

*Final*



**International Forum on Engineering Decision Making  
11<sup>th</sup> IFED**

## **Decision-Making for Extremes**

**11-14 December 2019**

**Q Station**

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

**Sydney Harbour National Park  
Manly, Australia**



**Chair: Mark G. Stewart**

email: [mark.stewart@newcastle.edu.au](mailto:mark.stewart@newcastle.edu.au)

IFED web: <http://ifedforum.weebly.com>



## Theme of the 11<sup>th</sup> IFED forum

The IFED forums are concerned with engineering decision-making that is based on assessments of engineering risks. The quantification and understanding of risks is an important element of risk-based decision-making, and the 11<sup>th</sup> IFED forum is focussed primarily on the development of strategies to manage risks in an optimal manner. In particular the 11<sup>th</sup> IFED forum is focussed on the development of strategies for managing extreme events – i.e., low probability – high consequence events. This includes emerging problems associated with short and long-term changes in the natural environment (including climate change) and the man-made environment (including increased demand on infrastructure, and the risks of sabotage and terrorism).

### Decision-Making for Extremes

- Natural and man-made hazards
- ‘Future proofing’ infrastructure – buildings, bridges, lifelines, dams, etc.
- Climate change
- Accuracy of long-term predictions
- Value of Information
- Intergenerational effects
- Politically-influenced decision-making
- Short vs long-term policy horizons
- Post 9/11 security environment
- Public policy decision-making
- Socio-economic impacts on decision-making
- Modelling of preferences of decision-makers
- Risk treatment to mitigate risks
- Life-cycle cost analysis
- Societal preferences in engineering decision making

Discussion, dialogue, collegiality, and careful framing of relevant issues are the pillars of a successful IFED forum. The single-session IFED format facilitates continuation of discussions during breaks, excursion, and evenings. At the end of each IFED forum consensus conclusions are formulated by all IFED participants together with an outlook for the future. These are subsequently published and made widely accessible.

## Venue and programme of the 11<sup>th</sup> IFED forum

The 11<sup>th</sup> IFED forum will be held in Australia at the heritage Q Station hotel ([www.qstation.com.au](http://www.qstation.com.au)) in the Sydney Harbour National Park, located 2.5 km from Manly in Sydney. This is the site of the former Quarantine Station located on the shores of Sydney Harbour. Q Station is located within the Sydney Harbour National Park which encompasses native flora and fauna, military forts, and lookouts over the harbour and ocean.

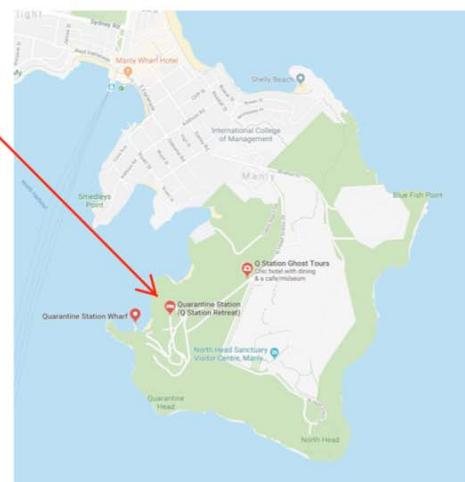
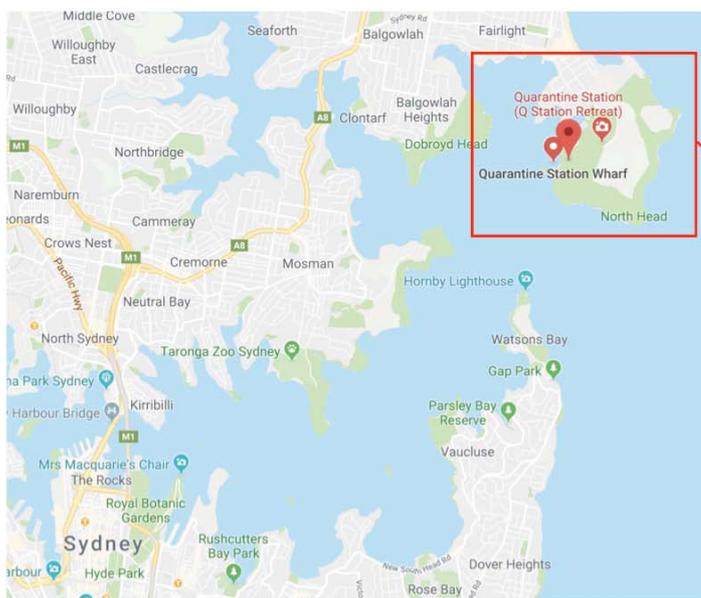


Q Station is a 28 km taxi ride from Sydney Airport. Alternatively, the Sydney Harbour Eco Hopper ferry from Circular Quay stops at the Q Station wharf six times a day (<https://myfastferry.com.au/sightseeing/q-station/>). Or you can catch a public ferry from Circular Quay to Manly, and Q Station is a 5 min taxi ride from there.

## Final

Some Deluxe rooms have been set aside for IFED delegates at the special price of A\$240 per night including breakfast. This special IFED rate is available for **direct booking** through Q Station [H8773@accor.com](mailto:H8773@accor.com) or +61 2 9466 1500 - Ext #1. Please quote "Newcastle University Dec 2019 – 10% off best available rate as per Group Booking Codes" when making your booking.

These rooms will be held for IFED attendees until **10 October 2019**. This is a popular hotel at peak tourist season, so please reserve your rooms by that date.

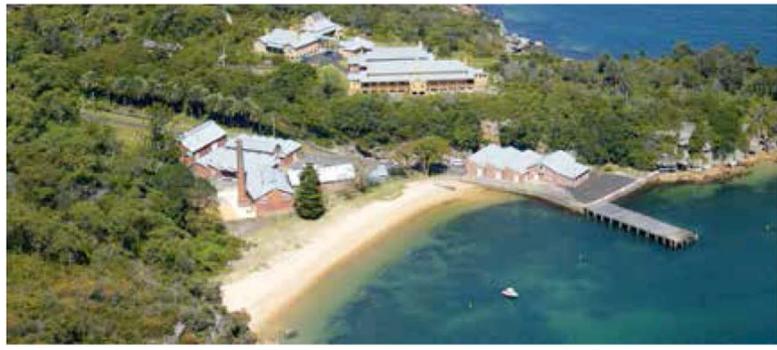


The 11<sup>th</sup> IFED forum will start with a welcome dinner by the harbour on Wednesday evening 11 December. The technical program will start Thursday morning and will end at noon on Saturday 14 December. On Friday after lunch, an outdoor group activity bush walk will take place within the national park and the adjacent North Head Sanctuary, followed by the IFED banquet.



**Registration** fee for the forum includes all lunches, all refreshment-breaks, excursion, the Wednesday evening welcome dinner (including beverages), and the IFED banquet (including beverages) on Friday evening. The registration fee is A\$700 for delegates, A\$350 for students and retired delegates, and A\$275 for partners. Registration details are at the end of this announcement. Please register by **1 November 2019**.

## Final



## Programme

The final programme of the single-session conference will be available **15 November 2019**. The IFED forum is designed to provide plenty of opportunity for participants to interact. There is sufficient time to present and discuss specific issues.

Final contributions in the form of papers and/or presentations are not due until the **beginning of the Forum, 11 December 2019**. We invite authors to bring along some hard copies which can be distributed to delegates during the conference. However, a written paper is not mandatory.

Following the IFED forum, selected authors will be invited to submit a journal-quality paper of their IFED contribution to a **special issue of a journal** to be designated in early 2020.

A tentative list of presentations include:

- Engineering Decision: Resilience Climate Indicators
- Risk-Targeted Decision-Making of Ground Motion Parameters for Mainland Of China
- Prediction of Storm Surge Evolution with Real-Time Updates
- Selecting Representative Natural Hazard Scenarios for Risk Management of Lifeline Systems
- Seismic Fragility Analysis of RC Bridges Considering Temporal-Correlated Aging Effects
- Hybrid Multi-Criteria Decision Making Within Hazard Assessment and Management
- Reliability Basis for Structural Design Considering Climate Change
- The Often Complex Relationship Between Short and Long-Term Prediction
- Risk Reduction Strategies for Infrastructures
- Autonomous Inspection Planning of Hazardous
- Locations Using a Value of Information Assessment
- Decision Criteria for Optimizing The Sustainability of Buildings and the Resilience of Communities
- Prioritization of Upgrading Infrastructure Under Uncertain Climate Change
- Improving the Resilience of Transport Networks to Flooding Events Through a Minimum Change Criterion
- Coping With Exponential Increases of Pluvial Flood Risk in Urban Areas
- Uncertainty Analysis for Decision-Making With Respect to Natural Hazards
- What is the Suitable Approach for Structural Reliability Assessments?
- Extremes in Subexponential Conditions
- How Safe Is Safe Enough? Risk and Uncertainty Modelling of Blast, Bullets and Bombs
- Loss Modelling for Australian Houses Subject to Extreme Wind and Rainfall Damage

## What is IFED?

IFED is an international organisation with the mission to stimulate new initiatives in decision-making and risk analysis for engineering systems. It organises on a regular basis open forums that focus on specific themes.

### Previous IFED forums

2004 - Stoos (Switzerland) Consequence modelling in engineering decision making	2006 - Lake Louise (Canada) Decision making involving spatially distributed systems
2007 - Port Stephens (Australia) Optimal strategies for disaster and hazard mitigation	2009 - Hakone (Japan) Long-term policy makings for a sustainable society
2010 - Stoos (Switzerland) Global catastrophic risk management	2012 - Lake Louise (Canada) Risk for temporary systems, structures, and activities
2013 - Port Stephens (Australia) Uncertain futures under a changing climate	2015 - Hieizan (Japan) Decision making beyond the engineering community
2016 - Stoos (Switzerland) Resilient infrastructures: integration of risk and sustainability	2018 - Lake Louise (Canada) New challenges in DM: big data, messy systems, fake news, professional rigour

### The IFED consortium

Marc Maes University of Calgary, Canada	Ross Corotis University of Colorado, USA
Mark Stewart University of Newcastle, Australia (current co-chair)	Michael Faber Aalborg University, Denmark
Stuart Reid University of Sydney, Australia (current co-chair)	Paolo Gardoni University of Illinois, USA
Kazuyoshi Nishijima Kyoto University, Japan	Emeritus: Jun Kanda University of Tokyo, Japan (IFED co-founder)

### The IFED advisory council

Paolo Bazzurro – Pavia, Italy	Yasuhiro Mori – Nagoya, Japan
Denys Breyse – Bordeaux, France	Arvid Naess – Trondheim, Norway
Robby Caspeele – Gent, Belgium	Enrico Rizzuto – Genoa, Italy
Markus Dann – Calgary, Canada	Mauricio Sanchez Silva – Bogotá, Colombia
David Elms – Canterbury, New Zealand	Erica Seville – Canterbury, New Zealand
Jean Goyet – Paris, France	John Sørensen – Aalborg, Denmark
Jim Hall – Newcastle upon Tyne, UK	Daniel Straub – Munich, Germany
Terje Haukaas – Vancouver, Canada	Bruno Sudret – Zurich, Switzerland
Inger Kroon – Lyngby, Denmark	Tsuyoshi Takada – Tokyo, Japan
Albrecht Lentz – Lyngby, Denmark	Dimitri Val – Edinburgh, UK

### 11<sup>th</sup> IFED - 2019 organising committee

Michael Netherton – Uni of Newcastle	Stuart Reid – Sydney
Mark Stewart – University of Newcastle	Colin Caprani – Monash University
Hao Qin – University of Newcastle	Hao Zhang – University of Sydney



# Conference Registration Form

<b>Title:</b>	<b>First Name:</b>	<b>Last Name:</b>
<b>Organisation:</b>		
Address Line 1: _____ Address Line 2: _____ City, State: _____ Zip / Post Code: _____ Country: _____ e-mail: _____ Telephone: _____		

**Accompanying person's name (if needed):**

**Please let us help you, by letting us know of your particular requirements:**

<b>Dietary:</b>	<input type="checkbox"/> Vegetarian	<input type="checkbox"/> Vegan	<input type="checkbox"/> Chocolate	<input type="checkbox"/> Donuts	<input type="checkbox"/> Other:
<b>Access:</b>	<input type="checkbox"/> Audio	<input type="checkbox"/> Mobility	<input type="checkbox"/> Other:		

Registration Fee Options <small>(Prices are in Australian Dollars and include GST)</small>	Registration Fee	Attend Reception?	Attend Banquet?	Totals
Full	\$AUD 700	<input type="checkbox"/>	<input type="checkbox"/>	\$AUD _____
Student or Retired <small>(includes reception and banquet)</small>	\$AUD 350	<input type="checkbox"/>	<input type="checkbox"/>	\$AUD _____
Accompanying Person	\$AUD 275	<input type="checkbox"/>	<input type="checkbox"/>	\$AUD _____
TOTAL of all Registration Fees:				\$AUD _____

**Payment Method:** (Please note: your Australian Tax Invoice will be from: The MAJAM Group Pty Ltd, ABN 13 127 317 686)

Payment for IFED 2019 is via PayPal. Please use the following hyper-link to pay your TOTAL of all Registration Fees:

- <https://www.paypal.me/IFED2019>
- Please use your Name as the Payment-Reference.
- If you have any troubles with this PayPal link, please contact: [michael.netherton@newcastle.edu.au](mailto:michael.netherton@newcastle.edu.au)

Your IFED Registration Fees includes:

- PayPal's finance/administration fees, and
- the Australian Goods and Services Tax (GST).

Your IFED Registration Fee does not include:

- Any accommodation,
- International exchange fees for converting your particular currency into \$AUD, or
- Further fees charged by your bank.

**Once you have paid your IFED2019 Registration fee, please complete all parts of this form and return to: [mark.stewart@newcastle.edu.au](mailto:mark.stewart@newcastle.edu.au)**

## Accommodation Bookings

The 11<sup>th</sup> IFED forum will be held in Australia at the heritage Q Station hotel ([www.qstation.com.au](http://www.qstation.com.au)) in the Sydney Harbour National Park, located 2.5 km from Manly in Sydney.

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These rooms will be held for IFED attendees until **10 October 2019**. This is a popular hotel at peak tourist season, so please reserve your rooms by that date.

## IFED 2019 Terms & Conditions:

### **Conference payments:**

- All IFED 2019 conference payments will be received and administered by The MAJAM Group Pty Ltd (ABN 13 127 317 686), for, and on behalf of, The IFED 2019 Conference Organising Committee.

### **Registration:**

- A confirmation e-mail will be sent to you once you have been successfully registered for the Conference.

### **Conference cancellation (by Delegate):**

- Notification of any delegate's conference cancellation must be made formally, in writing (by e-mail), to the Conference Secretariat.
- Delegate cancellations will be accepted until 15 November 2019. For all delegate cancellations prior to this date, the Conference Organising Committee will retain 20% of the prepaid registration fee as a processing fee. The refund will be 80% of the prepaid amount, and will be paid within 30 days of formal notification of cancellation.
- **After 15 November 2019** no delegate's conference cancellations will be accepted, nor will any refunds be made; however, an alternative delegate's name may be submitted.

### **Accommodation:**

- Accommodation bookings are the sole responsibility of individual Conference delegates.
- Information on local accommodation providers (including conference accommodation deals) can be reviewed on the Conference's website: <http://ifedforum.weebly.com>
- Any claim for accommodation refunds are at the sole discretion of your accommodation provider.

### **Insurance:**

- IFED 2019 Conference Registration Fees do not include insurance of any kind.
- The Conference Organising Committee, and The MAJAM Group Pty Ltd, cannot take any responsibility for any participants failing to arrange their own insurance.
- It is strongly recommended that at the time you register for the conference, and/or book your travel, that you consider appropriate insurance, and of your choice. The policy should include loss of registration fees through cancellation of your participation in the conference, or through cancellation of the conference, loss of international/domestic air fares through cancellation for any reason, loss of any pre-booked arrangements due to airline delay, force majeure or any other reason, medical expenses (including sickness and accident cover), loss or damage to personal property, additional expenses and repatriation should travel arrangements have to be altered.
- Any insurance should be purchased in your country of origin.

### **Waiver of liability:**

- The IFED 2019 Conference Organising Committee, The MAJAM Group Pty Ltd, or any of the supporting organisations to this event accept no liability to any persons or body for any loss, injury or damage howsoever and whether directly or indirectly from any action or cause whatsoever undertaken, organised, sponsored or associated with the conference.

## IFED 2019 Privacy Statement:

### **Australian Privacy Amendment (Private Sector) Act 2000:**

The IFED 2019 Conference Organising Committee, and The MAJAM Group Pty Ltd, are bound by and committed to supporting the National Privacy Principles (NPPs) set out in the Australian Privacy Amendment (Private Sector) Act 2000.

### **Use of personal information:**

The IFED 2019 Conference Organising Committee, and The MAJAM Group Pty Ltd, will collect and store information you provide in this registration form for the purposes of enabling us to:

- register your attendance at the conference;
- assist with administrative, financial and planning purposes;
- plan and develop conferences and other events in the future;
- facilitate your requirements in relation to the conference; and
- allow the compilation and analysis of statistics relevant to the conference.

The information that you provide in the registration form, and information provided at any other time during the conference, including without limitation any feedback obtained during the conference, will be used to offer, provide and continue to improve future conferences and other services.

### **Conference delegate list:**

The IFED 2019 Conference Organising Committee will produce a list of all delegates for supply to all registered attendees at the conference. The list will contain: a delegate's name, their affiliation and location (state or country) and their contact details. Registrants may withhold consent for inclusion of their details in this publication by contacting the Conference Secretariat by 1 December 2019.

### **Disclosure of personal information to third parties:**

The IFED 2019 Conference Organising Committee will not, without your consent, use or disclose your personal information for any purpose unless it would reasonably be expected that such purpose is related to the offer, provision and improvement of the conference or where such purpose is permitted or required by law.