Circular Case Study

ECOLIV®

Ecoliv Modular Homes: Sustainability Across the Full Product Lifecycle

EcoLiv is a modular home construction company with a deep commitment to sustainability, recognising that the materials and design choices made today will affect the environment for years to come. At EcoLiv, sustainability is not just a goal- it's a journey. Understanding the environmental impacts in every phase of their lifecycle, Ecoliv is working towards integrating circular economy principles into their homes, from construction to use, and eventually end-of-use.

Ecoliv addresses environmental impacts at every stage of a home's lifecycle. This includes sourcing sustainable, low-impact materials during construction, incorporating renewable technologies and passive design to reduce operational energy use, and creating modular homes that can be easily relocated or have components reused. When properly maintained and repurposed, these homes can significantly reduce the need for new construction, fostering long-term sustainability.

CONSTRUCTION PHASE
REDUCING IMPACTS THROUGH MATERIAL SELECTION

Ecoliv is committed to selecting materials that reduce the carbon footprint of their modular homes during construction, a phase known for its high emissions. Current efforts include:

- **Sustainable timber framing:** sustainably sourced plantation timber, reducing carbon emissions by up to 23 tonnes per home.
- **Recycled glasswool insulation:** Made from recycled glass bottles, this insulation provides high thermal comfort while significantly reducing impact in production. Recycled Glass Wool Insulation can be up to 85% lower carbon than typical insulation.
- **Interior paints and timber** are low in volatile organic compounds, improving indoor air quality and reducing harmful emissions as oil-based paints contain up to 350g/L of VOCs, contributing to the 60,000 T of harmful chemicals released into the air each year.

USE PHASE
PASSIVE DESIGN AND RENEWABLE & EFFICIENT TECHNOLOGIES

Ecoliv homes are designed to reduce operational impacts during their use phase. By incorporating energy-efficient technologies and passive design principles, Ecoliv is creating homes that are more resource-conscious and cost-effective.

- **Water efficiency:** A 10,000 liter rainwater tank and high WELS-rated plumbing fittings reduce reliance on mains water by up to 14,500 liters of water annually.
- **Thermal comfort:** High thermal performance achieved with quality insulation, reduce heating and cooling needs.
- **Passive design:** Strategic window placement maximises natural ventilation and daylight.

END OF USE PHASE
FOUNDATIONS FOR FULL LIFECYCLE CIRCULARITY

Ecoliv is working towards designing modular homes that are not only adaptable but also align the principles of disassembly. While this vision is still in progress, their efforts include:

- **Design for relocation:** Modular components that can be relocated or repurposed.
- **Exploring circularity support tools:** A potential 'Home Circularity Toolkit" with resources such as maintenance guides, disassembly plans, and product lifecycle data to help clients steward their homes.

Ecoliv's homes are designed for a 60 year lifespan, at odds with the median homeownership tenure in Victoria of just 8 years. That's why Ecoliv is ensuring that despite changing hands, their homes can continue to be used for their full design life.



Ecoliv knows that every product used carries an impact. That is why Ecoliv is not only carefully selecting products, like carpet with no synthetic materials and choosing timber over concrete, but also considering how to support these products' continued use.

Ecoliv acknowledges that achieving circularity is a long-term goal. By actively pursuing sustainability through material selection, innovative technologies, and modular design, they are making meaningful strides towards reducing environmental impacts across the lifecycle of their homes.

While the journey is ongoing, Ecoliv's approach reflects a forward-thinking vision; creating homes that align with circular principles to contribute to a more sustainable future.

ECOLIV KNOWS WHAT IT TAKES TO MAKE A HOME.

PRODUCTS USED IN A TYPICAL AUSTRALIAN HOME	PRODUCTION IMPACT (kg Co2e per unit)
SOLAR PANELS	2,560 per kW
COMPOSITE CLADDING	6.91 per m^2
FRAMING STEEL	22.8 per m^2
NYLON CARPET TILES	10.8 per m^2
ALUMINIUM-FRAMED WINDOWS	51.20 per m^2
PINK BATTS INSULATION	0.96 per m^2

THAT'S WHY THEY'RE INCORPORATING CIRCULARITY ACROSS THE FULL LIFECYCLE OF THEIR HOMES.

Coreo BASS COAST