The Department of Civil Engineering acknowledges the Traditional Owners and Elders, past, present and future, of all the lands on which Monash University operates.
VISION

Global leaders in education and research innovation with societal relevance and impact

MISSION

Building a better future through innovative and resilient solutions to societal problems

Equipping the future leaders of society with the skills to meet the demands of tomorrow’s problems

GOALS

To be the top civil engineering school in the region and one of the best in the world
To produce graduate engineers with the capacity to evolve according to the industry’s needs
To undertake interdisciplinary research that addresses societal grand challenges
To provide technological solutions that lead to resilient and innovative practices in industry

RESEARCH THEMES

Energy, water and resources
Monitoring, prediction and protection
Resilience, infrastructure and society
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INTRODUCTION FROM THE HEAD OF DEPARTMENT

The year 2017 was another busy one, with the pursuit of the infrastructure renewal program; consolidating course design, structure, and mode of delivery; and strengthening collaborations with international institutions in the delivery of programs that encourage transnational teaching, learning and research. Underpinning these activities is the department’s vision to be global leaders in education and research innovation that is relevant to, and has an impact upon, society.

The renovation of the Keller Hydraulic Laboratory into a world class ‘Living laboratory’ strengthens the Water Group’s research and teaching capabilities. Included in the facility are living roofs/walls, a state-of-the-art greenhouse, raingardens, and bio-filtration plots. The building was officially opened in December.

Among other infrastructure developments is a visualisation lab that allows students and researchers to visualise and analyse data applicable to transportation, construction, water, structural, geomechanics, environmental and resources engineering. This is due for completion in 2018.

The departmental meeting room and adjoining kitchen was also upgraded, including video conferencing and collaborative audio-visual capabilities. An additional meeting room with advanced audio-visual capabilities was also developed to meet the growth in the department.

The department also embraced the online education revolution by offering our Master of Advanced Engineering core units online as electives to our distance education masters programs – Master of Infrastructure Engineering and Management, and Master of Transport and Traffic. The 2+2 linkage program with Central South University continues to attract strong interest. This is a program where the Central South University students complete their first two years of study in China and then transfer to Monash for the final two years, often staying on to do either a Masters or PhD.

The research powerhouse of the department continues to be in the department’s exceptional PhD students. Not only is the student quality increasing but so to have the numbers. This growth and quality is also represented in our other student portfolios, including undergraduate and postgraduate coursework. And, although the civil engineering streams of the Master of Advanced Engineering has only been running for two years, its enrolments are increasing at a rapid rate.

Research continues to be a strength in the department with Australian Research Council grants accounting for 41 per cent of total research income in 2017. The department’s researchers increased their publication output by more than 70 percent from the previous year.

Overall, the Department of Civil Engineering continues to perform strongly in its teaching and research, including engagement beyond our shores. I thank all the staff in the department for their support throughout the year, with 2018 promising to be another productive year as we prepare for more improvements in our student programs, further realisation of infrastructure renewal projects, and strengthened collaboration with international campuses and partners.

Professor Jeff Walker
DEPARTMENT OF CIVIL ENGINEERING 2017 FAST FACTS

Ranked 4th best Civil Engineering course in Australia & 29th globally

Source: 2017 QS University Rankings

Students

Total: 2,492*
Female: 21%
Male: 79%

Higher Degree by Research Completions

Doctorate: 24
Masters: 6

Research Publications*

- Journal Article: 258
- Conference Paper: 29
- Review Article: 6
- Book Chapter: 2
- Book: 1
- Journal Editorial: 1

Research Income: $6,875,105

Notes:
- Includes students enrolled in a Civil Engineering specialisation at Clayton and Malaysia campuses and all ITB-Monash and joint Southeast University international students.
- Includes staff at Clayton, Malaysia and Suzhou. Does not include casual or adjunct staff.

Specialisations

Civil Engineering
Resources Engineering
Environmental Engineering

Staff

62 in total
Academic: 44
Professional: 18

Includes staff at Clayton, Malaysia and Suzhou. Does not include casual or adjunct staff.
AWARD HIGHLIGHTS IN 2017

The Department’s 2017 Annual Civil Engineering Dinner was held on Wednesday 14 June at which numerous departmental and professional awards were presented.

Departmental Award for:

**Excellence in Research**
Awarded to the academic who has a strong publication record, innovated, collaborated and networked, research grants, served international journals and supervised postgraduate and trained higher degree candidates:
Associate Professor Valentijn Pauwels

**Departmental OHS Award**
Awarded to the staff member who exemplifies the application of the University’s Occupational Health and Safety, Policies and Procedures in experimental laboratory or field research work
Dr Rebekah Henry

**Departmental Professional Staff Member Award**
Awarded to the professional staff member who provides exceptional professional support
Mr Long Goh

**Departmental Team Player Award**
Awarded to an exceptional staff member, who exemplifies unselfish support, with outstanding contributions to team effort and commitment towards achieving the department’s strategic and operational goals: Dr Colin Caprani

**Austroads Best Paper Award**
Dr Colin Caprani

*Dynamic Load Allowance—A Synthesis of the State of the Art*

**40 Year Service Award**
Emeritus Professor William Young

**Research Impact Award**
Awarded by the Australian Road Research Board for their research ‘A Global Shift in Public Transport Revenue Compliance Using Cross Disciplinary Research in Engineering, Psychology and Operations’:
Professor Graham Currie
Dr Alexa Delbosc

**Dean’s Awards 2017**
Awarded to a staff member for Excellence in Research by an Early Career Researcher
Dr Alexa Delbosc

**Vice Chancellor’s & Dean’s Award for Research Impact (Economic and Social Impact)**
Awarded for work on “A global shift in public transport revenue compliance using cross disciplinary research in Engineering Psychology and Operations”:
Professor Graham Currie
Dr Alexa Delbosc
Dr Alexa Delbosc

**Best Paper in Geosynthetics International Journal (Q1 Journal) in 2016**
Awarded in 2017 to:
Dr M.A. Rouf
Professor Bouazza
Adjunct Professor Kerry Rowe

**ISSMGE Outstanding Technical Committee Award on Energy Geotechnics**
The award recognises an ISSMGE Technical Committee for its work in the geo-engineering sphere
Professor Malek Bouazza, member of TC308-Energy Geotechnics Committee

**Telford Premium Best Paper in Environmental Geotechnics Journal**
Awarded by the British Institution of Civil Engineers
Professor Abdelmalek Bouazza
Md Abdur Rouf
Dr Rao Martand Singh
Professor R. Kerry Rowe
Civil Engineering Post-Graduate Conference
Organised by students for students and held at Engineers Australia HQ, attended by 123 people, the conference provided an opportunity for post-graduate students to pitch their research to industry representatives. The department also highlighted its outstanding research.
Some of the attendees were Anita Curnow, Executive Director of Access and Operations at VicRoads, and Monash University Civil Engineering PhD Alumni who spoke about their experiences following their PhD.

Congratulations to:

**Best Paper**
- Transport: Ziyuan Gu
- Structures: Mahsa Mirmoneni
- Water: Hossein Basser
- Resources: Yanlong Zheng
- Geomechanics: Nhu HT Nguyen

**Best Poster**
- First: Tingwen Sun
- Second: Solomon Lin
- Third: Chengyu Qiu

**Best Pitch**
- First: Veljko Prodanovic
- Second: Mayer Melhem
- Third: Laura Aston

A Research Picture Tells 80,000 Words
Held in October 2017 and open to postgraduate research students in the department, the photography competition sought pictures that conveyed the student’s research topic or the purpose of the research topic.

Congratulations to:
- First: Taru Jain
- Second: Rukshan Azoor
- Third: Radhika De Silva
- People’s Choice: Simone Gelsinari

2017 First Prize—Disrupting Shared Mobility? by Taru Jain

2017 People’s Choice Winner—Nothing withstands the strength of the ocean by Simone Gelsinari
Future Students Event
The Year 8 Challenge is an outreach program designed to encourage junior secondary school students in the field of engineering. They are invited to participate in workshops run by staff who are specialists in their field. The event is held over three days. The program introduces future engineering students to a variety of disciplines. Among them is civil engineering where students designed, built and tested small-scale spaghetti bridges, among other activities.

Open Day 2017
Held on Sunday 6 August 2017, a large number of secondary school students and their parents attended. The day provided school students the opportunity to visit the department and get an idea about who we are and what we do. Current students were available to answer questions about what it’s like to study civil engineering at Monash University, and about life on campus. Academics and researchers were available to provide information about courses, specialties and careers.
PROJECT HIGHLIGHTS IN 2017

Advanced Condition Assessment and Pipe Failure Prediction Project
Pipe failure can mean communities lose access to potable water resulting in inconvenience to households and industry, as well as significant economic costs. Led by Professor Jayantha Kodikara (pictured), a number of large and vitally relevant research projects are greatly mitigating the potential risks posed by ageing pipes in Australia and globally. The ACAPFP project along with the Smart Water Fund project produced a number of innovations, including a model used to predict the probability of pipe failure, a world first calibrated model that predicts the long-term (>20 years) exterior corrosion of cast iron water pipes, and a paradigm-shift in pipe condition assessment and interpretations of information gathered from existing pipe CA tools though innovative machine learning methods. As a result, the international water community can address pipe failure management more accurately, efficiently and economically, with better customer service. The project also established a new failure mode concept in relation to pipes leaking prior to a catastrophic burst—Leak Before Break. The value of this concept is that it can be used to prevent pipe failure through leakage monitoring, which was previously used only for preventing water wastage.

Modular Construction Codes Project
In this project, Professor Yu Bai (pictured) and his research team have been conducting a series of research activities on mechanical properties of structural and non-structural connections, responses of building modules during transportation, and system reliability and robustness of modular buildings. He was instrumental in developing -- in partnership with Professor James Murray-Parkes, head of Brookfield Scientific Solutions Group and Multiplex Engineering Innovations Group -- and launching a new handbook for the design of modular structures, a world first of its type. With guidance from the Modular Construction Codes Board and support from Engineers Australia, a range of industrial partners, and the Victorian Government, the handbook is specific to modular construction, and aims to influence the efficient use of limited resources within the building construction industry, and produce more affordable, well-designed and resilient structures.

Swamped
Civil engineering is more often associated with the construction and maintenance of structures, transport, mining, irrigation, energy, among other things. It is not often associated with art and design exhibitions.

The Cooperative Research Centre for Water Sensitive Cities (CRCWSC) research team, including Dr Christian Urich (pictured) from the Department of Civil Engineering and a member of the CRCWSC, collaborated with staff from Monash Art, Design and Architecture (MADA), and sensiLab to produce an exhibition that contemplates the consequences of climate change and rapid urbanisation on swamp sites. Swamped uses Elwood as a case study. The bayside suburb of Elwood was once a wetland area subject to episodic flooding. Swamped asks what will happen to Elwood with rising sea levels, droughts and storms? The exhibition invited the audience to reconsider the way in which we think of a city—not in terms of economics or politics but rather the way that water runs through it. The exhibition was held at The Gallery, St Kilda Town Hall, St Kilda 22 February 2017 to 22 March 2017.
EDUCATION

Course Offerings
In 2017, the department offered the following degrees:

On Campus
Bachelor of Engineering in—
• Civil Engineering
• Environmental Engineering
• Geological Engineering
• Mining Engineering
• Oil and Gas Engineering
• Renewable Energy Engineering

Off Campus
• Master of Infrastructure Engineering and Management
• Master of Transport and Traffic

Suzhou Campus
• Master of Transportation Systems

Undergraduate Students*
In 2017, 7,751 undergraduate students studied units offered by the Department of Civil Engineering. Of these, 1,536 at Clayton campus enrolled in an engineering specialty.

Clayton Campus
—— Civil Engineering 1,338
—— Environmental Engineering 147
—— Mining Engineering 51

Malaysia Campus
263

Total Undergraduate 1,799

*Includes double and single degrees undertaken.

Postgraduate Students*
Clayton 488
Malaysia 7
Total Postgraduate 495

*Coursework students only

Higher Degree by Research Students
PhD by research students* 188
Masters by research students 10
PhD by research completions 24
Masters by research completions 6

*Includes IITB-Monash students and Joint PhD with Southeast University.
GRADUATIONS

Higher Degree by Research Student Graduations

PhD
Xing Li
Mojtaba Farahi
Katerina Pavkova
Ashani Savinda Ranathunga
Nomeritae
Yanlong Zheng
Gardiya Punchihewage Dilanth De Silva
Daniel John King
Fatemeh Javidan
Richard Amoh-Gyimah
Mustafizur Rahaman
Seyyed Sajjad Hosseini
Xiaoying Cao
Qianhui Zhang
Sandy Peischl
Stephen Alan Northey
Farhana Ahmed
Zhujing Zhang
Timothy Tyson Werner
Lu Zhang
Ashley James Wright
Wenjun Feng
Roger Francis Toleman

PhD—Indian Institute of Technology Bombay (IITB)
Nikhil Sirdesai

Masters by Research

Bertrand Teodosio
Maryam Shirdashtzadeh
Hayder Mohammed Hayder Al-Taweel
Maozhu Tang
Ahmed Rasheed Mirza
Bill Wang
Postgraduate Student Graduations

Graduate Diploma in Transport and Traffic
Matthew Grant Adams
Megan Louise Waddell
Cheuk Suen Lau

Master of Infrastructure Engineering and Management
Moshraful Chowdhury
Anil Dilman
Samantha Libby Harrison
Aaron Matsinos
Sylvester Otumbo Otieno
Andrew Leslie Ryan
Suthaharan Sivashanmugam
Sudharsan Srimanoharan
Arunthavarajah Alankeswaran
Aouss Al-Twajiry
Benjamin David Harries
Ronnie Anthony Paulus
Usman Muhammad Qureshi
John Sciberras
Kalaruban Thiagarajasarma

Graduate Diploma in Infrastructure Engineering and Management
Farzad John Moghaddas
Mohamed Taleb

Master of Traffic
Peter Marshall Eady
Ishan Sankalpa Gangabada Arachchige
Brendon James
Michael Craig Logan
Soumendra Nath Paul
Viliami Peila Siale
Panduka Malinda Bandara Dassanayake

Master of Transport
Wing Yin Cheng
Timothy Robert Clark
Stephen Larter
Christine Laurence
Viliami Peila Siale
Johann Tay
Martin Thomas Anderson
Brigette Humphrey-Robinson
Sonia McGregor
Chloe Edwina Williams

Master of Advanced Civil Engineering
Infrastructure Systems)
Yilun Chen
Wing Yin Cheng
Kwong Hiu Tung Rosten
Zhiwei Xu
Bhuvanesh Doma
Ignatius Giovanni

Master of Advanced Civil Engineering
(Water)
Alejandra Acosta Hermosillo
Chen Yugen
Yangyang Deng
Fei Feng
Kai Huang
Qi Ma
Shangxuan Ma
Chaoqun Song
Tao Tian
Wang Jingye
Wu Wenjie

Master of Advanced Civil Engineering
(Transport)
Cong Wei

Master of Transportation Systems (Double Masters with Southeast University)
Weijie Chen
Jie Chen
Shen Hongfei
Chaoqun Song
Tao Tian
Wang Jingye
Bin Wang
Wu Wenjie
Undergraduate Graduations

Bachelor of Engineering (Honours) in Civil Engineering
Ahmed Alameri
Lin Tung Ang
Brad Battley
David Beaumont
Julian Birthistle
Guozheng Cao
Qiaolei Cao
Jun Wei Jason Cheah
Xinying Chen
Zheyi Chen
Xuefeng Cui
Peter Danatzis
Jianghua Deng
Vithyea Eap
Jeremy Erlich
Tsz Hin Fung
Dennis Graf
Xiaoying Gu
Christopher Hew
Dean Kueh Zhen Hua
Yankai Huang
Matthew Huynh
Jake Kontogeorgis
Jia Zhe Lai
Chi Shing Lau
Oliver Lee
Yongxin Lu
Timothy Lui
Guan Hua Luo
Zarah Matthew
Ka Chun Dicky Ng
Chun Wai Ng
Zhong Tah Ng
Hugo Nicholls
Anthony Panayotides
Rimal Patel
Zhiye Rao
Yini Rong
Krzysztof Sadowski
Mihiri Gamage Sanjeewa
Pengsheng Shi
Rachel Tai
Hui-Lin Tan
Udit Thummar
Kevin Tiong
Ding Xin Wan
Chuhong Wang
Miao Wang
Georgina Williamson
Daniel Chee Hong Wong
Kai Ming Wong
Xinyue Xu
Han Yang
Xiaohan Yang
Sannva Yin
Qiqin Yu
Rendi Yuwono

Bachelor of Engineering (with Honours) in the field of Civil Engineering
Noura Al-Fakih
Padraic Beasley
Andrew Biviano Dinges
Hannah Cameron
Sui Du
Jason Durand
Joo Wee Foo
Taylor Gale
Umashankar Gopal
Shen Hong Christopher Hew
Peter Hosri
Al-Amin Hossain Apon
Anushtiga Jeganathan
Daniel Jihna Kim
Stefan Kitanovic
Giorgo Kouroulis
Shun Jie Lim
Alexander Luc
Jarrod Luxton
Trent Matheson
Matthew Nandor
Tan Hung Nguyen
Vaibhav Pohani
Zijao Qiu
Kevin Rusli
Erdem Sen
Joshua Williams
Kailey Wilson
Brandon Tuck-Leong Wong
Aaron Wu
Jianbin Xu
Calvin Sii Hong Yei
Shijia Zhang
Han Zhu
Bachelor of Arts & Bachelor of Engineering (with Honours) in the field of Civil Engineering

Joel McCreanor
Oliver Vile’
Lixin Wang

Bachelor of Commerce & Bachelor of Engineering in the field of Civil Engineering

Andy Yu Yao Ma

Bachelor of Commerce & Bachelor of Engineering (Honours) in Civil Engineering

Rhys Cosmo
Jihyung Kim
Mark Morando
Sachindra Rajapakse
Joshua Robinson
Clinton Schramm
Benjamin Ung
John Walker
Julian Weekley
Vincent Yu

Bachelor of Engineering in the field of Civil Engineering & Bachelor of Science

Andrew Stevenson

Bachelor of Engineering (Honours) in Civil Engineering & Bachelor of Science

Andrew Griffiths

Bachelor of Engineering (with Honours) in the field of Civil Engineering & Bachelor of Science

Alishan Ajamyan
John Baker
Haydn Brouwer
Clements Hui Chan
Leonard Chow
William Crawford
Scott Crawshaw
Alice Digby
Joel Docker
George Hamer
Khalid Hassan
Vivian Hoang
Zubin Irani
Markus Kreher
Benjamin Lang
William McCall
James Sissins

Bachelor of Commerce & Bachelor of Engineering (with Honours) in the field of Civil Engineering

Wilson Au-Yeung
Steven Azari
Yostina Badawi
Junil Bae
Thomas Barbour
Cameron Butler
Richard Chau
Kyle Conlon
James Cran
Liesel De Silva
James Di Paolo
Kevin Dias
Kate Djumas
Nicholas Ervin
Yuanting Ge
Damien Hatch
Prashanthi Jitendaran
Mark Jones
Phillip Kossmann
Tharindu Kularatne
Amber Lack
Jason Keng Yew Leung
Tony Liang
Thomas Lobley
Desmond Manupillai
Robert McMillan
Aniq Mian
Shali Mallawitiya
Miranda Newnham
Matthew Owen
Sudish Perera
Thomas Rawling
Chern Rodrigues
Jarryd Skene
Joshua Steiger
Ashan Subasinghe
Ivan Susanto
Kevin Sylvester
Harin Tennakoon
Joseph Tissera
Richard Waid
Dinith Wanninayake
Cheuk Hin Joshua Wong
Matthew Yates
David Zhao
Bachelor of Civil & Environmental Engineering
Marcus Heyne

Bachelor of Civil & Environmental Engineering (Honours)
Jack Dykes
Lei Gao
Huawei Kong
Junyu Li
Lianggang Li
Scott Marriott
Hangyu Qiu
Ziyuan Wang
Yuekai Xie
Feng Xu
Zhengtong Zhang
Limin Zhou
Yize Zhou

Bachelor of Biomedical Science & Bachelor of Engineering (with Honours) in the field of Civil Engineering
Alexander Sheng Wei Lee

Bachelor of Environmental Engineering
Ding Cui

Bachelor of Environmental Engineering (Honours)
Lixuhan Chen
Xin Ding
Yongxuan Ren
Jin Xu
Qi Zhang
Yi Zhang
Yichi Zhang
Siyu Zhao

Bachelor of Environmental Engineering (with Honours)
Wong Keat Cheong
William Harris
Alec Miller
Thi Phuong Chi Nguyen
Jacqueline Whiteford

Bachelor of Environmental Engineering (with Honours) & Bachelor of Science
Mitchell Dixon
Lana Griffin
Rico Kobelt
Claire Marshall
Sethu Shanmugam
Elizabeth Williams

Bachelor of Commerce & Bachelor of Environmental Engineering (with Honours)
Priya Agarwal
Terence Gear
Joanna Lewandowska
James McCutcheon
Shaadma Saif
Andy Vu

Bachelor of Architectural Design & Bachelor of Engineering (with Honours) in the field of Civil Engineering
Shivani Amin
Geoffrey Britto
Andrew Carvalho
Kenrick Hao-Kang Chen
Yuzchen Chen
Lei Huang
Trung Truc Do Huynh
Katherine Larkin
Joseph Mascaro
Vishaka Nagendra
Emily Russo
Viet Cao Tran
Nancy Yassi

Bachelor of Mining Engineering (Honours)
Nicholas Burri
Mengqi Huang
Ashley Lamble
Trinh Dang Le
Shannon McMahon
Phillipa Mitchell
Michael O’Bree
Yungkun Zhuang
Bachelor of Engineering in the field of Civil Engineering
Ziyang Gu
Zhixian Koo
Vincent Jia
Tsun Hin Law
Zhihang Li
Paul Liang
Bruce Lok Hung Lung
David McDonald
Michael Sullivan
Ye Siang Tey
Nathan Tran
Samuel Whatley
Wanxiang Yang
Jiahui Zhao
Yengzi Zhong
Shitong Zhu

Bachelor of Civil & Environmental Engineering
Marcus Heyne

Bachelor of Arts & Bachelor of Environmental Engineering (with Honours)
Zoe Gerardson

Graduation day May 2017

Class of 2017
STUDENT AWARDS

The Department's 2017 Annual Civil Engineering Dinner was held on Wednesday 14 June at which numerous awards were presented to students for their achievements.

**Award for Best MEngSc (Research) Thesis**
‘Reinforcing effect of graphene oxide on cement mortar under high strain rate loadings’
Mr Chenyang Li

**Coffey Geotechnics Prize for Geoengineering at Level 2**
Best overall performance in the Geomechanics unit CIV2242
Xinjun Liu

**SRIA Prize for Concrete Structures**
Best overall performance in the Structures unit CIV2226
Xinjun Liu

**Australian Steel Institute Prize**
Best overall performance in Steel Structures unit CIV3221
Lachlan Hawthorn

**Douglas Partners Prize for Geomechanics**
Best overall performance in Level 3 Geomechanics units CIV3247 & CIV3248
John Baker

**Railand Prize for Water Engineering Level 3**
Best overall performance in the Water Engineering unit CIV3264
Lachlan Hawthorn

**GHD Highway Design Prize**
To the group who submitted the best Highway Design Project in CIV3238
Andrew Montgomerie
Hoai-My Truong
Harry Vu
James Wah

**GHD Civil Engineering Award**
Awarded to the top ranking graduate in Civil Engineering in the previous year
Khuzair Rehan

**GHD Prize in Water Engineering**
For the grease proficiency in Water Engineering units CIV4261 & CIV4268
Daniel Heap

**Traffic Group Scholarship Level 2**
Awarded to students who intend to pursue a career in transport engineering in memory of Anthony Mirabito
Tyler O’Hare

**Traffic Group Scholarship Level 3**
Awarded to students who intend to pursue a career in transport engineering
Anna Loughnan
**Brian Cherry Award**
Awarded by the Victorian Branch of the Australasian Corrosion Association Inc. to Victorian corrosion students for the best 15 minute presentation about their research
Rukshan Azoor, second place

**Best New Research Talent (Male)**
Awarded by the Australian Road Research Board
Arooran Sounthanarajah

**The AusIMM WIMNet Victoria Supporting Education for Women Program (SEWP)**
Awarded to students studying industry relevant courses with proven involvement and dedication to the industry
Kubra Taher, Inaugural Recipient

**Three Minute Thesis (3MT)**
An academic research communication competition, condensing years of complex PhD research into a three-minute presentation

**Departmental Winner:**
Antara Dasgupta—IITB student

**People’s Choice Award:**
Antara Dasgupta—IITB student

**Title**—‘Gauging’ Flood Situations

**Best Three-Minute Thesis Talk**
An award for senior researchers at the IITB-Monash Research Academy greater than two years in the Academy
Tushar Gupta—IITB student

**Best Poster Presentation**
Awarded by the IITB-Monash Research Academy
Tushar Gupta—IITB student

**Best Paper at the International Conference Earth Science and Engineering, Padang Indonesia**
Tushar Gupta—IITB student

**Best Cumulative Performance Index Award**
Awarded for academic achievement by the IITB-Monash Research Academy
Nithyapriya Boopathi—IITB student

**Best Student Presentation Award**
Australian Land & Groundwater conference in New Zealand
Shashi Biliangadi—IITB student

**INSA Young Scientist Award 2017**
For creativity and excellence in young scientists
Dr Vikram Vishal—IITB student

**Scholarships were awarded for the following number of students**

**CSIRO Postgraduate research scholarship**
Jack Wu
Haozhe Xin
Wei Wang
Andrea Massetti

**Flagship Collaboration Fund (CSIRO)**
Jihane Elyahyioui

**Monash Data61 Supplementary Postgraduate Research Scholarship**
Solomon Lin
Shaohan Zhao

**VicRoads Industry Scholarship**
Samithree Rajapaksha

**PTV Industry Scholarship**
Homayoun Rafati
Taru Jain
Maryam Nawaz
Rejitha Nath

**Metro Industry Scholarship**
Lisa Fu

Gabriela Love, Chair of WIMNet Victoria; Mary-Beth Adam, Treasurer of WIMNet Victoria, Kubra Taher and Gavan Collery, Co-founder and Steering Committee member of the Melbourne Mining Club
Foundation Industry Prize for Soil Engineering  
For the best foundation design in Soil Engineering CIV4249  
Dulan Dantanarayana

Richardson Prize in Transport  
For the greatest proficiency in one Level 4 Transport elective and Final Year Transport Project in the previous year  
Nathan Lindner

Traffix Group Prize at Level 4  
Best overall performance in all Transport units from across Levels 2-4  
Michael Byrne

AECOM Civil & Environmental Engineering Practice Prize  
For the highest scoring group in unit CIV4212  
Qing Di Sui  
Yin Li  
Desmond Manuelpillai  
Christopher Nikcevich  
Kai Ming Wong

Civil Contractors Federation Ian Jacka Award  
Awarded to the top student in Civil Engineering Construction CIV3203  
Hannah Bragge  
Billy Liolios  
Minghao Li

The Geofabrics Pty Ltd Prize  
Awarded for the best Geosynthetics final year project in CIV4248  
Daniel Kim  
Joseph O’Farrell  
Evan Williamson

Golder Associates Prize  
Awarded for the best overall performance in Geotechnical & Geoenvironmental Engineering  
Supun Mendis

Sustainable Transport Prize in Civil & Environmental Engineering Practice  
Awarded to:  
William Crawford  
Sunny Chen  
Malcolm Liu  
Ahmed Al-Hilli  
Yifan Zhang

SMEC Prize  
Awarded for Best Geomechanics Final Year Project  
Shalit Millawitiya

IStructE Prize  
Awarded for Best Structures Final Year Project  
Apon Al-Amin Hossain

TEACHING AWARDS

Teaching Fellow Awards  
For their contribution to teaching  
Ms Margaret Arblaster, Consultant  
Dr Nawshad Haque, CSIRO  
Dr Joel Gniel, Golder Associates  
Dr Darren Paul, Golder Associates  
Mr Derek Hamilton, Fulton Hogan  
Mr Jeff Hallberg, Fulton Hogan  
Mr Predrag Draca, Fulton Hogan  
Mr Stephen Smith, Fulton Hogan  
Dr Sajjad Maqbool, SMEC  
Mr Keith Midson, Midson Traffic  
Dr Brendan Pender, Monash University  
Dr Euan Ramsay, Department of Transport  
Dr Abou Vakili, Mining One Consultants  
Ms Bonnie Glaister, Monash University  
Mr Tim Werner, Monash University  
Mr Max Lee, Monash University

C Class Tram Melbourne Photo: Diliff - https://commons.wikimedia.org/
ALUMNUS OF THE YEAR

Ms Anita Curnow
Executive Director, Access & Operations, VicRoads

During her studies at Monash University Anita Curnow (pictured) gained a Deans Scholarship, Women in Engineering Cadetship with Melbourne Water, and both the Richardson and VicRoads Prizes in Transport Engineering. She graduated with a First Class Honours Degree in Civil Engineering in 1993, and a Master in Engineering Science in Traffic & Transport in 1999.

Having worked as an assistant editor for Traffic Technology International in the United Kingdom, a project manager in the Department of Infrastructure and VicRoads Anita has made significant contributions to civil engineering during her career.

In her address at the 2017 Annual Civil Engineering Dinner, Anita focused on the themes of respect, understanding and forethought in the practice of civil engineering. She stressed the importance of seeking and nurturing talent in those who underestimate their own abilities, and spoke about the structural, cultural and self-imposed barriers encountered by women engineers in the workforce. Her conclusion placed civil engineers in the pivotal role of producing facilities and systems for the benefit of humanity by respecting people of the past, understanding people of today and forethought for those of the future.
OUR PEOPLE

Teaching and Research Academics

Head of Department
Jeffrey Walker

Professors
Jayantha Kodikara
Yu (Barry) Bai
Abdelmalek Bouazza
Graham Currie
Wenhui Duan
Serge Hoogendoorn
Julia Lamborn
Marc Parlange
Ranjith Pathegama Gamage
Geoffrey Rose
Hai Vu
Jian Zhao
Xiao Zhao

Associate Professors
Victor Chang
David McCarthy
Valentijin Pauwels
Mohan Yellishetty

Senior Lecturers
Mehrdad Arashpour
Hai Bui
Colin Caprani
Edoardo Daly
Roger Dargaville
Alexa Delbosc
Asadul Haque
Amin Heidarpour
Tom Hughes
Ye Lu
Hossein Masoumi
Christoph Rüdiger
Elizabeth Sironic

Associate Professors of Practice
Stephan Arndt
Bre-Anne Sainsbury

Senior Lecturers of Practice
Pippa Connolly
Victoria Lamb

Lecturers
Yihai Fang
Inhi Kim
Anna Lintern
Robert Moehler
Phu Nguyen
Christian Urich
Brandon Winfrey
Xu Yang
Qianbing Zhang

Sunway Campus Academics

Professors
Khu Soon-Thiam

Senior Lecturers
Ahmad Mousa
Dennis Ong
M.E. Raghunandan
Amin Talei

Lecturers
Vivvi Anggraini
Daniel Kong
Suvash Chandra Paul
Ali Rashidi
Dr Susilawati
Kong Sih Ying
Izni Zahidi

Adjunct Research Fellow
Arash Behnia

Suzhou Campus Academics

Lecturers
Tanveer Adyel
Sina Alaghmand
Inhi Kim
Kun An
Ivan Zhang

Research Only Academics

Senior Research Fellow
Marilyn Johnson

Research Fellows
Peter Bach
Shujian Chen
Harsha Powdar
Guoyang Fu
Ying Gao
Stefania Grimaldi
Adrien Guyot
Chaoxun Hang
Rebekah Henry
Nam Hoang
Sajjad Hosseini
Fateme Javidan
Jian Ji
Asghar Korayem
Yuan Li
Mahsa Mirmomeni
Mohammad Nassirimia
Farhana Naznin
Emily Payne
Suranji Rathnayaka
Ezzat Shamsaei
Benjamin Shannon
Weilin Wang
Ash Wright
Xiaoling Wu
Nan Ye
Kefeng Zhang
Changxi Zheng
Adjunct Staff

Adjunct Professors
Riadh Al-Mahaid
Ana Deletic
Omid Ejtemai Jandaghi
Terry Liu
Masoud Motavalli
Ronald Rowe
Ahmad Shayan
Chien Wang
Xiaming Wang
William Young

Adjunct Associate Professors
Bill Wong

Adjunct Senior Lecturer
Richard Knight
Vincent Lemiale

Adjunct Senior Research Fellows
Gary Au

Adjunct Research Associates
Chris Haberfield
Robert Keller
Tony Ladson
Julian Seidel
Marcello Serini
Geoffrey Taplin

Honorary Associates
Solomon Cohney

Teaching Associate
Abou Vakili Mirzamani

Monash University Affiliate
Nawshad Haque

Teaching Fellows
Margaret Arblaster
Predrag Draca
Rick Brake
Khaled Elagha
Bonnie Glasier
Joel Gniel
Jeff Hallberg
Derek Hamilton
Nawshad Haque
Zahidul Hoque
Max Lee
Sajjad Maqbool
Keith Midson
Darren Paul
Brendan Pender
Euan Ramsay
Tony Richardson
Rita Seethaler
Stephen Smith
Abou Vakili
Tim Werner
Deming Whitman

Administrative and Technical Staff *

Gary Adamson
Anthony Brosinsky
John Clements
Andres Cortes
Zoltan Csaki
Ravin Deo
Jeffrey Doddrell
Tara Fry
Long Goh
Lyn Harris
Kristie Hunter
Rachel James
Bill Kilpatrick
Stefan Kitanovic
Peter Kolotelo
Michael Leach
Min Major
Sarvan Mani
Kiri Mason
Ian McHugh
Brenda O’Keefe
Christopher Powell
Gordon Privitera
Tharaka Rathnaweera
John Rebolledo
Monica Sanders
Christelle Schang
Irene Sgouras
Noi Souvandy
Mark Taylor
Tracy Warner
Richard Williamson
Leslie Wong Der Zhuang
Sherry Zhang

* Includes ongoing, fixed-term and casual staff

New Staff
Tanveer Adyel
Sina Alaghmand
Peter Breen
Wei-Chung Chang
Roger Dargaville
Amirhossein Eslamikhouzani
Yihai Fang
Adrien Guyot
Chaoxun Hang
Hanaa Hegab
Thomas Hughes
Kristie Hunter
Stefan Kitanovic
Anna Lintern
Robert Moehler
Bingle Ni
John Rebolledo
Xuhai Tang
Weilin Wang
Brandon Winfrey
Thomas Winnell
Qianbang Zhang

Separations, Resignations and Retirements
Narelle Ayson
Ana Deletic
Belinda Hatt
Gavin Mudd
Bingjie Ni
Mehran Ramezani
Meead Sabori
Xuhai Tang
Manu-Bui Wong
Kefang Zhang

Promotions
Christopher de Gruyter
Alexa Delbosc
Wenhui Duan
Richard Williamson
Zoltan Csaki
Kate Lowry
Shujian Chen
Nan Ye
Ha Hong Bui
Xiaoling Wu
Colin Caprani
COMMITTEES

Industry Advisory Committee

Anita Curnow (Chair-pictured)
Gamini Adikari, SMEC
John Bahoric, Bonacci Group
Bruce Brown, Bruce Brown Consulting Pty Ltd
Murray Cullinan, Transport for Victoria
Dusha Dayananda, Wood Group PSN
Khaled Elagha, Fulton Hogan
David Flower, Melbourne Water
Sam Linke, Aurecon
Shiroma Maheepala, Dept. of Environment, Land Water and Planning
Rory Nathan, University of Melbourne
Ian Pitcher, AECOM
John Sturdy, Spencer Sterling
Barry Bai, Department of Civil Engineering
Colin Caprani, Aurizon Limited
Wenhui Duan, Department of Civil Engineering
Jayantha Kodikara, Department of Civil Engineering
Julia Lamborn, Department of Civil Engineering
Hai Vu, Department of Civil Engineering
Jeff Walker, Department of Civil Engineering
Tamara Wright, Maurice Blackburn Lawyers
Mohan Yellishetty, Department of Civil Engineering

Ms Anita Curnow (pictured) is the Director of Network Strategy & Planning, VicRoads. She chairs the Industry Advisory Committee.

The committee advises the Department of Civil Engineering on the quality and relevance of its undergraduate teaching and research to industry, and recommends areas for improvement.

Meetings were held twice in 2017

Resources Engineering Advisory Board

Debra Stirling, (Chair-pictured)
Stephan Arndt, Monash University
Russell Caplan, Aurizon Limited
Elizabeth Croft, Monash University
Robert Edwardes, Woodside Energy Ltd
Jeff Harding, Infrastructure Capital Group
Chris Judd, UPC Renewables Australia Transmission Pty Ltd
Brian McCarthy, Infrastructure Consultant
Peter Rogers, Monash Engineering & IT Foundation
Mark Ruston, Newcrest Mining Limited
Deming Whitman, MMG Limited
Bre-Anne Sainsbury, Department of Civil Engineering
Frieder Seible, Dean, Faculty of Engineering
Ed Smith, External Relations, Development & Alumni
Jeffrey Walker, Department of Civil Engineering

Ms Debra Stirling (pictured) is a Non-Executive Director, MegaRail, chairs the Resources Engineering Advisory Board. Originally established in 2013-14, it advises, assists and supports the management of Resources Engineering to deliver the Vision and associated annual strategic plans, and to assist the Dean of Engineering as appropriate. The Board is available to offer counsel and advice as required; to advocate and lobby industry, government, and others as appropriate; to seek funding and other support – including in conjunction with the Monash Engineering Foundation – and to build links between industry and Resources Engineering, and the Engineering faculty more widely.

Meetings were held four times in 2017
Department of Civil Engineering Management Committee

Jeff Walker, Head of Department (Chair)
Jayantha Kodikara, Deputy Head of Department
Rachel James, Department Manager
Wenhui Duan, Director of Research
Hai Vu, Director of Research Training
Colin Caprani, Director of Education
Yu Bai, Director of International Affairs
Amin Heidarpour, Head of Structures
Ha Bui, Head of Geomechanics Group
Geoff Rose, Head of Transport
Stephan Arndt, Head of Resources

This committee discusses and disseminates relevant information regarding the management of the Department of Civil Engineering.

Meetings were held on a monthly basis.

Department of Civil Engineering Occupational Health and Safety Committee

Jeff Walker, Head of Department (Chair)
Mike Leach, Deputy Chair/Safety Officer
Tracy Warner, Deputy Safety Officer
Rachel James, Department Manager
Long Goh, Laboratory Manager
Richard Williamson, OHS Representative
Mark Taylor, Deputy OHS Representative
Rebekah Henry, Biosafety Officer
Christelle Schang, Deputy Biosafety Officer
Malek Bouazza, Teaching and Research Staff Representative
Xiaoling Wu, Postdoctoral Fellows Representative
Shaohua (Ella) Zhang, Postgraduate Student Representative
Brenda O'Keefe, Administration Manager
Priscilla Chow, External OHSE Advisor
Margaret Rendell, External OHSE Advisor

This committee promotes and facilitates cooperation between employees, students, suppliers and visitors in the development and implementation of OHS policy, procedures, guidelines and programs within the Department of Civil Engineering.

Meetings were held on a bi-monthly basis.
Department of Civil Engineering Education Committee

Julia Lamborn, Director of Teaching
Colin Caprani, Deputy Director of Teaching
Geoff Rose, Head of Transport
David McCarthy, Head of Water Engineering
Ha Bui, Head of Geomechanics Engineering
Mohan Yellishetty, Associate Professor in Resource Engineering
Victor Chang, Associate Professor in Environmental Engineering
Tony Ladson, External member

This committee disseminates information relevant to education activities and openly discusses issues of interest to the Department's operation.

Department of Civil Engineering Research Training Committee

Hai Vu, Director of Research Training
Chris Rüdiger, Deputy Director of Research Training
Ranjith Pathegama Gamage, Professor in Geomechanics Engineering
Wenhui Duan, Director of Research
Valentijn Pauwels, Associate Professor in Water Engineering
Alexa Delbosc, Senior Lecturer in Transport Engineering

This committee disseminates information relevant to the Department's research activities and openly discusses issues of interest to the Department's research activities.
INTERNATIONAL NEWS

Sunway Campus

The Department of Civil Engineering offers a Bachelor of Civil Engineering (Honours) at the Sunway campus in Malaysia with an identical course structure to the Clayton campus. A PhD in civil engineering is also offered with similar milestone requirements to those at Clayton campus. Continuous communication is maintained between the two campuses to ensure quality and consistency in teaching and training.

Programs are developed to encourage research and training collaborations between the two campuses. The Vice-Chancellor’s International Intercampus PhD Mobility Scheme is one such program. It supports short-term mobility for PhD students between Clayton and Sunway campuses with a $3,000 (AUD) one-off travel grant for a visit of up to four weeks. In 2017, Mr Arvind Rajan received the grant.

The Faculty of Engineering established the Australia-Malaysia Travel Grant to foster greater research collaboration between the two campuses. In 2017, Dr Kong Sih Ying from civil engineering at Sunway was awarded the grant to visit civil engineering at Clayton campus in 2018.

Suzhou Campus

The Southeast University-Monash University Joint Graduate School (Suzhou) established in 2012 offers Master’s by coursework and PhD programs in geomechanics, water management, and transportation systems.

The Master's program is taken over 2 to 2.5 years and the PhD program is over 3 to 4 years. Part of that time is spent studying in Australia, six months for Master’s students and one year for PhD students.

Indian Institute of Technology Bombay Academy (IITB Academy)

The academy is a partnership between the Indian Institute of Technology Bombay (IITB) and Monash University through collaborative, multi-disciplinary projects in areas of strategic importance to Indian and Australian industry and society.

The Department of Civil Engineering supports research projects for PhD students and short term visits. The research themes that the department collaborates with are advanced computational engineering, simulation and manufacturing, infrastructure engineering, clean energy, water and nanotechnology. Joint PhD students are received regularly into the department from the IITB Academy.
Central South University International Program

The Department of Civil Engineering has been receiving students from Central South University (CSU) in China since 2009 through the China Linkage Engineering Program. Through this program Monash and CSU offer the 2+2 linkage program where the CSU students complete their first two years of study in China then transfer to Monash for the third and fourth years of study. Students must meet English language and academic requirements prior to transfer.

In 2017, the department enrolled 21 civil engineering students from CSU for their third year. The department is also committed to delivering some civil engineering units to students who stay at CSU in their third and fourth years of study.

Alliance Programs

To encourage bilateral exchanges with international universities the department runs an initiative that supports students and staff visiting overseas universities. Collaborations have occurred among the academic staff between the department and Tsinghua University, and Delft University of Technology. The department provides a living allowance to visitors from overseas universities, and a return airfare for the department’s students and academic staff visiting overseas institutions. Overseas universities provide living and accommodation costs to the department’s staff or students who visit them. The duration of a single visit can vary from three to six months. The department support visitors through this initiative for no more than 12 months equivalent per year.

International Visiting Program

Developed with Central South University (CSU), this program supports their staff to make short term visits to the department for teaching and research collaborations. These visiting staff are frequently involved in teaching at CSU in the international program. Teaching at Clayton campus assists them in understanding the teaching methods and practices within the department. During 2017, two visiting professors from CSU attended departmental lectures for one month and two departmental professors plan to visit CSU in 2018.
INFRASTRUCTURE

The department’s infrastructure renewal program resulted in the renovation of teaching and research facilities. The ‘Living Laboratory’ is the redevelopment of the water group’s Keller Hydraulics Laboratory. Originally established in 1986, the laboratory became a major facility for experimental hydraulics in Australia. The laboratory’s main contributions have been in river engineering, and the development of workshops, publications, and software for practitioners.

This facility’s renewal will provide an opportunity to further the Water Group’s research with the aim of transforming grey urban areas into green, liveable and productive spaces with urban cooling functions where water is treated and reused, and food is produced amid aesthetically pleasing surroundings.

Green infrastructure is included in the existing building framework. Living roofs/walls, a greenhouse that converts into an open-air area that transforms the facility into a ‘living laboratory’. The greenhouse is state-of-the-art, which has a comprehensive water delivery system to enable research to progress with different types of water, demonstrating the department’s internationally applicable research. Other features are the raingardens, bio-filtration plots, tanks, permeable paving display, analytics laboratory, living scaffolds and fabrication spaces.

Inside the greenhouse with multiple projects underway

An artist’s impression of the ‘Living Laboratory’ with mature living walls

2017 Disciplines

Geomechanical Engineering
Head of Discipline: Professor R.P. Gamage

Resources Engineering
Head of Discipline: Assoc. Professor Stephen Arndt

Structural Engineering
Head of Discipline: Dr Amin Heidarpour

Transport Engineering
Head of Discipline: Professor Geoff Rose

Water Engineering
Head of Discipline: Assoc. Professor David McCarthy

Photo: Markus Spiske

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RESEARCH CENTRES

Departmental researchers collaborate with public and private industry researchers, and end users with the aim of planning research direction, monitoring its progress and delivering outcomes for the social and economic public good. The Department achieves this through its involvement with Research Centres and Hubs.

CRC for Water Sensitive Cities (CRCWSC)

Established in 2012, the Cooperative Research Centre for Water Sensitive Cities is an Australian research centre involved in multi-disciplinary research with the aim of transforming urban water management in Australia and globally. Water contributes to not only the quality of human life but also to economic development and growth of cities and towns. If they are to be sustainable, resilient, productive and liveable, in the future they must be designed, built and managed with knowledge of the value and contribution that water makes to thriving cities and towns.

Institute for Transport Studies (ITS)

This institute sits within the Department of Civil Engineering, and aims to advance transport knowledge and practice to enhance the prosperity and sustainability of industry and the wider community.

National Centre for Groundwater Research and Training (NCGRT)

Monash University’s Department of Civil Engineering works with more than 19 government and industry partners, and global groundwater research organisations to collaborate with the NCGRT. The centre advances knowledge and understanding of Australia’s groundwater resources, and trains the next generation of groundwater researchers.

ARC Nanocomm Hub

The Australian Research Council funded Monash University for the Nanocomm Hub to advance the construction materials industry into a progressive manufacturing sector, providing nanoscience-based construction materials manufacturing. The Department of Civil Engineering links with the Nanocomm Hub. Based at the Clayton campus, the Hub conducts multidisciplinary research with 51 partner institutions including the CSIRO, Australian and international universities and research centres, and industry.
Three research themes underpin the research disciplines within the department.

**Resilience, Infrastructure and Society** — this theme facilitates innovation in the sustainable use of energy, water and resources to create a better future for all. Research under this theme includes:

- Water Sensitive Urban Design
- Engineering for Extremes
- Smart Structures and Construction
- Sustainable Infrastructure

*Leader:* Professor Xiao-Ling Zhao

**Energy, Water and Resources** — this theme supports infrastructure adaptation to ensure it can withstand significant and unexpected changes. Research under this theme includes:

- Deep Earth Energy
- Engineering for Extremes
- Model-Data Fusion
- Water Sensitive Urban Design

*Leader:* Professor Ranjith Pathegama Gamage

**Monitoring, Prediction and Protection** — this theme leads the development and integration of monitoring and prediction technologies for a more resilient and informed society. Research under this theme includes:

- Engineering for Extremes
- Sustainable Infrastructure
- Model-Data Fusion
- Sensing Technologies

*Leader:* Professor Val Pauwels

The diagram illustrates the inter-relationship of each key theme.
Within the department's three main research themes, researchers undertake a range of projects supported by funding from federal and state government, international and national agencies, and industry. In 2017, the department received $6.9 million in HERDC reportable income. The department increased its category 1 income in 2017, when it accounted for the greatest amount received of the four categories.

**Figure 1: Percentage Research Income by Category and Year, 2014 - 2017**

Note: 2017 HERDC reportable income only

**Figure 2: Research Income ($m) by Category and Year, 2014 - 2017**

Note: 2017 HERDC reportable income only
## Research Income

<table>
<thead>
<tr>
<th>Award Holder List</th>
<th>Award Title</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Total</th>
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<tbody>
<tr>
<td>Category 1</td>
<td></td>
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<tr>
<td>Delbosc, Alexa</td>
<td>Understanding the automobility decisions of Australian millennials</td>
<td>-</td>
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<td>$128,886</td>
<td>$130,820</td>
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<tr>
<td>Habibnejad Korayem, Aseghar</td>
<td>3D printing of concrete structures reinforced using multiscale fibers</td>
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<td>-</td>
<td>$134,578</td>
<td>$136,597</td>
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<td>Nguyen, Phu</td>
<td>Numerical modelling of hydraulic fracturing for unconventional gas recovery</td>
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<td>$129,402</td>
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<tr>
<td>Chen, Shujian</td>
<td>New generation foam concrete using 3D printing and nanotechnology</td>
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<td>-</td>
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<td>Johnson, Marilyn</td>
<td>Understanding and preventing road deaths using coronial investigations</td>
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<td>$114,064</td>
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<tr>
<td>Bach, Peter</td>
<td>Virtual Reality for Planning of Green Urban Water Infrastructure</td>
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<td>$123,871</td>
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<tr>
<td>Currie, Graham;</td>
<td>Innovative urban traffic congestion solutions: Optimising Roadspace Using Networks of Multi-Class Priority Lanes</td>
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<td>$26,277</td>
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<td>Sarvi, Majid;</td>
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<td>Wallace, Mark</td>
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<tr>
<td>Zhao, Xiao; Heidarpour, Amin; Wu, Chengqing; Pack-</td>
<td>Composite Tubular Construction Subject to Impact and Blast Loading</td>
<td>$139,780</td>
<td>$109,792</td>
<td>-</td>
<td>$8,676</td>
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<td>er, Jeffrey</td>
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<tr>
<td>Zhao, Xiao; Al-Mahaidi, Ri-adh; Heidarpour, Amin; Han, Lin-Hai</td>
<td>Behaviour of ultra-high strength double-skin composite tubular construction</td>
<td>-</td>
<td>$81,584</td>
<td>$89,355</td>
<td>$95,039</td>
<td>$265,978</td>
</tr>
<tr>
<td>Zhao, Xiao; Singh, Raman; Teng, Jin-Guang; Wu, Gang</td>
<td>Hybrid Construction using Seawater, Sea Sand and Fibre Reinforced Polymer</td>
<td>-</td>
<td>-</td>
<td>$32,400</td>
<td>$80,000</td>
<td>$112,400</td>
</tr>
<tr>
<td>Bui, Ha Hong; Kodikara, Jayantha; Sanchez, Marcelo</td>
<td>A multi-scale approach to investigate desiccation cracking in clayey soils</td>
<td>-</td>
<td>-</td>
<td>$124,226</td>
<td>$115,582</td>
<td>$239,807</td>
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<tr>
<td>Walker, Jeffrey;</td>
<td>Improved rainfall measurement using mobile phone tower link attenuation</td>
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<tr>
<td>Seed, Alan; Uijlenhoet, Remko</td>
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</tr>
<tr>
<td>Pathegama Gamage, Ranjith; Haque, Asadul</td>
<td>Long-term mechanical-flow performance of an enhanced geothermal reservoir</td>
<td>-</td>
<td>-</td>
<td>$93,169</td>
<td>$94,567</td>
<td>$187,736</td>
</tr>
<tr>
<td>Walker, Jeffrey; Yeo, In-Young; Jackson, Thomas; Kerr, Yann; Kim, Edward; McGrath, Andrew</td>
<td>Towards P-band soil moisture sensing from space</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$225,493</td>
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</tr>
</tbody>
</table>

Note: Monash University Department of Civil Engineering Contribution of Higher Education Research Data Collection (HERDC) reportable research income only.
<table>
<thead>
<tr>
<th>Award Holder List</th>
<th>Award Title</th>
<th>2014</th>
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<th>2016</th>
<th>2017</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang, Chein Ming; Duan, Wenhui; Habibnejad Korayem, Asghar; Justnes, Harald</td>
<td>Floating Forest – a breakwater for protecting the Australian coastline</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$80,000</td>
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<tr>
<td>Nguyen, Giang D; Bui, Ha Hong; Andrare, Jose</td>
<td>Liquefaction of silty soils: micromechanics, modelling and prediction</td>
<td>-</td>
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<td>$34,000</td>
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<td>Pauwels, Valentijn</td>
<td>A novel and theoretically consistent method for correcting systematic errors in earth observation data and earth system model results</td>
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<td>$157,123</td>
<td>$157,394</td>
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<tr>
<td>Vu, Le Hai</td>
<td>Easing urban congestion through intelligent use of distributed information</td>
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<td>$33,004</td>
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<tr>
<td>Ni, Bing-Jie</td>
<td>Sustainable Wastewater Management</td>
<td>-</td>
<td>-</td>
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<td>$298,906</td>
<td>$298,906</td>
</tr>
<tr>
<td>Bai, Yu; Mendis, Priyan; Ngo, Tuan Duc; Rasmussen, Kim; Ranzi, Gianluca; Aitchison, Mathew Harry; Newman, Peter William Geoffrey; Hao, Hong; Zhao, Xiao; Manzie, Chris; Qiao, Greg Guanghua; Aye, Lu; Duffield, Colin Fraser; Singh, Prakash J; Crawford, Robert Henry; Noguchi, Masa; Fiorito, Francesco; Alfano, Jose; Colquhoun, Robert; Liaskos, Jim; Crough, Damien Joseph; Pidcock, David; Miletic, Miro; Perren, Nicolas; Kirk, Richard; Zendler, John</td>
<td>ARC Training Centre for Advanced Manufacturing of Prefabricated Housing</td>
<td>-</td>
<td>-</td>
<td>$80,000</td>
<td>$80,000</td>
<td>$160,000</td>
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<tr>
<td>Kodikara, Jayantha; Bui, Ha Hong; Jitsangiam, Peerapong; Diaz, Luis; Leung, Gordon; McIntees, Doug; Ramanujam, Jothi</td>
<td>Development of advanced deterioration model for the design of stabilised pavement bases</td>
<td>$34,191</td>
<td>$45,341</td>
<td>$23,226</td>
<td>$10,413</td>
<td>$113,171</td>
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<tr>
<td>Bouazza, Abdelmalek; Gates, Will; Hornsey, Warren; Rowe, Ronald; Swiftie, Brendan</td>
<td>Waste Containment Lining Systems for Antarctica: Ensuring their Performance Under Extreme Conditions</td>
<td>$26,116</td>
<td>$53,070</td>
<td>$51,099</td>
<td>$24,562</td>
<td>$154,847</td>
</tr>
<tr>
<td>Zhao, Xiao; Al-Mahaidi, Riadh; Hueppi, Martin; Motavalli, Masoud; Powers, Nigel</td>
<td>Fatigue Strengthening of Metallic Bridges using Carbon Fibre Reinforced Polymer System</td>
<td>$36,058</td>
<td>$24,657</td>
<td>$39,322</td>
<td>$16,225</td>
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<td>$15,000</td>
<td>$10,000</td>
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<td>Bouazza, Abdelmalek</td>
<td>Gas permeability of geomembrane-geosynthetic clay liner composite liners</td>
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<td>$29,605</td>
<td>$29,034</td>
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<td>Pathegama Gamage, Ranjith</td>
<td>608517-TOPS in the Energy Call: FP7-ENERGY-2013-1</td>
<td>-</td>
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<td>-</td>
<td>$16,369</td>
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<tr>
<td>Walker, Jeffrey; Beringer, Jason; Rudiger, Christoph; Daly, Edoardo; Kachi, Misaiko</td>
<td>Validation of global water and energy balance monitoring in the Australian Murray-Darling Basing using GCOM-W1 data</td>
<td>-</td>
<td>-</td>
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<td>$94,061</td>
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<tr>
<td>Currie, Graham</td>
<td>Urban passenger mode shift and cross modal demand effects. Crossmodal - 4192</td>
<td>-</td>
<td>$3,655</td>
<td>$10,468</td>
<td>$11,032</td>
<td>$25,155</td>
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<tr>
<td><strong>Total Category 3 Research Income</strong></td>
<td><strong>$61,218</strong></td>
<td><strong>$334,756</strong></td>
<td><strong>$446,901</strong></td>
<td><strong>$1,358,885</strong></td>
<td><strong>$2,201,759</strong></td>
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<tr>
<th>Award Holder List</th>
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<tbody>
<tr>
<td>Lu, Ye; Lee, Joseph</td>
<td>Nonlinear vibro acousto ultrasonic waves for fatigue cracking detection in key rail components</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$26,682</td>
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<tr>
<td>Pauwels, Valentijn; Walker, Jeffrey; Grimaldi, Stefania; Li, Yuan</td>
<td>Improving flood forecast skill using remote sensing data</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$123,500</td>
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<tr>
<td>Pauwels, Valentijn; Walker, Jeffrey</td>
<td>Improving flood forecast skill remote sensing data</td>
<td>$176,131</td>
<td>$116,262</td>
<td>$362,528</td>
<td>$188,236</td>
<td>$843,157</td>
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<tr>
<td>McCarthy, David</td>
<td>Fit-for-purpose water production</td>
<td>-</td>
<td>$110,916</td>
<td>$162,208</td>
<td>$27,683</td>
<td>$300,807</td>
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<tr>
<td>Deletic, Ana; Cook, Perran; Hatt, Belinda; McCarthy, David</td>
<td>Integrated multi-functional urban water systems</td>
<td>$32,681</td>
<td>$301,111</td>
<td>$294,283</td>
<td>$167,072</td>
<td>$795,147</td>
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<tr>
<td>Deletic, Ana; McCarthy, David</td>
<td>Integration and Demonstration through Urban Design</td>
<td>$357,006</td>
<td>$146,260</td>
<td>-</td>
<td>-</td>
<td>$503,266</td>
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<tr>
<td>Bach, Peter; Deletic, Ana</td>
<td>Water Sensitive Cities Toolkit</td>
<td>-</td>
<td>$29,577</td>
<td>$169,247</td>
<td>$158,250</td>
<td>$357,074</td>
</tr>
</tbody>
</table>

**Total Category 4 Research Income** | $565,818 | $704,126 | $988,266 | $691,423 | $2,949,633 |

**Total 2017 HERDC Reportable Research Income** | $2,535,579 | $2,921,292 | $5,093,158 | $6,875,105 | $17,425,134 |
### DEPARTMENTAL SEMINARS

Friday seminars are an opportunity for post-graduate students to present aspects of their research to an audience of other civil engineering postgraduate students and academics, or to hear presentations given by specialists in their fields. Post-seminar lunches are an important element of these seminars as food brings participants together and to celebrate the department’s cultural diversity. Food is a universal language. At intervals throughout the year, students from different cultural backgrounds shared not only aspects of their research, but also their cultural heritage by bringing a plate of food.

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Matteo Camporese</td>
<td>Monash University</td>
<td>Groundwater in the Box: laboratory Experiments at the University of Padova</td>
</tr>
<tr>
<td>Dr Victor Chang</td>
<td>Monash University</td>
<td>Humans, Buildings and the Environment: Challenges and Opportunities in Urban Settings</td>
</tr>
<tr>
<td>Professor Ana Deletic</td>
<td>Monash University</td>
<td>Urban Water Research @ Monash over the past 15 years</td>
</tr>
<tr>
<td>Ms Sabah Sabaghy</td>
<td>Monash University</td>
<td>Comparison of downscaling techniques for high resolution soil moisture mapping</td>
</tr>
<tr>
<td>Mr Mayer Melhem</td>
<td>Monash University</td>
<td>Influence of strand arrangement on the reliability of PSC girders for SLS</td>
</tr>
<tr>
<td>Professor William Young</td>
<td>Monash University</td>
<td>Alumni: Who are they and how can we help them?</td>
</tr>
<tr>
<td>Dr Victor Chang</td>
<td>Monash University</td>
<td>Research Concepts, Methodology and Publication Strategies</td>
</tr>
<tr>
<td>Dr Robert Moehler</td>
<td>Monash University</td>
<td>Projectification in a nutshell: trends, fashion and sustainability</td>
</tr>
<tr>
<td>Mr Rukshan Azoor</td>
<td>Monash University</td>
<td>A multiphysics model for underground corrosion</td>
</tr>
<tr>
<td>Mr Adam Castonguay</td>
<td>Monash University</td>
<td>Simulating strategies for the adoption of decentralised water technologies</td>
</tr>
<tr>
<td>Mr Ye Yuan</td>
<td>Monash University</td>
<td>Towards a dynamic and strategic understanding of minerals criticality - a game-theory approach via statistical learning</td>
</tr>
<tr>
<td>Ms Marta Spes-Skrbis</td>
<td>Monash University</td>
<td>&quot;It is my English, but something more&quot;: Second language speakers and barriers to success</td>
</tr>
<tr>
<td>Dr Saman Ilankoon</td>
<td>Monash University Malaysia</td>
<td>The challenges and opportunities in metal extraction from low grade ore resources: fluid flow in heap leaching systems</td>
</tr>
<tr>
<td>Dr Dilum Fernando</td>
<td>University of Queensland</td>
<td>Advanced composites in civil engineering</td>
</tr>
<tr>
<td>Professor Pavel Bedrikovetsky</td>
<td>University of Adelaide</td>
<td>Colloidal-suspension transport in porous media and fines-migration assisted oil and gas recovery</td>
</tr>
<tr>
<td>Assist. Professor Michael W Levin</td>
<td>University of Texas at Austin</td>
<td>Network modelling of autonomous vehicles</td>
</tr>
<tr>
<td>Dr Evan Franklin</td>
<td>Australian National University</td>
<td>Advanced renewable generators &amp; battery storage in a transitioning energy system</td>
</tr>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Dr Tom Hughes, <em>University of Canterbury, New Zealand</em></td>
<td></td>
<td>Challenges for Oil and Gas engineering in the reservoir, upstream and downstream</td>
</tr>
<tr>
<td>Assist. Professor Mohammad A Hoque, <em>East Tennessee State University</em></td>
<td></td>
<td>A cooperative freeway merge assistance system using connected vehicles</td>
</tr>
<tr>
<td>Ms Marta Spes-Skrbis, <em>Monash University</em></td>
<td></td>
<td>“It is my English, but something more”: Second language speakers and barriers to success</td>
</tr>
<tr>
<td>Dr Nan Zheng, <em>Beihang University</em></td>
<td></td>
<td>Multimodal Traffic</td>
</tr>
<tr>
<td>Professor Wanjing Ma, <em>Tongji University</em></td>
<td></td>
<td>Optimal Design and Control of Urban Traffic Intersections</td>
</tr>
<tr>
<td>Dr Kara Kockelman, <em>University of Texas at Austin</em></td>
<td></td>
<td>Anticipating a world of shared autonomous vehicles: cost energy and urban system implication</td>
</tr>
<tr>
<td>Dr Alena Walmsley, <em>Czech University of Life Sciences, Prague</em></td>
<td></td>
<td>Mining landscape from the Other Side: Unique ecosystems at post-mining sites in the Czech Republic</td>
</tr>
<tr>
<td>Dr Rebecca Doble, <em>CSIRO, Land and Water</em></td>
<td></td>
<td>Groundwater modelling for Australian water resource management</td>
</tr>
<tr>
<td>Mr Ben Tate &amp; Mr Brian Jackson, <em>Water Technology</em></td>
<td></td>
<td>Case studies of the HydroNET platform in improving flood modelling</td>
</tr>
<tr>
<td>Assoc. Professor Gopal Patil, <em>Indian Institute of Technology, Bombay</em></td>
<td></td>
<td>Network critical state: applications for network resilience and link criticality</td>
</tr>
<tr>
<td>Professor Serge Hoogendoorn, <em>Delft University of Technology, Netherlands</em></td>
<td></td>
<td>Transitions in traffic management &amp; ITS</td>
</tr>
<tr>
<td>Dr Tom Jackson, <em>US Dept of Agriculture, Agriculture Research Service, Hydrology and Remote Sensing Lab</em></td>
<td></td>
<td>Challenges in interpreting and validating satellite soil moisture information</td>
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<tr>
<td>Dr Peng Wu, <em>Curtin University</em></td>
<td></td>
<td>Life cycle assessment of greenhouse gas emissions for road Infrastructure</td>
</tr>
<tr>
<td>Professor Xiangyu Wang, <em>Curtin University</em></td>
<td></td>
<td>Towards smart and sustainable construction and infrastructure: a pathway of converging research</td>
</tr>
<tr>
<td>Dr Yihai Fang, <em>University of Florida</em></td>
<td></td>
<td>Advanced sensing and visualisation toward intelligent construction environment</td>
</tr>
<tr>
<td>Professor Katarzyna Dabrowska, <em>Polish Academy of Sciences</em></td>
<td></td>
<td>Sentinel2 data for carbon balance and soil moisture at wetlands</td>
</tr>
<tr>
<td>Professor Greg Pasternack, <em>University of California-Davis</em></td>
<td></td>
<td>Engineering design of channels and floodplains for ecosystem needs in the 21st century</td>
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<tr>
<td>Professor Eric J Miller, <em>University of Toronto</em></td>
<td></td>
<td>2017 Ogden Transport Lecture: Public transport in Toronto: What can we learn from the last 20 years?</td>
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<tr>
<td>Ms Kanchana Withana, <em>Monash City Council</em></td>
<td></td>
<td>Introduction to Monash City Council</td>
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<tr>
<td>Dr Anurag Pande, <em>California Polytechnic State University</em></td>
<td></td>
<td>Application of virtual reality to analyse pedestrian behaviour at a mid-block crosswalk</td>
</tr>
<tr>
<td>Professor Kelly J Clifton, <em>Portland State University</em></td>
<td></td>
<td>A framework for integrating pedestrians in travel demand models</td>
</tr>
<tr>
<td>Professor Bart van Arem, <em>Delft University of Technology, Netherlands</em></td>
<td></td>
<td>Automated driving change to the role of driver and dynamics of traffic flow</td>
</tr>
<tr>
<td>Dr Hossein Masoumi, <em>University of New South Wales</em></td>
<td></td>
<td>In the past, present &amp; future (Mining Engineering)</td>
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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Dr Rusian Puscasu</td>
<td>University of Queensland</td>
<td>Enabling Mining at Depth</td>
</tr>
<tr>
<td>Assoc. Professor Zduo Zheng</td>
<td>Queensland University of Technology</td>
<td>Modelling mixed traffic of traditional connected and automated vehicles</td>
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<td>Assoc. Professor Harish Chandra Phuleria</td>
<td>University of Southern California</td>
<td>Indoor and outdoor particulate matter exposure assessment in urban slums of Mumbai</td>
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<tr>
<td>Dr Mehrdad Arashpour</td>
<td>RMIT University</td>
<td>Off-site construction optimization: Sequencing multiple job classes</td>
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<tr>
<td>Dr Parvez Mahbub</td>
<td>Australian Centre for Research on Separation Science (ACROSS), University of Tasmania</td>
<td>Ultrafast Scalable and Green Remediation of Organic Contaminants in Water</td>
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<tr>
<td>Professor Ridho K Wattimena</td>
<td>Bandung Institute of Technology, Indonesia</td>
<td>Indonesian Mining Industry</td>
</tr>
<tr>
<td>Assoc. Professor Marcelo Sanchez</td>
<td>Texas A&amp;M University</td>
<td>Environmental and Energy Geomechanics: Challenges and Opportunities</td>
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Adyel, T., Hipsey, M & Oldham, C 2017, 'Stormwater nutrient dynamics during riparian zone saturation and lentic-lotic transition', 7th International Multidisciplinary Conference on Hydrology and Ecology (HydroEco 2017), Birmingham, UK, Birmingham, United Kingdom, 18/06/16 - 23/06/16, pp. 159-160.


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Byrne, M & Delbosc, A 2017, 'The impact of minimum licensing age on youth employment', *Road and Transport Research*, vol 26, no. 1, pp. 84-94.


Continued next page

Chik, L, Albrecht, D & Kodikara, J 2017, 'Estimation of the short-term probability of failure in water mains', *Journal of Water Resources Planning and Management - ASCE*, vol 143, no. 2, 04016075. DOI: 10.1061/(ASCE)WR.1943-5452.0000730


De Gruyter, C, Currie, G & Rose, G 2017, 'Sustainability measures of urban public transport in cities: A world review and focus on the Asia/Middle East Region', *Sustainability*, vol 9, no. 1, 43. DOI: 10.3390/su9010043


De Silva, GPD, Ranjith, PG, Perera, MSA, Dai, Z & Yang, SQ 2017, 'An experimental evaluation of unique CO2 flow behaviour in loosely held fine particles rich sandstone under deep reservoir conditions and influencing factors', *Energy*, vol 119, pp. 121-137. DOI: 10.1016/j.energy.2016.11.144


Continued next page


Fowdar, HS, Hatt, BE, Cresswell, T, Harrison, JJ, Cook, PLM & Deletic, A 2017, 'Phosphorus Fate and Dynamics in Greywater Biofiltration Systems', *Environmental Science and Technology*, vol 51, no. 4, pp. 154-168. DOI: 10.1021/acs.est.6b04181


Gong, X, Currie, G, Liu, Z & Guo, X 2017, 'A disaggregate study of urban rail transit feeder transfer penalties including weather effects', *Transportation*, pp. 1-31. DOI: 10.1007/s11116-017-9768-0


Continued next page


Huang, Y-H, Yang, S-Q & Zhang, C-S 2017, 'Strength failure behavior of granite containing two holes under Brazilian test', Geomechanics and Engineering, vol 12, no. 6, pp. 919-933. DOI: 10.12989/gae.2017.12.6.919


Continued next page


King, DJ, Bouazza, A, Gniel, JR, Rowe, RK & Bui, HH 2017, 'Load-transfer platform behaviour in embankments supported on semi-rigid columns: Implications of the ground reaction curve', Canadian Geotechnical Journal, vol 54, no. 8, pp. 1158-1175. DOI: 10.1139/cgj-2016-0406


Continued next page


Li, XF, Li, HB & Zhao, J 2017, '3D polycrystalline discrete element method (3PDEM) for simulation of crack initiation and propagation in granular rock', *Computers and Geotechnics*, vol 90, pp. 96-112. DOI: 10.1016/j.compgeo.2017.05.023


Li, X, Zhang, Q-B, He, L & Zhao, J 2017, 'Particle-based numerical manifold method to model dynamic fracture process in rock blasting', *International Journal of Geomechanics*, vol 17, no. 5, E4016014. DOI: 10.1061/(ASCE)GM.1943-5622.0000748


Continued next page


Mudd, GM, Jowitt, SM & Werner, TT 2017, 'The world's by-product and critical metal resources part I: Uncertainties, current reporting practices, implications and grounds for optimism', Ore Geology Reviews, vol 86, pp. 924-938. DOI: 10.1016/j.oregeorev.2016.05.001

Mudd, GM, Jowitt, SM & Werner, TT 2017, 'The world's lead-zinc mineral resources: Scarcity, data, issues and opportunities', Ore Geology Reviews, vol 80, pp. 1160-1190. DOI: 10.1016/j.oregeorev.2016.08.010


Continued next page


Nguyen-Phuoc, DQ, Currie, G, De Gruyter, C & Young, W 2017, 'Net impacts of streetcar operations on traffic congestion in Melbourne, Australia', *Transportation Research Record-Series*, vol 2648. DOI: 10.3141/2648-01

Nguyen, TT, Bui, HH, Ngo, TD & Nguyen, GD 2017, 'Experimental and numerical investigation of influence of air-voids on the compressive behaviour of foamed concrete', *Materials and Design*, vol 130, pp. 103-119. DOI: 10.1016/j.matdes.2017.05.054


Nguyen, VP, Nguyen, CT, Rabczuk, T & Natarajan, S 2017, 'On a family of convected particle domain interpolations in the material point method', *Finite Elements in Analysis and Design*, vol 126, pp. 50-64. DOI: 10.1016/j.finel.2016.11.007


Ong, WH, Chiu, WK, Kuen, T & Kodikara, J 2017, 'Determination of the state of strain of large floating covers using unmanned aerial vehicle (UAV) aided photogrammetry', *Sensors*, vol 17, no. 8, 1731. DOI: 10.3390/s17081731


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Song, Q-Y, Heidarpour, A, Zhao, X-L & Han, L-H 2017, 'Post-earthquake fire performance of flange-welded/web-bolted steel I-beam to hollow column tubular connections', *Thin-Walled Structures*, vol 116, pp. 113-123. DOI: 10.1016/j.tws.2017.03.012


Tong, LW, Xu, GW, Yang, DL, Mashiri, FR & Zhao, XL 2017, 'Fatigue behavior and design of welded tubular T-joints with CHS brace and concrete-filled chord', *Thin-Walled Structures*, vol 120, pp. 180-190. DOI: 10.1016/j.tws.2017.08.024


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Xu, Y, Yuan, Z & Ni, BJ 2017, 'Impact of Ammonium Availability on Atenolol Biotransformation during Nitrification', *ACS Sustainable Chemistry & Engineering*, vol 5, no. 8, pp. 7137-7144. DOI: 10.1021/acssuschemeng.7b01319

Continued next page

Yang, SQ, Ranjith, PG, Jing, HW, Tian, WL & Ju, Y 2017, 'An experimental investigation on thermal damage and failure mechanical behavior of granite after exposure to different high temperature treatments', *Geothermics*, vol 65, pp. 180-197. DOI: 10.1016/j.geothermics.2016.09.008


Yang, SQ, Tian, WL & Ranjith, PG 2017, 'Failure mechanical behavior of Australian Strathbogie granite at high temperatures: Insights from particle flow modeling', *Energies*, vol 10, no. 6, 756. DOI: 10.3390/en10060756


Yellishetty, M, Huston, D, Graedel, TE, Werner, TT, Reck, BK & Mudd, GM 2017, 'Quantifying the potential for recoverable resources of gallium, germanium and antimony as companion metals in Australia', *Ore Geology Reviews*, vol 82, pp. 148-159. DOI: 10.1016/j.oregeorev.2016.11.020


Continued next page


Wanniarachchi, WAM, Ranjith, PG & Perera, MSA 2017, 'Shale gas fracturing using foam-based fracturing fluid: a review', Environmental Earth Sciences, vol 76, no. 2, 91. DOI: 10.1007/s12665-017-6399-x


Bertram, N, Murphy, C, Pasman, R, Rogers, B, Gunn, A, Urich, C, Arnbjerg-Nielsen, K, Lowe, R, Radhakrishnan, M & Gersonius, B, Swamped, 2017, Commissioned or Visual Artwork, City of Port Phillip, St Kilda, Vic, Australia.
A Sapling Grows Out of Mine Wastes in Tasmania Photo: Tim Werner, winner 2016 Postgraduate Photo Competition