

## October 2007 e-newsletter

The Centre for Water Science and System is now known as the **SA Water Centre for Water Management & Reuse (RCWM&R)**.

### Highlights and Achievements

- **The Application of mEnCo<sup>®</sup> to Improve Treatment Optimisation and Water Quality for Customers in Adelaide.**  
John Van Leeuwen's work with United Water and CRC Water Quality and Treatment on the research and development work on modelling water treatment processes, won the SA Australian Water Association's Research and Development Award for 2007. The award was presented at the SA AWA dinner of 19<sup>th</sup> October 2007.

This research developed and implemented a software model known as **mEnCo<sup>®</sup>** that enables water treatment plant operators to rapidly determine the dose of coagulation chemicals to optimise the water treatment process. The software includes a generic function that can be used on a wide range of raw waters. The system has been implemented at full scale in six Adelaide metropolitan water treatment plants and has resulted in cost savings and improvements to water quality delivered to one million Adelaide consumers.

- **Rainwater Tank Sizing Calculator**

The Stormwater Industry Association of Australia (SIA) published information about UniSA's rainwater tank sizing calculator recently in their monthly bulletin.

*A rainwater tank sizing calculator has been developed by the University of South Australia (Centre for Water Science and Systems). Primarily for sizing domestic rainwater tanks up to 20,000 litres (20 kl). The calculator and accompanying notes are very user friendly with input data mechanisms (roof area, initial loss, in-house demand, irrigation) coupled with capital city rainfall data. Similarly, the accompanying notes for interpreting the output data are also very easy to follow. It has been developed in excel and can be downloaded from <http://www.unisa.edu.au/water/UWRG/publication/default.asp>*

- **Early Career Symposium Fellowship**

Mr Rezaul Kabir Chowdhury, PhD Student has been awarded “**Early Career Symposium Fellowship**” to attend the 2007 Symposium of the **Australian Academy of Technological Sciences and Engineering (ATSE)**. The Symposium is titled “**Resources Boom: Opportunities and Consequences**” and will be held at the Duxton Hotel, 1 St Georges Terrace, Perth on 19-20 November 2007.

Early Career Symposium Fellowships (ECSF) is awarded to people who are developing a career in the scientific and technological industries, to attend the Symposium, to take part in the debate and to contribute to the conclusions. Selection is by competition, and those awarded ECSF will receive complimentary registration, and support funding towards travel and accommodation. For more details please see <http://www.atse.org.au>

- **President's Scholarship**

Lee, Ah Rim, Postgraduate student of Guna Hewa and David Pezzaniti has won the University President's Scholarship (UPS) & School of Natural and Built Environments Scholarship to complete her Doctor of Philosophy program. For more details about the scholarships please see <http://www.unisa.edu.au/resdegrees/scholarships/unisaint.asp#ups>

## **Research Grants**

The Centre has been awarded an ARC Discovery Grant jointly with Adelaide University:

DP0877707 Prof NG Bean; Prof PG Howlett; Prof CE Pearce; Prof SC Beecham; Dr AV Metcalfe; Dr JW Boland

*WaterLog - A mathematical model to implement recommendations of the Wentworth Group*

2008 : \$ 235,000

2009 : \$ 215,000

2010 : \$ 195,000

Not only is this a large Discovery grant, we were also ranked A+ by the ARC which means ours was in the top third of those grants that were awarded, and hence in the top 7% of all applications. Phil Howlett, Simon Beecham and John Boland are all UniSA researchers while Nigel Bean, Charles Pearce and Andrew Metcalfe are mathematicians from the University of Adelaide.

In 2003, The Wentworth Group of Concerned Scientists released their 'Blueprint for a national water plan' with the primary objective to 'protect river health and the rights of all Australians to clean usable water'. Currently, there are significant water restrictions in all the Australian mainland capital cities. In January 2007, the Prime Minister of Australia announced a bold plan to rescue the Murray-Darling Basin. The plan incorporates political management changes, and an investment of \$10bn. This project will develop the fundamental mathematical principles required for this improved management.

## **Keynote and Invited Presentations**

On 11 October Simon delivered a keynote presentation on WSUD at the Place Leaders Association meeting in Adelaide. This follows a keynote paper Simon presented at the Stormwater Industry Association's annual conference in Wollongong and an invited paper at the Materials and AUSCERAM conference in Sydney.

## **Research and Research Education**

Adjunct Prof John Argue was the keynote speaker at a workshop of invited specialists organised by Victorian Dept of Sustainability & Environment and Melbourne Water entitled 'The Urban Runoff Spectrum: Opportunities and Constraints' held in Melbourne on 28 September, 2007. The workshop was called in response to a growing concern in leading 'water' circles in Melbourne that urban flooding is not being given sufficient recognition in the water-sensitive design strategies presently being promulgated in Victoria. Urban Water Resources Centre's manual "WSUD: basic procedures for 'source control' of stormwater - a Handbook for Australian practice" published in 2004, meets this concern. A follow-up in-house (Melbourne Water) 2-day workshop on the Handbook's procedures is being organised for early 2008.

Adjunct Prof John Argue presented the 23rd Engineering Education, Australia (EEA) 2-day Workshop on "Stormwater Management (source control)" in Brisbane on 18/19 October, 2007. The workshop was attended by 23 participants, divided evenly between consultants and municipal technical officers.

## **SA Water Scholarships**

The suite of SA Water Undergraduate scholarships listed below was made available for the first time in 2007 to 2nd/3rd year students studying in a full-time program.

SA Water will continue each of the nine scholarships to include the remaining years of study for each of the recipients.

SA Water Undergraduate Scholarships, including:

- SA Water Undergraduate Scholarship in Business
- SA Water Undergraduate Scholarship in Engineering (NBE)
- SA Water Undergraduate Scholarship in Civil Engineering
- SA Water Undergraduate Scholarship in Civil Engineering for Women
- SA Water Undergraduate Indigenous Scholarship

For more information please click on the links above.

## International

- The Centre for Water Management and Reuse welcomes Dr Ali Hassanli, Associate Professor in Water Engineering, from Shiraz University, Iran. Dr Hassanli will be based in the Centre for a year.
- Simon Beecham, David Pezzaniti & John Van Leeuwen gave a presentation and tour of the centre, as part of the Professional Development Programme organised for a group of visiting Indonesian academics. The visit was organised by International Centre of Excellence in Water Resources Management WaterEd Australia Pty Ltd (ICEWaRM).
- Simon Beecham attended the 3rd International Yellow River Forum (IYRF) on Sustainable Water Resources Management and Delta Ecosystem Maintenance held in Dongying City, Shandong Province of China on October 16-19, 2007.

Further information about the conference can be accessed from the conference website: <http://forum.yellowriver.cn/Ehytz2.htm>

## Media coverage

- **RECYCLING STORMWATER – Baden Myers**  
Baden Myers discusses his project on reusing stormwater collected from pavers. Ford says this is a brilliant idea. Myers says the pavers in this system have holes in them for water to go through into an impermeable membrane that holds the water. Waterman says this is perfect to catch the runoff. Myers says the pavers are available in Adelaide already from C&M. He says he's not sure whether Boral is still marketing it as the contract has gone to Hansons. Myers says he is involved in the research for water quality and treatment and that he's looking at the reuse potential of the water from underneath but not for drinking. He says he doesn't know of any home with these pavers yet and says there are plenty of pavers in Adelaide laid by councils but without a storage system. He says he has made a trial system himself at the **University of South Australia** at Mawson Lakes. Myers says he was inspired by a Boral catalogue. He says he's looking at having it used in shopping centre car parks for irrigating the shopping precincts.

Continued talk on water. Myers talks about his growing up years in Penrith NSW saying he went to the University of Technology Sydney to take up engineering. He says he decided to come to Adelaide to continue his research – adding **UniSA** has less red tape. He says **Simon Beecham**, his supervisor, moved down to Adelaide to take an appointment himself. Myers says he wants to take his research further into the future.

**Interviewees: Baden Myers, University of SA, Researcher; Dr Judy Ford.**

- **DESALINATION PLANTS – Simon Beecham**

Bevan says SA is going to get a desalination plant and the Premier has said it might add up to \$600 to people's water bills which is an awful lot of money. He says the Govt has also said it could take up to five years to build. Beecham says if the imperative was strong enough you could fast-track most of the technological side of things. He says a figure that's commonly quoted is that it takes two years to build, but he's not convinced that is an appropriate figure. He says the important thing is the environmental impact assessment and it's in no-one's best interests to fast-track that. He says you also want the best available technology. He says SA Water has done a good job in diversifying Adelaide's water supply. He says the costing of water in Australia is a big issue and it needs to be updated. He talks about the technical difficulties with desalination plants.

**Interviewees: Simon Beecham, University of SA.**

ABC 891 Adelaide (Adelaide) Mornings - 19/09/2007 - 10:34 AM  
Matthew Abraham and David Bevan

- **WATER MANAGEMENT IN ADELAIDE**

Simon Beecham talks about water resources and water management in Adelaide. He says the state strategic plan calls for an increase in population, he says the State has to be smarter with space management with multiple space usage. Beecham says water consumption is now going to be examined very carefully and says the community needs to be adaptive, and plan into the future. He says the Centre for Water Science and Systems, an SA Water funded research Centre at the University, they are currently examining historical rainfall data and previous climate trends to check the primary input.

Beecham has moved to Adelaide after spending 15 years in Sydney, he says the city is more pleasant to raise children in and has a high quality of life. He says water resources research needs to be invested in to increase understanding and ensure management is sustainable. He says Adelaide will not run out of water, but some water practices need to be altered to be more sustainable. He says Planning SA is currently implementing Water Sensitive Urban Design for the metropolitan area. He says this is a very progressive project that implements many of the research outcomes from the University of SA.

Compere asks about bans on drippers and watering with buckets. Beecham says Australia has difficult rain fall patters with extended period between rainfall events, which means the country has to manage its water in a different way to those with abundant regular rainfalls. Beecham says showering is a personal decision and perhaps people who like longer showers should be encouraged to save water in other ways, such as having front loading washing machines or reusing water on the property.

He says Australia has been quite ignorant about water use and now people are prepared to change their personal management of water.

**Interviewees: Simon Beecham, University of SA.**