

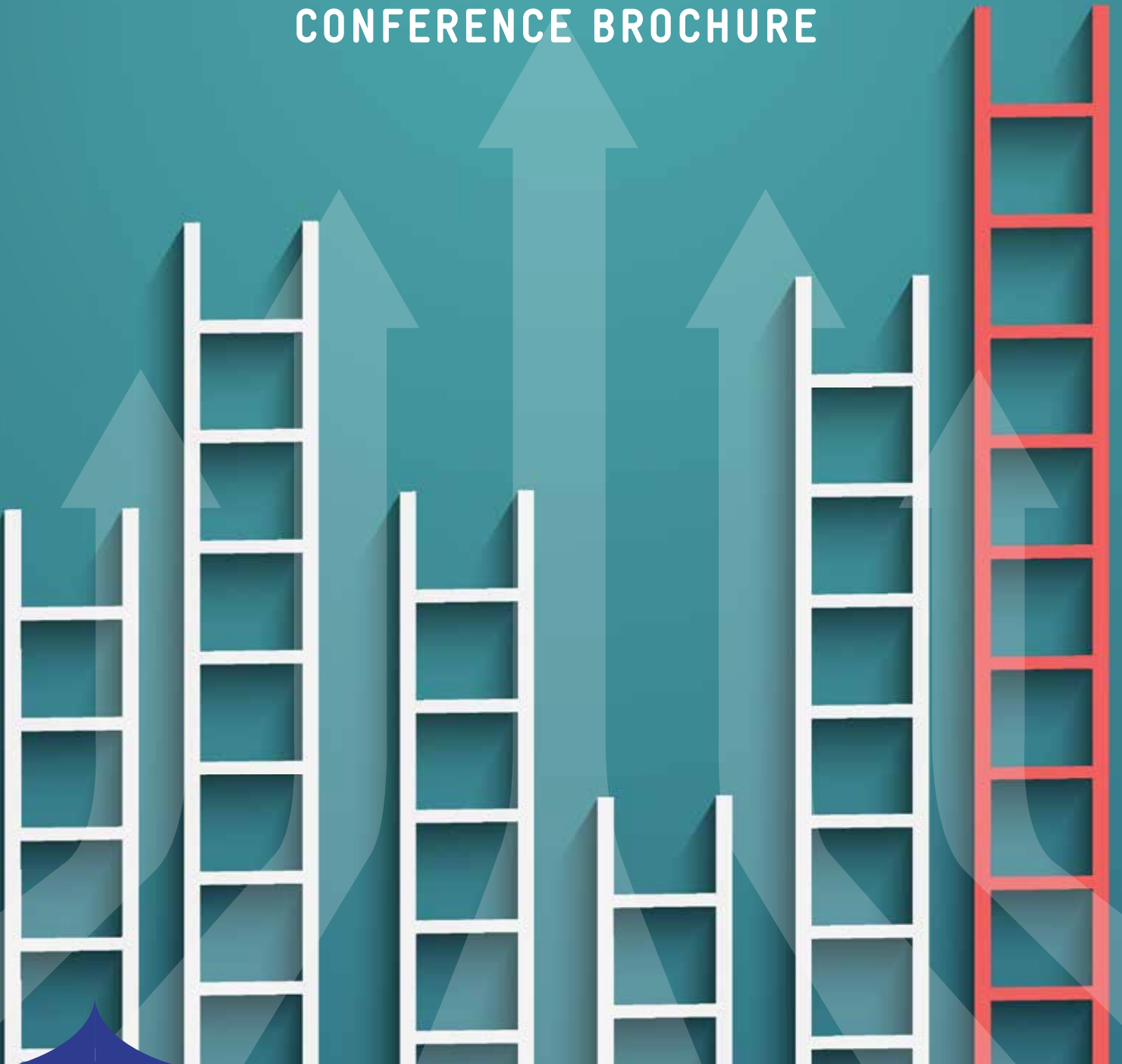
# STORMWATER 16

29TH AUGUST - 2ND SEPTEMBER 2016  
MARRIOTT RESORT SURFERS PARADISE,  
QUEENSLAND AUSTRALIA

#STORMWATER16

# RISING TO THE CHALLENGE

## CONFERENCE BROCHURE



### CONFERENCE SPONSORS:





# INVITATION TO ATTEND **STORMWATER** 16

**Stormwater Australia invites you to attend STORMWATER 2016, the 4th National Conference convened by Stormwater Australia, to be held from Monday, 29th August to Friday, 2nd September, 2016 in Surfers Paradise, Queensland.**

In 2009, the United Nations reported that more than half the world's population lived in urban centres. This proportion is set to increase to 66% by 2050, when it is estimated that city dwellers will live and share their neighbourhoods with an additional 2.5 billion people.

As our cities grow and evolve, it is imperative that we manage our natural resources to ensure they continue to provide clean, healthy environments for ourselves and the next generation. Access to adequate supplies of safe and fit-for-purpose water will be increasingly important to meet the needs of a growing population, while the responsible management of runoff from both increasing sprawl and density in existing urban areas will be needed to increase our resilience to natural disasters such as flood and heat waves, and to avoid further environmental and social degradation.

The modern stormwater industry seeks to balance traditional issues with emerging priorities which are being placed on our infrastructure. Practitioners are experienced in working at the coal face, often pragmatically dealing with issues in a complex environment, where policy requirements are often unclear, but the demand for good outcomes and multiple benefits are not. The growing need to work in multidisciplinary teams, to lead and influence, to understand and assimilate different points of view and technical requirements, will be core skills required in the future.

Challenge and change brings opportunity. Fiscal constraints are an ever present reality. New and emerging technologies are developed to provide technical solutions. Increasingly we are seeing new business models that empower greater choice. Increasingly we are looking to solve nexus issues around water, energy and food. In an increasingly connected world, information has a new currency to support decision making and engagement with community. As economies around the world transition to make better use of all this knowledge, there is potential to develop new markets and trade opportunities.

The 'Rising to the Challenge' Conference will reach out beyond our core industry practitioners to engage with a broader group of committed and talented people who will all need to work together to develop the solutions of the future. Stormwater Australia invites you and your colleagues from all disciplines and experiences to participate in what we anticipate will to be an exciting and engaging Conference that builds upon earlier successes, inspires participants and provide opportunities for collaboration and knowledge sharing.

**Andrew Allan**  
**National President**

## WHO SHOULD ATTEND THE CONFERENCE?

- Local Government Managers of Engineering Services, City Strategy and Development, Planning and Environment and Health
- Civil and Consulting Engineers
- Drainage Engineers
- Environmental Engineers
- Infrastructure and Asset Officers
- Water Projects and Sustainability Coordinators
- Catchment Management Officers
- Sustainability Managers
- Urban Planners
- Policy Managers and Officers
- University and Research Institutes
- Environmental Scientists
- Research Scientists
- Landscape Architects
- Academics specialising in Water and Civil Engineering

## CONFERENCE VENUE



**Surfers Paradise Marriott Resort and Spa | 158 Ferny Ave, Surfers Paradise QLD 4217**

## CONFERENCE KEYNOTE SPEAKERS



### Kim A Stephens, M.Eng. P.Eng

Executive Director, Partnership for Water Sustainability in British Columbia

An engineer-planner, Kim Stephens has more than four decades of experience. This covers the continuum of water resource and infrastructure engineering issues and applications, from master planning and modelling to implementation of capital projects.

He specialises in public policy and professional development, and has played a leadership role in a series of initiatives in British Columbia related to water conservation and sustainability, watershed health, rainwater management and green infrastructure.

In 1997, he was a member of the Ministry of Environment Working Group that developed 'A Water Conservation Strategy for British Columbia', released in 1998.

Circa 2000, Kim looked at rainfall differently and developed the Water Balance Methodology that the provincial government then incorporated in Stormwater Planning: A Guidebook for British Columbia, released in 2002.

In 2003, Kim was asked by the provincial government to develop the Water Sustainability Action Plan for British Columbia, released in 2004. Ever since, Kim has been responsible for Action Plan program delivery and evolution. This program includes leading the Georgia Basin Inter-Regional Educational Initiative. Five regions representing 75% of BC's population are partners in the initiative.

Kim is the principal author and editor of 'Beyond the Guidebook 2015: Moving Towards Sustainable Watershed Systems, through Asset Management', released in November 2015.

Kim has received wide recognition for his pioneering efforts. This includes a Premier's Award for Excellence and Innovation (2009). Also, he has been invited to speak on 'the BC experience' and make keynote presentations at forums throughout North America, as well as in Australia (2001). In 2015, for example, he was invited by United States Senator Patrick Leahy of Vermont to provide inspirational remarks at the 2nd Leahy Environmental Summit.

Prior to embarking on his current provincial role in 2003, Kim Stephens was a vice-president and project manager with CH2M Hill, one of North America's largest environmental engineering organizations.

### Michael Groom

Professional Mountaineer and Speaker

A professional mountaineer and speaker, Michael Groom's story of how he overcame severe challenges to climb the world's largest mountains is truly inspiring.

In 1987, Michael became the first Australian to climb Kangchenjunga, the world's third highest mountain, without the use of bottled oxygen or Sherpa support. However, when descending the mountain, Michael became temporarily blinded and was forced to spend the night exposed to the elements at above 8000m. Michael suffered serious frostbite, resulting in a third of both his feet being amputated. He was told he would never walk again.

Facing life in a wheelchair, Michael applied sheer will and determination to learn to walk again. Three years later he successfully climbed Cho Oyu, the world's sixth highest mountain. In 1996, Michael joined Rob Hall's calamitous Mt Everest attempt, in which eight climbers died. Of all those who reached the summit, only Michael and 'Into Thin Air' author, Jon Krakauer, survived.

Michael went on to become the first Australian to reach the top of the world's five most challenging mountains; Everest, K2, Kangchenjunga, Lhotse and Makalu.

In 2000, Michael's remarkable story was made into a documentary by the Australian Film Corporation. His book Sheer Will, published in 1997 and updated in 1999 and 2000, is a can't-put-down read.



## CONFERENCE KEYNOTE SPEAKERS

### Rachael Robertson

Antarctic Expedition Leader, Bestselling Author, Leadership Expert

Rachael Robertson is a dynamic leader and superbly strategic thinker under the most challenging circumstances. She successfully led the 58th Australian National Antarctic Research Expedition to Davis Station – only the second female to lead a team at the Station and one of the youngest-ever leaders.

Rachael is also a best-selling author, Australia's pre-eminent authority on extreme leadership and Australia's most booked female speaker. Her talents are in great demand from leading organisations around the globe.

As a keynote speaker and facilitator at over 700 national and international conferences and events, Rachael Robertson shares what it was like to be a leader in such an intense and unique situation – and the many valuable leadership lessons she learnt during her time of exploration and discovery.

As only the second female to lead a team to Davis Station in Antarctica, Rachael Robertson managed a diverse group of up to 120 people, through total isolation, months of darkness, with no way in and no way out. It was a leadership laboratory in the most extreme and hostile environment on Earth, where most of the theory doesn't apply.

In Antarctica she built a resilient and highly successful team based on the foundation that 'respect trumps harmony'. Prior to leading the expedition, Rachael had 16 years experience in a variety of senior operational roles in complex and challenging environments. She was Victoria's youngest Chief Ranger and led the media coordination unit during the Black Saturday bushfires. Since returning to Australia in 2006, Rachael has completed her MBA and written a best-selling book on her experience, *Leading on the Edge*.

Rachael has over 350 clients including NAB, AXA, Westpac, BHP Billiton, IBM, Minter Ellison, Crown Casino, CPA Australia, Wesfarmers, BP, Choice Hotels and Melbourne Water.



### Mark Babister

WMA Water

Mark Babister is a professional engineer with over 25 years experience in Water Engineering. He has been the CEO of specialist flood consulting firm WMA Water for over 10 years.

For the past 8 years he has been managing the update of 'Australian Rainfall and Runoff' for Engineers Australia and the Australian government. This project has involved the co-ordination of a large team of experts in the flood consulting, government and research sectors. This role has spanned commissioning research to fill knowledge gaps and translating research outcomes into practical advice for practitioners. Mark was the independent expert hydrologist for the Queensland Floods Commission of Inquiry.

Mark currently sits on the Ministerial Advisory Council for Flood Mitigation Manuals and Independent Panel of Experts advising the Brisbane River Flood Study. He is a member of the National Committee on Water Engineering.



## CONFERENCE KEYNOTE SPEAKERS

### Dr Katherine Daniell

The Australian National University

Dr Katherine Daniell, BEng(Civil)(Hons)/BA (Adel.), PhD (ANU/AgroParisTech), MIEAust, is a transdisciplinary scholar at The Australian National University who is passionate about water and sustainable development. She spends her time building bridges between people to support collaborative approaches to policy-making and action in these fields. She has worked in Europe and the Asia-Pacific on projects related to water governance, risk management, community resilience, urban development, climate change adaptation, the politics of innovation, and international science and technology cooperation.

Katherine's recent works include "Co-engineering and participatory water management: organisational challenges for water governance" (Cambridge University Press 2012, monograph), "River Basin Management in the 21st Century: Understanding People and Place" (CRC Press, 2014, co-editor) "Understanding and Managing Urban Water in Transition" (Springer, 2015, co-editor) and over 70 other academic publications.

She has previously worked in the ANU Centre for Policy Innovation and HC Coombs Policy Forum on a range of Australian Public Service – ANU cooperation projects, including on multi-level governance and the role of national culture in shaping public policy. Katherine has received many awards and honours for her work, including a John Monash Scholarship (2005) and being selected as one of the inaugural Fellows of the Peter Cullen Water and Environment Trust (2010). She currently serves on Australia's National Committee on Water Engineering and is Editor of the Australian Journal of Water Resources.

Katherine is also an invited member of the global 'Initiatives for the Future of Great Rivers' group, co-convenor of the French-Australian Water and Land Management Initiative and President of the Australian-French Association for Science and Technology (ACT) Inc.

## 2016 CONFERENCE DINNER GUEST SPEAKER

### Mick Collis

Author, Poet, Sports Commentator and Member of the Australian Sudoku Team

Growing up, Mick Collis dreamed of playing for Australia. He competed in everything from rugby union to lawn balls, but wasn't good enough at any of the sports he tried. Then, when all hope seemed lost, he discovered sudoku, the addictive 9x9 grid puzzle that appears on a daily basis in nearly every newspaper around the world.

He wasn't any good at that either. In fact, he'd never even completed a sudoku puzzle. But it didn't stop him picking himself and three rugby mates in the Australian Sudoku team, and travelling to India to represent his country at the World Sudoku Championships.

Mick's story is uniquely Australian. As funny as it is inspiring, it's about having a go and living your dream. It's about making the most of your opportunities, overcoming a lack of talent, embracing failure and never giving up, despite how high the odds are stacked against you.

"There is no such thing as failure. Sure, I may have finished 89th out of 89 at the world sudoku championships, but that's 89th in the world. That's like 89th out of 6 billion. I'll take that any day."



# PRE CONFERENCE WORKSHOPS: MONDAY, 29TH AUGUST

Attending the Pre Conference Workshops is a great way to supplement your learning and deepen your knowledge with focused learning opportunities at Stormwater 2016. A series of full and half day workshops will be held on **Monday, 29th August**, presented by leading experts in the career development field. Spaces are limited, so register early to avoid disappointment. The sessions on offer are:

## Full Day Workshop 1

### Urban Waterways – Understanding Processes to Protect Waterway Health

**Presenters:** Tony Weber and Misko Ivezich, Alluvium

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This Workshop will cover waterway management from stream and catchment management objectives, planning through to implementation. The workshop themes are:

1. Setting objectives and classifying urban streams – Effective objective setting is critical to achieving healthy urban waterways. This session provides an overview of effective objective setting, identifying values and the role of geomorphic classification
2. Stream classification and geomorphic processes in urban streams – An introduction to the classification of urban waterway types and the key geomorphic processes in urban streams
3. Catchment scale processes – Overview of the catchment scale processes which can threaten urban waterway health and the tools available to assess these processes
4. Best practice in waterway planning – Outline of best practice waterway planning in new and existing urban areas

The Workshop will be interactive, with a focus on case studies with direct applicability to practitioners. It will introduce the fundamentals of urban waterway management, and touch on some of the latest developments in the science.

## Full Day Workshop 2

### Turning Ideas Into Impact

**Presenters:** Lindsay Beck, LindsayB and Peter Canny, El Camino

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The stormwater industry is changing to meet the demands of modern cities with growing complexity in physical and social infrastructure. Expectation from community and government to be more collaborative and inclusive in decision making is ever-increasing, as we navigate stakeholder expectations and the need to collaborate with a growing number of professions outside our own.

This requires technical professionals to play a new role of “advocate” for their ideas and expertise with no official training on how to do this. Technical specialists spend an increasing amount of time on engagement-related activities and away from their specialty, or they rely on internal communications teams that often lack the right technical background.

*So what does this mean?*

The stormwater industry’s brightest minds are struggling to make a difference for their organisations and clients as they try to make their ideas heard. Employers want to support employees to be more effective and to align their ideas to deliver concrete business objectives. There is a clear need to develop capacity to refine, present and engage people with emerging stormwater ideas and innovations.

*Content*

This Workshop teaches a process that empowers participants to be more effective at communicating technical messages. Offered over one day, the skills participants learn can apply to any technical idea or issue. Applicable to areas such as flooding and drainage, urban planning, integrated water cycle planning and delivery, or green infrastructure, this Workshop gives participants a process and underlying principles they can apply to real-world communication problems they are facing right now, such as obtaining funding, engaging with political stakeholders on new ideas, engaging community on technical solutions or infrastructure, and others.

The course is taught using real-world examples brought by the participants to give them a concrete and relevant case to apply immediately.

## Full Day Workshop 3

### Design of Constructed Stormwater Wetlands

**Presenters:** Dr Dale Brown and Sally Boer, e2Designlab

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This Pre Conference Workshop will cover the essentials of design for constructed stormwater wetlands, including:

- An overview of Wetlands – What is a wetland, different types and how they work
- Functional design for multiple benefits including pollutant removal, ecological function, safety, cost effective asset management and integration within public open spaces
- The wetland design process
- Modelling a wetland in MUSIC – setting up a model and parameterisation
- Sizing and design flows
- Sediment pond function and design
- Macrophyte zones function and design and wetland bathymetry, minimising mosquito proliferation and other considerations
- Role of vegetation in wetlands, plant species selection and considerations for planting
- Inlet, outlet and high flow bypass design considerations
- Hydrodynamics including flow distribution, permanent pool and extended detention depths and water level patterns to sustain wetland vegetation
- Designing for access and maintenance, including dewatering and monitoring
- Landscape integration – examples of successful integration of wetlands within the urban landscape to provide multiple benefits and a facilitated discussion on new directions in wetland design seeking to meet the needs of a range of stakeholders

## Half Day Morning Workshop

### AR&R 2016 in Practice

**Presenter:** XP Software

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AR&R is the biggest change to Australian stormwater in nearly 30 years, but what does this mean for practicing engineers? This Workshop is designed to focus less on AR&R thesis and more on how you will practice AR&R 2016 methodology.

Delegates will:

- Learn practical tips on how you can meet the new AR&R 2016 guidelines in your day-to-day work
- Understand the effects on the industry at large
- Learn the method so your practice can take advantage of AR&R changes

The new edition of the AR&R guideline will provide technical direction for the industry and practices will change as a result of the release. We will run through key modelling methods you can employ today to comply with the new guidance. You will learn the key upcoming challenges and how to handle them for stormwater system design and analysis – and how to best manage these challenges.

The AR&R Guideline has developed from 14 Chapters split over 8 books, to 49 Chapters to be distributed over 9 books. The guideline is comprehensive and we will be addressing the key introductory concepts relevant to modellers, with a view to covering subsequent chapters and specific topics in future.

The session will be followed by a live Q&A. Note: XP Solutions has been an interested party in the Australian Stormwater industry for more than 40 years, but we are not affiliated with AR&R. For more details go to

<http://www.arr.org.au>.

## Half Day Afternoon Workshop

### Integrated Stormwater Assessment and Design

**Presenter:** XP Solutions

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This Workshop is designed to be educational and interactive to address stormwater infrastructure challenges that Australia faces now and into the future. The Workshop will feature:

- A site inspection of the case study location
- Opportunity to network with industry peers

The Workshop will be split into two focus topics:

- Integrated Urban Drainage Design; and
- Stormwater Detention and Infiltration System

The day will also feature a major stormwater drainage study being completed by a local council. The study identifies weaknesses in the existing infrastructure network and compares against the impact of climate change to 2100.



# STORMWATER 16

## PROGRAM: TUESDAY, 30TH AUGUST

7.00 am	Morning Activity			
8.00 am	Delegate Registration Tea and Coffee on Arrival			
8.45 am	Welcome to STORMWATER 2016 <b>Chris Gray, Conference Facilitator</b>			
9.15 am	Welcome to Country			
9.20 am	Conference Opening <b>Andrew Allan, National President, Stormwater Australia</b>			
9.30 am	Ministerial Address			
9.50 am	Keynote Presentation <b>Parallel Journeys to a Resilient Future: Water Cycle / Water Balance Approaches in Australia and British Columbia – 2001 to 2016 and Beyond</b> <b>Kim Stephens, Executive Director, Partnership for Water Sustainability, British Columbia</b>			
10.35 am	Conference Sponsor Welcome			
10.40 am	Morning Tea			
	ROOM 1	ROOM 2	ROOM 3	ROOM 4
11.10 am	Engaging Communities in Stormwater Management through Effective Communication <b>Dr Angela Dean, University of Queensland and CRC for Water Sensitive Cities</b>	Roof to Tap – Urban and Industrial Initiatives in Warrnambool <b>Peter Wilson, Wannon Region Water Corporation</b>	Using Drones to Undertake Inspections of Open Stormwater Channels <b>Pramod Janardhanan<sup>1</sup>, Masood Naqshbandi<sup>2</sup> and James Rennie<sup>3</sup></b> <sup>1</sup> Sydney Water, <sup>2</sup> Abyss Solutions and <sup>3</sup> Australian UAV	Changes in Viable Microbial Communities in a Stormwater Treatment Wetland During Dry and Wet Events <b>Miriam Agullo-Barcelo, Advanced Water Management Centre</b>
11.40 am	Move to Next Concurrent Session			
11.45 am	Visual Images that Engage People with Water Sensitive Urban Design <b>Tracy Schultz, CRC for Water Sensitive Cities</b>	Making Water for our Community Happen <b>Petrina Nelson, City of Canada Bay</b>	Adelaide Airport Stormwater Irrigation Trial – Determining the Multiple Benefits of Irrigated Vegetation <b>Greg Ingleton, SA Water</b>	Constructed Wetlands to Support Urban Waterway Protection from Stormwater Pollutants <b>Tanveer M. Adyel, The University of Western Sydney</b>
12.15 pm	Move to Next Concurrent Session			

# STORMWATER 16

## PROGRAM: TUESDAY, 30TH AUGUST

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
12.20 pm	<p>Evaluating the Impact of an Education and Enforcement Program for Electroplating Businesses on Stormwater Pollution Using a Risk-Based Approach and a Novel Suspended Particle Sampler</p> <p>Simon Sharp, CAPIM, University of Melbourne</p>	<p>Fishermans Bend Integrated Water Management Options Assessment</p> <p>David Howard, GHD Pty Ltd</p>	<p>Restoring Urban Ecology and Social Amenity to Alexandra Canal, Sydney</p> <p>Daniel Cunningham, Sydney Water</p>	<p>Transport Modelling to Verify Constructed Wetland Residence Times</p> <p>Thomas Cousland<sup>1</sup>, Warwick Bishop<sup>1</sup> and Micah Pendergast<sup>2</sup>, <sup>1</sup>Water Technology Pty Ltd and <sup>2</sup>Melbourne Water Corporation</p>
12.50 pm	Lunch			
1.50 pm	<p>The Green and Blue Web. What is the Legacy we are Leaving for our Grandchildren?</p> <p>Martin O'Dea, Clouston Associates</p>	<p>Hydrostatic Fluid Containment System – Passive Flood Barrier</p> <p>Scott Roy, Flow Defence</p>	<p>Maintenance of Stormwater Control Measures and the Implications for Performance</p> <p>Andrew Thomas<sup>1</sup> and Murray Powell<sup>2</sup>, <sup>1</sup>University of Melbourne Waterway Ecology Research Group and <sup>2</sup>Optimal Stormwater</p>	<p>Eric Singleton Bird Sanctuary Nutrient Stripping Wetland</p> <p>Jeremy Maher<sup>1</sup> and Simon Cleary<sup>2</sup>, <sup>1</sup>City of Bayswater and <sup>2</sup>GHD</p>
2.20 pm	Move to Next Concurrent Session			
2.25 pm	<p>Adding Blue to Green: Unlocking the Business Case for Dual-Purpose Stormwater Management and Urban Greening</p> <p>Celeste Morgan<sup>1</sup> and Dale Brown<sup>1</sup>, <sup>1</sup>e2DesignLab</p>	<p>Adaptive Floodplain Planning – From Modelling to Implementation</p> <p>Rob Swan, Cardno</p>	<p>Doing More with More: The Value of (industry-research) Collaboration</p> <p>Ross Allen, Monash University</p>	<p>An Approach to Control Stormwater Runoff in a More Cost-Effective Way</p> <p>Wing Man Kong, Waste and Environmental Technologies Ltd</p>
2.55 pm	Afternoon Tea			

# STORMWATER 16

## PROGRAM: TUESDAY, 30TH AUGUST

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
3.25 pm	<p>The Use of GRP Ovoid Pipes in Trunk Drainage</p> <p>Andrew Barry, PDC</p>	<p>City of Sydney: Operation, Maintenance, Rectification and Optimisation of 20 Stormwater Harvesting Sites</p> <p>Omid Sayer<sup>1</sup> and Murray Powell<sup>1</sup>, <sup>1</sup>Optimal Water</p>	<p>Multi-Functional Stormwater Projects – An Innovative Technical Design and Partnership Approach</p> <p>David Sexton<sup>1</sup> and Adam Berry<sup>2</sup>, <sup>1</sup>Engeny Water Management and <sup>2</sup>Ipswich City Council</p>	<p>WSUD Opportunities Mapping in City of Port Phillip, Melbourne</p> <p>Ashley Roberts<sup>1</sup> and Sam Innes<sup>2</sup>, <sup>1</sup>GHD and <sup>2</sup>City of Port Phillip</p>
3.55 pm	Move to Next Concurrent Session			
4.00 pm	<p>ARR Blockage Project 11: Numerical Implementation and Three Case Studies</p> <p>Paul Ollett<sup>1</sup> and Bill Syme<sup>2</sup>, <sup>1</sup>Hydralinc Pty Ltd and <sup>2</sup>BMT WBM</p>	<p>Stormwater Drainage Restoration and Rehabilitation at Liverpool City Council</p> <p>John Monro, Interflow Pty Limited</p>	<p>Putting Small Scale WSUD Policy into Action – A Rapid Adaptation Approach</p> <p>Prudence Tucker<sup>1</sup> and April McKay<sup>1</sup>, <sup>1</sup>Great Lakes Council</p>	<p>Stormwater Infrastructure Design as a Function of Road Hierarchy</p> <p>Rosemary Edwards, PDC</p>
4.30 pm	Move to Grand Ballroom			
4.35 pm	Clearwater Networking Activity			
5.10 pm	Close of Day 1			
5.15 pm – 7.15 pm	Conference Welcome Reception – Surfers Paradise Marriott Resort			

# STORMWATER 16

## PROGRAM: WEDNESDAY, 31ST AUGUST

7.00 am	Morning Activity on the Beach			
8.00 am	Delegate Registration			
8.30 am	Welcome to Day 2 Chris Gray, Conference Facilitator			
9.00 am	Keynote Presentation Improving Practice – Translating Research into Practice Mark Babister, WMA Water			
9.45 am	Keynote Presentation The Hidden World Decision-Making Processes Shaping Water Futures: Competing Cultures, Politics and Evidence Dr Kathryn Daniell, Australian National University			
10.30 am	Gold Sponsor Welcome Rod Wiese, Managing Director, Storm Consulting			
10.35 am	Morning Tea			
	ROOM 1	ROOM 2	ROOM 3	ROOM 4
11.05 am	A Historical and Future Perspective on the Hydrology and Environmental Processes in Armstrong Creek and Canadian Creek Catchments in Regional Victoria Prof Peter J Coombes, Urban Water Cycle Solutions	Glenvale Linear Parkland. Waterways and Parks can Cohabitate! Tony Loveday <sup>1</sup> and Josie Raftery <sup>2</sup> , <sup>1</sup> RMA Engineers Pty Ltd and <sup>2</sup> Toowoomba Regional Council	Drainage Planning and Design for Urban Density Helen Brookes, Essential Environmental	VIC vs NSW Baseflow Harvesting – Two Similar yet Very Different Stormwater Harvesting Showcases Hugh Williamson <sup>1</sup> and Murray Powell <sup>1</sup> , <sup>1</sup> Optimal Stormwater
11.35 am	Move to Next Concurrent Session			
11.40 am	Modelling the 3 Waters Ann Pugh, Innoyve	Targeting Multiple Benefits from Stormwater Quality Projects Through the Living Rivers Program Bronwen Hutchinson, Melbourne Water	Protecting our Waterways in Future Developments – A Whole of Water Cycle Optimisation Case Study Rod Wiese, Storm Consulting	Caloundra CBD Master Drainage Study Brendan Bolt, SMEC Australia
12.10 pm	Move to Next Concurrent Session			

# STORMWATER 16

## PROGRAM: WEDNESDAY, 31ST AUGUST

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
12.15 pm	<p>New Design Rainfalls for the Stormwater Industry</p> <p>Janice Green, Bureau of Meteorology</p>	<p>Pakenham Racecourse Relocation: Balancing Multiple Challenges</p> <p>Alice Lisitsa<sup>1</sup> and Julia Baumann<sup>1</sup>, <sup>1</sup>Dalton Consulting Engineers</p>	<p>Best Practice Policy Framework for Achieving Water Sensitive Urban Design in Australia's Cities</p> <p>Linda Choi, Monash University Law Faculty and CRC for Water Sensitive Cities</p>	<p>The Water Cycle Leads the Way – A Torquay Residential Development Approach</p> <p>Nic Green, Spiire Australia</p>
12.45 pm	Lunch			
1.45 pm	<p>RADAR Rainfall Calibration of Flood Models – The Future for Catchment Hydrology? A Case Study of the King Johns Creek Catchment in Moreton Bay, QLD</p> <p>Alister Daly, Water Technology Pty Ltd</p>	<p>WSUD – A Way of Life?</p> <p>Dr Madhu Pudasaini<sup>1</sup>, Raj Autak<sup>1</sup> and Maruf Hossain<sup>1</sup>, <sup>1</sup>Liverpool City Council</p>	<p>Dissolved Nitrogen – The Elephant in the Room?</p> <p>Mark Leibman<sup>1</sup> and Carl Tipper<sup>2</sup>, <sup>1</sup>Blacktown City Council and <sup>2</sup>CT Environmental</p>	<p>Uncertainty Analysis of Hydrologic Model Parameters through Monte Carlo Methods in XPRAFTS: A Case Study of the Ripley Valley Catchment</p> <p>Laurence Allan<sup>1</sup>, Jonathon Klaris<sup>2</sup>, <sup>1</sup>Cardno and <sup>2</sup>XP Solutions</p>
2.15 pm	Move to Next Concurrent Session			
2.20 pm	<p>Stormwater Retention Tanks: Basis for a Design Method</p> <p>Steven Cobden, LaTrobe University of Bendigo</p>	<p>An Experiment in Choice: Exploring Residents' Preferences and Willingness to Pay for Stormwater Treatment Systems</p> <p>Ben Penhallurick<sup>1</sup> and Dr Jim Smart<sup>1</sup>, <sup>1</sup>Griffith University</p>	<p>Killing Two Birds with One Stone: Soils and Soil Moisture for Healthy Trees and Stormwater Treatment</p> <p>Sally Boer<sup>1</sup> and Dale Browne<sup>1</sup>, <sup>1</sup>e2Designlab</p>	<p>Stormwater Pollution Investigation using Passive Sampling Techniques: A Pilot Study</p> <p>Beth Salt<sup>1</sup> and Simon Sharp<sup>2</sup>, <sup>1</sup>Water NSW and <sup>2</sup>Centre for Aquatic Pollution Identification and Management</p>
2.50 pm	Move to Next Concurrent Session			

# STORMWATER 16

## PROGRAM: WEDNESDAY, 31ST AUGUST

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
2.55 pm	<p>Reducing Flood Risk by Strategically Positioning Flow Controls in Stormwater Systems</p> <p><b>Chris Newton,</b> Hydro International</p>	<p>Voluntary Uptake of On-Lot IWCM Measures: What's Stopping our Community and How do we Encourage It? Findings from the WaterSmart Moreland Pilot</p> <p><b>Vaughn Grey<sup>1</sup> and Jamie Comley<sup>2</sup>,</b> <sup>1</sup>Moreland City Council and <sup>2</sup>Jamie Comley Consulting</p>	<p>Improving Stormwater Treatment Using Engineered Filtration Media</p> <p><b>Eric Love,</b> Centre for Organic Research and Education</p>	<p>Cost Savings and Innovation through 2d Stormwater Modelling: A Councils Perspective</p> <p><b>Peter Coleman<sup>1</sup> and Liam Callaghan<sup>1</sup>,</b> <sup>1</sup>Logan City Council</p>
3.25 pm	Afternoon Tea			
3.55 pm	<p>Stormwater Pollution Educational Awareness Campaign</p> <p><b>Diane Ross<sup>1</sup> and Richard Holloway<sup>1</sup>,</b> <sup>1</sup>Australian Car Wash Association</p>	<p>Effect of Hydrologic Variability on the Macrophyte Assemblage within a Constructed Wetland: A Review of Modelling Approaches</p> <p><b>Galareh Khakbaz,</b> University of Western Australia</p>	<p>Can an Offset Framework Deliver Water Sensitive Urban Design?</p> <p><b>Tony Weber<sup>1</sup> and Matt Francey<sup>1</sup>,</b> <sup>1</sup>Alluvium</p>	<p>The Evolution of Overland Flow Modelling and Mapping for the Sunshine Coast</p> <p><b>Gabriel Catalini,</b> Sunshine Coast Council</p>
4.25 pm	Move to Next Concurrent Session			
4.30 pm	<p>Managing Community and Infrastructure Flooding Vulnerability on a Complex and Diverse Floodplain</p> <p><b>Quentin Underwood,</b> IVRC</p>	<p>Floating Wetland Biofilter Performance Enhancement - Case Studies of Urban and Regional Stormwater Treatment Systems in Australia and Asia</p> <p><b>Tom Duncan,</b> Aqua Biofilter Floating Wetlands and Islands</p>	<p>A Risk-Based Framework for Managing Stormwater, Using Ecological Condition Triggers for Receiving Waterways</p> <p><b>Jocelyn Dela-Cruz<sup>1</sup> and Anthony Pik<sup>2</sup>,</b> <sup>1</sup>NSW Office of Environment and Heritage and <sup>2</sup>NSW Environment Protection Authority</p>	<p>Assessing New Technologies Available in Hydraulic Modelling</p> <p><b>James Newton<sup>1</sup> and Luke Cunningham<sup>1</sup>,</b> <sup>1</sup>Water Technology Pty Ltd</p>
5.00 pm	Close of Day 2			
7.00 pm – 11.30 pm	<p>STORMWATER 2016 Conference Dinner and National Awards for Excellence – Grand Ballroom, Surfers Paradise Marriott Resort, sponsored by:</p>			

# STORMWATER 16

## PROGRAM: THURSDAY, 1ST SEPTEMBER

8.00 am	Delegate Registration			
9.00 am	Welcome to Day 3 Chris Gray, Conference Facilitator			
9.10 am	Keynote Presentation Rachael Robertson, Antarctic Expedition Leader, Bestselling Author, Leadership Expert			
9.55 am	Senate Inquiry Update			
10.30 am	Morning Tea			
	ROOM 1	ROOM 2	ROOM 3	ROOM 4
11.00 am	On the Couch with the Winners of the National Awards for Excellence	Estimating Urban Flood Risk – Uncertainty in Design Criteria Stewart Franks, University of Tasmania	Urban Subsoil Drainage as an Alternative Water Source in a Drying Climate Carl Davies <sup>1</sup> , <sup>1</sup> CRC Water Sensitive Cites and <sup>1</sup> University of Western Sydney	Geocentric Optimized WSUD Selection Tool with Link to 1D/2D Dynamic Wave-Variable Time Step Hydraulic/Hydrologic Modelling Platform Patrick Bonk, Innovyze
11.30 am	Move to Next Concurrent Session			
11.35 am	On the Couch with the Winners of the National Awards for Excellence	Better Living through MUSIC Modelling Andrew O'Neil, Healthy Waterways	Following the Flowpath; a Practical Method for Embedding Integrated Water Cycle Management Thinking in the Design of New Urban Landscapes Tony Overman, Barwon Water	New Technologies to Support Stormwater Management and Green Infrastructure Solutions Denis Maragno <sup>1</sup> and Michele Dalla Fontana <sup>1</sup> , <sup>1</sup> University of Venice
12.05 pm	Move to Next Concurrent Session			
12.10 pm	Could This Be It? How to Create Social and Amenity Objectives for WSUD Jack Mullaly, Ideanthro	The Performance of Streetscape Bioretention Systems at the Field Scale in South East Queensland Lucy Pelijo, BMT WBM Pty Ltd	Penrith City Council Gross Pollutant Trap Auditing Simon Weaver <sup>1</sup> and Murray Powell <sup>1</sup> , <sup>1</sup> Optimal Stormwater	Room for Improvement: The Influence of Statutory Land Use Planning on the Adoption of Water Sensitive Urban Design Practices Don Williams, Monash University
12.40 pm	Lunch			

# STORMWATER 16

## PROGRAM: THURSDAY, 1ST SEPTEMBER

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
1.40 pm	<p>Methodology for Assessing Vulnerability of Stormwater Systems to Climate Change</p> <p>Christopher Drummond, University of New South Wales Water Research Laboratory</p>	<p>Improving your Gross Pollutant Traps Through Rectifications – Getting the Biggest Bang for your Buck</p> <p>Murray Powell<sup>1</sup>, Allen Zhang<sup>1</sup> and Hugh Williamson<sup>1</sup>, <sup>1</sup>Optimal Stormwater Laboratory</p>	To be confirmed	<p>Creating Stormwater Management Plans Ready for a Low Carbon Future Using Scenario Based Planning</p> <p>Edmond Lascaris, City of Whittlesea</p>
2.10 pm	Move to Next Concurrent Session			
2.15 pm	<p>Application of Two-Dimensional Flood Models to Effectively Plan and Manage Urban Stormwater</p> <p>Sophia Buchanan, City of Gold Coast</p>	<p>Bankstown City Council's Stormwater Audit Program – A Case Study</p> <p>Jeremy Manion, Bankstown City Council</p>	<p>Developing a New Bioretention Filter Media Specification to Balance Stormwater Treatment and Plant Growth</p> <p>Paul Dubowski<sup>1</sup> and Jack Mullaly<sup>2</sup>, <sup>1</sup>BMT WBM Pty Ltd and <sup>2</sup>Ideanthro</p>	<p>Stormwater and Waterway Benefits of Water Conservation Measures for Australian Capital Cities</p> <p>Prof Peter J Coombes, Urban Water Cycle Solutions</p>
2.45 pm	Move to Next Concurrent Session			
2.50 pm	<p>Partnering to Treat Urban Stormwater in a Drinking Water Catchment: Leura Falls Creek</p> <p>Alan Benson, Water NSW</p>	<p>Innovation in Stormwater Sediment Separation Dewaterers and Separates the Fine Fraction and Contaminants</p> <p>David Carew, Melbourne Water</p>	<p>More than Flooding and Nutrients: A Study of the Physical and Mental Health Benefits of Waterways</p> <p>Katie Fletcher, Alluvium</p>	<p>Meeting Dual Objective of Water Supply and Flood Mitigation in a Constrained Urban Setting</p> <p>Rod Wiese, Storm Consulting</p>
3.20 pm	Afternoon Tea			
3.40 pm	<p>Closing Keynote: Rising to the Challenge</p> <p>Michael Groom, Professional Mountaineer and Speaker</p>			
4.30 pm	<p>Closing Presentation, Announcement of Destination for 2018 National Conference and Prize Draw</p> <p>Andrew Allan, Stormwater Australia</p>			
4.45 pm	Conference Close			

Disclaimer: All conference activities and schedules are subject to change without notice.



## CONFERENCE TECHNICAL TOUR

This full day Technical Tour will visit a range of sites in South East Queensland and across the border, showcasing a range of on-the-ground works, including bioretention systems and stormwater treatment systems in some major development projects in the region.

The final Technical Tour schedule will be available via the Conference website in July.

[www.stormwater2016.com.au](http://www.stormwater2016.com.au)

### Technical Tour Format

8.30 am	Coach departs from the Surfers Paradise Marriott Resort
10.30 am	Morning Tea
12.30 pm	Lunch
4.30 pm	Coach returns to the Surfers Paradise Marriott Resort

## SOCIAL EVENTS

### Conference Welcome Reception

**Tuesday, 30th August**

**Surfers Paradise Marriott Resort**

**5.15 pm - 7.15 pm**

The Conference Welcome Reception is included in all Full Conference registrations.

Additional Welcome Reception Tickets for day delegates or accompanying people are \$85.00 each and can be booked through the online registration form.

**Dress Code:** Smart Casual

### Conference Dinner and National Awards for Excellence

Sponsored by Stormwater360

**Wednesday, 31st August**

**Grand Ballroom, Surfers Paradise Marriott Resort**

**7.00 pm - 11.30 pm**

The Conference Dinner is included in the Full Conference and Social Events registrations.

We are delighted to be hosting the 2016 Conference Dinner and presentation of the prestigious Stormwater Australia National Awards for Excellence and look forward to an outstanding evening with entertainment being provided by Special Guest Speaker, Mick Collis – Author, Poet, Sports Commentator and Member of the Australian Sudoku Team.

Additional Conference Dinner Tickets for day delegates or accompanying people are \$130.00 each and can be booked through the online registration form.

**Dress Code:** Business Attire – Black Tie Optional

Should you have any questions in regard to the social functions at STORMWATER 2016, please contact **GEMS Event Management** on (02) 9744 5252 or via email to the Conference Organisers – Lilly Barker at [lbarker@gemspl.com.au](mailto:lbarker@gemspl.com.au).



## HOW TO REGISTER

To register for STORMWATER 2016 and to book your accommodation, please register online at

[www.stormwater2016.com.au](http://www.stormwater2016.com.au)

### THE VALUE OF ATTENDING

# STORMWATER 16

*STORMWATER 2016 gives you three ways to achieve outstanding value from your conference registration:*

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#### EDUCATION

With 5 half and full day pre conference workshops and over 80 breakout sessions across 4 streams, this conference provides an outstanding opportunity to access stormwater experts, learn about new services and develop strategies to improve your professional practices.

#### NETWORKING

Experience the power of fresh viewpoints as you share ideas and experiences with more than 300 professionals from other organisations and build your industry networks.

#### TRADE EXHIBITION

Interact with the leading service suppliers to the stormwater industry and use the opportunity to get one-on-one answers to some of your specific challenges and provide feedback on the provision of support services.

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# CONFERENCE REGISTRATION FEES

## Pre Conference Workshop Fees

Pre Conference Workshop registration is applicable for sessions on Monday, 29th August only. Half day workshop pricing is per workshop, so if you wish to attend two half day workshops, the pricing listed below will apply for each workshop you wish to attend. Morning Tea, Lunch and Afternoon Tea are provided to Full Day Workshop Delegates. Morning and Afternoon Half Day Workshop Delegates are entitled to either Morning Tea and Lunch or Lunch and Afternoon Tea.

## Full Day Workshop Registration Fees

	Member	Non Member
Urban Waterways – Understanding Processes to Protect Waterway Health	\$595.00	\$665.00
Turning Ideas Into Impact	\$595.00	\$665.00
Design of Constructed Stormwater Wetlands	\$595.00	\$665.00

## Half Day Workshop Registration Fees

	Member	Non Member
AR&R 2016 in Practice	\$315.00	\$355.00
Integrated Stormwater Assessment and Design	\$315.00	\$355.00

## Full Conference Registration Fees

Full Conference registration includes all sessions on Tuesday 30th August, Wednesday, 31st August and Thursday, 1st September, Tea and Coffee on arrival, Morning Tea, Lunch and Afternoon Tea on all three days and attendance at the Welcome Reception on Tuesday, 30th August. The Full Conference and Social Events registration option also includes the Conference Dinner on Wednesday, 31st August.

Standard - Full Conference Registration Fees	Member	Non Member
Standard Conference and Social Events	\$1,090.00	\$1,260.00
Standard Full Conference with Welcome Reception	\$960.00	\$1,130.00

## Day Delegate Registration Fees

Day Delegate registration is valid for a single day and includes all sessions on either Tuesday, 30th August, Wednesday, 31st August or Thursday, 1st September and includes Tea and Coffee on arrival, Morning Tea, Lunch and Afternoon Tea on the day of attendance. Social events are not included in the Day Delegate registration.

Standard - Single Conference Registration Fees	Member	Non Member
Standard Single Day Registration	\$565.00	\$635.00

## CONFERENCE REGISTRATION FEES

### Technical Tour Registration Fees

Technical Tour registration includes the full day Technical Tour on Friday, 2nd September, Morning Tea, Lunch and Afternoon Tea.

Standard - Technical Tour Registration Fees	Member	Non Member
Technical Tour Registration	\$325.00	\$385.00

### Social Event Fees

Additional Welcome Reception Ticket	\$85.00 per person
Additional Conference Dinner Ticket	\$130.00 per person

## ACCOMMODATION

Discounted accommodation rates have been negotiated with the Marriott Resort Surfers Paradise for the benefit of delegates attending STORMWATER 2016.

To take advantage of these discounted rates, delegates must book and pay for their accommodation through the Conference Organisers. Accommodation can be booked when registering for the Conference, via the Online Registration Form at [www.stormwater2016.com.au](http://www.stormwater2016.com.au)

### Marriott Resort Surfers Paradise

158 Ferny Ave, Surfers Paradise QLD 4217  
[www.marriott.com.au](http://www.marriott.com.au)

Hinterland View Guest Room – Single Occupancy including one (1) breakfast	\$245.00 per night
Hinterland View Guest Room – Twin/Double Occupancy including two (2) breakfasts	\$270.00 per night



PLEASE NOTE: Limited accommodation is available at the Conference rates, so please book early to avoid disappointment. All accommodation charges will be processed with your registration fee.

# TERMS AND CONDITIONS

## Member Registrations

A member is defined as a member of any branch of **Stormwater Australia**. If you wish to confirm your membership status, please make contact with your state branch secretariat. Contact details can be found at [www.stormwater.asn.au](http://www.stormwater.asn.au)

## Full Registration

Full registration for members and non-members includes attendance at all sessions on **Tuesday, 30th August, Wednesday, 31st August and Thursday, 1st September**. Full registration includes one set of conference proceedings, satchel, name badge, morning and afternoon refreshments, lunch and entry to the Welcome Reception and Conference Dinner. The Conference Dinner is not included in the 'Full Conference with Welcome Reception' registration.

## Day Registration

Day registration includes attendance at sessions on the nominated day of attendance, one set of conference proceedings, satchel, name badge, morning and afternoon refreshments and lunch. Day registration does not include attendance at any of the social functions. Tickets to attend the social functions need to be purchased separately.

## Pre Conference Workshop Registration

Pre Conference Workshop registration includes attendance to the selected workshop/s on **Monday, 29th August**. Pre Conference Workshop registration includes a set of materials for the selected workshop/s and name badge. Morning tea, lunch and afternoon tea are provided to Full Day Workshop Delegates. Morning and Afternoon Half Day Workshop Delegates are entitled to either morning tea and lunch or lunch and afternoon tea. Registration for a Full Day Workshop or two Half Day Workshops does not include attendance at any of the social functions. Tickets to attend the social functions need to be purchased separately.

## Shared Registrations

Splitting of full conference registrations is not allowed under any circumstances. Delegates who only wish to attend one day of the Conference must register as day delegates.

## Conference Cancellation and Refund Policy

Cancellations must be received in writing, by mail, email or fax to GEMS Event Management. Cancellations will not be deemed to be received until you have written confirmation from GEMS Event Management. If you have not received acknowledgement within two business days, please contact **GEMS Event Management** on (02) 9744 5252. If the cancellation is not received in writing, the registration will not be cancelled and full registration fees will still be payable. Cancellations received in writing by the Conference Organisers by **Friday, 29th July, 2016** will be accepted and all fees refunded less an AUD \$145 administration fee. Cancellations received after this date cannot be accepted and will not be refunded, however, transfer of your registration to another person is acceptable. The full name and address details of the new delegate must be advised in writing to the Conference Organisers prior to the Conference. Online registrations received by GEMS are considered to be confirmed by the delegate. No tentative bookings will be accepted.

## Non Attendance at the Conference

No refunds will be made for non-attendance at the Conference and any unpaid registration fees will still be payable. In the case of a medical emergency which has caused a registered delegate to not attend the Conference, the Conference Organisers must be provided with a medical certificate or appropriate documentation before any refund will be considered. Where the Conference Organisers are advised of the situation after the Conference, and a refund is deemed to be appropriate, the delegate must still pay the Administration Fee along with any catering charges incurred as a result of their registration for all catering events at which they were scheduled to attend.

# TERMS AND CONDITIONS

## Cancelling your Accommodation

All delegates booking accommodation through GEMS Event Management will be required to pay for their accommodation at least 30 days prior to your arrival, covering those charges quoted in the accommodation rate. All delegates are responsible for payment of any additional charges on checkout of the hotel.

Please contact GEMS Event Management to cancel your accommodation prior to the conference. If you need to cancel your accommodation booking at any time, a cancellation fee may be charged by the hotel subject to the hotel cancellation policy.

If you alter your accommodation booking after you have checked in, please deal directly with the hotel. If you arrive 24 hours later than your indicated arrival day, you may find that you have forfeited your reservation and may have been charged a non-arrival fee.

## Late Registrations

Registrations for STORMWATER 2016 will close on **Wednesday, 24th August, 2016** in order to finalise all arrangements for the Conference. Late registrations may be accepted after this date by contacting GEMS Event Management and a late fee of \$55 AUD will be applied.

Delegates who choose to register onsite will be required to pay for all related costs immediately, by cash or by credit card. Receipts will be sent to the delegate concerned after the Conference. The organisers cannot guarantee that collateral, such as satchels, will be available to late registering delegates and there is a risk that social program functions may be fully subscribed.

## Insurance

Registration fees do not include insurance of any kind. It is strongly recommended that participants take out their own general travel insurance. It is suggested that the insurance policy should also cover loss of fees/deposit, airfares, accommodation charges, medical expenses, loss or damage to personal property and repatriation expenses. The insurance should cover loss arising from the cancellation of the conference by the organisers or a person's inability to attend due to any reason whatsoever. No responsibility is taken by the Conference Organisers for any person not holding insurance.

## Further Information

Should you have any questions about the Conference or the online registration process, please feel free to contact the team at **GEMS Event Management** on **(02) 9744 5252** or email **registration@gemspl.com.au**.

To register online or to obtain further information about the Conference, visit the official conference website at **www.stormwater2016.com.au**.

# STORMWATER 16

RISING TO THE CHALLENGE

#STORMWATER16



STORMWATER  
AUSTRALIA