Dear Colleagues and Friends

It is with pleasure but also some regret that I write the front-piece for this newsletter. Pleasure - because it has been another wonderful year for the School but some regret – because, as I will be stepping down as Head of School in early 2013, I will no longer be leading the superb team that is the School of Civil & Environmental Engineering. The support and tireless involvement of all staff in making the School the powerhouse that it is today has been the standout feature of my time in this role. The fact that I will be moving on to other roles at UNSW in no way limits the potential for further development of the School under the very able leadership of Professor Stephen Foster. I will provide my strongest support to Steve and ask that you do likewise.

Many challenges lie before the School – the significant growth experienced over the last five years has not come without pressures on staff time and availability of space and resources; the need to increase the proportion of women engaged in the study and practice of civil engineering is even more apparent as is the need to more readily cross boundaries between disciplines both within and external to the School. Producing highest quality research outputs whilst ensuring that we are providing significant leadership in the practice of civil and environmental engineering is not easy nor is the challenge of ensuring that our graduates are trained in the skills of critical thinking whilst developing a sound understanding of fundamentals. These are great challenges which I and my colleagues in the School will continue to strive to meet with energy, enthusiasm and compassion. All the best for 2013.

Farewell Head of School Scientia Professor T David Waite

David will be in Europe on well-earned sabbatical in the first half of 2013 before returning to UNSW and a new role as Deputy Dean of the Faculty of Engineering. Since 2007 David has led the School of Civil & Environmental Engineering through an extraordinary period of growth and expansion, in undergraduate and research student enrolments, in research publications and income. He inspired a hardworking School team with his own dynamic creativity and commitment. We wish him all the very best.

Super School

The School of Civil and Environmental Engineering is now the largest School of the ten Schools within the Faculty – with 25% of total Faculty undergraduate enrolments, and 23 % of total Faculty student enrolments including MEngSc and PhD researchers.

Semester 2 2012 UGRD UNSW Faculty of Engineering - Total EFTSL 4167

Total undergraduate and postgraduate CVEN enrolments were - 1380 EFTSL (Equivalent Full Time Student Load) out of a Faculty total of 5965 EFTSL.

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Grant Success

The 2013 Australian Research Council (ARC) Discovery Project and ARC Linkage Infrastructure, Equipment and Facilities (LIEF) grants were announced in November 2012. The School was successful in obtaining 3 Discovery and 1 LIEF grant. This is good news for the School especially considering how competitive these grants are, with a success rate of just 21% across the country in the Discovery category.

Discovery Projects:

Ian Gilbert – “Control of cracking caused by early-age contraction of concrete” $355K

Nasser Khalili and GaoFeng Zhao – “Dynamics analysis of unsaturated porous media subject to damage due to cracking” $300K


LIEF Grant:

Travis Waller, Vinayak Dixit, Michiel Bliemer (USyd) and Dennis Del Favero – “Travel Choice Simulation Laboratory (TRACSLab): a visualisation laboratory to study travel behaviour and drivers’ interactions” ($390K)

Congratulations to

Dr Rita Henderson, Senior Research Associate at the Water Research Centre won a prestigious 2012 NSW Young Tall Poppy Award for her work on water quality and treatment.

Associate Professor Bill Peirson for being awarded a UNSW Arc Postgraduate Council Award for Excellence in Postgraduate Research Supervision.

Chongmin Song for his well deserved promotion to Professor in 2012. Chongmin is one of the two original developers of the Scaled Boundary Finite-Element Method and has published more than 50 papers in the area of numerical methods, earthquake engineering, structural dynamics and fracture mechanics.

Dr GaoFeng Zhao – who won a 2013 ARC Discovery Early Careers Researcher award (DECRA) for his work in the area of ‘Dynamic fracturing in shale rock through coupled continuum-discontinuum modelling.’

The School’s External Relations Committee (l-r Ron Cox, Mary O’Connell, Tricia Tesoriero, Lauren Gardner, Steve Davis, Hazel Rowley; inset Kurt Douglas) won the 2012 Faculty of Engineering’s Excellence Award for outstanding achievements and the 2012 UNSW Staff Excellence Award (group) for their sustained high performance efforts and results in Community Engagement.

In addition to the successes in the School, our researchers are partners in four other successful grants:

Mark Bradford is a partner on a LIEF grant for “Performance level structural testing facility” ($500K) in collaboration with The University of Queensland.

Nasser Khalili is a partner on a LIEF grant for “A national facility for in situ testing of soft soils” ($300K) in collaboration with the University of Newcastle.

Xiaojing (Jean) Li, working with CIES, is CI on a grant “Advanced techniques for imaging radar interferometry” ($330K) in collaboration with UNSW Surveying.

Mathew McCabe is a partner on a LIEF grant for “Mobile weather radar system for advanced environmental monitoring and modelling” ($340K) in collaboration with Monash University.

UNSW Goldstar Award winners ($40,000) Adrian Russell, Nasser Khalili and Hossein Taiebat for their research project on ‘Mechanistic design tools for shallow foundations in unsaturated soils derived through numerical modelling, analysis and experimental investigation’. Goldstars are awarded annually to UNSW researchers who narrowly miss out on project grants in the major ARC funding rounds.

Outgoing Head of School, Professor T David Waite was presented with the 2012 UNSW Staff Excellence Award for Excellence in Senior Leadership by the Vice-Chancellor Professor Fred Hilmer AO.
Welcome New Staff

Dr Ali Akbarnezhad - BE (Amirkab, Tehran), PhD (NUS) - has joined the engineering construction and management group. Before joining UNSW, he was a Research Fellow in Civil Engineering, National University of Singapore, working on a number of research projects on sustainable design and construction in collaboration with the Housing and Development Board of Singapore. His research interests include Sustainability Assessment, Design for Sustainability, Information Modeling, Prefabrication, Microwave-Assisted Concrete Technology and Microwave ND T Tests.

Dr Atsushi Ikeda (Ikeda-Ohno) - BE Meiji Univ (Japan), ME, Ph.D Tokyo Tech (Japan) is the new ANSTO Research Fellow at the school. His work will focus particularly on assessing the status of radioactive contamination at the Little Forest Burial Ground (LFBG) site at Lucas Heights and developing a future remediation/decontamination strategy for LFBG.

Dr Fiona Johnson – BE, PhD UNSW - joined the water engineering group in September. Fiona's research interests are in statistical hydrology and modelling. She is particularly interested in climate change impacts on water resources systems - and the resulting implications for engineering design - and developing methods to evaluate and correct the simulations from climate models.

Dr Arman Khoshghalb - BEng, MEng, Sharif University of Technology, Tehran, PhD UNSW - joined the academic teaching staff in January. His research interests lie in the areas of large deformation analysis in geomechanics, advanced numerical methods in geomechanics, mechanics of unsaturated soils and coupled analysis of porous media.

Hugh McMullen is the new Health & Safety Implementation and Facilities Officer, a new position created by the School to manage the huge increase in student usage of labs and facilities as our enrolments have soared. Hugh came to the School from Noel Arnold & Associates Risk Management Consultancy.

Dr Hamid Valipour BE, MEngSc, PhD UNSW – has come from UTS to join the structural engineering group as a senior lecturer. His research areas involve behaviour modelling of structural components and materials, earthquake engineering, mechanics of materials, as well as non-linear finite element modelling of structures, and 3D finite element modelling of reinforced concrete structures.

Welcome New Head of School

Our new Head of School – from March 2013 – is Professor Stephen Foster, BE NSWIT, MEngSc PhD UNSW, MIEAust df, Director of the Centre for Infrastructure Engineering & Safety (CIES). Steve is a respected scholar in structural engineering with an international reputation in his field of concrete structures, and has published over 200 research papers and reports. He is also an award winning teacher, who has developed a number of innovative courses.

His vision for the School is one of continued national and global leadership in teaching and research excellence - in the advancement of design, construction and maintenance of infrastructure; in the planning and management of Australia’s water resources; in driving the national agenda across the breadth of Civil and Environmental Engineering, and in doing so to enhance the quality of life for humanity in a sustainable way.

Farewell Staff

Dr Nadarajah Gowripalan (Gowrie), who had been with the School since 1993, retired in March this year. Gowrie's teaching and research interests were in concrete technology and advanced materials technology. Gowrie was also a keen philanthropist amongst his community.

In September Dr Sangwon Han, lecturer in engineering construction and management, returned home to Korea for family reasons. Sangwon had worked tirelessly to develop stronger links between construction academics and professionals around the world.

In July Dr Zora Vrcelj left to take up a new position in Victoria. Her prodigious work for the School – in innovative engineering education and her development with A/Prof Mario Attard of the successful new BE Civil with Architecture - made her a wonderful colleague who is very much missed.
Thomas Chapman
1929-2012
BSc, Leeds, PhD Southhampton, FIEAust

Former Head of School, Emeritus Professor Tom Chapman passed away in December. Tom, whose research expertise was in hydrology, had led teams at CSIRO Division of Land Research for 13 years and then held the Chair of Engineering at UNSW Faculty of Military Studies in Duntroon for a decade before joining the School in 1981 as Professor of Water Engineering. His primary scholarly contribution was in the national review of predictive methods for Australian hydrology – with the landmark publication in 1975 of Prediction in catchment hydrology / a National Symposium on Hydrology which was edited by Tom and F X Dunin.

Tom was Head of School from 1984 – 1987 where he oversaw the introduction of computer laboratories into the School as well as better facilities for women students. He retired in 1987 but remained active as a researcher, writer and scholarly adviser for many years afterwards. Prof Stephen Foster recalled that “Tom was a thorough gentleman in all his dealings with School staff and students. Our thoughts go with Penny and his children at this time of their loss.”

Ken Faulkes
1933-2012
BE Hons, ME, PhD, UNSW

Ken was one of the first alumni and academics of the School, before leaving in 1982 to join and then to lead Engineering at UTS.

CVEN Associate Head (Academic) A/Prof Mario Attard recalls, ‘I studied Civil Engineering in the early 70s at UNSW and Ken was my lecturer in structural design. I looked up to Ken and admired his inspired style. He was one of those special teachers that made every class enjoyable and would instil passion for designing creative structures. His forte was prestressed concrete with his book on that subject being a key resource in Australia for structural engineers. He later became Dean of Engineering at UTS. He was a very humble and fine gentleman.’

Brian Shackel
1940-2012
BE Sheff, MEngSc PhD UNSW, CPEng, FIEAust

Staff, students and alumni will be saddened to hear that Associate Professor Brian Shackel lost his battle with cancer on the 18th November 2012. He will be sadly missed by his many colleagues and friends.

With nearly 40 years experience in teaching and consulting on pavement engineering including pavement design and construction, Brian was a recognised world authority on concrete block paving (CBP), and was the author of numerous research papers and 3 books on this topic. One of these, Design and Construction of Interlocking Concrete Block Pavements. Elsevier Applied Science, London, (1990) was probably the only book by a School staff member to have been published in four languages.

As Professor David Waite, Head of School noted, ‘Brian was always a pleasure to interact with and was a highly-regarded member of the School community.’

Dr Samia Guirguis (1948 – 2012) was the first woman to complete a PhD in Civil Engineering in Australia and she did it in the field of Concrete Technology at UNSW. She then went to work with the Cement and Concrete Association of Australia and was active on many code committees. Samia made a very significant contribution to the structural engineering profession throughout her career. She was awarded the 2011 John Connell Gold Medal in recognition of that fact.
Year 4 Dinner

At the annual Year 4 dinner, held at the Sheraton in November, students and staff celebrated four years of hard work and achievement.

Several industry partners assisted with subsidising students’ tickets to the dinner and the awarding of prizes to some of our many outstanding students.

We are grateful to these prize sponsors, and to all our industry partners, for their generous support of the work of the School.

Year 4 Industry Sponsored Prizewinners

The Civil and Environmental Engineering Construction Management Discipline Prize (donated by Brookfield Multiplex) **Bianca Bustamente** (pictured left) with Steve Boss, NSW/ACT Regional Manager and CVEN Industry Advisory Committee member

The Civil and Environmental Engineering Environmental Discipline Prize (donated by SKM) **Michael Reeves**

The Civil and Environmental Engineering Geotechnical Discipline Prize (donated by PSM) **Sam Tagliabue**

The Civil and Environmental Engineering Structures Discipline Prize (donated by Aurecon) **Shuang Guo**

The Civil and Environmental Engineering Transport Discipline Prize (donated by AECOM) **Edward Robson**

The Civil and Environmental Engineering Water Discipline Prize (donated by GHD) **Lisa Granqvist**

The Civil Engineering Industrial Training Prize (donated by URS) **Jivanka Perera**

The Civil Engineering Practice Prize (donated by Cardno) **Lizhe Sun**

The Environmental Engineering Practice Prize (donated by Cardno) **Carol Ka Ho Ng**

The Civil Engineering with Architecture Prize (donated by ARUP) **Garth Miller**
**Sustainable School**

The School has recently organised two very successful symposiums on Sustainability.

The first was held at UNSW in October, and hosted by the School’s Centre for Infrastructure, Engineering & Safety (CIES). Scientia Professor Mark Bradford led a ‘who’s who’ of international and national leaders in the field of sustainable infrastructure research and practice, including Professors Keith Crews, Paul Grundy, Rob Melchers, Michael Neuman, David Nethercot, Jin-Guang Teng, Brian Uy, Travis Waller and John Wilson and A/Profs Daksh Baweja and Frank Collins. The Symposium was focused on Civil Infrastructure: design, construction and resilience - and provided an opportunity for industry professionals to review current trends, network with peers, exchange ideas and inspiration, and look confidently toward the future.

A one day Sustainability in Construction Forum was also held in Hong Kong in November, coordinated by Professor David Carmichael from the School’s engineering construction management group - in collaboration with Hong Kong Polytechnic University, and UNSW and industry colleagues from Leighton Contractors (Asia), Cundall (HK) & Evans & Peck (HK). A group of prominent speakers addressed emerging issues in sustainability as it impacts the practice of construction.

**Donors Reception**

Donors and students got acquainted at the 2012 Faculty of Engineering Donor’s Reception held on 10 October in Leighton Hall at the UNSW Scientia Building. Attended by Professor Graham Davies, Dean of the Faculty of Engineering, and Professor David Waite, Head of School, scholarship donors and recipients, the night was a chance to thank our generous donors and for industry representatives to meet with the brightest undergraduate students from the Faculty, including recipients of the Dean’s Awards and engineering scholarships.

Lois Chambers, whose late father Professor Stan Hall, founding academic of the School - donated the Stan Hall Rural Scholarship, spoke at the gathering. Lois extolled the importance of scholarships in relieving the financial burden students face when pursuing tertiary education. “Without exception, the students have expressed their gratitude for the scholarship as it has enabled them to come to Sydney and either live in college or a flat without having to find a part-time job to supplement their finances. It has given them more time to pursue their studies and also the opportunity to take part in the various student activities on offer.”