# ADVANCED TIMBER COMPOSITE (ATC)



# Trusted mass timber flooring solutions

States of Co.



### **INTRODUCTION TO ATC**

### WHAT IS ATC?

Our Advanced Timber Composite (ATC) solution combines sustainably sourced hardwood glulam and structural plywood to create efficient, prefabricated panels that expedite installation, while reducing logistics costs. Durable green concrete is poured onsite providing the required FRL.

This lightweight, composite system increases span lengths, improves moisture management, and enhances vibration and acoustic performance.

It adheres to validated performance pathways for structural, fire, vibration, and acoustics, offering costeffective solutions with optimised floor-to-ceiling dimensions without needing transfer slabs.



Component		Size	Finish
MASSLAM Joists	Utilised in tension for MASSLAM's great bending properties at 800c/c to reduce overall fibre required at a visual grade quality.	200-450mm deep	TBC
Plywood	Sacrificial for fire, provides a working platform and formwork for the concrete pour with a visual grade exposed soffit.	17-25mm thick	TBC
Shear Connectors	Used to bring the concrete and timber together in composite action, increasing the strength of both.	-	-
Reinforced Concrete	Reduced thickness standard concrete slab for its excellent compression, durability, fire and acoustic performance.	60-120mm thick	By architects selection





### WHY ATC?

ATC builds on the range of now readily available engineered wood products (EWPs) with the same concept; to get the best out of the inputs with technology, manufacturing, and design to create the best possible solution and minimise waste by bringing together the advantages of each material used. It's about using the best materials in the best function in true composite action:

- sustainably sourced PEFC-certified local hardwood glulam for the joists,
- visual grade, structural plywood for construction stage and soffit finish, and
- green concrete for durability to the finished floor, removing material from low efficiency areas.

#### MASSLAM VISUAL GRADE

#### **Plantation Oak**

Plantation Oak is ASH's unique brand of highly attractive plantation-grown hardwood. Showcasing the best in Australian hardwood innovation, Plantation Oak is the responsible upgrade of plantation grown Shining Gum (Eucalyptus Nitens), otherwise largely destined for export and wood chip applications.

Plantation Oak is engineered to create an architectural timber with higher strength and improved appearance when compared to its unrefined counterparts. Like all species processed through our worldclass facility in Heyfield, Victoria, Plantation Oak is straight line edged after drying, providing superior straightness.

The result is a unique plantation hardwood with beautiful features and a consistent blonde to light brown colour. Plantation Oak is available in a Revit library for download on the ASH website in continuous render form.

### **KEY FEATURES AND BENEFITS OF ATC**

**1. 2030 Compliant Net Natural Structural System:** Designed to meet stringent future environmental regulations, ensuring sustainability from the ground up.

**2. Sustainability Ratings:** Achieves top scores in Green Star, NABERS, and other recognised sustainable building frameworks, reflecting its eco-friendly design.

**3. Victorian Timber Innovation:** Re-purposes timber sourced from trees grown in Tasmania and otherwise destined for pulp, into high-strength structural components.

**4. World-Class Engineering Support:** Access to leading engineers with specialised expertise in advanced timber solutions, ready to assist with any project requirements.

**5. Early Engagement with Manufacturer:** Collaborate from the project's inception to streamline processes and ensure tailored solutions.

**6. Rapid Costing and Carbon Packages:** Offers quick provision of detailed cost estimates and carbon impact assessments, facilitating informed decision-making.

**7. Partnership with Expert Installers:** Works closely with skilled installers to ensure seamless and efficient system implentation.



### **ADVANTAGES OF ATC**

Structural	Utilising the best properties of each material in composite action allows longer spans with less material required. Eliminate transfer slabs with larger grid spacings possible.
Fire	Validated performance pathway to Fire Design with timber joists and concrete covered in the NCC and full-scale fire testing completed and available to 120mins without supplementary fire protection.
Aesthetic	Visual grade hardwood timber with exposed soffit compliant with fire design and structural requirements (No additional soffit finishing required).
Prefabrication	Panels modelled, CNC'd, assembled and loaded on trucks in install sequence at ASH's Heyfield facility. Increased quality control associated with prefabricated modules in a controlled manufacturing environment.
Installation	Panels delivered to site in ready to lift modular form to replicate existing speeds with mass timber construction. Plywood as a working platform and a sacrificial formwork. Reduced on site team required at increased installation speeds.
Light Weight	Light weight in transport for reduced logistics and craneage costs as well as reduced footing requirements compared to conventional concrete structures.
Moisture Management	Continuous concrete topping slab avoids moisture management issues associated with exposed timber subject to the elements.
Sustainability	PEFC hardwood glulam and plywood uses sustainably managed trees at >2x the efficiency compared with CLT by operating in efficient structural zones. Green concrete able to be used as only 25MPa concrete properties required.
Vibration	Concrete slab along with high-strength hardwood joists allow for increased vibration performance with less mass than a typical CLT design.
Acoustics	Increased acoustic performance through concrete properties. Additional floor system buildups tested to suit a variety of building applications.
Certification Pathway	Validated performance pathway to structural, fire, vibration and acoustics all tested with flexibility in spans, applications and build ups.
Cost	Cost competitive with conventional construction with faster installation speeds.
Floor to Ceiling Height	Cost efficient floor to ceiling heights are achievable through reduced floor depths and acoustic build ups.
Eliminate Transfer Slabs	Large grids are possible without the need for transfer slabs to compensate for the change in column spacing to carpark areas below.
Cost Certainty	The MASSLAM design team can provide free design advice and cost estimates at an early stage to assess and give cost certainty to projects without the risk of volatile shipping and currency rates.
Supply Certainty	ASH maintains control from log to finished product. If ASH commit a production slot for your project, it will be manufactured and supplied as agreed.

## MASSLAM

MASSLAM is a glue-laminated (GLT) mass engineered timber solution from Australian Sustainable Hardwoods (ASH). Accelerating the use of mass timber in Australia is a known pathway to significantly assist with decarbonising the construction sector and contribute to Australia's goal of achieving net zero by 2050. Additional benefits including construction speed, sustainability and occupant well-being solidify MASSLAM as the modern construction choice for architects, specifiers and builders alike.

MASSLAM utilises uniquely attractive Australian timbers like Australian Oak (Tasmanian Oak) and Plantation Oak, chosen because they have some of the best strength-to-weight ratios of any timber species worldwide. ASH's glulam timber systems (including columns, beams, and floors) are manufactured at our Australian-owned timber plant in Heyfield, Victoria.

Our mass timber solutions are designed and manufactured for assembly by a highly-skilled team of MASSLAM designers and engineers and are intended for large domestic and commercial structures. The skill and experience provided by our in-house MASSLAM team is unmatched. Experience the consistency and ease of dealing with the same project manager from conception through to completion.

Solidifying our position at the forefront of mass timber design and manufacture in Australia, here at ASH, we have three state of the art robotic CNC machines providing enhanced processing capacity that allows longer spans, higher ceilings, increased floor space and lesser beam depth. Better still, mass timber provides unbeatable cost and time efficiencies when compared to conventional construction materials like concrete and steel.





# DESIGN PROCESS AND CAPABILITY

#### THE MASSLAM DESIGN TEAM

ASH has built up an experienced and versatile MASSLAM design team made up of timber design professionals from a range of consulting, manufacturing and construction backgrounds. The MASSLAM team can guide you right through the entire process of estimating, designing, documenting, fabricating, delivering and installing your mass timber project all in the one place. As with all design for manufacture and assembly (DfMA) projects, getting the MASSLAM design team in early has many advantages to the successful procurement and delivery of a project:

Procurement Certainty	Booking a product with procurement
Speed of Installation	If you are looki programme, early that will be fast to
Cost Certainty	The MASSLAM de estimates at an ea projects without t
Design Certainty	The entire project provided and appr be virtually built v
Coordination of Services	Through clash det can assist with the subsequent trades

Additional to assisting from design to delivery, the MASSLAM design team can also assist in a range of other roles throughout the process to ensure the project is delivered and installed on time, safely and with secure costing:

- Specialist timber advice and installation assistance
- BIM clash detection and model coordination with other trades and services
- Fastener and steelwork procurement
- Temporary engineering
- Project management
- Visualisation aids
- Early consultant advice and service penetration coordination
- Water management advice
- Transport and logistic coordination

tion slot early removes programme risk associated t, providing a firm delivery to site date.

ing to reduce overhead costs and construction consultation will create an efficient DfMA project , o manufacture and faster to install.

sign team can provide free design advice and cost arly stage to assess and give cost certainty to he risk of volatile shipping and currency rates.

is 3D modelled with a set of installation drawings roved ahead of fabrication allowing the project to well ahead of arrival on site.

tection and BIM coordination, the timber model ne coordination of services to ensure the is have the space required to continue their work.

# **KEY CONSIDERATIONS**

Clients should also read the following ATC & MASSLAM documents for long term satisfaction of mass timber solutions and design considerations. All are available for download on the MASSLAM webpage:



MASSLAM Span tables

MASSLAM Machining Capability Brochure

MASSLAM Coating Guide





# What should you do now?

To place an order for ATC speak to one of our specialists on 03 5139 7070

- To find out more about the ATC range, head to ash.com.au/application/masstimber
- To discuss an application or project, please email our project advisory specialists at masslam@ash.com.au

Your request will be treated confidentially.











Visit the ASH website

