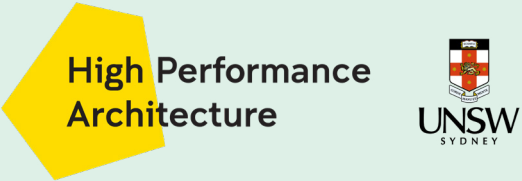


# UNSW-Tsinghua University Workshop

Urban Heat Mitigation & Adaptation  
Climate-Resilient Buildings and Cities  
Net Zero Carbon Buildings  
Advanced Modelling and Simulation  
AI Applications in Built Environments



29 August 2025,  
9:30am - 4:30pm



UNSW, Sydney

## Acknowledgement

Building Simulation Conference, IBPSA Australasia  
Climate and Atmospheric Science, NSW Department of Climate Change, Energy, the Environment and Water  
Governance Division, Risk and Resilience Branch, NSW Department of Planning, Housing and Infrastructure

## Program

**Venue:** Council Chamber, The Chancellery Building (Map C22), UNSW Sydney

### 9:30am Registration

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|--------|---|--|
| 9:45am | » Acknowledgement of Country and Opening Remarks (UNSW) | Prof. Philip Oldfield<br>Head, School of Built Environment, UNSW |
|        | » Welcome (Tsinghua University)                         | Prof. Da Yan, Tsinghua University                                |
|        | » Use of Building Simulation to Improve Practice        | Dr PC Thomas, Team Catalyst                                      |

### 10:10am Climate Change and Urban Heat Mitigation

- Session Chair: A/Prof. Riccardo Paolini, UNSW*
- |  |   |
|--|---|
| » Impact of Urban Overheating on Man   | Scientia Prof. Mat Santamouris, UNSW                    |
| » Urban Greening and Health Impacts  | Prof. Xiaoqi Feng, UNSW                                 |
| » Measuring, Modelling and Simulating Urban Green Infrastructures Performance for Climate Mitigation in Urban Environments | Prof. Francesco Causone<br>Politecnico di Milano, Italy |
| » Nature-Based Solutions for Urban Heat Island Mitigation in Australia   | A/Prof. Nasrin Aghamohammadi<br>Curtin University       |
| » Sky Parks: Investigating Green Roofs as Climate-Resilient Infrastructure in High-Density Urban Environments              | Alexander Georgouras<br>UNSW                            |

### 11:24am Morning Tea

### 11:44am Climate Adaptation Policy; Net Zero Carbon; Climate Resilient Buildings & Cities

- Session Chair: Joseph Miller, NSW DCCEEW*
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|--|---|
| » From Projections to Policy: Mainstreaming Climate Adaptation in Built Environments                                 | DrJocelyn Dela-Cruz & Matthew Riley<br>NSW DCCEEW |
| » Towards Net Zero Embodied Carbon: Design Strategies and Modelling Challenges                                       | Prof. Philip Oldfield<br>UNSW                     |
| » A Novel Approach to Construct Representative Meteorological Years for Climate-Resilient Building Energy Simulation | Prof. Da Yan<br>Tsinghua University               |
| » Urban Heat Mitigation: Performance Gaps, Technical and Non-technical Challenges                                    | A/Prof. Riccardo Paolini<br>UNSW                  |

### 12:46pm Panel Discussion

- Session Chair: A/Prof. Lan Ding, UNSW*
- |   |                                      |
|---|--------------------------------------|
| » Connection of Education to Practice of Simulation   | Quentin Jackson, Aurecon             |
| » Embedding Climate Risk into NSW Government Decision-Making: Insights, Challenges and the Road Ahead | Dr Carlos Bartesaghi Koc<br>NSW DPHI |
| » Demand Flexibility and Buildings  | Dr Subbu Sethuvenkatraman, CSIRO     |
| » CFD Modelling of Roof Mounted PVs   | A/Prof. Victoria Timchenko, UNSW     |

### 1:15pm Lunch

### 2:00pm AI in the Built Environment

- Session Chair: A/Prof. Paul Osmond, UNSW*
- |  |  |
|--|--|
| » Urban Microclimate and AI  | Prof. Leon Wang, Concordia University, Canada            |
| » Artificial Intelligence in Building Energy Management: Opportunities, Challenges, and the Path Forward | Prof. Alfonso Capozzoli,<br>Politecnico di Torino, Italy |
| » Collective Intelligence for Energy Efficiency in Buildings and Cities                                  | A/Prof. Lan Ding<br>UNSW                                 |
| » AI-Driven Occupant-Centric Control in University Buildings: Lessons Learned and Carbon Impacts         | Dr Sicheng Zhan<br>MIT Building Technology, US           |

### 3:02pm 10-minute Break

### 3:12pm Digital Transformation; Advanced Modelling, Simulation and Analysis

- Session Chair: A/Prof. Victoria Timchenko, UNSW*
- |   |   |
|---|---|
| » Towards an Interdisciplinary Academia Industry Research Nexus - Collaborative Pathways to Sustainable Digital Innovation in AEC     | Prof. Matthias Haeusler<br>UNSW                         |
| » Reproducible Computational Science in Dynamic Models for Building Energy Management   | Prof. Christian Ghiaus<br>INSA Lyon, France             |
| » Accelerating Food and Nutrition Security through Innovations in Controlled Environment Agriculture – A Building Science Perspective | Prof. Liping Wang<br>University of Wyoming, US          |
| » Analysis and Prediction for Solar PV Distribution in Australian Cities  | Prof. Wu Deng<br>University of Nottingham, Ningbo China |
| » Living Labs: Empirical Exploration of Energy Efficiency and Flexibility in Campus Buildings   | Dr Maomao Hu<br>National University of Singapore        |

### 4:16pm Announcement of a Special Issue in Building Simulation Journal

*Prof. Da Yan, A/Prof. Lan Ding, A/Prof. Riccardo Paolini*

### 4:26pm Workshop Concludes

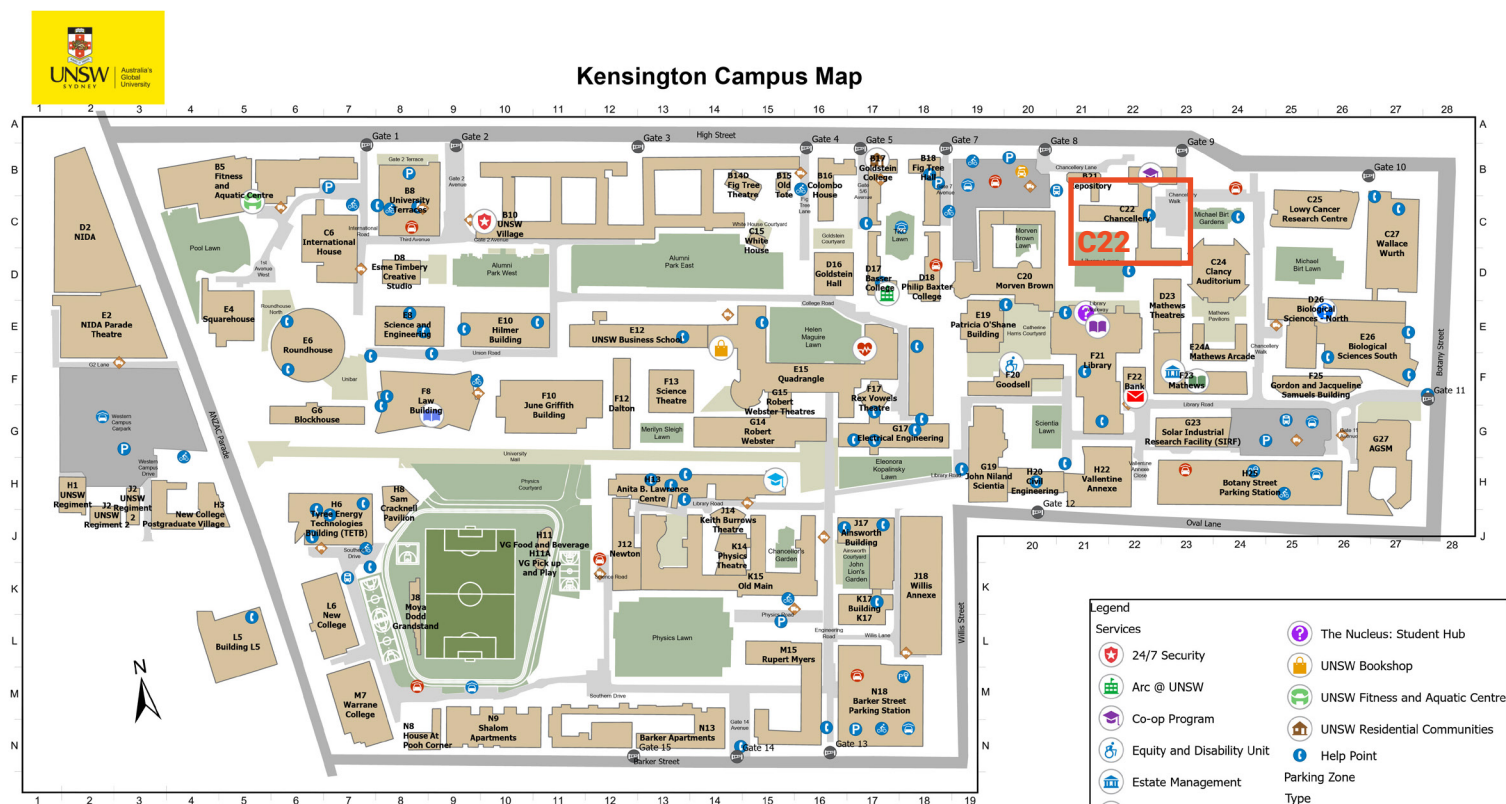


PhD Student Session

Venue: Committee Room 3, The Chancellery Building (Map C22), UNSW Sydney

3:06pm	Welcome	Shuhan Yang (Session Chair), UNSW
3:10pm	» Mitigating Urban Heat Using Modular Parklet	Qingyun Wu, UTS
	» Revealing Coupled Mechanisms between Urban Trees and Building Photothermal Performance	Lirui Deng Southeast University, China
	» Agri-Facades for Building and Community Resilience Through Improving Local Food Self-Sufficiency	Xi Zhang The University of Sydney
	» Climate-Resilient Buildings and Cities	Lehan Chen,UTS
	» Increasing the Building Envelope Resilience to Moisture Damages	Natalia Saavedra The University of Sydney
	» Zero Carbon Community: Approaches Using Urban Building Energy Modeling	Yunxi Zhu Politecnico di Milano, Italy
	» Opportunities and Barriers in Minimising the Energy Performance Gap (EPG) in the Hotel Sector in Australia	Noni Nuriani UNSW
	» Development of Building Lifecycle Digital Twins for Net Zero Buildings	Kaining Shen UNSW
	» Prediction of Solar PV Distribution in Canberra	Jie Shen, University of Nottingham, China
	» Development of Urban Morphological Models for Solar Potential and Energy Demand and Future Directions	Ivan Poon National University of Singapore
	» Research on Urban Building Electricity Simulation and Prediction Models under Future Heatwaves	Yi Wu Tsinghua University
	» A Causal-Bayesian Network Modelling Method for Heat Vulnerability–Mitigation Assessment and Forecasting	Shuhan Yang UNSW
	» Application of Neural Network Models in Urban Wind Speed Downscaling Prediction	Xiaohan Shen Southeast University, China
	» Implementation of Reinforcement Learning for Smart Control of an Ice-based Thermal Energy Storage System	Xiao Wang Tsinghua University

4:25pm Session Concludes



Getting to UNSW Sydney

- By Public Transport:
- Light Rail: Take the L2 Randwick Line or L3 Kingsford Line and get off at UNSW High Street or UNSW Anzac Parade stops. Both stops are located at the edge of campus and provide easy walking access.
  - Bus: Multiple bus routes service the UNSW Kensington campus, including the 390, 392, 370, etc. Check Transport NSW for real-time routes and schedules: <https://transportnsw.info>
- By Car:
- Limited paid parking is available on campus. Visitors can park in the parking spaces marked on the map.
- By Taxi or Uber:
- Use “UNSW Kensington Campus” as your destination.
  - Drop-off zones are located near Gate 9 (High Street) or Gate 2 (Anzac Parade) for convenient campus access.

