THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

Wood Solutions
design and build
www.woodsolutions.com.au

The University of Queensland

Dr Lisa Ottenhaus

Acknowledgement of **Country**

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

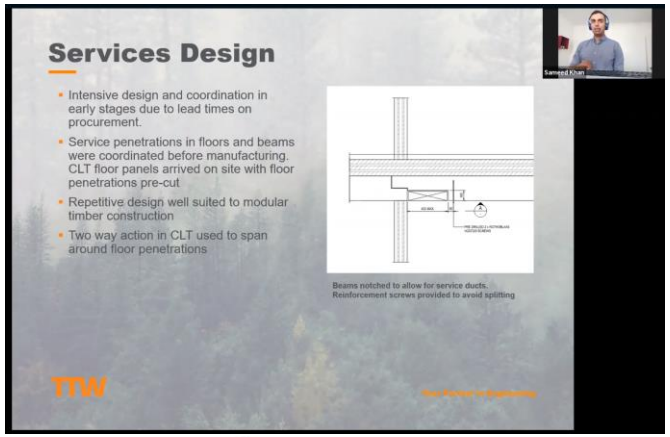
We recognise their valuable contributions to Australian and global society.

Timber Related Subjects Taught at UQ

Course	Year	Students
Design of Timber Structures & Architecture Course	4th year Bachelors and Masters	50-90
Fire Engineering Design: Explicit Quantification of Safety	Masters	20
Structural Fire Engineering	Masters	20-40

Group Design Project

Zoom Guest Lectures



Australian Timber Design Workshop | CPDs

Integrated Timber Design CPD course -
fire, durability, hygrothermal performance (2019)

Timber Hub Showcase – Webinar Series (2021)

Australian Timber Design Workshop (2022)

School of Civil Engineering Research Themes

- Monitoring, evaluation and restoration of natural ecosystems
- Addressing natural and man-made hazards
- Development of sustainable modern infrastructure for complex interconnected cities
- Utilising big data to enhance the functionally and design of smart cities

Broad Research Expertise

Structural Engineering

Prof Keith Crews
Dr Paola Leardini

Dr Lisa Ottenhaus
Kim Baber

A/Prof Joe Gattas
Dr Dan Luo

Fire Safety Engineering

Dr Cristian Maluk
Dr Luis Yerman

Dr Felix Wiesner
A/Prof Paul Dargusch

Dr David Lange
Dr Cristyn Meath

Architecture & Design

Materials & Environmental Science

Sustainability

Centre for Future Timber Structures

FUTURE TIMBERHUB

Wood Solutions
design and build
www.woodsolutions.com.au

Timber Research

- Supporting **Revision of Australian Standards** (AS1649, AS1684, AS1720.1)
- **Timber Fire Safety**, large-scale and open-plan CLT buildings, QFES Live Fire Campus
- **Durable timber structures**, with National Centre for Timber Durability and Design Life
- **CLT building performance** in hot-humid climates
- Adaptable timber buildings, reversible connections, **design for circular economy**
- **Digital design and fabrication**, building performance and resource efficiency
- **Artificial intelligence** for manufacture, image recognition and timber grading
- **Carbon offsets** and verified emissions reductions, lifecycle emissions savings
- **Cross-disciplinary collaboration**, Infrastructure CoLab, UQ Sustainable Infrastructure Research Hub, architects, designers, engineers, sustainability managers, contracts managers

Timber Related R&D with Industry

- 2023-2028 ARC Research Hub (Lead: Crews) $6.4m cash & $12m in-kind
- 2022-2027 ARC Linkage (Leardini, Ottenhaus, Crews) $336k R&D of Adaptable Timber Buildings (Fairweather Homes, Pro Clima Australia)
- 2020-2023 R&D of Reversible Connections | Sherpa Connectors GmbH, PhD Project, Zidi Yan (Supervisor: Ottenhaus)
- 2022 Industry funded R&D projects (Multiplex, 3RT, Pentarch, Public Works NSW, AkzoNobel, DFC Wood products) approx. $120k (Crews)
- 2021-2023 "Optimisation of Timber Selection in Low-Rise Residential Building Wall Frame Construction", MPhil Project, Jian Jiang, (Supervisor: Gattas)

UQ Labs & Facilities

Structures Lab

- Strong floor and reaction wall
- 1MN and 10MN MTS machines
- Wind Tunnel
- Digital fabrication | Robot arm
- Environmental chamber
- Oven for timber drying

Architecture Co-Lab

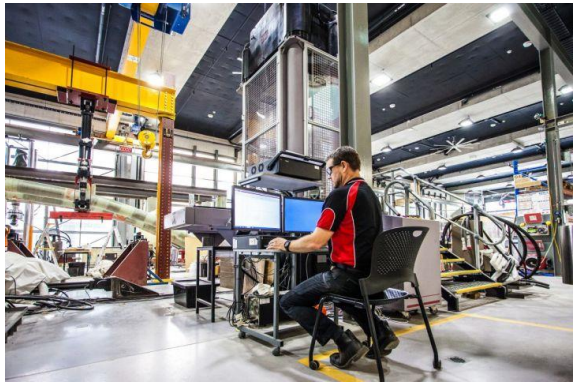
- CNC router
- Laser cutters
- Woodworking machinery (saws)
- 1:1 scale prototyping

Pinjarra Hills Research Facility

- Full-scale builds

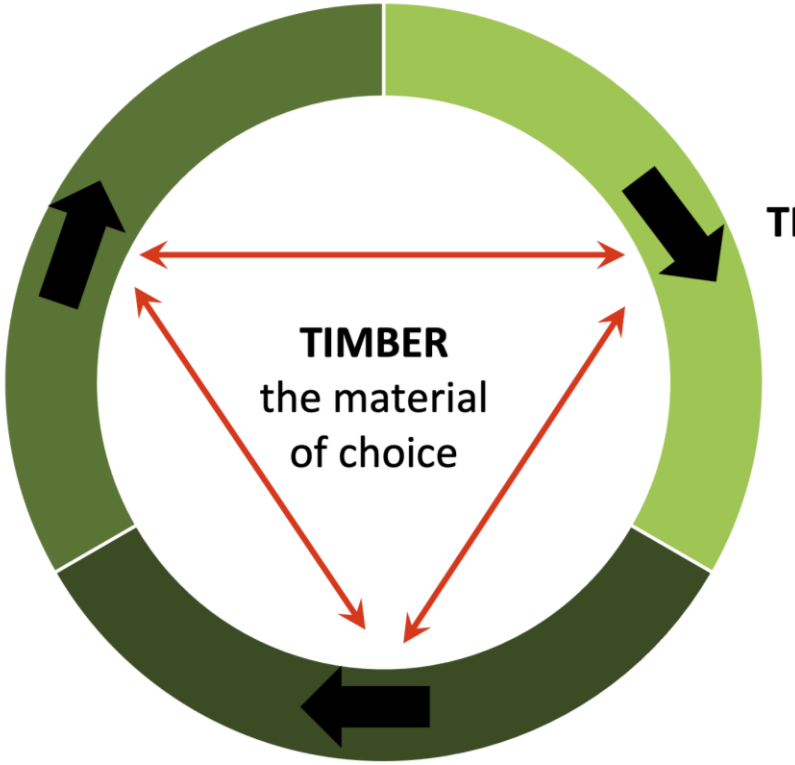
Fire Lab

- Bomb calorimeter
- Muffle furnace
- Thermo-gravimetric analysis
- Fourier transform infrared spectroscope
- Integrating sphere
- Transient plane source
- Mass loss calorimeter
- iCone calorimeter
- Fire propagation apparatus
- Large scale heat release analyser
- Modular radiant burner array
- Bench-scale H-TRIS
- Large-scale H-TRIS
- Smouldering reactor
- Environmental chamber



Research Hub to Advance Timber for Australia's Built Environment

INNOVATIVE SOLUTIONS
Design Solutions & Products



TRANSFORMATIVE BENEFITS
Tools & Metrics

PLANNING CHANGE
Policy & Practices

Thank you

Dr Lisa Ottenhaus | Lecturer

School of Civil Engineering, The University of Queensland

Centre for Future Timber Structures

l.ottenhaus@uq.edu.au

M: 0459 752 993

International Association of Mass Timber Construction

COST Action Holistic Design of Taller Timber Buildings

CTBUH Steel-Timber Hybrid Construction

Women in Forests and Timber Network