DEPARTMENT OF CIVIL ENGINEERING

2003 ANNUAL REPORT

Table of Contents

1. Overview of department ................................................................. 2
2. Current Departmental Structure .................................................. 4
3. Course Offerings ........................................................................ 11
4. Research and Development ......................................................... 12
5. Undergraduate Students (Class of 2003) & Prizes .......................... 29
6. Professional Activities ................................................................. 31
1. OVERVIEW OF DEPARTMENT

The Year 2003 saw the Department of Civil Engineering continue to expand its activities in research, teaching and professional services. The Department continued to provide a high level of teaching provision and research output while positioning itself for future change.

**Staff**

The Department has 73 staff (12 holding honorary positions). New academic staff joining the Department include: Professor Graham Currie, Australia’s first Professor in Public Transport, Dr Ana Deletic, Senior Lecturer in Water and Environmental Engineering, Dr Ranjith Pathagama Gamage and Dr Gavin Mudd. The level of staff research and teaching activities continue at a high level. Further, they continue to develop their skills with involvements in 19 professional development programs. In particular, Professor Xiao Ling Zhao is undertaking an MBA program.

**Undergraduate teaching**

The Department continued to present the Bachelor of Engineering program. Some students in this program combine their degree with Arts, Science, Law or Commerce degrees. The Bachelor of Technology (Infrastructure) continued to attract students and saw its first graduates in 2003. Eighty one students graduated from all undergraduate education programs. The level of industrial support for these programs was shown with 18 prizes being given to students at various stages in their studies.

**Postgraduate Education Programs**

Master of Traffic and Master of Transport attracted increased interest with over 60 students enrolled in the program. The Master of Infrastructure Engineering and Management also continues to increase student interest with over 20 student enrolments. Twenty one students graduated from these programs.

**Industry Education Programs**

The Institute of Transport Studies still maintains its activities in the Bus and Coach and Parking industries. The programs have attracted continuing support. Industry is involved in the ongoing development of the program. The Water group continues to offer technology transfer programs to industry. The Geomechanics group offers short courses in Environmental Geomechanics.

**Research**

Strong research activities have continued in the key departmental strengths of structural, water, geomechanics and transport engineering. One hundred and fifty research projects have provided the focus for staff during 2003. Research funding support of $1,724,151 has been attracted to support these projects. The Department has 27 PhD and 16 MEngSc students. Eight students completed PhD studies and 4 completed their Master studies.

Staff members were involved in the preparation of 6 book chapters, 30 journal articles, 68 conference papers and 4 research reports. Staff attended 34 conferences. Staff, research students and visitors presented 24 seminars on their research and activities during the Departmental seminar series.

Staff in the Department carried out consulting and contract research for 40 government and private organisations.

**Visitors and Visits**

The Department hosted nineteen visitors from all parts of the world. These visitors worked closely with departmental staff to develop research and teaching activities. The linkages developed between staff and these visitors ensure the maintenance of high standards of research and teaching as well as the strengthening of links between the department and other universities throughout the world. Departmental staff visited 21 institutions in 2003.

**External Activities**

Staff members were involved in the review of paper and journal editorial committees on 32 occasions and presented 14 seminars at other institutions. They were also involved in 41 professional associations and their activities.
Centres

Cooperative Research Centre for Catchment Hydrology (CRCCH)
The Centre’s Office of the Cooperative Research Centre for Catchment Hydrology is located in the Department, and its Business Manager, Mr John Molloy and the Leader of its Communication and Adoption Program, Mr David Perry, are attached to the Department. The Director of the CRCCH, Professor Rob Vertessy of CSIRO, is a Monash Honorary Professorial Fellow and Mr Erwin Weinmann is the Deputy Director for the Monash Node. Dr. Tim Fletcher is the Leader of the Urban Stormwater Quality Program within the CRC.

The CRCCH brings together, in a cooperative venture, four research and ten user organisations from Victoria, New South Wales and Queensland. All water-related staff members of the Department are involved in the Centre, contributing to its Sustainable Water Allocation, Urban Stormwater Quality and River Restoration research programs.

The CRCCH is now four and a half years into its second seven-year term of funding and performing well. A major independent review of the Centre, completed in August 2003, found that the CRCCH “is undertaking high quality work that serves well the immediate needs of industry stakeholders in three eastern States”.

Full details can be found on the Centre’s web site at:  http://www.catchment.crc.org.au/

Institute of Transport Studies, Monash Node (ITS)
ITS (Monash) continued to strengthen its activities in 2003 with the appointment of Professor Graham Currie to the Chair in Public Transport, and the arrival of Dr Majid Sarvi as a research fellow. Their appointments herald a strategic expansion of research activity focused on public transport. Professor Currie’s position has been funded by the Bus Association of Victoria, the Victorian Department of Infrastructure, VicRoads and Monash University. Dr Sarvi was subsequently appointed to a Lectureship position, created by Dr Greaves’ departure to join ITS (Sydney). Dr Sarvi’s research interests cover intelligent transport systems and microsimulation. Professors Currie and Young have been working with Dr Sarvi on a major research and development project for VicRoads which focuses on road space allocation. The 2003 Ogden Transport Lecture was delivered by Professor Graham Currie. That lecture was followed by the Transport Policy Public Lecture series which attracted strong attendance from the transport profession and the community. The theme of the Ogden Lecture, and the Transport Policy Public Lecture series, was road space allocation and those forums added substantially to the community and professional debate on those issues.

A review of ITS (Monash) conducted by the Faculty of Engineering, as part of the regular review of all centres within the Faculty, produced enthusiastic endorsement of the centre’s activities. Preparation of the written submission for the Faculty review panel provided the staff at ITS (Monash) with an opportunity to reflect on the high productivity of the centre over the last five years. The momentum of those activities will continue in 2004, thanks to important preparation and updating work undertaken in 2003. The very successful book ‘Traffic Engineering and Management’ was revised in 2003 and will be published early in 2004 in conjunction with the related workshop. Preparatory work was also undertaken in 2003 for a new public transport related workshops which will be held in 2004.

Full details can be found on the Institute’s web site at:  http://www.civil.eng.monash.edu.au/its

Monash Timber Engineering Centre (MTEC)
The Monash Timber Engineering Centre continues to develop research programs for the Timber industry. Its Director, Associate Professor Bob Milner and its Research Officer, Mr Con Adam, have facilitated a number of projects for over 15 clients.
2. CURRENT DEPARTMENTAL STRUCTURE

2.1. Management Committee

The Management Committee of the Department consisted of:

Professor William Young, Head of Department
Professor Xiao-Ling Zhao, Deputy Head and Director of Research
Associate Professor Gary Codner, Director of Teaching
Mr Christopher Powell, Director of Resources

From left to right: D. Thomson (Secretary to Committee), G. Codner, C. Powell, W. Young (Head), X.L. Zhao.

2.2. Research/Teaching groups

The department operates through the following four groups:

* The Geomechanics Group

led by Associate Professor Malek Bouazza and including:
Dr Jayantha Kodikara, Dr Asaeful Haque, Dr Ranjith Pathegama Gamage, Dr Xue-Fan Gu

Top row (left to right): J. Kodikara, M. Leach, A. Bouazza (Head of Group)
Bottom row (left to right): A. Haque, R. Pathegama Gamage, X.F. Gu

Research Strength: Environment Geotechnics
* The Structures Group

led by Dr Riadh Al-Mahaidi and including:
Professor Xiao-Ling Zhao, Emeritus Professor Paul Grundy, Associate Professor Raphael Grzebieta,
Associate Professor Jay Sanjayan, Associate Professor Bob Milner, Dr Bill Wong, Dr Roger Zou, Dr Fidelis Mashiri

Top row (left to right): R. Zou, C. Powell, F. Mashiri, R. Milner, J. Sanjayan, R. Grzebieta
Bottom row (left to right): X.L. Zhao, M.B. Wong, P. Grundy, R. Al-Mahaidi (Head of Group)

Research Strengths: Advanced Thin-Walled Structures and Crashworthiness, Lifetime Integrity of Structures, Timber structures

* The Water Group

led by Mr Erwin Weinmann and including:
Associate Professor Gary Codner, Associate Professor Bob Keller, Mr Rick Wootton, Dr Ana Deletic,
Dr Tim Fletcher, Dr Gavin Mudd, Dr Tony Ladson, Dr Tim Fletcher, Dr Tony Wong, Mr Frank Winston

From left to right: G. Mudd, G. Codner, E. Weinmann, T. Fletcher, F. Winston, A. Deletic, T. Ladson, R. Keller, T. Wong

Research Strength: Catchment Hydrology
The Transport Group (Institute of Transport Studies)

led by Associate Professor Geoff Rose (Semester 1) and Dr Stephen Greaves (Semester 2) and including: Professor William Young, Professor Graham Currie, Dr Majid Sarvi, Mr John Clements, Mrs Astrid De Alwis

Top row (left to right): M. Sarvi, W. Young, J. Clements, A. De Alwis, B. O'Keefe
Bottom row (left to right): G. Currie, G. Rose

Research strength: Transport Management

2.3. Industry Advisory Committee

The Department convened a meeting of its Industry Advisory Committee on 4th June 2003. The membership was as follows:

Industry representatives:
Mr Colin Jordan (Chairman), Chief Executive of RACV Ltd, Melbourne, Victoria
Mr Peter Bishop, Principal (Civil Section), Connell Wagner, South Melbourne, Victoria
Mrs Ann Kollmorgen, Consulting Engineer, Sinclair Knight Merz, Malvern, Victoria
Mr Ross Baldwin, Director, Flagstaff Consulting Group Pty Ltd, Hawthorn, Victoria
Dr Bronwyn Ridgway, Environmental Engineering Consultant, Cromer, Victoria
Mr Murray Cullinan, Department of Infrastructure, Victorian Government, Melbourne, Victoria
Dr Brian Wrench, Golder Associates Pty Ltd, Hawthorn, Victoria
Dr Frank Collins, Principal Engineer, Maunsell McIntyre Pty Ltd, Melbourne, Victoria

Department representatives:
Professor William Young, Head of Department
Professor Xiao-Ling Zhao, Deputy Head and Director of Research
Associate Professor Gary Codner, Director of Teaching
Mr Christopher Powell, Director of Support Services

Issues discussed included:
- Statement of changes incurred in the department
- Proposal to change the name of the department
- Existing Bachelor of Engineering degree
- Bachelor of Technology (Infrastructure)
- Masters courses and Continuing Education program
- New initiatives
- Opportunities for research
CURRENT DEPARTMENTAL STRUCTURE

2.4. Current staff list

Professors
William Young BE(Hons) NSW MSc PhD GradDipMgt Deakin MBA Deakin FIEAust FITE FCIT MPAA
MACRS CEng - Head of Department
Xiao-Ling Zhao PhD Syd ME Shanghai Jiao-Tong MASCE FIEAust CEng MCCES
Graham Currie BSc(Hons) Huddersfield UK MSc Cranfield UK MCIT

Associate Professors
Abdemalek Bouazza Civlng Algiers PhD Glasgow
Gary Peter Codner DipCE Caulfield I.T. BE(Hons) MBA PhD FIEAust
Raphael Hilary Grzebieta Mgrinz(Hons) T.U. Cracow PhD MIEAust CEng NPER MSAEA MSAE
Chris Michael Haberfield BSc BE(Hons) Syd PhD MIEAust CEng
Robert John Keller BE(Hons) PhD Cant. MASCE MIEAust MIPENZ
Henry Robert Milner BE MEngSc Qld PhD Lond. FIEAust CEng NPER AIWS
Geoffrey Rose BE(Hons) Queensland I.T. MSc PhD Northwestern MIEAust
Jay G. Sanjayan BSc(Eng) Sri Lanka PhD MIEAust
Tony H.F. Wong BE PhD CEng MIEAust MASCE

Senior Lecturers
Riadh Al-Melahdi BSc(Civil Eng) (Hons) Baghdad MSc PhD Cornell MIEAust MASCE CEng
Ana Deletic BSc(Hons) Belgrade MSc Belgrade PhD Aberdeen MIWA
Jayantha Kodikara BSc(Hons) Peradeniya PhD MIEAust, CEng
Peter Erwin Weinmann DipEng ETH Zurich MEngSc MIEAust CEng
Man-Blu (Bill) Wong BSc(Eng) Lond. PhD NSW CEng MICE MIEAust CEng

Lecturers
Stephen Greaves BA Leeds MSc Wales PhD Louisiana MITE MITPC MICIT
Asadul Haque BE(Civil) MEng(Geo) PhD Wollong. MIEAust
Anthony Ladson BE(Hons) Melb. MSc Minn. PhD Melb.
Ranjith Pathegama Gamage BSc(Eng) (Hons) Moratuwa PhD Wollong. MASCE MISRMI MAGS MSSE
Richard Murray Woodton BE Melb. DipCE Caulfield I.T. MEngSc TTTC

Assistant Lecturers
Astrid de Alwis BA Melb. GDip.T&D Mgt RMIT MLogMgt MCIT
Gavin Mudd BEnvEng (Hons) RMIT PhD VUT MIAH MACF MFE

Research staff
Constantine Adam BEngSc MEngSc FijiWS
Tatiana Bukharev BE (Hons) Leningrad I.T. MSc Illnins PhD MCIA MASCE MACS MMRS MPKPHS
Xue Fan Gu BE PhD MIEAust
Tim Fletcher BForSc (Hons) Melb PhD Melb MRBMS
Justin Lewis BSc Tas. MSc VUT
Fidelis Mashiri BScEng Zimb. MEng (Hons) Wollong. PhD
Peter Poelstra BA Sci (Environmental)
Fashkur Rahman BScEng (Civil) MSc Melb. PhD VUT
Mejdi Sarvi BCIveg (Hons) Tehran MEng (Hons) IUST PhD Tokyo MJSCe MJSTETTSC MCITE
Sergei Schneider PhD ANU

Administrative staff
Julia Arnold MBBS BSc(Med) BA (Hons) – Administrative Officer (Finance), ITS
Susan Daly – Graphic Designer, Communication and Adoption, CRCCH
Jennyanson – Postgraduate Admissions Officer
John Molloy BE(Civil) Melb Dip HE Deitl MBA Melb MIEAust – Business Manager, CRCCH
Brenda O’Keefe – Administration Manager, ITS
Helen Parker – Administrative Assistant, Support Services
David Perry BSc(For.) Post Grad (Land Rehab) – Communication and Adoption, CRCCH

Civil Engineering – 2003 Annual Report
CURRENT DEPARTMENTAL STRUCTURE

Chris Powell – Director, Support Services
Irene Sgouras – Undergraduate Studies Administration Officer
Nol Souvandy – Administrative Assistant, Support Services
Dominique Thomson – Administrative Assistant to the Head of Department
Virginia Verrelli – Administrative Assistant, CRCCH

Technical staff
Glenn Davis – Technical Officer
Peter Dunbar – Senior Technical Officer
Roy Goswell – Technical Officer
Andrew Haines BSc GradDipCompSc Melb – IT Manager
Michael Leach – Technical Officer
Don McCarthy BAppSci (Photo) RMIT GradDip(Media) Deakin MIPT – Visual Communication Officer
Kevin Nievaart – Technical Officer
Anthony Nixon – Technical Officer
Graeme Rundle – Laboratory Manager
Alan Taylor – Storeperson
Godwin Vaz – Computing Officer
Frank Winston BE(Hons) MEngSc – Technical Officer, Hydraulics Experimental Laboratory

2.5. Honorary positions

Emeritus Professor
Paul Grundy BE(Hons) MEngSc Melb PhD Cantab. FIEAust MISOPE CPEng

Adjoint Professors
Kenneth Wade Ogden BE(Hons) MEngSc Melb DipCE Ballarat School of Mines PhD MITE FIEAust CPEng
Rahmi Akcelik MSc Istanbul T.U. PhD Leeds
Tony Richardson BE(Hons) MEngSc UNSW PhD FIEAust MITE

Honorary Professional Fellow
Russell Gordon Mein BArch(Hons) MEngSc Melb PhD Minn. FIEAust

Associates
Stuart Martin Cannon BSc(Hons) Plymouth (UK) MSc Cranfield PhD Brun. CEng UK MRTNA
Zuyu Chen BE Tsinghua PhD Tsinghua
Frank Collins E Syd MEngSc Syd PhD
Ian Boyd Donald BCE(Hons) MEngSc Melb PhD DIC Lond. MIEAust
George Rechnitzer BE(Hons) MEngSc Melb PhD
Julian Peter Seidel BE(Hons) PhD MIEAust CPEng
Geoffrey William Smith DipCE RMIT BE MEngSc Melb CPEng FIEAust AIWSc
Geoffrey Robert Taplin BE(Hons) Tas. MEngSc PhD CPEng NPR MICE MStrucE MIEAust
Jack Taylor DipCE (RMTC) PhD FIEAust CPEng MConstE Aust AIWSc

2.6. Staff changes in 2003

New appointments
Professor Graham Currie (Chair of Public Transport)
Dr Ana Deletic (Senior Lecturer in Water and Environnmental Engineering)
Dr Gavin Mudd (Assistant Lecturer in Water and Environmental Engineering)
Dr Ranjith Pathnagama Gamage (Lecturer in Civil Engineering)
Dr Majid Sarvi (Research Fellow)
Ms Susan Daly (Graphic Designer w/CRCCH)
2.7. Visitors to the Department

The following visitors came to Monash University in 2003:

Mr Stefan Ahlman, PhD student from Chalmers University of Technology, Sweden, visited Dr Tim Fletcher to collaborate on approaches to modelling pollutant loads from urban stormwater.

Mr Do Van Binh, Lecturer from the Department of Industrial and Civil Engineering of Hanoi University of Civil Engineering (Vietnam) visited Prof Xiao-Ling Zhao/Dr Riadhi Al-Mahaidi and participated in a postgraduate training program (one year) sponsored by the Vietnamese Government.

Professor Avishai Ceder, senior research engineer at the Technion-Israel Institute of Technology, and a principal researcher in the PATH program at the Institute of Transportation Studies, University of California (Berkeley) visited Associate Professor Geoff Rose in October and was involved in the Transport Policy Lecture Series while at ITS (Monash). He was also the co-leader of a two-day course in Public Transport Operations Planning.

Professor John Dracup of the Department of Civil & Environmental Engineering at the University of California (Berkeley), USA, visited Dr Tony Ladson to collaborate on environmental management of waterways in large river basins and presented a seminar on drought prediction and water resource management.

Professor Nick Garber, Chairman of the Department of Civil Engineering at the University of Virginia, Charlottesville (USA) visited Associate Professor Geoff Rose in April-May to discuss research in the area of traffic operations. During his time at ITS (Monash), Professor Garber was co-leader of a two-day workshop entitled "Unsignalised intersections: balancing safety and capacity considerations".

Dr Vincent Janoo of the Civil Engineering Research Division, US Army Corps of Engineers, Hanover (Germany) visited Dr Jayantha Kodikara to discuss his research on road pavements and presented a seminar on new research developments.

Professor Peter Jones, Professor of Transport Policy and Behavioural Analysis at the University of Westminster in London (UK) and Director of its Transport Studies Group, visited Professor Graham Currie in November. While in Australia, Professor Jones presented at ITS (Monash) as part of the Public Transport Lecture Series and was also a speaker at the Dandenong Public Transport Forum organized jointly by ITS Monash and the City of Greater Dandenong.

Professor Heather Miller of the Department of Civil & Environmental Engineering, University of Massachusetts (USA) visited Associate Professor Malok Bouazza.

Professor Ian Moore of Queen’s University, Kingston (Ontario), Canada, visited Dr Jayantha Kodikara to discuss research on rehabilitation of buried pipe infrastructure. He also presented a one-day workshop on the topic.

Professor Gerard Nurick of the Department of Mechanical Engineering of the University of Cape Town (South Africa) visited Associate Professor Raphael Grzebieta and Professor Xiao-Ling Zhao to discuss the large Discovery Grant on Safeguarding Australia and projects regarding impact and blast-loaded structures and human body modelling for crushworthiness and injury prevention studies.

Professor Widi Pratikto, Professor of Ocean Engineering of the Ministry of Marine Affairs and Fisheries, Indonesia, visited Professor Grundy to discuss potential cooperation on coastal management in Indonesia.

Professor Wang Pu of the Shanghai Research Institute of Building Sciences visited Dr Riadhi Al-Mahaidi to discuss collaboration in the area of structural rehabilitation using composite materials.
CURRENT DEPARTMENTAL STRUCTURE

Mr Dudung Purwadi of the Department of Civil Engineering at Surabaya Institute of Technology, Surabaya (Indonesia) is currently enrolled as a postgraduate student in the department and visited Professor Bill Young to discuss his research proposal on travel behaviour in Surabaya.

Professor A.G. Razaqpur of the Department of Civil and Environmental Engineering at Carleton University, Ottawa (Ontario, Canada) visited Associate Professor Jay Sanjayan and Dr Riadh Al-Mahaidi seeking possible collaboration in the areas of FRP strengthening of structures and lifetime prediction of RC structures.

Professor Sami Rizkalla of the North Carolina State University (USA) visited Dr Riadh Al-Mahaidi to discuss collaboration in the area of FRP strengthening of steel and concrete structures.

Professor Jim Rhodes of the Department of Mechanical Engineering, University of Strathclyde, Glasgow, Scotland (UK) visited Professor Xiao-Ling Zhao and Assoc. Professor Raphael Grzebieta to conduct joint research on thin-walled structures.

Professor Ralph Roos of the Institute of Highway and Railroad Engineering, University of Karlsruhe (Germany) visited Associate Professor Geoff Rose from April to October. He also works as a managing partner of the Durtz Roos Consulting Group in Darmstadt. His recent areas of research include highway design and maintenance, road safety and public-private partnership in financing, building and maintaining roads. During his six months at ITS (Monash), he was involved in research into highway geometric design and road safety audit.

Professor Hui-Shen Shen of the School of Civil Engineering, Shanghai Jiao Tong University, Shanghai (PR China) visited Professor Xiao-Ling Zhao to discuss research on FRP strengthened steel structures.

A/Prof. Zhong Tao of the College of Civil Engineering and Architecture, Fuzhou University, Fuzhou (PR China) visited Professor Xiao-Ling Zhao to collaborate on concrete-filled double skin tubes.
3. COURSE OFFERINGS

Undergraduate programs
The Department offers undergraduate programs in Civil Engineering and Infrastructure Engineering and Management. The Civil program is combined with Arts, Law, Commerce and Science to offer double degrees. The Department also teaches into the Bachelor of Environmental Engineering.

Transport programs
The revised postgraduate program continued to attract interest from students both within and outside Victoria. A new unit in Transport Economics was introduced in Semester 2, 2003 and preparatory work was undertaken for the remaining unit in the postgraduate program (Transport Planning and Policy) which will be first offered in Semester 1, 2004. The Industry programs in Bus & Coach and Parking continue to attract students, although in the case of the former at a predictably reduced rate. The number of workshops offered by ITS (Monash) increased in 2003, thanks to visits from a number of overseas academics.

Bus and Coach Program
The Transport Management Course is a distance education program required for operator accreditation in Victoria. Since its inception in 1996, over 1200 operators have successfully completed the course.

The course consists of four units, each requiring 12 weeks of study and a written examination: Introduction to Legislation and Operations; Financial Management; Human Resource Management; Marketing, Planning and Operations. Unit selection is based on accreditation category requirements.

In 2003 there were 213 unit enrolments and approximately 100 course completions are anticipated.

Close liaison is maintained with the Victorian Department of Infrastructure (DOI) and the Bus Association of Victoria (BAV). Subject performance awards were sponsored in 2003 by: DOI, BAV, iComply, Pitcher Partners; Glenda Group; and Eastcoast Truck and Bus Service Centre (Ventura Bus Lines).

Infrastructure Engineering and Management
The Master of Infrastructure Engineering and Management, and its associated articulation pathway commenced in 2002. This program mainly focuses on the issues related to the planning, design, construction and maintenance of civil engineering structures. Most of the applicants attracted to this program are from local governments, roads and water departments within and outside of Australia. In 2003, an additional ten new applicants commenced this program totalling 16 students. Two new units in Water Engineering have been included in the list of Engineering Electives bringing a total of nine electives. It is expected that this will attract even more new applicants in the coming years. A number of students are expected to complete their first Masters program in 2005. Dr Asadul Haque manages the program.
4. RESEARCH AND DEVELOPMENT

4.1. List of research projects undertaken in 2003

Environmental Engineering
- Characterisation of stormwater pollutants in urban catchments (T. Wong/Wootten)
- Hydrological, geomorphological and ecological impacts of urbanisation on aquatic ecosystems (T. Wong/Fletcher/Ladson)
- Interactions between streamflow and biota (Ladson)
- Assessing the relative merits of protecting or restoring streams (Ladson)
- Indicators of stream health or condition (Ladson)
- Development of CHUTE software, first product to be offered on CRCCH Toolkit website (Keilin/Winston/Ladson)
- Roughness coefficients in Australian streams (Ladson)
- Sustainable mining (Mudd)
- Modelling of coal ash leaching (Mudd)

Geotechnical Engineering
- Filtration behaviour of cohesionless soils under dynamic loading condition (Haque)
- Modelling of shear behaviour of saturated infilled rock joints using Universal Distinct Element Code (Haque)
- Effect of water flow on the deformation behaviour of tunnel floor under dynamic loading (Haque)
- Effective stress behaviour of infilled rock joints under Constant Normal Stiffness (CNS) condition (Haque)
- Railway geotechnics (Haque)
- Analysis of piles in moving ground (Haque)
- Shear behaviour of rock joints (Haque)
- Stabilization of railway subgrade by lime-flyash slurry injection (Haque/Kodikara)
- Performance of geosynthetic clay liners (GCL) under various site conditions (Bouazza)
- Active containment barrier walls (Bouazza)
- Background of mineralisation around the Melbourne area (Bouazza)
- Geosynthetics piles for soil improvement (Bouazza)
- Unsaturated behaviour of geotextiles (Bouazza)
- Shallow and deep soil mixing (Bouazza)
- Geo-environmental engineering (Kodikara & Bouazza)
- The shear behaviour of rock joints (Haberfield/Kodikara)
- The performance of drilled pile shafts in rock (Haberfield/Kodikara)
- The strength and deformation properties of rock masses (Haberfield/Kodikara)
- The influence of construction procedures on pile capacity in rock (Haberfield/Kodikara)
- Unsaturated soil behaviour (Kodikara)
- Pavement engineering (Kodikara)
- Analysis of piles in moving ground (Kodikara)
- In-situ stabilisation of deteriorated road pavements (Kodikara)
- Innovative cover systems for coal ash and overburden materials in Loy Yang Power Station Sites (Kodikara/Bouazza)
- Modelling of evaporation from geomaterial surfaces (Kodikara)
- Study of dissipation cracking of clay (Kodikara)
- Modelling of tapered pile sections in various ground media including soft rocks (Kodikara)
- Modelling of capillary rise in stabilised materials (Kodikara)
- Modelling of salinity ingress into road bases and building infrastructure (Kodikara)
- Chemical grouting of sands (Bouazza)
- Gas transmissivity of geotextiles (Bouazza)
- Gas advective and diffusive migration through GCLs (Bouazza)
- Unsaturated flow behaviour of geotextiles (Bouazza)
- Filtration and transmissivity of geotextiles (Bouazza & Haque)
- Geomembrane Protection using geotextile cushions (Bouazza)
- Soil vapour extraction using prefabricated vertical drains (Bouazza)
- Contaminant transport through organomodified clays (Bouazza)
RESEARCH AND DEVELOPMENT

• Modelling of MSW landfill settlement using geostatistics (Bouazza)
• Hydraulic and diffusive performance of slimes (Bouazza)
• In-situ investigation using Constant surface wave systems and DMT (Bouazza & Kodikara)
• Tapered piles (Kodikara)
• Effects of CH₄ and CO₂ on stress–strain characteristics of coal (Ranjith)
• Dynamic behaviour of rock joints (Ranjith)
• Modification of existing dynamic shear apparatus to study the dynamic behaviour of soft rocks (Ranjith)

Structural Engineering

• Shear strength of reinforced concrete bridges (Al-Mahaidi/Taplin)
• Shear strength of concrete members (Al-Mahaidi)
• Retrofitting of concrete structures using carbon fibre reinforce plasties "CFRP" composites (Al-Mahaidi)
• Advanced numerical simulation of failure mechanisms of CFRP laminated concrete members (Al-Mahaidi)
• Cyclic behaviour of concrete plugs embedded in tubular steel piles (Al-Mahaidi, Grundy)
• Structural health monitoring of concrete bridges (Al-Mahaidi)
• Torsional-shear strength of concrete box girders strengthened with CFRP laminates (Al-Mahaidi)
• Flexural strength of reinforced concrete bridges (Taplin/Al-Mahaidi)
• Strength assessment of bridge decks (Al-Mahaidi/Taplin)
• Shear strengthening of concrete beams using fibre composites (Al-Mahaidi/Taplin)
• Torsional-shear strengthening of concrete beams using fibre reinforced polymer composites (Al-Mahaidi/Taplin)
• Assessing the structural crashworthiness of petrol road tankers in roll-over accidents (Grzebieta/Rechnitzer)
• Maximising the strength of spot-welded plates (Grzebieta)
• Investigation of the contribution of the void-filling compounds to the buckling strength of rectangular hollow sections (Grzebieta/Zhao)
• Investigation of safe lifting loads for agricultural tractors (Grzebieta/Rechnitzer)
• Roll-over vehicle crashworthiness (Grzebieta/Rechnitzer/Richardson)
• Investigation of lower limb injuries in side impact crashes (Grzebieta/Arndt)
• Investigation into the physics governing whiplash injuries (Grzebieta/Tingval)
• Design of crushworthy trains (Grzebieta/Rechnitzer)
• High tensile tubular beams subjected to impact loads (Grzebieta/Zhao)
• Thin-walled structures subjected to impact and blast loading (Grzebieta/Zhao/Mendis/Burman)
• Predicting stresses in underwater shock loaded steel plates (Grzebieta/Hammond/Paluch)
• Development of equations for underwater shock loaded plates (Grzebieta/Paluch [Crakow Tech. Uni.])
• Impact loading of square hollow beams (Grzebieta/Zhao)
• Maximising crashworthiness of roadside infrastructure (Grzebieta/Tingval/Zhao)
• Prestressed grouted pile/sleeve connections (Grundy/Zhao)
• Design criteria for bridge decks (Grundy)
• Innovative tubular connections (Grundy)
• Structural reliability of ageing bridges (Grundy)
• Stud shear connectors under cyclic load (Grundy)
• Capacity of steel/concrete composite beams under moving load (Grundy)
• Work product methods in structural engineering (Milner)
• Investigation of the mechanism causing shrinkage strains in concretes made with slag blended cements (Sanjayan)
• Investigation of the durability of geopolymeric materials in acid and sulphate environment (Bakharev)
• Investigation of the fire resistant properties of the geopolymeric materials (Bakharev)
• Investigation of spalling risk of high strength concrete exposed to accidental fire (Sanjayan)
• Investigation of the mechanism causing shrinkage strains in concretes made with slag blended cements (Sanjayan)
• Properties of High Strength Concretes incorporating slag blended cements (Sanjayan)
• Behaviour of high strength concrete under triaxial loading (Sanjayan)
• Life cycle performance evaluation of concrete bridges deteriorating through steel corrosion (Sanjayan)
• Development of a Dielectric Spectroscopic Method for Permeability Measurements in Concrete (Sanjayan)
• Bridge Performance Modelling using Inspection Data and Datamining Techniques (Sanjayan)
• Permeability measurements of concrete using impedance Spectroscopy (Sanjayan)
Research and Development

- Deterioration modelling of concrete bridges (Sajayan)
- Innovative tubular connections at elevated temperature (Zhao/Grundy/M.B. Wong)
- Fire resistance of tubular columns filled with high strength concrete (Zhao/Grundy/B. Wong)
- Fatigue of thin-walled welded tubular connections (Zhao/Grundy)
- High tensile tubular struts under large deformation cyclic tension and compression (Zhao/Grzebieta)
- High tensile tubular beams under large deformation cyclic bending (Zhao/Grzebieta)
- Stability and strength of Very High Strength (VHS) circular tubes (Zhao)
- Strengthening of steel structures using CFRP laminates (Zhao/Al-Mahaidi)
- Fatigue behaviour of dragline tubular structures (Zhao/Dayawansa/Price)
- Buckling strength of steel structures at elevated temperature (M.B. Wong)
- Fire engineering – steel structures & steel/concrete composite construction – thermal & mechanical response (M.B. Wong)
- Structural Behaviour of Steel Plates at Elevated Temperatures (Wong/Tan)
- Temperature prediction of structural sections in fire (B. Wong/Ghojel)

Safety Technology and Crashworthiness Systems

- Flexible guardrail impacts – development of load-deformation equations (Grzebieta)
- Flexible water filled roadside barriers – research, crash tests and commercialisation (Grzebieta)
- Development of seat belt configuration for different crash scenarios (Grzebieta)

Timber Engineering

- Long term deflection performance of glued laminated timber (Milner)
- Application of the rate-process method in the prediction of wood adhesive durability (Milner)
- Mechano-sorptive response of wood (Milner)
- Stressed skin housing using reconstituted wood panels (Milner)
- Evaluation of the performance of structural glulam from lamination data (Milner)
- Long term performance of reconstituted panel produces (Milner)
- A repair strategy for timber piles using FRP sleeves and Portland cement group (Milner)
- Use of fire glass braids for the reinforcement of timber containing epoxy grouted steel bars (Milner)
- Yield line patterns in end plates used in novel joints proposed for use in kit form industrial buildings (Milner)
- Repair methods for timber bridge decks (Milner)
- Deflection characteristics of nail plate spliced beams (McKenry)
- Moisture suction and micro-buckling influences on Mechano-sorptive creep in Timber (McKenry)

Transportation Engineering

- Transit Frequency Setting Using Social Cost Benefit Analysis (Currie/Kinnear/Wallis)
- Identification of Spatial Gaps in Public Transport Provision in Relation to Transport Needs in the Community (Currie)
- Trade-Offs in Transit Network Design and Service Levels (Currie)
- Exposure to Pollution (Greaves)
- Modelling of Weaving Phenomena Observed During Traffic Congestion (Young/Sarvi)
- Investigation into the Use of Persuasion Techniques in Transport Policy (Seethaler/Rose/Greaves)
- Travel Behaviour Change Opportunities of Major Events (Rose)
- Development of a National Resource Kit for TravelSmart Officer Training (Rose)
- Mobile Phones as Traffic Probes (Rose/Sekercioğlu/Ygnace)
- Using GPS Data to Build Drive-Cycles for Urban Buses (Greaves)
- Evaluation of Environmentally-Focussed Driver Behaviour Change Programs (Rose/Greaves)
- Quantification Of Road Pavement Performance At A Road Network Level And A Road Project Level (Martin/Young)
- Parking in Multi-use Facilities (Tan/Young)
- Accuracy and Traffic Simulation Modelling (Young)
- Modelling Small Area Traffic Networks (Young)
- Environmental Impacts of Transport (Young)
- Modelling Transport Demand and Parking Management (Young)
- Sustainability and Urban Transport (Young)
- The Modelling and intelligent Optimisation of Field Service Territories (Youngman/Rose/Greaves)
- Impact of In-vehicle Navigation Systems on Drivers' Travel Behaviour (Cham/Rose)
RESEARCH AND DEVELOPMENT

- Level of Service on Roads (Young)
- Performance Based Standards for Heavy Vehicles (Young)
- Road Space Allocation (Currie/Sarvi/Young)
- Driver attitudes to speed enforcement (Doran/Greaves)
- Development of Drive-Cycles for Public Buses (Francis/Greaves)
- Aggressive Driving Behaviour: Reality or Myth (Heitman/Greaves)
- Impact of travel mode choice on pollution exposure (Banks/Greaves)
- Improving the accuracy of walking measurement with electronic pedometers (Garlick/Seethaler/Greaves)
- Emissions from Heavy Vehicles (Matheson/Greaves)
- Bicycles and intermodal transport (Soi/Rosa)
- Analysis of bicycle count data (Stephenson/Rose)
- Bicycle facility Level of Service (Gheung/Rose)
- Power assisted bicycles (Smith/Reed/Rose)
- Shared pedestrian and traffic zones (Powell/Rose)
- Access plans for shopping centers (Pham/Rose)
- Panel travel surveys (Verlaan/Rose)
- Inner city public transport rights of way (Semers/Rose)
- Public transport stop design (Grant/Ryan/Currie/Young)
- Road Space Allocation (Saville/Yuen/Young)
- Public Transport Provision in Suburban Melbourne (Scanlon/So/Jayakodi/Young)
- Pedestrian Crossing Analysis (Sia/Lees/Young)

Water Resources Engineering

- Stormwater characterisation and load prediction (Fletcher/Deletic/Lewis/Poelsma)
- Improving unified stormwater treatment model (Deletic/Fletcher)
- Centralised database on stormwater characteristics and treatment (Deletic)
- Predicting the clogging of storm water infiltration (Deletic)
- Predicting the long-term performance of stormwater bio-filters (Deletic/Fletcher)
- Using WSUD for integrated stormwater treatment and re-use (Deletic/Fletcher)
- Integrated stormwater treatment and re-use systems - inventory of Australian and international practice (Deletic/Fletcher/Hatt)
- Novel biofilters for stormwater treatment and reuse (Deletic/Fletcher)
- Australian water conservation and re-use (Fletcher/Deletic/Hatt)
- Development of a proposal for an "Institute for Sustainable Water Resources" within the Faculty (Deletic/Fletcher/Ladson)
- Integrated stormwater models (Fletcher/Deletic)
- Predicting stormwater quality, treatment and impacts (Deletic/Fletcher/Ladson)
- Modelling of sustainable management of groundwater resources (Mudd)
- Stabilisation of river banks with groynes (Keller)
- Design of minimum energy loss structures (Keller/Winston)
- Design guidelines for rock chute structures (Keller/Winston)
- Final technical report and guidelines for AFFA Fishways Project (Keller)
- CHUTE software (Keller/Winston/Ladson)
- Sustainable water allocation - development of integrated water balance, climate and economic models (Codner/Weinmann)
- Evaluating environmental consequences of water allocation decisions (Codner/Schreider/Biggin)
- Decision making and policy setting under uncertainty (Codner/Schreider/Wills/Graff)
- Frequency of extreme rainfall and flood events (Weinmann/Kuczera)
- Predicting long-term wetland performance (Fletcher/Deletic)
### 4.2. List of research grants and income

Research Funding for 2003 was as follows:

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Project Title</th>
<th>Amount awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakharev, T.</td>
<td>Engineering Research Fund Travel Grants (Round 1, 2003)</td>
<td>$2,500</td>
</tr>
<tr>
<td>(Dr)</td>
<td>Attending International Symposium on Nanotechnology in Construction, University of Paisley, Scotland, 23-25 June; Attending 10th International Conference on the Composites/Nano-Engineering (ICCE), New Orleans (Louisiana, USA) 20-26 July</td>
<td></td>
</tr>
<tr>
<td>Kodikara, J.</td>
<td>Engineering Research Fund Travel Grants (Round 2 (2003)</td>
<td>$2,500</td>
</tr>
<tr>
<td>(Dr)</td>
<td>Attending 8th International Conference on Low-Volume Roads, Reno (Nevada, USA), 22-25 June</td>
<td></td>
</tr>
<tr>
<td>Al-Mahaidi, R.</td>
<td>Attending First International Conference on Structural Health Monitoring and Intelligent Infrastructure, Tokyo (Japan), 13-15 November</td>
<td>$2,500</td>
</tr>
<tr>
<td>(Dr)</td>
<td>Bouazzza, A. (A/Prof), Attending 12th European Conference on Soil M Mechanics and Geotechnical Engineering, Prague (Czech Republic) 22-30 August</td>
<td>$2,500</td>
</tr>
<tr>
<td>Deletic, A.</td>
<td>Attending XXX IAHK Congress, Thessaloniki, (Greece) 24-29 August</td>
<td>$2,500</td>
</tr>
<tr>
<td>(Dr)</td>
<td>Grundy, P. (Em Prof) Attending 13th International Ship and Offshore Structures Congress, San Diego (California, USA), 10-15 August; IABSE Symposium, Antwerp (Belgium); 10th International Symposium on Tubular Structures, Madrid (Spain) 27-29 August; International Jack-Up Conference, London (UK), 10 August-25 September</td>
<td>$2,500</td>
</tr>
<tr>
<td>Grzebieta, R.</td>
<td>2nd International Conference and Workshop: Avoiding Disaster: Engineering Technology and the Law, Monash Campus, Plato (Italy), 7-10 October</td>
<td>$2,500</td>
</tr>
<tr>
<td>(A/Prof)</td>
<td>Haque, A. (Dr) Attending Deformation Characteristics of Geomaterials (ISLyonn3), Lyon (France), 22-24 September</td>
<td>$2,500</td>
</tr>
<tr>
<td>Zhao, X.L.</td>
<td>Attending 10th International Symposium on Tubular Structures, Madrid, Spain, 14-21 September 2003</td>
<td>$2,500</td>
</tr>
<tr>
<td>(Prof)</td>
<td>Faculty of Engineering Small Grants Scheme – 2003 Unsaturated Hydraulic Properties of Geotextiles</td>
<td>$12,500</td>
</tr>
<tr>
<td>Bouazzza, A.</td>
<td>Predicting Stresses in Underwater Shock Loaded Steel Plates</td>
<td>$13,900</td>
</tr>
<tr>
<td>(A/Prof)</td>
<td>Rose, G. (A/Prof), Mobile Phones as Traffic Probes</td>
<td>$12,000</td>
</tr>
<tr>
<td>Sanjayan, J.</td>
<td>Bridge Performance Modelling Using Inspection Data and Data Mining Techniques</td>
<td>$12,500</td>
</tr>
<tr>
<td>(A/Prof)/Dowe, D. (Drl/D)</td>
<td>Fabricated Sections Utilising Very High Strength Steel Tubes</td>
<td>$18,000</td>
</tr>
<tr>
<td>Taplin, G. (Dr)</td>
<td>ARC Linkage 2003</td>
<td></td>
</tr>
<tr>
<td>Zhao, X.L.</td>
<td>Settlement of Municipal Solid Waste, Industry Partner: Pioneer Australia Waste Management Pty Ltd</td>
<td>$50,045*</td>
</tr>
<tr>
<td>(Prof)</td>
<td>Bouazzza, A. (A/Prof), Development of efficient and effective ground improvement techniques, Industry Partner: Franki Pike</td>
<td>$22,292</td>
</tr>
<tr>
<td>(transferred from J Seidel)</td>
<td>Pavement Technology Ltd, Rail Infrastructure Corporation (RIC), NSW</td>
<td>$56,899</td>
</tr>
<tr>
<td>Haque, A. (Dr)/Kodikara, J. (Dr) [1 APAI]</td>
<td>Stabilisation of Railway Subgrade by Lime-Flyash slurry injection - Industry Partners: Technip pavement Ltd, Rail Infrastructure Corporation (RIC), NSW</td>
<td>$42,883</td>
</tr>
<tr>
<td>Ladson, A. (Dr)/Deolan, J M (Dr) [1 APAI]</td>
<td>Indicators of River Conditions: Are They Useful for Environmental Management, Industry Partner: Dept of Natural Resources and Environment</td>
<td>$19,016</td>
</tr>
<tr>
<td>Sanjayan, J (A/Prof) [1 APAI]</td>
<td>Investigation of the Mechanism Causing Shrinkage Strains in Concretes made with Slab-Bonded Cements, Industry Partner: Independent Cement and Lime Pty Ltd</td>
<td>$183,333</td>
</tr>
<tr>
<td>Zhao, X L (Prof)/Dayawansa, D (Dr)/Price, J (Prof)</td>
<td>Fatigue Behaviour of Drageine Tubular Structures, Industry Partner: BHP Billiton Mitsubishi Alliance, Coal Operations Pty Ltd, Bucyrus (Aust) Pty Ltd</td>
<td></td>
</tr>
<tr>
<td>New Staff Member Research</td>
<td>Predicting the Long-Term Performance of Stormwater Bio-Filters</td>
<td>$15,000</td>
</tr>
<tr>
<td>Deletic, A (Dr)</td>
<td>Travel Choices and the Risks of Personal Exposure to Respirable Particulate Matter</td>
<td>$15,000</td>
</tr>
<tr>
<td>Greaves, S (Dr)</td>
<td>Laboratory Investigation of Shear Behaviour of Saturated Infilled Rock Joint</td>
<td>$13,231</td>
</tr>
<tr>
<td>Haque, A (Dr)</td>
<td>Modelling of Non-Uniform Shrinkage and Curling of Wet Porous Materials During Desiccation</td>
<td>$15,000</td>
</tr>
<tr>
<td>Investigators</td>
<td>Project Title</td>
<td>Amount awarded</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Ladson, A (Dr)</td>
<td>Rapid Methods for Field Assessment of Stream Condition</td>
<td>$15,000</td>
</tr>
<tr>
<td>Mudd, G (Dr)</td>
<td>Sustainable Groundwater Resource Modelling</td>
<td>$11,000</td>
</tr>
<tr>
<td>Ranjith, P G (Dr)</td>
<td>An Experimental Study of Two-Phase Permeability Characteristics of Coal</td>
<td>$15,000</td>
</tr>
<tr>
<td>Sanjayan, J (A/Prof)</td>
<td>ARC Discovery (2002) Development of Scientific and Experimental Basis for Manufacture of Building Materials with Special Properties Based on Geopolymers</td>
<td>$77,186</td>
</tr>
<tr>
<td>Bakhtarev, T (Dr)</td>
<td>Bouazza, A (A/Prof) Gas Diffusive Flow Through Unsaturated Fine-Grained Soils and Geo-Synthetich Clay Liners</td>
<td>$45,000</td>
</tr>
<tr>
<td>Grebnera, R (A/Prof)</td>
<td>ARC (2001) Crashworthiness Behaviour of Roadside Furniture Utilising Thin-Walled Structures</td>
<td>$86,633</td>
</tr>
<tr>
<td>Zhao, X L (Prof)</td>
<td>Rangan, B (Prof) Zhao, L (Prof) Han, L (Prof)</td>
<td>$80,234</td>
</tr>
<tr>
<td>Bouazza, A (A/Prof)</td>
<td>Development of Technical Parameters for Long-term Containment Facility Performance Requirements Meinhardt Vic Pty Ltd</td>
<td>$3,000</td>
</tr>
<tr>
<td>Currie, G (Prof)</td>
<td>Bus Regulatory and Network Design for Regular Passenger Transport Services (Dept of Infrastructure, Energy &amp; Resources, Tasmania)</td>
<td>$13,000</td>
</tr>
<tr>
<td>Deletic, A (Dr)</td>
<td>Fletcher, T (Dr) Using WSLID (Water Sensible Urban Design for Integrated Stormwater Treatment and Re-use) (Environment Protection Authority Victoria)</td>
<td>$56,644</td>
</tr>
<tr>
<td>Deletic, A (Dr)</td>
<td>Fletcher, T (Dr) Integrated Stormwater and Re-use Systems - Inventory of Australian and International Practice (Environment Protection Authority New South Wales)</td>
<td>$46,000</td>
</tr>
<tr>
<td>Deletic, A (Dr)</td>
<td>Fletcher, T (Dr) Inventory of Australian Water Sensitive Urban Design (CSIRO Land and Water)</td>
<td>$15,000</td>
</tr>
<tr>
<td>Fletcher, T (Dr)</td>
<td>Duncan, H (M) Wong, T (A/Prof) Lloyd, S (M) Puolms, P (M) Lewis, J (M)</td>
<td>$77,740</td>
</tr>
<tr>
<td>Fletcher, T (Dr)</td>
<td>Understanding wetland inter-event behaviour: Reffy's Water (Melbourne Water) (A/Prof)</td>
<td>$25,000</td>
</tr>
<tr>
<td>Fletcher, T (Dr)</td>
<td>Identifying and Overcoming Barriers to Water Sensitive Urban Design (Melbourne Water)</td>
<td>$40,000</td>
</tr>
<tr>
<td>Fletcher, T (Dr)</td>
<td>Victorian Stormwater Quality Assessment (Environment Protection Authority, Victoria) (Dr)</td>
<td>$214,430</td>
</tr>
<tr>
<td>Fletcher, T (Dr)</td>
<td>Tools for Evaluating the Economic and Social Performance of Storm Water Management (Melbourne Water)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Taylor, A (Dr)</td>
<td>Fletcher, T (Dr) Tools for Evaluating the Economic and Social Performance of Storm Water Management (Brisbane City Council)</td>
<td>$17,500</td>
</tr>
<tr>
<td>Taylor, A (Dr)</td>
<td>Fletcher, T (Dr) Tools for Evaluating the Economic and Social Performance of Storm Water Management (Environment Protection Authority Victoria)</td>
<td>$60,500</td>
</tr>
<tr>
<td>Taylor, A (Dr)</td>
<td>Fletcher, T (Dr) Identifying and Overcoming Barriers to Water Sensitive Urban Design (Melbourne Water)</td>
<td>$40,000</td>
</tr>
<tr>
<td>Keller, R (R J (A/Prof)</td>
<td>Physical Hydraulic Modelling Research on Litter Trap (Clevetrek Pty Ltd)</td>
<td>$35,000</td>
</tr>
<tr>
<td>Winston, F (Mr)</td>
<td>Keller, R (A/Prof) Snowy River Rehabilitation Trials Using Engineered Large Woody Debris Structures Provision of Hydraulic Modelling Services (Sinday Knight Merz via State Government)</td>
<td>$80,125</td>
</tr>
<tr>
<td>Rose, G (A/Prof)</td>
<td>Rose, G (A/Prof) Development of a National Training Resource on Intelligent Transport Systems Architecture (Intelligent Systems Australia, ITS Australia)</td>
<td>$7,538</td>
</tr>
<tr>
<td>Rose, G (A/Prof)</td>
<td>Yeung, W (Prof) Currie, G (Prof) Sarvi, M (Dr)</td>
<td>$1,500</td>
</tr>
<tr>
<td>Zhao, X L (Prof)</td>
<td>DuraGal Profile Fatigue Research (OneSteel) (A/Prof)</td>
<td>$80,000</td>
</tr>
<tr>
<td>Zhao, X L (Prof)</td>
<td>CIDECT CHS Fatigue Research (OneSteel)</td>
<td>$10,922</td>
</tr>
<tr>
<td><strong>Total Funding Awarded in 2003</strong></td>
<td></td>
<td><strong>$1,724,151</strong></td>
</tr>
</tbody>
</table>

* (includes in-kind and cash contribution)
4.3 Research activity at CRCCH and Centres (ITS and MTEC)

Cooperative Research Centre in Catchment Hydrology (CRCCH)
The second round of three-year projects commenced in January 2003 and has already produced important research outputs. An important aim of the CRCCH is to turn these research outputs into practical tools, delivered in the form of a web-based Catchment Modelling Toolkit, to assist the water industry in better resource management.

Core research projects in 2003 with major Monash involvement include:

Sustainable Water Allocation – Program 3
- Project 3A – Hydrologic and economic modelling for water allocation (Erwin Weinmann, Sergel Schreider, Gary Codner)

Urban Stormwater Quality – Program 4
- Project 4A – Development of integrated stormwater models (Tony Wong, Tim Fletcher, Rick Wootton)
- Project 4B – Stormwater Best Management Practices (Tim Fletcher, Ana Deletic, Tony Ladson, Gavin Mudd)

River Restoration – Program 6
- Project 6B – Predicting spatial and temporal variations in channel form (Tony Ladson)
- Project 6.5 – Hydraulics and performance of fishways in Australian Streams (Bob Keller)
- Project 6.6 – Developing tools to predict the scour of rehabilitation works (Bob Keller)
- Project 6.8 – Research to improve the effectiveness of Australian fishway design (Bob Keller)

Total funding for these and other projects and for the CRCCH Office activities at Monash was $1,440,357 in 2003.

Institute of Transport Studies, Monash Node (ITS)
ITS (Monash) continued to strengthen its research activities in 2003 with the appointment of Professor Graham Currie to the Chair in Public Transport, and the arrival of Dr Majid Sarvi as a research fellow. Their appointments herald a strategic expansion of research activity focused on public transport. Professor Currie’s position has been funded by the Bus Association of Victoria, the Victorian Department of Infrastructure, VicRoads and Monash University. Dr Sarvi was subsequently appointed to a Lectureship position, created by Dr Greaves’ departure to join ITS (Sydney). Dr Sarvi’s research interests cover intelligent transport systems and microsimulation. Professors Currie and Young have been working with Dr Sarvi on a major research and development project for VicRoads which focuses on road space allocation.

Monash Timber Engineering Centre (MTEC)
MTEC undertook a number of projects in 2003 for 15 different clients. A major project on glued laminated timber was completed (Funded by the Glued Laminated Timber Association of Australia and the Forest and Wood Products R & D Corporation – FWPBDC) and recommendations forwarded to Standards Australia with a view to having glued laminated timber treated more favourably in design standards. Other work revolved around product testing covering laminated veneer lumber, pallets, furniture and other products. One PhD (structural uses of particleboard) and one MEngSc (behaviour of box-beam portal frames) student successfully completed their degrees and a new student started work on timber bridges. Two major grant applications have reached an advanced stage of processing with the FWPBDC, one on wood adhesive bonding ($1.7 million shared with CSIRO), and a second project on epoxy grouted steel bars ($250K). The work on timber bridges is expected to become a major activity towards the mid to latter part of 2004 with the overall aim being to develop a prefabricated timber bridge deck that can be placed on bridge structures in a minimum of time. Work continued on standards at both a national and international level.
4.4. Research seminars given by visitors to the Department

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Seminar Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Widi A. Pratikto, Ministry of Marine Affairs and Fisheries (Republic of Indonesia)</td>
<td>Marine Coastal Resources Management in Indonesia</td>
</tr>
<tr>
<td>Dr Vincent Janoc, Civil Engineering Research Division, US Army Corps of Engineers, Hanover (Germany)</td>
<td>Influence of Moisture and Temperature Changes on Pavement Performance</td>
</tr>
<tr>
<td>Professor A G Razagpur, Department of Civil and Environmental Engineering, Carleton University, Ottawa, Ontario (Canada)</td>
<td>Numerical Modelling of Combined Chloride and Carbonation Induced Corrosion of Reinforcement in Concrete Structures</td>
</tr>
<tr>
<td>Mr Stefan Ahinman, Visiting Postgraduate Student Chalmers University of Technology (Sweden)</td>
<td>Sustainable Storm Water Systems</td>
</tr>
<tr>
<td>Professor John Dracup, Department of Civil Engineering, University of California at Berkeley (USA)</td>
<td>Linking Drought Analysis to Water Management</td>
</tr>
<tr>
<td>Professor Avishai Cedar, Senior Research Engineer, Technion-Israel Institute of Technology</td>
<td>Roadspace Management — International Perspectives</td>
</tr>
<tr>
<td>Professor Peter Jones, Professor of Transport Policy and Behavioural Analysis, University of Westminster, London.</td>
<td>Roadspace Management - Pricing</td>
</tr>
</tbody>
</table>

4.5. Formal seminars given by staff and postgraduate students

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Seminar Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sina Aves (Mr)</td>
<td>Site characterization in municipal solid waste landfills for settlement prediction</td>
</tr>
<tr>
<td>Manie Griffith (Ms)</td>
<td>Irrigated agriculture under uncertainty</td>
</tr>
<tr>
<td>Dean Judd (Mr)</td>
<td>The causes of anastomosis</td>
</tr>
<tr>
<td>Andrew Haines (Mr)</td>
<td>A computer survival kit for staff and postgraduate students</td>
</tr>
<tr>
<td>Huy Binh Pham (Mr)</td>
<td>Debonding failures of fibre reinforced polymer composites bonded to RC members</td>
</tr>
<tr>
<td>Margot Biggin (Ms)</td>
<td>Evaluating the impact of water diversions on the hydraulic environment of streams</td>
</tr>
<tr>
<td>Ana Deletic (Dr)</td>
<td>Behaviour of sediment run-off through grass</td>
</tr>
<tr>
<td>Tim Fletcher (Dr)</td>
<td>Urban stormwater quality program (overview)</td>
</tr>
<tr>
<td>Rita Soothaler (Ms)</td>
<td>Application of the principles of persuasion to a community-based travel behaviour change program</td>
</tr>
<tr>
<td>Stephen Greaves (Dr)</td>
<td>Travel survey data collection in Victoria in the new millennium – old challenges and new opportunities</td>
</tr>
<tr>
<td>and Ana Deletic (Dr)</td>
<td>Sustainability and civil engineering education</td>
</tr>
<tr>
<td>Gary Cocker (A/Prof)</td>
<td>Radium mining in Australia 1996 to 1945: A continuing environmental story</td>
</tr>
<tr>
<td>Heads of Sections</td>
<td>Presentation to 4th year students: The Benefits of Postgraduate Study</td>
</tr>
<tr>
<td>Kee Ho Kong</td>
<td>Numerical analysis of tapered piles</td>
</tr>
<tr>
<td>Keith McKenny (Mr)</td>
<td>Rehabilitation of timber bridge decks</td>
</tr>
<tr>
<td>Kah Ying Lee (Mr)</td>
<td>Numerical analysis of model pile failure due to soil movement using FLAC3D</td>
</tr>
<tr>
<td>Kok Yuen Lee</td>
<td>Cementitious stabilisation of scoria for pavement construction</td>
</tr>
<tr>
<td>Shane Haydon</td>
<td>Modelling pathogen behaviour in a hydrologic context</td>
</tr>
<tr>
<td>Andrew Halnes (Mr)</td>
<td>Spam, scams, worms and patches – dealing with a hostile internet</td>
</tr>
<tr>
<td>Paul Grundy (Em. Prof)</td>
<td>Menangle railway bridge</td>
</tr>
</tbody>
</table>

4.6. Publications

Book chapters


Journal papers


Civil Engineering – 2003 Annual Report
RESEARCH AND DEVELOPMENT


Conference papers


Bakharev, T. (2003), Preparation of geopolymeric composites with synthetic mineral polymer matrix processing, characterisation and properties, 10th Int. Conference on Composites/Nano Engineering, New Orleans, Louisiana (USA), July.


RESEARCH AND DEVELOPMENT

Haque, A. and Indraratna, B. (2003), Effect of roughness on the peak shear strength of clay infilled joints under constant normal stiffness, ISRM Congress (6-12 September 2003), Sandton, Gauteng, SA.


Han, L.H. and Zhao, X.L. (2003), Recent developments in concrete-filled steel tubular structures in China, Advances in Structures, Sydney, June.

Hon, A., Taplin, G. and Al-Mahaidi, R. (2003), Assessing the Strength of Reinforced Concrete Beam and Slab Bridge Decks Using Compressive Membrane Action, 21st Biennial Conference of the Concrete Institute of Australia, Brisbane, Australia, July.


Ladson, A. R., Cornish, S., Walsh, C. and Fletcher, T. (2003), Improving Stream Health by Retrufitting Suburbs to Decrease the Connection Between Impervious Surfaces and Waterways, Symposium on Urbanisation and Stream Ecology, 8-10 December, University of Melbourne.

LaMotta, J., Kodikara, J.K. and Bouazza, A. (2003), Suitability of leached ash as an alternative landfill cover material, International Conference on Acid Rock Drainage, Cairns, CD Rom Proceedings.


Nathan, R. J., Weimann, P.E. and Hill, P. (2003), Use of a Monte Carlo simulation to estimate the expected probability of Large to Extreme floods, Proc. 28th International Hydrology and Water Resources Symposium, Nov 2003, Wollongong, NSW 1.105-1.112.


Pham, H. and Al-Mahaidi, R. (2003), Experimental and Numerical Investigation into Flexural Retrofitting of Reinforced Concrete Beams using FRP Composites, 12th International Conferences on Composite Structures, ICCS 12, Melbourne, Australia, November.


Other Reports


4.7. List of postgraduate students and research topics

<table>
<thead>
<tr>
<th>Student Name</th>
<th>PhD or Master</th>
<th>Project Title</th>
<th>Main Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam, Con Y (Mr)</td>
<td>MEngSc</td>
<td>Remote monitoring of timber structures</td>
<td>A/Prof H. R. Miner</td>
</tr>
<tr>
<td>Arndt, Naomi (Ms)</td>
<td>MEngSc</td>
<td>Biomechanical Analysis of Leg in Side Impact Automobile Crashes</td>
<td>A/Prof R. Grzebieta</td>
</tr>
<tr>
<td>Franczy, Matthew (Mr)</td>
<td>MEngSc</td>
<td>Modelling of stormwater quality</td>
<td>Dr A. Deletic/ Dr T. Fletcher</td>
</tr>
<tr>
<td>Francis, Bernie (Mr)</td>
<td>MEngSc</td>
<td>Laterally loaded piles in jointed soft rock masses</td>
<td>A/Ard C. Haberfield</td>
</tr>
</tbody>
</table>

Civil Engineering – 2003 Annual Report
<table>
<thead>
<tr>
<th>Student Name</th>
<th>PhD or Master</th>
<th>Project Title</th>
<th>Main Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haydon, Shane (Mr)</td>
<td>MEngSc</td>
<td>Modelling pathogen behaviour in a hydrologic context</td>
<td>Dr. A. Deletic/ A/Prof G. Codner</td>
</tr>
<tr>
<td>Hii, Adrian (Mr)</td>
<td>MEngSc</td>
<td>Structural health monitoring of bridges using fibre optic sensors</td>
<td>Dr. R. Al-Mahaidi/ Dr. J. Kodikara/ Dr. A. Haque</td>
</tr>
<tr>
<td>Kong Kee Ho (Mr)</td>
<td>MEngSc</td>
<td>Numerical analysis of model pile failure due to soil movement using FLAC3D</td>
<td>Dr. J. Kodikara/ Dr. A. Haque</td>
</tr>
<tr>
<td>Lee Kah Ying (Mr)</td>
<td>MEngSc</td>
<td>Cementitious stabilization of scoria for pavement construction</td>
<td>Dr. J. Kodikara</td>
</tr>
<tr>
<td>Lee Kok Yun (Mr)</td>
<td>MEngSc</td>
<td>Travel time prediction</td>
<td>A/Prof G. Rose</td>
</tr>
<tr>
<td>Li, Ruimin (Ms)</td>
<td>MEngSc</td>
<td>Analysis of pipes resting on ocean beds</td>
<td>Dr. R. Al-Mahaidi/ Dr. J. Ang</td>
</tr>
<tr>
<td>Lim, K K (Mr)</td>
<td>MEngSc</td>
<td>Impedance spectroscopic method for permeability measurements in concrete</td>
<td>Dr. J. Sanjayan</td>
</tr>
<tr>
<td>Salim, Maya (Ms)</td>
<td>MEngSc</td>
<td>Fatigue behaviour of dragline tubular structures</td>
<td>Prof X. L. Zhao/ Dr. P. Dayawansa</td>
</tr>
<tr>
<td>Pang, Daniel (Mr)</td>
<td>MEngSc</td>
<td>Design of heavy duty pavements in reactive soils subgrades using geosynthetics</td>
<td>Dr. J. Kodikara</td>
</tr>
<tr>
<td>Pardo, Lucas (Mr)</td>
<td>MEngSc</td>
<td>Public transport planning in Indonesia</td>
<td>Prof W. Young</td>
</tr>
<tr>
<td>Purwardi, Dudung (Mr)</td>
<td>MEngSc</td>
<td>Stabilization of railway subgrade by lime-flyash slurry injection</td>
<td>Dr. A. Haque/ Dr. J. Kodikara</td>
</tr>
<tr>
<td>Wilkinson, Alex (Ms)</td>
<td>PhD</td>
<td>Settlements in municipal solid waste landfill sites with rheological and geostatistical considerations</td>
<td>Prof A. Bousazza/ Dr. J. Kodikara</td>
</tr>
<tr>
<td>Avsar, Sina (Mr)</td>
<td>PhD</td>
<td>Evaluating the impact of water allocation proposals on hydraulic conditions</td>
<td>Prof G. Codner/ Dr. M. Stewardson/ Prof S. Schneider</td>
</tr>
<tr>
<td>Biggin, Margot (Ms)</td>
<td>PhD</td>
<td>Shrinkage behaviour of chemically stabilized material as applicable to in-situ pavement rehabilitation</td>
<td>Dr. J. Kodikara</td>
</tr>
<tr>
<td>Chakrabarti, Srijib (Mr)</td>
<td>PhD</td>
<td>Evaluation of effectiveness of road safety audit</td>
<td>A/Prof G. Rose/ Dr. M. Regan</td>
</tr>
<tr>
<td>Chan, Merle (Ms)</td>
<td>PhD</td>
<td>Strengthening of steel structures using high modulus CFRP laminates</td>
<td>Dr. R. Al-Mahaidi/ Prof X. L. Zhao</td>
</tr>
<tr>
<td>Fawzia, Sabrina (Ms)</td>
<td>PhD</td>
<td>Research into the effectiveness of deep soil mixing techniques in improving the engineering properties of Coode Island Silt in-Situ</td>
<td>Dr. A. Bouazza</td>
</tr>
<tr>
<td>Fletcher, Peter (Ms)</td>
<td>PhD</td>
<td>Irrigated agriculture under uncertainty</td>
<td>Mr P. E. Weinmann/ Dr R Nathan</td>
</tr>
<tr>
<td>Green, Janice (Ms)</td>
<td>PhD</td>
<td>Estimating the probability of extreme rainfalls - a joint probability approach</td>
<td>A/Prof G. Codner/ A/Prof R. Groobotta/ Prof X. L. Zhao</td>
</tr>
<tr>
<td>Griffith, Marnie (Ms)</td>
<td>PhD</td>
<td>The fundamental mechanics of the crashworthiness behaviour of roadside safety barrier made from thin-walled structures</td>
<td>Prof X. L. Zhao</td>
</tr>
<tr>
<td>Jiang, Tony (Mr)</td>
<td>PhD</td>
<td>The Behaviour of VHS Members and Welded Connections</td>
<td>A/Prof R. Keller/ Prof P. Grundy</td>
</tr>
<tr>
<td>Jiao, Hui (Mr)</td>
<td>PhD</td>
<td>The causes of anastomosis</td>
<td>Prof X. L. Zhao/ Dr. R. Al-Mahaidi</td>
</tr>
<tr>
<td>Judd, Dean (Mr)</td>
<td>PhD</td>
<td>Reliability-based assessment of load capacity of existing concrete</td>
<td>A/Prof T. Wong</td>
</tr>
<tr>
<td>Khalaf, Hussein (Mr)</td>
<td>PhD</td>
<td>Longitudinal fillet welds in very high strength (VHS) circular tubes</td>
<td>A/Prof J. Sanjayan</td>
</tr>
<tr>
<td>Ling, Tong Wei (Mr)</td>
<td>PhD</td>
<td>Exploring opportunities and barriers to sustainable stormwater management practices in residential catchment</td>
<td>A/Prof J. Sanjayan</td>
</tr>
<tr>
<td>Lloyd, Sara (Ms)</td>
<td>PhD</td>
<td>Constitutive behaviour of high strength concrete under cyclical loading</td>
<td>A/Prof J. Sanjayan</td>
</tr>
<tr>
<td>Lokuge, Weena (Ms)</td>
<td>PhD</td>
<td>Corrosion induced deterioration and its effect on service life of concrete structures</td>
<td>Prof W. Young/ A/Prof G. Rose/ Dr. R. Al-Mahaidi</td>
</tr>
<tr>
<td>Maheswaran, Tharmalingam (Mr)</td>
<td>PhD</td>
<td>Components of uncertainty in predicting pavement performance at a road network and program level</td>
<td>A/Prof R. Groebieta</td>
</tr>
<tr>
<td>Martin, Tim (Mr)</td>
<td>PhD</td>
<td>Failure mechanisms of FRP repaired concrete beams</td>
<td>A/Prof R. Groebieta</td>
</tr>
<tr>
<td>Pham, Huy Binh (Mr)</td>
<td>PhD</td>
<td>Rollover Protective Structures for (Military) 4 x 4 vehicles</td>
<td>A/Prof J. Sanjayan/ Prof W. Young/ A/Prof G. Rose/ Dr. R. Al-Mahaidi</td>
</tr>
<tr>
<td>Richardson, Shane (Mr)</td>
<td>PhD</td>
<td>Investigating the use of persuasion techniques in transport policy: application of persuasion principles to a community-based travel behaviour change program</td>
<td>A/Prof R. Groebieta/ A/Prof S. Allen</td>
</tr>
<tr>
<td>Seethaler, Rita (Ms)</td>
<td>PhD</td>
<td>A study of void filled thin-walled rectangular steel sections</td>
<td>A/Prof R. Groebieta</td>
</tr>
<tr>
<td>Sironic, Lizi (Ms)</td>
<td>PhD</td>
<td>Side impact protection – occupants in the far-side seat</td>
<td>A/Prof R. Groebieta</td>
</tr>
<tr>
<td>Stolinski, Richard (Mr)</td>
<td>PhD</td>
<td>Civil Engineering – 2003 Annual Report</td>
<td>Page 26 of 43</td>
</tr>
</tbody>
</table>
4.8. Theses accepted for Higher Degree

**PhD**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Supervisor(s)</th>
<th>Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elchalakani</td>
<td>Mohamed</td>
<td>Prof X-L Zhao/ A/Prof R Grzebieta</td>
<td>Cyclic bending behaviour of hollow and concrete filled cold-formed steel members</td>
</tr>
<tr>
<td>Giaccio</td>
<td>Craig</td>
<td>Dr R Al-Mahaidi</td>
<td>Flange effectiveness in the resistance of shear on RC T-beams subjected to point loads</td>
</tr>
<tr>
<td>Lee</td>
<td>Tuan Kuan</td>
<td>Dr R Al-Mahaidi</td>
<td>Shear strength of reinforced concrete T-beams strengthened using carbon fibre reinforced polymer (CFRP) laminates</td>
</tr>
<tr>
<td>Nozamian</td>
<td>Abolghasem</td>
<td>Dr R Al-Mahaidi</td>
<td>Bond strength of concrete plugs embedded in tubular steel piles</td>
</tr>
<tr>
<td>Sonnenberg</td>
<td>Andrew</td>
<td>Dr R Al-Mahaidi</td>
<td>An investigation into the shear resistance and failure mechanisms of shear critical RC beams</td>
</tr>
<tr>
<td>Szymkowski</td>
<td>Jerry</td>
<td>A/Prof C Haberfield</td>
<td>Direct shear testing of jointed soft rock masses</td>
</tr>
<tr>
<td>Taylor</td>
<td>Jack</td>
<td>A/Prof H R Miner</td>
<td>The structural use of particle board</td>
</tr>
<tr>
<td>Thaveesak</td>
<td>Vangpaisal</td>
<td>A/Prof A Bouazza</td>
<td>Gas permeability of geosynthetic clay liners under various conditions</td>
</tr>
<tr>
<td>White</td>
<td>Lindsay</td>
<td>A/Prof R Keller</td>
<td>Advancements in the engineering and scientific basis of the design of fishways with an emphasis on the Murray-Darling Basin, Australia</td>
</tr>
</tbody>
</table>

**MEngSc (Research)**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Supervisor</th>
<th>Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amdt</td>
<td>Naomi</td>
<td>A/Prof R Grzebieta/A/Prof B Flides</td>
<td>Lower extremity injuries in side-impact vehicle crashes</td>
</tr>
<tr>
<td>Kwan</td>
<td>Pek Soon</td>
<td>A/Prof A Bouazza</td>
<td>Laboratory investigation on the improvement of strength and compressibility characteristics of Coode Island Silt by soil mixing</td>
</tr>
<tr>
<td>Ramchurn</td>
<td>Avijeet</td>
<td>Mr P Weirmann/A/Prof G Codner</td>
<td>Understanding the role of on-farm storages in the regulated GWDIR system</td>
</tr>
<tr>
<td>Sabaratnam</td>
<td>Renuka</td>
<td>A/Prof R Keller/A/Prof I Rulifford</td>
<td>Stream bank undercut. Their distribution and morphology along the Acheron River, S.E. Australia</td>
</tr>
</tbody>
</table>

**MEngSc (Coursework & Minor Thesis)**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Supervisor</th>
<th>Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanderson</td>
<td>Sigrid</td>
<td>Prof. W. Young</td>
<td>Crossing the road with a disability</td>
</tr>
</tbody>
</table>
4.9. Graduating Class of 2003 (Postgraduates)

Master of Engineering Science (Coursework and Minor Thesis)
Sigrid Sanderson BE(Hons)

Master of Engineering Science (Research)
Kwan Pek Soon BE(Hons)
Chen Lee
Avijee Ramchurn
Renuka Sabaratnam

Master of Traffic
Agnelo Anthony Duarte
Charmaine Dunstan
Andrew William Edgar
Owen Carl Gervasoni
John Phillip Hanlon
Joseph Kott
Darryl William Paterson

Master of Transport and Traffic
Suzette Sarah Goldwasser BE(Hons)
Jennifer Siin Yee Mak
Kumutha SrisivalingamBE(Hons) U.N.S.W.
Donald James Robertson
Sylvia Teache
Trevor David Wakefield

Graduate Certificate in Transport and Traffic
Duncan John Foster
Visvaldis Janis Valdemars Gravitis
Grant Robert Stewart
Arthur Vlahogenis
Daniel John Wegner

Postgraduate Diploma in Transport and Traffic
Yucel Adas
David John Lane
Nicole Anne Oliver

Doctor of Philosophy
Dr Craig Giaccio BEng(Civ) Adel. (Civil Engineering)
Dr Lee Tuan Kuan BE (Civil Engineering)
Dr Andrew Murray Charles Sonnenberg BE (Civil Engineering)
Dr Jack Arnold Taylor DipEng R.M.I.T. (Civil Engineering)
Dr Thaveesak Vanpaisal BE Khon Keen MEngSc U.N.S.W. (Civil Engineering)
Dr Lindsay John White BSc BE(Hons) MEngSc (Civil Engineering)
Dr Scott Norman Wilkinson BE (Hons) (Civil Engineering)
5. UNDERGRADUATE STUDENTS (CLASS OF 2003) & PRIZES

5.1. Graduating Class of 2003

Bachelor of Engineering (Civil)
Cheuk-Yu Lee
Choon Kiat Eng
Lauren Kathleen Curwood
Amir Dianati
Vladimir Masic
Jeffrey Quendo
Rageswary Palany
Sehon Roger Peilow
Kosta Smirnis
Peter Eric James White
Hui Fai Matthew Wong
Ling Sing Wong

Bachelor of Engineering (Civil) with Honours
Christopher Aarons
Sam Akriftidis
Anthony Graham Askew
Damien Mark Backholer
Andrew Ronald Baker
Catherine Jane Bolton
John David Bongiorno
Danielle Anne Cassidy
Andrew William Charnock
Andrew William Colman
Christopher Luke de Gruyter
Andrew Robert De Vries
Tulay Sehzade Div
James Allan Eagle
Silvia Cristina Goncalves
Timothy Alexander Grieve
Emily Anne Hamilton
Garret James Handke
Barry Thomas Hope
Paula Elizabeth Jacobs
Kam Yoke Loo
David Kolber
Daniel Kong
Brendan Matthew Lawrence
Nicholas Travis Linford
Fouad Loffi-Jam
Paul Matthew Malone
Jayden Luke Neve
Gavin Peter Nicholls
Mark David O'Shea
Rebecca Polvere
Dean Michael Purdy
Jodie Louise Rankin
Andra Sava
Luke Edward Shaw
Simon Matthew Sheldrick
Daniel Sia Ting Yii
Daochinda Siharath
Cameron Richard Smith
Tyler William Smith
Chuchart Sritangos
Ted Teo
Amanda Gayell Tobin
Marcus Gordon Voitz
Michael Peter von Steen
Luke Anthony Veyra
Bill Wang
Darren Rolfe Webb
Christopher Byam Wight
Jason Andrew White
Alexander Douglas Wilkinson
Felicia Kate Williams
Peter Bethune Wills
Wing Wai Choi

Bachelor of Engineering (Civil and Computing)
Darran Alan Burnett
Momcilo Monte Ivancevic

Bachelor of Arts and Bachelor of Engineering (with Honours) in the field of Civil Engineering
Mark Phillip Andrews
Linda Marion Armstrong
Samuel Grayton Ryan
Dean Andrew Doherty

Bachelor of Commerce and Bachelor of Engineering (with Honours) in the field of Civil Engineering
Luke James Brady
Michael Alexander Szafranski

Bachelor on Environmental Engineering
Chris Beardshaw
Derek Jean-Paul Hollander
Jeremy Russell Kinley
Leoni Zeer Ying Lam
Rodney Andre Lavoipierre
Hayley Joy Trimble

Bachelor on Environmental Engineering (with Honours)
Chris Beardshaw
Kathryn Jayne Bormann
Stuart Herman Cleven
Martin Hillemacher
Derek Jean-Paul Hollander
Jeremy Russell Kinley
Rodney Andre Lavoipierre
June Leen Lee
Hayley Joy Trimble
# UNDERGRADUATE STUDENTS

Bachelor of Technology (Infrastructure – Design, Construction and Management)

| Kit Hung Chau | Tsz Ching Mok |

## 5.2. Undergraduate Prizes and Awards

### Scholarships

<table>
<thead>
<tr>
<th>Scholarship</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leighton Contractors &quot;Keith Rix&quot; Scholarship</td>
<td>Graham Bradley</td>
</tr>
<tr>
<td>Traffic Group Scholarship</td>
<td>Anthony Mirabito (Second Year)</td>
</tr>
<tr>
<td></td>
<td>Adam Smith (Third Year)</td>
</tr>
</tbody>
</table>

### Prizes

<table>
<thead>
<tr>
<th>Prize</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esso Engineering Prize</td>
<td>Peter Doran</td>
</tr>
<tr>
<td>Civil Contractors Federation Prize</td>
<td>Scott Cornish</td>
</tr>
<tr>
<td>Arup Prize for Civil Engineering</td>
<td>Luke Shaw</td>
</tr>
<tr>
<td>Railand Prize for Water Engineering</td>
<td>Luke Brady</td>
</tr>
<tr>
<td>Neville Smith Timber Industries Prize</td>
<td>Li Chin Pan</td>
</tr>
<tr>
<td></td>
<td>Julian Schlesinger</td>
</tr>
</tbody>
</table>

#### Level 3 Prizes

<table>
<thead>
<tr>
<th>Prize</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Steel Institute Prize</td>
<td>Jonathan Lam</td>
</tr>
<tr>
<td>Douglas Partners Prize for Geomechanics</td>
<td>Andrew Somers</td>
</tr>
<tr>
<td>SRIA Prize for Concrete Structures</td>
<td>Changeeka Jayakodi</td>
</tr>
<tr>
<td>Railand Prize for Water Engineering</td>
<td>Robin Kalfat</td>
</tr>
<tr>
<td></td>
<td>Andrew Somers</td>
</tr>
</tbody>
</table>

#### Level 4 Prizes

<table>
<thead>
<tr>
<th>Prize</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHD Highway Design Prize</td>
<td>Jonathan Lam</td>
</tr>
<tr>
<td></td>
<td>Vlad Myrizkov</td>
</tr>
<tr>
<td></td>
<td>Catherine Rossignoli</td>
</tr>
<tr>
<td></td>
<td>Nguyen Phan Anh</td>
</tr>
<tr>
<td></td>
<td>Duong Hong Le</td>
</tr>
<tr>
<td>Foundation Industry Prize for Soil Engineering</td>
<td>Matthew Sentry</td>
</tr>
<tr>
<td>GHD Prize in Water Engineering</td>
<td>Chris de Gruyter</td>
</tr>
<tr>
<td>Richardson Prize in Transport</td>
<td>Naomi Langdon</td>
</tr>
<tr>
<td>Thiess Prize for Civil Engineering Design</td>
<td>Jason White</td>
</tr>
<tr>
<td></td>
<td>Matthew Sentry</td>
</tr>
<tr>
<td></td>
<td>Changeeka Jayakodi</td>
</tr>
<tr>
<td></td>
<td>Alex Wilkinson</td>
</tr>
<tr>
<td>Traffic Group Traffic Engineering Prize</td>
<td>Naomi Langdon</td>
</tr>
<tr>
<td>Civil Engineering Vacation Work Prize</td>
<td>Luke Shaw</td>
</tr>
</tbody>
</table>
6. PROFESSIONAL ACTIVITIES

6.1. Conference attendance

Al-Mahaidi, R. (Dr)
21st ARRB & 11th REAAA Conference, Cairns (Queensland), Australia, May.
6th International Symposium on Fibre-Reinforced Polymer Reinforcement for Concrete Structures (FRPRCS-6), Singapore, July
1st International Conference on Structural Health Monitoring and Intelligent Infrastructure Conference, Tokyo, Japan, November
12th International Conference on Composite Structures (ICCS 12), Melbourne, November.

Bakharev, Tatiana (Dr)
1st International Symposium on Nanotechnology in Construction
10th International Conference on Composites/Nano Engineering

Bouazza, Malek (Assoc Prof)
13th European Conference on Soil Mechanics and Geotechnical Engineering, Prague (Czech Republic), August

Codner, Gary (Assoc Prof)
National Environment Conference, Brisbane (QLD), June
Workshop on Effective Teaching, University of Melbourne, October

Currie, Graham (Prof)
SMART Urban Transport Conference, Sydney, NSW, May
26th Australasian Transport Research Forum, Wellington (New Zealand), October

Deletic, Ana (Dr)
XXXth IAHR Congress, Thessaloniki (Greece), August

Fletcher, Tim (Dr)
Symposium on Urbanization and Stream Ecology (member of Organizing Committee), Melbourne, December
Water Infrastructure Conference, Melbourne, July
Australian Runoff Quality Symposium (Engineers Australia), Humo, June

Greaves, Stephen (Dr)
21st ARRB Transport Research Conference, Cairns, May
6th International Conference on Satellite Navigation Technology (SATNAV 2003), Melbourne, July

Grundy, Paul (Em. Prof)
Advances in Structures Conference – Steel, Concrete, Composite and Aluminium, Sydney, June,
IABSE International Symposium – Structures for High Speed Railway Transportation, Antwerp (Belgium), August
Tubular Structures X Conference, Madrid (Spain), September
Avoiding Disaster – Engineering, Technology and the Law, Prato (Italy), October
Inaugural Australian Bridges Conference, Sydney, December

Grzebieta, Raphael (Assoc Prof)
Second International Conference on Engineering Technology and the Law, Monash Campus at Prato (Italy), September-October
Eighteenth International Technical Conference on the Enhanced Safety of Vehicles, Nagoya (Japan), May.

Haque, Asadul (Dr)
International Symposium on Deformation Characteristics of Geomaterials, ISLyon03, Lyon (France), September
PROFESSIONAL ACTIVITIES

Keller, Robert (Assoc Prof)
XXXth IAHR Congress, Thessaloniki (Greece), August
29th International Hydrology and Water Resources Symposium, Wollongong NSW, November

Kodikara, Jayantha (Dr)
21st ARRB & 11th REAAA Conference, Cairns (Queensland), Australia, May.
International Conference on Low Volume Roads, Reno (USA), June

Ladson, Tony (Dr)
29th International Hydrology and Water Resources Symposium, Wollongong NSW, November
Symposium on Urbanisation and Stream Ecology, University of Melbourne, December

Rose, Geoff (Assoc Prof)
Sixth International Conference on Satellite Navigation Technology (SATNAV2003), Melbourne Vic, July
Australasian Transport Research Forum 2003, Wellington (New Zealand), October
Connecting Cycling Conference 2003, Canberra ACT, November

Sanjayan, Jay (Assoc Prof)
IABSE Symposium, Antwerp (Belgium), August
EUROMAT Conference, Lausanne (Switzerland), August

Sarvi, Majid (Dr)
ITS World Congress, Madrid (Spain), November

Schreider, S. (Dr)
International Congress on Modelling and Simulation (MODEM 2003), Townsville QLD, July

Weinmann, Erwin (Mr)
28th International Hydrology and Water Resources Symposium, Wollongong NSW, November
3rd Victorian Flood Management Conference, Horsham, October

Wong, M.B. (Dr)
Australian Symposium on Combustion and The 6th Australian Flames Days, Melbourne, December, 2003,

Young, William (Prof)
21st AARBB Transport Research Conference, Cairns (QLD), May
Smart Urban Transport Conference, Sydney (NSW), May

Zhao Xiao-Ling (Prof)
CIDECT (International Committee for the Development and Study of Tubular Structures) working groups
and technical committee meetings, 14-17 September, 2003, Madrid (Spain)
10th International Symposium on Tubular Structures, 18-20 September, 2003, Madrid (Spain)
Chaired an IIT XVI-E subcommittee meeting 20th September, 2003, Madrid (Spain)

Zou, Roger (Dr)
2nd International conference and workshop "Avoiding Disaster – Engineering, Technology and the Law",
Monash Campus at Prato (Italy), October
Enhanced safety vehicle conference, (Japan), May
Worley Australian Finite Element Conference, Werribee Park, Melbourne, Vic, September

6.2. Contribution to Professional Organisations

Al-Mahaidi, Riadh (Dr)
Member, ACI-ASCE Committee 447 "Finite Element Analysis of Reinforced Concrete Structures"
Member, American Concrete Institute ACI Committee 440 "Fibre Reinforced Polymer Reinforcement"
PROFESSIONAL ACTIVITIES

Founding Member, Polymer Composites in Construction Steering Committee, Composites Institute of Australia
Member, International Advisory Panel, 4th ACUN International Composites Symposium, University of New South Wales, Sydney, Australia, 21-25 February, 2003
Member, International Advisory Panel and Keynote Speaker, International Conference on Bridge Engineering and Hydraulic Structures, Kuala Lumpur, Malaysia 26-28 July, 2004
Member, International Advisory Committee, Australasian Congress on Applied Mechanics, 16-18 February 2005, Melbourne, Australia
Member, International Advisory Panel, 4th International Conference on Advanced Composite Materials in Bridges and Structures, Calgary, Alberta, Canada July 20-23, 2004
Member, International Advisory Committee, 21st ARRB & 11TH REAA Conference, Cairns, Queensland, Australia, May 2003

Bouazza, Malek (Assoc Prof)
President, Australasian Chapter of the International Geosynthetics Society Core Member and Coordinator, Technical Committee No. 5 (Environmental Geotechnics) of the International Society of Soil Mechanics & Geotechnical Engineering
Member, Committee 14 on Waste Disposal, International Association of Engineering Geology and the Environment
Member, Geosynthetics Committee, ASCE Geo-Institute
Member, Editorial board for International Journal of Geotextiles and Geomembranes
Member, Editorial board for Lowland Technology International Journal
Member, Australian Standard Committee CE-20 on Geosynthetics
Co-Chair, International Geosynthetics Conference, Dresden, Germany (to be held in Sept 2004)
Member, International Committee, International Conference on Geofilters, Johannesburg, South Africa (to be held in October 2004)
Member, International Review Committee, Asian Conference on Geosynthetics, Seoul, Korea (to be held in June 2004)

Codner, Gary (Assoc Prof)
Chair, IEAust College of Environmental Engineers
Chair, BTech Accreditation Panel, Queensland University of Technology, Queensland, April
Moderator, Finding Solutions: Ecological Sustainability; Engineers Australia Forum, Melbourne, September,

Currie, Graham (Prof)
Member, Victorian Local Governance Association. Reference Group on Sustainable Transport.

Deletic, Ana (Dr)
Australian representative, Committee of the Sewer Systems and Processes Working Group (joint specialist working group of International Water Association and International Association of Hydraulic Research)
Member, Scientific Committee of 18th European Junior Scientists Workshop on Sewer Processes and Networks
Member, Organising Committee of 1st Asian Junior Scientist/Workshop on Sewer Processes and Urban Drainage
Reviewer, XXXth International Association of Hydraulic Research Conference papers
Reviewer, Surface Water Modelling papers for MODSIM 2003 conference
Member, First meeting of the Urban Water Data Management Core Group (part of the UNESCO’s IHP VI Project) in Thessaloniki (Greece) and member at their 1st workshop, Paris (France)
Member, Scientific Committee of 11th International Conference on Urban Drainage to be held 2008 in Edinburgh (UK)
Co-chair, UNESCO IHP-VI Project “Data requirements for urban water management”.

Fletcher, Tim (Dr)
Reviewer, Brisbane City Council’s Stormwater Quality and SQIDs Monitoring Program
Member, Conference Organising Committee “Urbanization and Stream Ecology Symposium”, Melbourne, December
Member, Conference Organising Committee, 6th International Conference on Urban Drainage Modelling (to be held in Melbourne in 2006)
Contributor, “Australian Runoff Quality” for Engineers Australia.
Co-chair, UNESCO IHP-VI Project “Data requirements for urban water management”.

Civil Engineering – 2003 Annual Report
PROFESSIONAL ACTIVITIES

Chair of Melbourne Water Technical Review Committee for Water Sensitive Urban Design Guidelines.

Grundy, Paul (Em. Prof)
Chair, Australian Group of IABSE
Austroads BD090 Committee on Fatigue of Highway Bridges
Member, National Trust Industrial Heritage Committee on Metal Bridges

Grzebieta, Raphael (Assoc Prof)
President, Australian College of Road Safety
Member, National Executive of Transport Engineering, Institution of Engineers Australia
Member, Victorian Panel of Transport Engineering, Institution of Engineers Australia
Member, ATSB’s National Road Safety Strategy Panel
Member, Organising Committee of Prato Conference on Forensic Engineering and Expert Witness issues with Law Faculty and Coroner

Greaves, Stephen (Dr)
Member, EcoDrive Advisory Committee
Member, VATSII Advisory Committee
Member, ITE Committee and Student Chapter Coordinator

Haque, Asadul (Dr)
Committee Member, Australian Geomechanics Society (AGS), Victorian Chapter.

Kodikara, Jayantha (Dr)
Member, Australian Standard Committee on Soil Stabilisation
Corresponding Member, Pavement Reference Group, Pavement Stabilisation

Ladson, Tony (Dr)
Committee Member, Water Engineering Branch, Institution of Engineers, Australia.
Member of Water Policy Committee, Environment Victoria
Advisor to the Barmah Forest Committee, Victorian National Parks Association

Milner, Robert (Assoc Prof)
Chair, Committee TM-004, Glued timber products, Standards Australia Meeting, Melbourne
Member, Committee TC165, Timber structures, International Standards Organisation, Istanbul (Turkey)
Chair, Working Group 6, International Standards Organisation

Mudd, Gavin (Dr)
Member, SA EPA In-Situ Leach Review Steering Committee, Adelaide (as representative for Conservation Council of South Australia)

Rose, Geoff (Assoc Prof)
Corresponding Member, Institution of Engineers Australia National Committee on Transport
Member, PhD Dissertation Prize Committee, International Association of Travel Behaviour Research (IATBR)

Sanjayan, Jay (Assoc Prof)
Member, Working Commission 3 (Concrete Structures) of IABSE committee meeting, Antwerp (Belgium)
Member, Permanent Committee of IABSE meeting, Antwerp (Belgium)
Member, International Scientific Committee, 18th Australasian Conference on the Mechanics of Structures and Materials to be held in Perth, December 2004
Member, Concrete Institute of Australia, Victoria Branch Committee
Member, Concrete 2005, Technical Committee
Member, 18th Australasian Conference on the Mechanics of Structures & Materials, Technical Committee

Schreider, Sergei (Dr)
Member, Editorial Board, International Congress on Modelling and Simulation (MODSIM 2003)
Session Organiser, "Integrative modelling for sustainable water allocation" for MODSIM 2003
PROFESSIONAL ACTIVITIES

Weinmann, Erwin (Mr)
Reviewer, MODSIM 2003 Conference, Surface Water Modelling papers
Reference Panel member, 3rd Victorian Floodplain Management Conference
Reviewer, 28th International Hydrology and Water Resources Symposium, Engineers Australia

Wong, M.B. (Dr)
Member, Institute of Engineers Australia, Structural Branch Committee, Victoria.

Young, William (Prof)
Member, Standards Association of Australia Parking Committee
External Examiner, Master of Engineering Science, Nanyang Technological University (Singapore)
Member, Scientific Committee, International Association for Travel Behaviour Research (IATBR)
Conference held in Lucerne (Switzerland)

Zhao, Xiao-Ling (Prof)
Chairman, I IW Subcommission XV-E on Tubular Structures
Member, ASCE Committee on Structural Connections
Member, International Scientific Committee, Advances in Structures, Steel, Concrete, Composite and Aluminium, ASSCCA’03, Sydney (Australia), June
Member, International Scientific Committee, 10th International Symposium on Tubular Structures (Spain), September
Member, International Scientific Committee, 4th International Conference on Thin-Walled Structures (UK) to be held May 2004

6.3. Visits to Other Institutions

Al-Mahaidi, Riadh (Dr)
Shanghai Research Institute of Building Sciences, Shanghai (China), November
University of Baghdad (Iraq), December
Tong Ji University, Shanghai (China), November

Bouazza, Malek (Assoc Prof)
École Nationale des Ponts et Chaussées (ENPC), Paris (France), August
University Joseph Fourier, Grenoble (France), December

Deletic, Ana (Dr)
Belgrade University (Yugoslawia), August

Fletcher, Tim (Dr)
City Design, consulting arm of Brisbane City Council, Brisbane (Queensland) August-September (for 6 weeks)

Grundy, Paul (Em. Prof)
École Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology), Lausane (Switzerland)
September

Grzebieta, Raphael (Assoc Prof)
Crakow Technical University, Cracow (Poland), September-October
Milan University (Italy), September-October

Greaves, Stephen (Dr)
Invited seminar at ITS Sydney (University of Sydney) on “Using GPS to characterize different driving styles”. VicRoads Seminar on “Applications of Global Positioning System Technologies for Collecting Transportation Data”.

Civil Engineering – 2003 Annual Report
PROFESSIONAL ACTIVITIES

Haque, Asadul (Dr)
Khulna University of Engineering and Technology (KUET), Bangladesh, December

Kodikara, Jayantha (Dr)
University of California, Berkeley (USA)

Ladson, Tony (Dr)
University of Adelaide, as part of Ephemeral Rivers Project.
University of Melbourne (on a regular basis as part of work with CRC for Catchment Hydrology)
University of Wollongong for a workshop on rainfall runoff modelling.

Milner, Robert (Assoc Prof)
Advanced Engineered Wood Composites Centre, University of Maine (USA), February

Sanjayan, Jay (Assoc Prof)
École Polytechnique Fédérale de Lausanne (Swiss Federal Institute of Technology). Structural laboratory, Lausanne (Switzerland) September

Wong, M.B. (Dr)
University of Hong Kong, Hong Kong, November
Nanyang Technological University, Singapore, December

Young, William (Prof)
Nanyang Technological University (Singapore), October

Zou, Roger (Dr)
Aeronautical Engineering Department, Milan Polytechnic University, October

6.4. Editorial Services

Al-Mahaidi, Riadh (Dr)
Reviewer, ACI Structures Journal
Reviewer, Composite Structures Journal
Reviewer, Cement and Concrete Composites Journal

Bouazza, Malek (Assoc Prof)
Reviewer, Journal of Lowland Technology
Member, Editorial board for International Journal of Geotextiles and Geomembranes
Member, Editorial board for International Journal of Lowland Technology
Reviewer, Geotextiles and Geomembranes

Haque, Asadul (Dr)
Reviewer, International Journal of Geotechnical and Geological Engineering

Grundy, Paul (Em. Prof)
Reviewer, Marine Structures (Elsevier) – Special edition on bulk carriers
Reviewer, Journal of Strain Analysis (Professional Engineering)

Grzebieta, Raphael (Assoc Prof)
Member, Editorial Board of International Journal of Crashworthiness
Member, Editorial Board of Electronic Journal of Structural Engineering
Member, Editorial Board of Australian Journal of Structural Engineering

Kodikara, Jayantha (Dr)
Reviewer, ASCE, Geotechnical and Geoenvironmental Engineering,
PROFESSIONAL ACTIVITIES

Reviewer, Canadian Geotechnical Journal
Examiner, PhD thesis from Newcastle University, NSW

Keller, Robert (Assoc Prof)
Associate Editor, International Journal of Hydraulic Research

Ladson, Tony (Dr)
Reviewer, Australian Geographical Studies
Reviewer, MODSIM 2003 Conference
Reviewer, River Research and Applications
Reviewer, Book chapter on Arid Zone Rivers for Cambridge University Press
Reviewer, reports for the Sustainable Rivers Audit

Pathegama Gamage, Ranjith (Dr)
Reviewer, Int. Journal of Resources Conservation and Recycling

Weinmann, Erwin (Mr)
Member, Editorial Panel and Reviewer, Australian Journal of Water Resources

Young, William (Prof)
Reviewer, Scientific Committee, MODSIM 2003
Reviewer, International Advisory Committee, CityTrans China International Conference, Shanghai (China)
Reviewer, International Scientific Committee, Eastern Asia Society for Transportation Studies (EASTS) Conference, Fukuoka (Japan)

Zhao, Xiao-Ling (Prof)
Editorial Board for Thin-Walled Structures
Editorial Board for International Journal of Structural Stability and Dynamics
Editorial Board for Electronic Journal of Structural Engineering
Reviewer for Engineering Structures – An International Journal
Reviewer for Journal of Structural Engineering, ASCE
Reviewer for International Journal of Structural Stability and Dynamics
Reviewer for Agency for Science, Technology & Research (A*STAR) Grants, Singapore

6.5. Services to Expert Bodies and Expert Advice

Currie, Graham (Prof)
Expert advice re: Federal Government Enquiry on Sustainable Cities (BIC)
Sustainable Transport Seminars – Victorian Local Governance Association

Fletcher, Tim (Dr)
Chair, Technical Review Committee, for Melbourne Water’s “Water Sensitive Urban Design Technical Manual” (w/Prof Russell Mein and Mr Earl Shaver)

Grundy, Paul (Em. Prof)
Expert witness re: Menangle Bridge, Independent Commission against Corruption, NSW, July

Grzebieta, Raphael (Assoc Prof)
Member, CS-85 Automotive Child Restraints Australian Standards Committee representing Consumer Federation of Australia
Member, ME-63 Motor Vehicle Frontal Protection Systems Australian Standards Committee representing Consumer Federation of Australia
Member, Road Safety Barrier Australian Standards Committee CE 33
Member, Australian Standards Committee CS/75 Automotive Occupant Restraints representing Consumer Federation of Australia
PROFESSIONAL ACTIVITIES

Ladson, Tony (Dr)
Member, Technical Advisory Panel, Sustainable Rivers Audit, Murray-Darling Basin Commission.

Wootton, Rick (Mr)
Municipal Association of Victoria – contributions Department and CRC for Catchment of Hydrology could make to their Capacity Building Program for Best Practice Urban Stormwater Management.

6.6. External Seminars, Courses, Workshops and Conferences

Al-Mahaidi, Riadh (Dr)
Seminar, “The use of FRP composites in retrofitting of concrete structures”, Shanghai Research Institute of Building Sciences, November
Seminar, “Research topics on retrofitting of damaged concrete structures”, Faculty of Engineering, University of Baghdad, December

Bouazza, Malek (Assoc Prof)
Workshop on GCLs held in Prague (Czech Republic), August

Currie, Graham (Prof)
Key note speech for the Chartered Institute of Transport and Logistics, Hobart, June
Presentation, Engineers Australia seminar, Melbourne, September
Co-chair, City of Yarra workshop on Sustainable Transport, Melbourne, November
The third annual Ogden lecture, Melbourne, September
2003 Monash Transport Policy Lecture Series, September - November
Dandenong Public Transport Forum, Melbourne, November
Co-Leader, 2 day short course, Planning Public Transport Services at a Route Level
Victorian Local Governance Association - Integrated Transport seminars
Workshop on public transport in the Frankston region

Deletic, Ana (Dr)
Short course on WSUD software for integrated stormwater treatment and re-use, July

Fletcher, Tim (Dr)
MUSIC software Users’ Forum and MUSIC Training Course, Monash University, July
Stormwater management and water sensitive urban design Short Course, Monash University, June
Stormwater management and water sensitive urban design Short Course, Brisbane City Council, December
Presentations on water sensitive urban design to South West Water, Coliban Water, Deakin University, RMIT University, La Trobe University, Marrickville City Council, Australian Water and Wastewater Association.

Grundy, Paul (Em. Prof)
Seminar on “Assessing bridge integrity from weigh-in-motion data”, Swiss Federal Institute of Technology of Lausanne (Switzerland), September
Workshop on inspection and maintenance of wrought iron bridges, Road Traffic Authority, NSW, December

Grzebieta, Raphael (Assoc Prof)
Second International Conference and Workshop: Avoiding Disaster: Engineering, Technology and the Law, Monash Campus, Prato (Italy), October

Haque, Asadul (Dr)
Short course on Geosynthetics Advances in Transportation Applications, Victoria University of Technology, Melbourne, October
Short course on Pipe Infrastructure Rehabilitation at Monash, December
PROFESSIONAL ACTIVITIES

Keller, Robert (Assoc Prof)
CHUTE Software workshop, August

Kodikara, Jayantha (Dr)
One-Day Short course on Pipe Infrastructure Rehabilitation with Prof Ian Moore of Queens University (Canada), December
Two presentations at ARRB/REAAA Conference in Cairns, – (1) Laboratory assessment of capillary rise in cementitiously stabilised crushed rock; (2) Effects of moist reactive clay on the properties of crushed basaltic rock, May
Presentation at TRB Meeting on Low Volume Roads at Reno, Nevada (USA) on strength, shrinkage and capillary rise properties of cementitiously stabilised crushed basaltic rock.
A 3 day numerical modelling workshop with GEO-SLOPE (Canada) at Monash University, July

Ladson, Tony (Dr)
CHUTE software workshop, August
Workshop on “Comparing the benefits of rehabilitating degraded streams and protecting pristine streams” and review report for Department of Sustainability and Environment (DSE)
Workshop on “Geomorphic indicators of river health” as part of a review of the Index of Stream Condition for DSE, Seminar on “An Australian Handbook of Stream Roughness Coefficients”, Institution of Engineers, Water Engineering Branch, November
Workshop on monitoring environmental flows, December

Rose, Geoff (Assoc Prof)
One-day workshop on Intelligent Transport Systems Architectures, convened by ITS Australia, Canberra, March
TravelSmart Officer Training workshop, March
Two-day workshop “Unsignalised Intersections: Balancing Safety and Capacity Considerations”, May
Three-day residential course: Professional Development Course for Road Safety Officers for VicRoads, June 2003 Monash Transport Policy Lecture Series, September-November

Sanjayan, Jay (Assoc Prof)
Seminar for Concrete Institute of Australia on “Walter, there is a Crack in my Concrete”, March

Weinmann, Erwin (Mr)
CRC-FORGE Workshop No. 2 for Rivers and Water Commission, Perth, May
CRC-FORGE Workshop No. 3 for Rivers and Water Commission, Perth, September

Wong, M.B. (Dr)
Speaker, two-day short course on “Fire resistance of structures: performance-based design concept and procedures”, Centre of Advanced Construction Studies, Nanyang Technological University, Singapore, 1-2 December 2003.
Speaker, two-day short course on “Fire resistance of steel & concrete structures”, University of Hong Kong, Hong Kong, 27-29 November 2003.

Young, William (Prof)
Public Seminar, “A Comprehensive Approach to Balanced Road Space Allocation in Relation to Transit Priority”, Nanyang Technological University, Singapore, October.

6.7. Special presentations

Al-Mahaidi, Riadh (Dr)
Invited presentation, Concrete Institute of Australia seminar on “Bridge Assessment, Testing and Strengthening”, June.

Currie, Graham (Prof)
Keynote address, Chartered Institute of Transport and Logistics Conference
Guest speaker ‘Public Transport – Yarra Demands Better’
PROFESSIONAL ACTIVITIES

Joint chair ‘S.E. Melbourne Public Transport Forum’
Guest speaker ‘Mitcham Frankston Freeway’, Engineers Australia

Haque, Asadul (Dr)
Guest speaker on piled foundation design and analysis, Khulna University of Engineering and Technology (KUET), Bangladesh, December.

Grundy, Paul (Em. Prof)
Occasional address, Engineering Graduation Ceremony, May.

Grzebieta, Raphael (Assoc Prof)
Special Seminar on Roll Over Analysis, Invited speaker for New Car Assessment Program (NCAP) and Vehicle Occupant Vulnerability in Incompatible Vehicles, SAE Australasian Inst. of Engineers Aust.
Invited Lecture, Second International Conference on Engineering Technology and the Law, Prato (Italy), September-October.

Mudd, Gavin (Dr)
Presentation on the environmental importance of groundwater to the Ivanhoe branch of Soroptimist, September.
Lecture to the Mineralogical Society of Victoria on "Early Uranium Efforts in Australia 1906-1945: From Radium Mining to the Manhattan Project".

Rose, Geoff (Assoc Prof)
Briefing to the Victorian Bicycle Advisory Council on the regulation of power-assisted bicycles.
Keynote address, ITS Architecture Workshop, Canberra, March.
Presentation at the Second Annual National Travel Demand Management Seminar, Melbourne, September.

6.8. Consulting and Contract Research

Al-Mahaidi, Riadh (Dr)
Development of design and inspection guidelines: Use of FRP composites for strengthening of bridges, for VicRoads.
Structural assessment and strengthening of the Monash Freeway Bridge over Warrigal Road for VicRoads.

Bouazza, Malek (Assoc Prof)
Interface tests for Wagga Wagga landfill, Golder Associates
Advisor on long term containment facility project for Meinhardt Pty Ltd
Direct shear tests on rock samples from New Caledonia for Golder Associates Pty Ltd
Direct shear tests of rock core samples for BFP Consultants Pty Ltd
Direct shear tests of rock core samples from Dubai for Foundation qa

Currie, Graham (Prof)
Review of Patronage Forecasts, Sydney Transitways (RTA)
Peak Rail Demand Management – Department of Infrastructure

Deletic, Ana (Dr)
Rochdale Feasibility Study (Final Peer Review).

Fletcher, Tim (Dr)
Review of stormwater quantity, quality, treatment and impacts for NSW Environment Protection Authority.

Greaves, Stephen (Dr)
Passive measurement of on-road driving style: A precursor to outcome evaluation of the EcoDrive Program (Greaves/Rose) for the Environmental Protection Authority of Victoria.
PROFESSIONAL ACTIVITIES

Grundy, Paul (Em. Prof)
Fatigue reassessment of Westgate Bridge
Structural risk assessment of Menangle Railway Bridge, NSW
Telstra Dome refurbishment
Structural failure assessment

Grzebieta, Raphael (Assoc Prof)
Collaboration on Projects with State Coroner re: Longford Disaster and Linton fire for Fourth Year project topics
Finite element analysis of Hopper Impact for Hong Kong Power Station
Brifin Wire Rope Test Level 4 – 8 tonne truck crash
MADYMO analysis of occupant without seat belt for NRMA
Truck Bull Bar impact analysis for the Coroner of Western Australia

Keller, Robert (Assoc Prof)
Physical Model Study of Cockburn Power Station Cooling Water System for Dare, Sutton, Clarke Pty. Ltd. and Western Power
Litter Trap Model Study
Lower Snowy Modelling
Physical model study of Litter Trap for Clevertek Pty Ltd
Contract for Hydraulics Lab to model a 2 km stretch of the Lower Snowy River, as part of major studies to restore health to the Lower Snowy River.

Kodikara, Jayantha (Dr)
Technical review for landfill cover design for Meinhardt

Ladson, Tony (Dr)
Assessing the health of representative reaches in the Glenelg Catchment for the Glenelg Hopkins Catchment Management Authority
Review of Lower Goulburn Floodplain Rehabilitation Project – as part of Monash International and MEI team
Input into development of a monitoring program for the Thomson River (Earthtech Engineering Pty Ltd).

Milner, Robert (Assoc Prof)
Design value for Australian Glulam (funded by FWPRDC and GLTAA)
Design values of Keruing laminated veneer lumber (Asian Timber Industries)
Timber pallet performance (Blue Circle Southern Cement P/L)
Furniture testing
Design properties of timber finger jointed purlins (Auspine Limited)
Design properties of timber finger jointed studs (Auspine Limited)
Testing of scumbrum beams (Aupply)
MDF properties (Carter Holt Harvey)
Properties of radiata pine finger jointed timber (Green Triangle Forest Products)
Properties of cypress pine finger jointed timber (E & R Hay & Co P/L)
Properties of composite timber and steel trusses (Mitek Australia)
Properties of SUPA17 timber (TPC)
Tension perpendicular to grain for hardwood and softwood (GLTAA)
Pull out capacity of epoxy grouted steel glulam (GLTAA)

Mudd, Gavin (Dr)
Mineral sands processing mill – brief submission on monazite issues on behalf of local Hamilton community group for Victorian Planning Minister
Review and critique of ongoing environmental management reports for the Ranger uranium mine and Jabluka project for the Gundjeihmi Aboriginal Corporation

Rose, Geoff (Assoc Prof)
Passive measurement of on-road driving style: A precursor to outcome evaluation of the EcoDrive Program (S. Greaves & G. Rose) - Contract research funded by Environmental Protection Authority of Victoria
Development and Evaluation of ‘Ride to Work and Beyond’ Travel Behaviour Change Interventions - Contract research funded by Victorian Department of Infrastructure.
Professional Activities

Development of a National Training Resource on Intelligent Transport Systems Architecture - Contract research project funded by ITS Australia.

Weinmann, Erwin (Mr)
Review of Lower Goulburn Floodplain Rehabilitation Project – as part of Monash International and MEI team
Review of Brisbane River Flood Study - as part of Independent Review Panel commissioned by Brisbane City Council
Review of SKM flood risk assessment report for Chinaman’s Bridge Caravan Park (Goulburn River) for Department of Sustainability and Environment

Zhao, Xiao-Ling (Prof)
Oktalok Space Frame testing
Security Screen Doors testing

Zou, Roger (Dr)
Finite element analysis of dynamic impact loadings of wear linings for Coal Hoppers installed at Castle Power Station, Hong Kong
Finite element analysis of Tower Support/Leg Structure for Construction.

6.9. Professional Development

Deletic, Ana (Dr)
4-day Introduction to University Teaching, July
Graduate Certificate in Higher Education
Completion of unit HEC 5001 as part of Graduate Certificate in Higher Education

Fletcher, Tim (Dr)
Outside study program at Brisbane City Council.

Greaves, Stephen (Dr)
Completion of Graduate Certificate in Higher Education.

Grundy, Paul (Em. Prof)
Emeritus Member, College of Structural Engineers of the Institution of Engineers Australia, October

Haque, Asadul (Dr)
Graduate Certificate in Higher Education (HED5001)
Research supervisor training course, Berwick campus.

Ladson, Tony (Dr)
Training in supervision of Higher Degree students, November
Introduction to University Teaching, December
WebCT training, January
Graduate Certificate in Higher Education (completion of unit HEC5001 as part of the Graduate Certificate)
Training in use of the Rainfall Runoff library, University of Weilongong, November

Milner, Robert (Assoc Prof)
Outside study program, Semester 1, 2003

Mudd, Gavin (Dr)
WebCT workshops
Introduction to University Teaching, July
Monash New Staff induction and staff performance workshops
Graduate Certificate in Higher Education
PEST modelling workshop (model parameter optimisation software)
Monash PostGraduate supervision workshop
PROFESSIONAL ACTIVITIES

Rose, Geoff (Assoc Prof)
Two-day workshop on signalised intersection analysis using SIDRA software, Melbourne, May

Schreider, Sergei (Dr)
Courses in Introductory University Teaching, Monash University (HEDU, CeLTS), 3-day course, February
Workshop session on MS.NET environment, especially VB.NET, for incorporating Project 3A products in CRCCH Toolkit, Canberra, July

Zhao, Xiao-Ling (Prof)
Fellowship of the Institute of Engineers Australia (October)