

NatHERS Thermal Comfort and BASIX Assessment

Proposed Dwelling: Lot 2 at 90 Brighton Street, Freshwater NSW 2096

Project Client: V. Glavan

Project Architect: Watershed Architects

Project No.: 24002

Revision	Notes	Date
A	Thermal Comfort & BASIX Assessment – NCC 2022 (NatHERS 7 Stars)	29/10/2024
B	Update to reflect revised design	11/02/2025

Star Rating	Climate Zone	Floor Area (m ²)		Loads (area adjusted MJ/m ² /annum)		
7.0	56	Conditioned	Unconditioned	Heating	Cooling	Total
		269	33	21.9	8.1	30.0

Thermal Comfort Specifications	
Glazing: Doors/windows	High performance double glazing throughout: Glazing may be substituted with any other product/manufacturer, however you must meet the maximum U-values (be equal to or lower than) and there is a flexibility of +/-5% with the SHGC value. Aluminium framed double and triple glazing: Louvre windows: BRZ-011-003 U-Value: 2.4 (equal to or lower than) SHGC: 0.10 (±5%) Sliding doors (Living and Bedroom): REY-027-006 U-Value: 1.8 (equal to or lower than) SHGC: 0.47 (±5%) Sliding door (Rumpus South): SCH-055-007 U-Value: 1.2 (equal to or lower than) SHGC: 0.21 (±5%) Sliding door (Rumpus East): SCH-055-004 U-Value: 1.2 (equal to or lower than) SHGC: 0.44 (±5%) Sliding windows: DOW-022-007 U-Value: 2.0 (equal to or lower than) SHGC: 0.51 (±5%) Hinged Entry Door: CPT-016-005 U-Value: 1.9 (equal to or lower than) SHGC: 0.40 (±5%) Fixed windows: A&L-026-302: U-Value: 1.8 (equal to or lower than) SHGC: 0.48 (±5%) Sashless double hung windows: ANE-015-321: (bedrooms and Study modelled as 30% open) U-Value: 1.9 (equal to or lower than) SHGC: 0.38 (±5%) Note: Given values are AFRC, total window system values (glass and frame)
Skylights	Double glazed by Velux: Maximum U-Value 2.7, and SHGC: 0.24 (±5%)
Roof	Metal roof with R1.3 anticon/builders blanket External Colour: Medium (0.475<SA<0.7)
Ceiling	Lower Ground Floor: R2.0 insulation (insulation only value) to internal ceiling of Garage and RWT Room where habitable areas above (between levels) Ground Floor: R2.0 insulation (insulation only value) to internal plasterboard ceiling (between levels) where rooms above First Floor where metal roof above: Plasterboard ceiling with R3.5 insulation (insulation only value)
Ceiling penetrations	Sealed LED downlights (ie. IC rated): modelled at one light per 2.5m² of floor space Exhaust fans to Kitchen, Baths/Ensuites and Laundry Chimney Flue Note: All downlights are to be IC rated and sealed, all exhaust fans and chimney to have dampers
Ceiling fans	Seven ceiling fans required: One to Study, one to Bedroom 01, one to Bedroom 02, one to Bedroom 03, one to Bedroom 04, one to Rumpus, and one to Living or Dining
External Walls	Lightweight cladding on timber framing with R2.7 insulation (insulation only value) Cavity brick with R2.13 insulation (insulation only value), or one skin of AFS wall and one skin of brick with cavity between with R2.13 insulation, or Total Wall Construction System Value R_t2.5 (insulation modelled as R1.5 bulk reflective both sides to total insulation product value of R2.13; this would be indicative of a product like Polastic 20mm reflective cavity insulation)

	Concrete (Dintel/AFS; minimum 150mm) to Garage and RWT Room (no insulation required to these two unconditioned zone walls) External colour: Light (0.475>SA) and default Medium (0.475<SA>0.7)
Internal walls	Lift: Cavity brick (or may be substituted with one skin of AFS wall and one skin of brick with cavity between) Lower Ground Floor: Concrete walls with R2.0 insulation required between the Garage and Entry. No insulation required between Garage and Plant. Ground Floor and First Floor: Plasterboard on lightweight framing with R2.0 insulation to Ground Floor Laundry and First Floor Bath
Floors	Lower Ground Floor: Concrete slab on Ground with R1.5 underslab insulation to Entry floor only. No insulation required to Garage and RWT Room floors. Concrete between Lower Ground Floor and Ground Floor Ground Floor: Concrete slab on Ground with R1.5 underslab insulation Suspended timber floor to First Floor with R3.0 insulation where open to air below Floor coverings: Carpet to bedrooms, tiles to wet areas, timber elsewhere. Garage and RWT room floors are bare concrete
External Shading	Vertical louvre screens, eaves and covered balconies as per drawings

BASIX Water Inclusions

Fixtures	Install showerheads minimum rating of 4 stars (>6.0 and <= 7.5 Litres/min) Install toilet flushing system with a minimum rating of 4 stars in each toilet Install tap with minimum rating of 4 stars in the kitchen Install taps with minimum rating of 4 stars in each bathroom
Alternative Water	Install rainwater tank with minimum 3,000L capacity, connected to – At least one outdoor (garden) tap and all toilets Rainwater harvest collected from a min. 150m ² roof area
Pool	Volume no greater than 25kL Must have a pool cover

BASIX Energy Commitments

Hot water System	Electric heat pump: minimum performance of 31-35 STCs
Cooling system	3 phase air conditioning to living areas and bedrooms: EER 3.0-3.5
Heating system	3 phase air conditioning to living areas and bedrooms: EER 3.0-3.5
Ventilation	Kitchen - Individual fan, externally ducted to roof or façade, manual on/off switch Bathrooms - Individual fan, externally ducted to roof or façade, interlocked to light with timer off (<i>note that the BASIX Certificate says 'Operation control: please select' and this is a mistake (known issue unresolved with BASIX)</i>) Laundry - Individual fan, externally ducted to roof or façade, manual on/off switch
Pool	Heating system: electric heat pump Must install a timer for the swimming pool pump with a minimum 5 Star efficiency
Other	Induction cooktop & electric oven Outdoor clothes drying line Alternative Energy: Minimum 2.0kW of photovoltaics (solar); South nominated for the panel orientation to allow for worst case scenario