

Breathe Architecture designed the house around the constraints of heritage orders, a tight block and the need for regulation setbacks from an electrical transformer.



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photography ANDREW WUTTKE

THROUGH AN ENVIRONMENTALLY CONSIDERATE DESIGN, TRANSFORMER HOUSE PROVIDES AN AFFORDABLE NEW SMALL FAMILY HOME.

For Jeremy McLeod and Craig Byatt of Breathe Architecture the constraints of a tight block and heritage restrictions of existing stable walls were just the start of the story. The elephant in the room, or perhaps that should be on the small 50-square-metre block in the inner Melbourne suburb of Brunswick, was the necessity of complying with a regulation setback from a bulky pole electricity transformer directly outside the building. The architects' response has recently been announced as the winner of the 2010 Australian Timber Development Association's residential sustainable design award.

The brief for the project was to subdivide a sliver of land and provide an environmentally sustainable home at the rear of an existing terrace house. The presence of the transformer informed the response as the timber-clad form folds away from the pole and the sizable electrical box that crowns it.

Bounded by the heritage stable walls, the building opens up to the north to capture the winter sun and a view into the canopy of a towering eucalypt to the east. The plan was turned upside-down, with living areas on the first floor opening to a deck, which expands the view into the eucalypt. The first floor is designed as both a heat sink and a radiator. The suspended concrete slab contains hydronic heating coils, which are preheated by winter sun and in turn circulate heat throughout the dwelling, radiating both heat and cool to the first and ground floors below.


With maximum northern exposure to all living spaces, the built form is calculated and finished to minimise solar gain in summer while maximising winter sun. Automated high-level saw-tooth windows promote natural convection processes to exhaust hot air, reducing energy consumption and removing the need for air-conditioning. Double glazing further contributes to passive solar performance. Timber battens on the western facade minimise heat



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loading through the ventilated cavity between the rain screen and wall surface.


The material palette was kept to robust, highly durable natural finishes. With unoiled class 1 spotted gum (*Corymbia citriodora*) cladding and battens, stainless-steel fastenings, existing brickwork, and clip-lock steel cladding, the building envelope is designed to last. The cladding timber (lemon-scented spotted gum) was sourced from private regrowth forest in Queensland through Urban Salvage. Harvested in Queensland, the embodied energy related to timber transport from source to the Victorian site was minimal. This robust material requires no maintenance in its natural state and has a service life of at least 50 years, ensuring cladding longevity and overall value.

Interiors were finished in a simple range of whites, with a charcoal pigmented concrete floor to the living areas and an off-form concrete ceiling to the bedrooms. Gas-boosted solar hot water adds a further bonus to the sustainability checklist.

The Australian Timber Design Awards (ATDA) is a

national competition to promote and encourage outstanding timber design in the built environment professions. Now entering its 12th year, the ATDA is distinguished by a proud heritage of design innovation and achievement.

The aim of the awards is to develop a timber design ethos through the encouragement and showcasing of superlative timber design in a variety of applications. A broad range of entry categories demonstrates the diversity of timber and permits recognition of achievement in a variety of areas. The ATDA is open to builders, designers, architects, engineers and landscapers: to anyone involved in the design or building of structures that feature timber. A separate section in the residential category is available to architecture and design students and entrants aged 30 or under.

In awarding the ATDA residential sustainability award to the Transformer House, the judges described the residence as “a well thought-out project which has overcome its spatial limitations while utilising a spartan array of materials to provide a justifiably sustainable outcome” 

Clockwise from above: Interiors were finished in a range of whites with a charcoal pigmented floor in the living areas; with spotted gum cladding and battens, stainless steel fastenings, existing brickwork and clip-lock steel cladding the building is designed to last.