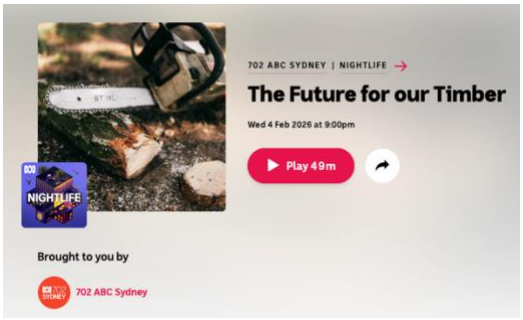
TABLE OF CONTENTS

NEWS HIGHLIGHTS

ARC ADVANCE TIMBER HUB DIRECTOR, PROFESSOR CREWS, ON ABC RADIO'S NIGHTLIFE – THE FUTURE FOR OUR TIMBER



Professor Keith Crews outlined the sector's challenges and opportunities during an interview on **ABC Radio's Nightlife – the Future for our Timber.** He emphasised that timber remains the only mainstream construction material that is both renewable and capable of storing carbon throughout its service life.

See: https://www.advance-timber-hub.org/media-releases/arc-advance-timber-hub-director-professor-crews-on-abc-radios-nightlife-the-future-for-our-timber/

This also inspired an article by Wood Central: Australia Needs to Plant More Trees — but Agroforestry Could Help Close the Gap

HUB PHD CANDIDATE, JOSH MADDEN, CELEBRATED BY QUEENSLAND DEPARTMENT OF EDUCATION

ARC Advance Timber Hub PhD Candidate, Josh Madden, was celebrated in an inspiring story by the Queensland Department of Education on Josh's career path.

Josh is a UQ School of Civil Engineering PhD candidate, with his research focused on the ARC Advance Timber Hub Project – Fire Safety Design of Open Plan Timber Compartments. We are very proud his journey has led him to be part of the ARC Advance Timber Hub team.

See: https://www.advance-timber-hub.org/hub-news/joshmadden/

BRIDGING RESEARCH AND INDUSTRY PRACTICE: INSIGHTS FROM DR LUIS YERMAN'S AKD SECONDMENT

Dr Luis Yerman, completed a successful industry secondment, in late 2025, with Hub partner, AKD. Luis, a Senior Research Fellow at The University of Queensland School of Civil Engineering, representing the ARC Advance Timber Hub and the National Centre for Timber Durability and Design Life, undertook the six-month industry secondment to bridge academic research and real-world timber applications.
See: https://www.advance-timber-hub.org/hub-news/bridging-research-and-industry-practice-insights-from-dr-luis-yermans-akd-secondment/

This article also featured on the Front Page of Timber Forestry eNews: https://www.advance-timber-hub.org/hub-news/front-page-of-timber-forestry-enews/

ARC ADVANCE TIMBER HUB STRATEGIC PLANNING DAY 2025

The ARC Advance Timber Hub convened its Annual Strategic Planning Day on 15 December 2025 in Brisbane City, bringing together Hub stakeholders, researchers and selected industry representatives to reflect on progress, align priorities and shape the year ahead.
See: https://www.advance-timber-hub.org/hub-news/arc-advance-timber-hub-strategic-planning-day-2025/

ARC ADVANCE TIMBER HUB SHOWCASES RESEARCH AT QUEENSLAND PARLIAMENT HOUSE

The ARC Advance Timber Hub, together with The University of Queensland School of Civil Engineering, demonstrated a strong presence at Queensland Parliament House on Tuesday 9 December 2025, engaging directly with key government stakeholders to highlight The University of Queensland's (UQ) Productivity in Practice Solutions Showcase.
See: https://www.advance-timber-hub.org/hub-news/arc-advance-timber-hub-showcases-research-at-queensland-parliament-house/

HUB PHD CANDIDATE, MAHDI MAZHARI, RECEIVES MITACS GLOBALINK RESEARCH AWARD TO SUPPORT INTERNATIONAL COLLABORATION

The ARC Advance Timber Hub is pleased to acknowledge the outstanding achievement of Mahdi Mazhari, a PhD candidate in Structural Engineering at Griffith University, who's PhD is part of ARC Advance Timber Hub Research Node: Performance of Building Components, Project 1.1: Innovative Long-Span Timber and Wood-Based Hybrid Floors for Vibration Performance and Acoustic Compliance.
See: https://www.advance-timber-hub.org/hub-news/hub-phd-candidate-mahdi-mazhari-receives-mitacs-globalink-research-award-to-support-international-collaboration/

SMALL-LOG FRAMING CONCEPT SHOWCASED BY HUB PARTNER LOGGO

Hub partner, Loggo. Has featured in 3 x Wood Central articles which explores Loggo's approach to developing efficient, low-cost timber building systems that optimise resource use and reduce material waste.

To view the Wood Central articles please click links below:

1. Small-Log Framing Concept showcased by Hub Partner Loggo
2. Loggo Has Over Half the World Patented — Now It Needs Partners to Build It
3. Novel Mass Timber System Showcased by Hub Partner Loggo

This work aligns with **ARC Advance Timber Hub Project "Establishing Viable Product and Market Solutions for Hardwood Plantation Thinnings and Small Logs",** which was featured in a Project Update in November 2025.
See: https://www.advance-timber-hub.org/hub-news/project-update-establishing-viable-product-and-market-solutions-for-hardwood-plantation-thinnings-and-small-diameter-logs/

PROFESSOR KEITH CREWS FEATURED IN THE COURIER MAIL: "FLATPACK VILLAGE COULD BUILD A LASTING OLYMPIC LEGACY"

Professor Keith Crews, was featured in THE COURIER MAIL in an article highlighting innovative housing solutions for Brisbane 2032 and beyond.
See: https://www.advance-timber-hub.org/hub-news/professor-keith-crews-featured-in-the-courier-mail-flatpack-village-could-build-a-lasting-olympic-legacy/


MAJOR PARTNERS technology1 Brisbane Airport The University Of Queensland walker 05

Riverfront Visy-on for the future

Plan for 4000 new high-rise homes

House about a flatpack village

Kate Jones

"The plan will deliver more homes, more jobs and a vibrant precinct"

Deputy Premier Jarrod Bleijie

The technology to make the Games a success is born right here

ED CHUNG

QUEENSLAND FUTURE TIMBER PLAN CHARTS LONG-TERM VISION FOR A SUSTAINABLE TIMBER INDUSTRY

The Queensland Government unveiled the QUEENSLAND FUTURE TIMBER PLAN — a long-term strategy designed to provide certainty for the forestry and timber industries while supporting regional jobs, sustainable growth and infrastructure needs.

The ARC Advance Timber Hub was closely involved in this process through membership of the Timber Supply Chain Ministerial Stakeholder Roundtable and direct engagement via Hub Director, Professor Keith Crews.

See: https://www.advance-timber-hub.org/media-releases/queensland-future-timber-plan-charts-long-term-vision-for-a-sustainable-timber-industry/

ARC ADVANCE TIMBER HUB RESEARCHERS PRESENT AT OSAKA WORLD EXPO 2025

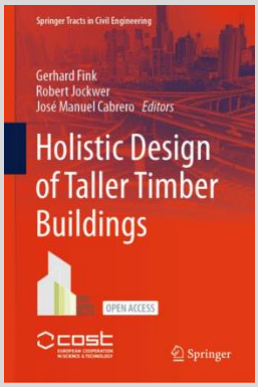
ARC Advance Timber Hub Chief Investigators A/Prof Kim Baber, Dr Liam Ottenhaus and A/Prof Joe Gattas, represented Australia's timber research community at the Australian Pavilion during the Osaka World Expo 2025 in Japan.
See: https://www.advance-timber-hub.org/hub-news/arc-advance-timber-hub-researchers-present-at-osaka-world-expo-2025/

ARC ADVANCE TIMBER HUB LEADERS PRESENT AT GOTTSTEIN TRUST UNDERSTANDING WOOD SCIENCE COURSE

On September 11 & 12 2025. the, ARC Advance Timber Hub (ATH) Director and 1990 Gottstein Fellowship recipient Prof Keith Crews along with QLD DPI Forest Product Innovation Team Leader and 2024 Gottstein Fellowship recipient Adam Faircloth, were invited to present at the biennial Understanding Wood Science Course hosted by the Gottstein Trust in Canberra. The event that brings together industry, researchers, and fellows to share insights into the evolving role of timber and wood products in Australia's built environment.
See: https://www.advance-timber-hub.org/hub-news/advance-timber-hub-leaders-present-at-gottstein-trust-understanding-wood-science-course/

To learn more about **Adam Faircloth's Gottstein Fellowship Study Tour – Exploring the Global Understanding of Timber Vibration and Acoustics** see: https://www.advance-timber-hub.org/hub-news/adam-faircloths-gottstein-fellowship-study-tour-exploring-the-global-understanding-of-timber-vibration-and-acoustics/

ARC ADVANCE TIMBER HUB INVESTIGATOR CONTRIBUTES TO INNOVATIVE PUBLICATION ON THE HOLISTIC DESIGN OF TALLER TIMBER BUILDINGS



Hub Investigator, Liam Ottenhaus, contributed to Innovative Publication on the Holistic Design of Taller Timber Buildings. See: https://www.advance-timber-hub.org/media-releases/arc-advance-timber-hub-investigator-contributes-to-innovative-publication-on-the-holistic-design-of-timber-buildings/

AUSTRALIAN TIMBER FIRE STATION WINS BUILT BY NATURE PRIZE 2025

An exemplar project of the ARC Advance Timber Hub: The Queensland Fire and Emergency Services North Coast Regional Headquarters and Maryborough Fire and Rescue Station, **won the international Built by Nature Prize 2025**. See: https://www.advance-timber-hub.org/hub-news/australian-timber-fire-station-wins-built-by-nature-prize-2025/
&
https://www.advance-timber-hub.org/hub-news/australian-timber-fire-station-wins-built-by-nature-prize-2025/

FEATURED ARTICLES

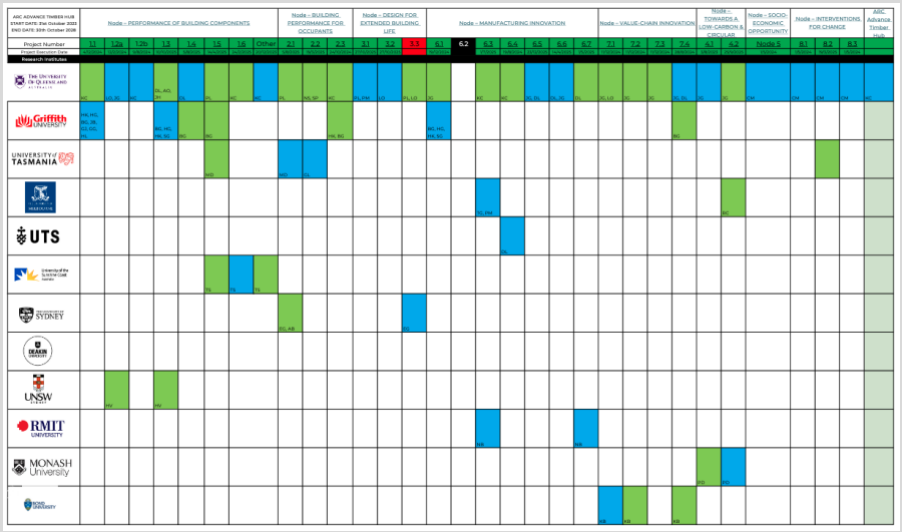
The ARC Advance Timber Hub and/or Partners / Investigators were featured in the following articles:

1. London Goes Vertical — Timber Extensions Add 40% More Space
2. New Research Looks to Underutilised Timber to Address Australia's Housing Challenge
3. Timber Framing Carbon Calculator
4. Building with Timber: Construction, Performance & Design Life
5. Bunnings Community & Sustainability Report 2025 for Responsible Timber Sourcing
6. From Pulpwood to Glulam — The Aussie Bluegum as Strong as Steel!
7. Have Your Say on FWPA's Draft Standard: Methods of Test for Mechanical Fasteners and Connectors
8. WoodSolutions and Timber Insight advance sustainability
9. Celebrating Scion's Recognition for Outstanding Contribution
10. Arup to Lead Brisbane 2032 Victoria Park Masterplan – Continues Commitment to Sustainable Innovation
11. Designing Long-Span CLT Floors: Why Under-Floor Insulation Matters for Soundproofing

PROJECT / RESEARCH UPDATES

PROJECT OVERVIEW

To easily see what projects our partners are supporting, please view the Overview Diagram.



ARC ADVANCE TIMBER HUB WEBSITE / PROJECTS

The ARC Advance Timber Hub website is regularly refreshed to keep you informed of the latest findings. Click on project links below to be directed to the website page.

Node 1: Performance of Building Components

Project 1.1
Innovative Long-Span Timber and Wood-Based Hybrid Floors for Vibration Performance and Acoustic Compliance
– Professor Hassan Karampour

Project 1.2
Connection Systems for Extended Building Life
– Dr Liam Ottenhaus

Project 1.3
New Hybrid Load Bearing System as an Incremental Step Towards the Adoption of Timber in Buildings
– Associate Professor Benoit Gilbert

Project 1.4
Fire Safety Design of Open Plan Timber Compartments
– Associate Professor David Lange

Project 1.5
Development of Moisture Monitoring, Assessment and Management Systems for the Australian Mass Timber Construction Industry
– Dr Maryam Shirmohammadi

Project 1.6
Role of Moisture in the Long-Term Performance of Mass Timber Building Elements – Professor Tripti Singh

Node 2: Building Performance for Occupants

Project 2.1
The Bio-Hygrothermal Performance of Mid-Rise Non-Residential Timber Framed Façade Systems – Dr Mark Dewsbury

Project 2.2
Design for Positive Occupant Outcomes in Timber-Rich Environments – Dr Georgia Lindsay

Project 2.3
Influence of CLT Manufacturing Variables on Vibration and Acoustic Performance – Dr Chandan Kumar / Adam Faircloth

Node 3: Design for Extended Building Life

Project 3.1
Circular [Re]Design to Enable Disassembly and Reuse of Mid-Rise Timber Buildings – Associate Professor Paola Leardini

Project 3.2
Connection Systems for Extended Building Life – Design Principles – Dr Liam Ottenhaus

Node 4: Towards a Low-Carbon & Circular Economy

Project 4.1
New 'Green' Methods to Support Forest and Wood Products Advocacy in the Built Environment – Prof Paul Dargusch / Assoc Prof Joe Gattas

Project 4.2
The Development of Strategies to have the Carbon Savings and Broader Environmental Benefits of Growing Forests and Using Timber in the Built Environment Appropriately Recognised – Professor Paul Dargusch / Professor Robert Crawford

Node 5: Socio-Economic Opportunity

Node 5 Projects
Economic Modelling of Timber Industry and Synergy and Interaction with Systems Dynamic Model & EWP Industry Audit and Economic Scenario Modelling (Alignment with Supply Chain Modelling Tool) – Dr Cristyn Meath / Emeritus Professor John Mangan

Node 6: Manufacturing Innovation

Project 6.1
Improving Resource Availability and Utilisation for Residential Timber Manufacturing and Construction
– Associate Professor Benoit Gilbert

Project 6.3
Digital and Physical Systems Design for Optimised Design-to-Delivery of Prefabricated Timber Housing – Dr Tharaka Gunawardena / Dr Nic Bao
Project 6.4
Autonomous Screw-Fixing Robots for CLT Panel Building Assembly
– Dr Dikai Liu

Project 6.5
Collaborative Robots For Resource-Adaptive Timber Construction Using Variable, Out-Of-Grade Timber Feedstocks
– A/Prof Joe Gattas

Project 6.6
Automatic Timber Property Assessment for Variable Fibre Feedstocks
– Dr Dan Luo

Project 6.7
Performance-Based Architectural Design and Optimization Using Biomaterial and AR-Assisted Discrete Assemblies
– Dr Nic Bao

Node 7: Value Chain Innovation

Project 7.1
Adaptive Building Forms for Inventory-Constrained Utilisation of Low Value Fibre
– Kim Baber

Project 7.2
Establishing Viable Product and Market Solutions for Hardwood Plantation Thinnings and Small Diameter Logs
– Dr Chandan Kumar

Project 7.3
EWPs to Maximise Australian Wood Fibre Recovery and Utilisation
–Dr Rob McGavin

Project 7.4
An Open-Data Framework for Forest-to-Building Value Chain Mapping
– A/Prof Joe Gattas

Node 8: Interventions for Change

Project 8.1
EWP Industry Supply Chain Modelling Tool (alignment with Economic Scenario Modelling) – Dr Cristyn Meath

Project 8.2
Status, Perceptions and Priorities of EWP Industry in Australia
– Dr Cristyn Meath

Project 8.3
Evaluation of the ARC Advance Timber Hub
– Dr Cristyn Meath

RESOURCES

The ARC Advance Timber Hub lists all published material from project outcomes on its RESOURCES page. Below are links to the latest resources that have been added:

ARC Advance Timber Hub:

Video:
1. WORLD CONFERENCE ON TIMBER ENGINEERING 2025 VIDEOS

Node 1: Performance of Building Components

Blog:
1. LONG-SPAN CLT FLOORS: THE IMPORTANCE OF UNDER FLOOR INSULATION FOR SOUNDPROOFING

Conference Paper:
1. RETHINKING FIRE SAFETY FOR TIMBER BUILDINGS: IGNITION, SPREAD, AND PERFORMANCE-BASED DESIGN
2. A METHOD TO STUDY IGNITION OF INVERTED COMBUSTIBLE SURFACES
3. BURNING BEHAVIOUR OF A TIMBER CEILING: A BENCH-SCALE INVESTIGATION
4. COUPLING FIRE AND MASS TIMBER STRUCTURES: A CHALLENGE FIRE SAFETY DESIGNERS MUST ADDRESS

Journal Article:
1. A METHOD TO STUDY IGNITION OF INVERTED COMBUSTIBLE SURFACES
2. GLOBAL STATE OF KNOWLEDGE ON HUMAN-INDUCED SOUND AND VIBRATION EVENTS: DEFINING FUTURE RESEARCH DIRECTIONS FOR MASS TIMBER PRODUCTS

Webinar:
1. ACOUSTIC AND VIBRATION PERFORMANCE OF MASS TIMBER FLOOR SYSTEMS

Node 2: Building Performance for Occupants

Webinar:
1. ACOUSTIC AND VIBRATION PERFORMANCE OF MASS TIMBER FLOOR SYSTEMS

Node 3: Design for Extended Building Life

Book Chapter:

1. EVALUATING THE DISASSEMBLY POTENTIAL OF TIMBER BUILDINGS: DEVELOPMENT OF CALCULATION TOOL AND PROOF OF CONCEPT

Node 4: Towards A Low-Carbon & Circular Economy

Tool:

1. TIMBER FRAMING CARBON CALCULATOR

Node 6: Manufacturing Innovation

Conference Papers:

1. GOAL-DIRECTED VISUAL DIFFUSION POLICY FOR EFFICIENT DATA COLLECTION IN ROBOT LEARNING

Node 7: Value Chain Innovation

Conference Papers:

1. FROM WASTEWATER TO BUILDING: HARNESSING DIGITAL FABRICATION FOR CIRCULAR ECONOMY INNOVATIONS
2. SUSTAINABLE MODULAR TIMBER MEMBRANE SHADE STRUCTURE FROM UNDER-UTILISED PLANTATION THINNINGS

PEOPLE UPDATE

TIMBER QUEENSLAND

We are delighted to advise that **Chloe Downey** now works at Timber Queensland as their Communications and Event Officer.

Chloe was part of our team at The University of Queensland / ARC Advance Timber Hub for 16 months, as our Engagement and Events Coordinator, where she supported the delivery of the World Conference on Timber Engineering 2025, and boosted the ARC Advance Timber Hub's communication strategies. Her contract ended at the beginning of 2026, however we were happy to hear that shortly after she was appointed by Hub Partner, Timber Queensland, as their Communications and Event Officer.
We are so pleased for Chloe and wish her all the best at Timber Queensland.

CURRENT STAFF

Along with our many investigators, see People section of the ARC Advance Timber Hub website, here is a list of current staff who are fully or partly funded by the Hub.

Research Hub Manager

1. Kelly Rischmiller – The University of Queensland

Research Fellows

1. Luis Yerman – The University of Queensland - Node 1 (Durability)
2. Thomas Wright – The University of Queensland - Project 1.2 & 3.2
3. Hons K Wyn – The University of Queensland - Project 1.4
4. Bill Leggate – Griffith University - Project 6.1

Research Assistants

1. Ian Underhill – Griffith University - Project 1.1
2. Jarrah Will – The University of Queensland - Project 1.4
3. Mitchell Lees – The University of Queensland - Project 1.4
4. Loren Dyer – University of Tasmania -Project 2.2
5. Gibson Hu – University of Technology - Project 6.4
6. Steve Li – RMIT - Project 6.3 & 6.7
7. Catalina Espinosa – The University of Queensland - Node 5 & Project 8.1

PHD CANDIDATES

1. Adam Faircloth – Griffith University - Project 1.1 & Project 2.3
2. Mahdi Mazhari – Griffith University - Project 1.1
3. Joseph Yassa – The University of Queensland - Project 1.2
4. Pietro Rigo – The University of Queensland - Project 1.2 (visiting student from University of Bologna – Jan to July 2026)
5. Josh Madden – The University of Queensland - Project 1.4
6. Paulo Silvares – University of the Sunshine Coast - Project 1.6
7. Asteria Chen – The University of Queensland - Project 3.1
8. Harshani Dissanayake – University of Melbourne - Project 6.3
9. Sasindu Samarawickrama – University of Melbourne - Project 6.3
10. Lingju (Jules) Wu – The University of Queensland - Project 6.5
11. Xinyu Wang – The University of Queensland - Project 6.6
12. Harlan Guo – RMIT - Project 6.7
13. Zhixin Wen – RMIT – Project 6.7
14. Catalina Espinosa – The University of Queensland - Project 8.2
15. TBC – Griffith University - Project 1.3 (starting 2026)
16. TBC – University of Tasmania – Project 2.1 (starting 2026)
17. TBC – Monash University - Project 4.2 (starting 2026)
18. TBC – The University of Queensland - Node 5 (starting 2026)

GETTING TO KNOW OUR PHD CANDIDATES

Here we celebrate our ARC Advance Timber Hub PhD Candidates with a peak into their research and what motivates/inspires them. They also answer the most common question – ***if you could visit any timber building in the world, which one would it be and why?*** Our next newsletter will include more.

PAULO HENRIQUE DO SANTOS SILVARES

PROJECT 1.6: **Role of Moisture in the Long-Term Performance of Mass Timber Building Elements**

Paulo is a PhD Candidate at the University of the Sunshine Coast. His research examines how moisture behaviour in mass timber influences mould growth, with a focus on PINUS RADIATA and hybrid pine products. By integrating hygroscopic performance with mould development, Paulo is developing predictive and evidence-based guidelines that enable industry and regulators to better assess moisture-related risks and improve design, construction, and maintenance practices. This work supports the long-term durability, performance, and health of mass timber buildings, strengthening confidence in timber as a mainstream construction material.

Paulo is motivated by the global shift toward sustainable construction and the need to better understand moisture-driven biodeterioration in engineered wood systems. With a background in biology, he is inspired by timber's natural complexity and environmental potential.

"TIMBER IS BOTH COMPLEX SCIENTIFICALLY AND CRUCIAL ENVIRONMENTALLY— WHAT TRULY EXCITES ME IS HOW A BIOLOGICAL RESOURCE CAN SUPPORT SUSTAINABLE BUILDING PRACTICES, LOWER CARBON FOOTPRINTS, AND SHOWCASE NATURE'S OWN ADVANCED SOLUTIONS TO CONTEMPORARY PROBLEMS."
Paulo Silvares

If you could visit any timber building in the world, which one would it be and why?
"I would choose the Brock Commons Tallwood House in Canada, as it was one of the first tall buildings to demonstrate how mass timber can be used safely and effectively at large scale, setting an important precedent for the future of timber construction."

JOSH MADDEN

PROJECT 1.4: Fire Safety Design of Open Plan Timber Compartments

Josh is a PhD Candidate in the School of Civil Engineering at The University of Queensland. His research investigates fire behaviour in large open-plan mass timber compartments, where exposed timber elements can actively contribute to fire development. Drawing on seven years' experience as a consulting fire safety engineer, Josh was motivated to return to academia after observing the rapid growth of mass timber buildings and the limitations of traditional fire safety methodologies, which typically assume non-combustible structures.

Josh's work aims to improve understanding of how fires ignite, develop, and spread in mass timber buildings, supporting safe occupant evacuation, effective fire brigade intervention, and structural integrity during fire events. By building a stronger evidence base, Josh's research addresses one of the key barriers to wider adoption of mass timber—fire safety—and provides greater confidence for designers, regulators, insurers, and building owners.

"FIRE SAFETY IS OFTEN VIEWED AS THE KEY BARRIER TO THE BROADER ADOPTION OF MASS TIMBER - BY IMPROVING OUR UNDERSTANDING OF HOW FIRES IGNITE, DEVELOP, AND SPREAD WITHIN MASS TIMBER BUILDINGS, WE CAN DESIGN MORE ROBUST FIRE SAFETY STRATEGIES."
Josh Madden

If you could visit any timber building in the world, which one would it be and why?
"Mjøstårnet in Norway. Completed in 2019, it was the world's tallest timber building at the time and represents a significant milestone in pushing the boundaries of timber engineering."

CATALINA ESPINOSA TOVAR

PROJECT 8.2 - Status, Perceptions and Priorities of EWP Industry in Australia

Catalina is a PhD Candidate in the School of Business, at The University of Queensland and is a researcher within Nodes: Interventions for Change and Socio-Economic Opportunity. Her research focuses on the human and organisational dimensions of industry transformation, examining how people across the Hub understand its goals, collaborate with one another, and collectively contribute to change in the timber and construction sectors. Using a combination of interviews and network analysis, Catalina investigates the relationships, interpretations, and

structural factors that enable—or constrain—effective collaboration and progress toward a more sustainable industry.

Catalina was inspired by the opportunity to study transformation at a system-wide level, looking beyond materials and technologies to the people and partnerships that drive adoption. Her work contributes by identifying partner and organisational dynamics that influence the uptake of timber, supporting more coordinated action, reduced barriers, and stronger alignment across industry, research, and policy.

"I STUDY HOW PEOPLE ACROSS THE TIMBER AND CONSTRUCTION SECTOR WORK TOGETHER, AND HOW THEIR UNDERSTANDINGS SHAPE PROGRESS TOWARD A MORE SUSTAINABLE INDUSTRY."
Catalina Espinosa

If you could visit any timber building in the world, which one would it be and why?
"I'd love to visit Boola Katitjin at Murdoch University and the Forestry Building at the University of Tasmania. Their designs really impress me and show what can be achieved with timber."

SASINDU SAMARAWICKRAMA

PROJECT 6.3 - Digital and Physical Systems Design for Optimised Design-to-Delivery of Prefabricated Timber Housing

Sasindu is a PhD Candidate at the University of Melbourne. His research focuses on improving the integration between digital design models and manufacturing workflows in prefabricated timber construction, with the aim of optimising the design-to-delivery process. Sasindu was inspired to pursue this work after observing how poor software interoperability can lead to significant losses in time, materials, and effort across the construction supply chain. As the industry shifts toward greater automation and precision manufacturing, he sees addressing these integration challenges as both timely and impactful.

Sasindu's work contributes to advancing timber construction by strengthening the digital pathways between designers, engineers, and manufacturers. Improved connectivity helps reduce errors, streamline production, and increase predictability and efficiency, particularly for large and complex prefabricated timber projects. This, in turn, supports wider industry adoption of timber systems.

"I AM DEVELOPING BETTER WAYS FOR DIGITAL DESIGN SOFTWARE AND FACTORY MACHINES TO COMMUNICATE SO TIMBER BUILDINGS CAN BE PRODUCED MORE EFFICIENTLY AND WITH LESS WASTE."
Sasindu Samarawickrama

If you could visit any timber building in the world, which one would it be and why?
I would choose Ascent MKE in Milwaukee, the world's tallest mass timber hybrid tower. It's an impressive example of what becomes possible when design, engineering, and fabrication align at a high level.

HARLAN GUO

PROJECT 6.7 - Performance-Based Architectural Design and Optimization Using Biomaterial and AR-Assisted Discrete Assemblies

Harlan is a PhD Candidate at RMIT University. His research focuses on performance-based architectural design and optimisation using biomaterials, integrating advanced computational design with augmented reality (AR)–assisted discrete assemblies. Harlan is motivated by the urgent need for more sustainable building practices, alongside a desire to re-energise the cultural and architectural significance of timber through contemporary digital approaches such as AI and AR.

Harlan's work contributes to advancing timber construction by developing seamless digital workflows that link design, fabrication, and assembly. By leveraging computational tools and immersive digital platforms, his research aims to reduce errors and material waste while improving precision, efficiency, and economic viability in modern timber buildings. This approach helps position timber as a competitive, high-performance material for future construction.

Harlan is particularly inspired by timber's sustainability, biophilic qualities, and deep cultural resonance.

"I'M WORKING TO MAKE TIMBER CONSTRUCTION SMARTER, MORE EFFICIENT, AND MORE ACCESSIBLE - THE OPPORTUNITY TO REINTERPRET THIS ANCIENT MATERIAL FOR THE FUTURE OF ARCHITECTURE, USING DIGITAL TOOLS TO UNLOCK ITS FULL POTENTIAL, IS PARTICULARLY COMPELLING."
Harlan Guo

If you could visit any timber building in the world, which one would it be and why?
"I would choose to visit Sou Fujimoto's "Grand Ring." The project is a powerful demonstration of timber's capacity for large-scale, expressive forms, and I would be keen to experience firsthand its impressive volume and the robustness of its structural design."

ASTERIA CHEN

PROJECT 3.1 - Circular [Re]Design to Enable Disassembly and Reuse of Mid-Rise Timber Buildings

Asteria is a PhD Candidate in the School of Architecture, Design and Planning, at The University of Queensland. Her research focuses on circular (re)design strategies for mid-rise mass timber buildings, with a particular emphasis on Design for Disassembly (DfD) to enable adaptability, component reuse, and improved whole-of-life environmental performance. Asteria was inspired by the urgent need to decarbonise the built environment and by timber's potential as a low-carbon, regenerative material. Her background as an Environmentally Sustainable Design (ESD) researcher highlighted how strongly early design decisions shape long-term sustainability outcomes, motivating her to explore how circular principles can be embedded into mainstream design workflows.

Asteria's work contributes to advancing timber construction by documenting current business-as-usual practices and proposing practical DfD-based workflows that reduce uncertainty, enhance durability and adaptability, and maximise the long-term value of timber components across multiple building life cycles. This research supports industry confidence in mass timber as a scalable, future-proof solution.

"TIMBER IS ONE OF THE FEW STRUCTURAL MATERIALS THAT CAN MEANINGFULLY SUPPORT CIRCULARITY - NATURALLY COMPATIBLE WITH MODULARITY, DISASSEMBLY, AND REUSE. I AM ESPECIALLY EXCITED BY HOW THESE QUALITIES ALLOW US TO RETHINK NOT ONLY HOW BUILDINGS ARE CONSTRUCTED, BUT HOW THEY EVOLVE, CHANGE, AND CONTINUE TO SERVE COMMUNITIES OVER TIME."
Asteria Chen

If you could visit any timber building in the world, which one would it be and why?
"I would choose Ise Jingu in Japan. Although not a contemporary mass timber project, it represents one of the most sophisticated and enduring examples of circular timber construction in human history. The shrine's cyclical rebuilding tradition—where structures are periodically renewed using carefully preserved

craftsmanship, modular joinery, and selective component replacement—embodies many of the core principles we value today in Design for Disassembly and long-term material stewardship.
Ise Jingu demonstrates that timber buildings can be continuously adapted, maintained, and regenerated across centuries, offering a powerful cultural precedent for the sustainable and circular timber practices we are now reintroducing into modern construction."

LINGJU WU

PROJECT 6.5 - Collaborative Robots For Resource-Adaptive Timber Construction Using Variable, Out-Of-Grade Timber Feedstocks

Lingju Wu is a PhD candidate at the School of Architecture, Design and Planning and School of Civil Engineering at The University of Queensland. Her research supports the timber supply chain by exploring how under-utilised, low-grade, and recycled timber can be more efficiently and intelligently used through digital design and fabrication. With a background in architecture and computational design, Lingju was inspired by the potential of digital workflows to unlock hidden structural value in irregular or discarded timber that would otherwise go to waste.

Lingju's work focuses on defect-aware optimisation, material-efficient placement algorithms, and advanced digital fabrication workflows for low-grade and construction-and-demolition (C&D) timber. By enabling smarter material use, her research contributes to reducing waste, improving resource efficiency, and strengthening the sustainability credentials of timber construction. This approach helps expand the usable timber resource base while maintaining structural performance and design quality.

Lingju is motivated by the combination of technical challenge and environmental impact. As she explains, "I USE COMPUTATIONAL DESIGN AND DIGITAL FABRICATION TECHNOLOGIES TO TURN IRREGULAR OR DISCARDED TIMBER INTO EFFICIENT STRUCTURAL COMPONENTS - IT'S REWARDING TO WORK ON RESEARCH THAT IS BOTH TECHNICALLY CHALLENGING AND CONTRIBUTES TO MORE SUSTAINABLE CONSTRUCTION."

If you could visit any timber building in the world, which one would it be and why?
"I'd love to visit Mjøstårnet in Norway. It represents the ambition of large-scale timber construction and shows what is possible when engineering, materials innovation, and sustainability meet at a high level."

GETTING TO KNOW OUR STAFF

Here we celebrate our ARC Advance Timber Hub Staff with a peak into their work and what motivates/inspires them. They also answer the most common question – ***if you could visit any timber building in the world, which one would it be and why?*** Our next newsletter will include more.

LOREN DYER

PROJECT 2.2: **Design for Positive Occupant Outcomes in Timber-Rich Environments**

Loren is a Research Assistant at the University of Tasmania. With a background in architecture and design, Loren has been involved in academic research since completing a PhD in 2018 and joined this project in May 2024. Her role focuses on developing systematic search strategies, compiling and analysing existing research, and contributing to articles and reports that examine how timber buildings affect occupant productivity, health, and wellbeing.

Project 2.2 explores the relationship between material and design decisions in construction and the lived experiences of building users. Loren's work is central to building a strong evidence base that helps designers, industry, and policymakers better understand the human impacts of timber-rich environments, supporting more informed and people-centred design choices.

Loren finds particular value in connecting research with everyday outcomes.

"MY RESEARCH FOCUSSES ON THE IMPACTS OF TIMBER BUILDINGS ON THE PRODUCTIVITY AND WELL-BEING OF THE PEOPLE WHO USE THEM. I AM ENJOYING EXPLORING HOW DECISIONS ABOUT RESOURCE USE IN CONSTRUCTION CAN IMPACT THE DAY-TO-DAY LIFE OF END-USERS."
Loren Dyer

If you could visit any timber building in the world, which one would it be and why?
"I'd choose to visit the residential structures of 16th-century Japan to understand the techniques and tools of carpentry in this period and experience the surface qualities of the timber and the spaces they produce."

STEVE LI

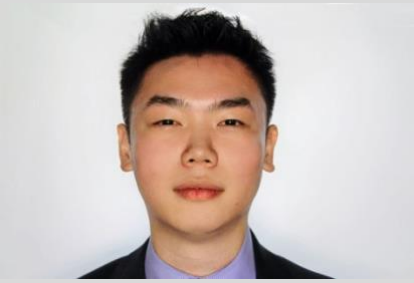
PROJECT 6.3 - Digital and Physical Systems Design for Optimised Design-to-Delivery of Prefabricated Timber Housing

PROJECT 6.7 - Performance-Based Architectural Design and Optimization Using Biomaterial and AR-Assisted Discrete Assemblies

Steve is a Research Assistant based at RMIT University, supporting Projects 6.3 and 6.7. With a Master of Civil Engineering from the University of Melbourne, Steve brings a strong structural and housing background, having initially trained in conventional concrete and steel design before shifting his focus toward sustainable, low-carbon construction and prefabrication.

Within the Hub, Steve's role centres on linking performance-based design with buildable, discrete timber assemblies. He works with digital and parametric models to explore how different assembly logics and biomaterial choices affect structural and overall building performance, while contributing to workflows that support AR-assisted construction on site. His work helps bridge the gap between design intent, structural performance, and practical delivery.

Steve is motivated by timber's potential to address sustainability and housing challenges.



"IT'S EXCITING TO WORK WITH A MATERIAL THAT CAN STORE CARBON, SUPPORT INDUSTRIALISED PREFABRICATION, AND STILL ALLOW FOR WARM, HIGH-QUALITY ARCHITECTURAL SPACES. BEING PART OF A TEAM THAT IS RETHINKING HOW WE DESIGN, MANUFACTURE AND ASSEMBLE BUILDINGS—RATHER THAN JUST REPEATING TRADITIONAL METHODS—IS VERY MOTIVATING."
Steve Li

If you could visit any timber building in the world, which one would it be and why?
"I would love to visit Mjøstårnet in Norway, one of the world's tallest timber buildings, because it demonstrates how far mass timber can be pushed in terms of height, performance and architectural quality, and it offers valuable lessons for future mid- and high-rise timber projects globally."

IAN UNDERHILL

PROJECT 1.1: Innovative Long-Span Timber and Wood-Based Hybrid Floors for Vibration Performance and Acoustic Compliance

Ian is a Research Assistant working at Griffith University. He brings a strong technical background to the role, holding a PhD from Griffith University focused on the design of composite engineered wood products, alongside a range of trade and design

qualifications spanning both the timber and design industries. Ian has also completed two post-doctoral secondments investigating the progressive collapse of mass timber buildings and the development of high-performance composite materials.

Within Project 1.1, Ian's work centres on developing search strategies, compiling and analysing prior research, and contributing to articles and technical reports. His broader expertise in destructive and non-destructive testing plays a key role in building a rigorous evidence base to support safe, high-performance timber construction. This research helps strengthen confidence in mass timber systems by improving understanding of material behaviour, performance limits, and structural resilience.

Ian values the hands-on nature of timber research and its practical impact. As he puts it, "THE PROJECT FOCUSSES ON THE IMPACTS OF TIMBER BUILDINGS ON THE PRODUCTIVITY AND WELL-BEING OF THE PEOPLE WHO USE THEM. TO SOMEONE OUTSIDE OF THE INDUSTRY, MY ROLE IS PREDOMINANTLY DESTRUCTIVE AND NON-DESTRUCTIVE TESTING, BASICALLY I GET TO BREAK THINGS."

If you could visit any timber building in the world, which one would it be and why?
"It would probably be a visit to the UK to view some of the medieval buildings constructed from oak."

END