

WOODSOLUTIONS TUTORIALS FOR ENGINEERS



Free in-house technical presentation for engineers

The presentations are provided by [WoodSolutions](http://www.woodsolutions.com.au) – the Australian forest and wood product industry's information channel to design and building professionals – and are conducted by structural timber engineers of the Timber Development Association. Available in Sydney metropolitan and Canberra.

Topics

- *Timber Connections*
- *Mass Timber Construction: Cross Laminated Timber (CLT)*
- *Composite Flooring Systems*
- *Floor Diaphragm and Timber Shear Wall Design*
- *Timber Portal Frames*
- *Fire Safety and Performance of Timber in Apartments and Commercial Buildings*
- *Timber in Building Life Cycle Assessments*
- *Durability & Service Life of Timber*
- *Timber Products Structural Properties & Specification*
- *Residential Timber-framed Construction Code AS1684*
- *Engineered Timber Products*

Timber Connections

Efficient design and use of connections is vital for ensuring timber structural performance and economic construction practices. While in most cases the fastening of timber to timber requires little skill or knowledge of design in massive timber construction, joints may require ingenuity and the use of specialised connectors, such as nail-plates, bolts, shear-plates, screws, timber rivets or epoxy threaded rods. The application of these requires sound knowledge of design standards and construction methods. This presentation covers relevant Australian standards AS1684, AS1720 and also discusses how design can be undertaken under Eurocode 5, for modern connections, and their applications in the construction of residential and non-residential timber structures.

Mass Timber Construction: Cross Laminated Timber (CLT)

Cross-laminated timber (CLT) is a prefabricated solid engineered wood product made of at least three orthogonally bonded layers of solid-sawn timber or composite timber. Suitable for roof, floor, or wall applications CLT provides improved dimensional stability allowing for prefabrication of wide and long floor slabs and wall panels. This presentation provides design and construction details of CLT-based construction and, using Australia and overseas examples, shows how it is delivering shorter construction times and increased onsite safety which in turn lowers development costs.

Composite Floor Systems

This presentation demonstrates how the structural performance requirements of long-span floors for medium rise residential and commercial buildings can be met with timber-concrete composites (TCC) floors. TCCs are a structural form whereby a concrete slab is fixed to a timber joist at the interface using a suitable shear connector which transfers shear forces and impedes slip between concrete and timber.

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Floor Diaphragm and Timber Shear Wall Design

This presentation discusses the principles and practice of horizontal timber diaphragm behaviour under in-plane loading, gives guidance on analysis and reviews the principles of floor diaphragm designs. In addition, this presentation looks at the principles and design of available timber shear wall systems including sheets nailed or screwed to a timber frame or of cross laminated solid timber panels for horizontal loading.

Timber Portal Frames

Portal frames are suitable for a variety of building such as industrial buildings, warehouses and sport halls. They are a popular and versatile architectural form which provides both wide interior spaces and a lateral load resisting system. This presentation reviews the process of designing timber portal frames including sections and connections with local examples.

Fire Safety and Performance of Timber-Framed Construction in Multi-Residential and Commercial Buildings

This presentation demonstrates how the fire performance requirements in the National Construction Code (NCC) for townhouses, apartments, aged care, offices, shops and factories can be met with timber-framed construction. In this context, the presentation provides verified construction details that utilise the NCC's deemed-to-satisfy provisions as well as guidance on Alternative Solutions.

Timber and Building Life Cycle Assessments

Life cycle assessment (LCA) is becoming the world standard for evaluating the sustainability of materials and assemblies and improving environmentally based decision-making. This presentation looks at how wood construction can contribute to a sustainable building over the whole of the buildings life cycle using life cycle assessment (LCA) methodology. Timber products Environmental Product Declarations (EPDS) are also covered. (Presentation delivered by Timber Development Association's Sustainability Manager: Stephen Mitchell)

The Basics: Durability & Service Life of Timber

This presentation is based on structural engineering criteria, years of experience, extensive Australian field trials and predictive modelling. It provides guidance on methods to maximise the service life of timber in residential and commercial buildings as well as infrastructure such as bridges, commercial decks. The consideration of natural variation between wood species, the effectiveness of wood preservative treatments and diverse climatic conditions is covered.

The Basics: Timber Products Structural Properties & Specification

Is specifying timber like a foreign language to your new staff? Participants in this presentation will receive an overview of wood terminology, applications of wood materials, production of wood, characteristics of wood and relationship with properties, grading, sizes, durability/preservation, specification and handling as well as an overview of engineered wood products such as laminated veneer lumber (LVL).

The Basics: Residential Timber-framing Construction Code AS1684

This presentation provides an overview of AS 1684 – the Residential Timber-Framed Construction Code, its place in the National Construction Code and detailed overview of its application.

The Basics: Engineered Timber Products

This presentation covers the properties of engineered timber products laminated veneer lumber (LVL), I-beams, CLT and glulam; an overview of the structural properties of each, durability and preservative treatment, connections and recommendations for use in exterior applications; as well as their status in the National Construction Code and examples of good and not so good design and installation practices.

To book a presentation

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