

PROPERTY #13: INDENTED HEAD

HOMEOWNERS' STORY

In this new build the homeowner has drawn on his experience as an electrician and some very innovative approaches to living in a sustainable way. Chief amongst these is the choice of construction material, in this case Bondor archi panels. These structural sandwich panels comprise powder coated steel outers surrounding a 140cm wide expanded polystyrene with fire retardant inner. The panels are typically used to construct industrial freezers working at -40C and as such have excellent insulation properties. Because they are structural, houses built with Bondor archi panels don't require framing and can accommodate two storey builds that take less time than traditional buildings of a similar size. The panels also include built-in service channels and being steel, wall furnishings such as pictures can be attached with magnets rather than screws or the like.

To moderate the temperature inside the house, the homeowner has installed a ground air cooling system. This system uses a 300Watt fan to pump air into to the house via an 18 metre pipe buried 2 metres below the earth. The surrounding earth and length of pipe has been capable of keeping the house at 23C on a 40C day.

The concrete slab on which the house is built was sealed with a penetrating concrete sealer before the walls were built. This sealer stops any moisture penetration and also serves to stop concrete dust. All of the windows are double glazed and the house has been fully sealed and air leak tested.

The 7Kw solar system with Fronius solar converter and Selectronic controller enables the house to be totally off-grid. Interestingly the homeowner has chosen to use lead acid forklift batteries to store excess energy for later use. LED lighting is used throughout the house including some very fashionable options. The system uses a 5KVA generator as a back-up supply.

The roof includes safety anchor points as well as power and water connections can be accessed via an ingenious attic ladder.

The homeowners are developing a garden including numerous natives which will be well watered by 40000 litres of interconnected water tanks. An edible garden and orchard will follow.

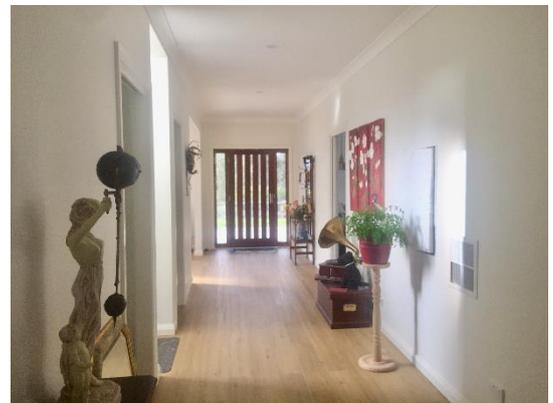
Photos: courtesy Phil Hines Photography



Talk to homeowner, Russell about his clever underground cooling system & many nifty 'sparky' fittings

SUSTAINABILITY FEATURES

Category	Features
House type	Built in 2018
Lifestyle	Large 52sq coastal home sized for family summer holidays
Building type	Two storey home constructed using full height Bondor ® archi panels, large workshop and outdoor retreat
Sustainable design	highly insulated home, low maintenance, off grid
Sustainable materials	All concrete treated with penetrating sealer before building to stop moisture rising and supress dust, vinyl floor planks, recycled materials and batteries
Energy efficiency	6.5 stars
Renewable energy	Off grid setup - 7Kw rooftop solar, Fronius inverter, Selectronic controller, recycled 1600AH lead acid forklift batteries
Heating & cooling	Underground cooling system, minimal heating
Water heating	Instanteous gas HWS
Fixtures & fittings	Many clever electrical fittings, LED lights, double glazed windows, pelmets, drapes
Water saving/reuse	40000 litres of interconnected water tanks
Garden/outdoors	Fernery and extensive planting of natives Next stage will be for edible raised garden beds & an orchard



Chat to a Bondor representative onsite on SHD