

Australasian Structural Engineering Conference 2024

30 – 31 October 2024 | Melbourne and online

Subject to change. Last updated 29 October 2024. All times listed in AEDT.



ENGINEERS
AUSTRALIA

Time	Day 1 – Wednesday, 30 October		
7.50–5.00	Registration		
8.40–9.00	Acknowledgement to Country and Opening address day one		
9.00–9.45	Structural engineering with purpose: addressing climate change globally through aligned action Tanya de Hoog FStructE CEng MIEAust President, The Institution of Structural Engineers		
9.45–9.48	Society of Façade Engineering (SFE) Tom Donald Eckersley O'Callaghan		
9.48–10.15	Morning tea and exhibition		
Time	Forum level 30	Learning Hub level 31	Discovery Hub level 31
10.15	Buildings: design and construction 1	Transport infrastructure 1	Engineering resilience 1
10.15–10.35	Design of reinforced concrete columns and walls with high strength steel Prof Stephen Foster University of New South Wales	Pre-tensioning and sliding of Victoria's first network arch railway bridge Gareth Jelenich Aurecon Daniel Tofful Civil Structures Studio	Structural robustness: A dive into the Australian standard approach Kray Real GHD
10.35–10.55	The application of structural fire engineering for sustainable building construction Dr Linus Lim Holmes Australia & New Zealand	Design of fixings for over track structures rail/metro tunnels (Virtual) Tony Lavorato Tom Daunt Aurecon	Structural behaviour of self-compacted and ambient-cured geopolymer concrete with coated recycled concrete aggregates Bahareh Nikmehr Deakin University
10.55–11.15	Closing the gap: secondary structural scope and what we can learn from integrated structural facade systems Tom Donald Marley Meemeduma Eckersley O'Callaghan	Causeway pedestrian and cycle bridges – using computational modelling to generate 3D models for complex cable stayed bridges Brent Burgess WSP	Effect of temperature on compressive behavior of hybrid fibre-reinforced magnesium oxychloride cement-based composites Farhan Ahmad Western Sydney University
11.15–11.35	Carbon reduction – strategies for structural engineers Richard Cass Arup	Melbourne Metro Tunnel project – city square rock pillar replacement wall Alistair Watson Arup	Mapping corrosion and estimating the effects of climate change for structural steel in Australia Peter Golding Galvanizers Association of Australia
11.35–11.55	Post-installed anchors approved for fatigue applications to enhance sustainability of structures Dr Philipp Mahrenholtz MKT	Accelerated bridge construction of three railway bridges in Botany Rail Duplication Project Sean Whelan Freyssinet Australia	Design criteria for public buildings that can provide refuge from extreme weather (Virtual) Dr David Henderson Cyclone Testing Station
11.55–12.15	Delivering EA's 2023 Project of the Year – Boola Katitjin Raffaele Belperio, Aurecon	Experiences in RSI analysis for urban light rail viaducts Mariano Martín Cañueto Acciona	Blast vibration limits by competent structural assessment Bill Jordan, Bill Jordan & Associates P/L Dr Alan Richards. Terrock Pty Ltd

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Time	Day 1 – Wednesday, 30 October continued		
12.15–1.00	Lunch and exhibition		
	Forum level 30	Learning Hub level 31	Discovery Hub level 31
1.00	Buildings: design and construction 2	Transport infrastructure 2	Engineering resilience 2
1.00–1.20	Bi-directional (2D) tuned sloshing damper for wind-induced building sway Dr Kirsty Kuo <i>Arup</i>	How bridge design and construction technologies have changed over 40 years Gerry Hofmann <i>GH Consulting Services</i>	Revision to Australian standard AS 4324.1-2017 for materials handling machine structures Richard Morgan <i>Aspec Engineering Pty Ltd</i>
1.20–1.40	Seismic behaviour factor of timber structures: a review Kosar Sefidi Jirandeh <i>University of New South Wales</i>	Low carbon small span road bridges John Hilton Ellen Worthington <i>Aurecon</i>	Performance of solar PV panels in recent tropical cyclones Dr Geoff Boughton <i>Cyclone Testing Station, James Cook University</i>
1.40–2.00	Seismic vulnerability of unreinforced masonry structures with different parameters (Virtual) Pranoy Debnath <i>IIT ISM Dhanbad</i>	Melbourne Metro cut and cover shaft excavation retention construction types Peter Statton <i>WSP</i>	Towards a safe structural fire design for mass timber buildings Grant Wang <i>Arup</i>
2.00–2.20	Column layout optimisation of a generalised concrete slab under architectural constraints using a gradient-based method Benjamin Pollock <i>van der Meer Consulting / University of New South Wales</i>	Application of recycled fibre reinforced concrete for sustainable railway sleepers (Virtual) Dr Christophe Camille <i>Western Sydney University</i>	Rapid seismic assessment tool for expediting rescue and recovery in an earthquake Prashidha Khatiwada <i>University of Melbourne</i>
2.20–2:50	Afternoon tea and exhibition		
2:50–3.35	Design of high-strength and ultra-high strength steels in the frame of Eurocode 3 (Pre-Record) Professor Ulrike Kuhlmann <i>University of Stuttgart / Institute of Structural Design</i>		

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Time	Day 1 – Wednesday, 30 October continued		
	Forum level 30	Learning Hub level 31	Discovery Hub level 31
3.35–3.40	Break to move rooms		
3.40	Buildings: design and construction 3	Engineering resilience 3	Circular economy
3.40–4.00	Improvement of interlayer bond strength of 3D printed concrete through interlocking patterns (Virtual) Longsheng Wang <i>University of Adelaide</i>	A state-of-the-art review of cold-formed steel built-up composite columns with geopolymers concrete infill Serene Sara <i>Simon Deakin University</i>	<i>Withdrawn</i>
4.00–4.20	Sydney modern – transforming the art gallery of NSW Andrew Phillips <i>Arup</i>	Impact of rooftop solar array installation on large scale buildings Dr Jianzeng Geng <i>Gamcorp Pty Ltd Martin Gamble</i>	Circular economy in the building sector: existing trends and stakeholders' perceptions regarding circular design strategies Mohana Motiei <i>RMIT</i>
4.20–4.40	What can we learn from structural health monitoring (SHM)? Part 1: Theory (Virtual) Benjamin Smith <i>Clockwork Consultancy Ltd</i>	Learning from Black Summer fires to enhance resilience in bushfire-prone areas (Virtual) Dr Sahani Hendawitharana <i>Queensland University of Technology</i>	The use of parametric tools in the refurbishment of the Victoria Bridge Gabbi Hodge <i>Arup</i>
4.40–5.00	What can we learn from structural health monitoring (SHM)? Part 2: Case study (Virtual) Benjamin Smith <i>Clockwork Consultancy Ltd</i>	Key focus areas to assure the longevity of resilient and sustainable reinforced concrete structures Scott Munter <i>Steel Reinforcement Institute of Australia</i>	Redfern station upgrade – Adaptive reuse and strengthening of heritage significant buildings and innovative canopy launch over live tracks Karim Abou-Youssef <i>Aurecon</i>
5.00–7.30	ASEC 2024 Welcome reception Curious bar, W Melbourne		

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Time	Day 2 – Thursday, 31 October		
8.00–16.00	Registration		
8.45–9.00	Opening address day two		
9.00–9.45	<p>Building a sustainable future – A new paradigm for structural engineering</p> <p>Dr Joseph Correnza, FIEAust CPEng Principal and Australasian Regional Board Member Arup</p>		
9.45–10.15	Morning tea and exhibition		
	Forum level 30	Learning Hub level 31	Discovery Hub level 31
10.15	Buildings: design and construction 4	Transport infrastructure 3	Technology and innovation 1
10.15–10.35	<p>Can CFRP sheets transform steel columns for sustainable construction?</p> <p>Lik Tze Lee Monash University</p>	<p>Permanent and temporary design integration: Noranda Station Overpass case study</p> <p>Matthew McCormick ADG Engineers</p>	<p>Parametric analysis and design of steel gantries to achieve sustainable outcomes</p> <p>Elise Verrocchi Arup Orissa Dixon Arup</p>
10.35–10.55	<p>Post-installed reinforcing bar connections: Design and installation</p> <p>Dr Tilak Pokharel AEFAC</p>	<p>3D finite element analysis of Parkville station for Melbourne Metro Tunnel project</p> <p>Kiana Kashefi WSP</p>	<p>Evaluation of concrete material properties for high strength concrete and steel fiber reinforced concrete at different hydration ages</p> <p>Prayush Rajbhandari Swinburne University of Technology</p>
10.55–11.15	<p>600 MPa Prefabricated column cages to improve sustainability</p> <p>David Drevon <i>InfraBuild Reinforcing</i> Maddelon Holt-Smith <i>Mirvac</i></p>	<p>Thermal loading monitoring, shaded air & strut temperature correlation in Underground Earth Retaining Structures on Melbourne Metro Tunnel Project</p> <p>Etienne De Boissieu <i>Gamuda Engineering Pty Ltd</i> Fabien Chamussy <i>Bouygues</i></p>	<p>The use of nonlinear finite element analyses in structural design and assessment</p> <p>Huy Binh Pham SMEC</p>
11.15–11.35	<p>Sydney Football Stadium redevelopment – Integrating collaborative methods with innovative design for a complex roof structure</p> <p>Hudson Kestel Michael Chernyavsky (Virtual) Aurecon</p>	<p>Anzac Station – Construction staging to accommodate transport network and TBM strategy</p> <p>Andrew Cowell Arup Adam Miller Arcadis</p>	Asset management / Forensic engineering 1
			<p>Bridge inspections using UAVs and digital reality models to promote sustainability</p> <p>Kaan Karabina David Miller Sterling Infrastructure</p>
11.35–11.55	<p>Galkangu Bendigo GovHub – Sustainable design and construction</p> <p>Mark Ayers Josh Finnin Arup</p>	<p>Vehicle-induced fatigue damage prognosis of orthotropic steel decks</p> <p>Saman Karimi Western Sydney University</p>	<p>Identification of structural integrity of full-scale structures using ambient vibration</p> <p>Dr Alan Jeary <i>Straam Group</i> Prof Marton Marosszeky <i>BCRC</i></p>
11.55–12.15	<p>Customised rib pattern to reduce development lengths for 600 MPa reinforcing steels</p> <p>Anthony Ng InfraBuild Australia</p>	<p>Extension of design life for bridges utilising ultra high-performance concrete</p> <p>David Gardiner, SMEC</p>	

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Time	Day 2 – Thursday, 31 October continued		
12.15–1.15	Lunch and exhibition		
1.15–2.15	Panel discussion: AI in Structural Engineering: Challenges & Opportunities Moderator: Michelle Collette FIEAust CPEng NER PE Associate/Lead Structural Engineer MLEI Consulting Engineers Melbourne		
	Professor Jun Li School of Civil and Mechanical Engineering Curtin University Ross Harvey Director Structures WSP	Alexandra Snelson (Virtual) Strategic Initiatives Manager Standards Australia	
2.15–2.20	Break to move rooms		
	Forum level 30	Learning Hub level 31	Discovery Hub level 31
2.20	Buildings: design and construction 5	Asset management / Forensic engineering 2	Technology and innovation 2
2.20–2.40	A multi-scale modelling strategy for mitigating catastrophic failures in composite structures Behzad Abdellahi Monash University	A method of determining whether delignification of a tile batten is a structural defect Dr Geoff Boughton, Cyclone Testing Station, James Cook University Dr Andrew Lacey Curtin University	Empowering engineering: new digital developments to increase safety and reduce cost in complex construction projects Eduardo Portillo Freyssinet
2.40–3.00	Saint Teresa of Kolkata building – Engineering Australian Catholic University’s (ACU) new flagship facility John Noel Arup	Enhancing structural health monitoring in heavy industries: An innovative approach Masoud Moghaddas FIEAust CPEng RPEQ NER Brad Searle WSP	<i>Withdrawn</i>
3.00–3.20	PARKD car park structural system evolving construction products to sustainable systems of construction Hoyeol Hur Peter Mcutchen PARKD	Prediction and prevention of structural failure; process tanks, pressure vessels and large bore ducting Richard Shedlock Olaf Rutgrink AMOG Pty Ltd	Stress field analysis of deep beams using physics-informed convolutional neural networks (PI-CNN) (Pre-Record) Dr Idris Ahmed Musa University of Kurdistan=Hewler
3.20–3.40	Application of low carbon design principles to structural engineering Evelyn Storey Aurecon	The role of engineering issues on failures and disputes in construction projects Dr Behrang Sarrafi HKA	
3.40–4.00	Performance of notched solid aluminium cassette cladding panels – Insights from numerical simulations backed by assessment of industry practices Bassam Matty Ironbridge Engineering	Prediction and prevention of Structural failure; rail mounted equipment and runways Richard Shedlock AMOG Pty Ltd	
4.00–5.30	Closing reception		

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Time	Day 3 – Friday, 1 November	
	Site tours <i>Pre-purchased ticket required</i>	
10.30–11.30	Melbourne Metro Tunnel Project	T3 Collingwood 36 Wellington Street, Collingwood VIC 3066

ASEC 2024 Poster listing

ID	Poster Title	Presenter	Subtheme
9	Load distribution in aluminium window frame elements	Hassan Sabzehali Director, AHA Engineering Pty Ltd	Buildings: design and construction
23	Threaded Inserts for reinforcement, from theoretical models to design tables through validation testing.	Emanuele Naccini Technical Development Engineer, Reid Construction Systems Andrew Coumaros Technical Development Engineer, Reid Construction Systems	Buildings: design and construction
26	Testing of post-installed anchors with a commercially available tolerance enabling device to complement their existing European Technical Assessments (ETA's).	Andrew Coumaros Technical Development Engineer, Reid Construction Systems Paul Shermerewich ITW Construction Asia Pacific - Industrial Division	Technology and innovation
110	From Pre-Concept to Construction: How the designation of environmental targets in the engineering specification prior to a design competition can empower a project.	Marley Meemeduma Associate, Eckersley O'Callaghan Tom Donald Eckersley O'Callaghan	Buildings: design and construction