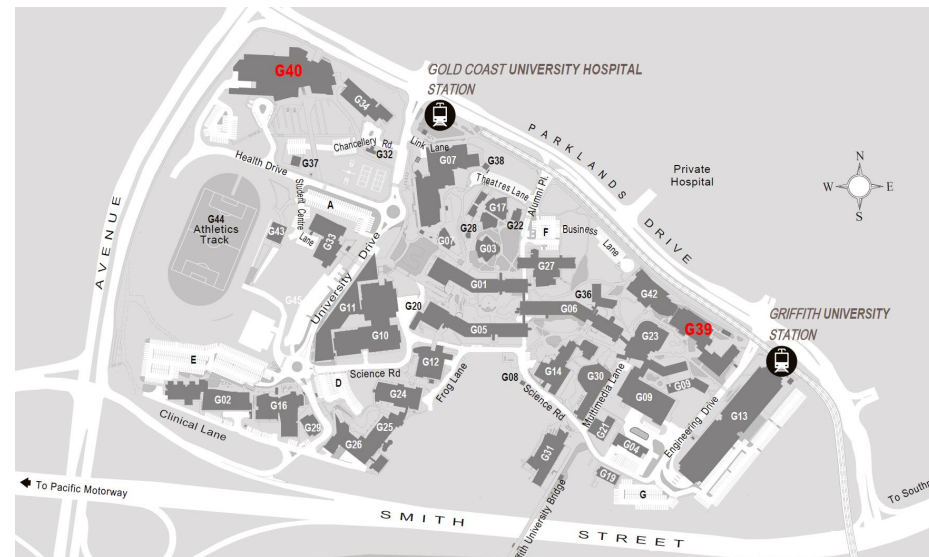


ASA Harmony in Architectural Science and Design: Sustaining the Future 2024



The 57th International Conference of the Architectural Science Association (ANZAScA)
26 – 29 November 2024, Gold Coast, Australia

CONFERENCE PROGRAM



NOTES:

- Except for the workshop, Introductory Exploration of Life Cycle Assessment, conducted by Dr Linaraki and held in G39, all the conference activities are held in G40.
- If using public transport [trams or buses], please be aware that the best stop to reach G40 is the Gold Coast University Hospital Station.
- How to interpret the venue numbering system:
Example: G40_5.60 = G40 [building name/number] 5.60 [level 5; room number 5.60]
- **ONLY** the presenting author is listed in the conference program. For full author and affiliation details, please refer to the Book of Abstracts.
- How to access **free Wi-Fi** for visiting guests or an eduroam participating institution account.

VISITING GUESTS



EDUROAM



1:00-5:00 PM	REGISTRATION OPENS G40_5 Foyer	
2:00-4:00PM	WORKSHOP SESSIONS	
	W01: Immersive horizons: Shaping tomorrow's architecture with VR Instructor: Soroush Masoumzadeh Sayyar, UniSA G40_4.113	W02: Introductory exploration of life cycle assessment Instructor: Dr Despina Linaraki, GU G39_3.54

OPENING NIGHT: 26 NOVEMBER – OPEN TO PUBLIC

	OPENING CEREMONY G40_5.63 Griffith Auditorium Welcome to the delegates Dr. Fan Zhang & Dr. Cecilia Bischeri Welcome to Griffith University Associate Professor Andrew Busch – Head of School Engineering and Built Environment Address from the President of the ASA Dr. Christopher Jensen
5:30PM	

	KEYNOTE LECTURE G40_5.63 Griffith Auditorium 6:00PM ARCHITECTURE'S ROLE IN SUSTAINING THE FUTURE Ali Bounds & Neil Logan, BVN Co-CEO Chair: Joe Snell, Director, Studio Snell
Till 9:00PM	WELCOME DRINKS AND CANAPES G40_5 Foyer

DAY 1: 27 NOVEMBER

8:00AM	REGISTRATION OPENS G40_5 Foyer		
	KEYNOTE LECTURE G40_5.60 Lecture Theatre 1 ECONOMIC DEVELOPMENT QUEENSLAND'S ROLE IN SHAPING A THRIVING HEALTH AND KNOWLEDGE ECONOMY Gareth Richardson - Development Manager at Economic Development Queensland Chair: Dr Tingting Liu		
9:00AM			
10:20AM	GROUP PHOTO & MORNING TEA G40_5 Foyer		
	S01: Architectural/building science, Indoor environment quality Chair: Prof. Richard Hyde G40_4.111	S02: Architecture, design and environment Chair: Dr Rongrong Yu G40_4.112	S03: Building and energy simulation, prediction, and evaluation Chair: Dr Mark Dewsbury G40_4.113
11:00 AM	Reducing traffic noise for indoor comfort: wing cheong estate, Hong Kong – improvements with different inclination angles Ferdinand Oswald	Cinematic echoes: exploring the spectrum of misery and dignity in Mexico City's forgotten cinemas Juan Carlos Dall'Asta	Analysing the impact of interest rate on the feasibility of using different window classes in residential buildings Mikael Gilbert
11:15 AM	An exploration of energy outcomes in 32 homes in Victoria Pabasara Upalakshi Wijeratne	Re-designing the Australian dream: Homeness imaginaries in emerging residential typologies Caroline Dahl	Lessons learned from calibrating the simulation model using measured data Hirda Lailani Khalid
11:30 AM	Improvement of heat exchange efficiency of combined heat recovery ventilation system with phase change materials for external load reduction Yongjun Choi	Towards a comprehensive definition of circular building through qualitative meta-synthesis Fernando Pavez	Evaluation of ventilation options for an urban childcare centre Sanuj Bandara
11:45 AM	Thermal comfort evaluation of an indoor thermal environment control algorithm using a metabolic rate estimation model Ji Young Yun	Harmony in the House: Qajar architecture through a comparative case study of six houses Azin Ehteshami	Optimizing landfilling fees for construction waste: A dynamic multi-objective optimization approach balancing environmental and economic performance Wenbo Zhao
12:00 PM	Multimodal machine learning model for thermal comfort prediction using infrared facial thermal images and tabular data Haifeng Lan	Exploring social sustainability in the built environment: definitions, dimensions, and implications Azra Zainab Shabbir Ahamed	Innovative Trombe wall technology applicable to north-facing facade for increase energy efficiency of public buildings Seong Taek Kang
12:30PM	LUNCH G40_5 Foyer		
	S04: Architecture, design and environment Chair: A/Prof. Ju Hyun Lee G40_4.112	S05: Building resilience, sustainability, and life cycle analysis Chair: Prof. Robert Crawford G40_4.113	
1:30PM	Addressing the 'recovery window': shifting approaches in post-disaster shelter strategies Subin Umar Rahman	Sustaining the future by using university campuses as material and greenhouse gas emissions banks André Stephan	
1:45PM	Towards an immersive design experience: initial user requirements to integrate parametric design with virtual reality Hamidreza Sakhaei	Sizing up new housing in Victoria: An interdisciplinary perspective on housing sufficiency Nicola Willand	



Griffith University acknowledges the people who are the Traditional Custodians of the land and pays respect to the Yugambeh and Kombumerri people their Elders, past and present, and extends that respect to all Aboriginal and Torres Strait Islander peoples.

2:00PM	A theoretical framework for development of virtual environments to aid contextual architecture	Enhancing and harmonizing environmental sustainability and circularity through timber hybrid building.
	Soroush Masoumzadeh Sayyar	Bigyeong Shin
2:15PM	Designing in different realities: how virtual environment fidelity influences design thinking—insights from pilot studies	Comparison of process-based and hybrid life cycle inventory data for environmental benchmarks of residential buildings
	Soroush Masoumzadeh Sayyar	Lise Mouton
2:30PM	Nature-experiential archetypes: Learnings from the Gandhi Ashram	Life cycle greenhouse gas emissions of energy retrofitting strategies for residential buildings in India: A case study
	Archie Arvindbhai Patel	Nayanika Bora
3:00PM	AFTERNOON TEA G40_5 & VISIT TO GU END OF THE YEAR EXHIBITION G39**	
	S06: Design education and research	S07: Building materials and indoor environment quality
	Chair: Susan Wake G40_4.111	Chair: Dr Ferdinand Oswald G40_4.112
4:00pm	Integrative AI in architecture: Towards a conversational design process	Decoding office satisfaction: What drives positive and negative experiences for occupants
	Juan Carlos Dall'Asta	Maryam Khoshbakht
4:15pm	Viral architecture or the unintentional architecture criticism of social media	An investigation of occupant window opening behaviour in residential aged care facilities during winter in Adelaide, Australia
	Ines Consuela Essen	Ali Malekpour
4:30pm	Barriers and opportunities in online delivery of architecture and building design studios: Australian educators' perspectives	An evaluation of methods to determine the water vapour diffusion resistivity properties of Australian plantation timber commonly used in construction
	Peter Lawrence	Mark Dewsbury
4:45pm	Through the forest of extraneous things: Exploring cognitive load theory and architectural design studio andragogy	Investigating the impact of emissivity of fully glazed facades on the outdoor thermal environment
	Daniel Gibbs	Elham Sanagar Darbani
5:00pm	Workshopping architectural acoustics pedagogies	Recycling waste banners into eco-friendly insulation for sustainable building materials
	Michael Mack	Dongchan Jin
		Denise Ryan
		Implications of Building Information Modelling (BIM) on project performance in high-end residential projects amidst economic crises: A case study of Sri Lanka (2020 – 2023)
		Dona Hashini Anuradha Wijesinghe

** If you are interested in visiting Griffith's 2024 Architecture, Industrial Design End of the Year Exhibition OPERATIVE during the afternoon tea break, our friendly staff will be happy to guide you to G39.

DAY 2: 28 NOVEMBER

8:00AM	REGISTRATION OPENS G40_5 Foyer	
	KEYNOTE LECTURE G40_5.60 Lecture Theatre 1	
9:00AM	BEYOND TRADITIONAL ARCHITECTURAL SCIENCE RESEARCH Prof. Veronica Soebarto – The University of Adelaide	
	Chair: Dr Fan Zhang	
10:20am	MORNING TEA G40_5 Foyer	
	S09: Architectural/building science, Indoor environment quality	S10: Architecture, design and environment
	Chair: Dr Mary Myla Andamon G40_4.112	Chair: Prof. Ning Gu G40_4.113
11:00 AM	A discrete choice experiment approach towards students' preferences of the lighting and acoustic condition in a virtual classroom	Floating and still houses in Agusan Marsh, Philippines: Vernacular architecture and water urbanism in the 21st century
	Cynthia Hou	Isidoro R. Malaque III
11:15 AM	Social factors driving adaptive behaviours for indoor comfort: Towards a framework for effective integration	Optimizing Building Performance: A Systematic Literature Review on Harnessing AI in Early Design Stages
	Francisca Rodriguez	Arianna Brambilla
11:30 AM	The thermal qualities of the living environments of older South Australians: an examination of two cohorts	Good medium: better maximum
	Larissa Arakawa Martins	Guy Marriage
11:45 AM	A Novel Approach to Investigate the Impact of Building Features on Occupant Behaviours: A Case Study of Low Socio-Economic Older People in South Australia	Housing Tomorrow: Challenges and opportunities for prefabricated medium density housing in New Zealand
	Shadi Jamialahmadi	Megan Scholtz
12:00 PM	The Effect of Indoor Temperature and Task Complexity on the Cognitive Performance of Office Workers	Designing climate-responsive built and living environments: perceptions of barriers and facilitators among design practitioners
	Sadia Israt Anam	Sareh Moosavi
12:30PM	LUNCH G40_5 Foyer	
	S11: Building and energy simulation, prediction, and evaluation	S12: Cities and outdoor environment
	Chair: Prof. Mark Luther G40_4.111	Chair: Prof. Isidoro Malaque III G40_4.112
1:30PM	Bio-hygrothermal performance of clay masonry veneer wall systems in southeast Australian residential buildings: A comparison from 6 star to 7 star with AEH 0.250, 0.375	Distant landscapes: Finding harmony in the work of Roberto Burle Marx
	Liqun Guan	Susan Wake
		Siti Balkish Roslan

1:45PM	Assessing the cooling effect of novel photonic meta-concrete on buildings with and without thermal insulation	Oasis effect for cooler cities	Assessing the internal thermal comfort of buildings in the greater male region, Maldives: with special reference to building practices and energy demand perspective on housing sufficiency
	Nick Adams	Maria Fernanda Parnenzini	Ahmed Jinan
2:00PM	Decarbonization of PV homes through services system electrification	An Evidence Based Framework for Climate-Sensitive Urban Design	Integration of vernacular design principles in contemporary buildings: A comfort assessment of school buildings in Colombo, Sri Lanka
	Zheng Wang	Yisong Liu	Tharoosha Sankaipa Karunagoda
2:15PM	Home is where the HRV is: A workflow to proliferate the Passive House standard in Australia	Multimodal Perception-Driven Safety Analysis for Urban Street	Developing a comprehensive framework for assessing elder friendly accessibility in mid-rise residential buildings in Colombo, Sri Lanka
	Noah Soderlund	Shuyang Li	Nesura Tharaka Bulathsinghala
2:30PM	Input for building energy modelling: Automatic 3D geometry model processing from UAV images	Heat-exposure risks in the construction industry: an analysis of fatal and non-fatal incidents in the United States between 2000 and 2023	Formulating an index for pluvial flood resilience in Colombo, Sri Lanka: a sponge city's perspective
	Mengfan Jin	Seyed Armin Mirhosseini	Suvani Manawadu Wickramasinghe
3:00PM	AFTERNOON TEA G40_5 Foyer		
	S14: Cities and outdoor environment	S15: Building resilience, sustainability, and life cycle analysis	S16: Online Session
	Chair: Dr Ehsan Sharifi G40_4.111	Chair: Dr Christopher Jensen G40_4.112	Chair: Dr Tingting Liu G40_4.113
3:30PM	Multicriteria framework for land use planning in watershed areas: Case of Matina River watershed, Davao City, Philippines	The reliability and comparability of Environmental Product Declarations in Australia	Impact of virtual reality on interior design project assessment: A comparative study at the University of Buraimi, Oman
	Isidoro R. Malaque III	Robert Crawford	Ahmed Anwar Kandil
3:45PM	Unveiling the design faults of green roofs as novel urban green spaces for enhanced thermal comfort: Lessons from Melbourne	Determination of commercial building solar admittance measures for the next National Construction Code of Australia	A Comparative Study: Vernacular Timber Construction Techniques of Iranian, Japanese, and Spanish Granary Structures
	Andrea Pianella	Paul Bannister	Farkhondeh Vahdati
4:00PM	What are smart cities good for? What city-building professionals say about the 'smart city'	Integrating the consideration of embodied environmental flows into the building design process	Examining sound insulation properties of bamboo-based composite construction material: a literature review
	Fanni Melles	Fabian Prideaux	Farkhondeh Vahdati
4:15PM	Rethinking the Building Energy Use from Occupant Aspect	Integrated assessment of the life cycle greenhouse gas emissions and life cycle costs of a smart heating, ventilation and air conditioning control system for an office building	Building-Integrated Photovoltaics (BIPV) in Building performance Research - A systematic literature review
	Shuyang Li	Praddeep Gobinath	Aanuoluwapo Aderonke Oguntade

4:30PM	Examining the spatio-cultural characteristics of ethnic communities: A combined syntactic and semantic approach Ling Zhou	Addressing interdependencies between urban ecology and Urban Industrial Buildings (UIBs) in the context of climate change: a literature review Marjan Rafiei	A rapid prediction model for building facade solar radiation using random forests Jun Hao Chan
CONFERENCE DINNER			
6:00-9:00PM	Southport Yacht Club, 1 Macarthur Parade, Main Beach, Queensland, 4217 Chair: Dr Rongrong Yu		

Getting to the Southport Yacht Club from Griffith University Campus:

- Via Car Sharing services or Taxi - time might vary according to traffic. The estimated time is between 12 to 30 minutes.
- Via public transport, you have two options:

OPTION 1 (TOT time 34 mins)

BUS starting from Gold Coast University Hospital Bus station [ground level]
Bus n. 719 Southport Platform 4
 Get off at Scarborough St at Southport (5th stop)
Bus n. 704 Sea World
 Get off at Seaworld Dr at Southport Yacht Club (7th stop)
 Walk about 2 min, 180 m.

OPTION 2 (TOT time 32 mins)

TRAM starting from Gold Coast University Hospital Tram station [underground level]
Tram Broadbeach South Platform 2
 Get off at Southport (4th stop)
 Walk
Bus n. 704 Sea World
 Get off at Seaworld Dr at Southport Yacht Club (5th stop)
 Walk about 2 min, 180 m.

Please consult GPS systems such as Google Maps for more detailed information.

When you arrive at the Southport Yacht Club, please remember to claim your drink token at the registration desk. Drinks for purchase are also available.

DAY 3: 29 NOVEMBER

KEYNOTE LECTURE G40_5.60 Lecture Theatre 1		
9:00AM NATURE IN CITIES: EXPLORING NECESSARY PARADIGM SHIFTS IN URBAN DESIGN Prof. Ali Cheshmehzangi – Head of School Architecture, Design and Planning The University of Queensland Chair: Dr Cecilia Bischeri		
10:20am MORNING TEA G40_5 Foyer		
S17: Architecture, design and environment Chair: A/Prof. Arianna Brambilla G40_4.111 Harmony, Vāstu Architecture and contemporary living	S18: Building resilience, sustainability, and life cycle analysis Chair: Dr Cynthia Hou G40_4.112 Embodied greenhouse gas emissions of the Fusion Modular VPAC system	S19: Theory, practice and community engagement Chair: A/Prof. Daniela Ottmann G40_4.113 Temporal synthesis in architecture: Bridging geography, material memories, and urban narratives
11:00 AM	Aparna Datey Sleep in intensive care units: The impact of light interventions	Robert Crawford From rooftops to ecosystems: Understanding the life cycle embodied GHG emissions of green roofs in Melbourne
11:15 AM	Iza Karen Linders Sustainable acoustics: Sound absorptive mycelium composites in architecture	Andrea Pianella An approach for comparing the embodied greenhouse gas emissions of HVAC systems for large volume buildings
11:30 AM	Brandon Eduardo Martinez Thermal performance of three common steel facade profiles	Surendar Jayachandran Engaging diverse stakeholders: Integrating wellbeing and sustainability in residential design and construction
11:45 AM	Ricardo Lionar	Dilshi Ishanka Dharmarathna Emma Morse
12:00 PM	Understanding the differences in LCA Tools for building environmental impact assessment: A comparative analysis Huixin Peng	
12:30PM ASA Annual General Meeting Award Ceremony and Announcement of next conference G40_5.60 Lecture Theatre 1		
1:30PM LUNCH G40_5 Foyer		

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