



UNSW
THE UNIVERSITY OF NEW SOUTH WALES

civil & environmental engineering

Welcome from
David Waite

Professor and
Head of School



Dear Friends

Welcome to the Winter 2008 edition of the new School Alumni & Industry Newsletter. Through this newsletter we hope to maintain contact with our alumni, industry partners and friends and keep you in touch with the exciting challenges and changes facing the School.

Our enrolment numbers at the undergraduate level continued to grow in 2008 with significantly increased demand for our civil engineering and civil with architecture programmes. The School's coursework Masters also showed strong enrolment in both internal and external offerings.

While a large number of PhD students completed in 2007, our 2008 intake of new research students did not match the number of graduates. With industry demand for civil and environmental engineers at an all time high, greater efforts are needed to attract the highest quality graduates to doctoral research.

Research activity in the School remains strong. We continue to publish widely in peer-reviewed journals and conference proceedings. It is expected that increased links with industry, in part through the recently established UNSW Centre for Infrastructure Engineering and Safety and the UNSW Water Research Centre, will see a growth in research funding in future.

Links with industry continue to be strengthened as a result of the involvement of our Industry Advisory Committee in School affairs. This Committee has been particularly active in examining our marketing to School leavers and in reviewing the School's operational and strategic plans.

I look forward to an even greater degree of interaction and support with alumni and industry through 2008.

Newsletter Winter 2008



List of Contents

Welcome & Overview from Head of School	p1
New Research Centres	p2
CIES	
Connected Waters Initiative	
Water Research Centre	
New Staff	p3
Richard Collins	
Wei Gao	
Matt McCabe	
Anila Sadananda	
Hossein Taiebat	
School Statistics	p4
Alumni	
Industry Partner Programme	

School Annual Report available now

The School Annual Report for 2007 lists the School's achievements in research and teaching, the work of the Research Centres and provides profiles of all School academic staff.

The Report is downloadable at http://www.civeng.unsw.edu.au/about/statistics_and_annual_reports/index.html

If you would like a free hard copy please contact the School's External Relations Administrator at m.oconnell@unsw.edu.au

New School Research Centres

The School is the leading civil and environmental engineering research School in Australia. Our success in attracting research income both from the highly competitive ARC (Australian Research Council) grants and from industry confirms our place as one of UNSW's most successful research schools. In 2007 our grant funding totaled \$8 million.

Notably in 2007, the Centre for Infrastructure, Engineering & Safety was established at the School as a University of New South Wales Research Centre. The UNSW Water Research Centre encompassing the activities of the School's Water Research Laboratory and the Centre for Water and Waste Technology was also established as a UNSW Centre in late 2007.

The Connected Waters Initiative is a joint initiative between the School of Civil & Environmental Engineering and the School of Biological Earth & Environmental Sciences (BEES). It is planned for the CWI to evolve into a well funded National Centre for Excellence over the next few years.

CIES

Centre for Infrastructure Engineering and Safety



The demands of new and existing structures imposed by society and by economics and the use of new or advanced materials require advanced solutions that challenge and unite creativity and scientific rigour.

Existing infrastructure in the developed world is ageing, and strengthening and rehabilitating bridges, buildings, dams and other critical infrastructure is an equally demanding challenge to creative engineering solutions.

The Centre for Infrastructure Engineering and Safety (CIES) was established as a University of New South Wales Research Centre in 2007 to undertake advanced research in all aspects of civil engineering infrastructure embodying building structures, bridges, dams, tunnels, roads, pavements and more.



The Director of the Centre is Federation Fellow, Scientia Professor and Professor of Civil Engineering, Mark Bradford.

CIES is underpinned by eminent academic staff with strong international reputations in their respective fields, particularly in structural engineering, engineering mechanics and computational mechanics.

The Centre conducts pure and applied research and undertake commercial activity in collaboration with industry, with the School of Civil & Environmental Engineering's computational and large scale testing facilities providing the essential physical resources.

<http://www.civeng.unsw.edu.au/cies/>

Connected Waters Initiative

Australia is often said to be the driest inhabited continent on Earth - but that's only because of its low rainfall. In fact, while the surface of the land is dry, we have massive reserves of this most precious of resources right beneath our feet: groundwater.

Our natural springs are the source of the millions of bottles of mineral water we consume every year. Groundwater makes it possible to grow much of our irrigated crops and pastures. Groundwater use makes up more than one-fifth of all the water we harvest, yet we know far too little about how to manage it sustainably. Nor do we know enough about the many and complex connections and interactions between groundwater and the surface water - dams, lakes, rivers, wetlands. These "connected waters" are crucial to Australia's social, economic and environmental future.



Professor Ian Acworth, of the School of Civil and Environmental Engineering, is the inaugural holder of the Gary Johnston Chair of Water Management, and research leader at the Connected Waters Initiative.

"Australia already pipes vast amounts of underground water for agriculture and inland towns and we've been using it as if it were a magic pudding that will never run out," Professor Acworth says. "There's an urgent need not only for research in this area but for public education about it as well."

The goals of the Connected Waters Institute are to:

- Contribute practically to significant environmental challenges facing Australia in water resource management.
- Promote better management and understanding of the interaction between surface and groundwater.
- Boost community awareness and research quality in an emerging area of high national significance.

<http://www.connectedwaters.unsw.edu.au>

The UNSW Water Research Centre

The UNSW Water Research Centre - encompassing the activities of the School's Water Research Laboratory and the Centre for Water and Waste Technology - was also established as a UNSW Centre late in 2007.

This Centre will combine the research efforts of expert staff, who are leaders in their fields, covering everything from water policy and urban water systems to coastal, ground, estuarine and inland water, preventing and managing contaminants and organisational factors affecting sustainable water development. More information on this exciting new Centre will be in the next Newsletter.

<http://www.wrl.unsw.edu.au> & <http://www.cwwt.unsw.edu.au>



New School Staff Semester 1 2008



Dr Hossein Taiebat
Senior Lecturer, Geotechnical Engineering

PhD Topic: Three-dimensional Liquefaction Analysis of Offshore Foundations. (USyd, 1999)

Research Interests: includes offshore foundations, slope stability, and dam engineering

Previous Roles:

Research Associate, USyd: Structural Design Engineer, Connell Wagner : Senior Lecturer, Faculty of Eng'g, UTS

If I could start out again: I would probably toss between engineering and pottery!

Person I most admire: Nelson Mandela. I wish one day I could meet him and sing "Turn this world around" with him.

Dr Anila Sadananda
Student Services Manager



Previous Roles:
Manager, Student Operations, Charles Darwin Uni, NT
Dean of Students and Community Affairs, Inst. Technology, Bangkok

Professional Goals: Either as an academic (international relations-specialising in Russian studies) or an administrator I find myself fulfilling my passion and my goal of serving young students towards their personal and professional development in an internationally sensitive environment. As an administrator I can even help to make changes in the processes for the benefit of the student community, something that as an academic was not easy.

Person I most admire: Actually I have admiration for everyone I come across because each one of us has something special and unique.



Dr Matthew McCabe
Senior Lecturer, Water Engineering

PhD Topic: Uncertainty modelling and regional scale estimation of evapotranspiration: improving predictions using remotely sensed surface temps. (Newcastle 2002)

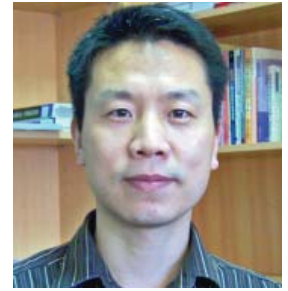
Research Interests: applying remote sensing approaches to improve knowledge of the Earth System, focusing predominantly on water and energy cycles at the land surface, but broadly interested in all applications encompassing terrestrial, atmospheric and oceanic components.

Professional Goal: to develop a strong group of individuals and collaborators that produces world-leading research.

Desert Island Disc: my iPod shuffle with Interpol, The Killers, David Gray, Eskimo Joe, Death Cab for Cutie, Eminem, Radiohead - otherwise, the sound of the ocean would suffice.

Person I would most like to meet: Gandalf

Dr Wei Gao
Lecturer, Structural Engineering



PhD Topic: Random vibration analysis and active vibration control of stochastic intelligent structures. (Mech Eng, Xidian University, 2003)

Research Interests: Uncertain modelling and uncertain methods: Vehicle-bridge interaction dynamics: Wind and/or seismic induced random vibration: Train-rail-sleeper-foundation-tunnel/bridge system: Stochastic nonlinear system: Vehicle dynamics and vehicle rollover: Structural optimization and control: Smart structures: Stability and reliability analysis

Professional goals: Uncertainty exists in most engineering structures such as bridges, towers, antennas, aircraft, vehicles, ships and aerospace structures. I hope our research results can provide new theoretical bases and innovative approaches for engineers to analyse and design structures with improved reliability.

Desert Island Disc: Chinese operas.

Person I most admire: Stephen Hawking. He has made the most astounding advances in physics, although he is disabled by amyotrophic lateral sclerosis (ALS).

Dr Richard Collins
UNSW-ANSTO Research Fellow*



PhD Topic: Chelation in Cd and Zn phytoextraction. (Dept of Soil & Water, Uni of Adelaide, 2002)

Previous Roles:
Senior Research Associate, CWWT, UNSW: Research Engineer French Atomic Energy Commission, France: Analytical Chemist ZENECA Ag Products, USA

Research Interests: the environmental fate, speciation and bioavailability of metals (Al, Cd, Co, Cu, Fe, Mn, Ni, and Zn), metalloids (Se) and actinides (Am and U) in aquatic and terrestrial systems.

Professional Goals: to effectively contribute to the preservation, rehabilitation and/or sustainable economical/environmental use of the natural environment. Also to always learn and be involved in work/research that I find interesting and relevant.

Desert Island Disc: I'd prefer a radio to pick up the local desert island radio station.

Person I'd most like to meet: the writer Peter Carey.

**Two major research activities are proposed for this groundbreaking UNSW-ANSTO strategic initiative. The first is specifically related to ANSTO's Institute for Environmental Research's 'Radwaste' project, which researches the environmental aspects of nuclear operations. The second activity involves utilising a range of nuclear techniques (XAS, PIXE, AMS, neutron scattering, isotope tracers etc) to address issues of environmental degradation. For more details please see <http://www.eng.unsw.edu.au/news/2008/0623.htm>*

Student & Staff Statistics 2003-07

As the table below indicates, the School experienced a large increase in undergraduate enrolments in 2006 and again in 2007. This renewed interest by school leavers in studying civil engineering has been maintained in 2008.

	2003	2004	2005	2006	2007
STUDENT NUMBERS					
Total EFTSU	581	567	582	592	669
BE	634	647	615	730	859
MEngSc/MEnvEngSc	339	292	323	287	322
GradDip/GradCert	72	38	28	32	23
PhD	81	82	79	80	70
ME/MSc	16	17	11	10	6
GRADUATES					
PhD	15	8	14	8	23
ME	1	3	0	0	1
MSc	0	0	0	0	1
MEngSc	117	119	95	114	80
MEnvEngSc	13	13	13	7	8
GradDip/GradCert	6	7	7	13	8
BE (Civil)	64	67	87	80	120
BE (Environmental)	19	28	21	23	23
STAFF (Full-time, tenured)					
Academic	32	33	29.5	25	25
Technical	15	14	15	13	13
Administration	8	8	8	7	8
STUDENT/STAFF RATIO					
— EFTSU/ACADEMIC	18.2	17.2	19.7	23.7	26.8

Alumni Stay in Touch

www.civeng.unsw.edu.au/alumni_industry_relations/index.html

The School would like to keep in touch with its graduates so that they can be kept informed of key developments in the School.

School Alumni also perform an essential on-going contribution to the School in terms of feedback on School direction and areas for improvement, and a way of tracking the strengths and weaknesses of the School's teaching programs.

It also gives us the opportunity to invite our Alumni to participate in School programs and committees including curriculum review, student mentoring, alumni dinners and other relevant activities. And it is a great way to keep in touch with your fellow classmates after graduation.

If you are a CVEN graduate, please keep us up to date with your latest details. Please either fill out your details online at http://www.civeng.unsw.edu.au/alumni_industry_relations/alumni/alumni_registration/index.html or email us at alumni@civeng.unsw.edu.au

Industry Partners and Supporters

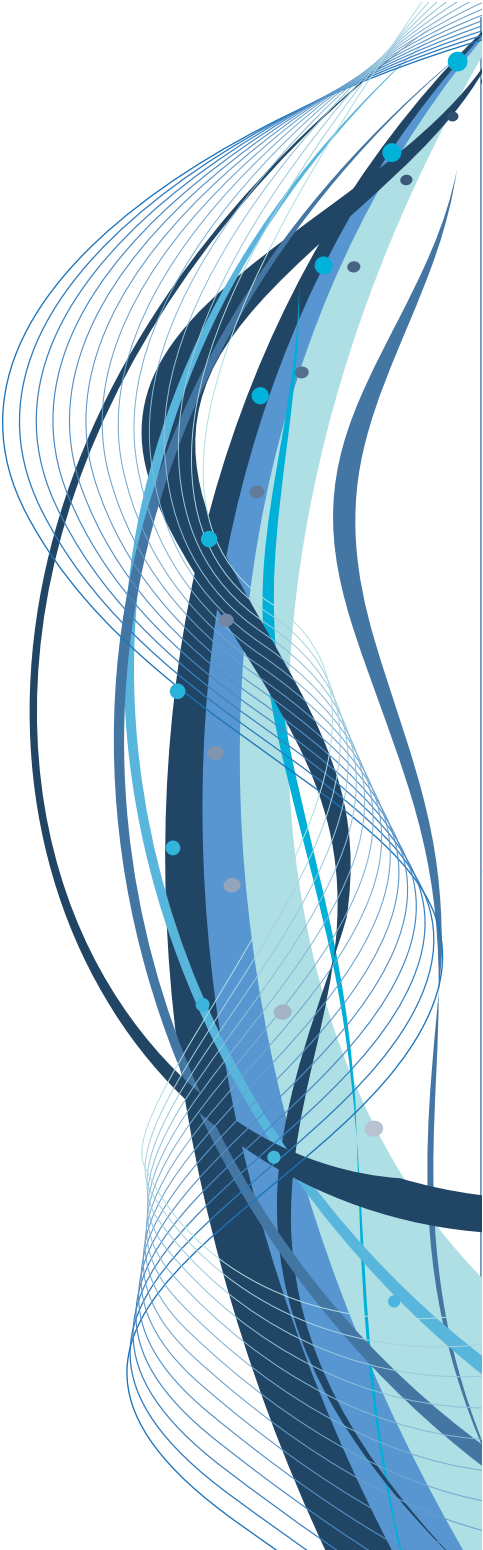
www.civeng.unsw.edu.au/alumni_industry_relations/industry_partners/index.html

The Industry Partnership programme allows for the opportunity to further develop the productive relationship between the School, its students and industry.

The money raised through the programme will be used for the purpose of promoting the School and the engineering profession to school students and the wider community, as well as creating new ways for our students to interact with industry representatives.

As part of the programme, Industry Partners are invited to the School to give technical lectures within various classes and to provide talks and information on various career opportunities for our students.

If you are interested in further information on the Industry Partnerships Program please contact Associate Professor Ron Cox at r.cox@unsw.edu.au



The School of Civil and Environmental Engineering is committed to an ongoing relationship with our alumni and to continuing to strengthen our strong ties with industry.

School of Civil and Environmental Engineering
UNSW Sydney NSW 2052
E: info@civeng.unsw.edu.au
T: 61 2 9385 5033
W: www.civeng.unsw.edu.au