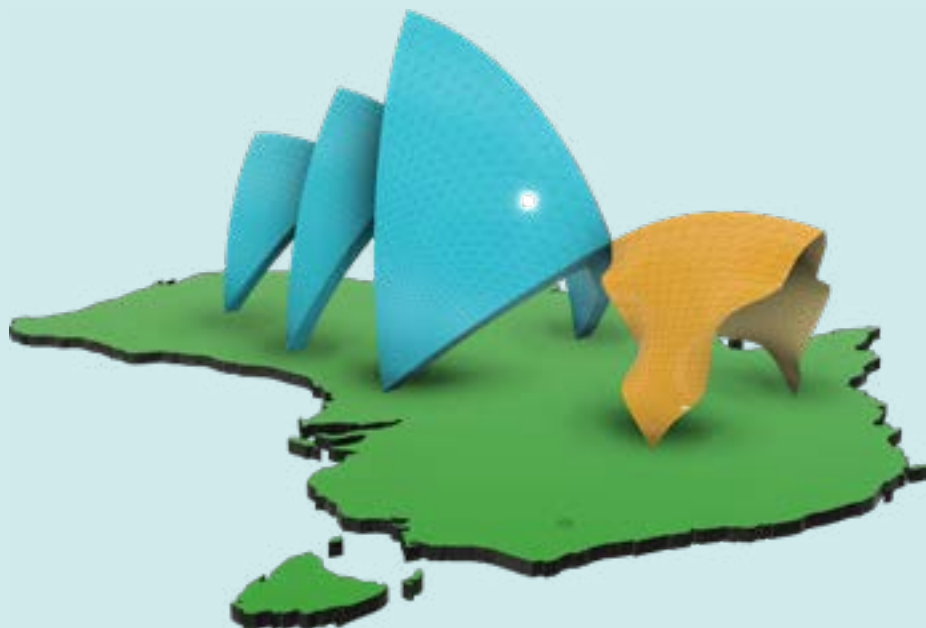


ICTWS2023

THIN-WALLED STRUCTURES NINTH INTERNATIONAL CONFERENCE

📅 29 November - 1 December 2023

📍 The University of Sydney, Australia



CONFERENCE PROGRAM

Charles Perkins Centre



Wednesday 29 November 2023

8.00am	Registration		
8.30am Room 1	Welcome to Country and Conference Opening Welcome by Prof Kim Rasmussen, <i>Chair Organising Committee</i> Welcome to Country by Brendan Kerin, <i>Marrawarra/Barkindji</i> Welcome by Prof Willy Zwaenepoel, <i>Dean of the Faculty of Engineering, The University of Sydney</i> Briefing on Thin-Walled Structures by Prof Nuno Silvestre, <i>Editor in-Chief</i>		
9.00am Room 1	Keynote: Wrinkling of Thin Membranes: Analysis and Effects on Solar Sails Professor Nuno Silvestre, <i>University of Lisbon, Portugal</i> Chair: Gregory Hancock		
9.45am Room 1	Keynote: Research Progress on Blast Analysis and Safety of Glass Facades Professor Suwen Chen, <i>Tongji University, China</i> Chair: Gregory Hancock		
10.30am	Morning Tea		
11.00am	Session 1: Cold-Formed Steel 1	Session 2: Fire	Session 3: Additive Manufacturing
	Room 1 Chairs: Maria Koteiko & Lip Teh	Room 2 Chairs: Paulo Vila Real & Zhong Tao	Room 3 Chairs: Leroy Gardner & Ben Young
	Pull-Out Capacities of Screw Connections in CFS Cladding Systems Under Combined Wind and Bushfire Actions Mahen Mahendran Design Optimisation for Cold Rolled Steel Beam Sections with Complex Stiffeners Considering Cold Working Effects Van Bac Nguyen Distortional Buckling of Cold-Formed Steel Channels Under Minor Axis Bending John Papangelis The Shear Performance Comparison of a Welded and Bolted Cold-Formed Steel Clip-Angle in a Beam-to-Column Shear Connection Ranjithkumar Madheswaran Behaviour and Design of Cold-Formed Steel Channel Sections with Strengthened Web Holes Under Different Loadings: A Review Boshan Chen Buckling Analysis of Built-Up Cold-Formed Steel Members Using the Reproducing Kernel Particle Finite Strip Method Mani Khezri	Distortional Behaviour, Failure and DSM Design of Lipped Channel Beams at Elevated Temperatures Alexandre Landesmann Fire Design of Steel I Beams Susceptible to Lateral-Torsional Buckling Under Combined End Moments and Transverse Loads Nuno Lopes Finite Element Study of LSF Walls Made of Built-Up CFS Channel Studs in Fire Son Tung Vy Fire Performance of High-Strength Steel Tubular Columns Protected by Sprayed Fire-Resistive Material Zhong Tao Moment Capacity of Brackets of Cold-Formed Steel Portal Frames James B.P. Lim Experimental Fire Performance of Slender Steel-Reinforced Concrete-Filled Steel Tubular Columns David Medall Martos	Local Buckling of Wire Arc Additively Manufactured I-Sections Ben Weber Testing and Analysis of Optimised Wire Arc Additively Manufactured Steel Trusses Pinelopi Kyvelou Testing and Modelling of 3D Printed Steel Plates Stiffened by Sinusoidal Waves Jingbang Pan Local Buckling of WAAM Tubular Cross-Sections with Plain and Optimised Profiles Xin Meng Shape Optimisation and Experimental Verification of Additively Manufactured Stainless Steel Corrugated Shells Ruizhi Zhang Objective-Based Topology Optimisation for Additively Manufactured Structural Joints Pouya Afshar Imani

Wednesday 29 November 2023

12.30am	Lunch		
1.30pm	Session 4: Stainless Steel and Aluminium Structures	Session 5: Connections 1	Session 6: Storage Racks
	Room 1 Chairs: Michael Jandera & Esther Real	Room 2 Chairs: Shen Yan & Luis da Silva	Room 3 Chairs: Hao Zhang & Zsolt Nagy
	Web Crippling Behaviour of Aluminium Sigma Sections: One Flange Load Cases Thirunavukkarasu Kajaharan Web Crippling Behaviour of Stainless-Steel Sigma Sections: Two Flange Load Cases Thirunavukkarasu Kajaharan Stainless Steel Portal Frames: Tests and Numerical Study Michal Jandera Web Crippling of Stainless Steel Built-Up I Sections Under End-Two-Flange Loading Ke Jiang Test on the Overall Stability of QN1803 Stainless-Steel Beam-Columns Baofeng Zheng Tests on Cold-Formed Stainless Steel Built-Up Box Section Stub Columns Hai-Ting Li	Minimum Strength Matching Coefficient Analysis of X80 Pipeline Welded Joints Under Different Strain Demands: A Numerical Study Dong Zhang Comparative Analysis: Fracture Toughness Demands of X80 Pipeline Girth Weld Under Different Design Criteria Yue Yang Design of Steel Tubular Phase Field Fracture Modelling for Laser Powder Bed Fusion Metals Cunyi Li RHS Joints with Passing Through Plates Using Laser Cut Technology Luis Calado Seismic Performance of Pallet Racking System with Friction Slipper Baseplates in Cross-Aisle Direction Zhenghao Tang Examining the Viability and Applicability of Cold Metal Transfer Welding Technology for Cold-Formed Steel Structural Members Bishal Naik	Experimental and Numerical Seismic Evaluation of Cold-Formed Steel Pallet Storage Rack Systems in Down-Aisle Direction Nima Shokrollahi Direct Strength Method and Response of Cold-Formed Steel Storage Rack Uprights in Global Buckling Nima Talebian Progressive Collapse of Beam-to-Upright Subassemblies of Steel Storage Racks Under a Column Removal Scenario Liusi Dai Research Development of Behaviour of High-Rise Braced Steel Storage Racks Zhaoqi Huang Experimental Investigation of the Behaviour of the Steel Storage Rack Frames Stabilized by Single-Sided Spine Bracing Zhaoqi Huang Experimental Evaluation of the Effects of Distortional Buckling on the Strength of Steel Storage Rack Uprights in Frame Assemblies Zhaoqi Huang
3.00pm	Afternoon Tea		

Wednesday 29 November 2023

3.30pm	Session 7: Plates and Shells 1	Session 8: Connections 2	Session 9: Fibre Composite Structures
	Room 1 Chairs: Richard Stroetmann & Alex Remennikov	Room 2 Chairs: Eiki Yamaguchi & James Lim	Room 3 Chairs: Joe Loughlan & Mike Bambach
	<p>Bending of Sandwich Panels with Various Cores Dong Ruan</p> <p>An Automated Preprocessing Algorithm for Model Reconstruction Towards Measured 3D Point Clouds of Cold-Formed Steel Members Xi Zhao</p> <p>Experimental Investigations on Diaphragms Made of Sandwich Panels and Corrugated Sheets Zsolt Nagy</p> <p>Experimental Study on the Fatigue Performance and Damage Evaluation of V125 Steel Roofing Cladding Under Typhoon Hazards Fan Bai</p> <p>Experimental and Numerical Investigation of Close-In Blast Response of Re-Entrant Honeycomb-Cored Sacrificial Cladding Systems Alex Remennikov</p> <p>Flexural Capacity of Extruded Aluminium Cladding Iqrar Hussain</p> <p>Functional and Structural Behavior of Innovative Ultra-Low Carbon Building Steel Envelope Systems Helena Gervasio</p> <p>Experimental Investigation of Corrugated Steel Sheeting Under the Effect of Wind Uplift Sodumu Ravikanth Reddy</p>	<p>Bolted Gusset Plates Connections in Compression Michal Jandera</p> <p>Evaluation of Bolted Shear Connector Used in Cold-Formed Steel Lightweight Concrete (GFS-LWC) Composite Beams Rohola-Rahnavard</p> <p>Experimental Investigation of the Rotational Behaviour of Apex Connections in Cold-Formed Steel Portal Frames Jurgen Becque</p> <p>Seismic Performance of Blind-Bolted Tubular Column Splices Xing Gao</p> <p>Experimental Investigation on Cold-Formed Steel Built-Up Beam Splice Connection Using Flange Splice and Web Cleat Karmugilan Panchamoorthy</p> <p>Full-Range Response of Angle Cleats in Bolted Angle Connections Jingsheng Zhou</p> <p>Retrofit Method for Repair of Corroded Bolted Connection Eiki Yamaguchi</p> <p>Development a High-Fidelity Finite Element Model of a Re-Constructible Inter-Modular Connection Aziz Ahmed</p>	<p>Studying the Debonding Failure in FRP-Strengthened Steel Braces Using Discrete Cohesive Zone Model Parisa Shadan</p> <p>Reliability-Based Code Calibration of Pultruded GFRP I and H-Section Columns Prone to Local Buckling André Martins</p> <p>Channel Section Laminated Beams with Non-Symmetries Subjected to Four-Point Bending Tomasz Kubiak</p> <p>Nonlinear Dynamic Analysis of the Organic Solar Cell Subjected to Moving Mass Impacts Yuhang Tian</p> <p>Numerical Study on the Behaviour of a Uniformly Stressed Metallic Toroidal Pressure Vessel Overwrapped with Carbon Fiber Reinforced Polymers Mohan Krishna Paleti</p> <p>The Effects of Shear Direction on the Buckling of CFRP Composite Perforated Plate Noorfaizal Yidris</p> <p>Graphene Nanoplatelets Induced Glass/Epoxy Composite Cylindrical Shells Under Thermal Environment: Material Characterization and Finite Element Analysis Velmurugan R</p> <p>Failure Behaviour of Thin Ply Composite Tubes Under Static Loading Liyong Tong</p>
5.30pm	Walk to Chau Chak Museum		
6.00pm - 8.00pm	Welcome Reception Chau Chak Wing Museum, The University of Sydney		

Thursday 30 November 2023

8.30am	Registration		
9.00am Room 1	Keynote Presentation: Data-Centric Engineering: Engineering in the Age of AI Professor Hugh Durrant-Whyte, <i>NSW Chief Scientist & Engineer, Australia</i> Chair: Kim Rasmussen		
9.45am Room 1	Keynote Presentation: Encompassing Measurements, Advanced Analysis and BIM for Digital Twinning of Steel Structures Associate Professor Rolando Chacón, <i>Universitat Politècnica de Catalunya, Spain</i> Chair: Kim Rasmussen		
10.30am	Morning Tea		
11.00am	Session 10: Concrete-Filled Tubes Room 1 Chairs: Yue Geng & Suwen Chen	Session 11: Plates and Shells 2 Room 2 Chairs: Ahmer Wadee & Federico Guarracino	Session 12: Machine Learning Room 3 Chairs: Rolando Chacón & Tomasz Kubiak
	Experimental and Numerical Study on Slender Concrete-Filled Steel Tubular Arches Subjected to Tilting Loads Yue Geng Test of Thin-Walled CFDST Columns with Large Hollow Ratio Under Complex Loads Kai-Yuan Jin Experimental Investigation of the Static Behaviour of Multi-Planar CFST Chord-CHS Brace KK Joints Qiqi Li Concrete-Filled Cold-Formed Chord Studs to Improve Seismic Performance of Steel Framing Buildings Francisco López Almansa Performance Evaluation of Bond Stress in Thin-Walled Concrete-Filled Steel Tube Columns with Shear Connectors Partha Debnath	Durable Decks of Lightweight Composite Bridges Richard Stroetmann Advanced Analysis of Steel Plate Girders Subjected to Web Shear Buckling Mehmed Numanovic Experimental Investigation of the Behaviour and Capacity of Sheathed Cold-Formed Steel Stud Walls Under Inward Flexural Loading Jurgen Becque Crashworthiness of Bio-Inspired Hierarchical Hexagonal Tubes Dong Ruan A Kinetic Façade Prototype with an Optimised Panel Plate Mike Bambach Tests of Thin-Walled Pultruded GFRP Beam-to-Column Joints Sivaganesh Selvaraj	A New Approach Based on Machine Learning Models to Predict the Behaviour of Cold-Formed Steel Columns Subjected to Eccentric Compressive Loads Liusi Dai Advanced Reliability Analysis for Engineering Structures Through Machine Learning Method Enyong Zhao A Physics-Guided Neural Network Framework for Laminated Composite Plates Weixi Wang Deep Neural Network Directs Stiffness Method: Initial Verification Examples Andreas Müller A Simple MLR Based Approach for the Characterization of Stainless Steel Connections Federico Guarracino A Smart Structural Analysis Method to Axial Compression Cold-Formed C-Section Members Xi Zhao
12.30am	Lunch		

Thursday 30 November 2023

1.30pm	Session 13: Cold-Formed Steel 2	Session 14: Plates and Shells 3	Session 15: Members 1
	Room 1 Chairs: Mahen Mahendran & Ben Schafer	Room 2 Chairs: Ashraf El Damatty & Cilmar Basaglia	Room 3 Chairs: Sandor Adany & Nuno Lopez
	<p>Experimental Investigation of Cold-Formed Steel Built-Up Closed Section Beam-Columns Under Moment Gradients Qiu-Yun Li</p> <p>A Consistent Design Approach of Built-Up Back-to-Back CFS Channel Compression Members With Varying Boundary Conditions and Sheathing Effects Son Tung Vy</p> <p>Assessment of DSM Design Standards for Cold-Formed Steel Built-Up Cross-Section Columns: Future Directions Sivaganesh Selvaraj</p> <p>Proposal for Interactive Buckling Design of Cold-Formed Steel Built-up Closed Cross-Section Columns Mahendrakumar Madhavan</p> <p>Moment Capacity of Novel Cold-Formed Steel Built-Up Box Sections Yecheng Dai</p> <p>Sectional Buckling Design of Built-Up Cold-Formed Steel Columns Mandana Abbasi</p>	<p>Damage Detection in Conical Shells Using an Inverse Finite Element Based on Generalised Beam Theory Ionel Craiu</p> <p>Parametric Study for Singly-Curved Parabolic Cylindrical Inflatable Structure Sanjay Upadhyay</p> <p>Combined Behaviour of Stiffened Steel Tubes for Wind Turbine Towers Yao Lu</p> <p>The Effect of Roof Curvature on the Rigidity and Stability of Cable Domes Ashraf El Damatty</p> <p>Stability of Empty Steel Conical Tanks Based on Wind Tunnel Testing and Numerical Modeling Ashraf El Damatty</p> <p>Analytical Solution for Local Effects in Cylindrical Shells Based on Enhanced Viasov's Approach Federico Guarracino</p>	<p>Reliability Analysis Method for Buried Pipeline Under Thawing Landslide of Frozen Soil Xiaoben Liu</p> <p>Numerical Analysis on the Seismic Capacity of Buildings with Transversely Prestressed CFST Columns Francisco López Almansa</p> <p>Buckling Resistance of Axial-Loaded Circular Steel Tubes Strengthened by Welding Under Service Load Shen Yan</p> <p>Designing and Harnessing the Buckling of Frames Subjected to Torsion for Adaptive Shading Modules Mani Khezri</p> <p>Numerical Simulation and Design of Pin-Ended Steel Equal-Leg Angle Section Columns and Beam-Columns Behnam Behzadi-Sofiani</p> <p>New Design Approach for Cold-Formed Steel Members Subjected to Combined Axial Compressive Load and Bending Maryam Hasanali</p>
3.00pm	Afternoon Tea		

Thursday 30 November 2023

3.30pm - 5.00pm	Session 16: Cold-Formed Steel 3	Session 17: Advanced Analysis Methods	Session 18: Members 2
	Room 1 Chairs: Mahendrakumar Madhavan & Cao Hung Pham	Room 2 Chairs: Dinar Camotim & Jurgen Becque	Room 3 Chairs: Rodrigo Gonçalves & Itaso Arrayago
	<p>Shape Improvement of Trapezoidal Cross-Sections for Self-Supporting Roof Cold-Formed Steel Members Cilmar Basaglia</p> <p>Web Crippling Behaviour of Cold-Formed Steel SupaCee Sections with Web Openings Hasini Weerasinghe</p> <p>Web Crippling Behaviour of Cold-Formed Sigma Channel Sections with Web Openings: Experimental Study Hasini Weerasinghe</p> <p>Design Proposal for Cold-Formed Channels Under Predominantly Shear with High Aspect Ratios Duy Khanh Pham</p> <p>Revised Plastic Mechanism Models for Use in DSM Localised Loading Design of Lipped Channel Sections Under Two-Flange-Loading Yiyu Xie</p> <p>Plastic Mechanism Models for Use in DSM Localised Loading Design of Hat Sections Under One-Flange-Loading Zhehang Chen</p>	<p>Thermal Stability of Porous Polymer Composite Plate Reinforced with Randomly Distributed Nanotubes Tanish Dey</p> <p>Application of Parametric Tools for Structural Design of Load-Bearing Glass Walls in Pavilion-Like Buildings Vlad Silvestru</p> <p>Ultimate Strength of TWCFS Members Under Eccentric Compression: Upper-Bound Estimation Via Yield Line Analysis Maria Kotelko</p> <p>Linear Buckling Analysis of Tubular Members with Modal Decomposition Sandor Adany</p> <p>Comparing Architectural Design Integration with Advanced Structural Analysis in Steel-Glass Structures: A Comparative Examination of Various Scenarios Faham Tahmasebinia</p> <p>Evaluation of the Structural Performance of Modular Buildings with Pre-Loaded Inter-Module Connections Keunwoo Lee</p>	<p>On the Effect of Prebuckling Deflections on the Lateral-Torsional Buckling of Beams Sandor Adany</p> <p>Applications of the Geometrically Exact Beam Theory to Non-Prismatic Beams Rodrigo Gonçalves</p> <p>Local Buckling Design for Hybrid Steel I-Girders Shuxian Chen</p> <p>Built-Up Cold-Formed Steel Lightweight Concrete (CFS-LWC) Composite Beams: Simulation and Design Rohola-Rahnavard Ben Schafer</p> <p>Design of Welded Steel I-Section Members by GMNIA with CSM Strain Limits Xiang Yun</p> <p>Influence of Wind Load Models on the Non-Linear Load-Bearing Performance of Steel Frame Structures Robin Steinmetz</p>
5.15pm	Bus from The University of Sydney to Dinner Cruise ferry wharf		
6.00pm - 9.00pm	Conference Dinner Cruise on Sydney Harbour Departing from King Street Wharf 5, Barangaroo		

Friday 1 December 2023

<p>9.00am Room 1</p>	<p style="text-align: center;">Dinar Camotim Special Session 1 Chairs: Rodrigo Gonçalves & Nuno Silvestre</p> <p>On the Contributions of Dinar Camotim to the Advancement of Thin-Walled Member Analysis and Design Rodrigo Gonçalves, NOVA School of Sciences and Technology, Portugal</p> <p>Testing and Analysis of Composite Cold-Formed Steel and Timber Flooring Systems with Innovative Shear Connectors Leroy Gardner, Imperial College London, UK</p> <p>Recent Developments in the DSM Localised Loading Design of Cold-Formed Steel Sections Gregory Hancock, The University of Sydney, Australia</p> <p>The Stability of Thin-Walled Single and Multi-Cell CFRP Composite Tubes in Torsion Joseph Loughlan, Loughborough University and Cranfield University, UK</p> <p>Performance of Load-Bearing LSF Walls Exposed to Fire on Both Sides Mahen Mahendran, Queensland University of Technology, Australia</p>
<p>11.00am</p>	<p>Morning Tea</p>
<p>11.30am Room 1</p>	<p style="text-align: center;">Dinar Camotim Special Session 2 Chairs: Rodrigo Gonçalves & Nuno Silvestre</p> <p>A Novel Functional Form for the Application of Direct Strength Method Ben Schafer, John Hopkins University, USA</p> <p>Lateral-Torsional Buckling Resistance of Non-Uniform Mono-Symmetric Steel Beams Luís Simões da Silva, University of Coimbra, Portugal</p> <p>Local-Global Buckling Interaction in Steel Beams: A European Design Proposal for the Case of Fire Paulo Vila Real, University of Aveiro, Portugal</p> <p>Test Campaign on Cold-Formed Steel Lipped Channel Beams Experiencing Local-Distortional Interaction Under Non-Uniform Bending Ben Young, The Hong Kong Polytechnic University, Hong Kong</p> <p>Stiffness Reduction of Cold-Formed Steel Structures Subject to Sectional Buckling and Yielding Professor Kim Rasmussen, The University of Sydney, Australia</p> <p>Response from Dinar Camotim</p>
<p>1.30pm</p>	<p>Lunch</p>
<p>2.00pm - 2.30pm</p>	<p>Conference Close</p>

Social Events

Welcome Reception

📅 Wednesday 29 November

🕒 6:00pm - 8:00pm

📍 Chau Chak Wing Museum,
The University of Sydney

Includes: Canapés & drinks.



Conference Dinner

📅 Thursday 30 November

🕒 6:00pm - 9:00pm

📍 Sydney Harbour Cruise
King Street Wharf 5

Includes: 3 course dinner & drinks.

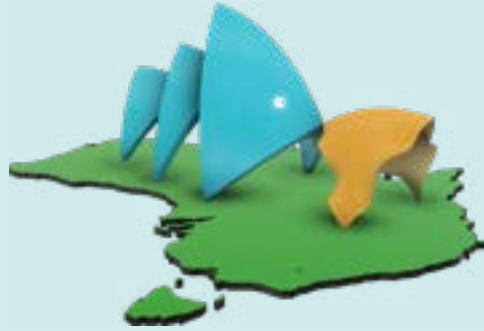


Chau Chak Wing Museum



Lab Tour meeting point





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Hosted by



THE UNIVERSITY OF
SYDNEY