

# 5th Pacific Timber Engineering Conference (PTEC 2019)

10-12 July 2019  
Brisbane, AUSTRALIA

Time	Wednesday, 10 July 2019 *		
	Plaza Foyer		
8am-8:45am	Coffee / Registration		
	Plaza - P1 & P2		
8:45am-8:55am	Opening Address Associate Professor Dilum Fernando The University of Queensland		
8:55am to 9:05am	Welcome To Country Shannon Ruska		
9:05am-9:20am	Future Timber Hub Presentation Professor Sritawat Kitipomchai Director of the ARC Future Timber Hub The University of Queensland		
9:20am-10:00am	Keynote Professor Jose L. Torero Professor Civil Engineering and Head of the Department of Civil, Environmental, Geomatic Engineering at University College London Explicit Design of Fire Safe Timber Structures by Separation of Risks		
10:00am-10:40am	Keynote Toby Hodsdon Associate Structural Engineer, ARUP, Brisbane, Australia Our Timber Journey – using design and research to build better		
	Plaza Foyer		
10:40am - 11:00am	Morning Tea Break		
	P1	P2	P3
11am-12:50pm	Session 1A Timber engineering (fire engineering) CHAIR - Jose Torero	Session 1B Wood products and components (new products and connections) CHAIR - Nick Hewson	Session 1C Timber engineering (mixed, composite, and hybrid structures) CHAIR - Toby Hodsdon
	1) Robert Dixon - Arup A Time-Equivalence Methodology for Exposed Mass Timber Structural Elements  2) Cristian Maluk - The University of Queensland Can we use inverse cause-consequence analyses for the fire safe engineering design of load-bearing timber structures?  3) Gabrielle K. Hodge - The University of Queensland Computational design of glued laminated timber trusses: a comparison of Australian Standard and Eurocode fire safety design implementations.  4) Oat Tuksaw - RED Fire Engineers Pty Ltd Challenges to performance-based fire safety designs in complex and tall mass timber buildings.	1) Giovanni Scollo - Rothoblaas Point Supported CLT Slabs: a new reinforcement system for the column-floor-column node  2) Hao Zhou - 3E Panels Pty Ltd & The University of Queensland Novel 3E Wall Panels  3) Cristiano Loss - University of British Columbia, Canada Prefabricated modular hybrid timber-based components for the next generation of multi-story buildings  4) Farshid Nouri - University of NSW Semi-rigid partial-strength steel-timber composite beam-to-column joints	1) Layla Kia - University of NSW Feasibility of Expressive Timber-Steel Hybrid Exoskeletal Systems for Tall Timber Structures  2) Zherui Li - Kyoto University, Japan Lateral Performance of the Frame with Upper Mud Wall in Japanese Traditional Residential Houses  3) Robert Tan - MiTek Australia Ltd PosiSlab Composite Concrete on Metal-Webbed Timber Floor Truss System  4) Kevin Plasencia - XLam Australia Pty Ltd CLT Composite Band Beam Floor System Design Concept

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12:50-1:50pm	Plaza Foyer Lunch		
Room	P1	P2	P3
1:50pm-3:40pm	Session 2A Timber engineering (fire engineering) CHAIR: Cristian Maluk	Session 2B Wood products and components (new products and connections) CHAIR: Lisa Ottenhaus	Session 2C Timber Engineering (Durability Issues) CHAIR: Jeffrey Morrell
	1) Samia Razzaque - Permax Australia Intumescent Coatings on Timber – Exploring what is it actually doing?  2) Ian Pope - The University of Queensland Effect of Grain Orientation on Heating and Charring of Laminated Bamboo Structures under Fire Conditions  3) Mateo Gutierrez - The University of Queensland Mechanical response of engineered bamboo at elevated temperatures  4) Juan I. Cuevas - The University of Queensland Challenges in the use of Bench-Scale Fire Testing as Design Tool	1) Giovanni Scollo - Rothoblaas Tensile and shear behavior of an innovative angle bracket for CLT structures.  2) Lie Luo - Tongji University, China Experimental and numerical studies on bolted glulam beam-column connections loaded perpendicular to grain  3) Qianwen Han - Tongji University, China Experimental Study on Screwed Beam-Wall Joint for Multi-Storey Glulam Portal Frame with Cross Laminated Timber Shear Walls  4) David Zhang - Multinail Australia Pty Ltd Timber Screw Capacity Related to Penetration Depth	1) Jeffrey J. Morrell - University of the Sunshine Coast Role of Moisture Management in During Mass Timber Construction  2) Andy Buchanan - PTL Structural Consultants, New Zealand Why healthy buildings are so important for structural timber engineers?  3) Geoff Stringer - The University of Queensland Internal Stress in Timber – Reliable design methods?  4) Philip D. Evans - University of British Columbia, Canada High-Performance Clear Coatings for Timber Buildings
Room	Plaza Foyer		
3:40pm-4:10pm	Afternoon Tea Break		
Room	P1	P2	P3
4:10pm-5:30pm	Session 3A Timber engineering (fire engineering) CHAIR: Andy Buchanan	Session 3B Wood products and components (new products and connections) CHAIR: Robert Mansell	Session 3C Timber Engineering (Robustness) CHAIR: Benoit Gilbert
	1) Carmen Gorska - The University of Queensland Self-Extinguishment of Cross-Laminated Timber in the Context of Compartment Fires  2) Aidon Browning - Holmes Fire L.P The Effect of Fuel Load Nature on the Self-Extinction of Mass Timber  3) Hangyu Xu - The University of Queensland Exploring the self-extinguishment mechanism of engineered timber in full-scale compartment fires: Design of Full-Scale Experiments and Preliminary Results	1) Mahyar Masaeli - Griffith University Scaling Effects in Beam-to-Column Connectors used in Mass Timber Buildings - Shear and Moment Behaviours  2) Nick Hewson - XLam Australia Pty Ltd Experimental Analysis of Load-Bearing Capacity of Platform-Frame CLT Floor Wall Joint Reinforcements  3) Hyeon-jeong Lee - Seoul National University, Republic of Korea Evaluation of screw shear connectors in Timber-Concrete Composite (TCC)	1) Toby Hodsdon - Arup State of the Art in Designing for Robustness of Engineered Timber Buildings  2) Chunhao (Alan) Lyu - Griffith University Experimental Study on a Novel Beam-to-Column Connector to Improve the Progressive Collapse Resistance of Mid-Rise Mass Timber Frame Buildings  3) Xinyi Cheng - Griffith University Experimental Study of the Dynamic Response of 2D Mass Timber Frames Under a Sudden Column Removal Scenario
Room	Plaza Foyer		
5:30pm-7:30pm	Welcome Reception		

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Time	Thursday, 11 July 2019 *		
Room	Plaza Foyer		
8:30am-8:50am	Coffee / Registration		
Room	Plaza - P1 & P2		
8:50am-9am	Opening Address <b>Chair: Professor Keith Crews</b> University of Technology Sydney		
9am-9:40am	Keynote <b>Professor Frank Lam</b> Senior Chair Professor Wood Building Design and Construction, University of British Columbia, Canada Opportunities and Challenges in Timber Engineering Research		
9:40am-10:20am	Keynote <b>Ben Owen</b> Senior Construction Manager, Lendlease Building, ACT Implementation and the buildability benefits of timber in construction		
Room	Plaza Foyer		
10:20am-10:50am	Morning Tea Break		
Room	P1	P2	P3
10:50am-12:40pm	Session 4A Wood products and components (structural performance of materials) CHAIR: Hans Blass  1) Chandan Kumar - Department of Agriculture and Fisheries, Queensland Government, Australia Predicting performance of sawn boards by using transverse cores from standing trees  2) Benoit Gilbert - Griffith University Capacity factors for laminated veneer lumber (LVL) beams manufactured from early to mid-rotation subtropical hardwood plantation logs  3) Samuel Wong - University of Waterloo, Canada & University of British Columbia, Canada New approaches for characterizing the strength of lumber based on a spatial distribution of knots  4) Adam Redman - Department of Agriculture and Fisheries, Queensland Government Australia Modelling of Vacuum Drying of Australian Hardwood Species and Future Application	Session 4B Wood products and components (mixed, composite, and hybrid structures) CHAIR: Minjuan He  1) Abdulrahman Zaben - The University of Queensland Fire performance of a prototype Timber-FRP hybrid Glulam beam  2) Ye Wen - The University of Queensland Hybrid Fibre-Reinforced Polymer (FRP)-Timber (HFT) Thin-Walled Cee Section Columns: Behaviour under Axial Compression  3) Amir Karimi-Nobandegani - University of NSW Nonlocal three-dimensional continuum damage model for failure analysis of timbers  4) Hamid Vali Pour Goudarzi - University of NSW Steel-timber composite floors	Session 4C Timber engineering (evaluation and comparison) CHAIR: Minghao Li  1) Xiaolan Zhang - Kyoto University, Japan Cyclic loading tests of 3-storey CLT structures  2) Alex Mainey - Griffith University Investigation of the Moisture Driven Backout of Nailplates using Digital Image Correlation  3) Takahiro Tsuchimoto - Dept. of Building Materials and Components, Building Research Institute, Japan Verification of Various Performance on Full-Sized Testing Houses of 2-Story CLT Panel and 6-Story Wood Frame Construction  4) Hiroshi Isoda - Kyoto University, Japan Experimental Seismic Behavior of a Two-Story Cross-Laminated Timber Structure without Tensile Anchor
Room	Plaza Foyer		
12:40-1:40pm	Lunch		

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Time	Thursday, 11 July 2019 *		
Room	P1	P2	P3
1:40pm-3:30pm	<b>Session 5A</b> Wood products and components (structural performance of materials) CHAIR: Rob McGavin	<b>Session 5B</b> Wood products and components (high performance wood products and building systems) CHAIR: Boris Iskra	<b>Session 5C</b> Timber engineering (best practice examples and case studies) CHAIR: Keith Crews
	1) Marina Totsuka - The University of Tokyo Partial Compressive Properties in the direction to the Lateral Face in CLT  2) Benoit Gilbert - Griffith University Key mechanical properties of LVL and cross-banded LVL manufactured from blending spotted gum and hoop pine veneers  3) Henry R Milner Glulam characteristics from statistical engineering mechanics  4) Wenchen Dong - University of Canterbury Lateral Behavior of Glulam Frames with Buckling Restrained Braces (BRBs)  5) Xiuzhi Zheng - Tongji University Long-term Performance of Post-tensioned Timber Beam-to-Column Connections	1) Yongliang Sun - Tongji Architectural Design (Group)Co.,Ltd., China Experimental mechanical properties of modified timber made of rubberwood  2) Shuai Jiao - Griffith University Development of an Innovative Composite Mullion Made of Aluminium and Timber  3) Ya Ou - The University of Queensland A Hybrid Timber-Concrete Floor System with Hollow Cores: An Experimental Study  4) Li Min - The University of Queensland Hybrid Fibre Reinforced Polymer (FRP)-Timber (HFT) Thin-Walled Structural Members  5) Atsushi Toyoda - Suncoch Consultant Co.,Ltd, Tokyo,Japan Performance evaluation of the cross laminated timber (CLT) for the bridge decks	1) Professor Judith Sheine - University of Oregon Lane County Mass Timber Courthouse: Promoting demonstration projects through interdisciplinary education  2) Jon Shanks - TimberED Services GlobalClinic - a case study in agile design & supply-chains in timber buildings  3) Gi Young Jeong - Chonnam National University, South Korea High-rise timber building using Force based design  4) Knut Menden - BVN Architecture Our Lady of the Assumption Catholic Primary School – Case Study 1st Multi Storey School in Mass timber construction (CLT, GLT)
Room	Plaza Foyer		
3:30pm-4:00pm	Afternoon Tea Break		
Room	P1	P2	P3
4:00pm-5:30pm	<b>Session 6A</b> Wood products and components (high performance wood products and building systems) CHAIR: Frank Lam	<b>Session 6B</b> Timber architecture CHAIR: Judith Sheine	<b>Session 6C</b> Timber engineering (Topics in timber engineering) CHAIR: Tim Smith
	1) Koumei Maehara - Kogakuin University, Tokyo, Japan The analytical research of seismic design for CLT structure using glued laminated timber for horizontal members  2) Justin Brown - University of Canterbury Quasi-static cyclic testing of Post-Tensioned Timber Core-wall Systems)  3) Chunhao (Alan) Lyu - Griffith University Progressive Collapse Experimental Response of Mid-Rise Mass Timber Frame Buildings under an Edge Column Removal Scenario	1) Kim Baber - The University of Queensland Large span glue laminated arches for the Yanjaegogae Eco Bridge  2) Tim Crawshaw - BVN Architecture Mass timber construction and the aesthetic of innovation  3) Eugenia Gasparri - University of Sydney UNITISED TIMBER ENVELOPES – From Concept to Prototype	1) Joseph Gattas - University of Queensland The potential for underutilised timber for the built environment  2) Emma O'Neill - PTL   Structural Consultants, New Zealand Pushing Boundaries with Light Timber Framing: Mary Potter Apartments  3) Aurimas Bukauskas - University of Bath, UK Whole Timber Construction: The State of the Art
6:30pm-10:30pm	<b>Conference Dinner</b> Location: Rydges South Bank Brisbane The Rooftop - Level 12 9 Glenelg Street, South Brisbane, QLD 4101 Note: There is direct access from BCEC		

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8:30am-8:50am	Coffee / Registration	
	Plaza - P1 & P2	
8:50am-9am	Opening Address <b>Chair: Dr Tim Smith</b> Director Forestry and Biosciences RD&E - Queensland Government	
9am-9:40am	Keynote <b>Professor Minjuan He</b> Professor, Department of Structural Engineering, Tongji University, China The Recent Development on Timber Engineering in China - Research, Codes and Construction Projects	
9:40am-10:20am	Keynote <b>Anna Charalambous</b> Project Manager, Lendlease DesignMake The evolution of mass timber from a Lendlease perspective and the future direction of utilising digital design and manufacturing principles.	
	Plaza Foyer	
10:20am - 10:50am	Morning Tea Break	
	P1	P2
10:50am-12:40pm	Session 7A Timber engineering (codes and international practices for timber structures) <b>CHAIR: Hamid Vali Pour Goudarzi</b>	Session 7B Implementations (public interest and incentives) <b>CHAIR: Andrea Stocchero</b>
	1) Lisa-Mareike Ottenhaus - University of Canterbury Nailed hold-downs in the context of timber strength classes proposed in the revision of NZS/AS1720.1  2) Craig Cowled - Queensland University of Technology Australia Needs to Adopt a Standard Test Method for Determining Timber-Framed Shear Wall Capacity  3) Laurence Ritchie - WoodSolutions, Australia New Cost Engineering Guide for Mid-rise Timber Construction  4) Thuy Nguyen - University of Technology Sydney Australian Construction Practitioner's Perception of Mass Timber Construction – The emerging challenges and strategies for further development  5) Xiang Fu - Tokyo Institute of Technology Cyclic loading test of Chuandou timber frames with masonry infill for residential house in south China	1) Andrea Stocchero - Scion, New Zealand Sustainable wood for a sustainable future: design and construction contributing to the UN Sustainable Development Goals and climate change mitigation  2) Chao (Sally) Liang - Shanghai Real Estate Education Center Lessons to Be Learned from Tourism Property Development  3) Andy Buchanan - University of Canterbury Embodied carbon in timber buildings  4) Marcus Strang - The University of Queensland Hygrothermal Performance of Engineered Wood Multi-Story Buildings in Australian Tropical and Sub-Tropical Climates  5) Sanam Aghdamy - Griffith University Experimental Investigation on Long-term Axial Creep Performance of Pine, Spotted Gum and Laminated Veneer Lumber
	Plaza Foyer	
12:40-1:40pm	Lunch	

## Silver Sponsors /Exhibitors



## Exhibitors



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Time	Friday, 12 July 2019 *	
Room	<b>P1</b>	<b>P2</b>
1:40pm-3:40pm	<b>Session 8A</b> <b>Timber engineering (innovative structural design and construction)</b> CHAIR: Geoff Stringer	<b>Session 8B</b> <b>Computer-based methods (modelling of structures)</b> CHAIR: Paolo Lavisci
	1) Alireza Chiniforush - University of Sydney and University of NSW Long-term Viscoelastic Creep of Steel-CLT Composite Beams  2) Shoichi NAKASHIMA - Building Research Institute, JAPAN Evaluation of Initial Stiffness and Yield Strength of CLT Drift Pinned Connection  3) Jussi Björman - METSÄ WOOD Elements & Modules for fast construction  4) Sung-Jun Pang - Seoul National University, Republic of Korea Shear resistance of Ply-lam composed with plywood and structural timber  5) Takuro MORI - Hiroshima University, Japan Study on creep behavior of Timber-Concrete Composite Floor	1) Adam Jones - WoodSolutions, Australia New tools for efficient structural design of mid-rise timber buildings  2) Xavier Estrella - Pontificia Universidad Católica de Chile, Chile Modelling the cyclic response of strong light-frame walls in Latin America  3) Kotaro Sumida - Kyoto University, Japan Damage Assessment of Japanese Wooden Houses during Earthquakes by Using Seismic Simulation Program  4) Kristopher Orlowski - The University of Melbourne Analysis of web alterations in stressed-skin engineered timber flooring cassettes
Room	<b>Plaza Foyer</b>	
3:40pm-4:00pm	<b>Afternoon Tea Break</b>	
Room	<b>Plaza 1 &amp; 2</b>	
4:00pm-5:15pm	<b>Panel Discussion</b> <b>"Using Timber in Construction - Benefits, Perception, Constraints"</b> Chair: Dr Joe Gattas - The University of Queensland Panel: 1) Professor Jose L. Torero - University College London 2) Tim Smith - Director Forestry and Biosciences RD&E - Queensland Government 3) Katie Fowden - Manager Strategic Relations - Hyne Timber 4) Craig Kay - National Product Engineer - Tilling 5) Adam Jones - Structural Engineer - WoodSolutions 6) Dave Gover - CEO - EWPAA	
5:15pm-5:30pm	Closing remarks, inclusive of WCTE 2020 Announcement - Professor Keith Crews	

**Silver Sponsors / Exhibitors**

**Exhibitors**
