

# How to achieve the Triple Bottom Line: case studies.

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# Forest and Wood Products Australia (FWPA) Acknowledgement of Country

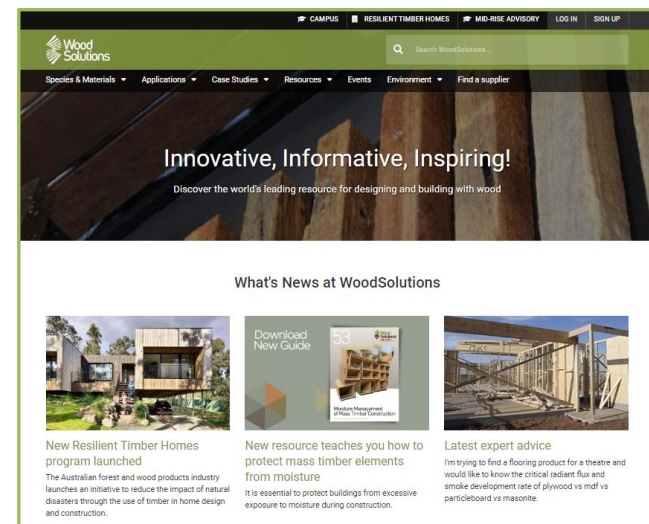
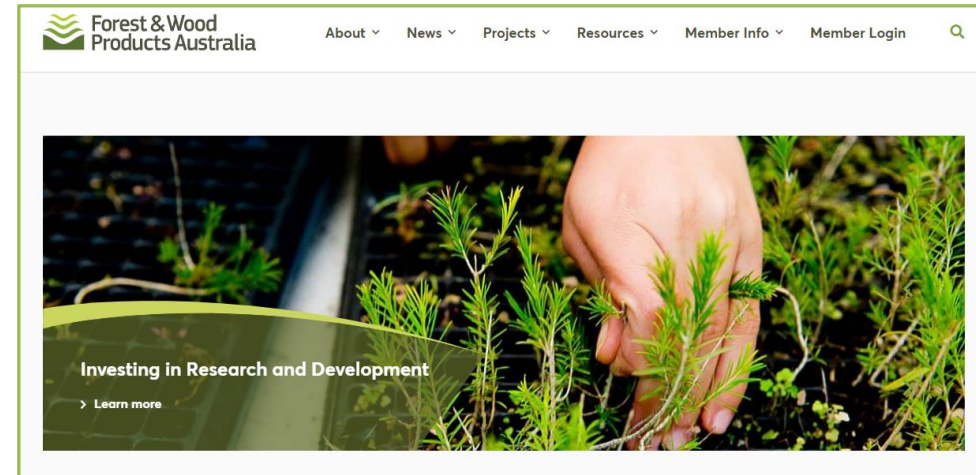


In the spirit of reconciliation, Forest & Wood Products Australia acknowledges the Traditional Custodians of Country throughout Australia, and we acknowledge their connection to the land and their custodianship of Country and forests. We pay our respect to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples.

# Forest and Wood Products Australia (FWPA)

## WoodSolutions™

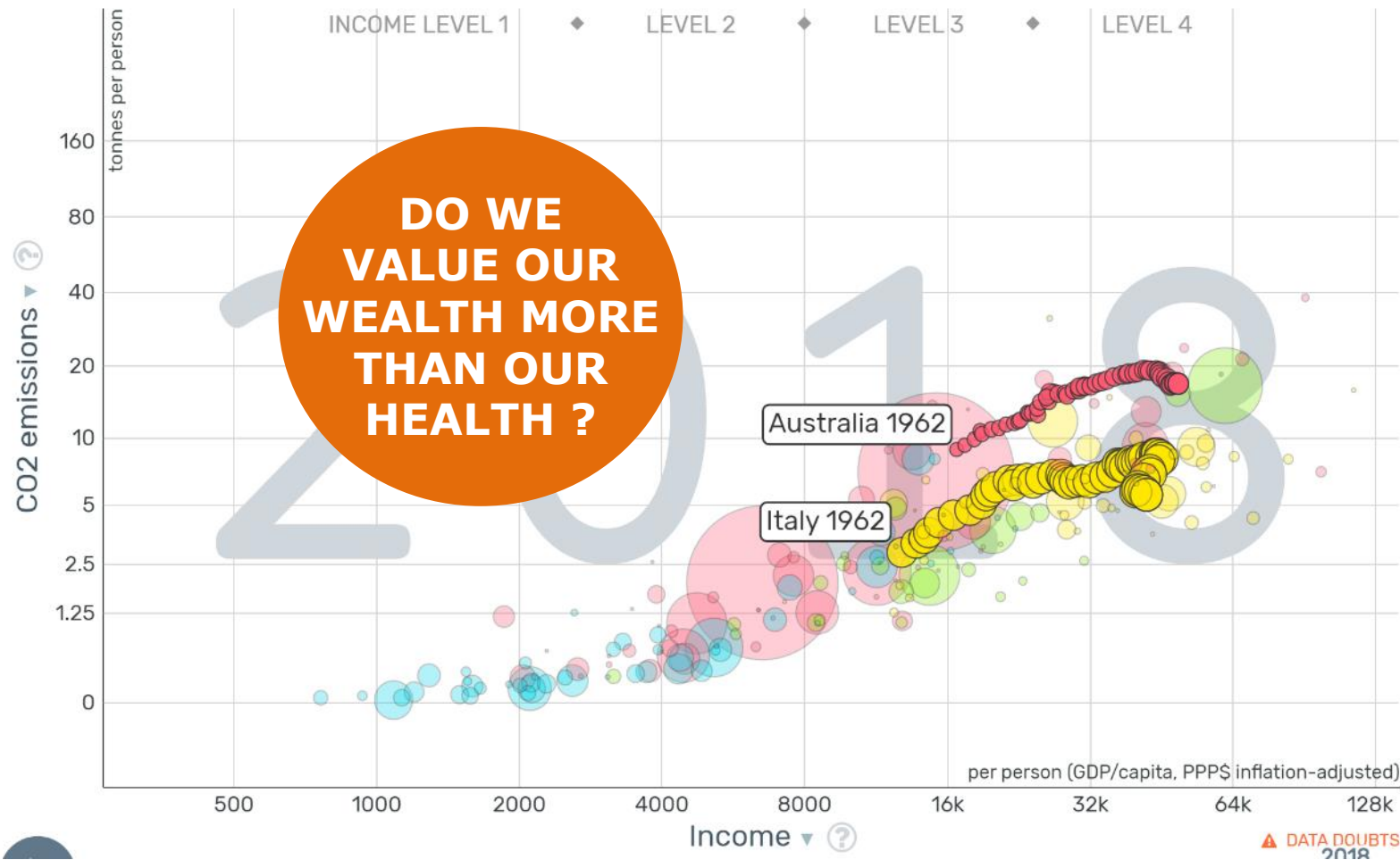
- A **not-for-profit** industry services company
- **Independent, non-commercial, evidence-based** information, training and R&D activities
- **Established collaborations** with the Australian Building Codes Board, other regulatory Bodies, Agencies and Associations



# Am I to blame? Apparently, yes...

## ... even if I was born on Earth Day!

Pro capita CO<sub>2</sub> emissions and income (gapminder.org)



Color: World Regions

Select: Search...

- Italy
- Australia
- Afghanistan
- Albania
- Algeria
- Andorra
- Angola
- Antigua and Barbuda

DESELECT

Size: Population

Zoom: 100%



# Outline

## The Triple Bottom Line with Engineered Wood Products

Case studies

Conclusions



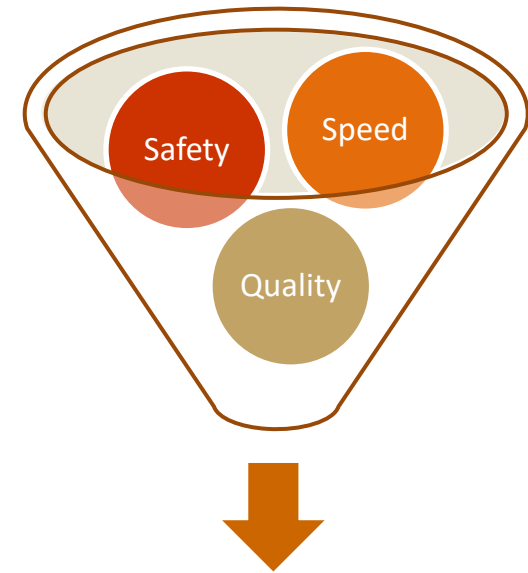
# The Triple Bottom Line for an ESG Accountant (and for a Developer / Builder).

Is it BEARABLE?  
(Is it FASTER?)



Is it VIABLE?  
(Is it CHEAPER?)

Is it EQUITABLE?  
(Is it SAFER?)



- Safer workplaces mean
- Shorter programs, with
- Less variations.

# The Triple Bottom Line for a successful project.



**IT'S ABOUT  
FINDING THE  
SWEET SPOT  
(BALANCE)**





# The Triple Bottom Line with Engineered Wood Products.

## PEOPLE

Australian forests and plantations provide **stable, long-term employment in rural towns**, with \$23 billion/year of direct economic activity (Australian Bureau of Statistics, 2018), **improving the resilience of these communities.**





# The Triple Bottom Line with Engineered Wood Products.

## PLANET

Wood products currently **offset around 10% of the total greenhouse gases emitted in Australia** (Australian Government Department of Industry, Science, Energy and Resources, 2021), and are **the natural choice for a circular economy approach** where waste and pollution are designed out, products and materials are kept in use, and natural systems are regenerated.



# The Triple Bottom Line with Engineered Wood Products.

## PROSPERITY

Australian developers and builders “*do not have to choose between saving money and protecting the environment*” (Clean Energy Finance Corporation, 2021), with timber building projects demonstrating excellent track records of **zero site accidents, shorter delivery times, and higher rents thanks to improved comfort and wellness.**



### Timber to deliver a greener approach for large-scale buildings

The \$500 million CEFC Timber Building Program aims to transform our approach to large-scale construction – from greener commercial offices, retail, industrial, healthcare and education to multi-residential apartments, seniors living and student accommodation.

[Read more](#)



**To quantify your Triple Bottom Line results, always use objective criteria and data.**

### **Environmental Product Declarations (EPDs):**

- a **standardised and verified** way of quantifying the environmental impacts
- a **consistent set of rules** that make comparisons possible and objective
- **not only carbon**, but also consumption of raw materials and energy, waste, emissions to air, soil and water over the full life cycle
- **tracking the evolution over time** (i.e. for sawn softwood: 12% improvement from 2015 to 2020).

**INVESTORS  
NEED CLARITY,  
NOT GREEN-  
WASHING**

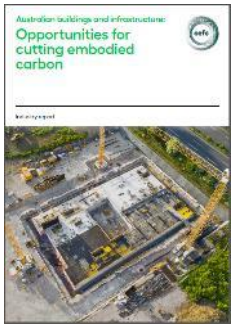




# Embodied Carbon: 2 types of EPDs.



**COMPANY-SPECIFIC EPDs**



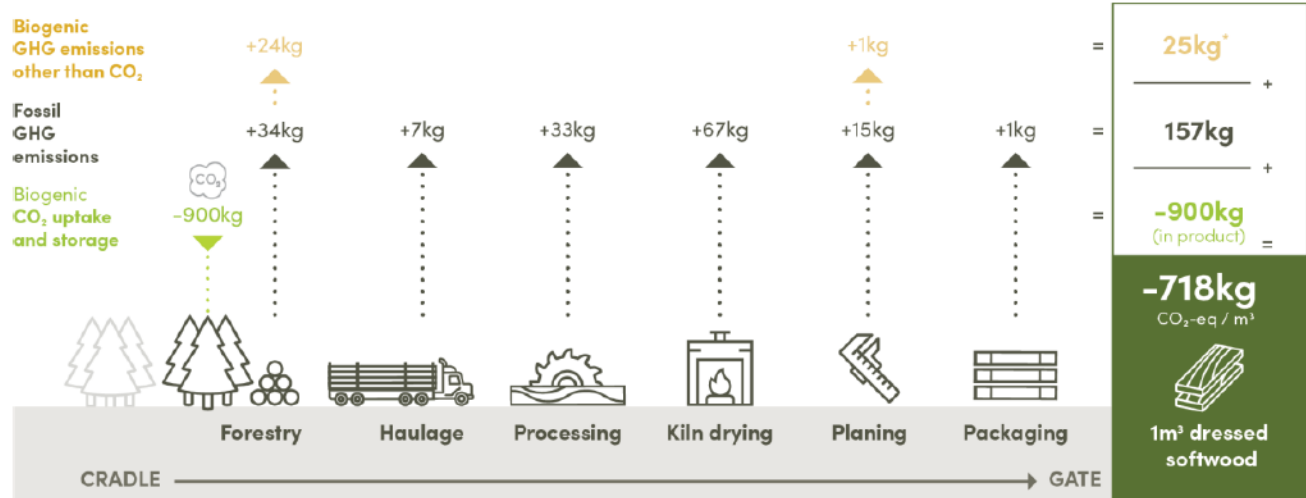
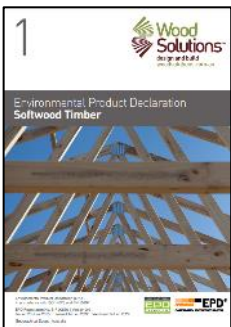
## Material type

## Embodied carbon (kg CO<sub>2</sub>/t material)

## Data source

CLT	930	XLAM EPD for CLT (2021)
CLT – with carbon storage	-610	XLAM EPD for CLT (2021)

**INDUSTRY-WIDE EPDs**



**Carbon footprint 1m<sup>3</sup> of KD dressed softwood**  
'Cradle to Gate' A1 – A3

\*CO<sub>2</sub> biogenic emissions from production (e.g. from combustion and degradation of residues) are excluded as they are balanced by uptake during tree growth (i.e., balance to zero)

# Wood-based products store carbon, even at their End-Of-Life.



Carbon is transferred to the next use, with minimal energy requirements.



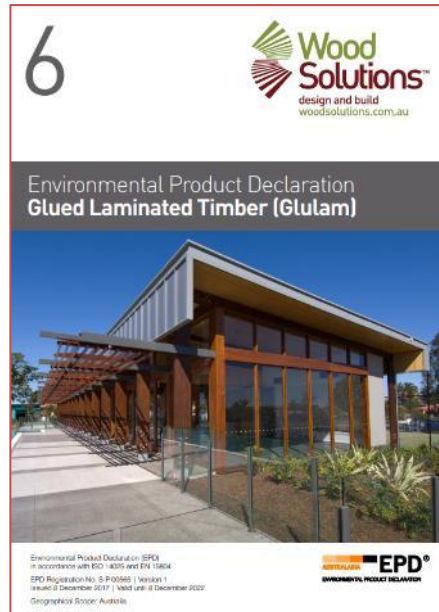
Carbon is transferred, using much lower energy than for other materials.



Emits CO<sub>2</sub> back but substitutes an alternative fuel (often a fossil one). Impossible for non-combustible building materials.

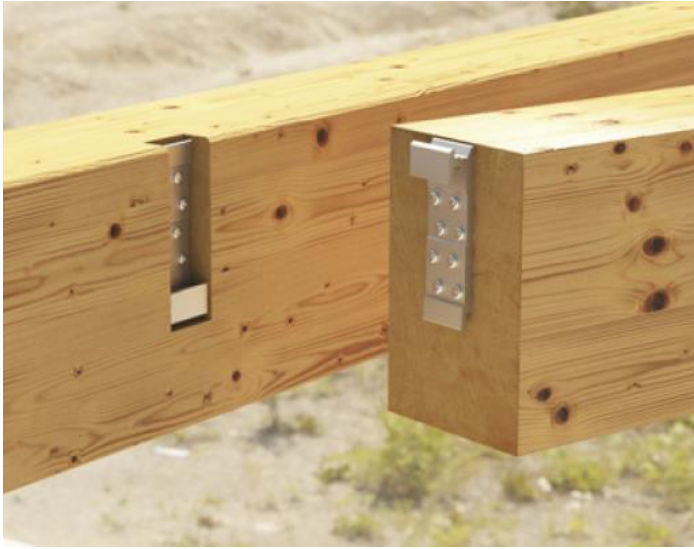


Significant evidence that wood has **minor decay over 30-50 years**, therefore carbon sequestration still applies (at least as a %).



# DfMA + R

Designing for Reuse/Recycle is easy nowadays.





# Outline

The Triple Bottom Line with  
Engineered Wood Products

**Case studies**

Conclusions

**DATA ARE  
FROM THE  
DESIGNERS,  
DEVELOPERS,  
BUILDERS**



# 25 King street - Office Brisbane



Bates Smart  
Aurecon  
Lendlease





# 25 King street - Office Brisbane



## BEARABLE

74% less e. carbon and  
81% less waste in the  
landfill than an  
equivalent RC  
structure



## EQUITABLE

Zero site accidents



## VIABLE

20% faster than traditional construction



# LaTrobe Uni - Student Accommodation Melbourne



JCBA  
TTW  
Multiplex

# LaTrobe Uni - Student Accommodation Melbourne



## BEARABLE

75% less embodied carbon than an equivalent RC structure



## EQUITABLE

Zero site accidents



## VIABLE

2.5 days/level faster cycles than for an equivalent RC structure



# AVEO Northwest - Aged Care Sydney



Jackson Teece  
TTW  
Strongbuild



# AVEO Norwest - Aged Care Sydney



## BEARABLE

Reduced the embodied carbon by 2,700 tons of CO<sub>2</sub> compared to an equivalent volume of concrete



## EQUITABLE

Additional costs were offset by time-related savings



## VIABLE

Completed 13 weeks earlier than with a concrete-based construction program

# Monterey - Apartments Brisbane



Hayes Anderson Lynch  
Aurecon  
Gardner Vaughan





# Monterey - Apartments Brisbane



## BEARABLE

Replaces 1,170 cbm of concrete and blockwork with Australian timber, avoiding 3,744 tons of CO<sub>2</sub> emissions



## EQUITABLE

15 times better insulation than with masonry walls

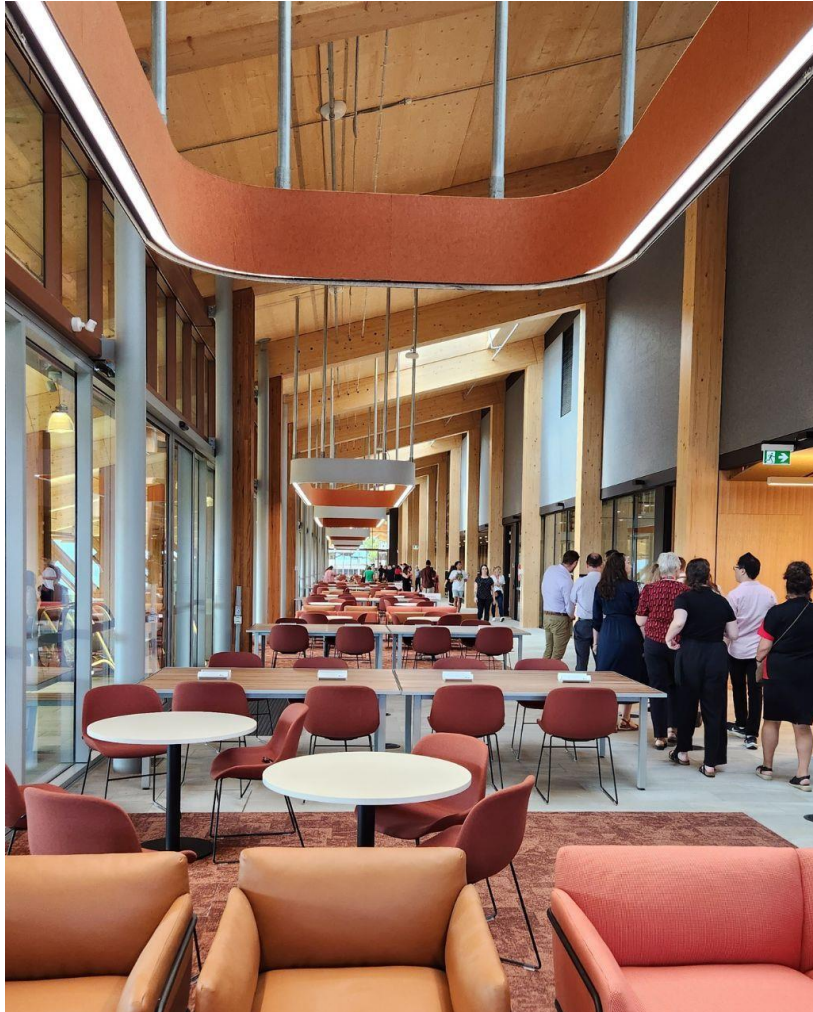


## VIABLE

Built over a tunnel, possible only in timber for this building size and height



# Boola Katitjin - Learning Centre Perth



Lyons  
Aurecon  
Multiplex



# Boola Katitjin - Learning Centre Perth



## BEARABLE

55% reduction in embodied carbon when compared to an equivalent concrete & steel structure



## EQUITABLE

Ethically sourced from renewable plantations in Australia and Europe



## VIABLE

Tested robotic assistance to installation, improving site efficiency and safety



# 36 Wellington - Office Melbourne



JCBA  
Aecom  
Icon



# 36 Wellington - Office Melbourne



## BEARABLE

Cuts embodied carbon by 40% during construction and targets Net Zero emissions once operational

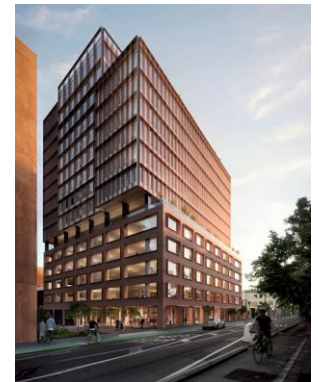


## EQUITABLE

Ethically sourced from renewable Australian forests and plantations


## VIABLE

The first project co-financed by the CEFC's Timber Building Program



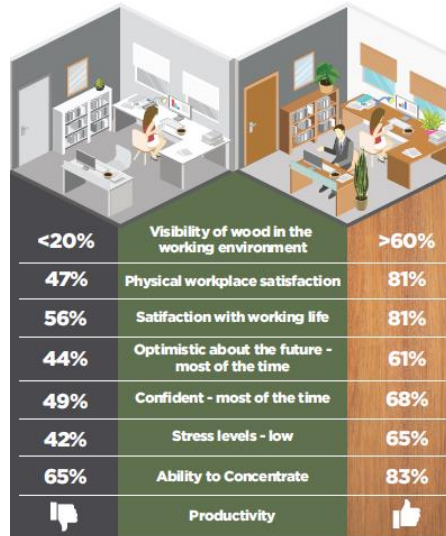
# Wellness, productivity, and... ... higher rents.

**Workplaces:  
Wellness +  
Wood =  
Productivity**



A report prepared for  
Forest & Wood Products Australia\*  
by Andrew Knox,  
Howard Parry-Husbands,  
Pollinate\*\*  
February 2018

Pollinate



**Key findings** of a non-biased and peer-reviewed survey (1,000 office workers):

- Higher levels of satisfaction and concentration
- Improved mood and productivity
- Less sick leave days

**HIGHER  
RENTS ARE  
BEING PAID  
FOR WOOD-  
BASED  
OFFICES**



**Durability is high, even in warm climates,  
with good design and construction.**

**BRISBANE  
1913 & 2018**



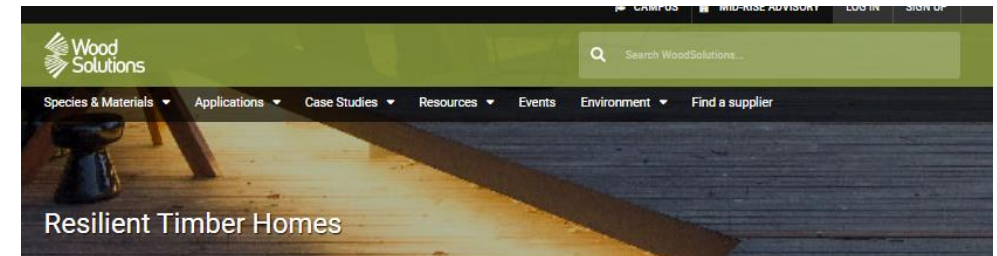
**WHEN A  
BUILDING IS  
LOVED, ITS  
LIFESPAN IS  
LONGER**



# Improving sustainability and resilience, with The Ultimate Renewable building material.



*“In only 150 seconds, our plantations can re-grow the wood in an average home frame.”*



Home » Resilient Timber Homes

Resilient Timber Homes (RTH) are an efficient and sustainable solution to the challenges caused by our rapidly changing climate, which are becoming increasingly critical for our communities, environment, and economy.

This program will demonstrate how timber homes can be designed and built with a resilience-focused “Code+” approach, to provide better safety and wellness their occupants, as well as increased value for the investors and the whole community.

Resilient Timber Homes will therefore become a significant driver of the growth in the demand for innovative, sustainable and competitive wood-based products and services over a number of years. Increased demand will also result in a stronger and more resilient supply chain, a win both the environment and the whole building sector.

You are welcome to [contact us](#) for more information.



The impact of natural hazards



Why Resilient Timber Homes?



# Tackle the effects of climate change: let's make it happen!



**AUD 100K  
PRIZE MONEY,  
+ BUILDING  
THE WINNER'S  
DESIGNS**

Wood Solutions

Overview Partners Benefits Key Dates Jury Login REGISTRATION

## RESILIENT TIMBER HOMES DESIGN COMPETITION

Join us in tackling the effects of climate change. Use your design skills, and let's make it happen.

LEARN MORE ABOUT RESILIENT TIMBER HOMES

greenstar

### Upfront Carbon Emissions calculation guide - interim

Guidance on calculation methods for the Upfront Carbon Emissions and Life Cycle Impacts credits

Interim Version 1  
6 December 2022

Green Building Council Australia

Building a Sustainable Future

[www.resilienttimberdesign.com.au](http://www.resilienttimberdesign.com.au)



# Outline

The Triple Bottom Line with  
Engineered Wood Products

Case studies

**Conclusions**



# The Triple Bottom Line with EWPs

## Key Takeaways



### BEARABLE

More demand (WOOD) =  
More supply (TREES)



### EQUITABLE

Growing the timber industry =  
Growing stable employment  
in rural Australia

### VIABLE

Safer & faster construction =  
Lower risk & Higher Return On Investment



# THANK YOU

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