

MODERN GREEN HOMES

Sanctuary

ISSUE
73

PREFAB + MODULAR
SPECIAL

**BUILT
OFFSITE**
and beautiful

PUBLISHED BY **renew.**
SUMMER 2025/26 • AU/NZ \$15.95
SANCTUARY.RENEW.ORG.AU

ISSN 1833-1416



9 771833 141017

PLUS

Prefab studios for at-risk youth
Changing the conversation with Parlour

Roadmap to Zero Carbon Homes
Gardening on the wild side



Towards high-performance houses at scale

Founded back in 2013, Melbourne-based CarbonLite is a longstanding player in the prefabricated construction industry in Australia, and a pioneer of the rigorous Passive House standard in the country too. Co-founder Burkhard Hansen has always sought to push the boundaries, and together with partner builders, CarbonLite has delivered some of the country's most energy-efficient homes.

"These homes usually come at a premium though – often around \$6,000 per square metre – putting them out of reach for most Australians," says Tom Davies, CarbonLite's Transformation and Partnerships Director. "While this demonstrates what's possible, it won't by itself achieve the scale of change we need in the industry. With homes responsible for around 21 per cent of Australia's carbon emissions across their life cycle,

the residential sector has to transform as a critical, inevitable part of the climate solution."

Looking for opportunities to deliver high-performing houses at scale, thus driving down costs and putting them within the financial reach of more people, the CarbonLite team has recently collaborated with long-established sustainable design practice Envirotecure to develop RubikHaus.

"RubikHaus is a set of house designs that have been optimised for energy efficiency and performance using Passive House principles," explains Tom. "Each design can be precision fabricated in CarbonLite's factory using a Passive House-certified panelised construction system, before being assembled onsite by a team of trained installers."

The first two RubikHaus projects were

recently completed, both in Gisborne in the Macedon Ranges, 50 kilometres north-west of Melbourne: "perfect territory for Passive Houses, with its seasonal temperature extremes," says Tom. Cambio is a two-storey, four-bedroom home that achieved an 8.5-Star energy rating. It was manufactured in just five weeks for a cost of around \$3,500 per square metre. While it's yet to be certified, a blower door test done before the plaster layer was added showed an airtightness of 0.81 air changes per hour, keeping it on track to meet the Passive House Low Energy standard.

Just down the road, Tempus is a single-storey RubikHaus that also rated 8.5 Stars and was delivered for around the same price per square metre. The house is currently tenanted, and in the April-June quarter this year the occupants received a \$42 credit on their electricity bill, while



DESIGNER
Enviroecture

**PREFAB MANUFACTURER
& BUILDER**
CarbonLite

PREFAB TYPE
Passive House–certified
panelised

LOCATION
Gisborne, VIC
(Wurundjeri Country)

SIZE
Cambio 237m²
Tempus 180m²
(RubikHaus designs
range from 150m² to
250m²)

WORDS
Anna Cumming

PHOTOGRAPHY
RT Edgar Macedon
Ranges

living in comfort with their new baby.

“There’s no reason why we can’t deliver homes that are net positive for energy across the year – the only real barrier is cost,” Tom says. “To address that, we must achieve volume, to make the additional cost of materials and energy-efficient appliances comparable with a conventional home.”

He goes on to emphasise the importance of innovative finance mechanisms. “The Australian home market is ripe for transformation; land and build costs no longer stack up, and volume homes are typically value-engineered to achieve the minimum required performance standard at least cost. A way to address this is to change the system so that for high-performing (net positive and resilient) homes, operational costs including mortgage finance, energy

bills and insurance costs are reduced, enabling greater financial accessibility for homeowners – this effectively incentivises building better homes.” He notes that some financial institutions now have offerings targeted at higher-performing homes and those built using advanced methods of construction, and build-to-rent schemes – a good model for housing security and greater affordability – are also starting to mature in Australia.

“RubikHaus is CarbonLite and Enviroecture’s contribution to a broader initiative to transform the housing sector and business in general to become climate and nature positive,” Tom says. “Having spent three years perfecting the product, we’re now focusing on scaling initiatives. That’s the next chapter.” **S**

Above Cambio, a recently completed RubikHaus project, is an 8.5-Star family home built using a prefabricated panelised construction system for speed and high performance.