

# CWMR ENEWS

August 2009



SA Water Centre for  
Water Management  
and Reuse



## Research news

### Signing Ceremony and Annual Workshop

UniSA and SA Water have extended the research partnership deal that has seen SA Water invest \$3.5m of funding into finding smart ways to manage and re-use water in South Australia. The new agreement over five years was signed by Anne Howe (CEO SA Water) and Prof Peter Høj (Vice Chancellor of UniSA) at a ceremony on Friday August 14 at UniSA's Mawson Lakes campus.

Already the partnership has delivered some significant outcomes across a broad range of water management applications from research into low energy desalination using clean technologies, through to improved methods for harvesting, treating and reusing urban stormwater.

Speaking at the launch of the next phase of the research partnership, UniSA Vice Chancellor Professor Peter Høj said the Centre's strength lay in its commitment to tackling the State's water problems on many fronts.



Anne Howe (CEO SA Water) and Prof Peter Høj (Vice Chancellor UniSA)  
Signing the New Five Year Collaborative Agreement

*"The research being carried out is wide ranging, not only developing ways to better manage and use our natural rainfall, but also examining how sophisticated new technologies, including nanotechnology and new methods of filtration, can help to build a sustainable water supply future for the State," Prof Høj said. He continued by saying "This kind of collaboration works especially well*

*because we have a direct link with SA Water, the group with the best understanding of our water supply challenges. It means our researchers can work to provide solutions to real problems on an integrated scale."*

SA Water CEO Anne Howe said over the past five years of the collaboration the Centre for Water Management and Reuse had already delivered some significant research and at the same time was acting as an important demonstration facility for industry. *"What is exciting about this work is that out here at Mawson Lakes we have tangible evidence of how these innovations will work across the community,"* Howe said. *"This has become a focus for technology transfer to industry and a place where theories and innovations can be tested so that we can develop guidelines and systems that are practical and offer best practice for water capture, use, and recycling. This is a constructive and fruitful relationship which we are delighted to continue to support."*

A research facilities tour for media and other guests was conducted prior to the signing ceremony. This included:

- Low energy desalination systems, nanotechnology and advanced treatment technologies. Visitors were shown how reverse osmosis membranes for desalination are tested in the laboratory.
- Three full-scale facilities demonstrating water sensitive urban design
- Two full-scale permeable paving systems, one including underground storage and solar pumping system for application as a water supply for an accompanying rainwater garden
- Two other vegetated biofiltration systems
- A working demonstration of Australia's largest experimental siphonic roofwater harvesting rig.

CWMR's annual Research Workshop followed the signing ceremony. This was well attended by SA Water staff and other industry representatives and the workshop covered all four of the Centre's research themes.

A video of the ceremony highlights can be viewed on YouTube at the following address [www.youtube.com/watch?v=uzF2SNd\\_MKc](http://www.youtube.com/watch?v=uzF2SNd_MKc)

## Other Research News

Associate Professor Linda Zou has received ITEK commercialisation catalyst funding of \$57,000 for her desalination waste research work.

Murdoch University is leading the new \$25 million National Centre of Excellence in Desalination, announced on 15 May 2009. UniSA through CWMR is one of the research partner universities of this centre. More research activities of this will be reported in future Newsletters.

Simon Beecham has been awarded a \$30,000 research grant from the Mawson Lakes Innovations and Economic Opportunities Group (IEOG). The grant will be used for an experimental investigation into clogging of permeable pavements.

Associate Professor Linda Zou and Professor Dennis Mulcahy visited Korea for 5 days at the beginning of April. The trip included visits to Gwangju Institute of Science Technology and SEAHERO (Seawater Engineering Architecture High Efficiency Reverse Osmosis) Centre for Seawater Desalination Plant. The visit was funded through a Korea-Australia Foundation grant.

On 7 July 2009 Adjunct Associate Professor Chris Chow and Dr John van Leeuwen in conjunction with United Water visited the Morgan Treatment plant. The Morgan plant has just installed a streaming current detector (on-line coagulation control) and its plant operators are seeking assistance from CWMR. John has extensive experience in this technique. This visit also facilitated a networking exercise with the United Water team. United Water is currently investigating methods to manage coagulation dosing control for the Bolivar plant and Dr John van Leeuwen has been invited to direct the project.



LEFT: Dr John van Leeuwen (UniSA) and Dr Mike Holmes (United Water)  
RIGHT: Dr. Chris Chow at the Morgan Treatment Plant

## Visitors to the Centre

CWMR Adjunct Professor Dongsheng Wang from the Chinese Academy of Sciences' Research Centre for Eco-environmental Sciences is visiting CWMR in August to work with Chris Chow and John van Leeuwen. Another visitor in August has been Professor Magnus Jaeger (University of Applied Sciences Amberg-Weiden) who regularly spends time with our Centre.

Dr. Ki-Hong Kim from the Korea Atomic Energy Research Institute will be spending a year at CWMR working with Dr. John van Leeuwen on the development of advanced oxidation processes and specifically on pulp and paper mill wastewater treatment processes.

## Conferences, seminars, workshops

On Saturday 14 March Professor Don Bursill gave a presentation at the Water Summit organized by the Friends of Gulf St Vincent on "The importance of the River Murray to Adelaide's water supply". Professor Simon Beecham and Richard Clark were also speakers at the meeting.

On Wednesday 18 March Professor Don Bursill presented an invited address and chaired a half day session of a workshop held in Melbourne as part of the national AWA OzWater Conference. The workshop was arranged by the International Water Association to discuss issues associated with the implementation of water safety plans by water utilities. The concept of these risk based water quality management plans was developed for the Australian Water Quality Guidelines by the CRC

Water Quality and Treatment here in Adelaide and it has subsequently been taken up in a slightly modified form by the World Health Organisation in their Guidelines for Drinking Water Quality.

On the 4<sup>th</sup> and 5<sup>th</sup> of May, 2009 Adjunct Prof John Argue presented a 2-day workshop on “Stormwater Management (source control)” to a group of 13 practitioners in Perth. This was the 30<sup>th</sup> presentation across the nation on behalf of the organisers, Engineering Education Australia, the education wing of Engineers Australia. John is scheduled to give the 31<sup>st</sup> presentation of the EEA workshop “Stormwater Management (source control)” in Brisbane on 20/21 August, 2009.

During his recent trip to Iran, A/Prof Ali Hassanli gave three seminar presentations:-

1. The first presentation was held in the Soil and Water Division of the Iranian Agriculture Department on 13 April 2009. The topic was “How soil water monitoring in irrigation projects is important in water saving and salinity management: a quick overview of typical projects in soil monitoring in Australia”. The audience included researchers, managers and soil and water experts.
2. The second presentation was held in the Regional Water Department of Fars Province on 15 April 2009. The topic was “Why water resource management is important? A comparison between the Australian view on water management and the Iranian view”. The audience included managers of different sections of the Regional Water Department of Fars Province and water experts.
3. The third and final presentation was held at Shiraz University on 18 April 2009. The topic was “Research and education systems of Australian universities and possible available scholarships for postgraduate students”. The audience included lecturers and students.

Adjunct Prof John Argue led a 5-day workshop for the Waitakere City Council, Auckland, NZ, during the week of 18 – 22 May, 2009. The goal of the workshop was to advise Council on what ‘source control’ measures should be required of the proposers of three development applications in three rural (‘greenfield’) catchments in the city’s northern region.

The CWMR team of John Argue, David Pezzaniti and Guna Hewa were invited by Sunshine Coast Council, Queensland, to collaborate with a group from Newcastle University in a major initiative to produce a ‘leading edge’ Guidelines document aimed at improving the WSUD practices presently used in South-east Queensland.

Dr John van Leeuwen attended The 18th World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation was held in Cairns, Australia from 13–17 July 2009. He presented a paper titled “Disinfectant dosing of blended waters” van Leeuwen, JA, Cook, D., Chow, C. and Drikas, M.

## Awards

Prof John Argue attended the Stormwater ’09 Conference (combined NSW/Victoria SIA) in Albury, NSW in early July 2009. He presented a paper co-authored with David Pezzaniti “The need for quantity-related criteria in regional WSUD guidelines – a demonstration”. The paper won the conference ‘best paper’ award.

## People

Terry Lucke recently completed his PhD in under three years and CWMR would like to congratulate him on this significant achievement. Terry specialises in the area of siphonic roofwater harvesting and has over ten years experience in the water industry.



CWMR's newest staff member Dr Terry Lucke

## Publications

Hassanli, A. M., Esmaili, N. A. and Beecham, S. (2009), Evaluation of the effect of porous check dam location on fine sediment retention (a case study), *Environ Monit Assess*, Springer, 152(1), pp319-326

Development and implementation of the software mEnCoq to predict coagulant doses for DOC removal at full-scale WTPs in South Australia

J. van Leeuwen, M. Holmes, U. Kaeding, R. Daly and D. Bursill

*Journal of Water Supply: Research and Technology—AQUA* | 58.4 | 2009

Pezzaniti, D., Beecham, S. and Kandasamy, J. (2009), Influence of Clogging on the Effective Life of Permeable Pavements, *Journal of Water Management*, Institution of Civil Engineers UK, 162(3), pp211–220

Lucke, T. and Beecham, S. (2009), Cavitation, Aeration and Negative Pressures in Siphonic Roof Drainage Systems, *Journal of Building Services Engineering Research and Technology*, 30(2), pp103-119