ASH

T3 COLLINGWOOD

OPTIMISING DESIGN OF TALL GLULAM STRUCTURES USING HARDWOOD

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WORLD CONFERENCE ON TIMBER ENGINEERING 2025
BRISBANE, AUSTRALIA

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MASSLAM DESIGN TEAM

Main Role

- Supply of Glulam beams and columns

Other Roles

- Fastener and steelwork procurement
- Liaise with CLT suppliers
- Specialist timber advice and installation assistance
- Temporary engineering
- Project management
- Clash detection and model coordination
- Visualization aids
- Early consultant advice and service penetration coordination
- Water management advice
- Transport coordination

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MASSLAM DESIGN TEAM

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COMMON HARDWOODS (Australia)

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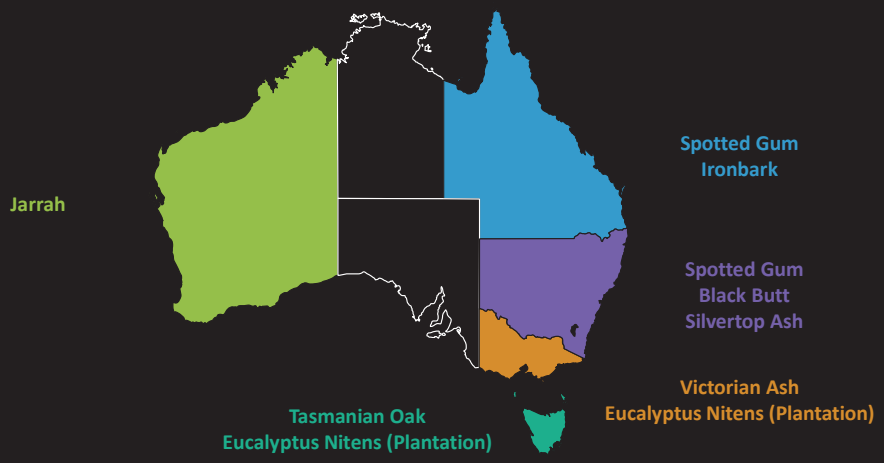

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MASSLAM

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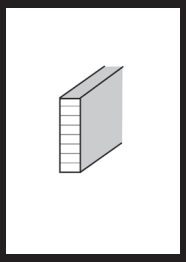
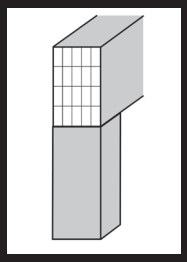


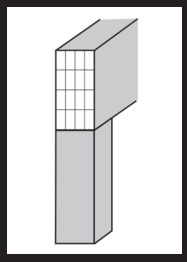
MASSLAM SL33/SL35

- Plantation / Tasmanian Oak
- Glue Laminated Timber
- Commonly used for:
  - Purlins / Rafters
  - Narrow members



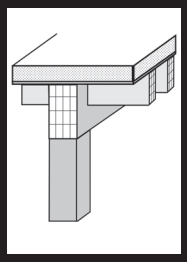
MASSLAM 38

- Plantation Oak
- Glue Laminated Timber
- Commonly used for:
  - Columns
  - Beams



MASSLAM 45

- Tasmanian Oak
- Glue Laminated Timber
- Commonly used for:
  - Columns
  - Beams



ATC
(Advanced Timber Composite)

- Plantation / Tasmanian Oak
- Hybrid Materials:
  - GLT
  - Plywood
  - Concrete
- Floorplate Solution

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T3 COLLINGWOOD

CASE STUDY – T3 COLLINGWOOD

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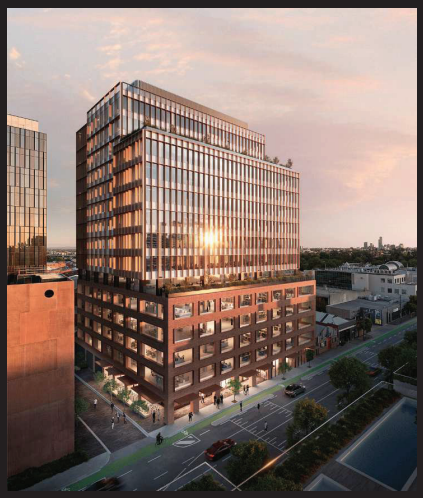
Project Summary

- 15 story building
  - 6-storey concrete podium
  - 9-storey timber tower
- 6-star GreenStar and 5.5 star NABERS
- 34% less embodied carbon than concrete reference design
- All timber supplied locally (glulam by ASH, CLT by Xlam)
- All timber harvested for 36 Wellington St is PEFC certified



CASE STUDY – T3 COLLINGWOOD

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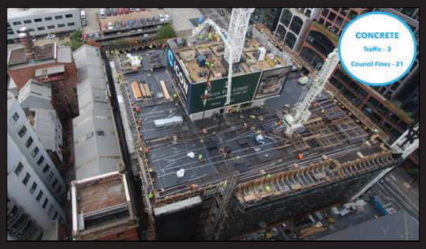
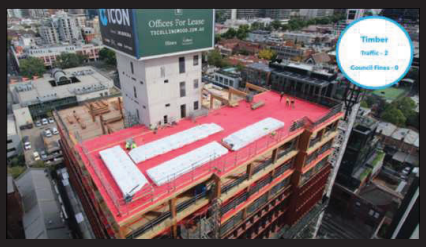
Concrete Vs Timber

Concrete:		Timber:
54-58 workers on site	v	14-18 workers on site
21 council fines	v	0 council fines
11-day average floor cycle	v	8.4-day average floor cycle
Re-work/defects on every floor	v	0 defects; no on-site re-work





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CASE STUDY – T3 COLLINGWOOD

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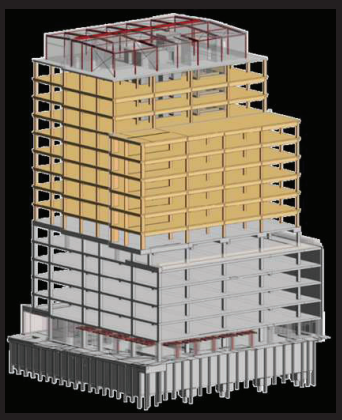
Timber Structure

- Typical concrete grid = 9.6m x 11m
- Typical timber grid = 9.6m x 5.5m
- Floor-to-floor = 3.715m
- FRL = 120 mins
- CLT Panel thickness = 220mm

	GL24h	ML45
Typical beam	490 x 850	380 x 840
Typical Column	600 x 600	380 x 660



CASE STUDY – T3 COLLINGWOOD

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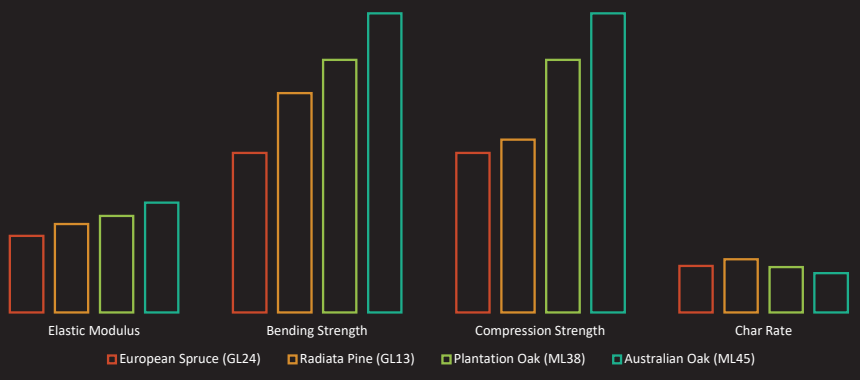

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CASE STUDY – T3 COLLINGWOOD

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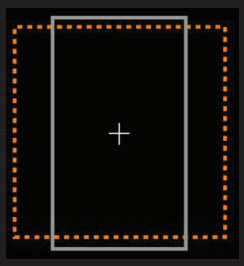
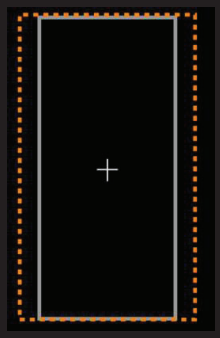
Typical Column



43% more fibre

Typical Beam



30% more fibre

ML45
GL24h

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BEST PRACTICE LAYOUTS

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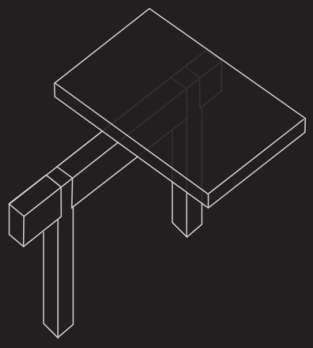
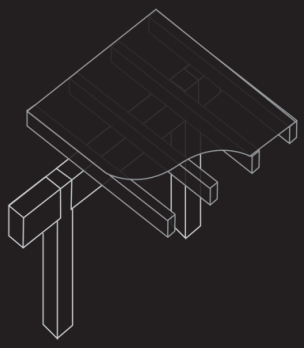
Glulam + CLT



9m x 6m

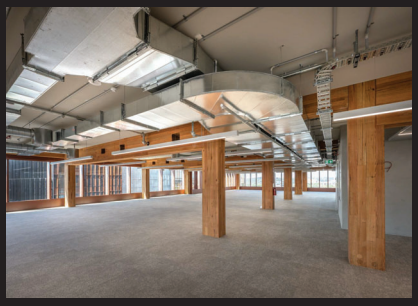
Timber Concrete Composite



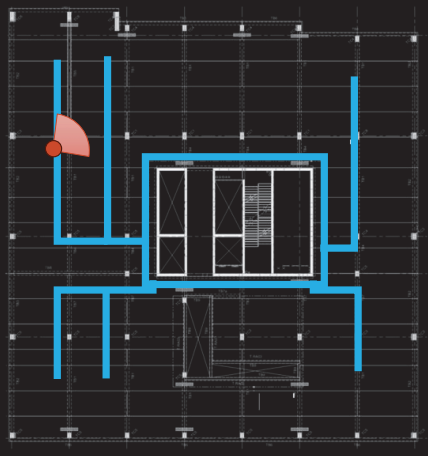
9m x 9m

BEST PRACTICE LAYOUTS

ASH



"Services Highway"



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BEST PRACTICE STABILITY

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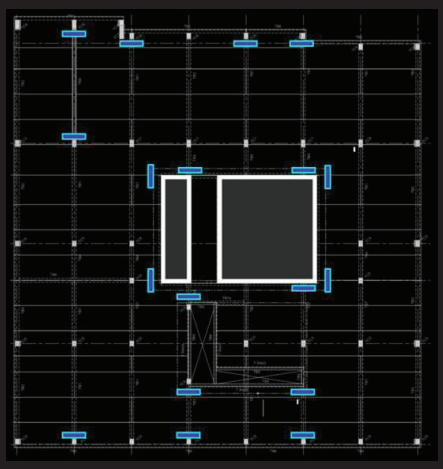
- Hybrid timber-concrete structure
- Diaphragm action through CLT floorplate (staggered panels)
- Stitch plates around core and high-shear areas
- Robustness design incorporated into connections



BEST PRACTICE CONNECTIONS

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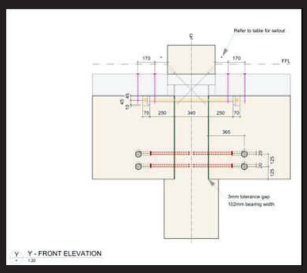
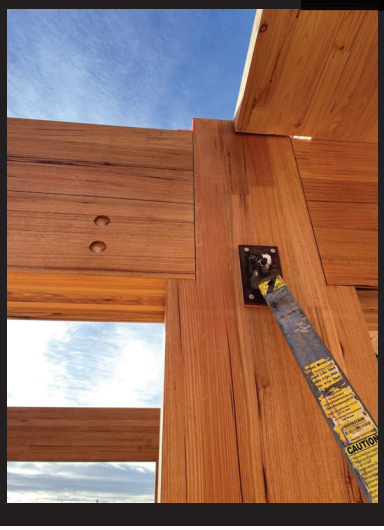
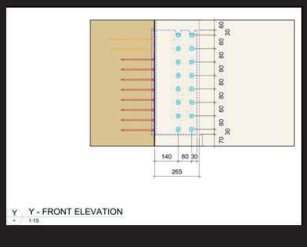
Hardwood
- Bearing connection
- "Keep it simple"





Softwood
- Internal fin plate



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