

Engineering Tasmania

February 2008



ENGINEERS
AUSTRALIA
Tasmania Division

Newsletter of Engineers Australia, Tas Division - Royal Engineers Building, 2 Davey Street Hobart
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PRESIDENT'S REPORT

Thank you for giving me the opportunity to contribute at the highest level and hopefully make a difference to the Tasmanian Division of Engineers Australia. Welcome to you all to the New Year and I trust that you all enjoyed a break and are refreshed and ready to participate in the events planned for 2008.

Firstly let me briefly introduce myself and secondly provide an overview of where I want to make a difference with your assistance.

I was born in Launceston and spent my early years in both Burnie & Launceston before, moving to Hobart at an early age – where I have remained since. I received BE (Hons) and M Eng Sci

degrees from the University of Tasmania in Electrical Power Engineering and since then I have worked in the electricity supply industry for in excess of 30 years with roles covering power scheme planning, power system protection design, power station design, construction, transmission planning, economic regulation, customer management and business strategic planning.

I was lucky enough to be involved in the formation of the Australian National Electricity Market and the reform of the Tasmanian electricity supply industry during the 1990s which culminated in Tasmania's entry into the National Electricity Market in May 2005.

As a foundation executive member of Transend Networks since its formation in 1998, I managed Transend's interests in successfully connecting Basslink, a 400kV high voltage direct current under sea link between Tasmania and Victoria, in April 2006. My current role in Transend is Executive Manager Corporate Strategy & Compliance responsible for business planning & development, interfacing with regulators and overseeing electricity industry compliance obligations.

I commenced my membership with the Institution of Engineers as a student member with my first voluntary involvement to organise Electrical College meetings in the then Hydro theatre and cafeteria. Since winning the Frederick Brough Memorial Prize in 1977 I have had a strong belief in the role of Engineers Australia in not only the development of technical expertise but also the personal development of engineers throughout their careers from undergraduates to CPEng to Eng Exec to retirement and beyond. To this end I currently chair the University of Tasmania's External Advisory Committee and the Tasmanian Chapter of Engineers Australia Centre for Engineering Leadership and Management, I am a member of the board of the Australian Power Institute and Transend's Graduate Steering Committee.

Supporting me at home is Jan who looks after our two children Sophie 8 and Sam 15 and I have two other children Kate 24 and Ben 26. Our family enjoys tennis, the outdoors, involvement in Scouting and particularly activities both on and under the water. We have a twenty year plan to finish our home and surrounds that started 15 years ago – I am glad to say we are on track!

That's more than enough of me. Now to what I would like to achieve as President of your Tasmanian Division. My two areas are the National initiatives associated with the Strategic Marketing Review conducted by Beaton Consulting and professional development.

The Strategic Marketing Review is complete in so far as the Review has been done, and some observations have been made. Specifically the review sought to identify and profile target member segments based on members' needs, document value propositions for each segment, document Engineers Australia's strategic marketing objectives and key strategies to achieve these objectives, and to clarify what the focus of the next marketing campaign of Engineers Australia should be.

The essence of what members want from EA has been identified along with where EA has opportunities for increasing its value to existing and prospective members. The challenge is to design a plan to develop and improve the benefits delivered to members by focussing on the things that target segments want from Engineers Australia and what students want.

The real work now begins as we, as an organisation, digest the report, consider the options and implement a campaign. The value has been defined, the next steps are to create the value and then communicate the value propositions.

Continued on page 3....

Tasmanian company brings the world to remote Pacific Ocean islands

Many thousands of kilometres, no infrastructure, and the middle of the Pacific Ocean proved no barrier to innovative Tasmanian company Powercom Systems – as it has set-up a communications system in one of the most remote places in the world – the Republic of Kiribati (pronounced Kee-ree-bas).



Powercom Systems has used its experience in working in Tasmania's rugged and isolated regions to overcome many logistical challenges to transport and install transmission towers, base stations and transmission studio on Kiribati.

“Providing new technology to Kiribati, which occupies the largest area of any country in the mid-Pacific, was as challenging as any communications job anywhere in the world,” Powercom Systems Business Manager, Malcolm Crosse said.

“The system we installed consists of a base station/studio on Tarawa and translators on Christmas, Fanning and Washington Islands with associated transmission towers, all linked by satellite using IP (Internet Protocol) to transmit the audio data.

“A major benefit to the people of Kiribati is that each translator station has a dedicated IP based phone connection to the studio on Tarawa,

giving instant communications between islands for the first time ever.

“Some of the I-Kiribati people have never had radio let alone Internet and many had never left the island they were born on, so to experience this level communications has been a revelation.” Mr Crosse said.

Mr Crosse said the connection of three of the country's main islands now allows the population to spread information about local business, births, deaths and important cultural events for the first time.

The “can do” attitude of Powercom Systems was highlighted in completing the project on time.

Despite a year of planning and three months of on-the-ground installation the Tasmanians along with their I-Kiribati colleagues endured a ship broken down on a reef and a crane falling into the ocean, enough to test any company.

Adding to the danger, one island was so treacherous that landing and departure had to be done with the precise tidal conditions in dinghies and canoes.

Due to Kiribati's remoteness all supplies had to be shipped and itemised for each island including tools, paper, pens, even plastic tie downs, with the Tasmanian crew taking a total of three shipping containers of equipment to complete the project.

The benefits of the improved communications are immense, local hospitals can now call physicians in larger areas for emergency help, have increased weather warnings, give navigation assistance to fisherman and better logistics tracking of ships between the many islands and atolls that makeup the country.



Navigation lights on top of the transmission towers also give fishermen the direction of home at night, as they can see the lights more than 10km at sea!

From its island base in Tasmania, Powercom Systems has shown Tasmanian isolation, challenging places and extreme terrain provides excellent training to tackle the World's toughest communications projects.

Questions and answers

What key hardware has been installed as part of the Kiribati project?

- 4 x 3.8m Prodelin C-Band satellite dishes using Newskies NSS5
- 4 x L-Band Comtech satellite modems
- 4 x Mayah audio encoder/decoders
- 2 sites with 2.1kW (killowatts) of solar power
- 2 sites with 1100AH (amp-hours) of battery capacity
- 3 x 41.5m Rojone towers
- 1 x 100W FM Transmitter
- 1 x 50W FM Transmitter
- 1 x 2kW FM Transmitter
- 2 x 1.6kW Sine Wave Inverters

What are the key technical points of the Kiribati project?

- Efficient use of bandwidth (128kbps outgoing to islands, 2 x 64kbps
- return links, 128kbps return link) to reduce ongoing costs.

- Two program sources, Tarwa studio or Christmas island studio.
- Network controlled from Tarawa.
- Internet Protocol (IP) based network, IP carries all data,
- including monitoring & control, audio and VoIP.
- Audio encoded using Mayah MPEG Encoder/Decoders
- Equipment selected for robustness and efficiency
- Simple, power efficient and cost effective design.

Richard Gerathy MBA, BSc, CPM, AFAMI

President's Report cont.....

The job ahead is as much about internal communication and goal setting as it is about the execution of an actual campaign planned for launch by 1 July 2008. That will commence a two year implementation period.

There is a shortage of practicing engineers in the Australian market and it would appear that addressing this issue will involve coordinated effort over an extended period by governments, industry and industry organisations, educational institutions and professional organisations such as Engineer's Australia. In addition to initiatives such as the Science & Engineering Challenge we can play a role in promoting our profession through obtaining our own internal recognition of Chartered Status (CPEng) and Engineering Executive status (EngExec).

Chartered Status is exclusive to Engineers Australia and certifies you practice in a competent, independent and ethical manner. Through the Centre for Engineering Leadership and Management (CELM), Engineers Australia has developed a competency based assessment and accreditation framework for engineers with a proven professional engineering track record who are interested in pursuing management and leadership opportunities and will recognise the achievements of members in the form of the post-nominal Engineering Executive (EngExec).

I look forward to joining you all at your Units meetings and during the visit by our National President, Julie Hammer.

Mike Green, FIEAust CPEng EngExec

MEET OUR NATIONAL PRESIDENT

**MONDAY, 25 FEBRUARY 2008 - ULVERSTONE
TUESDAY, 26 FEBRUARY 2008 - LAUNCESTON**

(See calendar on page 12 for further details)



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

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

“SUPPORTING THE DIVERSITY OF THE PROFESSION”

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

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

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

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

2007 ALAN BURN MEMORIAL LECTURE REPORT

“REACHING FOR THE STARS”

The 2007 Alan Burn Memorial Lecture was presented by Ms. Gwynne Allan, a retired aerospace thermodynamics specialist, to enthusiastic audiences in Hobart and Burnie during last November. Gwynne also addressed some Grade 6 students at Kingston Primary School where she was such a hit that the students queued for her autograph.



Gwynne signs an autograph for Grace Leung

Commencing her presentation Gwynne Allan explained that NASA, (National Aeronautic and Space Administration), does not build spacecraft. Its purpose is to decide which projects are worth developing, then lobbying the American Congress for funding. Once funding is received, NASA selects an aerospace company as

prime contractor to coordinate the overall spacecraft project. Other aerospace companies are then sub-contracted under the prime contractor to build a portion of the spacecraft. Each aerospace company has its own expertise. TRW, the company Gwynne worked for, was a leader in space based communication systems.

She then traced her path into the aerospace industry saying that after completing her degree in Applied Science she went to work with an engineering firm. Although she had been working closely with the Estimator for 7 years and had started her engineering studies her boss returned an application for a vacant position of Estimator saying, “No Gwynne, you can’t have this job. No man is ever going to pay any attention to a female engineer.” So her job search began.

Gwynne obtained an interview for a position as a Thermal Dynamics Technician with an aerospace company. The interviewer was impressed with Gwynne’s maths background and the fact that she had completed drafting and design work. Then he asked a really strange question, ‘Could she sew?’ On receiving an answer in the affirmative he replied, “You’re hired, when can you start?”

MLI heat shields are a combination of mylar and kapton. Mylar shrinks in heat and is used to protect the spacecraft from cold; kapton on the other hand shrinks in cold and is used to protect the spacecraft from excessive heat. Depending upon the orbit of the spacecraft and payload requirements various layers of these two materials are combined then sewn together. After making heat shields in a secure laboratory the Thermal Dynamics team was called to install heat shields on a spacecraft. This was the first time a woman had been assigned to the spacecraft assembly area. Her Section was Thermal Integration and Test Systems, which was shortened to an acronym. For obvious reasons the group was renamed Thermal Testing and Integration Systems or TTIS.

The second part of a Thermal Specialist’s job was to perform space simulation tests, which were conducted in large thermal vacuum chambers. The spacecraft is set on the lid of the chamber and lifted up into the cavity, which is then sealed. The spacecraft is placed under vacuum and cycled through the temperature variations it will experience during its particular orbit. The purpose of the test was to obtain enough data to program the on-board heaters to turn on and off as needed to keep the payload at or near ambient temperature whilst in outer space.

When Gwynne began testing spacecraft in 1977 everything was done manually. Banks of monitors were set against three walls of the testing area. Once every hour one person read the numbers from each of about 300 or so monitors to a second person who wrote the figures down. They would then sit and crunch the numbers whilst a third person would plot the results on a chart and make the necessary adjustments to the monitors. This whole process took about 55 minutes each hour of the 8 to 12 hour shifts. When assigned to a test staff had to work 7 days a weeks for the duration of the test; an average of four weeks. (Now with computers the whole process takes one person less than 15 minutes.)

The third and most exciting part of the Thermal Specialist’s job was launch operations at Kennedy Space Centre in Cape Canaveral, Florida. Not long after starting her job she set herself the goal to qualify for gantry based launch operations. After 2 ½ years of hard work and continued studies she was finally chosen to be a member of a launch crew in 1979.

As could be expected in a previously all male environment there were difficulties to be ironed out such as toilet provision and changing rooms at Kennedy Space Centre. There was also the reaction of male staff thinking a woman should not be present in the secure/dangerous areas of launch operations and the inevitable practical jokes.

The gantry is a metal structure used to hold and protect the rocket prior to launch. It also affords access to the various levels for specialists and engineers. The spacecraft is accessed on the 15th level. One of her duties at the ‘Cape’ was to monitor the spacecraft whilst it sat on top of the booster rocket three days prior to launch.

Gwynne recalled, “The day of my first launch I was so excited I didn’t sleep a wink. After a briefing we changed into our anti-static gear and I took the



High Bay Assembly Area

2007 ALAN BURN MEMORIAL LECTURE REPORT

“REACHING FOR THE STARS”

elevator up to the 15th level with one of my team members. At T -30 minutes (or 30 minutes before launch) Thermal Dynamics was called forward to do the final closeout. I stepped forward with my team member; much to the surprise of the assembled specialists who were not expecting a female presence. Back in the control centre I was given the privilege to grant the ‘go’ for launch during the final countdown. Telemetry-go, ordnance-go, thermal-go... There was a pause then...Thermal? I said Go.”



Ready for Launch

After seven years working in Thermal Dynamics on both booster rockets and the shuttle Gwynne took a job in Logistics. By this time women held engineer and support positions in many areas of aerospace. But the logistics team had held out and were not really happy to have a woman ‘forced upon them’. Gwynne was assigned to a dirty, mouse-infested warehouse on the outskirts of Space Park in hopes that she would quit. This turned out to be a great assignment as she learned everything about ground support equipment and hardware movements, which was so useful later in her career. Once the team realised Gwynne had the ability to do the job she was brought back into the high bay.



Orbiter in Transit

The logistics team is responsible for getting all hardware, from the titanium screws to the solar ray panels and MLI heat shields, into the high bay when required during the two-year assembly schedule. Logistics handled the support equipment and set-up various space simulation tests.

When the spacecraft was ready for delivery to the Cape, Logistics would supervise the delivery of the spacecraft and all its support equipment to the waiting C5A at Los Angeles International Airport. The first time she was responsible for a spacecraft delivery a security guard, not knowing who she was, verbally abused her for being ‘in the way’ and tried to have her removed from the operation. He wasn’t too happy when he found out that not only was a female running the show but that she was his boss!

After working in Counter Espionage for a couple of years, which was challenging but extremely interesting, Gwynne took on the task of setting up a secret spacecraft assembly facility. She was responsible for outfitting the high-bay, computer rooms, hiring security staff, writing the facility’s security documentation for FBI approval, briefing all staff and issuing security clearances on a need-to-know basis. In this job Gwynne was able to put into practice all she had learned over the previous 12 years.

Then one evening, while at a birthday party at one of the local pubs, in walked her future husband, Keith. He said “Why don’t you come down under and checkout God’s country”...so she did.

Gwynne discovered there is life after NASA. In Perth she worked as a Security Consultant for a research and development company investigating high temperature smelting processes for iron ore. She helped set up the company’s security system, classified their documentation and secured the computer room. Five years later she worked for the Queensland government helping to set up an IT network so that smaller IT companies, working together, could attract and share in bigger IT contracts from around Australia and overseas.

If you were to ask Gwynne whether a female can reach for the stars and attain her goals the reply would undoubtedly be “Go for it girl”.

Gwynne Allan began her aerospace career in 1976 as the first female Technician working in Thermal Dynamics and Launch Operations. She was also part of the multi-faceted team that developed strategies for switching from booster rocket launches to shuttle deployment.

Gwynne considers her 14 years in aerospace as one of the most exciting periods of space exploration. She left aerospace in 1990 as Information Security Manager for the \$350 million dollar MILSTAR communication program. She now lives in retirement in Adelaide with her husband, Keith.

DAVID BRUMBY FIEAust CPEng

Warren Lee Memorial Engineering Scholarship announced



The University of Tasmania (UTAS) and Brighton Council have jointly announced a new undergraduate scholarship for second year civil engineering students at the university.

The Warren Lee Memorial Scholarship, valued at \$5000, has been instituted in memory of Brighton Council engineer Warren Lee, a former member of Engineers Australia who tragically died from cancer in 2007.

The scholarship was announced at the Brighton Council Chambers in the presence of Warren Lee's family and friends.

Scholarship program manager Jenny Morgan said that the scholarship leaves a legacy of the high esteem in which Mr Lee was held.

"It is fitting that one man's impression upon those with whom he worked is kept alive through the encouragement of young Tasmanians to take up a career in civil engineering. The generous scholarship will greatly assist the recipient with his or her studies," Ms Morgan said.

Warren studied Civil Engineering at UTAS, and joined Brighton Council part-time as a university student in 1993 to undertake practical components of his degree. He was offered a full-time position with Council following his graduation in 1996.

Warren Lee went on to become a respected engineer and was recognised in Tasmania from early in his career as a sewage reuse expert.

Head of the School of Engineering Professor Chris Letchford said the scholarship would provide an important incentive for second year engineering students who choose to study Civil Engineering. The Scholarship will also service to provide crucial workplace experience for the recipient which is an important part of the training of an engineer.

Mayor of Brighton Tony Foster said he was delighted that Warren's memory would be commemorated in

this way and thanked the University of Tasmania for facilitating the scholarship in his name.

"Warren was an integral part of the Brighton Council team and his enthusiasm and work ethic are sorely missed. Even after he became ill, Warren worked diligently to complete a 10-year asset plan for council and continually asked if there was more that he could do despite the illness that was overtaking him," he said.

Cr Foster described Warren as an asset for the Council, respected by staff, councillors and the entire Brighton community.

"Warren was unconstrained in his thinking and was always willing to 'have a go' no matter how difficult the task.

"This scholarship will recognise second-year engineering students who demonstrate those same qualities and we believe that a scholarship in Warren's name is a fitting tribute to his legacy."

The scholarship will provide an opportunity for work experience to be undertaken at Brighton Council while the recipient of the scholarship completes his or her degree. .

The first scholarship will be awarded to a student undertaking his or her second year in engineering in 2008. Application forms are available from the UTAS Tasmania Scholarships website: www.scholarships.utas.edu.au or apply online.



From left, Professor Chris Letchford, Warren's partner Juanita Pike, his father Peter Lee, Brighton Mayor Tony Foster and Brighton General Manager Ron Sanderson

ANNUAL REPORT

Tasmania Division

2007



NOTICE OF 88th ANNUAL GENERAL MEETING

Notice is hereby given that the 88th Annual General Meeting of members of the Tasmania Division of Engineers Australia will be held on Thursday, 6 December 2007 at 6.00pm at The Royal Yacht Club of Tasmania, Marieville Esplanade, Sandy Bay.

All members of the Division, their partners and friends are invited to attend.

The Agenda is:

1. Welcome
2. Apologies
3. Confirmation of Minutes of the 87th Annual General Meeting
4. Adoption of Annual Report
5. Business Arising from the Minutes
6. Appointment of Scrutineers
7. Announcement of Division Committee
8. General Business
9. Announcement of Division President for 2008
10. Address by retiring Division President, Geoff Brayford
11. Vote of Thanks

DIVISION COMMITTEE

President, National Congress	Geoff Brayford
Vice President, National Congress	Mike Green
Vice President, National Congress	Mike Brewster
Hon Treasurer	David Brumby
Past President	Dan O'Toole

COMMITTEE

Grant Atherton	Noel Carroll	Nicholas Dwyer	David Pointing
Richard Bevan	Bruce Cole	Staff Gill	Graham Shepherd
Aaron Brimfield	Alan Coote	Henk Kremer	Phoebe Swift
Tim Burbury	Mike Davis	Chris Letchford	Rebecca Tilbrook

DIRECTOR

Geoff Harper, CPA

College Board Representatives

Civil	Grant Atherton
Mechanical	Mike Davis
Electrical	Alan Coote
Structural	Noel Carroll / Simon Angilley

It is with pleasure that I can provide the Tasmanian Division's report for 2007.

As members maybe aware, over the past few years we have been negotiating with Government concerning the possible purchase of the Royal Engineers Building. A number of pre-purchase reports concerning the building and the site were undertaken, however the Government has now indicated that further discussions be placed on hold while they undertake a feasibility assessment on the adjacent railways yards as a possible site for a new hospital.

As an interim measure, the Government has offered us a three lease of the building on a commercial rental commencing on 1 December 2007.

During the year the Tasmanian Government commenced a review of the provision of sewerage and drainage services within the state, naming Engineers Australia's Tasmanian Infrastructure Report card as one of the compelling reasons for undertaking the review. Preliminary reports indicate a large investment is required to bring the systems up to the required standard.

The Engineering Excellence awards were again conducted successfully, and this year the Division held the award ceremony in the regions, in Launceston rather than in the capital in Hobart. Four Excellence Awards and two Highly Commended Awards were presented.

The engineering skill shortage in Tasmania is becoming more apparent with a number of organisations reporting extreme difficulties in attracting staff, and even in applying for undergraduate

cadet engineering positions. The capability to reformat the sewerage and water service delivery will to some extent depend upon the available skill sets that can be found.

In that sense it is refreshing to see Engineers Australia continuing to support initiatives to take our profession to the community. The Science and Engineering challenge was again successfully held with increasing enthusiasm. In the same vein our Young Engineers conducted an Innovation workshop to increase awareness and participation for those who have chosen the profession. The Women in Engineering Committee were also active with many activities during the Year of Women in Engineering including a combined with event with Young Engineers to run the Gen²X function seeking involvement from all genders and generations.

"Re-engineering Australia" (REA) is also to be congratulated for establishing a Formula 1 design hub

at Brooks High school in Launceston, enabling schools in the region to encourage their students to understand the excitement and challenge of technical careers.

During 2007 the Division presented name badges to 110 members of Tasmania Division who had had continuous membership of over 40, 50, 60 or 70 years.

The Division is still seeking ongoing discussions with the government over the Building Act and the accreditation of its engineering members. This has been an ongoing issue for a number of years with little gain in overcoming what the Division sees as a number of avoidable difficulties in the application of the Act. More has to be undertaken in this area.

An Engineer's Vision for Tasmania

The six key objectives are :

- Build a stronger relationship with Tasmania Together, identifying common goals.
- Increase the number of young Australians developing careers in engineering education in Tasmania
- Increase the awareness of the criticality to Tasmania's success of developing and maintaining quality Infrastructure. This will involve liaison with Victoria on common issues.
- Create an inclusive culture within engineering that embraces equality & diversity
- Create an inclusive culture within engineering that embraces equality & diversity
- Promote the contribution that engineering makes to Tasmania

Our Heritage Committee has also been active and an Engineering Heritage marker was awarded to the Launceston Water supply for its 150th anniversary. Many components of the system are still operating indicating the skill sets of previous engineers to install enduring infrastructure.

I congratulate the winners of the following Tasmania Division awards:

Sir Allan Knight Medal (UTas)
Cassandra Blazely

Norman Selfe Prize (AMC)
Joel Ireland

TAFE Tasmania– Hobart
Matthew Ridge

I would like to thank all members and especially Committee members for their assistance and participation during the year, and encourage more to become more active in the Division's business.

May I also congratulate the Division on seeking to take EA to the regions in Tasmania, not only by holding the Excellence Awards in Launceston this year, but also in electing a Divisional President from Launceston.

Whilst I found the role of Divisional President fulfilling it was somewhat of a challenge being from Launceston. It was also exciting and I welcomed the opportunity extended to me. None of this however would have been achieved without the support extended by both Geoff Harper and Catherine Reading and I extend my thanks in particular to them.

I wish Mike Green all the best for his forthcoming term and know that he will contribute all that is required to the task.

Geoff Brayford, FIEAust

FINANCE

At the November 2005 National Council meeting, the Council approved the abolition of the requirement in Division Rules for fully audited financial statements to be produced by each Division and presented to a Divisional Annual General Meeting, as from the 2005-2006 financial year.

As part of the consolidation of Engineers Australia's accounting procedures, from 1 April 2006 the processing and reporting of financial affairs of the Tasmania Division was transferred to National Office. Below is a financial summary extracted from the National Annual Report showing the consolidated financial performance of Engineers Australia for the year ended 30 June 2007, with Tasmania Division figures inserted.

Over all Engineers Australia had a net surplus from ordinary activities of \$2,268K and Tasmania Division a surplus of \$3K.

Engineers Australia National Office, Divisions and Subsidiary Companies Income Statement for the year ended 30 June 2007

	Consolidated \$,000s	TAS \$,000s
Income		
Revenue	32,613	300
Other Income	781	6
Total Income	<u>33,394</u>	<u>306</u>
Expenses		
<u>Operating Activities</u>		
Employee & Consultant Expenses	13,979	179
Admin., Travel, Publication & IT Exps	8,083	53
Occupancy Expenses	1,417	11
Borrowing Expenses	4	0
Depreciation & Amortisation	1,237	3
Conference / Meeting Expenses	4,388	34
Other Expenses	2,018	23
Total expenses	<u>31,126</u>	<u>303</u>
Net surplus from ordinary activities	<u>2,268</u>	<u>3</u>
Increase in asset revaluation reserve	3,631	
Total changes in members' funds	<u>5,899</u>	
Members funds - 30th June 2007	<u>33,275</u>	

<p align="center">NATIONAL STRATEGIC PLAN KEY OBJECTIVE</p>	<p align="center">TASMANIA DIVISION HIGHLIGHTS</p>																		
<p>Public role and professional standing</p> <p><i>To achieve increased recognition of the professional and leadership contribution we make to public policy and national wellbeing.</i></p>	<ul style="list-style-type: none"> • The Infrastructure Report Card continues to be quoted by politicians (16 references in Hansard) and others, including in the Ministerial press release and documents seeking submissions on Water and Sewerage Reform. The Division also supported a very successful CEDA run forum on this topic with the Treasurer as a keynote speaker. • Work continues with the implementation of the six key objectives identified in the “Engineers Vision for Tasmania” • Discussions continue with Government regarding issues relating to the Building Act 																		
<p>An inclusive professional team</p> <p><i>To create an ethos where each current and potential member, and each member of staff, feels that their contribution will be valued on its merits, and their needs understood, regardless of their professional or personal background.</i></p>	<ul style="list-style-type: none"> • Young Engineers continue to be very active, including arranging a highly successful Innovation Workshop and in conjunction with Women in Engineering a Gen2X event. (Generation & Gender Exchange) • Young Professionals Network events continue to be well attended giving members opportunities to network with other young people from related professions. 																		
<p>Membership</p>	<table border="1"> <thead> <tr> <th>Grade</th> <th>2007</th> <th>2006</th> </tr> </thead> <tbody> <tr> <td>Graduates</td> <td align="right">281</td> <td align="right">282</td> </tr> <tr> <td>Members</td> <td align="right">505</td> <td align="right">502</td> </tr> <tr> <td>Fellows (& others)</td> <td align="right">124</td> <td align="right">127</td> </tr> <tr> <td>Students</td> <td align="right">330</td> <td align="right">369</td> </tr> <tr> <td>Total</td> <td align="right">1,240</td> <td align="right">1,280</td> </tr> </tbody> </table>	Grade	2007	2006	Graduates	281	282	Members	505	502	Fellows (& others)	124	127	Students	330	369	Total	1,240	1,280
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<p>Youth appeal</p> <p><i>To increase the number of young Australians developing careers in engineering and technology.</i></p>	<ul style="list-style-type: none"> • The Science & Engineering Challenge continues to be very successful with 950 high school students from 29 schools participating in the 4 days heats followed by the first Tasmanian Super Challenge. • EngQuest prizes were presented at school assemblies by Young Engineers and this received very positive feedback 																		
<p>Chartered status</p> <p><i>To increase acceptance that the award of Chartered status to our members for their competence is the assured measure of continuing professionalism in engineering.</i></p>	<ul style="list-style-type: none"> • 102 people attended the March series of 8 CPEng workshops state wide. • A “Meet the Profession” & “Chartered Status” information evening was also very successful. • 2 new PDP agreements were signed 																		
<p>Continuing professional development</p> <p><i>To expand the avenues available to our members for education and learning through their careers, so they may equip themselves better for professional success and strengthen national engineering capabilities.</i></p>	<ul style="list-style-type: none"> • With the co-operation of other related bodies, Invitations to 85 events were distributed to members • CELM has developed a draft Strategic Plan at a local level and held two joint events this year • Discussions have been held with the Tasmanian Building & Construction Industry Training Board regarding delivery & funding of CPD for professionals in the building industry 																		
<p>Internal communications</p> <p><i>To build stronger relationships and shared sense of purpose among all our members and staff through more effective communications.</i></p>	<ul style="list-style-type: none"> • 10 issues of at least 12 pages of the Division newsletter, now in full colour, were printed & posted to all members • Regular electronic updates are also sent to members 																		
<p>A capable organisation</p> <p><i>To harness our complex structures and systems into a more coherent and transparent enterprise for both members and staff.</i></p>	<ul style="list-style-type: none"> • Considerable maintenance on the stone façade of the building has been completed by the Government. • Discussions with regard to the purchase of the Royal Engineers Building have been placed on hold while the Government undertakes a feasibility assessment on the adjacent railway yards as a possible site for a new hospital 																		



**Rebecca
Tilbrook**
GradIEAust

WOMEN IN ENGINEERING

It's a bold plan but we have a great team to bring it to fruition. Following our AGM last December we can proudly add another two names to the representing committee of WIE-Tas. **Committee members in 2008 are:**

“Life After YoWIE”

The New Year has arrived and we say good-bye to a spectacular 2007, the Year of Women In Engineering. I feel as though this year has made a significant difference to the way that the engineering community perceives gender diversity. Not only have industry and tertiary bodies embraced the concepts of the year but Engineers Australia itself as an organisation has gone through a process of significant change, which I believe is a direct result of the Year. This was signified by the awarding of the National President's Award for Excellence being presented to the National Women In Engineering Committee. The award recognises outstanding achievements within Engineers Australia.

The Tasmanian Women In Engineering committee also had a significant impact on the local engineering community. Some of the highlights include:

- The Year of WIE Launch, with over 60 people attending
- Julie Hammer visit and presentation, “Leadership: Making a Difference”
- Northern Networking event, with presentation by Kyril Belle on the hectic world of biomedical engineering in practice
- Gen2X: Generation to Generation, Gender to Gender
- Tanya Ford became the first female to be awarded the membership status of Fellow in the state

‘So what now?’, you may ask. In 2008 WIE-Tas is focused on two key elements – 1) working with schools and education groups to more broadly spread the reputation of engineering as a premier career choice for women, and 2) develop closer relationships with industry and tertiary bodies in the state.



**Rebecca Tilbrook
Amanda Halley
Vanessa King
Meredith McQueen
Fiona Evershed
Jo Hugman
Sasha Ford
Rebecca Hindley
Hayley Young
Erin Driscoll**

I would like to formally welcome new members and extend my thanks and appreciation to existing members for continuing their dedication and enthusiasm to the group. Look out for bios of the team in upcoming editions of Engineering Tasmania and in our new e-newsletter.

If you would like further information on the highlights of the Year of Women In Engineering or our plans for 2008, please email us at wietas@gmail.com and we can send you a copy of our annual report, which details everything you may want to know about Women In Engineering in Tasmania.

Rebecca Tilbrook, GradIEAust
Chair, Women In Engineering Tasmania
wietas@gmail.com

To do this we have devised a clear vision and strategy that align with our proposed calendar of events.

Plans for 2008

Strategy & Objectives

Vision
Attract. Support. Develop. Celebrate.

Mission
Our mission is to increase the participation of women in the engineering profession and allow our members' aspirations to flourish.

Objectives

1. To increase awareness of women in engineering to a broader audience by developing appropriate campaigns and programmes.
2. To create an inclusive culture within engineering that embraces equality and diversity and allows women to feel safe, comfortable and non-alienated at all engineering-related forums and functions
3. To provide premium professional and personal development opportunities to all WIE members that are of high quality, and offer value for money and time.
4. To recognise and celebrate the contribution and achievements of women in engineering.

UPGRADING MEMBERS



TANYA FORD
FIEAust CPEng

Tanya (Kouzmin) Ford graduated from the University of Melbourne in 1969 with a Bachelor of Civil Engineering. She completed twelve post graduate subjects in soil mechanics as part of a masters degree, but deferred her thesis to join the workforce in 1971 with Soilmech, a soil engineering consultancy with drilling rigs and laboratories. Since that first position as project geotechnical engineer, Tanya has worked in the discipline of geotechnical engineering, but in a number of diverse fields and in different states of Australia.

As a consultant, she managed her own company, Kouzmin & Ford Consulting Engineers Pty Ltd, Melbourne for 12 years from 1984 to 1996, but also worked for other consultants - Coffey (Sydney in the 70's and Tasmania in 2005-2008), and GHD (Melbourne in the 70's & Perth in the 90's).

As a researcher, Tanya worked as an experimental officer with CSIRO Division of Building Research in Victoria in the 70's, and with contractors Drilling and Grouting Services Pty Ltd for 3 years in the 90's, where she undertook pile research testing and design.

Tanya has also lectured on and off over her 30+ year career, in a full time capacity or as a sessional lecturer; at FIT in Victoria (solid mechanics), CIT in Victoria

(geology) and Leederville TAFE in Perth (construction management). Finally, Tanya had a short spell as a public servant in the 80's when she was with the Department of Housing and Construction in the capacity of regional geotechnical manager for Victoria and Tasmania. Of the many diverse projects that Tanya has worked on, Tanya especially values her time working in the mining industry in WA, primarily with tailings dams; her geotechnical and structural design of high capacity (5000 kN) micropiles for the convention centre hotel in Perth; and her years as a self employed consultant who had to handle whatever work came in the door, while juggling the demands of a growing family. She counts her special professional interests as soft soil engineering, reactive soils, and forensic engineering. As far as sheer fun goes though, nothing matched her time in the 90's as interpreter to Russian rocket scientists, when GHD were project-managers for an Australian/Russian rocket launching facility on Christmas Island (unfortunately the project was not completed).

In the last three years, Tanya has been Principal Geotechnical Engineer with Coffey Geotechnics in Launceston, where she has led landslide risk assessments, tailings dam investigation and design, and levee investigation and analysis. In January 2008 Tanya returned to her home town, Melbourne, to work with Chadwick T&T as Principal Geotechnical Engineer.

Tanya has the rare distinction of having mothered three daughters that are engineers as well; two civil engineers and one (soon-to-be) Naval Architect (Maritime Engineering). She claims she was simply following the biblical injunction to go forth and multiply.



KEITH MIDSON,
MIEAust CPEng

Keith graduated with a civil engineering bachelor degree from the University of Tasmania in 1995. His first job was with Hobart City Council in 1996 as a graduate traffic engineer working within the Traffic Engineering unit. During his three and a half years at Council, Keith was responsible for special event traffic management, on and off-street parking management, arterial route management, local area traffic management, road safety investigations and traffic advice for development applications.

Keith moved to Pitt and Sherry in 1999, where he was a traffic engineer working on various Department of Infrastructure Energy and Resources projects, traffic impact assessments and road safety studies. Keith was also seconded into Glenorchy City Council as a traffic engineer two days a week during this time.

In 2000, he moved to Melbourne to work for Ratio Consultants in Richmond. In this role, Keith worked on several road safety strategies for Victorian Council's, traffic impact assessments for a range of large and small scale developments across Victoria, road safety studies, and transportation studies (including several studies in Hobart and Glenorchy).

At the end of 2000, Keith moved back to Tasmania to work for Glenorchy City Council as Traffic Engineer and Deputy Manager Roads and

Recreation. In this role, he was responsible for traffic and parking initiatives throughout the municipality. This included a series of 12 local area traffic management schemes from inception to the development of numerous traffic calming schemes, traffic input into the upgrade of Main Road through the CBD, upgrade of Tolosa Street, and traffic assessments for numerous developments including the Big W development.

During his time at Glenorchy, Keith completed his Master of Traffic degree with Monash University in 2004. Keith was awarded the top ranking student in Road Safety Engineering and Parking Policy and Design during this time. As part of the Masters degree, Keith undertook some research on crash rates and causing factors in strip shopping centres, which has led to further research that has been presented at three major conferences, the most recent being the 3rd International Road Safety Conference in Perth in November 2007. This interest in strip shopping centres arose from analysis of crash data for the upgrade of Main Road through Glenorchy's CBD.

After four years at Glenorchy, Keith moved to GHD as a senior traffic engineer. Some key projects have included the Kingston and Environs Transport Study that utilised Paramics microsimulation software (this project investigated the Kingston Bypass amongst other traffic issues – the Federal Government has recently committed to funding the bypass), Droughty Point Transport Study (also using Paramics software), the Statewide transportation assessment of the proposed Northern Tasmania pulp mill as part of the original RPDC process, South Arm Traffic Study, as well as numerous large and small scale traffic impact assessments, transport corridor assessments, and other transport studies.

As the workload increased, Keith grew the traffic team in Tasmania from one (himself) to seven over a short timeframe. The Tasmanian office also grew significant from approximately

45 staff when Keith joined GHD to now over 145 in three years. To accommodate this growth, the Tasmanian office underwent a restructure, and as part of this, Keith became the Business Group Manager for Transportation within GHD in 2005. This role involves the management of both the Roads and Traffic groups, as well as maintaining a high level traffic and transport input into projects.

Some recent key projects in this role have included Sorell Traffic Management Study, Brooker Highway Transport Study, Northern Approaches to Hobart Transport Study, Clarence Plains Outline Development Plan transport analysis, Macquarie Street clearway trial traffic analysis, engineering review of Lorinna Road to name a few.

Keith has also been involved in several major projects on the mainland and overseas, including four strategic route management studies for VicRoads and peer review of several large projects in the Middle East.

Keith completed his second Masters degree from Monash University in Transport in 2006. Keith's keen interest in traffic and transport education has led him to lecture Transportation Engineering for third year engineering undergraduates at the University of Tasmania on a casual basis, as well as supervise several student's honours and final year projects each year. This started in 2005, where he lectured a third of the subject. This year Keith lectured the whole subject, which has included a complete overhaul of the subject's structure.

Keith is a member of the Executive Board of the Institute of Transportation Engineers, Australia/ New Zealand. This is an International organisation for transportation engineering professionals, largely based in the United States.

Keith is the proud father of three young boys, and outside the work environment enjoys spending time with his family, renovating his old West Hobart house and windsurfing.

CONGRATULATIONS / WELCOME Members joining, rejoining or upgrading

FELLOW

Tanya Ford, FIEAust CPEng

MEMBERS

Daniel Alimu, MIEAust
Danie Hugo, MIEAust
Daniel Indyk, MIEAust
Keith Midson, MIEAust CPEng
Adrian Paine, MIEAust
Christopher Tummon,
MIEAust CPEng

GRADUATES

Nicolas Barta, GradIEAust
Amelia Jones, GradIEAust
Jason Lavroff, GradIEAust
Brendon Pitt, GradIEAust
Dion Furfaro, GradIEAust

STUDENTS

(StudIEAust)

Jarred Allen
Hannah Atkins
Alan Fleming
Samuel Johnson
Daniel Lockett
Anise Pertl
Alexander Ponomarenko
Min Sithu
Mark Symes

YOUNG PROFESSIONALS NETWORK TASMANIA

On the 16 November, The Cascade visitors centre played host to the Young Professionals Network of Tasmania's final event for 2007.

Over 80 young professionals were in attendance from a variety of professions including Engineering, Accounting, Planning, Environmental science, Legal support and Project management which achieved the YPNT's primary aim of the event, to bringing together young professionals working in the built environment. Despite some participants concern with pinning name tags to some glamorous evening attire, participants got into the swing of the night right from the outset and lively conversations were

struck as people discovered workmates, past uni friends and old acquaintances.

After a quick overview of the organisation and thanks to the sponsors for making the years events possible, the evening was put in the capable hands of MC, Gavin Baskerville who successfully managed the task of entertaining such a large group directly after a week of work.

Between the good food and even better drinks, Raffle winners were picked to receive kayaking trips, dinners and CD vouchers. A few games of Heads and tails were also run with the last game won by a certain chap who it was

suspected simply didn't want to move his hands off his "tail" and so outlasted all competitors.

Later in the evening people were encouraged to move about and talk about topics of interest posted on the wall by the organisers to encourage people to move outside their comfort zone and meet and talk to new people. This session was a good success with most people moving about the room and striking up conversations, hopefully gaining some insights from conversations with other young professionals.

YOUNG ENGINEERS



*Jessica Andrewartha,
GradIEAust*

Hi and welcome to 2008!

First let me introduce myself... My name is Jessica Andrewartha and I am the new Chair of Young Engineers Tasmania. I have been a member of the YEAT committee for close to 2 years in the role of Vice Chair, and will lead YEAT for 2008. I am currently doing a PhD in fluid dynamics at UTAS, focusing on improving the efficiency of canals and pipelines for Hydro Tasmania by investigating the effects of biofouling.

I would like to take this opportunity to acknowledge the fantastic contribution of Phoebe Swift, who held the position of Chair for the past 2 years, and has helped guide the development of the committee and YEAT events during this time.

I am also pleased to announce the Young Engineers Committee for 2008

Jessica Andrewartha - Chair
James Porter - Vice Chair
Phoebe Swift - Immediate Past Chair
Cohan Drew - National Rep
Justin Digney - Student Rep
Jenna McCoy - Student Rep
Brandon Servant
Karl Walker
Nathan Campbell
Sandra Thaow
James Baker

Over the next few months we will introduce you to the faces of the 2008 committee, and if you are interested in getting involved with the Tas Young Engineers committee, now is the time!

Please contact me via email at Jessica.Andrewartha@utas.edu.au, for more information.

After a very successful 2007, YEAT is looking forward to bringing you more exciting events and networking opportunities in 2008, including student BBQ's at UTAS, Meet the Profession and CPEng Evenings, as well as several social networking events. Check out the March issue of ET for more details!

Jess Andrewartha, GradIEAust
Chair



All up the night was a great success and all attendees appeared to get a lot out of the evening, eventually being ushered from the building late in the night.

Thanks go to the excellent organisation skills of the three YPNT committee that organised such a smoothly run event, the great service and atmosphere at the Cascade visitors centre and finally all the attendees who got into the spirit of networking so well on the night.

The YPNT looks forward to running more events in 2008.

Many thanks to our 2007 Sponsors, Hydro Tasmania, GHD and Pitt & Sherry.



sustainablethinking

ELECTRICAL BRANCH MEETING

DATE: Tuesday, 26 February 2008
TIME: 5.30 for 6.00pm
PLACE: Royal Engineers Building
2 Davey Street, Hobart

BRAD TURNER, MIEAust CPEng

“HYDRO TASMANIA’S ENGINEERING EXCHANGE”

In 2003 Hydro Tasmania established an annual engineer exchange program with Electricite De France (EDF).

The program was established to allow the open exchange of knowledge between Hydro Tasmania and EDF.

Brad Turner, an electrical engineer with Hydro Tasmania, participated in this program in 2007.

Brad will share the experiences he had whilst in France.

RSVP: Catherine Reading 6234 2228 or
creading@engineersaustralia.org.au

**THIS MEETING WARRANTS
1.5HRS CPD**

AUSTRALIAN GEOMECHANICS SOCIETY (Tasmanian Chapter)

DATE: Tuesday, 4 March 2008
TIME: 5.30 for 6.00pm
PLACE: Royal Engineers Building
2 Davey Street, Hobart

**DR DEREK PENNINGTON,
MICE, MIEAust CPEng**

Derek is an independent consulting engineer, recently followed his professor wife to Hobart where he has reduced his work load to less than 30 hours PER MONTH giving him sufficient time to actually enjoy parenting girls aged 3 and 6, and restore an 1830 house complete with stables and coach house in Battery Point.

Geotechnical life started with Arup in London, and had interim stops that included Thailand, Hong Kong, Tanzania, and Western Australia. He completed his PhD developing shear wave devices to measure stiffness anisotropy in clays while riding bad weather in a Fugro Investigation vessel off the North West Shelf in 1999. He then set up the Arup Perth Geo group, and subsequently Worley Geosciences. He joined Advanced Geomechanics, and then formed Pennington Scott Hydro and geotechnical consultants.

He is an Honorary Associate in the UTAS, School of Engineering and is the sole employee in Pennington Geotechnics

“Hang Tuah, Yolla & Maari: Geotechnical Perspectives of the Suction Installation of these Offshore Platforms”

Hang Tuah – the worlds first ACE platform (conceived and designed by Arup), was installed in the clay seabed of the south china sea in 2001. The second ACE platform Yolla, has since been installed off Tasmanias North Coast, and the third, Maari, will be installed in the significantly more complex interbedded sands and clays in the Tasman sea offshore New Plymouth in 2008. Derek Pennington has been involved with all three platforms as installer, designer, and currently clients engineer and will provide a light visually rich geotechnical / structural taster of the fascinating concept of these self installing, self elevating platforms – all world firsts in their own right.

RSVP: Andrew Ezzy 6221 3740
AEzzy@skm.com.au

THIS MEETING WARRANTS 1.5HRS CPD

CALENDAR 2008

FEBRUARY

Thursday 7 - Australian Bureau of Meteorology - Transforming Australia's Water Resources Information Seminar - 9.00am to 11.30am - Hobart Function Centre, Elizabeth Street Pier - No Cost - Please register with Atliana Safich 9669 4662 or a.safich@bom.gov.au

Saturday 23 - LAKE MARGARET PLAQUING CEREMONY - 12.00 noon - Lyell District Ex-Servicemen's Club, Queenstown - Register with Catherine Reading on 6234 2228 or creading@engineersaustralia.org.au (Refer to this page)

Monday 25 - NATIONAL PRESIDENT'S VISIT - NORTH WEST GROUP - "Supporting the Diversity of the Profession" - Julie Hammer - 6.00 for 6.30pm - Gawler Room, Ulverstone Civic Centre - \$15 per person for 3 course meal - Register with Catherine Reading on 6234 2228 or creading@engineersaustralia.org.au (Refer to page 3)

Tuesday 26 - NATIONAL PRESIDENT'S VISIT - NORTHERN GROUP - "Supporting the Diversity of the Profession" - Julie Hammer - 12.30pm - Launceston Function Centre - \$10 per person for a light lunch - Register with Catherine Reading on 6234 2228 or creading@engineersaustralia.org.au (Refer to page 3)

Tuesday 26 - Electrical - Hydro Tasmania's Engineering Exchange - Brad Turner - 5.30 for 6.00pm - Royal Engineers Building, 2 Davey Street, Hobart - Register with Catherine Reading on 6234 2228 or creading@engineersaustralia.org.au (Refer to page 15)

Thursday 28 - Concrete Institute of Australia - ONE DAY SEMINAR - Precast for Structural Engineers - John Woodside - 9.00am to 4.45pm - The Old Woolstore, 1 Macquarie Street, Hobart - \$350 National Precast & Concrete Institute Members \$425 Non Members - Limited Numbers of 35 only - Register with Nicole (02) 9736 2955 or admin@concreteinstitute.com.au

Friday 29 - Young Engineers - University Welcome BBQ - Hobart Campus

Tuesday 4 - Geomechanics - Hang Tuah, Yolla & Maari: Geotechnical Perspectives of the Suction Installation of these Offshore Platforms - Derek Pennington - 5.30 for 6.00pm - Royal Engineers Building, 2 Davey Street, Hobart - Register with Catherine Reading on 6234 2228 or creading@engineersaustralia.org.au (Refer to page 15)

Thursday 6 - Cement Concrete & Aggregates Australia - Concrete Cracking & Successful Slab-on-Ground Construction Seminar - 6.30pm to 10.00pm - Mercure Hotel, 156 Bathurst Street, Hobart - \$33.00 per person or \$11.00 students - Email registrations to Brooke Courtneage at brooke@cca.com.au

REMINDER

HISTORIC ENGINEERING MARKER FOR LAKE MARGARET POWER SCHEME



His Excellency, Governor William Cox will be unveiling the bronze plaque in Queenstown on **Saturday, 23 February 2008 at 12.00 noon.**

A site tour will be conducted after lunch.

If you would like an invitation sent to you, please contact Catherine Reading at the Division office on 6234 2228 or creading@engineersaustralia.org.au

MARCH

1 - 3 November - International Conference on Engineering Sustainability - Perth - Sheraton Hotel - For more information email enquiries@keynotewa.com.au

The Structural Engineers Conference: ASEC 2008

**MELBOURNE
June 26-27, 2008**

Register now: www.asec2008.com