DEPARTMENT OF CIVIL ENGINEERING

2005 ANNUAL REPORT

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Construction of Eastlink, Melbourne (Victoria), aerial image from Ringwood area, Deep Creek, March 2006.
The cover photograph is courtesy and copyright of Southern and Eastern Integrated Transport Authority (SEITA).
1. OVERVIEW OF DEPARTMENT

2005 was another year of growth and development in the Department of Civil Engineering. It continued to provide a high level of teaching and research output. A review of the Department's activities was carried out by experts from industry academics and government organisations. It concluded the Department was well run, providing teaching programs of international standard and research activities comparable to many Australian Universities. It published in its need to nurture the many new staff members joining the Department to develop internationally recognised researchers. This report outlines the activities undertaken by staff in the Department during 2005. Further details about the department can be found on its web site at: http://civil.eng.monash.edu.au/

Staff

The Department had 80 staff members (16 holding honorary positions). The Department continued to lose long serving academics (Erneil Wainman and Rick Woodbor) through retirement. These are being replaced in 2006, Professor Xiao Ling Zhao and Associate Professor Geoff Rose won respectively the Dean's Research and Teaching awards in 2005 and Professor Scott Sloan was the 2005 Alumni of the Year.

Undergraduate teaching

The Department continued to offer Bachelor of Engineering, Bachelor of Technology and Double Degrees (with Arts, Commerce, Law and Science) programs. It also contributes to the Environmental Engineering degree. These programs attracted a considerable increase in enrolments in 2005. Class sizes in Level 2 of the program were the largest experienced since the formation of the Department. 52 students graduated from the Department and a further 12 gained Environmental Engineering degrees. In order to increase students' knowledge of industrial activities, a lunch time Seminar Series was introduced. It was well attended by the undergraduates. Twenty prizes were presented to undergraduate students with Mr Tiew Kai Ting gaining the prize for the best all round performance in the undergraduate Degree.

Postgraduate Education Programs

The Department continued to offer off-campus programs in Traffic, Transport and Infrastructure. Like the undergraduate programs, these attracted increased enrolments in 2005. There were 9 students graduating from these programs in 2005.

The research programs graduated 4 students in 2005. There were 18 students enrolled in the Master of Engineering Science program and 41 in the Doctoral program. This represented a considerable increase on 2004. Much of the growth in student numbers was in the water area.

Industry Education Programs

The Department continued to offer off-campus programs in Bus and Coach Management and Parking. These programs showed a slight decrease in enrolments in 2005 but continued to attract considerable numbers.

Research

One hundred and ninety four (194) research projects have provided the focus for staff and students during 2005. Research funding support of $2,453,393 has been attracted to support these projects. Staff members were involved in the preparation of 1 book, 6 book chapters, 53 journal articles, 96 conference papers and 3 research reports. Staff attended 58 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 18 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 26 institutions in 2005.

External Activities

Staff members were involved in the review of paper in journal editorial committees on 53 occasions and presented 27 seminars at other institutions. They were also involved in 80 professional associations and their activities.

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OVERVIEW OF DEPARTMENT

eWater CRC (Monash Node)

The eWater Cooperative Research Centre (eWater CRC) commenced in July 2005. Its aim is to build and support decision systems and models for total water cycle management in urban and rural catchments, integrating water quality and quantity, stream ecology and economics. This CRC has 9 industry partners, 1 local government partner, 24 state government partners, 3 Australian government partners and 8 university partners (45 in total). The Department of Civil Engineering is involved in several research program areas, including Landscape Processes and Catchment Restoration, Catchment Water and Constituent Dynamics and Urban Systems & Design, with the later program being lead by this department.

The Monash Node director is Dr Grace Mitchell.

Further details about the CRC can be found on its website at: http://www.ewatercrc.com.au/

Facility for Advancing Water Biofiltration, FAWB

Water biofiltration is the process of improving water (stormwater and wastewater) quality through the processes of filtration through biologically influenced media. Stormwater biofiltration systems include:

- Bioretention systems
- Constructed surface flow wetlands
- Constructed sub-surface flow wetlands

Following a successful application, initiated via the Department of Civil Engineering, to the Victorian Science Technology and Innovation (STI) Program, the Facility for Advancing Water Biofiltration, FAWB, commenced in July 2005 with total cash and in-kind funding of $4.3 million over three years.

FAWB is a joint venture research facility between Ecological Engineering Holdings Pty Ltd and Monash University under the auspices of the Victorian Government's STI Initiative. FAWB also has seven Water Industry collaborators.

Its Chief Executive Officer is Dr Tony Wong, its Research Manager is Dr Ana Dalecic and its Business Manager is Mr John Molloy.

Further details about the research facility can be found on its website at: http://www.civil.warwick.edu.au/ewater/

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CURRENT DEPARTMENTAL STRUCTURE

2. CURRENT DEPARTMENTAL STRUCTURE

2.1. Management Committee

In 2005, the Management Committee of the Department consisted of:

- Professor William Young, Head of Department
- Professor Xiao-Ling Zhao, Deputy Head and Director of Research (1 Jan – 30 Jun)
- Associate Professor Gary Cotner, Director of Teaching and Deputy Head (1 Jul-31 Dec)
- Mr Richard Woodton, Acting Director of Teaching (1 Jan-30 Jun)
- Dr Jayantha Kodikara, Director of Research (1 Jul-31 Dec)
- Mr Christopher Powell, Director of Resources

Clockwise: Gary Cotner, Dominique Thomson (Committee Secretary), Bill Young (Head), Christopher Powell, Rick Woodton, Xiao-Ling Zhao

2.2. Research/Teaching groups

The department operates through the following four groups:

2.2.1. The Geomechanics Group

The group is led by Associate Professor Malek Bouazza and includes:

Dr Jayantha Kodikara, Dr Asadul Haque, Dr Rangith Pathagama, Dr Xue-Fan Gu

Back row (left to right): Jayantha Kodikara, Mike Leech, Malek Bouazza (Head of Group)
Front row (left to right): Asadul Haque, Rangith Pathagama, Xue Fan Gu

Research Strengths: Environmental Geotechnics, unsaturated soils, soil and rock stabilisation

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CURRENT DEPARTMENTAL STRUCTURE

2.2.2. The Structures Group
The group is led by Dr Riadhi Al-Mahaidi and includes:

Prof. Xiao-Ling Zhao, Emeritus Prof. Paul Grundy, Assoc. Prof. Raphed Grezbieta, Assoc. Prof. Jay Sanjayan, Assoc. Prof. Bob Minet, Dr Bill Wong, Dr Michael Bambrick, Dr Roger Zou, Dr Fikads Maskini

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

2.2.3. The Water Group
The group led by Dr Tony Ladson and includes:

Assoc. Prof. Gary Codner, Assoc. Prof. Robert Keller, Mr Rick Wootton, Dr Ana Dalekic, Dr Tim Fletcher, Dr Graeme Mitchell, Dr James George, Dr Gavin Mudd, Prof Emre Wiermann, Dr Tony Wong, Mr Frank Wrenn


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CURRENT DEPARTMENTAL STRUCTURE

2.2.4. The Transport Group (Institute of Transport Studies)
The group is led by Associate Professor Geoff Rose and includes:

Professor William Young, Professor Graham Currie, Dr Majid Savif, Mr John Clements, Mrs Astrid De Alais, Ms Brenda O’Keefe (Administration Manager), Dr Julie Arnold (Administrative Officer Finance).

Research Strength: Transport Management

2.3. Industry Advisory Committee
A meeting of the Industrial Advisory Committee was held on 8th November 2005.
The membership of the Industrial Advisory Committee was as follows:

Industry representatives:
Mr Colin Jordan (Chair) Chief Executive of RACV Ltd, Melbourne, Victoria
Mr Peter Bishop Principal Civil Engineering, Connell Wagner, South Melbourne, Victoria
Mrs Ann Auldridge Consulting Engineer, Sandor Knight Merz, Melawa, Victoria
Mr Ross Baldwin Principal, Fletchall Consulting Group Pty Ltd, Melbourne, Victoria
Dr Bronwynn Ridgway Environmental Consultant, Cromer, Victoria
Mr Murray Cullinan General Manager, Business Dev., Public Transport Section, Department of Infrastructure, Victorian Government, Melbourne, Victoria
Dr Brian Wrench, Principal, Golder Associates Pty Ltd, Hawthorn, Victoria
Dr Frank Collins Associate Director (Materials), Maunsell Australia Pty Ltd, Melbourne, Victoria
Mr John Shorty Director, Huddren, Melbourne, Victoria
Dr Rory Nathan Principal, Sandor Knight Merz, Armadale, Victoria
Mr Brian Dean Principal, Connell Macdonald, South Melbourne, Victoria

Department representatives:
Professor William Young Head of Department
Assoc. Prof. Gary Codner Deputy Head and Director of Teaching
Dr Jayantha Kodikara Acting Director of Research
Mr Christopher Powell Director of Support Services

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2.4. Current staff list

Proфессоры
Wheeler Young BE(Hons) NSW MSc PhD Grad Dip Mt Des Min MBA Deskin PhD Aust FIE Aust FICIT MAIA MAFTP CPEng - (Head of Department)
Xiao-Ling Zhao PhD Syd ME Shanghai Jian-Tong MASCE FIE Aust CPEng MSIDP MIFC [Deputy Head of Department]
Graham Curtis BSc(Hons) Huddersfield UK MSc Cranfield UK MGT

Associate Professors
Adelmale Rezaei Civilizing Algozos PhD Glasgow
Gary Peter Codner DIPCE Caulfield I.T. BE(Hons) MBA PhD FIE Aust
Raphael Hilary Grottesca MEng(Hons) T.U. Czecow PhD MIE Aust CPEng NPER MSAEA MSAE
Robert John Kurila BE(Hons) PhD Carl MASCE MIE Aust MPEng
Henry Richard Miller BE MEng Sc Grad PhD Lond. FIE Aust CPEng NPER AWES
Geoffrey Rose BE(Hons) Queensland I.T. MSc PhD Northern New Zealand MIE Aust
Jay G. Sangayan BScEng Sir Lanka PhD MIE Aust
Tony H.F. Wong BE PhD CPEng MIE Aust MASCE

Senior Lecturers
Riadhi Al-Mahaydi BSc(Civil Eng) (Hons) BEng Hltd MSc PhD Cornell MIE Aust MASCE CPEng
John Clements BE(Hons) DIPEd MEd. MEd MAEd. FICIT
Ane Dekaite BSc (Hons) Belgrade MSc Belgrade PhD Aberdeen MIMIA
Tim Fletcher BEng(Hons) MIE Aust MEd MHRM
Jayandha Kodikara BSc (Hons) Peradeniya PhD MIE Aust CPEng
Anthony Letoon BE(Hons) MIE Aust MEd MHRM
Pater Ewen Warmington Dipling ETH Zurich MEngSc MIE Aust CPEng
B M B Wong BSc(Civil) Lond. PhD NZD Ching MIE Aust CPEng

Lecturers
Asad Hushe BE Civil(MEng) MEng (Gee) PhD Wollongong MIE Aust
Ranjith Pathirajama Gamage BSc(Eng) (Hons) Monctoura PhD Wollongong MASCE MSRNI MAGS MSEE
Majid Soni BEng(Hons) Telahan MEng(Hons) IUST PhD Tokyo MASCE MUSTETSIC MCTE
Richard Murray Wootton BE DipCE Caulfield I.T. MEngSc TTC

Assistant Lecturers
Ashok de Abrew BA. GDip T&MISC RMT MEngMa MCT
Gavin Muir BEng(Hons) MIE Aust RMF PhD VIT MAH NAC MF MIE
Michael Bambach BE Syd. PhD Syd,

Research staff
Conaline Artem BEngSc MEngSc MIE Aust
Talanta Banksen BE(Hons) Lemington I.T. MSc Illinois PhD MICA MASCE MACS MAMRS MKPMHs
James Greve BE(Hons) Lancaster PhD Birmingham
Xue Fan Gu BE PhD MIE Aust
Justin Lewis BSc(Tech), MSc WIT
Fidzia Masiri BSc(Eng) Zimb. MEng(Hons) Wollongong, PhD
Valerie Grace Motllo BE(Hons) Cranberry, NZ. PhD
Pater Poetana BSc (Environmental)
Andre Taylor BE(Hons) Tax. MEM Queensland

Administrative staff
Julia Arnold MBBS BSc(Med) BA (Hons) – Administrative Officer (Finance), ITS
Susan Daly – Graphic Designer, Communication and Adoption, CECRC
Mayann Dragoon Muller – Personal Assistant, Institute of Sustainable Water Resources
Jenny Mancon – Postgraduate Admissions Officer
John Molloy BE(Civil) MEng Dip HE Dell MSc MBA MIE Aust – Business Manager, CECRC
Brenda O’Keeffe – Administration Manager, ITS
Maier O’Leary – Administrative Assistant, CECRC
Helen Parker – Administrative Assistant, Support Services
David Perry BSc(Eng) – Post Grad (Land Rehabe) – Communication and Adoption, CECRC

2.5. Honorary positions

Emeritus Professor
Paul Grzym BSc(Hons) MEngSc. MEngPhD. PhD Canada. FIE Aust MOSPE CPEng

Adjunct Professors
Rahmi Alcocik MSc Istanbul T.U. PhD Leads
Tory Richardson BE(Hons) MEngSc UWA PhD PhD FIE Aust MIE
Russell Mee BE(Agr) Med MEngSc Med PhD Minnesota FIE Aust

Associates
Zepo C. Chen BE Tongji PhD Tsinghua
Frank Collins BE Syd MEngSc PhD
Ian Boyd Donald BSc(Hons) MEngSc MEd PhD DBC Lond. MIE Aust
George Rechnitzer BE(Hons) MEngSc Med PhD
Julian Peter Sedel BE(Hons) PhD MIE Aust CPEng
Geoffroy Robert Taplin BE(Hons) Tax. MEngSc PhD CPEng NPER MIE MSc BEng MIE Aust
Jack Taylor Dip CE(RMTC) PhD FIE Aust MEngSc Associated AUWA
Rodovic (Rory) John Nathan BE(Agr) Med MSc DIC London PhD
John Tiller BE(Civil) Hons Med. MSc Colorado PhD Med. CEng MIE Aust MASCE
Christopher Halesfield BSc Sydney BE(Civil) Sydney PhD FIAust MASCE MIMM MIMMSE
Rajyed I.T. Al-Amey BSc(Eng) MSyD FIE Aust
Sung Hy (Xavier) Choi BE(Hons) PhD Grad Dip Computing

2.6. Staff changes in 2005

Promotions
Dr Anthony Laddon (To Senior Lecturer)

Resignations
Dr Tatiana Bakow
Dr Xue Fan Gu
Associate Professor Tony F. Wong
Ms Marianne Drogumuller
Mr Andrew Hoine
Ms Susan Daly

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CURRENT DEPARTMENTAL STRUCTURE

Retirement
Mr Enkh Uuwanz
Mr Richard Wooton
Mrs Virginia Vareli
Mr Roy Gowell

2.7. Staff Awards

Associate Professor Geoff Rose won the Dean’s Award for Excellence in Teaching.
Professor Xiao-Ling Zhao won the Dean’s Award for Excellence in Research.

2.8. Visitors to the Department

The following visitors came to Monash University in 2005:

Professor Avid Aakre from the Department of Civil and Transportation Engineering, Norwegian University of Science and Technology (NTNU), Trondheim (Norway), visited the department during August 2005 – June 2006. Professor Aakre has been working with staff from the Institute of Transport Studies.

Mr Marie Thongrav, postgraduate student, École Polytechnique Fédérale de Lausanne (Switzerland), visited Professor Xiao-Ling Zhao as an occupational trainee to undertake research at Monash between October 2004 and February 2005.

Ms Janice Garrett, Senior Lecturer, School of Health Sciences, Deakin University, Melbourne, Victoria, visited Assoc. Prof Geoff Rose between January and July 2005.

Mr Michael Steinhoff, postgraduate student in the Civil Engineering Department, University of Konstanz (Germany) visited the Department as an occupational trainee, working with Assoc. Prof Bob Milner between March and September 2005.

Mr Oliver Haenn, postgraduate student in the Civil Engineering Department, University of Konstanz (Germany) visited the Department as an occupational trainee, working with Assoc. Prof Bob Milner between March and September 2005.

Professor Kentaro Y. Yamada from Nagoya University (Japan) visited Professor Xiao-Ling Zhao in March 2005 and presented a seminar entitled “Recent trend of highway bridges in Japan.”

Dr Hai Lu from the Fujian Academy of Building Research, Fuzhou, Fujian, PR China, was a visiting academic in the department undertaking research with Prof Xiao Ling Zhao between April 2004 and June 2005.

Professor Wiratman Wangsaditna, Dr Sugiaras Roesman and Dr Sotha Aihkbana from the School of Graduate Studies, Tarumanagara University, Indonesia, visited the department between April and May 2005 to undertake the tour of the Civil Engineering Laboratory.

Dr Riyash Al-Amery, University of Technology, Baghdad (Iraq) visited the department as an Endeavour Research Fellow between February and August 2005, conducting research in the area of behaviour of strength and composites of structures with Dr Raedh Al-Mahaidi.

Professor Saroj Mandal from the Department of Civil Engineering, Jadavpur University, Kolkata (India) visiting Assoc. Professor Jay Singwuy in October 2005.

Mr Alain Sévère, postgraduate student at the City of Paris, School of Engineering, visited Dr Grace Mitchell and Dr Tim Fletcher, as an occupational trainee between March and June 2005.

Professor Jeff Packer from the Department of Civil Engineering, University of Toronto (Canada) visited Professor Xiao-Ling Zhao in August 2005.

(Professor Avi Cedar from the Technion Institute of Technology (Israel) visited Professor Graham Currie of the Institute of Transport Studies in October 2005.

Professor Moir Haug from the Department of Civil and Geological Engineering, University of Saskatchewan (Canada) is a visiting academic in the department, collaborating with Dr Jayantha Kodiana, between November 2005 and April 2006.

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3. COURSE OFFERINGS

Undergraduate programs
The Department offers undergraduate programs in Civil Engineering and Infrastructure Engineering and Management (Bachelor of Engineering and the Bachelor of Technology (Infrastructure)).

The Civil program is combined with Arts, Law, Commerce and Science to offer double degrees: Bachelor of Engineering/Bachelor of Arts, Bachelor of Engineering/Bachelor of Science, Bachelor of Engineering/Bachelor of Laws, Bachelor of Engineering, Bachelor of Engineering/Bachelor of Commerce.

The Department also provides teaching for the Bachelor of Environmental Engineering.

Transport programs
The postgraduate program continued to attract interest from students both within and outside Victoria. It attracted an increased enrolment in 2005.
- Certificate in Transport and Traffic
- Diploma in Transport and Traffic
- Master in Traffic
- Master in Transport

Industry Programs
The Industry programs in Bus & Coach and Parking continued 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 2005, thanks to visits from a number of overseas academics.
- Transport Management Course in Bus and Coach Operations
- Program in Parking Management

Infrastructure Engineering and Management
The Master of Infrastructure Engineering and Management 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 2005, an additional ten new applicants commenced this program totalling 30 students. Dr Aseel Haque manages the program (Graduate certificate, Postgraduate Diploma, Master).

4. RESEARCH AND DEVELOPMENT

4.1. List of research projects undertaken in 2005

Geotechnical Engineering

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>An experimental study of two-phase permeability characteristics of coal</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>An investigation of the effect of carbon dioxide injection on the behaviour of coal</td>
<td>Pathmaja/Choi</td>
</tr>
<tr>
<td>An investigation of the impact of explosions in a tunnel on the stability of other underground facilities</td>
<td>Pathmaja/Pathmaja/Choi/Pathmaja/Choi</td>
</tr>
<tr>
<td>Atmosphere and soil interaction modelling</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Behaviour of raft foundation on a fill</td>
<td>Pathmaja/Pathmaja/Choi</td>
</tr>
<tr>
<td>Behaviour of saturated infilled rock joints</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Chemical grouting of sands</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Deep and shallow soil mixing</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Deterioration modeling of road pavements</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Dynamic behaviour of rock joints</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Dynamic triaxial compression tests on fractured rocks</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Effects of CH4 and CO2 on stress-strain characteristics of coal</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Experimental and numerical investigations of carbon dioxide sequestration in depleted reservoirs</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Filtration behaviour of cohesiveless soils under dynamic loading condition</td>
<td>Haque</td>
</tr>
<tr>
<td>Filtration and transmissivity of geosynthetics</td>
<td>Bouzaiza/Haque</td>
</tr>
<tr>
<td>Gas advection and diffusive migration through GCLs</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Gas transmissivity of geosynthetics</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Geo-environmental engineering</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Geocomposite protection using geotextile cushions</td>
<td>Bouzaiza/Kodikara/Bouzaiza</td>
</tr>
<tr>
<td>In-situ investigation using constant surface wave systems and DMT</td>
<td>Bouzaiza/Kodikara</td>
</tr>
<tr>
<td>Modelling of MSW landfill settlement using geostatistics</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Modelling of shear behaviour of saturated infilled rock joints using Universal Distinct Element Code</td>
<td>Haque</td>
</tr>
<tr>
<td>Modelling of CO2-rock/water interactions using experimental results and numerical work</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Laboratory investigation of the mechanics of gas migration in coal seams with application to coalbed methane recovery and carbon dioxide sequestration</td>
<td>Pathmaja/Choi</td>
</tr>
<tr>
<td>Particle flow analysis</td>
<td>Kodikara</td>
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<tr>
<td>Pavement engineering</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Pile foundation</td>
<td>Pathmaja</td>
</tr>
<tr>
<td>Pipe failures due to ground movement in reactive soils</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Railway subgrade improvement</td>
<td>Haque</td>
</tr>
<tr>
<td>Salt movement and crystalization modelling</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Soil vapour extraction using prefabricated vertical drains</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Stone columns</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Study of desiccation cracking of clay</td>
<td>Kodikara</td>
</tr>
<tr>
<td>Surface wave analysis of non-textbook materials</td>
<td>Bouzaiza</td>
</tr>
<tr>
<td>Tapered piles</td>
<td>Kodikara</td>
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<tr>
<td>Unsaturated flow behaviour of geosynthetics</td>
<td>Bouzaiza</td>
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<tr>
<td>Unsaturated soil behaviour</td>
<td>Kodikara</td>
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</tbody>
</table>
Structural Engineering

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced numerical simulation of failure mechanisms of CFRP laminated</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>concrete members</td>
<td></td>
</tr>
<tr>
<td>Assessing the structural crashworthiness of petrol road tankers in</td>
<td>Griebeltra/Rechitner</td>
</tr>
<tr>
<td>roll-over accidents</td>
<td></td>
</tr>
<tr>
<td>Behaviour of FRP retrofitted steel structures under very low to very</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>high temperature exposure</td>
<td></td>
</tr>
<tr>
<td>Behaviour of composite beams in fire</td>
<td>Wang</td>
</tr>
<tr>
<td>Bond between steel ad CFRP (carbon fibre reinforced polymer)</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>Bridge performance modelling using inspection data and damage</td>
<td>Zhao / Al-Mahaidi</td>
</tr>
<tr>
<td>detection techniques</td>
<td></td>
</tr>
<tr>
<td>Characterisation of concrete microstructures using impedance</td>
<td>Sanjay</td>
</tr>
<tr>
<td>spectroscopy (IS)</td>
<td></td>
</tr>
<tr>
<td>Deflection failure in CFRP strengthened steel structures</td>
<td>Zhao / Al-Mahaidi /</td>
</tr>
<tr>
<td>Design criteria for bridge decks</td>
<td>Zoka / M. Al-Mahaidi</td>
</tr>
<tr>
<td>Fatigue behaviour of drainage culvert structures</td>
<td></td>
</tr>
<tr>
<td>Fatigue of thin-walled welded tube connections</td>
<td>Zoka / Gruny</td>
</tr>
<tr>
<td>Fire resistance of tunnel columns filled with high strength concrete</td>
<td>Zoka / Gruny /Wong /</td>
</tr>
<tr>
<td>High tensile tubular beams subjected to impact loads</td>
<td>Sanjay</td>
</tr>
<tr>
<td>Impact loading of circular beams</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>Innovative tunnel connections at elevated temperature</td>
<td>Gruny / Zhao /Wong</td>
</tr>
<tr>
<td>Investigating and analysing roadside barrier systems</td>
<td></td>
</tr>
<tr>
<td>Investigation and mitigating injuries in roadside barriers</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>Investigation of the effects of alkali-aggregate reaction (AAR) in</td>
<td>Gruny / Al-Mahaidi</td>
</tr>
<tr>
<td>concrete columns using fibre optic sensors</td>
<td></td>
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<tr>
<td>Investigation of the contribution of the void-filling compounds to the</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>buckling strength of rectangular hollow sections</td>
<td></td>
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<tr>
<td>Investigation of stripping risk of high strength concrete exposed to</td>
<td>Sanjay</td>
</tr>
<tr>
<td>accidental fire</td>
<td></td>
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<tr>
<td>Investigation of the mechanism causing shrinkage strains in concretes</td>
<td>Sanjay</td>
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<tr>
<td>made with slag blended cements</td>
<td></td>
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<tr>
<td>Life cycle performance evaluation of concrete bridges deteriorating</td>
<td>Sanjay</td>
</tr>
<tr>
<td>through steel corrosion</td>
<td></td>
</tr>
<tr>
<td>Maximising the strength of spigot-ventilated plates</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>Performance of FRP reinforced concrete sections under fire</td>
<td>Wang / Al-Mahaidi</td>
</tr>
<tr>
<td>Pressure rated pipe/valve connections</td>
<td>Gruny / Zhao</td>
</tr>
<tr>
<td>Properties of High Strength Concrete incorporating slag blended</td>
<td>Sanjay</td>
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<tr>
<td>cements</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>Retrofitting of concrete structures using carbon fibre reinforcer</td>
<td></td>
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<tr>
<td>laminates</td>
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<tr>
<td>Roll-over vehicle crashworthiness</td>
<td>Griebeltra / Rechitner /</td>
</tr>
<tr>
<td>Stiffness and strength of Very High Strength (VHS) circular tubes</td>
<td>Richardson</td>
</tr>
<tr>
<td>Strengthening of steel structures using CFRP laminates</td>
<td></td>
</tr>
<tr>
<td>Strengthening of steel structures using CFRP</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>Structural health monitoring of bridges using fibre optic sensors</td>
<td>Zhao / Al-Mahaidi</td>
</tr>
<tr>
<td>Structural behaviour of steel plates at elevated temperatures</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>Temperature prediction of structural sections in fire</td>
<td>Wong / Tan</td>
</tr>
<tr>
<td>Thin-walled structures subjected to impact and blast loads</td>
<td>Wong / Jia</td>
</tr>
<tr>
<td>Composite strength of concrete beams using fibre reinforced</td>
<td>Griebeltra / Diao /</td>
</tr>
<tr>
<td>polymer composites</td>
<td>Menda / Burman</td>
</tr>
<tr>
<td>Tubular steel thin-walled structures subjected to impact and blast</td>
<td>Al-Mahaidi</td>
</tr>
<tr>
<td>loads</td>
<td></td>
</tr>
<tr>
<td>Very High Strength steel tubular longitudinally welded to steel plates</td>
<td>Griebeltra / Baniashchi /</td>
</tr>
<tr>
<td>Work product methods in structural engineering</td>
<td>Zhao / Al-Mahaidi</td>
</tr>
<tr>
<td></td>
<td>Milner</td>
</tr>
</tbody>
</table>

Safety Technology and Crashworthiness Systems

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design of crashworthy trains</td>
<td>Griebeltra / Rechitner</td>
</tr>
<tr>
<td>Investigation of safe lifting loads for agricultural tractors</td>
<td>Griebeltra / Rechitner</td>
</tr>
<tr>
<td>Investigation into the physics governing whiplash injuries</td>
<td>Griebeltra / Tingshi</td>
</tr>
<tr>
<td>Investigating and analysing roadside barrier systems</td>
<td>Griebeltra</td>
</tr>
<tr>
<td>Investigation and mitigating injuries in rollover crashes</td>
<td>Griebeltra / Tingshi</td>
</tr>
<tr>
<td>Maximising crashworthiness of roadside infrastructure</td>
<td>Zhao / Al-Mahaidi /</td>
</tr>
</tbody>
</table>

Timber Engineering

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of the role-process method in the prediction of wood</td>
<td>Milner</td>
</tr>
<tr>
<td>adhesive durability</td>
<td></td>
</tr>
<tr>
<td>Assessment of and repair methods for timber bridges</td>
<td>Milner</td>
</tr>
<tr>
<td>Behaviour of timber beams with web openings</td>
<td>Milner</td>
</tr>
<tr>
<td>Duration of load behaviour of particle board and medium density</td>
<td>Milner</td>
</tr>
<tr>
<td>fibreboard</td>
<td></td>
</tr>
<tr>
<td>Durability of tocoysrate-based adhesives in engineered wood products</td>
<td>Milner</td>
</tr>
<tr>
<td>Evaluation of the performance of structural glues from lamination data</td>
<td>Milner</td>
</tr>
<tr>
<td>Long term performance of reconstructed panel preduces</td>
<td>Milner</td>
</tr>
<tr>
<td>Pull-out capacity of rods epoxy glued into timber</td>
<td>Milner</td>
</tr>
<tr>
<td>Timber bridge assessment and repair</td>
<td>Milner</td>
</tr>
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</table>

Transportation Engineering

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy and traffic simulation modelling</td>
<td>Young</td>
</tr>
<tr>
<td>Appraisal of an innovative train stop design treatment for wheelchair</td>
<td>Yen, Young</td>
</tr>
<tr>
<td>access</td>
<td></td>
</tr>
<tr>
<td>A study of parking in multi-use facilities</td>
<td>Currie</td>
</tr>
<tr>
<td>Demand impacts of real time passenger information systems</td>
<td>Curry</td>
</tr>
<tr>
<td>Demand Responsible Bus Pilot Project Design</td>
<td>Currie</td>
</tr>
<tr>
<td>Developing an instrumental car</td>
<td>Curry</td>
</tr>
<tr>
<td>Developing measures of public transport network schedule coordination</td>
<td>Rose</td>
</tr>
<tr>
<td>quality</td>
<td></td>
</tr>
<tr>
<td>Development and evaluation of &quot;Hike to Work and Beyond&quot; – Travel</td>
<td>Curry</td>
</tr>
<tr>
<td>behaviour change interventions</td>
<td></td>
</tr>
<tr>
<td>Dynamic signal priority project – optimum location of detectors</td>
<td>Sanji / Curry</td>
</tr>
<tr>
<td>Enhancing South - Sendon county employee access</td>
<td>Rose</td>
</tr>
<tr>
<td>Electronic road pricing</td>
<td>Young</td>
</tr>
<tr>
<td>Environmental impacts of transport</td>
<td>Young</td>
</tr>
<tr>
<td>Equilibrium modelling of land use activities</td>
<td>Young</td>
</tr>
<tr>
<td>Evaluation of the 2004 Monash University TravelSMART Initiative</td>
<td>Rose</td>
</tr>
<tr>
<td>Features of successful real time passenger information systems</td>
<td>Currie / Sanji / Young</td>
</tr>
<tr>
<td>Improving methodologies to assess on road public transport priority</td>
<td>Currie / Smith</td>
</tr>
<tr>
<td>Innovative accessible train stop design</td>
<td>Curry</td>
</tr>
<tr>
<td>Metlink Market Futures Research and Development Project</td>
<td>Rose</td>
</tr>
<tr>
<td>Mobile phone applications in transport</td>
<td>Rose / Sekere / Ygesta</td>
</tr>
<tr>
<td>Mobile phones as traffic probes</td>
<td>Young</td>
</tr>
<tr>
<td>Modelling transport demand and parking management</td>
<td>Young</td>
</tr>
<tr>
<td>Modelling of weaving phenomena observed during traffic congestion</td>
<td>Sanji / Young</td>
</tr>
<tr>
<td>Network simulation program development</td>
<td>Young / Sanji</td>
</tr>
<tr>
<td>Performance based standards for heavy vehicles</td>
<td>Young</td>
</tr>
<tr>
<td>Predicting pavement performance at a road network and road project</td>
<td>Monash / Young</td>
</tr>
<tr>
<td>Public Transport Design Initiative</td>
<td>Currie</td>
</tr>
<tr>
<td>Public Transport stop design</td>
<td>Young / Sanji</td>
</tr>
<tr>
<td>Regulation of personal mobility devices</td>
<td>Rose</td>
</tr>
<tr>
<td>Review of Australian bus rapid transit systems</td>
<td>Curry</td>
</tr>
<tr>
<td>Roundabout study using simulation and analytical methods</td>
<td>Sanji</td>
</tr>
<tr>
<td>Strengths and weaknesses of bus in relation to transit oriented</td>
<td>Currie</td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td>Sustainability of urban transport</td>
<td>Currie</td>
</tr>
<tr>
<td>Travel time prediction estimation</td>
<td>Currie / Young</td>
</tr>
<tr>
<td>Travel behaviour change opportunities for effective implementation of</td>
<td>Rose / Li</td>
</tr>
<tr>
<td>transport policy</td>
<td></td>
</tr>
<tr>
<td>Vehicle movement at intersections</td>
<td>Seehaker / Ros / Adan</td>
</tr>
<tr>
<td>VicRoads &quot;dynamic signal priority project – logic review and</td>
<td>Adeko / Young</td>
</tr>
<tr>
<td>development&quot;</td>
<td></td>
</tr>
<tr>
<td>VicRoads &quot;dynamic signal priority project – simulation modelling&quot;</td>
<td>Currie</td>
</tr>
</tbody>
</table>

Civil Engineering – 2005 Annual Report | Page 14 of 47
## Water and Environmental Engineering

<table>
<thead>
<tr>
<th>Projects</th>
<th>Investigators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer tools for the design of river management works</td>
<td>Keller/Wehrmann</td>
</tr>
<tr>
<td>CRCHP Program 3 – Sustainable Water Allocation</td>
<td>Codner</td>
</tr>
<tr>
<td>CRCHP Program 4 – Urban Stormwater quality</td>
<td>Fletcher/Mitchell/Ladson/Cole/Wehrmann</td>
</tr>
<tr>
<td>CRCHP Program 6 – River restoration</td>
<td>Ladson/Keller</td>
</tr>
<tr>
<td>CRUSE Urban Program</td>
<td>Ladson</td>
</tr>
<tr>
<td>Decision-making and policy setting under uncertainty</td>
<td>Codner/Schneider/Giffith</td>
</tr>
<tr>
<td>Disaster support system for stormwater quality management</td>
<td>Ladson</td>
</tr>
<tr>
<td>Design of minimum-energy structures</td>
<td>Keller</td>
</tr>
<tr>
<td>Designing sustainable substrates</td>
<td>Mitchell</td>
</tr>
<tr>
<td>Developing a Australian Handbook of Streambank Flows</td>
<td>Ladson</td>
</tr>
<tr>
<td>Developing an improved unified equation for prediction of stormwater treatment</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Episodic River Health Assessment (CRCH associated project)</td>
<td>Ladson</td>
</tr>
<tr>
<td>Evaluation of the performance of constructed wetlands in stormwater pollution control</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Evaluating environmental consequences of water allocation decisions</td>
<td>Codner/Schneider/Biggin</td>
</tr>
<tr>
<td>Evolving existing urban water systems</td>
<td>Mitchell</td>
</tr>
<tr>
<td>eWater CRC Stream Restoration project A2</td>
<td>Ladson</td>
</tr>
<tr>
<td>eWater CRC Urban Systems and Design Program (E)</td>
<td>Mitchell/Fletcher/Deletic</td>
</tr>
<tr>
<td>eWater CRC Groundwater project D3</td>
<td>Mudd</td>
</tr>
<tr>
<td>Facility for Advancing Water Pollution (Victorian Government STI project, with industry partners)</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Frequency of extreme rainfall and flood events</td>
<td>Weimann/Koepske</td>
</tr>
<tr>
<td>Greenscape Planner</td>
<td>Mitchell</td>
</tr>
<tr>
<td>Groundwater quality and ASR in Melbourne</td>
<td>Mudd</td>
</tr>
<tr>
<td>Groundwater fitforc modelling under long-term climate change scenarios</td>
<td>Mudd</td>
</tr>
<tr>
<td>Groundwater Surface Water interactions project (eWater)</td>
<td>Mudd</td>
</tr>
<tr>
<td>Hampden Park wetland monitoring, MW project</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Health risks in urban stormwater</td>
<td>Ladson</td>
</tr>
<tr>
<td>Hydrological, geomorphological and ecological impacts of urbanisation on aquatic ecosystems</td>
<td>Weimann/Codner</td>
</tr>
<tr>
<td>Hydrology and economic modelling for water allocation</td>
<td>Weimann/Codner</td>
</tr>
<tr>
<td>Improving design flood estimation methods</td>
<td>Deletic</td>
</tr>
<tr>
<td>Improving unfiltered stormwater treatment model</td>
<td>Deletic</td>
</tr>
<tr>
<td>Indicators of stream health and condition</td>
<td>Ladson</td>
</tr>
<tr>
<td>Institutions and social issues in urban water management</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Integrated stormwater treatment and re-use</td>
<td>Mitchell</td>
</tr>
<tr>
<td>Interactions between streamflow and floods</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Investigating improved design of rainwater tanks</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Lifecycle costing of stormwater management in New Zealand</td>
<td>Fletcher</td>
</tr>
<tr>
<td>Lifecycle costing of stormwater management</td>
<td>Fletcher</td>
</tr>
<tr>
<td>Linking urban groundwater to stormwater reuse</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Long-term sustainability of stormwater billfeters</td>
<td>Deletic</td>
</tr>
<tr>
<td>Modelling irrigated agriculture decision-making under uncertainty</td>
<td>Codner/Weimann</td>
</tr>
<tr>
<td>Modelling heavy metal concentrations in urban stormwater: new methods for assessing risks and uncertainties</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Modelling pathogen behaviour in a hydrological context</td>
<td>Deletic/Codner</td>
</tr>
<tr>
<td>Modeling Pathogens in Urban Stormwater</td>
<td>Mitchell/Fletcher</td>
</tr>
<tr>
<td>Novel billfeters for stormwater treatment and reuse</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Pollutant adsorption and uptake processes in vegetated swales and stormwater interception systems</td>
<td>Fletcher/Wehrmann</td>
</tr>
<tr>
<td>Prediction the long-term performance of stormwater bio-filters</td>
<td>Deletic</td>
</tr>
<tr>
<td>Predicting the clogging of storm water infiltration (ARC-Discovery)</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Prediction of stormwater quality in relation to land-use, Vic EPA, MW</td>
<td>Fletcher/Deletic</td>
</tr>
<tr>
<td>Priority Ranking for Improved Stream Management</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Quantifying the Hydraulic Environment of Streams</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Reworking storms in condition (New Staff Member Grant)</td>
<td>Ladson/Codner</td>
</tr>
<tr>
<td>Roughness coefficients in Australian streams</td>
<td>Ladson</td>
</tr>
<tr>
<td>Sustainable Stormwater Management</td>
<td>Mudd</td>
</tr>
</tbody>
</table>

### 4.2. List of research grants and income

**Research Fundings for 2005 as follows:**

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Project Title</th>
<th>Amount awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bouzza, A.</td>
<td>Development of a new technique to improve very soft soils using geogrid wrapped stone columns.</td>
<td>$29,148*</td>
</tr>
<tr>
<td>Doolan, J.</td>
<td>Indicators of river condition; are they useful for environmental management</td>
<td>$32,932*</td>
</tr>
<tr>
<td>Ladson, A.</td>
<td>Industry partner: Department of Natural Resources and Environment, 1 APA (I) Award</td>
<td>$36,033*</td>
</tr>
<tr>
<td>Haque, A.</td>
<td>Stabilisation of railway subgrade by lime-flyash slurry injection</td>
<td></td>
</tr>
<tr>
<td>Kothari, J.</td>
<td>Industry partner: Pavement Technology Ltd, Rail Infrastructure Corporation (RIC)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NSW, 1 APA (I) Award</td>
<td></td>
</tr>
<tr>
<td>Kothari, J.</td>
<td>Improvement of the performance of wear-sensitive geopolymers using</td>
<td></td>
</tr>
<tr>
<td>Pathagama, R.</td>
<td>hydrophilic additives</td>
<td>$26,556*</td>
</tr>
<tr>
<td>Sanjayan, J.</td>
<td>Investigation of the mechanism causing shrinkage strains in concrete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industry partner: Blue Circle Southern Cement Limited 1APA (I) Award</td>
<td></td>
</tr>
<tr>
<td>Price, J.</td>
<td>Fall-off behaviour of high-volume slurry materials</td>
<td>$33,033*</td>
</tr>
<tr>
<td>Dudevewasa, P.</td>
<td>Industry partner: BHP Billiton Mount isa, Alliance Coal Operations Pty Ltd and Buyac (Australia) Pty Ltd 2 APA (1) Awards</td>
<td>$117,080*</td>
</tr>
<tr>
<td>Zhao, X.L.</td>
<td>High strength steel protection bolts</td>
<td>$53,556*</td>
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<tr>
<td>Greenway, R.</td>
<td>Industry partner: Leda Security Products Pty Ltd, 1 APA (I) Award</td>
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<tr>
<td></td>
<td><strong>ARC Linkage International</strong></td>
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<tr>
<td>Packer, J.</td>
<td>Design of welded steel tubular connections</td>
<td>$4,370</td>
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<tr>
<td>Zhao, X.L.</td>
<td><strong>ARC Discovery Funds Allocated in 2005</strong></td>
<td></td>
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<tr>
<td>Bouzza, A.</td>
<td>Experimental and theoretical analysis of gas leakage rate through composite landfills covers due to geomembrane defects</td>
<td>$60,900</td>
</tr>
<tr>
<td>Deletic, A.</td>
<td>Predicting the clogging of storm water infiltration</td>
<td>$59,900</td>
</tr>
<tr>
<td>Sanjayan, J.</td>
<td>Development of an enhanced activated sludge based construction material for high fire risk infrastructures</td>
<td>$92,900</td>
</tr>
<tr>
<td>Zhao, X.L.</td>
<td>Thir-sealed structures subjected to impact and blast loading</td>
<td>$65,500</td>
</tr>
<tr>
<td>Greibl, R.</td>
<td>Debonding failure in CFRP strengthened steel structures</td>
<td>$110,000</td>
</tr>
<tr>
<td>Chou, T.</td>
<td>Collaborative Research</td>
<td></td>
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<tr>
<td>Ishida, G.</td>
<td>CSIRO; Sustainability of alternative water and sewerage services</td>
<td>$32,550</td>
</tr>
<tr>
<td>Pathagama, R.</td>
<td>Monash University/CSIRO; a laboratory investigation of the mechanisms of gas migration</td>
<td>$35,574</td>
</tr>
<tr>
<td>Kothari, J.</td>
<td><strong>Collie Curative Bane</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FPAIC house for two years now</td>
<td>$2,500</td>
</tr>
</tbody>
</table>

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Civil Engineering – 2005 Annual Report
## RESEARCH AND DEVELOPMENT

### Engineering Faculty Small Grant Scheme

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Project Title</th>
<th>Amount awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bouzza, A.</td>
<td>Gas migration through geornembrane seams</td>
<td>$16,000</td>
</tr>
<tr>
<td>Delovic, A.</td>
<td>Modelling heavy metal concentrations in urban stormwater</td>
<td>$16,000</td>
</tr>
<tr>
<td>Dedovic, J.</td>
<td>Prediction and development of solutions to salinity and water induced damage to roads excluding infrastructure</td>
<td>$12,000</td>
</tr>
<tr>
<td>Pathagama, R.</td>
<td>Experimental and numerical investigations of carbon dioxide</td>
<td>$12,000</td>
</tr>
<tr>
<td>Zhao, X.L.</td>
<td>Bond between steel and CFRP (Carbon Fibre Reinforced Polymer)</td>
<td>$20,000</td>
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</tbody>
</table>

### Engineering Research Fund Travel Grant (Round 1)

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Event/Conference</th>
<th>Amount awarded</th>
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</thead>
<tbody>
<tr>
<td>Bermbach, M.</td>
<td>Eurosteel 2005, 4th European Conference on Steel and Composite Structures, Netherlands, 8-10 June 2005</td>
<td>$2,500</td>
</tr>
<tr>
<td>Sari, M.</td>
<td>ISfT 18 Conference, Maryland USA, 19-22nd July</td>
<td>$2,500</td>
</tr>
<tr>
<td>Wong, B.</td>
<td>Eurosteel 2005, 4th European Conference on Steel and Composite Structures, Netherlands, 8-10 June 2005</td>
<td>$2,500</td>
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</tbody>
</table>

### Engineering Research Fund Travel Grant (Round 2)

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Event/Conference</th>
<th>Amount awarded</th>
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</thead>
<tbody>
<tr>
<td>Al-Mahaid, R.</td>
<td>Attending ACI Fall Convention, USA 6-10 November 2005</td>
<td>$1,250</td>
</tr>
<tr>
<td>Bouzza, A.</td>
<td>16th Int. Conf. on Soil Mechanics and Geotechnical Engineering</td>
<td></td>
</tr>
<tr>
<td>Delovic, A.</td>
<td>10th Int. Conf. on Urban Drainage, Copenhagen, Denmark, 21-26 August 2005</td>
<td>$2,500</td>
</tr>
<tr>
<td>Dedovic, J.</td>
<td>10th Int. Conf. on Urban Drainage, Copenhagen, Denmark, 21-26 August 2005</td>
<td>$2,500</td>
</tr>
<tr>
<td>Dedovic, J.</td>
<td>16th Int. Conf. on Soil Mechanics and Geotechnical Engineering</td>
<td></td>
</tr>
<tr>
<td>Milner, H.</td>
<td>3rd Int. Conference on 3-8 July 2005</td>
<td>$1,250</td>
</tr>
<tr>
<td>Mitchell, G.</td>
<td>10th Int. Conf. on Urban Drainage, Copenhagen, Denmark, 21-26 August 2005</td>
<td>$1,250</td>
</tr>
<tr>
<td>Pathagama, R.</td>
<td>1st Symposium on Advanced in Mining Technology and Management</td>
<td>$1,800</td>
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</tbody>
</table>

### Industry Based Research

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Project Title</th>
<th>Amount awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currie, G.</td>
<td>Dynamic signal priority project (Vichloors)</td>
<td>$15,000</td>
</tr>
<tr>
<td>Delovic, D.</td>
<td>Brisbane City Council - Water Re-Use</td>
<td>$20,000</td>
</tr>
<tr>
<td>Delovic, D.</td>
<td>EPA Old – Stormwater Re-Use</td>
<td>$26,360</td>
</tr>
<tr>
<td>Keeler, R.</td>
<td>(DSE Victoria), Sinclair Knight Mezz</td>
<td>$21,000</td>
</tr>
<tr>
<td>Kellar, R.</td>
<td>Yarra Valley Water – Victoria</td>
<td>$108,770</td>
</tr>
<tr>
<td>Kellar, R.</td>
<td>Gunteridge et al/Melbourne Water – Hobson’s Bay</td>
<td>$2,960</td>
</tr>
<tr>
<td>Milner, H.R.</td>
<td>Durability of isocyanate-based adhesives in engineered wood products (Forest Wood Products Research and Development Corporation/CSIRO)</td>
<td>$280,000</td>
</tr>
<tr>
<td>Milner, H.R.</td>
<td>Advanced remote monitoring and strengthening techniques (Forest Wood Products Research and Development Corporation)</td>
<td>$20,000</td>
</tr>
<tr>
<td>Mitchell, G.</td>
<td>Pull-out capacity of steel and fibre composite rods grout</td>
<td>$60,000</td>
</tr>
<tr>
<td>Mitchell, G.</td>
<td>CSIRO</td>
<td>$13,750</td>
</tr>
</tbody>
</table>

### Research and Development

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Project Title</th>
<th>Amount awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rose, G.</td>
<td>Travel time prediction model (Transurban Ltd)</td>
<td>$18,816</td>
</tr>
<tr>
<td>Rice, G.</td>
<td>Role to work and beyond, development and evaluation (Department of Infrastructure)</td>
<td>$20,000</td>
</tr>
<tr>
<td>Rose, G.</td>
<td>City of Greater Dandenong</td>
<td></td>
</tr>
<tr>
<td>Sanyal, J.</td>
<td>Modelling of shrinkage cracking behaviour of concrete using field data (Ready Mix Holdings Pty Ltd)</td>
<td>$12,000</td>
</tr>
<tr>
<td>Young, W.</td>
<td>Public Transport Research, Department of Infrastructure</td>
<td>$20,000</td>
</tr>
<tr>
<td>Dettic, A.</td>
<td>Institute for Sustainable Water Resources</td>
<td>$253,000</td>
</tr>
<tr>
<td>Dettic, A.</td>
<td>New Staff Member Grant</td>
<td></td>
</tr>
<tr>
<td>Dettic, A.</td>
<td>Science Technology and Innovation (STI)</td>
<td>$382,500</td>
</tr>
<tr>
<td>Dettic, A.</td>
<td>Australasian Facility for Stormwater Buffer Technologies (eWAF)</td>
<td></td>
</tr>
</tbody>
</table>

### Total Funding Awarded in 2005

$2,453,393

Items marked * include cash contribution from Linkage Industry Partners

### 4.3. Research activity at Centres (CRCCH, ITS, ISWR, eWater CRC, FAWB)

#### Cooperative Research Centre in Catchment Hydrology (CRCCH)

The second round three-year projects, which commenced in January 2003, continued to produce important research outputs.

The Centre substantially advanced the development and implementation of its web-based Catchment Modelling Toolkit. Through the toolkit, practical tools - developed from research outputs - were made available to assist the land water industry in better resource management.

Core research projects in 2005 with major Monash involvement included:

- **Sustainable Water Allocation – Program 3**
  - Project 3.09 (SA) – Hydrologic and economic modelling for water allocation [Weirman/Coolwen]

- **Urban Stormwater Quality – Program 4**
  - Project 4.09 (SA) – Development of integrated stormwater models [Fletcher/Wyco/Woolston]
  - Project 4.09 (BB) – Stormwater Dust Management Practices [Fletcher/Dettic/Lawson/Rudd]
  - Project 6.11 (BB) – Predicting spatial and temporal variations in channel flow [Lubose]

Total funding for these and other projects end for the CRC for Catchment Hydrology Office activities at Monash was $378,464 in 2005.

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Institute of Transport Studies, Monash Node (ITS)

Research activities have continued to diversify. Areas of investigation include demand responsive bus pilot projects, ramp stop design, signal priority modelling, development of innovative techniques for measuring the quality of coordination between buses and rail schedules at interchanges, and a review of the market impacts of public transport information systems.

Associate Professor Geoff Roche’s study leave in Deft resulted in plans for a number of projects in the areas of reliability of motorway performance, road user decisions of cyclists and opportunities to use advanced technology to reduce vehicle fuel consumption and emissions. Majdi Sarni worked over the summer with Professor Massou Khosravian at the University of Tokyo to study driving behaviour. This research made use of a three dimensional dynamic driving simulator linked to a network traffic micro-simulation model. Having a deep understanding of driving behaviour is vital to traffic and transport engineers. One of the most challenging driving tasks occurs when a driver is involved in a dynamic combination of lateral and longitudinal movements (i.e. lane changing and merging manoeuvre). There has been limited research concerning with the traffic behaviour and characteristics in these situations. A significant challenge that has become increasingly apparent in the development of models of driving behaviour in these situations over the last few years is the absence of reliable data with which to simulate processes, such as car following, may be compared. Obtaining such data and the associated increase in model validity that this would allow is increasing in importance as new advanced vehicular systems to improve traffic flow and safety are introduced and require assessment. Thus the research being undertaken by Dr Sarni will lay important foundations for improved understanding of driving behaviour in complex, real world environments.

At the end of March, ITS (Monash) hosted a workshop entitled “Transport Research at Monash” (TRiM). This initiative was supported by the Vice-Chancellor and showcased current transport research activities across all faculties. It was successful in stimulating several multi disciplinary transport research projects, and this concept of a multi disciplinary transport research network has now been selected as one of the ventures to be funded within the Monash Sustainability Institute. Another of the initiatives following on from this combined approach to research was the initiation of planning for a conference on transport disadvantage and social wellbeing, to be held early in 2006, with ITS (Monash) and a number of social and professional bodies as co-sponsors.

The PhD program continued to grow, with two new scholarships funded by Melton and Valgraven negotiated in the latter part of 2005. The new students will commence in January 2006. Mark Chue was awarded her PhD. Ria Suthaker, a current PhD student, was awarded the David Willis memorial prize for the best student paper by the Australasian Transport Research Forum at its meeting in September.

The centre hosted Associate Professor Arvid Aakre, a visitor from the Department of Civil and Transport Engineering, Norwegian University of Science and Technology, Tromsø 22 August. Associate Professor Aakre will continue in residence until June 2006. His research is in the area of road safety.

Five papers (three journal articles, one book chapter and one report) have been published and three others are in progress or have been submitted for review. Professor Curtis and Associate Professor Rose made numerous presentations to professional bodies and public organisations both in Australia and overseas.

Institute for Sustainable Water Resources (ISWR)

ISWR is involved in research in a number of water sustainability issues, but its key research aim is to develop:

- Strategies and technologies for water resource sustainability in urban development and renewal

Within this focus area, a number of strategic research areas have been adopted:

- Scalable and integrated technologies to improve the sustainability of water resources across the urban water cycle
- Alternative sources and allocation of urban water, including treatment and storage
- Interactions between ground water and surface water, and the implications for ground water management
- Institutional reform to facilitate the sustainable management of water resources
- Interactions between urban water management and ecosystems, and the services provided by urban aquatic ecosystems
- Ecological and geomorphic restoration of urban waterways

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Research seminars given by visitors to the Department

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Seminar Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Emmanuel Delorme, Dept of Civil Engineering, University of Minnesota</td>
<td>Hydraulic fracturing</td>
</tr>
<tr>
<td>Dr Jean-Luc Gynloc, Senior Researcher, INRETS, Lyon France</td>
<td>Assessing costs and benefits of deploying high speed internet services for train travellers</td>
</tr>
<tr>
<td>A/Professor Khaled A. Khedr, Scientific-Vizor, CSIRO Land and Water, School of Science and Technology, CSU, Wagga, NSW</td>
<td>Application of artificial intelligence in water resource modelling</td>
</tr>
<tr>
<td>Mr Roger Douieb</td>
<td>Data Acquisition: the basics</td>
</tr>
<tr>
<td>Professor Kortani Yamada, Nagoya University, Japan</td>
<td>Recent trend of highway bridges in Japan</td>
</tr>
<tr>
<td>Prof. Mark Brayford, School of Civil and Environmental Engineering, University of New South Wales, Sydney, NSW</td>
<td>Short and long-term nonlinear behaviour of shell concrete arches</td>
</tr>
<tr>
<td>Professor Scott Skene, Newcastle University, NSW (Alumni of the Year, 2005)</td>
<td>Coupled shear-flexure strengthening of reinforced concrete beams using CFRP composites</td>
</tr>
<tr>
<td>Professor Sari Mendis, Civil Engineering Department,</td>
<td>Insights into previous and future mentioned in Civil Engineering</td>
</tr>
</tbody>
</table>

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## 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>Javadeep, University, Kolkata, India</td>
<td>cement mortor and concrete</td>
</tr>
<tr>
<td>Emeritus Professor B. Vajra Rangan, Faculty of Engineering, Curtin University of Technology, Perth WA</td>
<td>Fly-ash based geopolymer concrete</td>
</tr>
<tr>
<td>Professor Gerald Muck, Blast Impact and Survivability Research Unit, University of Cape Town, South Africa</td>
<td>Structures subjected to blast loads</td>
</tr>
<tr>
<td>Professor Gerald Muck, Blast Impact and Survivability Research Unit, University of Cape Town, South Africa</td>
<td>Impact Biomechanics</td>
</tr>
</tbody>
</table>

## 4.6. Publications

### Books


### Book chapters


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Page 32 of 47
Journal papers (continued)  

Conference papers  
RESEARCH AND DEVELOPMENT

Conference papers (continued)


Fawzia, S., Al-Majali, R., Zhao, X.L. and Rizkalla, S.H. (2005). Double-tap shear tests to determine the bond characteristics between CFRP and steel plates, 4th Int. Conf. on Advances in Steel Structures, Shanghai, China, June 2005.


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RESEARCH AND DEVELOPMENT

Conference papers (continued)


Liu, H., Zhao, X.L. and Han, L.H. (2005). Nonlinear finite element analysis of SCC filled steel tubular beams. 4th International Conference on Advances in Steel Structures, Shanghai, China June 2005.


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Conference papers (continued)


Civil Engineering – 2005 Annual Report  Page 29 of 47
### 4.7. List of postgraduate students and research topics

<table>
<thead>
<tr>
<th>Student Name</th>
<th>MEngSc/EngSc</th>
<th>Project Title</th>
<th>Main Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter, Lisa (M)</td>
<td>MEngSc</td>
<td>Indicators of river condition: are they useful for environmental management</td>
<td>A. Ladkori</td>
</tr>
<tr>
<td>Chao, Derin (M)</td>
<td>MEngSc</td>
<td>Mechanisms prediction and prevention of pipe bursts in buried water and gas pipe systems due to ground movement</td>
<td>J. Kolikova, X. Choi (CSIRO), R. Fathomega, J. Kolikova</td>
</tr>
<tr>
<td>Cherukosa, Mathis (M)</td>
<td>MEngSc</td>
<td>Performance of earthen cover systems under various climatic conditions</td>
<td>R. Malaikar</td>
</tr>
<tr>
<td>Gamage, Kumari (M)</td>
<td>MEngSc</td>
<td>Fire resistance of CFRP plated concrete members</td>
<td>R. Al-Mahaidi, B. Wondi</td>
</tr>
<tr>
<td>Groot, Joel (M)</td>
<td>MEngSc</td>
<td>Development of a new technique to improve very soft soils using geotextile wrapped stone columns</td>
<td>M. Bouzaara</td>
</tr>
<tr>
<td>Guenter, Maurice (M)</td>
<td>MEngSc</td>
<td>Development of an alkaline activated slag based construction material for high risk infrastructures</td>
<td>J. Sanjayan</td>
</tr>
<tr>
<td>Haider, Jimmy (M)</td>
<td>MEngSc</td>
<td>Development of high strength boltarda</td>
<td>R. Grobvest, M. Barnabas, X.L. Zhao, W. Young, J. Kolikova</td>
</tr>
<tr>
<td>Kabir, Eshoahum (M)</td>
<td>MEngSc</td>
<td>Filtration behaviour of granular soils under repeated load</td>
<td>A. Hoque, J. Kolikova, M. Barabas, W. Young</td>
</tr>
<tr>
<td>Kabir, Kheib (M)</td>
<td>MEngSc</td>
<td>Impacts of major road infrastructures on land use and city development</td>
<td>M. Barabas, W. Young</td>
</tr>
<tr>
<td>Karpovitch, Mark (M)</td>
<td>MEngSc</td>
<td>Transformed technology based transport, infrastructure and engineering projects financed and undertaken in China and Asia</td>
<td>W. Young</td>
</tr>
<tr>
<td>Kong, Kew Ho (M)</td>
<td>MEngSc</td>
<td>Numerical analysis of piles loaded laterally by structurally forces or moving soil</td>
<td>J. Kolikova, A. Hoque, J. Kolikova</td>
</tr>
<tr>
<td>Lee, Kok Yuen (M)</td>
<td>MSc</td>
<td>Cementitious stabilization of scoria for pavement construction</td>
<td>A. Hoque, J. Kolikova</td>
</tr>
<tr>
<td>Lee, Kail Ying (M)</td>
<td>MEngSc</td>
<td>Numerical analysis of piles loaded laterally by structurally forces or moving soil</td>
<td>J. Kolikova, A. Hoque, J. Kolikova</td>
</tr>
<tr>
<td>Magyari, Minhia (M)</td>
<td>MEngSc</td>
<td>Design of reinforcement tendons</td>
<td>G. Mikanis, A. Laxton</td>
</tr>
<tr>
<td>McCarthy, David (M)</td>
<td>MEngSc</td>
<td>Modelling micro-organisms in urban stormwater</td>
<td>G. Mitchell, A. Delidio</td>
</tr>
<tr>
<td>Wightwick, Matthew (M)</td>
<td>MEngSc</td>
<td>Improvement of the performance of water-sensitive geomaterials using hydrophobic additives</td>
<td>J. Kolikova, R. Fathomega, A. Delidio, I. Fletcher</td>
</tr>
<tr>
<td>Zinger, Yaron (M)</td>
<td>MEngSc</td>
<td>Advancing stormwater drill/stub technologies</td>
<td>A. Delidio, I. Fletcher</td>
</tr>
<tr>
<td>Schull, Martin (M)</td>
<td>MEngSc</td>
<td>Settlement of raft footings on fill and soft soils</td>
<td>A. Hoque</td>
</tr>
<tr>
<td>Adam, Con Y. (M)</td>
<td>PhD</td>
<td>Reliability of timber structures using remote advance monitoring techniques</td>
<td>R. Minet, R. Al-Mahaidi, X.L. Zhao</td>
</tr>
<tr>
<td>Al-Shawaf, Ahmad (M)</td>
<td>PhD</td>
<td>Bond characteristics of CFRP strengthened steel members under extreme temperatures</td>
<td>R. Al-Mahaidi, X.L. Zhao</td>
</tr>
</tbody>
</table>

#### Civil Engineering – 2005 Annual Report

<table>
<thead>
<tr>
<th>Student Name</th>
<th>MEngSc/EngSc or PhD</th>
<th>Project Title</th>
<th>Main Supervisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aly, Tarek (M)</td>
<td>PhD</td>
<td>Investigation of the mechanising factors in rainwater infiltration systems</td>
<td>J. Sanjayan</td>
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<tr>
<td>Arsal, Bilal (M)</td>
<td>PhD</td>
<td>Using continuous surface wave method for near surface site characterization</td>
<td>M. Bouzaara</td>
</tr>
<tr>
<td>Browne, Dale (M)</td>
<td>PhD</td>
<td>Predicting and modeling the clogging of stormwater infiltration systems</td>
<td>J. Sanjayan, A. Delidio, T. Fletcher</td>
</tr>
<tr>
<td>Byrne, Matthew (M)</td>
<td>PhD</td>
<td>Road Asset Management</td>
<td>A. Delidio, T. Fletcher</td>
</tr>
<tr>
<td>Chan, Marko (M)</td>
<td>PhD</td>
<td>Impact of in-vehicle navigation systems on drivers’ travel behaviour</td>
<td>J. Sanjayan, G. Rose, M. Hogen</td>
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<tr>
<td>Fawaz, Sobina (M)</td>
<td>PhD</td>
<td>Strengthening of steel structures using high modulus CFRP laminates</td>
<td>R. Al-Mahaidi, X.L. Zhao</td>
</tr>
<tr>
<td>Fletcher, Paul (M)</td>
<td>PhD</td>
<td>Research into improvement of Coalie Island silt by deep soil mixing</td>
<td>M. Bouzaara</td>
</tr>
<tr>
<td>Francoi, Matthew (M)</td>
<td>PhD</td>
<td>Pollutant generation from urban catchments</td>
<td>A. Delidio, T. Fletcher, H. Duncan</td>
</tr>
<tr>
<td>Green, Janice (M)</td>
<td>PhD</td>
<td>Estimating the probability of extreme rainfalls – a joint probability approach</td>
<td>E. Wohmann</td>
</tr>
<tr>
<td>Griffith, Manse (M)</td>
<td>PhD</td>
<td>Decision making and policy setting under uncertainty</td>
<td>G. Costigan, I. Mills</td>
</tr>
<tr>
<td>Hall, Belinda (M)</td>
<td>PhD</td>
<td>Developing novel stormwater treatment technologies for safe re-use</td>
<td>A. Delidio, T. Fletcher</td>
</tr>
<tr>
<td>Haydon, Sharon (M)</td>
<td>PhD</td>
<td>A simplified process based model for predicting pathogen transport in catchments</td>
<td>A. Delidio, G. Coster</td>
</tr>
<tr>
<td>Hui, Adrian (M)</td>
<td>PhD</td>
<td>Tensile strengthening of reinforced concrete beams using CFRP composites</td>
<td>R. Al-Mahaidi</td>
</tr>
<tr>
<td>Jana, Husseik (M)</td>
<td>PhD</td>
<td>Thin-walled structures subjected to impact and blast loads</td>
<td>R. Grobvest, M. Barnabas, X.L. Zhao</td>
</tr>
<tr>
<td>Jiang, Tony (M)</td>
<td>PhD</td>
<td>Predicting impact loads and lateral reflections of road safety barrier systems</td>
<td>R. Grobvest</td>
</tr>
<tr>
<td>Judd, Dean (M)</td>
<td>PhD</td>
<td>How a five-arch bridge forms: a process study on the Riverina Plain of South-Eastern Australia</td>
<td>R. Kiler</td>
</tr>
<tr>
<td>Kabir,Mohbawook (M)</td>
<td>MSc</td>
<td>Modelling long term groundwater rebound and recharge at Ravenahon Mine, Kakiniku National Park</td>
<td>G. Muddy, T. Lekhold</td>
</tr>
<tr>
<td>Khalaf, Hussien (M)</td>
<td>PhD</td>
<td>Robustly-based assessment of load capacity of existing concrete bridges</td>
<td>P. Grandy, G. Twinn</td>
</tr>
<tr>
<td>Kong, Danieli (M)</td>
<td>PhD</td>
<td>Investigation of fire resistance of alkali activated slag based concrete</td>
<td>R. Al-Mahaidi</td>
</tr>
<tr>
<td>Li, Runvin (M)</td>
<td>PhD</td>
<td>Travel time prediction</td>
<td>G. Rose, M. Seri</td>
</tr>
<tr>
<td>Li, Yong (M)</td>
<td>PhD</td>
<td>Developing an improved unified equation for prediction of stormwater treatment</td>
<td>A. Delidio, T. Fletcher</td>
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<tr>
<td>Ling, Tong Wei (M)</td>
<td>PhD</td>
<td>The tensile behaviour of geotextile-plated connections in very high strength (VHS) tubes</td>
<td>X.L. Zhao, R. Al-Mahaidi</td>
</tr>
<tr>
<td>Liu, Hongbo (M)</td>
<td>PhD</td>
<td>Fatigue of tube-to-plate T-connections partially filled with concrete or reinforced with FRP</td>
<td>X.L. Zhao</td>
</tr>
<tr>
<td>Menaheem, Mohammad</td>
<td>PhD</td>
<td>Modelling of concrete bridge expansion for Maintenance decisions</td>
<td>R. Al-Mahaidi</td>
</tr>
<tr>
<td>Martin, Trin (M)</td>
<td>PhD</td>
<td>Components of uncertainty in predicting pavement performance at a road network and program level</td>
<td>W. Young, G. Rose</td>
</tr>
<tr>
<td>Nahawai, Hari (M)</td>
<td>PhD</td>
<td>Unnatural behaviour of geotechnics</td>
<td>M. Bouzaara</td>
</tr>
<tr>
<td>Pang, Daniel (M)</td>
<td>PhD</td>
<td>Fatigue behaviour of drainage tubing structures</td>
<td>X.L. Zhao, P. Dayawansa</td>
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<tr>
<td>Pham, Huy Binh (M)</td>
<td>PhD</td>
<td>Debonding failure in concrete members retrofitted with carbon fibre reinforced polymer composites</td>
<td>R. Al-Mahaidi</td>
</tr>
<tr>
<td>Richardson, Shane (M)</td>
<td>PhD</td>
<td>Rollover protection systems for (Military) 4 x 4 vehicles</td>
<td>R. Grobvest</td>
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</table>
### 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>
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</thead>
<tbody>
<tr>
<td>Pham</td>
<td>Huy Bin</td>
<td>Dr R. Al-Mahadi</td>
<td>Debonding failure in concrete members retrofitted with carbon fibre reinforced polymer composites</td>
</tr>
<tr>
<td>Ling</td>
<td>Yang Wei</td>
<td>Prof. X-L Zhao</td>
<td>The behaviour of groove-plate welded connection in very high strength (VHS) tubas</td>
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</table>

**MEngSc (Research)**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Supervisor(s)</th>
<th>Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ganage</td>
<td>Kumari</td>
<td>Dr R. Al-Mahadi</td>
<td>Effect of temperature cycles on bond between fibre reinforced polymer plates and concrete</td>
</tr>
<tr>
<td>Kong</td>
<td>Kee Ho</td>
<td>Dr J. Kudikara</td>
<td>Numerical modelling of tapered piles in Melbourne Mudstone</td>
</tr>
<tr>
<td>Lee</td>
<td>Kah Ying</td>
<td>Dr J. Kudikara</td>
<td>Numerical analysis of model pile failure due to soil movement using FLAC3D</td>
</tr>
</tbody>
</table>

### 4.0. Graduating Class of 2005 (Postgraduates)

**Master of Engineering Science (Research)**

Kee Ho Kong  BE(Hons) Tss.
Lee Kon Yut  BE(Hons) Tst.

**Master of Traffic**

Melissa Joy Sparrow  BE(Hons) R.M.I.T.
John Storrie  

---

**Master of Transport**

Timothy Andrew Frederick Brown
Perenkee Ford
Darryn Peterson
John Storms
Arthur Vlahogian

**Master of Transport and Traffic**

Yvonne Aasid Warnaar

**Postgraduate Diploma in Transport and Traffic**

Duncan Foster

**Graduate Certificate in Transport and Traffic**

Kevin John Flynn  AssocDipCivilEng Gordon I.T.,

**Graduate Certificate in Infrastructure Engineering and Management**

Simon Paul Davis

**Master of Infrastructure Engineering and Management (2004)**

Lawrence Chew
Brendan Walsh

**Doctor of Philosophy**

| Dr Sara Dorothy Lloyd  MEEngSc (Civil Engineering) |
| Dr Sathrawanwanyo Mahaswan  BS(Eng)Hons (Civil Engineering) |
| Dr Srijit Chakraborti  BE(Civil)Region.Eng.Coll. Darapur  M.CivilEng Jadavpur (Civil Engineering) |
| Dr Mark Chan  BE(Hons) Auckland (Civil Engineering) |
5. UNDERGRADUATE STUDENTS AND PRIZES

5.1. Graduating Class of 2005

Bachelor of Engineering (Civil)

Wen Chit Choo
Philip Ashley Covalus
James John Matchett-Smyth
Meiwen Ah Cheong Lim Shung
Ka Yeung Chow
Amy Vi Thi Ho
Kok Leong Lim

Huy Minh Tran
Ping Sun Wan
Catherine Betty Williams
Wai Leung Mak
Jason Sitchetti
Chong Wei Yang

Bachelor of Engineering (Civil) with Honours

Steve David Boast
Graham Stuart Bradley
Wee Boon Chan
Yvonne Yen Mei Chang
Anthony Cheung
Lee James Compton
Haydon Russell Day
Matthew De Marco
Maurice Guerriero
Jude Dominic Hart
Jarrod Donald Sinclair Hill
Changkeuk Pasha/Aditya Jayakody
Robin Kafet
Scott Reuben Knight
Nicholas Konoustoglou
Yok Ying Ling
Anthony James McColough
Peter Charles Malley
Anthony Mirkab (posthumously)
David Anthony Chapple
Kim Ting Chau
Dayne Edward Deprez
Nargaila Elum Fernando
Koon Kyu Edwina Fung
Christopher Justin Hamlin
Kia Jin Lim
Janina Maria Perella Mok

Daniel John Mocik
Christopher Paul Moran
Sally Lauren Neeman
Matthew Thomas O'Connor
Bradley Ian Pedlar
Ashley Daniel Pulford
Helen Sandra Sanders
Julian Schlesinger
James Daniel Sieradkowski
Jin Hyup So
Jessica Spencer
Simon Peter Thompson
Jennifer Louise van de Giessen
Jason Stuart Warren
Melanie Catherine West
Mark Christopher Yoshida
John Capper
Andrew Jeffrey Roseman
Daniel Ricardo Vieira
Yin Cheong Edward Wan
Daniel Wallace Wilkman
Dianne Dan Zhao
Andrea Zivanovic
Teck Seng Quik
Albert Cheong Vui Tien

5.2. Undergraduate Prizes and Awards

Scholarships (Faculty)

Leighton Contractors "Keith Rix" Scholarship
Traffic Group Scholarships Level 2 (Anthony Mirabito Scholarship)
Freya Mills
Erin Murphy
Rick Williams

Prizes

Faculty
Arup Prize for Civil Engineering
Golder Associates Pty Ltd Prize
Transurban Excellence in Engineering Award
Civil Contractors Federation Prize
Esso Engineering Prizes
CIV3204 (shared)
CIV3205

Department

Level 1 Prize
Top Level 1 student entering Civil Engineering
Matthew Davney
Top Level 1 double degree student entering Civil Engineering
Tom Hennessy
6. PROFESSIONAL ACTIVITIES

6.1. Conference attendance

Al-Mahaidi, R (Dr)
4th Australian Conference on Applied Mechanics, ACAM 2005, Feb, Melbourne
ASCE Structures Congress and AGI Spring Convention, New York City, NY, USA, April
Int. Workshop on Structural Health Monitoring, Stanford University, Stanford, CA, USA, September
Second Int. Symposium on Higher Education in Iraq, London, UK, September
13th Int. conference of Composites Structures ICCS13, Monash University, November
Int. Symposium on Disaster Reduction on Coasts, Monash University, November
FRP2005 Conference and ACI Fall Convention, Kansas City, KA, USA, November

Bambach, Michael (Dr)
Launch of the ARC Research Network for a Secure Australia (RNSA), Canberra, February
Eurosteel 2006, 4th European Conference on Steel Composite Structures, Mannichst, Netherlands, June
4th Homeland Security Summit and Expo, Conyers, July

Bouazzza, Malek (Assoc Prof)
16th Int. Conf. on Soil Mechanics and Geotechnical Engineering, Osaka (Japan), September
Int. Symp. on Geomechanics Applications for Ground Reinforcement Improvement, Busan (Korea), July
Geohotrends 2005 Conference, Austin (USA)

Codner, Gary (Assoc Prof)
ASEE/AAE 4th Global Colloquium on Engineering Education, Sydney, NSW, September
2nd Environmental Engineering Academics’ Workshop, Sydney (Australia), September
Effective Assessment and Feedback to Students Conference, sponsored by Faculty of Engineering and Melbourne University Engineering Foundation, Melbourne, VIC, September
Water CRC participants Forum (Monash Representative), Brisbane, October

Currie, Graham (Prof)
Trans–Oriented Development – Make It Happen Conference, Perth, WA, July
Institution of Transportation Engineers Annual Conference, Melbourne, VIC, August
Australian Transport Research Forum, Sydney, NSW, September
Victorian Council for Social Services Annual Conference, Melbourne, VIC, October
Bus Industry Confederation Annual Conference, October
UIF National Assembly, November

Deletic, Ana (Dr)
10th Int. Conf. on Urban Drainage (10CUD), Technical University of Denmark and Aalborg University, Copenhagen, Denmark, August

Fletcher, Tim (Dr)
10th ICDU, 21-26 August 2005, Copenhagen, Denmark
Stormwater Industry Association (NSW) Annual conference – invited keynote speaker
Stormwater Industry Association (QLD) Annual conference – invited keynote speaker

Grzebieta, Raphaël (Assoc Prof)
Annual Int. Transportation Engineers Conf. Melbourne, August
Int. Technical Conf. on the Enhanced Safety of Vehicles, Washington, USA, June
Monash University Int. Institute of Forensic Studies Biannual Conf., Experts and Lawyers: Surviving in the Brave New World, Broome, Western Australia, October
Symp. on Road Traffic Management, Int. Cooperation Department of Public Security Ministry, Xi’i, China, November
Australian Road Safety Research Policing Education Conference, Transport New Zealand, Wellington, November

Keller, Robert (Assoc Prof)
River, Coastal and Estuarine Morphodynamics Conference, University of Illinois at Urbana-Champaign, Urbana, USA, October

5.3. Undergraduate seminars 2005

In 2005, a new initiative was started jointly with the Students Society whereby guests from industry would sponsor and present a seminar to undergraduate students on professional careers in civil engineering.

The first seminar, given by Don Edwards from KBR Consultants, was a great success with more than 100 students attending. The second seminar was given by Chuenaiwa Duran from consultants Traffic Group and was also a major success. The initiative is now set to be a regular event in the Civil Engineering undergraduate student calendar.

Top Civil Engineering Prize
Tiew Kai Ting

Level 4 Prizes
GHD Prize in Water Engineering
Joan Ko
Foundation Industry Prize for Soil Engineering
Steven Boest
Richardson Prize in Transport
Tiew Kai Ting
Thess Prize for Civil Engineering Design
Andrew Mehorgan
Trafal Group Traffic Engineering Prize
Tiew Kai Ting
Foundation QA Prize
Daniel Mocik
Civil Engineering Vacation Work Prize
Daniel van Veen
PROFESSIONAL ACTIVITIES

Kodikara, Jayantha (Dr)
16th Int. Conf. on Soil Mechanics and Geotechnical Engineering, Osaka (Japan), September

Ladson, Tony (Dr)
26th Hydrology and Water Resources Symposium, Canberra, February

Milner, Henry Robert (Assoc Prof)
3rd Int. Conference on Advanced Engineered Wood Composites, Bar Harbour, Maine (USA), July

Mitchell, Grace (Dr)
10th Int. Conference on Urban Drainage, Copenhagen, Denmark, August

Mudd, Gavin (Dr)
WasteCare 06, Int. Conference on Engineering for Waste Treatment, Abl (France), May

National Conf. on Environmental Engineering: ESS 2005 – Creating Sustainable Solutions, Sydney, NSW, July

Annual Conference of the Australian Mining History Association, Bendigo VIC, July

Australian Uranium Conference 2005, Fremantle WA, October

NZHEA-IAGNZSESS Auckland 2005 Conference “Where Waters Meet”, Auckland (NZ), November-December

Pathegama Gamage, Ranjith (Dr)
Asien Rock Mechanics Conference (ARM2004), Kyoto (Japan)

Sanjayan, Jay (Assoc Prof)
First Korea-Australian Workshop on Recent Advances in High Performance Concrete organised by Korean Institute of Construction Technology and Korea Concrete Institute, in Seoul, Korea, January

Conference on Iron and Steel Slag Products: A significant time of scarcity, organised by Australian Slag Association, Sydney, NSW, March

International Workshop on Geopolymer and Geopolymer concrete, organised by University of Alabama (USA), CUTE: University of Technology, WA (Aust) and National Science Foundation (USA), in Perth WA, September

Sarvi, Majid (Dr)
Conference of Australian Institutes of Transport Research, December

Weinmann, Erwin (Mr)
Hydrology and Water Resources Symposium, Canberra, ACT, February

Wong, M.B. (Dr)
EurCem Eridani 2005, 6th European Conference on Steel Composite Structures, Maastricht, the Netherlands, June

4th Int. Conference on Advances in Steel Structures 2005 (ICASS/2005), Shanghai, China, June

IABSE Symposium on Structures and Extreme Events, Lisbon, Portugal, September

Young, William (Prof)
ATIPM National Conference, Brisbane, Queensland, July

Zhao Xiao-Ling (Prof)
4th Australasian Congress on Applied Mechanics, Melbourne, Australia, February

4th Int. Conference on Advances in Steel Structures, Shanghai, China, June

International Society of Offshore and Polar Engineers (ISOPE) Conference in Seoul, Korea, June

International Institute of Welding Annual Assembly, Prague, Czech Republic, July

CIDECT Annual Meeting, Athens, Greece, September

International Symposium on Bond Behaviour of FRP in Structures, Hong Kong, China, December

International Symposium on Advances in Composite Structures, Hong Kong, China, December

6.2. Contribution to Professional Organisations

Al-Mahaidi, Riadh (Dr)
Member, ACI-ASCE Committee 447 “Finite Element Analysis of Reinforced Concrete Structures”
Chaired, ACI-ASCE Committee on “Finite element modelling for the repair and rehabilitation of RC and masonry structures”

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PROFESSIONAL ACTIVITIES

Member, American Concrete Institute ACI Committee 447 “Fiber Reinforced Polymer Reinforcement”
Founding Member, Polymer Composites in Construction Steering Committee, Composites Institute of Australia
Founding Member, FRP Rehabilitation Subcommittee, Composites Institute of Australia
Member, International Advisory Committee, First Canadian Conference on Effective Design of Structures, McMaster University, Hamilton Ontario, Canada
Member, Organising Committee, 5th Int. Conf. on Multi-purpose High-Rise Towers and Tall Buildings, Dubai, UAE
Chairman, Technical Advisory Committee, Int. Symposium on Disaster Reduction on Coasts, Melbourne, Australia, November

Bouaza, Malek (Assoc Prof)
Member, International Geosynthetics Society Council
Member, Education and Communication committee, International Geosynthetics Society
Core member, Technical committee No 5 (Environmental Geosynthetics) of the International Society of Soil Mechanics & Geotechnical Engineering
Member, Australian Standard Committee on Geosynthetics
Member ASCE, Geotechnical Geosynthetics Committee
Member, Technical Committee of the 5th International Congress on Environmental Geotechnics, to be held in Cardiff, Wales (UK), in June 2006
Member, paper review Committee of the 4th Int. Conf. on Unsaturated Soils, UNSAT2006, Phoenix, Arizona (USA) to be held in 2006.
Member, Scientific Committee of the 6th French Conference on Geosynthetics, Montpellier (France)

Codner, Gary (Assoc Prof)
Chair, IEAust College of Environmental Engineers

Currie, Graham (Prof)
Member, Victorian Local Government Association, Transport Reference Group
Member, Minister for Transport's Victorian Road-Based Public Transport Advisory Group
Member, City of Yarra Transport Policy Advisory Committee
Member, Academic Network, Union Internationale des Transports Publics (UITP)
Member, Victorian Transport Research Board – Committee AP005 Bus Transit Systems
Member, Victorian Transport Research Board – Committee AP075 Light Rail Transit

Deletic, Ana (Dr)
Chair, UNESCO IHP-VII Data for Integrated Urban Water Management

Australian Representative, Committee of Sewer Systems and Processes Working Group, working under Joint Urban Drainage Committee of IWA and IAHR

Member, Water Sensitive Urban Design Working Group, Joint Committee on Urban Drainage of IWA and IAHR

Elected member of Joint Committee on Urban Drainage (under IWA/IAHR)

Secretary, International Working Group on Data and Models (under JCOM of IWA/IAHR)

Fletcher, Tim (Dr)
Member, Scientific Committee, Novatech conference (June 2007, Lyon, France)
Member, Auckland Regional Council’s International Scientific Advisory Panel
Member, Organising Committee, UDMURJLD to be held in Melbourne in 2006, organised by IWSR
Member, Committee developing collaboration with Landcare Research, New Zealand

Co-chair, Water Sensitive Urban Design Working Group, Joint Committee on Urban Drainage of IWA and IAHR

Co-chair, UNESCO IHP-VII “Data Requirements for Integrated Urban Water Management” group

Grezbieta, Raphael (Assoc Prof)
Member, Standards Australia CE 33 Road Safety Barrier Committee

Member, National Australian Standards Committee CS-085 Child restraints for use in motor vehicle

Member, National Australian Standards Committee CS-075 Automotive occupant restraints

Member, Australian Transport Safety Bureau National Committee, Road Safety Strategy Panel

Member, Institution of Engineers, National Committee on Transport

President, Australian College of Road Safety

Member, Victorian Chapter, Australasian College of Road Safety

Kodikara, Jayantha (Dr)
Member, Council of the Centre for Pavement Engineering Education

Member, Australians Committee on Road Stabilisation

Member, Australian Standard Committee on Soil Stabilisation

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PROFESSIONAL ACTIVITIES

Zhao, Xiao-Ling (Prof)
Chairman, IW Sub commission XV-E on Tubular Structures
Commission Member, IFC (International Institute for FRP in Construction)
Member, CIDECT (International Committee for the Development and Study of Tubular Structures) Project Working Group
Member, Int. Scientific Committee, First Int. Conf. on Experimental Structural Engineering, Nagoya, Japan, July 2006
Member, Int. Scientific Committee 4th International Conference on Advances in Steel Structures, Shanghai, P.R. C., June 2006
Member, 11th Int. Symposium on Tubular Structures to be held in Canada in August 2006
Member, Int. Scientific Committee, 3rd Int. Conf. on FRP Composites in Civil Engineering, Miami, USA (to be held in 2006)
Member, Int. Scientific Committee, 6th Int. Conf. On Steel and Aluminium Structures, Oxford, UK (to be held in 2007)
Member, Int. Scientific Committee, Int. Symposium on Bond Behaviour of FRP in Structures, Hong Kong, December.

6.3. Visits to Other Institutions

Al-Mahaidi, R. Idaf (Dr)
University of Westminster, London, UK, September
Wuhan University of Technology, Wuhan, China, October

Bouazza, Malek (Assoc Prof)
University of Texas, Austin, Texas (USA)
AIT, Bangkok (Thailand)
National University of Singapore (Singapore)
Ecole Nationale des Ponts et Chaussees, Paris (France)

Fletcher, Tim (Dr)
UNESCO (United Nations Education and Scientific Cooperation Organisation), Paris (France), March

Ladson, Tony (Dr)
School of Anthropology, Geography and Environmental Studies, University of Melbourne

Mitchell, Grace (Dr)
UNESCO (United Nations Education and Scientific Cooperation Organisation), Paris, France, March

Pathagama, Ranjith (Dr)
University of Tokyo, Japan

Rose, Geoff (Assoc Prof)
University of Tokyo (Japan), Traffic Engineering Laboratory, Department of Human and Social Systems, July 2006
Deft University of Technology (Netherlands), Transportation Planning and Traffic Engineering Section, Faculty of Civil Engineering and Geoscience, August-December
Malmö Mobility Centre, Malmö (Sweden)

Sanjayan, Jay (Assoc Prof)
Korean Institute of Construction Technology (KICT), Seoul (Korea) Jan-Feb
D年namark Technical University, Copenhagen (Denmark), March

Sanjayan, Jay (Assoc Prof)
Korean Institute of Construction Technology (KICT), Seoul (Korea) Jan-Feb

Sarvi, Majid (Dr)
Member, Engineers Australia, Victorian Transport Committee

Weinfurter, Erwin (Mr)
Member, National Committee for Water Engineering of Engineers Australia

Wong, M.B. (Dr)
Member, IEAust Structural Branch Committee, Victoria
Member, Int. Advisory Committee, 4th Int. Conf. on Advances in Steel Structures, Shanghai, P.R. China, held in June 2006

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PROFESSIONAL ACTIVITIES

Hong Kong Polytechnic University, Hong Kong, P.R. China, September to December
City University, Hong Kong, P.R. China, November

6.4. Editorial Services

Al-Mahaldeh, Riadh (Dr)
Reviewer, Journal of Structural Engineering, ASCE
Reviewer, Journal of Composites in Construction, ASCE
Reviewer, Australian Journal of Structural Engineering
Reviewer, Int. J. for Construction and Building Materials
Reviewer, ISORP 2006 conference
Reviewer, ACAM Conference
Reviewer, FRPRCST Conference, New Orleans, Louisiana, USA
Examiner, PhD thesis from University of New South Wales
Examiner, PhD thesis from University of Queensland
Examiner, Grants Committee, Italian Ministry of Education, University & Research Ministry

Bouazza, Malek (Assoc Prof)
Member, Editorial board for International Journal of Geotextiles and Geomembranes
Member, Editorial board for International Journal of Lowland Technoenv
Reviewer, Canadian Geotechnical Journal
Reviewer, Journal of Geotechnical & Geoenvironmental Engineering
Reviewer, Geotextiles & Geomembranes
Reviewer, Geosynthetics International
Reviewer, Journal of Waste Management
Reviewer, Acta Chimica
Examiner, Master thesis for the University of Ballarat
Examiner, Master thesis for the National University of Singapore
Examiner, Strategic Grant for NSERC, Canada

Currie, Graham (Prof)
Member, Editorial Board, Australian Road Research Board Journal “Road and Transport Research”
Reviewer, Australasian Transport Research Association
Reviewer, US Transportation Research Board Annual Meeting

Deletic, Ana (Dr)
Reviewer, ICUD Conference papers
Member, Organising Committee, UA&MWSUD Conference to be held in Melbourne in 2006 and organised by UWA
Member, Organising Committee, 11th ICUD 2008 to be held in Edinburgh UK
Reviewer, Water Research
Reviewer, Chemosphere
Reviewer, J. of Hydrology

Fletcher, Tim (Dr)
Member, Editorial Board, Urban Water Journal, UK
Reviewer, Revue Européenne de Génie Civ. France

Grzebieta, Raphael (Assoc Prof)
Peer Review Papers Editor, J. of the Australian College of Road Safety
Member, Editorial Board, Int. J. of Crashworthiness
Member, Editorial Board, Electron. J. of Structural Engineering
Member, Editorial Board, E Austral Australian J. of Structural Engineering

Kodikara, Jayantha (Dr)
Reviewer, Canadian Geotechnical Journal
Reviewer, J. of Geotechnical & Geoenvironmental Engineering
Reviewer, ASCE Journal
Reviewer, J. of Waste Management
Reviewer, Int. J. of Geomechanics
Reviewer, Computers and Geotechnics

6.5. Services to Expert Bodes and Expert Advice

Currie, Graham (Prof)
Invited Speaker, Victorian Parliamentary Inquiry into Sustainable Cities
Invited Speaker, Victorian Competition and Efficiency Commission Inquiry into “Managing Transport Congestion”
Deletic, A. (Dr)  
Advisor, Development of collaboration with Landcare Research, New Zealand

Grzebieta, Raphael (Assoc Prof)  
ATSB National Road Safety Strategy Panel, Canberra, February  
Victorian Coroner’s Inquest into All Terrain Vehicle Fatalities  
NSW Coroner’s Inquest into death of Bethany Holter

Ladson, Tony (Dr)  
Advisor, Victorian National Parks Association on water management in the Barmah-Millawa Forest  
Advisor, Environment Victoria on water policy  
Advisor, Department of Sustainability and Environment on stream condition measurement

Mitchell, Grace (Dr)  
Member, Judging Panel, UnibadNations Association World Environment Day Awards  
Advisor, Development of collaboration with Landcare Research, New Zealand

Mudd, Gavin (Dr)  
Expert witness, Hearing of the House of Representatives Committee Inquiry on Australia’s Uranium Resources

6.6. External Seminars, Courses, Workshops and Conferences

Al-Mahaidi, Raedh (Dr)  
Seminar presentation on “Carbon Fibre Technology; the design, supply and use of carbon fibre”, Structural Branch Engineers Australia, Victoria Division, Melbourne, April
Research Workshop on Advanced Engineering, Joint Monash University/Central South University/Wuhan University of Technology workshop, Wuhan, China, October

Bouazza, Malek (Assoc Prof)  
Seminar on landfill failures to the Australian Geomechanics, Victoria Branch, Melbourne, June  
Short course on basic design of piled foundation, Monash Conference Centre, Melbourne, August  
Teaching short course on Geosynthetics in Environmental Engineering, Sydney, Brisbane, Melbourne and Perth (course sponsored by the Australasian Chapter of the International Geosynthetics Society), October  
Training course on Geosynthetic Applications in Geotechnical Engineering for Engineers University Professors in South East Asia, Bangalore, sponsored by the International Geosynthetics Society (ABS), December

Currie, Graham (Prof)  
Transport Research @ Monash (TRIGRA) Workshop, Bayview Conference Centre, Clayton, March/April  
Planning Public Transport Services, October

Deletic, Ana (Dr)  
Workshop on Stormwater Reuse, Brisbane, May

Fletcher, Tim (Dr)  
MUTIC Short Course, Sydney, July

Grzebieta, Raphael (Assoc Prof)  
SAE Road Safety Seminar for Industry, Melbourne, September  
Safety Seminar organized by the Australasian College of Road Safety, Perth, February

Kodikara, Jayantha (Dr)  
Seminar on unsaturated soils and discussion with PhD students, University of NSW  
Seminar, Main Roads Queensland, Brisbane, November  
Short course on basics of pile foundation, Melbourne, August

Ladson, Tony (Dr)  
RRB8-5 Workshop (30 November, 1 December)

Mitchell, Grace (Dr)  
Workshop on stormwater reuse, Brisbane, Queensland, May  
Presentation at the Stormwater Innovation Workshop, Beaconsfield, Victoria, June  
Aquaculture Training courses, Brisbane, Queensland in June and Sydney, New South Wales, in July

Pathegama Gamage, Ranjith (Dr)  
Seminar presented to the Research Institute of Innovative Technology for the Earth (RITE), Tokyo, Japan

Rose, Geoff (Assoc Prof)  
TRIGRA (Transport Research @ Monash) Workshop, Bayview Conference Centre, Clayton, March

Sanjayan, Jay (Assoc Prof)  
Technical evening for Concrete Institute of Australia on “Environmental Sustainable Development: Role of Concrete”, March

Wemmern, Irwin (Mr)  
RORSB-5 Workshops, Monash University, Clayton Campus, November/December  
Australian Rainfall and Run-Off Workshop, Sydney, November

Wong, Bill (Dr)  
Short course on Steel Structures Design to AS4100, Monash University, August and October  
Short course on Fire Engineering Design of Reinforced Concrete and Steel Structures to the British and European Codes, University of Hong Kong, December

Young, William (Prof)  
Transport Multidisciplinary (TRIGRA) Workshop, Bayview Conference Centre, Clayton, Victoria, March

6.7. Special presentations

Al-Mahaidi, Raedh (Dr)  
Invited paper on "Australia Iraq Research and Training Programs" and chaired a plenary session at the Second International Symposium on Higher Education in Iraq, University of Westminster, London, September

Bouazza, A. (Assoc Prof)  
Invited lecture on geosynthetics reinforcement in landfills at the GeoFlorida Conference, Austin, Texas (USA), January

Currie, Graham (Prof)  
Keynote speaker – Monash Public Transport Design Research Innovation Expo, November  
After Dinner Speaker – Australian Institute of Traffic Planning and Management Victorian Section Annual Meeting  
Address to the International Union of Public Transport National Assembly, November  
Address to the Victorian Roads Based Public Transport Advisory Council Public Forums – Bendigo, Casey and Coburg, November  
Address to the Metropolitan Transport Forum Launch of 'Most Livable and Best Connected' Publication  
Address to Melbourne City Council, ‘Melbourne Public Transport Futures’

Grzebieta, Raphael (Assoc Prof)  
Fy National Road Safety Council Consultative Workshop, keynote presentation, December

Ladson, Tony (Dr)  
Chair, Session on ‘Mesopotamian Marshes’, at the Australian Iraq Forum, November

Mitchell, Grace (Dr)  
Presentation on Urban Water Cycle Modelling to Engineers Australia, Sydney Division Water Panel, May

Mudd, Gavin (Dr)  
Presentation on the Great Artesian Basin for the local branch of the International Association of Hydrogeologists

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6.8. Consulting and Contract Research

Ibouza, Malek (Assoc Prof)
- Cyclic direct shear tests on calcarenite soils for the Woodside Angel offshore platform, North West Shelf, WA.
- Advanced Geomachines Pty Ltd, Perth.
- Performance of a geotextile cushion for a landfill liner system in Adelaide, S.A. for Goldier Associates Pty Ltd.
- Monotonic and cyclic direct shear test on calcarenite rocks, Dubai Tower, Doha (Qatar) for Survey Geotechnical (UK) and Foundation QA (Australia).
- Monotonic direct shear tests on modified material for Bobasli Dam, Tasmania for GHD Pty Ltd.
- Monotonic direct shear tests on embankment material, Royal Melbourne Showgrounds for Goldier Associates.
- Rock strength tests for the Northern Diversion Sewer, Coburg, SMB Pty Ltd.
- Review of Tamala landfill liner design, Perth, Meinhardt Pty Ltd.
- Review of Tulloch waste management waste leachate liner design for Goldier Associates Pty Ltd.
- Design of the long term containment facility for hazardous wastes in Victoria, EPA Victoria (Coordination of international peer review process).

Currie, Graham (Prof)
- Yarra Trans/Viaducts – Think Tram Policy Group – Advice on Before and After Study Approaches to Tram Development Initiatives.
- City of Melbourne – Transport Futures Review project.

Grzebiet, Raphael (Assoc Prof)
- Testing of bus frames, VicRoads.
- Analysis of seatback safety, Land Engineering Agency.
- Fatigue and Impact, Adelaide, DVExperts.
- Fatigue and Impact Tree Crash, DVExperts.
- Battery Systems, DVExperts.
- Fatigue and Impact Walkways, DVExperts.

Kelso, Robert (Dr)
- Physical model study of Uitter Trap for Clervalek Pty Ltd.
- On-going model study of 2km stretch of Lower Snowy River, as part of major studies to restore health to the Lower Snowy River.
- Model study of sewerage vortex drop structure.
- Design, construction and installation of an air lift fish pump.
- Model study of major sewer siphon.

Kodikara, Jayantha (Dr)
- CNS Testing for Queensland MainRoads.

Ladson, Tony (Dr)
- Geomorphic Investigation of the Little Striny park Creek for Melbourne Water and Earth Tech Engineering.
- Best management practices to reduce nutrient loads to the Gippsland Lakes.

6.9. Professional Development

Bambach, Michael (Dr)
- Course organised by WorkCover Victoria on “Safe handling and safe use of explosives.”

Deletic, Ana (Dr)
- Graduate Certificate in Higher Education unit HED5005.

Haque, Asadul (Dr)
- Faculty Teaching Retreat, May.

Kodikara, Jayantha (Dr)
- Outside Study Program, February-July.

Ladson, Tony (Dr)
- Outside Study Program (September 2006 to February 2006).

Mitchell, Grace (Dr)
- Postgraduate supervision accreditation course.

Mudd, Gavin (Dr)
- Graduate Certificate in Higher Education unit HED 5004.

Rose, Geoff (Assoc Prof)

Zhao, Xiao-Ling (Prof)
- Overseas Study Program (DSP) for the period June to December Master of Business Administration study program.

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