences with outsourcing in your industry; Has it worked well; Has it not; How to maximise the benefits of outsourcing.

Types of Contracts

Lump sum; Cost plus; Incentive based contracting; Alliance contracting; Review clauses of actual contracts; Standard form contracts including AS2124 and AS4000.

Intellectual Property

If a consultant is engaged to create a new design, who owns the intellectual property; EXAMPLES of contractual clauses

Tendering Processes

Different processes and evaluation techniques; Legal issues with tendering; Aspects of online tendering.

Latent Conditions and Extensions of Time

When are these claims justified?

25 & 26 July 2011
Salamanca Inn, Hobart

Download flyer at:
www.engineersaustralia.org.au/tasevents

\$792 EA Members
\$990 Non Members

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



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www.eeaust.com.au





Workshops on Urban Stormwater Drainage:

1. A GUIDE TO STORMWATER DRAINAGE PRACTICE
2. DRAINS DESIGN METHODS
3. DRAINS INVESTIGATION METHODS

Developed for Engineering Consultants and Council Staff

These courses cover urban stormwater drainage design and analysis, with the last two applying the DRAINS program. Engineers and technicians can attend one-day workshops separately, or for two or three consecutive days.

The first workshop introduces engineering aspects of urban stormwater drainage systems, concentrating on flooding issues. It is suitable for persons starting to work in this field, or those requiring a refresher.

The second workshop introduces DRAINS, the rainfall-runoff simulation program with many uses in designing and analysing urban stormwater drainage systems.

The final workshop covers advanced aspects of DRAINS such as inflow design and asset management, featuring the unsteady flow hydraulics in the premium hydraulic model.



Over 550 Engineers Australia have purchased DRAINS since 1998.

OBJECTIVES

The workshops aim to introduce engineering professionals to the field of urban stormwater management and train them to use the DRAINS program for design and analysis work, providing the knowledge needed to design new drainage systems, and to manage existing systems.

The first two workshops are suitable for persons who are inexperienced in design or the use of DRAINS, and those requiring a refresher or orientation. The last is for designers familiar with DRAINS, or those who attend the second workshop.

Both DRAINS workshops will cover the new standard hydraulic model in DRAINS.

For further information on the workshops, please contact **Geoffrey O'Loughlin** on 0438 383 841 or geoff.oloughlin@tpg.com.au.

DATES

Workshops will be held from 9 am to 5 pm, Monday to Wednesday, **1 to 3 August, 2011**. There will also be a dinner and public presentation on stormwater pits at the same venue at 5.30 for 8 pm on **1 August**.

VENUE

Lucas Hotel
46 Gilbert Street, Latrobe, 7307
(Special room rates are available)
(phone: (03) 6426 1101)

Participants will need to bring their own laptops. Software installation instructions will be provided prior to the courses. Participants will work with examples, spreadsheets and tutorials from a USB drive.

PRESENTER

The workshops are presented by **Dr. Geoffrey O'Loughlin**, the co-developer of DRAINS.

For more information on the workshop content, call Geoff on 0438 383 841



Download registration form at www.engineersaustralia.org.au/tas/events

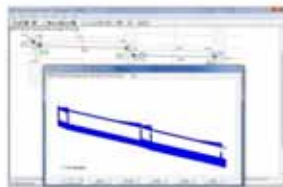
Workshops on Urban Stormwater Drainage

WORKSHOP CONTENT

1. Stormwater Drainage Practice (1 August)
Description and history of drainage systems
Sources of information and the stormwater industry
The scientific basis - hydrological and hydraulic models and computer applications
Examples: RORB, HEC-RAS and spreadsheets
Planning and design of stormwater systems
Design for stormwater quality management
Water sensitive urban design procedures
2. DRAINS Design Methods (2 August)
Introduction - an example of DRAINS in operation
Step by step construction of a DRAINS model
Design operations, ILSAX, rational method and extended rational method hydrology.
Modelling open channels and detention basins; on-site stormwater detention
Problem issues and solutions - flow times, pit inlet capacities and shock losses
Utility and presentation spreadsheets
3. DRAINS Investigation Methods (3 August)
A review of the features within DRAINS
Assessing local flooding problems
Flood studies for development applications
Area-wide stormwater system asset management
Unsteady flow hydraulic modelling
Sensitivity tests and checks
Storage-routing models for rural and urbanising catchments.

THE SOFTWARE

- DRAINS, which has a new standard hydraulic model, offers:
- Design methods for urban drainage systems using ILSAX, rational method and storage routing hydrology with unsteady flow hydraulics. GUCM procedures are supported.
 - Comprehensive techniques for analysis of large, established drainage systems.
 - Connections to spreadsheet, CAD, DTM and GIS programs, including Advanced Road Design, 12d, MX, ESRI programs and MapInfo.
 - A simple and effective user interface, a detailed Help system, manual, in-built design data for inlet pits and other devices, and a free Viewer.
 - Responsive support and regular training courses.



From www.watercom.com.au you can download a demonstration version, examples and User Manual. Contact Bob Stack at bobstack@watercom.com.au or (02) 6649 8005 [phone/fax] for further information and the free DRAINS Viewer.

WORKSHOP FEES

No. of Workshops	One	Two	Three
First person from an organisation	\$600 + 10% GST	\$1100 + 10% GST	\$1500 + 10% GST
2nd and 3rd persons at the same workshop(s)	\$450 + 10% GST	\$825 + 10% GST	\$1125 + 10% GST

Fees discounted by 20% are available to Engineers Australia or IPWEA members. (Unemployed engineers and those from educational bodies should contact Geoffrey O'Loughlin for special rates.)

REGISTRATION

Please complete this form and fax or e-mail it to: (02) 9570 8111 or geoff.oloughlin@tpg.com.au. A tax invoice allowing for EA or IPWEA discounts will be sent to you. Queries can be directed to Geoff O'Loughlin at 0438 383 841.

Tick the days that you wish to attend:

Participant(s)	EA or IPWEA Member (y/n)	1 Aug	2 Aug	3 Aug

Organisation:

ABN:

Address:

Phone: Fax:

E-mail:

NORTH WEST GROUP

DATE: Monday, 1 August 2011

TIME: 5.30pm Pre-dinner drinks
6.00pm Dinner
7:00pm Presentation
8:30pm Close

PLACE: Lucas Hotel, 46 Gilbert St, Latrobe

STORMWATER PITS - INLET CAPACITY, BLOCKAGE & ENERGY LOSSES

The humble stormwater pit is a complex hydraulic device, whose operation can vary considerably. Geoff O'Loughlin will provide an insight into pit behaviour, explaining the capacity of pit inlets and the changes of energy and pressure that occur inside pits.

After defining types of pits, he will discuss capacity theory and available information. Blockage, and issues being explored by Engineers Australia as part of the revision of *Australian Rainfall and Runoff*, will be discussed. Finally, the estimation of energy losses and pit pressure change will be covered, referring to new research and estimation procedures.

Dr Geoffrey O'Loughlin, FIEAust CPEng

Geoffrey was educated at the University of NSW, gaining BE and PhD degrees in the 1960s and 70s, and then working as a state government, academic and consulting engineer. While lecturing at the University of Technology, Sydney for a 23 year period, he was an author of the stormwater drainage chapter in *Australian Rainfall and Runoff*, 1987 and of the stormwater standard, AS/NZS 3500.3. He has over 15 years experience of consulting engineering. Geoff developed the ILSAX software, which was developed into DRAINS with Bob Stack of Watercom Pty Ltd. He maintains an interest in research and teaching, presenting short courses on hydraulics, hydrology, design procedures and the DRAINS program.

Meal Cost: \$15 Members and partners and \$25 Non Members.

Attendance for the presentation only is free of charge at 7.00pm

RSVP: Chris Martin on 6428 3994 by Friday, 29 July 2011 or chris@csetas.com.au

THIS MEETING WARRANTS 1.5HRS CPD

CALENDAR 2011

For up to date information on these and other events, please visit www.engineersaustralia.org.au/tasevents

JULY

SCIENCE & ENGINEERING CHALLENGES

Wednesday 6 to Friday 8 - HOBART - Moonah Sports Centre

Tuesday 12 - DEVONPORT - Devonport Sports Centre

Thursday 14 & Friday 15 - LAUNCESTON - Elphin Sports Centre

Volunteers needed to help supervise activities at all events, if you can help, please contact Susie Haley on 6226 7868 or susie.haley@utas.edu.au

Tuesday 12 - Young Engineers - "Engineer your Career" - EA Career Manager's Visit - Jenny O'Donovan - **FREE PUBLIC SESSION** - 5.30 for 6.00pm - Royal Engineers Building, 2 Davey Street, Hobart - RSVP to Catherine Reading 6234 2228 or creading@engineersaustralia.org.au (Refer to page 16)

Wednesday 13 - EEA SHORT COURSE - Project Earned Value Management - Salamanca Inn - 8.30am to 5.00pm - **HOBART** - \$528 (EA Members) - \$660 (Non Members) - Download registration form at www.engineersaustralia.org.au/tasevents (Refer to page 17)

Wednesday 13 - ONE ON ONE SESSIONS with EA's Career Manager - STRICTLY LIMITED AVAILABILITY - BOOK EARLY - Jenny will be available to meet with Members one on one to discuss any career queries - Royal Engineers Building, 2 Davey Street, Hobart - RSVP to Catherine Reading 6234 2228 or creading@engineersaustralia.org.au

Wednesday 20 - North West Group - Ray Howe, MIEAust CPEng - **Naval Engineering** - Gawler Room, Ulverstone Civic Centre - 5.30 for 6.00pm Dinner - Members & Partners \$15 per person, Non Members \$25 for meal - RSVP to Chris Martin 6428 3994 or chris@csetas.com.au (Refer to page 16)

Monday 25 & Tuesday 26 - EEA 2 DAY COURSE - Contract Management - Salamanca Inn - 8.30am to 5.00pm - **HOBART** - \$792 (EA Members) - \$990 (Non Members) - Download registration form at www.engineersaustralia.org.au/tasevents (Refer to page 18)

Friday 29 - ENGINEERING EXCELLENCE AWARDS GALA DINNER - 7.00pm for 7.30pm - Wrest Point Convention Centre - Dress: Black Tie - \$100 per person (all inclusive) or \$950 per corporate table (10 people) - RSVP to Catherine Reading 6234 2228 or creading@engineersaustralia.org.au (Refer to page 5)

Contract Management Training

Practical courses presented by experienced industry practitioners that can answer your questions

Courses provide CPD points consistent with Engineers Australia guidelines

Upcoming Courses August - November 2011

Aug	16	Hobart	Preparing Scopes of Work & Specifications
	17-18	Hobart	Contract Management for Superintendents
Oct	25-26	Sydney	Contract Administration - Works
	27-28	Sydney	Advanced Contract Administration
Nov	15-16	Melbourne	Contract Administration - Works
	17-18	Melbourne	Advanced Contract Management for Superintendents

Discounts apply to members of Engineers Australia

CONTRACT CONTROL INTERNATIONAL



E: training@ccintl.com.au

P: (07) 3236 1936

W: www.ccintl.com.au



AUGUST

Monday 1 - North West Group - Dr Geoffrey O'Loughlin, FIEAust CPEng - **Stormwater Pits, Inlet Capacity, Blockage & Energy Losses** - Lucas Hotel, 46 Gilbert Street, Latrobe - 5.30 for 6.00pm Dinner - Members & Partners \$15 per person, Non Members \$25 for meal - RSVP to Chris Martin 6428 3994 or chris@csetas.com.au (Refer to page 19)

Monday 1 to Wednesday 3 - 3 DAY WORKSHOP ON URBAN STORMWATER DRAINAGE - Dr Geoffrey O'Loughlin, FIEAust CPEng - Lucas Hotel, 46 Gilbert Street, Latrobe - 9.00am to 5.00pm - Download registration form at www.engineersaustralia.org.au/tasevents (Refer to page 19)

Tuesday 2 - Young Engineers - Casual Networking Night - 5.30pm to 7.30pm - The Metz, 217 Sandy Bay Road - **ALL WELCOME - NO CHARGE** - Light refreshments available - RSVP to Catherine Reading 6234 2228 or creading@engineersaustralia.org.au (Refer to page 11)

SCIENCE & ENGINEERING CHALLENGE STATE FINAL

Tuesday 9 - DEVONPORT - Devonport Sports Centre