

# SUSTAINABLE MANAGEMENT PLAN



PROPOSED MIXED-USE  
DEVELOPMENT

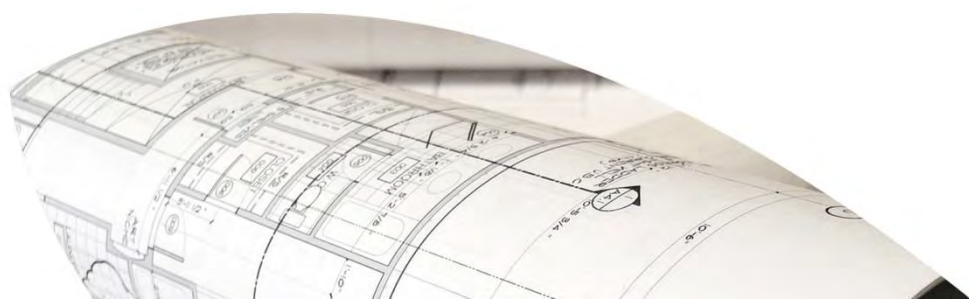
97 Alma Road, St Kilda East

GIW21210  
Revision G

Prepared for:  
Neometro

4 July 2024

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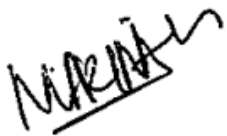
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## Revision History

Revision Number	Date Issued	Author	Approved	Comments
A	28/10/2022	MS	IB	Draft
B	08/11/2022	MS	IB	Final
C	18/11/2022	MS	IB	Final
D	02/03/2023	MS	IB	RFI Response
E	16/03/2023	MS	IB	RFI Response
F	22/05/2024	MS	IB	Final
G	04/07/2024	MS	IB	Final

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# 1. Introduction

## Project Information

GIW Environmental Solutions Pty Ltd (“GIW”) has been engaged by Neometro to provide Environmentally Sustainable Design (ESD) consulting services for the proposed mixed-use development at 97 Alma Road, St Kilda East.

The proposed development will include 47 apartments, 20 townhouses and a retail tenancy constructed over 4 levels plus basement carpark and will consist of the following:

- 10 x 1-bedroom apartments
- 19 x 2-bedroom apartments
- 5 x 2-bedroom duplex apartments
- 13 x 3-bedroom apartments
- 20 x 3-bedroom townhouses
- 33m<sup>2</sup> F&B

The site located at 97 Alma Road, St Kilda East has an approximate surface area of 4,997m<sup>2</sup> and is currently the location of a 4-storey commercial building. Distance from the site to Melbourne CBD is approximately 7km.



Figure 1 - Pre-existing sites at 97 Alma Road, St Kilda East.

## Statutory Requirements

This Sustainable Management Plan (SMP) has been prepared to inform City of Port Phillip of the proposed development’s sustainability credentials and performance targets. The project team is committed to achieving a building solution which responds to Port Phillip Planning Scheme - Clause 15.01-2L-02 Environmentally Sustainable Development.

Development Type	Application Requirement	Example Tools
Development of 10 or more dwellings.	Sustainability Management Plan (SMP)	BESS Green Star MUSIC STORM

Further to the above, this SMP also responds to Victoria Planning Provisions VC216 – 15.01-2S.

## Built Environment Sustainability Scorecard (BESS)

The proposed mixed-use development will be assessed against the Built Environment Sustainability Scorecard (BESS) guidelines. The BESS tool addresses nine key environmental categories as follows:

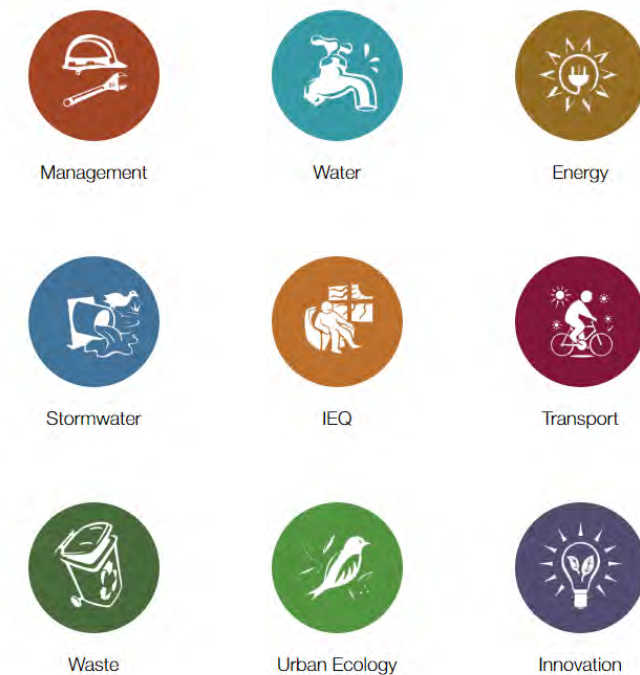


Figure 2 - BESS Environmental Categories ([www.bess.net.au](http://www.bess.net.au))

All ESD measures described under the nine key environmental categories are to be suitably incorporated into relevant project documentation at the appropriate project phase.

## Responsibilities & Implementation

Neometro will be responsible for the suitable implementation of the requirements of this report throughout the design and development phases. Should the development be sold the responsibility will pass to the new owner. At such time as a builder is novated or a building contract is put in place the builder will be responsible for implementation during the construction phase. At occupancy, the Owners Corporation and individual lot owners and or tenants will be responsible for the correct use of installed equipment and building systems in line with the provided Building User's Guide.

## Sources of Information

The following 'Sources of Information' have been used to guide the design solutions:

- Kerstin Thompson Architects – Project No. 2202 – Drawing No. TP000 – TP003 Rev 4, TP010 Rev 4, TP020 Rev 4, TP021 – TP024 Rev 4, TP1B1 Rev 4, TP100 – TP104 Rev 4, TP300 – TP301 Rev 4, TP310 Rev 4, TP400 – TP402 Rev 4, TP600 Rev 4, TP610 Rev 4, TP620 – TP625 Rev 4, TP630 – TP634 Rev 4, TP650 – TP655 Rev 4, TP660 – TP661 Rev 4, TP670 – TP673 Rev 4, TP800 Rev 4, TP940 – TP942 Rev 4, TP950 Rev 4, TP970 Rev 4.
- City of Port Phillip – Planning Permit No. PDPL/00823/2022 (dated: 22/03/2024).
- City of Port Phillip – Planning Scheme Clause 15.01-2L-02 Environmentally Sustainable Development.
- Municipal Association of Victoria - SDAPP Explained; Building Design for a Sustainable Future
- Built Environment Sustainability Scorecard (BESS)
- CSIRO 1999, Urban Stormwater – Best Practise Environmental Management Guidelines

## 2. ESD Summary

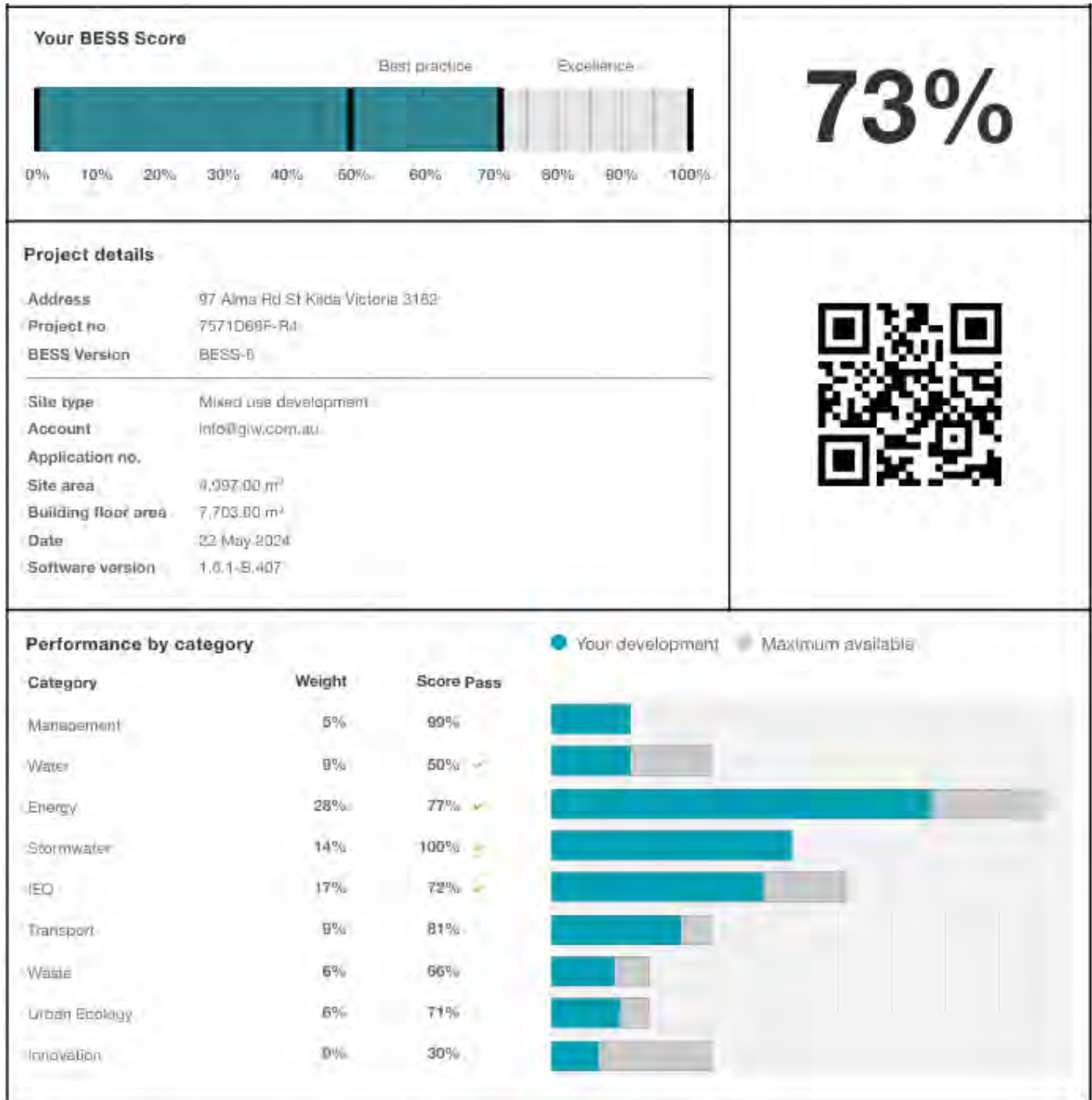
The proposed mixed-use development at 97 Alma Road, St Kilda East will implement the following ESD initiatives:

1. The project achieves a total BESS score of 73% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%.
2. 100% (47 out of 47) of the development's apartments and 100% (20 out of 20) of the development's townhouses are effectively naturally ventilated.
3. Daylight modelling has been conducted for a representative sample of apartments. The summary result is as follows:
  - 85% of living floor area achieves >90% above DF 1
  - 88% of bedroom floor area achieves >90% above DF0.5
4. The non-residential areas are targeting a 2% DF to 40% of the nominated area.
5. 38% (18 out of 47) of apartments achieve at least 3 hours of sunlight.
6. The development is provided with a comprehensive shading strategy.
7. The development is to achieve a 7.5 Star average NatHERS Energy Rating result for the apartments and a 7.0 Star average NatHERS Energy Rating result for the townhouses.
8. The non-residential areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019).
9. The development is to utilise electric heat pump hot water system.
10. A 9.6kW Solar PV system is to be located on the roof of the apartment building.
11. A 2kW solar PV system is to be provided for each townhouse.
12. Individual cold water and electricity meters will be provided to the apartments, townhouses, and communal areas.
13. Water efficient fittings and fixtures are applied throughout.
14. A 32,000-litre rainwater tank and a 30,000-litre rainwater tank will harvest rainwater from the apartment roof and townhouse roofs respectively. These tanks will be connected to all toilets.
15. A Melbourne STORM rating of 108% is achieved.
16. All landscaping is to be native species or landscaping irrigation is to be connected to the rainwater tank only.
17. In total 67 bicycle spaces are to be provided for residents.
18. 2 bicycle spaces are provided for employees.
19. In total 14 bicycle spaces are to be provided for residential visitors. 2 bicycle spaces are provided for non-residential visitors.
20. One charging point for electrical vehicles is integrated in the proposed development.
21. 146m<sup>2</sup> of communal space will be provided at the rooftop deck.
22. 27m<sup>2</sup> of communal food production area will be provided.



### 3. BESS Performance

The project achieves a total BESS score of 73% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%. This figure represents a percentage improvement over a benchmark project. A score of 50% and higher equates to 'best practice' and is an effective pass of the BESS tool. A score of 70% and higher equates to BESS 'excellence' and exists as a higher benchmark in the tool.



## 4. ESD Assessment

### Management

Council ESD objectives:

- To encourage a holistic and integrated design and construction process and ongoing high performance.

### Council Best Practice Standard





Criteria	Construction and Building Management Actions
<p>Pre-Application Meeting</p> <p>To ensure appropriate sustainable design principles and strategies are considered from the preliminary design stage of each development.</p>	<p>GIW has been involved in a pre-application meeting with Port Phillip Council on 20/10/2022.</p>
<p>Metering</p> <p>To provide building users with information that allows monitoring of energy and water consumption</p>	<p>Electricity and cold-water metering are to be provided to each individual apartment, townhouse, and retail tenancy.</p> <p>Lighting and general power to common areas is to be separately metered to quantify energy used for common areas spaces.</p>
<p>Building User's Guide</p> <p>To encourage and recognise initiatives that will help building users to use the building more efficiently.</p>	<p>A Building User's Guide will be provided to all occupants explaining the correct use of installed equipment and building systems. This shall cover at a minimum:</p> <ul style="list-style-type: none"> <li>• Energy and Environmental Strategy</li> <li>• Options for purchasing a ≥3 Star Washing Machine</li> <li>• Monitoring and Targeting</li> <li>• Building Services</li> <li>• Transport Facilities</li> <li>• Materials and Waste Policy</li> <li>• Expansion/Re-fit Considerations</li> <li>• References and Further Information</li> </ul>

Water

Council ESD objectives:

- To ensure the efficient use of water
- To reduce total operating potable water use
- To encourage the collection and reuse of stormwater
- To encourage the appropriate use of alternative water sources (e.g. grey water)
- To minimize associated water costs

Council Best Practice Standard

Criteria	Development Provision
<p>Potable Water Reduction</p> <p>To reduce total potable water use due through the use of efficient fixtures, appliances, and the use of rainwater.</p>	<div style="display: flex; justify-content: space-around; text-align: center;"> <div> <p>WELS 4 Star - Toilets</p>  </div> <div> <p>WELS 5 Star - Taps</p>  </div> <div> <p>WELS 4 Star - Showerhead</p>  </div> <div> <p>WELS 5 Star - Dishwasher</p>  </div> </div>
<p>Rainwater Collection &amp; Reuse</p>	<p>A 32,000-litre rainwater tank and a 30,000-litre rainwater tank will harvest rainwater from the apartment roof and townhouse roofs respectively. These tanks will be connected to all toilets. It is estimated that this will save more than 655kL of potable water every year and meet 68.2% of the demand in these areas.</p> <p>Stormwater drainage mechanism is to be determined by the hydraulics services engineer at the design development phase.</p> <p>Refer Appendix A – WSUD Response</p>
<p>Landscape Irrigation</p> <p>To ensure the efficient use of water and to reduce total operating potable water use through encouraging water efficient landscape design.</p>	<p>All landscaping is to be native species or landscaping irrigation is to be connected to the rainwater tank only.</p>

**Council Best Practice Standard**

Criteria	Development Provision
Building System Water Use Reduction	Ensure the efficient use of water, to reduce total operating potable water use and to encourage the appropriate use of alternative water sources for cooling and fire testing systems.  N/A

## Energy

Council ESD objectives:

- To ensure the efficient use of energy
- To reduce total operating greenhouse emissions
- To reduce energy peak demand
- To reduce associated energy costs

### Council Best Practice Standard

Criteria	Development Provision																																																												
Thermal Performance Rating - Residential  To reduce energy needed to achieve thermal comfort in summer and winter - improving comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.	<p>The National Construction Code (NCC) Class 2 – Sole Occupancy Unit(s) residential building component is to be designed in accordance with NCC Section J (2019) NatHERS requirements. The apartments must achieve an average 7.5 Star rating, and the townhouses must achieve an average 7.0 Star rating, with no townhouse achieving below 5 Stars.</p> <p>Further to this no apartment is to exceed the maximum allowed cooling load of 30 MJ/m<sup>2</sup> (Climate Zone 21 Melbourne RO) in accordance with BADS Standard B35.</p> <p>On average the development may not exceed a heating load of 48MJ/m<sup>2</sup>.</p> <p>The apartments are currently achieving a 7.7 Star average and the townhouses are achieving a 7.2 Star average. This represents &gt; 10% reduction compared to minimum NCC compliance benchmarks. The below sample ratings demonstrate the developments’ ability to achieve this average. Refer Appendix B for Preliminary FirstRate5 Certificates.</p>																																																												
	<table border="1"> <thead> <tr> <th>Apartment No.</th> <th>ACE Total MJ/M<sup>2</sup></th> <th>ACE Heating</th> <th>ACE Cooling</th> <th>ACE NCFA</th> <th>Star Rating</th> </tr> </thead> <tbody> <tr> <td>G.01</td> <td>68.8</td> <td>50.1</td> <td>18.7</td> <td>87.2</td> <td>7.4</td> </tr> <tr> <td>G.02</td> <td>37.7</td> <td>29.9</td> <td>7.8</td> <td>74.4</td> <td>8.5</td> </tr> <tr> <td>G.06</td> <td>62.5</td> <td>49</td> <td>13.5</td> <td>42.9</td> <td>7.7</td> </tr> <tr> <td>G.07</td> <td>66</td> <td>52.9</td> <td>13.1</td> <td>42.7</td> <td>7.6</td> </tr> <tr> <td>G.13</td> <td>26.6</td> <td>15.2</td> <td>11.4</td> <td>74.3</td> <td>8.9</td> </tr> <tr> <td>G.14</td> <td>70.7</td> <td>48</td> <td>22.7</td> <td>80.5</td> <td>7.4</td> </tr> <tr> <td>1.01</td> <td>36.7</td> <td>26.3</td> <td>10.4</td> <td>70.8</td> <td>8.6</td> </tr> <tr> <td>1.05</td> <td>52.2</td> <td>30.1</td> <td>22.1</td> <td>79.5</td> <td>8.1</td> </tr> <tr> <td>1.06</td> <td>41.3</td> <td>25.6</td> <td>15.7</td> <td>82.1</td> <td>8.4</td> </tr> </tbody> </table>	Apartment No.	ACE Total MJ/M <sup>2</sup>	ACE Heating	ACE Cooling	ACE NCFA	Star Rating	G.01	68.8	50.1	18.7	87.2	7.4	G.02	37.7	29.9	7.8	74.4	8.5	G.06	62.5	49	13.5	42.9	7.7	G.07	66	52.9	13.1	42.7	7.6	G.13	26.6	15.2	11.4	74.3	8.9	G.14	70.7	48	22.7	80.5	7.4	1.01	36.7	26.3	10.4	70.8	8.6	1.05	52.2	30.1	22.1	79.5	8.1	1.06	41.3	25.6	15.7	82.1	8.4
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### Council Best Practice Standard

Criteria	Development Provision				
1.12	32	24.8	7.2	74.3	8.8
2.01	58.4	38.1	20.3	44	7.8
2.02	38.8	27.2	11.6	70.8	8.5
2.10	50.7	44.4	6.3	74.3	8.1
2.11	62.2	42.8	19.4	43.2	7.7
3.01	84.6	58.1	26.5	44	6.9
3.02	69.2	46.7	22.5	70.8	7.4
3.03	74.9	60.7	14.2	129.1	7.3
3.05	69.2	51.8	17.4	63	7.4
3.06	78.6	51.3	27.3	44.4	7.1
3.07	77.9	49.1	28.8	44.4	7.2
3.08	86.9	71.9	15	63.8	6.9
3.09	74.1	54.1	20	73.7	7.3
3.10	71.1	46.6	24.5	43.7	7.4
<b>Average</b>	<b>61.2</b>	<b>46.2</b>	<b>15.0</b>	<b>76.2</b>	<b>7.7</b>
<b>TH No.</b>	<b>ACE Total MJ/M<sup>2</sup></b>	<b>ACE Heating</b>	<b>ACE Cooling</b>	<b>ACE NCFA</b>	<b>Star Rating</b>
THA1	138.5	114.6	23.9	141.5	5.3
THA2	98.5	76.2	22.3	142	6.4
THA3	141.4	120.5	20.9	144.1	5.2
THA4	105.2	74.1	31.1	144	6.3
THA5	106.3	77.3	29	152.8	6.2
THA6	109.4	92.8	16.6	162.2	6.1
THB7	58.2	45.5	12.7	136.9	7.8
THB8	53	41.5	11.5	140	8
THB9	52.1	40.7	11.4	140	8.1
THB10	67.9	56.2	11.7	141.2	7.5
THC11	61.7	49.3	12.4	107.6	7.7
THC12	103.5	85.3	18.2	105.4	6.3

### Council Best Practice Standard

Criteria	Development Provision					
THC13	105.6	87.5	18.1	104.9	6.3	
THC14	49.6	33.5	16.1	123.9	8.1	
THC15	45.6	32.5	13.1	124.1	8.3	
THC16	50.1	35.7	14.4	123.9	8.1	
THC17	45.6	32.6	13	124.1	8.3	
THC18	50.3	35.8	14.5	123.9	8.1	
THC19	43.3	30.6	12.7	124.1	8.4	
THC20	85.5	71.5	14	139.2	6.9	
<b>Average</b>	<b>78.6</b>	<b>61.7</b>	<b>16.9</b>	<b>132.3</b>	<b>7.2</b>	

\*Dwellings are assessed using FirstRate5 v5.3.2

Construction assumptions for preliminary FirstRate5 ratings are listed below. Note, these assumptions are based on the sample of apartments assessed and may vary throughout the development. These assumptions are not to be relied upon for any other purpose beyond Town Planning assessment.

Element	Material	Insulation Value
Concrete Slab on Ground	Concrete	NIL
Floor (where exposed / unconditioned below)	Concrete Slab	R3.2
Floor (where exposed / unconditioned below)	Timber Framed (TH)	R5.0
External Walls	WE-M1-WE-M3 & WE-M11-WE-M12 – Brick Veneer	R2.7
	WE-M4 – Brick /Concrete	R0.7
	WE-L1- WE-L2 & WE-L11 - Lightweight walls	R2.7

### Council Best Practice Standard

Criteria	Development Provision	
Internal Walls	WP-L1-WP-L2 & WP-L11 – Inter Apt / TH	2off. R1.8
	WP-L3 – Inter Apt Concrete	2off. R0.7
	WL-L1 External Concrete Wall	R1.8
	WL-L3 Core	R0.7
Roof	Concrete Slab where exposed balcony / roof above	R3.2
	Timber Framed where exposed balcony (TH)	R5.0
	Concrete Roof	R3.20
	Metal framed deck (TH)	R8.3
Awning Window / Casement	Aluminium framed, Thermally Broken, Double glazed, Argon filled, Low-E, Clear	Total System U-Value: 2.51 SHGC: 0.47
Fixed Windows	Aluminium framed, Thermally Broken, Double glazed, Argon filled, Low-E, Clear	Total System U-Value: 1.99 SHGC: 0.54
Sliding Door	Aluminium framed, Thermally Broken, Double glazed, Argon filled, Low-E, Clear	Total System U-Value: 2.93 SHGC: 0.49
Skylights	Aluminium framed, Double glazed, Argon filled, Low-E, Clear	Total System U-Value: 2.58 SHGC: 0.24
Thermal Performance Rating – Non-Residential	To reduce energy needed to achieve thermal comfort in summer and winter - improving	The non-residential areas aim to reduce heating and cooling energy consumption below the reference case (BCA Section J 2019). Refer Appendix C – Preliminary Part J1.5 Façade Calculator.



### Council Best Practice Standard

Criteria		Development Provision
	comfort, reducing greenhouse gas emissions, energy consumption, and maintenance costs.	
HVAC System	To ensure the efficient use of energy and to reduce consumption of electricity.	<p>Inverter split systems are to be installed and sized to maintain conditions of the main living space of each apartment. The efficiency of the air conditioning system is to be within 1 star rating of best available under MEPS Post-October 2012 measurement standard.</p> <p>VRV / VRF systems with a COP of 3.4 are to be installed to the non-residential areas.</p>
Hot Water System	To ensure the efficient use of energy and to reduce consumption and greenhouse emissions from water heating.	The development is to utilise a centralised electric heat pump hot water system.
Car Park Ventilation	To ensure the efficient use of energy, reduce total operating greenhouse gas emissions and to reduce energy peak demand.	<p>Carpark ventilation fans are driven by a VSD motor connected to CO sensors within the carpark. The inclusion of CO sensor control will allow the ventilation fans to ramp down when the car park is unoccupied. The system is to be designed in accordance with AS1668.2.</p> <p>The mechanical services engineer is responsible for the design and specification of the system. The contractor is to procure and install the specified system.</p> <p>Maintenance requirements of the CO sensor system are to be included in the O&amp;M manual.</p>
Clothes Drying	Ensure the efficient use of energy and to reduce energy consumption and greenhouse emissions associated with	Communal clothes drying facilities will be provided for the apartments at rooftop terrace and all townhouses will be provided with individual clothes drying racks or lines.

**Council Best Practice Standard**

Criteria	Development Provision
<p>clothes drying</p> <p>Internal Lighting - Residential</p> <p>To ensure the efficient use of energy, to reduce energy consumption, greenhouse emissions associated with artificial lighting, and to reduce energy peak demand.</p>	<p>The maximum illumination power density (W/sqm) is at least 20% lower than NCC 2019 requirements.</p> <p>Lighting power density shall be as follows:</p> <ul style="list-style-type: none"> <li>• Dwellings: No greater than average 4W/m<sup>2</sup></li> <li>• POS: No greater than average 3.2W/m<sup>2</sup></li> <li>• General carpark: No greater than average 1.6W/m<sup>2</sup></li> <li>• Bin room/Services areas: No greater than average 1.2W/m<sup>2</sup></li> </ul> <p>All common area, external and carpark lighting is to be controlled with daylight, motion sensors or timers (whichever is deemed appropriate).</p>
<p>Internal Lighting – Non-Residential</p> <p>To ensure the efficient use of energy, to reduce energy consumption, greenhouse emissions associated with artificial lighting, and to reduce energy peak demand.</p>	<p>The maximum illumination power density (W/m<sup>2</sup>) in the non-residential areas meets the requirements of Table J6.2a of the NCC 2019 Section J.</p> <p>Lighting power density shall be as follows:</p> <ul style="list-style-type: none"> <li>• Retail: No greater than average 14W/m<sup>2</sup></li> </ul>
<p>Renewable Energy Systems - Solar</p> <p>To encourage on-site renewable energy generation and reduce greenhouse emissions.</p>	<p>A 9.6kW Solar PV system is to be located on the roof of the apartment building. Additionally, a 2kW solar PV system is to be provided for each townhouse.</p> <div> <p>The image contains two architectural drawings. The left drawing is a site plan showing a building footprint with a grid of 'PV PANELS' on its roof. The right drawing is a cross-section of a building showing solar panels installed on the roof of an apartment building and on the roof of a townhouse below it.</p> </div> <p style="text-align: center;">Location Solar PV Systems</p> <p style="text-align: center;">Refer Appendix D – Renewable Energy</p>

## Stormwater

Council ESD objectives:

- To reduce the impact of stormwater run-off
- To improve the water quality of stormwater run-off
- To achieve best practice stormwater quality outcomes
- To incorporate water sensitive urban design principles

### Council Best Practice Standard

Criteria	Development Provision
<p>Stormwater Treatment</p> <p>To minimise negative environmental impacts of stormwater runoff and maximise onsite re-use of stormwater.</p>	<p>The Melbourne Water - Stormwater Treatment Objective Relative Measure (STORM) tool has been applied to determine performance relative to Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999). As per City of Port Phillip Planning Scheme - Clause 22.12 Stormwater Management (Water Sensitive Urban Design), the development is required to achieve a STORM rating of 100% or greater.</p> <p>A Melbourne STORM rating of 108% is achieved via the following:</p> <ul style="list-style-type: none"> <li>• Rainwater is to be collected from the apartment building roof and directed into a 32,000-litre rainwater tank. All toilets are to be connected to the rainwater tank.</li> <li>• Rainwater is to be collected from the townhouse roofs and directed into a 30,000-litre rainwater tank. All toilets are to be connected to the rainwater tank.</li> <li>• Permeable paving is to be provided to the west POS of TH11-20, AP G.01-G.02, AP G.11-G.14 and south POS of TH07-10.</li> </ul> <p>Refer Appendix A – WSUD Response.</p>

## Indoor Environment Quality

Council ESD objectives:

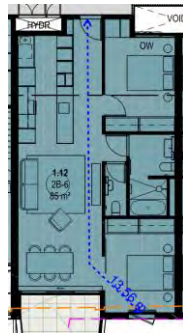
- to achieve a healthy indoor environment quality for the wellbeing of building occupants.
- to provide a naturally comfortable indoor environment will lower the need for building services, such as artificial lighting, mechanical ventilation and cooling and heating devices.

### Council Best Practice Standard

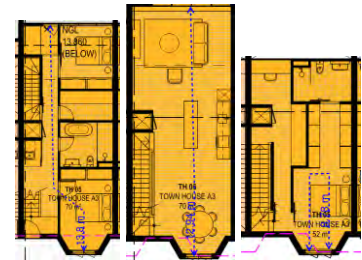
Criteria		Development Provision	
Daylight Access - Residential	To provide a high level of amenity and energy efficiency through design for natural light.	Daylight modelling has been conducted for a representative sample of apartments. The summary result is as follows:	
		% of living floor area above DF 1.0	% of bedroom floor area above DF 0.5
		85	88
Refer Appendix E - Daylight Modelling.			
Winter Sunlight	To provide a high level of amenity and reduce need for artificial heating in winter.	38% (18 out of 47) of apartments achieve at least 3 hours of sunlight.	
Daylight Access – Non-Residential	To provide a high level of amenity and energy efficiency through design for natural light.	The non-residential areas are targeting a 2% DF to 40% of the nominated area.	
Minimal Internal Bedrooms	90% of bedrooms have an external window.	NIL internal bedrooms.	
Effective Natural Ventilation	To provide fresh air and passive cooling opportunities.	100% (47 out of 47) of the development’s apartments and 100% (20 out of 20) of the development’s townhouses are effectively naturally ventilated. Apartments and townhouses are provided with windows on opposite or adjacent facades or are effective single sided ventilated.	

Council Best Practice Standard

Criteria Development Provision



Typical natural cross-ventilated apartment



Typical natural cross-ventilated townhouse

Ventilation – Non-Residential

To provide fresh air and passive cooling opportunities.

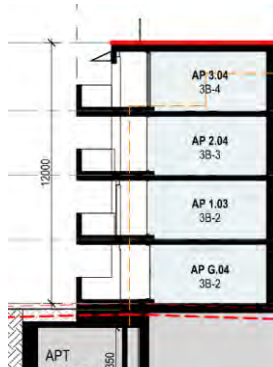
Outdoor air rate for the F&B tenancy is to be 50% increased compared to AS 1668:2012.

This is to be included in the mechanical design and specifications.

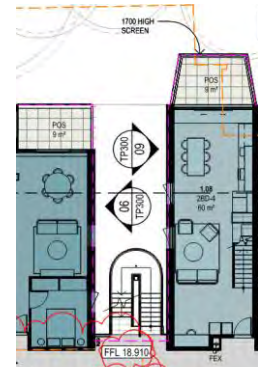
Thermal Comfort

To provide comfortable indoor spaces and reduce energy needed for heating and cooling.

The development is provided with a comprehensive shading strategy:



The majority of north, west and east oriented apartment living area windows are shaded by the overhanging balcony of the floor above or awnings.



Windows adjacent to the central walkway and stair void will be shaded by the build form.

Council Best Practice Standard

Criteria

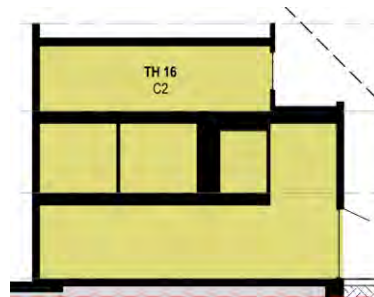
Development Provision



TH01-06 east oriented windows will be shaded by a combination of overhangs, wing walls and external operable shading.



TH07-10 L2 north oriented windows are shaded by an operable awning.



TH12-21 west oriented windows are shaded by overhangs, window boxes and wing walls.



TH01-06 west and TH12-21 east oriented windows are shaded by the adjacent townhouses and apartment building.

The development is provided with a comprehensive shading strategy:

Thermal Comfort – Non-Residential

To provide comfortable indoor spaces and reduce energy needed for heating and cooling.



North oriented F&B windows are shaded by a 1m deep sunshade screen.

Nil ceiling fans provided.

### Council Best Practice Standard

Criteria	Development Provision
	<p>All paints and adhesives meet the maximum total indoor pollutant emission limits.</p> <p>All internally applied paints adhesives and sealants are to have a low or ultra-low VOC content in line with Green Star Buildings V1 Credit 13.</p>
<p>Air Quality – Non-Residential</p>	<p>All carpet meets the maximum total indoor pollutant emission limits.</p> <p>All internally applied carpets are to have a low VOC content in line with Green Star Buildings V1 Credit 13.</p>
	<p>All engineered wood meets the maximum total indoor pollutant emission limits.</p> <p>All internally applied engineered wood products are to have low formaldehyde levels in line with Green Star Buildings V1 Credit 13.</p>

## Transport

Council ESD objectives:

- To minimise car dependency.
- To ensure that the built environment is designed to promote the use of public transport, walking and cycling.

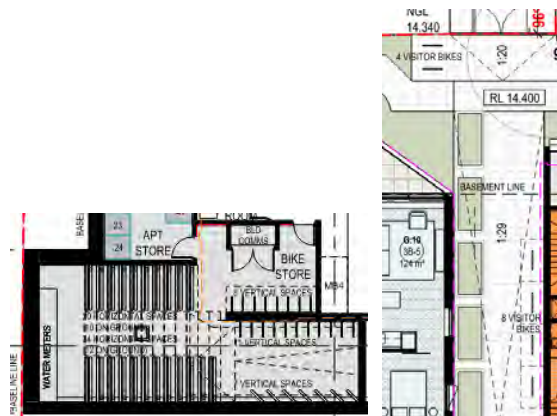
### Council Best Practice Standard

#### Criteria

#### Development Provision

Bicycle Parking – Residential & Residential Visitors

To encourage and recognise initiatives that facilitate cycling.

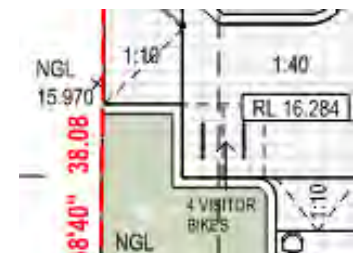
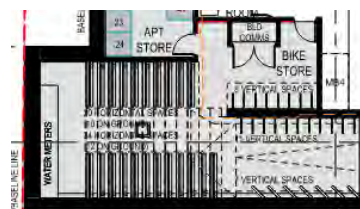


In total 67 bicycle spaces are to be provided for residents. This will provide a ratio of 1 resident bicycle space for every apartment/townhouse.

In total 14 bicycle spaces are to be provided for residential visitors. This will provide a ratio of approximately 1 visitor bicycle space for every 5 apartment/townhouse.

Bicycle Parking – Non-Residential & Non-Residential Visitors

To encourage and recognise initiatives that facilitate cycling.



In total 2 bicycle spaces are to be provided for employees. This represents a 50% increase over the planning scheme requirements.

In total 2 bicycle spaces are to be provided for non-residential visitors. This represents a 50% increase over the planning scheme requirements.



### Council Best Practice Standard

Criteria		Development Provision
End of Trip Facilities – Non-Residential	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	Nil.
Electric Vehicle Infrastructure	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking, and cycling.	One charging point for electrical vehicles is integrated in the proposed development.
Car Share Scheme	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	Nil.
Motorbikes / Mopeds	To minimise car dependency and to ensure that the built environment is designed to promote the use of public transport, walking and cycling.	The proposed development will incorporate min. 5 motorbike / moped spaces in the basement carpark. This represents $\geq 5\%$ of the total carparking.

## Materials

ESD objectives:

- Use of low embodied energy materials.
- Encourage use of recycled and reusable materials in building construction and undertake adaptive reuse of buildings, where practical.

### Council Best Practice Standard

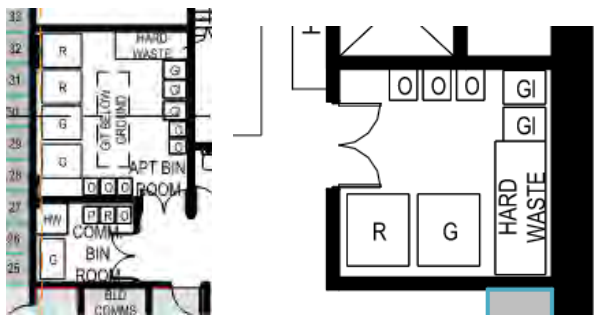
Criteria	Development Provision
Embodied Energy	<p>Limited use of high embodied energy metals and materials, especially in a design with intended high churn (e.g. retail)</p> <p>The design will seek to limit the use of high embodied energy metal finishes.</p> <p>At least 40% of coarse aggregate in the concrete is crushed slag aggregate or other alternative materials (measured by mass across all concrete mixes in the project).</p>
Structural and Reinforcing Steel	<p>The building's steel (by mass) is to be sourced from a Responsible Steel Maker with:</p> <ul style="list-style-type: none"> <li>• a currently valid and certified ISO 14001 Environmental Management System (EMS) in place; and</li> <li>• is a member of the World Steel Association's (WSA) Climate Action Programme (CAP)</li> </ul>
Sustainable Timber	<p>Where timber is to be used, such timbers are to accord with the GBCA's 'Essential' criteria for forest certification. This may include FSC and / or PEFC Certification which are both internationally recognised schemes ensuring that timber is sourced from sustainable sources. Alternatively, recycled timber will be used.</p>
PVC	<p>Permanent formwork, pipes, flooring, blinds and cables in the project will seek to comply with the following:</p> <ul style="list-style-type: none"> <li>• Meet the GBCA's Best Practice Guidelines for PVC. or;</li> <li>• The supplier holds a valid ISO14001 certification.</li> </ul>
Sustainable Products	<p>The project will incorporate products that meet the transparency and sustainability requirements where deemed appropriate. This includes the following: reused products, recycled content products, environmental product declarations, third party certified and stewardship programs.</p>

## Waste Management

Council ESD objectives:

- To ensure waste avoidance, reuse and recycling during the design, construction, and operation stages of development.
- To ensure long term reusability of building materials.
- To meet Councils' requirement that all multi-unit developments must provide a Waste Management Plan in accordance with the *Guide to Best Practice for Waste Management in Multi-unit Developments 2010*, published by Sustainability Victoria.

### Council Best Practice Standard

Criteria	Development Provision
Building Re-use	To ensure waste avoidance, reuse, and recycling during the design. None of the existing structure is re-used.
Construction and Demolition Waste	To reduce construction waste going to landfill At least 80% of the waste generated during construction and demolition has been diverted from landfill.
Food & Garden Waste	To ensure waste avoidance, reuse, and recycling during the operational life of the building. Green waste storage is provided in the basement bin stores.
Convenience of Recycling	To ensure waste avoidance, reuse, and recycling during the operational life of the building.  Separate general, recycling, glass and organic waste storage will be provided at basement bin store.

## Urban Ecology

Council ESD objectives:

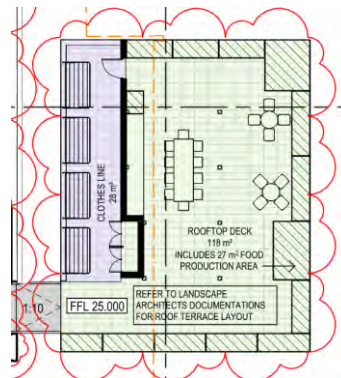
- To protect and enhance biodiversity.
- To provide sustainable landscaping.
- To protect and manage all remnant indigenous plant communities.
- To encourage the planting of indigenous vegetation.

## Council Best Practice Standard

### Criteria

### Development Provision

146m<sup>2</sup> of communal space will be provided at the rooftop deck. Communal space will include the following amenities: seating, shared clothes lines, food production area and landscaping.

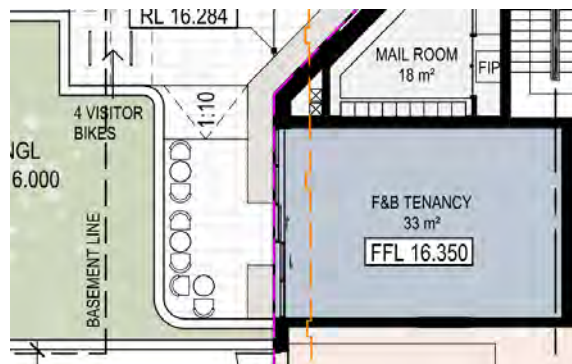


Communal Space

To encourage and recognise initiatives that facilitate interaction between building occupants.

Communal space will be provided at roof top deck.

8.8m<sup>2</sup> of communal space will be provided to the F&B tenancy. Communal space will include seating, and landscaping.



Communal space provided to F&B tenancy.

### Council Best Practice Standard

Criteria		Development Provision
Vegetation	To encourage and recognise the use of vegetation and landscaping within and around developments.	<p>Landscaped area is to be located ground level.</p> <p>The total area of vegetation is 27% of the site area.</p>
Green Walls / Roof	To encourage the appropriate use of green roofs, walls and facades to mitigate the impact of the urban heat island effect.	The development will be provided with creepers to the entry walkway of the apartment building.
Private Open Space - Balcony / Courtyard Ecology	To encourage plants in a healthy ecological context to be grown on balconies and in courtyards.	All balconies or private open space have been provided with a tap and floor waste allowing residents to cultivate their own gardens.
Food Production - Residential	To encourage the production of fresh food on-site.	27m <sup>2</sup> of communal food production area will be provided at the communal rooftop terrace.
Heat Island Effect	To reduce the contribution of the project site to the 'heat island effect	<p>Roof to have a three-year SRI of minimum 64.</p> <p>Unshaded hard-scaping elements are to have a three-year SRI of minimum 34 or an initial SRI of minimum 39.</p>

## Innovation

Council ESD objectives:

- To encourage innovative technology, design, and processes in all development, which positively influence the sustainability of buildings.

## Council Best Practice Standard

Criteria		Development Provision
Carbon Neutral Power Agreement	10-year carbon neutral power agreement.	<p>The proposed development will be established with a carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower for all energy consumed by building (including communal areas, apartments, townhouses, and F&amp;B tenancy). It is the intent to maintain this agreement for a minimum of 10 years.</p> <p>Additionally, the development is committed to provide on-site renewable energy generation to meet minimum of 5% of electricity consumed by residents at the site per the Embedded Networks Review.</p>
ESD Checkpoint during Construction Phase	To ensure that all ESD items are suitably installed and incorporated during construction.	<p>An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved.</p> <p>The checkpoint assessments will be undertaken at two stages as follows:</p> <ul style="list-style-type: none"> <li>• Site Inspection 1: Prior to installation of internal linings.</li> <li>• Site inspection 2: At the time of project completion.</li> </ul>

## Appendices

### Appendix A: WSUD Response

#### Site layout Plan

The following architectural mark-up illustrates the rainwater collection and impervious areas of the proposed development site.

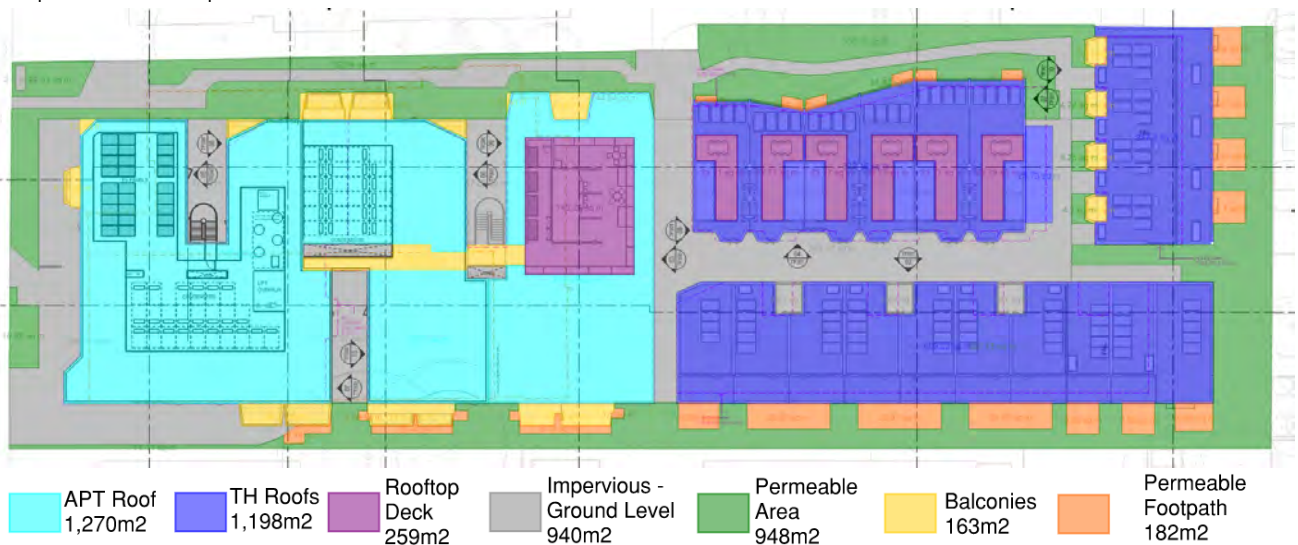


Figure 1 - Mark-up of water catchment and impervious areas

The rainwater collected off the roof areas will be directed into the designated rainwater tanks using a gravity operated system. The exact downpipe locations, LPOD and final collection and reticulation strategy is to be designed and documented by the civil and hydraulic engineer.

#### STORM Rating Report

A STORM rating of  $\geq 100\%$  can be achieved by implementing the following initiatives:

- Rainwater is to be collected from the apartment building roof and directed into a 32,000-litre rainwater tank. All toilets are to be connected to the rainwater tank.
- Rainwater is to be collected from the townhouse roofs and directed into a 30,000-litre rainwater tank. All toilets are to be connected to the rainwater tank.
- Permeable paving is to be provided to the west POS of TH11-20, AP G.01-G.02, AP G.11-G.14 and south POS of TH07-10.

Melbourne Water has developed the Stormwater Treatment Objective- Relative Measure (STORM) Calculator as a method of simplifying the analysis of stormwater treatment methods. The STORM Calculator displays the amount of treatment that is required to meet best practice targets, using WSUD treatment measures.

The best practice standards have been set out in the Urban Stormwater Best Practice Environmental Management Guidelines (Victoria Stormwater Committee, 1999) for reduction in total suspended solids (TSS), total phosphorus (TP) and total nitrogen (TN) loads.

The STORM Result is provided below:

 <b>STORM Rating Report</b>						
TransactionID:	0					
Municipality:	PORT PHILLIP					
Rainfall Station:	PORT PHILLIP					
Address:	97 Alma Road					
	St Kilda					
	VIC: 3182					
Assessor:	GIW					
Development Type:	Residential - Mixed Use					
Allotment Site (m2):	4,997.00					
STORM Rating %:	108					
Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Apartment Roof	1,270.00	Rainwater Tank	32,000.00	100	167.00	80.00
TH Roofs	1,198.00	Rainwater Tank	30,000.00	60	166.80	80.00
Roof Decks	259.00	None	0.00	0	0.00	0.00
Balconies	163.00	None	0.00	0	0.00	0.00
Impervious Ground	940.00	None	0.00	0	0.00	0.00



### WSUD Strategy

The development will include the provision of a 32,000-litre rainwater tank and a 30,000-litre rainwater tank, plus associated pump in the basement garage. The rainwater tank is to be connected to all toilets.

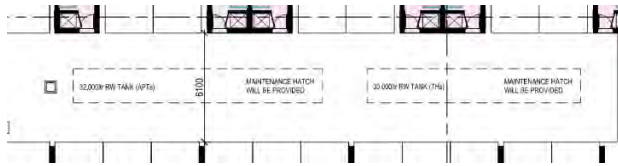


Figure 2 – Location Rainwater Tanks

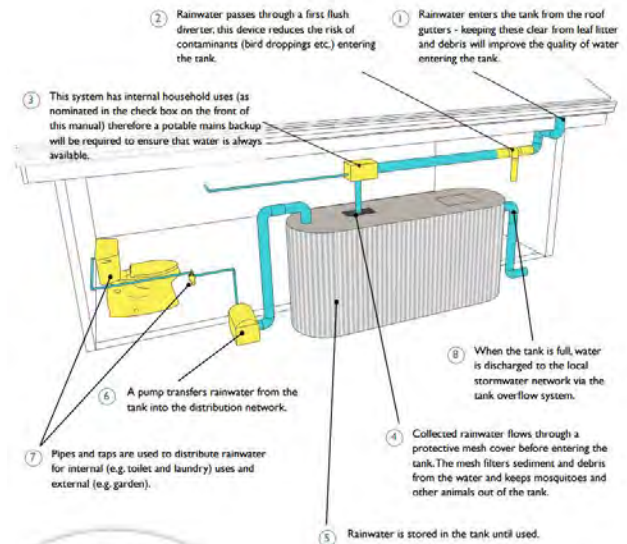


Figure 3 – Cross-section Tank  
(City of Port Phillip)

## Rainwater Reuse

### Inputs

Catchment Area	2468 sqm
Number of Bedrooms	157
Number of Occupants	
Bin Washout	No
Irrigation Area	0 sqm
Tank Capacity	62,000 Litre

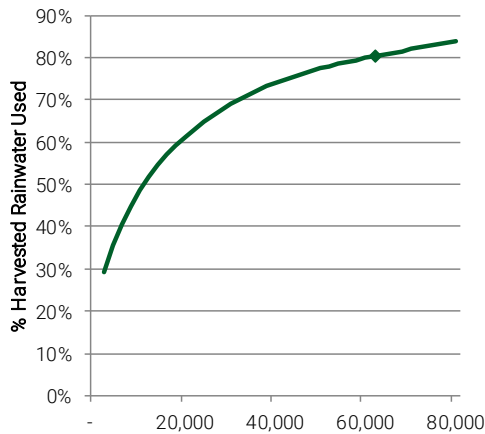
### Outputs

% Served by Rainwater	68.2%
% Harvested Rainwater Used	83.3%
Total Potable Water Saved	655,046 Litre

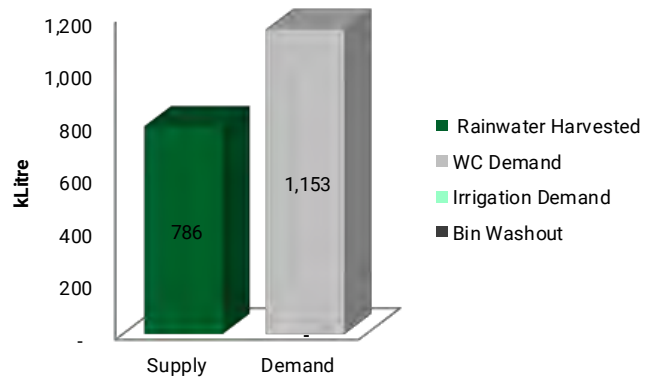
### Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	54,374	0	97,960	0
Feb	63,074	0	88,480	0
Mar	59,932	0	97,960	0
Apr	64,871	0	94,800	0
May	64,080	0	97,960	0
Jun	67,200	0	94,800	0
Jul	53,636	0	97,960	0
Aug	68,105	0	97,960	0
Sep	68,582	0	94,800	0
Oct	70,075	0	97,960	0
Nov	86,905	0	94,800	0
Dec	65,583	0	97,960	0
Total	786,417	0	1,153,400	0
Equivalent STORM tool		0		0

### Tank Sizing



### Supply-Demand



### Site Management Statement

Prevention of litter, sediments and pollution entering the stormwater system in the construction phase is to be addressed through introduction of the following initiatives:

- Buffer strips to prevent stormwater runoff.
- Gravel sausage filters at stormwater inlets to prevent silt, mud or any other site contaminant from entering the stormwater system.
- Silt fences under grates at surface entry inlets to prevent sediment from entering the stormwater system.
- Temporary rumble grids to vibrate mud and dirt off vehicles prior to leaving the site.
- The site is to be kept clean from any loose rubbish or rubble.
- Introduction of offsite construction for building elements where deemed appropriate.

The builder is to include these initiatives in the construction management plan and address these during site induction of relevant contractors.

### Maintenance Program

The maintenance of the rainwater tank is the responsibility of the owners corporation (OC), after the defects and liability period has concluded. The following maintenance requirements are to be programmed to ensure the rainwater tank operates effectively:

Item	Description	Maintenance Interval
Gutters and downpipes	Eave and box gutters are to be inspected and cleaned to prevent large debris from being washed into rainwater tank.	3 monthly
First flush system (as applicable)	Inspect and clean excess sediment from diverter chamber to prevent blockages.	3 monthly
Tank contents	Siphon the tank to inspect contents. If sludge is present, a plumber will be required to drain tank contents and clean the tank.	2 to 3 years
Tank structure	Inspect tank externally for leaks	Yearly
Pump system	Inspect pump wiring, plumbing and check for smooth operation.	6 monthly
Plumbing	Plumbing and fixtures connected to the rainwater tank is to be inspected for leaks.	Yearly

\*Note that the maintenance manual as provided in the O&M manual by the builder will be leading as this will be tank specific.

## Appendix B: Preliminary FirstRate5 Certificates

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** 1.01, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 70.8	suburban
Unconditioned* 0.9	<b>NatHERS climate zone</b>
Total 71.7	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>26.3</b>	<b>10.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au.](http://www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 18	1700	1200	casement	90.0	W	No
Bedroom 1	THC-023-03 B	Opening 20	2400	1750	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 19	2650	4100	sliding	45.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	931	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

5 97 Alma Road - WL-L1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R1.8)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	2400	3017	W	0	No
Bedroom 2	1	2400	985	S	3909	Yes
Bedroom 2	2	2400	2923	N	0	No
Bedroom 2	3	2400	1143	N	0	No
Bathroom	2	2400	3520	N	0	No
Bedroom 1	4	2400	896	E	0	No
Bedroom 1	4	2400	1768	E	0	Yes
Bedroom 1	2	2400	2702	N	0	No
Bedroom 1	3	2400	1337	N	0	No
Kitchen/Living	1	2700	4132	W	3132	Yes
Kitchen/Living	3	2400	7785	S	0	No
Kitchen/Living	5	2400	2957	E	0	No
Kitchen/Living	5	2400	3890	S	0	No
Kitchen/Living	4	2400	1648	E	2606	Yes
Kitchen/Living	4	2400	615	N	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	46.5	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	12.3	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
Laundry	FR5 - 200mm concrete slab	0.9	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - 200mm concrete slab	37.9	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	5	Downlights	80	Sealed

\* Refer to glossary.



## NatHERS Certificate

8.6 Star Rating as of 22 May 2024

Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom 1	5	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	15	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 1.05, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	79.5	suburban
Unconditioned*	7.5	<b>NatHERS climate zone</b>
Total	87	21 Melbourne RO
Garage	-	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**52.2 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>30.1</b>	<b>22.1</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [www.FR5.com.au](http://www.FR5.com.au) When using either link, ensure you are visiting [www.FR5.com.au](http://www.FR5.com.au).

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 8	2700	3920	sliding	45.0	E	No

\* Refer to glossary.

Kitchen/Living 1	THC-023-03 B	Opening 7	2400	1930	awning	30.0	W	No
Bedroom 1	THC-023-03 B	Opening 4	2400	1960	awning	30.0	W	No
Double 5	THC-033-07 B	Opening 14	2700	3920	fixed	0.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	926	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

4	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
5	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
7	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 7	1	2400	4840	N	0	No
Shared 7	1	2400	680	E	0	No
Shared 7	1	2400	15800	N	0	No
Shared 7	1	2400	1120	W	0	No
Shared 7	1	2400	3720	N	0	No
Shared 7	1	2400	1640	W	0	No
Shared 7	1	2400	2160	N	0	No
Shared 7	1	2400	5200	W	0	No
Shared 7	1	2400	4440	N	0	No
Shared 7	2	2400	8760	W	0	No
Shared 7	2	2400	7701	WSW	0	No
Shared 7	2	2400	73880	W	0	No
Shared 7	2	2400	26560	S	0	No
Shared 7	2	2400	96200	E	0	No
Kitchen/Living 1	3	2750	7820	S	0	No
Kitchen/Living 1	4	2750	1212	S	0	No
Kitchen/Living 1	3	2750	2811	S	0	No
Kitchen/Living 1	5	2750	4174	E	0	Yes
Kitchen/Living 1	4	2750	1944	N	0	No
Kitchen/Living 1	3	2750	8722	N	0	No
Kitchen/Living 1	4	2750	1835	E	0	No
Kitchen/Living 1	4	2750	1176	N	0	No
Kitchen/Living 1	6	2750	5951	W	2617	Yes
Bedroom 1	3	2400	3024	S	0	No
Bedroom 1	7	2400	1710	N	0	No
Bedroom 1	4	2400	1309	N	0	No

\* Refer to glossary.

Bedroom 1	7	2400	4213	W	2562	Yes
Bath	3	2400	3636	S	0	No
Bedroom 2	3	2400	966	S	0	No
Bedroom 2	4	2400	1239	S	0	No
Bedroom 2	3	2400	759	S	0	No
Bedroom 2	4	2400	593	N	0	No
Bedroom 2	7	2400	2363	N	0	No
Double 5	5	2400	4194	E	2934	Yes
Double 5	4	2400	1948	N	0	No
Double 5	7	2400	1906	S	0	No
Stairs	7	2400	3622	N	0	No

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	38.3	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 7	FR5 - CSOG: Slab on Ground	54.6	Enclosed	R0.0	none
Shared 7	FR5 - CSOG: Slab on Ground	2558.2	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 200mm concrete slab	8.1	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 200mm concrete slab	43.4	Enclosed	R3.2	Timber
Bedroom 1	FR5 - 200mm concrete slab	12.7	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	7.5	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 200mm concrete slab	0.4	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
Double 5	No Floor	1.5	Enclosed	R0.0	No Floor
Double 5	No Floor	6.5	Enclosed	R0.0	No Floor
Stairs	FR5 - 200mm concrete slab	7.4	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 7	FR5 - 200mm concrete slab	R3.2	No
Kitchen/Living 1	FR5 - 200mm concrete slab	R0.0	No
Kitchen/Living 1	FR5 - 200mm concrete slab	R0.0	No
Kitchen/Living 1	Plasterboard	R0.0	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	20	Downlights	80	Sealed



## NatHERS Certificate

8.1 Star Rating as of 22 May 2024

Bedroom 1	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
Stairs	3	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

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<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 1.06, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	82.1	suburban
Unconditioned*	7.4	<b>NatHERS climate zone</b>
Total	89.5	21 Melbourne RO
Garage	-	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**41.3 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>25.6</b>	<b>15.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 8	2700	3900	sliding	45.0	E	No

\* Refer to glossary.

Room	Window ID	Opening	Width (mm)	Height (mm)	Type	SHGC	Orientation	SHGC Limit
Kitchen/Living 1	THC-023-03 B	Opening 7	2400	1900	awning	30.0	W	No
Bedroom 1	THC-023-03 B	Opening 4	2400	1900	awning	30.0	W	No
Double 5	THC-033-07 B	Opening 14	2300	3900	fixed	0.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1000	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No

3	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
4	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WE-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living 1	1	2750	1961	W	2816	Yes
Kitchen/Living 1	2	2750	1169	S	0	No
Kitchen/Living 1	3	2750	7923	S	0	No
Kitchen/Living 1	2	2750	2827	S	0	No
Kitchen/Living 1	4	2750	4218	E	0	Yes
Kitchen/Living 1	3	2750	2861	N	0	No
Kitchen/Living 1	2	2750	1178	N	0	No
Kitchen/Living 1	3	2750	7885	N	0	No
Kitchen/Living 1	1	2750	2244	W	2803	Yes
Bedroom 1	5	2750	4190	W	2636	Yes
Bedroom 1	2	2750	1071	S	0	No
Bedroom 1	6	2750	1914	S	0	No
Bedroom 1	3	2750	3014	N	0	No
Bath	3	2750	3618	N	0	No
Bedroom 2	6	2750	2203	S	0	No
Bedroom 2	2	2750	700	S	0	No
Bedroom 2	3	2750	707	N	0	No
Bedroom 2	2	2750	1209	N	0	No
Bedroom 2	3	2750	1008	N	0	No
Double 5	6	2750	2056	N	0	No
Double 5	2	2750	2064	S	0	No
Double 5	4	2750	4194	E	2563	No
Stairs	6	2750	3594	S	0	No

\* Refer to glossary.

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	43.9	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living 1	FR5 - 200mm concrete slab	9.3	Enclosed	R0.0	Timber
Kitchen/Living 1	FR5 - 200mm concrete slab	41	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 200mm concrete slab	12.6	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	7.4	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 200mm concrete slab	0.5	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 200mm concrete slab	11.7	Enclosed	R0.0	Carpet
Double 5	No Floor	1.7	Enclosed	R0.0	No Floor
Double 5	No Floor	7	Enclosed	R0.0	No Floor
Stairs	FR5 - 200mm concrete slab	7.3	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living 1	FR5 - 200mm concrete slab	R0.0	No
Kitchen/Living 1	FR5 - 200mm concrete slab	R0.0	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	20	Downlights	80	Sealed
Bedroom 1	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
Stairs	3	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
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<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 1.12, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**32 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	74.3	suburban
Unconditioned*	2.1	<b>NatHERS climate zone</b>
Total	76.4	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>24.8</b>	<b>7.2</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

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#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 5	2400	1800	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 7	2700	3450	sliding	45.0	W	No
Bedroom 1	THC-023-03 B	Opening 6	1700	1200	casement	90.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	900	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
2	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

5 97 Alma Road - WE-M1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R2.7)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	2400	4087	S	0	No
Bedroom 2	2	2700	1919	E	3322	Yes
Bedroom 2	2	2400	801	S	0	Yes
Bedroom 2	2	2400	1080	E	0	Yes
Kitchen/Living	2	2400	1543	E	2551	Yes
Kitchen/Living	3	2400	737	N	0	No
Kitchen/Living	3	2400	2046	E	0	No
Kitchen/Living	4	2400	4368	N	0	No
Kitchen/Living	1	2400	1240	N	0	No
Kitchen/Living	4	2400	5445	N	0	No
Kitchen/Living	5	2700	3604	W	2998	Yes
Bedroom 1	1	2400	4069	S	0	No
Bedroom 1	5	2400	991	N	0	Yes
Bedroom 1	5	2400	2982	W	0	Yes
Bathroom	1	2400	3584	S	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	48.6	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	13.1	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	42.2	Enclosed	R0.0	Timber
Powder	FR5 - 200mm concrete slab	2.1	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12.2	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.8	Enclosed	R0.0	Tiles

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	4	Downlights	80	Sealed

## NatHERS Certificate

8.8 Star Rating as of 22 May 2024

Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	16	Downlights	80	Sealed
Powder	1	Exhaust Fans	200	Sealed
Powder	1	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.



<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 2.01, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**58.4 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	44	suburban
Unconditioned*	5.3	<b>NatHERS climate zone</b>
Total	49.3	21 Melbourne RO
Garage	-	

### Thermal performance

Heating	Cooling
<b>38.1</b>	<b>20.3</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom	THC-023-03 B	Opening 22	2100	1200	casement	90.0	S	No
Kitchen/Living	THC-010-21 A	Opening 21	2700	4170	sliding	30.0	W	Yes

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	898	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

6 97 Alma Road - WL-L1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R1.8)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bathroom	1	2750	1508	S	0	Yes
Bathroom	2	2750	2041	E	0	No
Bedroom	1	2750	4156	S	0	Yes
Kitchen/Living	3	2750	5079	N	0	No
Kitchen/Living	4	2750	1011	N	4171	Yes
Kitchen/Living	4	2750	4124	W	0	Yes
Kitchen/Living	1	2750	6068	S	0	Yes
Corridor	5	2750	2130	E	1375	Yes
Corridor	6	2750	3863	N	0	No
Corridor	3	2750	2628	N	0	No
Corridor	2	2750	531	S	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	38.8	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles
Bedroom	FR5 - 200mm concrete slab	11.7	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	25.1	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	7.2	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom	5	Downlights	80	Sealed
Kitchen/Living	10	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	3	Downlights	80	Sealed

\* Refer to glossary.

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 2.02, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	70.8	suburban
Unconditioned*	0.9	<b>NatHERS climate zone</b>
Total	71.7	21 Melbourne RO
Garage	-	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

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### Thermal performance

Heating	Cooling
27.2	11.6
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

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Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 18	2400	1200	casement	90.0	W	No
Bedroom 1	THC-023-03 B	Opening 20	2400	1750	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 19	2700	4100	sliding	45.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	931	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

5	97 Alma Road - WL-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

### External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	2750	3017	W	2250	No
Bedroom 2	1	2750	985	S	3909	Yes
Bedroom 2	2	2750	2923	N	0	No
Bedroom 2	3	2750	1143	N	0	No
Bathroom	2	2750	3520	N	0	No
Bedroom 1	4	2750	896	E	0	No
Bedroom 1	4	2750	1768	E	0	Yes
Bedroom 1	2	2750	2702	N	0	No
Bedroom 1	3	2750	1337	N	0	No
Kitchen/Living	1	2750	4132	W	3234	Yes
Kitchen/Living	3	2750	7785	S	0	No
Kitchen/Living	5	2750	2957	E	0	No
Kitchen/Living	5	2750	3890	S	0	No
Kitchen/Living	6	2750	1648	E	2459	Yes
Kitchen/Living	4	2750	615	N	0	No

### Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	53.5	

### Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	12.3	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
Laundry	FR5 - 200mm concrete slab	0.9	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - 200mm concrete slab	37.9	Enclosed	R0.0	Timber

### Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

### Ceiling *penetrations\**

\* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	5	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom 1	5	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	15	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 2.10, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 74.3	suburban
Unconditioned* 2.1	<b>NatHERS climate zone</b>
Total 76.4	21 Melbourne RO
Garage -	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

**8.1**  
The more stars  
the more energy efficient

**50.7 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>44.4</b>	<b>6.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).





## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 5	2400	1800	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 7	2700	3450	sliding	45.0	W	No
Bedroom 1	THC-023-03 B	Opening 6	2400	1200	casement	90.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	900	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
2	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

5 97 Alma Road - WE-M1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R2.7)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	2750	4087	S	0	No
Bedroom 2	2	2750	1919	E	3322	Yes
Bedroom 2	2	2750	801	S	0	Yes
Bedroom 2	2	2750	1080	E	0	Yes
Kitchen/Living	2	2750	1543	E	2551	Yes
Kitchen/Living	3	2750	737	N	0	No
Kitchen/Living	3	2750	2046	E	0	No
Kitchen/Living	4	2750	4368	N	0	No
Kitchen/Living	1	2750	1240	N	0	No
Kitchen/Living	4	2750	5445	N	0	No
Kitchen/Living	5	2750	3604	W	2998	Yes
Bedroom 1	1	2750	4069	S	0	No
Bedroom 1	5	2750	991	N	0	Yes
Bedroom 1	5	2750	2982	W	0	Yes
Bathroom	1	2750	3584	S	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	55.6	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	13.1	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	42.2	Enclosed	R0.0	Timber
Powder	FR5 - 200mm concrete slab	2.1	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12.2	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.8	Enclosed	R0.0	Tiles

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	4	Downlights	80	Sealed

\* Refer to glossary.

**NatHERS Certificate**

8.1 Star Rating as of 22 May 2024

Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	16	Downlights	80	Sealed
Powder	1	Exhaust Fans	200	Sealed
Powder	1	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

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The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 2.11, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**62.2 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	43.2	suburban
Unconditioned*	5.3	<b>NatHERS climate zone</b>
Total	48.5	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>42.8</b>	<b>19.4</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom	THC-023-03 B	Opening 22	2150	1200	casement	90.0	N	No
Kitchen/Living	THC-010-21 A	Opening 21	2700	4132	sliding	30.0	W	No

\* Refer to glossary.



## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	903	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
2	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
5	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bathroom	1	2750	2618	E	0	No
Bathroom	2	2750	1508	N	0	Yes
Bedroom	2	2750	4156	N	0	Yes
Kitchen/Living	2	2750	5970	N	0	Yes
Kitchen/Living	3	2750	4141	W	2177	Yes
Kitchen/Living	3	2750	880	S	3589	Yes
Kitchen/Living	4	2750	5079	S	0	No
Corridor	1	2750	531	N	0	No
Corridor	4	2750	5969	S	0	No
Corridor	1	2750	522	S	0	No
Corridor	5	2750	1557	E	1376	Yes

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	37.2	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles
Bedroom	FR5 - 200mm concrete slab	11.7	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	24.6	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
No Data Available			

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom	5	Downlights	80	Sealed
Kitchen/Living	10	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	3	Downlights	80	Sealed

**Ceiling fans**

\* Refer to glossary.

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.01, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**84.6 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	44	suburban
Unconditioned*	5.3	<b>NatHERS climate zone</b>
Total	49.3	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>58.1</b>	<b>26.5</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

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### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom	THC-023-03 B	Opening 22	2400	1200	casement	90.0	S	No
Kitchen/Living	THC-010-21 A	Opening 21	2700	4170	sliding	30.0	W	Yes

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	898	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WL-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No



**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bathroom	1	2950	1508	S	0	Yes
Bathroom	2	2950	2041	E	0	No
Bedroom	1	2950	4156	S	0	Yes
Kitchen/Living	3	2950	5079	N	0	No
Kitchen/Living	4	2950	1011	N	4171	Yes
Kitchen/Living	4	2950	4124	W	0	Yes
Kitchen/Living	1	2950	6068	S	0	Yes
Corridor	2	2950	2130	E	1375	Yes
Corridor	5	2950	3863	N	0	No
Corridor	3	2950	2628	N	0	No
Corridor	2	2950	531	S	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	41.8	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles
Bedroom	FR5 - 200mm concrete slab	11.7	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	25.1	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	7.2	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bathroom	Plasterboard	R3.2	No
Bedroom	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No
Corridor	Plasterboard	R3.2	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom	5	Downlights	80	Sealed
Kitchen/Living	10	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

Corridor	3	Downlights	80	Sealed
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**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
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Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.02, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 70.8	suburban
Unconditioned* 0.9	<b>NatHERS climate zone</b>
Total 71.7	21 Melbourne RO
Garage -	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to; insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**69.2 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>46.7</b>	<b>22.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 18	2400	1200	casement	90.0	W	No
Bedroom 1	THC-023-03 B	Opening 20	2400	1750	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 19	2700	4100	sliding	45.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	931	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

5 97 Alma Road - WL-L1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R1.8)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	3150	3017	W	53	No
Bedroom 2	1	3150	985	S	3909	Yes
Bedroom 2	2	3150	2923	N	0	No
Bedroom 2	3	3150	1143	N	0	No
Bathroom	2	3150	3520	N	0	No
Bedroom 1	4	3150	896	E	0	No
Bedroom 1	4	3150	1768	E	0	Yes
Bedroom 1	2	3150	2702	N	0	No
Bedroom 1	3	3150	1337	N	0	No
Kitchen/Living	1	2950	4132	W	1038	Yes
Kitchen/Living	3	2950	7785	S	0	No
Kitchen/Living	5	2950	2957	E	0	No
Kitchen/Living	5	2950	3890	S	0	No
Kitchen/Living	4	2950	1648	E	2459	Yes
Kitchen/Living	4	2950	615	N	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	58.8	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	12.3	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12	Enclosed	R0.0	Carpet
Laundry	FR5 - 200mm concrete slab	0.9	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - 200mm concrete slab	37.9	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 2	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No
Bedroom 1	Plasterboard	R3.2	No
Laundry	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No

\* Refer to glossary.



**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	5	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom 1	5	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	15	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.03, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	129.1	suburban
Unconditioned*	2.2	<b>NatHERS climate zone</b>
Total	131.3	21 Melbourne RO
Garage	-	



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

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State and territory variations and additions to the NCC may also apply.



### Thermal performance

Heating	Cooling
60.7 MJ/m <sup>2</sup>	14.2 MJ/m <sup>2</sup>

### About the rating

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 3	THC-023-03 B	Opening 8	2400	1200	casement	90.0	W	No

\* Refer to glossary.

## NatHERS Certificate

7.3 Star Rating as of 22 May 2024

Bedroom 2	THC-023-03 B	Opening 12	2700	1800	awning	30.0	E	No
Master Bedroom	THC-023-03 B	Opening 10	1800	1200	casement	90.0	N	No
Master Bedroom	THC-033-07 B	Opening 21	2700	1600	fixed	0.0	W	No
Kitchen/Living	THC-010-21 A	Opening 9	2700	6644	sliding	40.0	N	No
Kitchen/Living	THC-033-07 B	Opening 7	2400	1200	fixed	0.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	975	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M4	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
2	97 Alma Road - WP-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

\* Refer to glossary.

3	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WE-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
7	97 Alma Road - WE-M5	0.5	Medium		No

### External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 3	1	2950	3070	W	0	No
Bedroom 3	2	2950	4091	S	0	No
Bath	2	2950	3582	S	0	No
Bedroom 2	2	2950	3815	S	0	No
Bedroom 2	3	2950	2003	E	2948	Yes
Bedroom 2	3	2950	825	S	0	Yes
Bedroom 2	3	2950	1407	E	2125	Yes
Master Bedroom	3	2950	1186	E	0	No
Master Bedroom	4	2950	5727	E	0	No
Master Bedroom	5	2950	5071	N	0	No
Master Bedroom	6	2950	1765	W	7744	Yes
Kitchen/Living	3	2950	1581	E	2118	Yes
Kitchen/Living	6	2950	7313	N	3444	Yes
Kitchen/Living	7	2950	7102	W	0	No

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	108.5	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 3	FR5 - 200mm concrete slab	12.6	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	7.3	Enclosed	R0.0	Tiles
Bath 2	FR5 - 200mm concrete slab	2.2	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 200mm concrete slab	13.2	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	5.7	Enclosed	R0.0	Tiles
Master Bedroom	FR5 - 200mm concrete slab	28.3	Enclosed	R0.0	Carpet

Kitchen/Living	FR5 - 200mm concrete slab	14.3	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 200mm concrete slab	4.8	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 200mm concrete slab	37.1	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 3	Plasterboard	R3.2	No
Bath	Plasterboard	R3.2	No
Bath 2	Plasterboard	R3.2	No
Bedroom 2	Plasterboard	R3.2	No
Ensuite	Plasterboard	R3.2	No
Master Bedroom	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 3	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Bath 2	1	Exhaust Fans	200	Sealed
Bath 2	1	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed
Master Bedroom	8	Downlights	80	Sealed
Kitchen/Living	24	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium



## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.05, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**69.2 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 63	suburban
Unconditioned* 6.9	<b>NatHERS climate zone</b>
Total 69.9	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>51.8</b>	<b>17.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://www.FR5.com.au).



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	THC-023-03 B	Opening 45	1800	1200	casement	90.0	N	No

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Bedroom 2	THC-033-07 B	Opening 48	2200	1550	fixed	0.0	N	No
Bedroom 2	THC-023-03 B	Opening 49	2200	1200	casement	90.0	E	No
Kitchen/Living	THC-023-03 B	Opening 46	2200	1200	casement	90.0	N	No
Kitchen/Living	THC-010-21 A	Opening 47	2500	3690	sliding	45.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	998	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WE-M4	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
3	97 Alma Road - WE-M5	0.5	Medium		No
4	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

5	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
7	97 Alma Road - WE-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
8	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
9	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	1	2950	2170	N	0	Yes
Bedroom 1	2	2950	1182	N	0	Yes
Bedroom 1	3	2950	704	N	3816	Yes
Bedroom 1	4	2950	1910	W	1209	Yes
Bedroom 1	5	2950	904	S	0	No
Bedroom 1	5	2950	1106	W	0	No
Bathroom	6	2950	1718	W	0	No
Bathroom	6	2950	3627	S	0	No
WIR	6	2950	3128	S	0	No
Bedroom 2	7	2950	2283	N	2918	Yes
Bedroom 2	6	2950	671	S	0	No
Bedroom 2	8	2950	2789	S	0	No
Bedroom 2	9	2950	2951	E	0	No
Kitchen/Living	2	2950	1252	N	0	Yes
Kitchen/Living	1	2950	5072	N	0	Yes
Kitchen/Living	4	2950	1958	W	2113	Yes
Kitchen/Living	6	2950	1445	S	0	No
Kitchen/Living	7	2950	3812	E	2394	Yes

Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	60.3	

Floor type

\* Refer to glossary.

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	FR5 - 200mm concrete slab	11.2	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Tiles
WIR	FR5 - 200mm concrete slab	5.2	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 200mm concrete slab	10.8	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	35.8	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No
WIR	Plasterboard	R3.2	No
Bedroom 2	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	4	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
WIR	2	Downlights	80	Sealed
Bedroom 2	4	Downlights	80	Sealed
Kitchen/Living	14	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
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<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.



<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.06, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**78.6 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 44.4	suburban
Unconditioned* 5.5	<b>NatHERS climate zone</b>
Total 49.9	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>51.3</b>	<b>27.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au.](http://www.FR5.com.au)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-010-21 A	Opening 7	2500	3900	sliding	45.0	E	Yes
Bedroom	THC-023-03 B	Opening 8	2400	1970	awning	30.0	W	Yes

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	920	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
3	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
4	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	1	2950	4148	E	984	Yes
Kitchen/Living	2	2950	2861	N	0	No
Kitchen/Living	3	2950	3019	N	0	No
Kitchen/Living	3	2950	2002	S	0	No
Kitchen/Living	2	2950	1037	S	0	No
Kitchen/Living	3	2950	2847	S	0	No
Bathroom	3	2950	1658	S	0	No
Corridor	3	2950	3414	N	0	No
Corridor	2	2950	1235	N	0	No
Corridor	3	2950	1869	E	0	No
Corridor	3	2950	1247	N	0	No
Corridor	4	2950	2905	W	2521	Yes
Bedroom	4	2950	3009	W	0	Yes
Bedroom	3	2950	4102	S	0	No

## Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	39.4	

## Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	FR5 - 200mm concrete slab	24.4	Enclosed	R0.0	Timber
Bathroom	FR5 - 200mm concrete slab	5.5	Enclosed	R0.0	Tiles
Corridor	FR5 - 200mm concrete slab	8.4	Enclosed	R0.0	Timber
Bedroom	FR5 - 200mm concrete slab	11.6	Enclosed	R0.0	Carpet

## Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No
Corridor	Plasterboard	R3.2	No
Bedroom	Plasterboard	R3.2	No

## Ceiling *penetrations\**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	9	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

7.1 Star Rating as of 22 May 2024

Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Corridor	4	Downlights	80	Sealed
Bedroom	4	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** 3.07, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	44.4	suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
Total	49.9	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
49.1	28.8
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

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### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

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Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

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Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
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THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-010-21 A	Opening 7	2500	3900	sliding	45.0	E	Yes
Bedroom	THC-023-03 B	Opening 8	2400	1970	awning	30.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	920	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
2	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kitchen/Living	1	2950	2847	N	0	No
Kitchen/Living	2	2950	1037	N	0	No
Kitchen/Living	1	2950	2002	N	0	No
Kitchen/Living	1	2950	3019	S	0	No
Kitchen/Living	2	2950	2861	S	0	No
Kitchen/Living	3	2950	4148	E	984	Yes
Bathroom	1	2950	1658	N	0	No
Corridor	4	2950	2905	W	2572	Yes
Corridor	1	2950	1247	S	0	No
Corridor	1	2950	1869	E	0	No
Corridor	2	2950	1235	S	0	No
Corridor	1	2950	3414	S	0	No
Bedroom	1	2950	4102	N	0	No
Bedroom	4	2950	3009	W	0	Yes

## Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	39.4	

## Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Kitchen/Living	FR5 - 200mm concrete slab	24.4	Enclosed	R0.0	Timber
Bathroom	FR5 - 200mm concrete slab	5.5	Enclosed	R0.0	Tiles
Corridor	FR5 - 200mm concrete slab	8.4	Enclosed	R0.0	Timber
Bedroom	FR5 - 200mm concrete slab	11.6	Enclosed	R0.0	Carpet

## Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No
Corridor	Plasterboard	R3.2	No
Bedroom	Plasterboard	R3.2	No

## Ceiling *penetrations\**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	9	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

7.2 Star Rating as of 22 May 2024

Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Corridor	4	Downlights	80	Sealed
Bedroom	4	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
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<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.08, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**86.9 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 63.8	suburban
Unconditioned* 6.9	<b>NatHERS climate zone</b>
Total 70.7	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>71.9</b>	<b>15</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://www.FR5.com.au).



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 1	THC-023-03 B	Opening 45	1800	1200	casement	90.0	S	No

\* Refer to glossary.

## NatHERS Certificate

6.9 Star Rating as of 22 May 2024

Bedroom 2	THC-023-03 B	Opening 49	2200	1200	casement	90.0	E	No
Bedroom 2	THC-033-07 B	Opening 48	2200	1550	fixed	0.0	S	No
Kitchen/Living	THC-010-21 A	Opening 47	2500	3690	sliding	45.0	E	No
Kitchen/Living	THC-023-03 B	Opening 46	2200	1200	casement	90.0	S	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	998	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WE-M5	0.5	Medium		No
3	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
7	97 Alma Road - WE-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

### External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 1	1	2950	880	N	0	Yes
Bedroom 1	1	2950	3030	W	0	Yes
Bedroom 1	2	2950	662	S	3816	Yes
Bedroom 1	3	2950	3011	S	0	Yes
Bathroom	4	2950	3627	N	0	No
Bathroom	4	2950	1718	W	0	No
WIR	4	2950	3128	N	0	No
Bedroom 2	5	2950	2951	E	0	No
Bedroom 2	6	2950	2789	N	0	No
Bedroom 2	4	2950	671	N	0	No
Bedroom 2	7	2950	2283	S	2649	Yes
Kitchen/Living	7	2950	3812	E	2373	Yes
Kitchen/Living	4	2950	1445	N	0	No
Kitchen/Living	1	2950	1958	W	2113	Yes
Kitchen/Living	3	2950	6637	S	0	Yes

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	59	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 1	FR5 - 200mm concrete slab	11.1	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Tiles
WIR	FR5 - 200mm concrete slab	5.2	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 200mm concrete slab	10.8	Enclosed	R0.0	Carpet

Kitchen/Living	FR5 - 200mm concrete slab	36.7	Enclosed	R0.0	Timber
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### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 1	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No
WIR	Plasterboard	R3.2	No
Bedroom 2	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 1	4	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
WIR	2	Downlights	80	Sealed
Bedroom 2	4	Downlights	80	Sealed
Kitchen/Living	14	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

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**Address** 3.09, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	73.7	suburban
Unconditioned*	2.1	<b>NatHERS climate zone</b>
Total	75.8	21 Melbourne RO
Garage	-	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal performance

Heating	Cooling
54.1 MJ/m <sup>2</sup>	20 MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 5	2400	1800	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 7	2700	3450	sliding	45.0	W	No
Bedroom 1	THC-023-03 B	Opening 6	2400	1200	casement	90.0	W	No

\* Refer to glossary.



## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	900	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
2	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

5	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
6	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

### External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bedroom 2	1	2950	4044	S	0	No
Bedroom 2	2	2950	2017	E	0	Yes
Bedroom 2	2	2950	789	S	0	Yes
Bedroom 2	2	2950	978	E	0	Yes
Kitchen/Living	2	2950	1494	E	0	Yes
Kitchen/Living	3	2950	719	N	0	No
Kitchen/Living	3	2950	2067	E	0	No
Kitchen/Living	4	2950	4336	N	0	No
Kitchen/Living	5	2950	1240	N	0	No
Kitchen/Living	4	2950	5445	N	0	No
Kitchen/Living	6	2950	3583	W	927	Yes
Bedroom 1	1	2950	4069	S	0	No
Bedroom 1	6	2950	986	N	0	Yes
Bedroom 1	6	2950	2982	W	-82	Yes
Bathroom	1	2950	3584	S	0	No

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	59.4	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bedroom 2	FR5 - 200mm concrete slab	12.9	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	41.9	Enclosed	R0.0	Timber
Powder	FR5 - 200mm concrete slab	2.1	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12.2	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.8	Enclosed	R0.0	Tiles

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bedroom 2	Plasterboard	R3.2	No

\* Refer to glossary.

Kitchen/Living	Plasterboard	R3.2	No
Powder	Plasterboard	R3.2	No
Bedroom 1	Plasterboard	R3.2	No
Bathroom	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	4	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	16	Downlights	80	Sealed
Powder	1	Exhaust Fans	200	Sealed
Powder	1	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** 3.10, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	43.7	suburban
Unconditioned*	5.3	<b>NatHERS climate zone</b>
Total	49	21 Melbourne RO
Garage	-	



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to; insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**71.1 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>46.6</b>	<b>24.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

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Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
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### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom	THC-023-03 B	Opening 22	2400	1200	casement	90.0	N	No
Kitchen/Living	THC-010-21 A	Opening 21	2700	4090	sliding	30.0	W	Yes

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	903	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
2	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
5	97 Alma Road - WL-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No



6 97 Alma Road - WE-L2

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R2.7)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bathroom	1	2400	577	E	0	No
Bathroom	1	2950	2041	E	0	No
Bathroom	2	2950	1508	N	0	Yes
Bedroom	2	2950	4156	N	0	Yes
Kitchen/Living	2	2950	6068	N	0	Yes
Kitchen/Living	3	2950	4124	W	0	Yes
Kitchen/Living	3	2950	1011	S	3625	Yes
Kitchen/Living	4	2950	5079	S	0	No
Corridor	1	2950	531	N	0	No
Corridor	4	2950	2628	S	0	No
Corridor	5	2950	3341	S	0	No
Corridor	1	2950	522	S	0	No
Corridor	6	2950	1557	E	1376	Yes

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	40.1	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Bathroom	FR5 - 200mm concrete slab	5.3	Enclosed	R0.0	Tiles
Bedroom	FR5 - 200mm concrete slab	11.7	Enclosed	R0.0	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	25.1	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bathroom	Plasterboard	R3.2	No
Bedroom	Plasterboard	R3.2	No
Kitchen/Living	Plasterboard	R3.2	No
Corridor	Plasterboard	R3.2	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bathroom	2	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Bathroom	1	Exhaust Fans	200	Sealed
Bedroom	5	Downlights	80	Sealed
Kitchen/Living	10	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	3	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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## Glossary

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# Nationwide House Energy Rating Scheme NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

## Property

**Address** G.01, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

## Plans

**Main plan** -  
**Prepared by** -

## Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	87.2	suburban
Unconditioned*	1487.5	<b>NatHERS climate zone</b>
Total	1574.7	21 Melbourne RO
Garage	-	



## Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

## National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**68.8 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

## Thermal performance

Heating	Cooling
<b>50.1</b>	<b>18.7</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

## About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

## Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-010-21 A	Opening 71	2750	4200	sliding	45.0	W	No

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Kitchen/Living	THC-033-07 B	Opening 70	2700	1200	fixed	0.0	S	No
Kitchen/Living	THC-033-07 B	Opening 76	2700	1200	fixed	0.0	S	No
Double 3	THC-033-07 B	Opening 79	2400	4200	fixed	0.0	W	No
Bedroom 2	THC-023-03 B	Opening 78	2400	1200	awning	30.0	S	No
Bedroom 1	THC-023-03 B	Opening 77	2400	1200	awning	30.0	S	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	960	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	FR5 - Cast Concrete	0.5	Medium		No
4	FR5 - Brick Veneer	0.5	Medium		No

\* Refer to glossary.

5	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
6	97 Alma Road - WL-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
7	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
8	97 Alma Road - WE-M4	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
9	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
10	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared Carpark	1	4120	24865	N	0	No
Shared Carpark	2	4120	8453	W	0	No
Shared Carpark	2	4120	1274	S	0	No
Shared Carpark	2	4120	2187	W	0	No
Shared Carpark	2	4120	4882	S	0	No
Shared Carpark	2	4120	1800	E	0	No
Shared Carpark	2	4120	5943	S	0	No
Shared Carpark	2	4120	2593	W	0	No
Shared Carpark	2	4120	2876	N	0	No
Shared Carpark	2	4120	8860	W	0	No
Shared Carpark	2	4120	1398	S	0	No
Shared Carpark	2	4120	3076	W	0	No
Shared Carpark	2	4120	3974	N	0	No
Shared Carpark	2	4120	3062	E	0	No
Shared Carpark	2	4120	1380	S	0	No
Shared Carpark	2	4120	1539	E	0	No
Shared Carpark	2	4120	10252	N	0	No
Shared Carpark	3	4120	1521	W	0	No
Shared Carpark	3	4120	1022	W	0	No
Shared Carpark	4	4120	5952	W	0	No
Shared Carpark	4	4120	1187	W	0	No
Shared Carpark	1	4120	32527	W	0	No
Shared Carpark	2	4120	26559	S	0	No
Shared Carpark	1	4120	60944	E	0	No
Bathroom	5	2700	2646	N	0	No

\* Refer to glossary.



## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Stairs	6	2700	412	N	0	No
Stairs	5	2700	1624	N	0	No
Kitchen/Living	7	2700	2005	E	0	No
Kitchen/Living	7	2700	668	S	0	Yes
Kitchen/Living	6	2700	2147	E	2853	Yes
Kitchen/Living	6	2700	3213	N	0	No
Kitchen/Living	5	2700	4449	N	0	No
Kitchen/Living	7	2750	4129	W	2111	Yes
Kitchen/Living	8	2700	1117	S	0	Yes
Kitchen/Living	9	2700	10877	S	0	Yes
Double 3	5	2400	1113	N	0	No
Double 3	7	2400	764	N	4094	Yes
Double 3	7	2400	4150	W	2269	Yes
Double 3	9	2400	1919	S	0	Yes
Bedroom 2	9	2400	3108	S	0	Yes
Bedroom 2	5	2400	3493	N	0	No
Stairs	5	2400	3147	N	0	No
Bath	9	2400	3550	S	0	Yes
Bedroom 1	9	2400	3077	S	0	Yes
Bedroom 1	7	2400	2006	E	0	No
Bedroom 1	7	2400	672	S	0	No
Bedroom 1	10	2400	2125	E	2595	Yes
Bedroom 1	6	2400	3749	N	0	No

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	67.1	

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared Carpark	FR5 - CSOG: Slab on Ground	117.8	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	268	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	170	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	346.6	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	96.1	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	12.3	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	59.2	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	414.9	Enclosed	R0.0	none
Bathroom	FR5 - 250mm concrete slab	2.6	Enclosed	R3.2	Tiles
Stairs	FR5 - 250mm concrete slab	2	Enclosed	R3.2	Timber
Kitchen/Living	FR5 - 250mm concrete slab	45.8	Enclosed	R3.2	Timber

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Double 3	No Floor	0.4	Enclosed	R0.0	No Floor
Double 3	No Floor	7.5	Enclosed	R0.0	No Floor
Bedroom 2	FR5 - 200mm concrete slab	0.8	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 200mm concrete slab	12.6	Enclosed	R0.0	Carpet
Stairs	FR5 - 200mm concrete slab	3.1	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	3.7	Enclosed	R0.0	Timber
Bath	FR5 - 200mm concrete slab	0.3	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	6.7	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 200mm concrete slab	0.8	Enclosed	R0.0	Carpet
Bedroom 1	FR5 - 200mm concrete slab	13.3	Enclosed	R0.0	Carpet

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared Carpark	FR5 - 250mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	FR5 - 250mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Bathroom	FR5 - 200mm concrete slab	R0.0	No
Stairs	FR5 - 200mm concrete slab	R0.0	No
Kitchen/Living	FR5 - 200mm concrete slab	R0.0	No
Bedroom 2	Plasterboard	R3.2	No
Bedroom 1	Plasterboard	R3.2	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bathroom	1	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Stairs	1	Downlights	80	Sealed
Kitchen/Living	18	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Bedroom 2	5	Downlights	80	Sealed
Stairs	1	Downlights	80	Sealed
Corridor	1	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Bedroom 1	6	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

\* Refer to glossary.

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** G.02, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 74.4	suburban
Unconditioned* 1.5	<b>NatHERS climate zone</b>
Total 75.9	21 Melbourne RO
Garage -	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**37.7 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>29.9</b>	<b>7.8</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 8	2500	4200	sliding	45.0	W	No
Bedroom 1	THC-023-03 B	Opening 19	1600	1200	casement	30.0	W	No
Bedroom 2	THC-023-03 B	Opening 20	1800	1700	awning	30.0	E	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	900	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	97 Alma Road - WE-L20	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
5	97 Alma Road - WL-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No



6	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
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**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 7	1	4100	29600	N	0	No
Shared 7	1	4100	57960	W	0	No
Shared 7	1	4100	29600	S	0	No
Shared 7	1	4100	58000	E	0	No
Kitchen/Living 1	2	2400	669	N	0	No
Kitchen/Living 1	3	2500	4183	W	2261	Yes
Kitchen/Living 1	4	2400	8723	S	0	No
Kitchen/Living 1	5	2400	2912	E	0	No
Kitchen/Living 1	5	2400	3884	S	0	No
Kitchen/Living 1	2	2400	1665	E	1823	Yes
Bedroom 1	3	2500	2971	W	0	Yes
Bedroom 1	6	2400	2872	N	0	No
Bedroom 1	4	2400	1175	N	0	No
Bath	6	2400	3503	N	0	No
Bedroom 2	2	2700	923	E	0	No
Bedroom 2	2	2700	1755	E	0	Yes
Bedroom 2	6	2400	2687	N	0	No
Bedroom 2	4	2400	1381	N	0	No

**Internal wall type**

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	49.7	

**Floor type**

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 7	FR5 - CSOG: Slab on Ground	1716.2	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	2.7	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	5.3	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	33.4	Enclosed	R3.2	Timber
Bedroom 1	FR5 - 400mm concrete slab	12	Enclosed	R3.2	Carpet
Bath	FR5 - 400mm concrete slab	8.6	Enclosed	R3.2	Tiles
Bedroom 2	FR5 - 400mm concrete slab	12.2	Enclosed	R3.2	Carpet
Laundry	FR5 - 400mm concrete slab	1.5	Enclosed	R3.2	Timber

\* Refer to glossary.

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 7	FR5 - 400mm concrete slab	R3.2	No
Shared 7	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	17	Downlights	80	Sealed
Bedroom 1	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	4	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Laundry	1	Downlights	80	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** G.06, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**62.5 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	42.9	suburban
Unconditioned*	5.4	<b>NatHERS climate zone</b>
Total	48.3	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>49</b>	<b>13.5</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

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#### Verification

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### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

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\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 7	2700	4150	sliding	45.0	E	No
Bedroom 4	THC-023-03 B	Opening 8	1800	2000	awning	30.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	920	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

5 97 Alma Road - WE-L1

0.5 Medium

Glass fibre batt (k = 0.044  
density = 12 kg/m<sup>3</sup>) (R2.7)

No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 5	1	3300	29568	N	0	No
Shared 5	1	3300	57520	W	0	No
Shared 5	1	3300	29615	S	0	No
Shared 5	1	3300	57301	E	0	No
Kitchen/Living 1	2	2700	4033	E	2682	Yes
Kitchen/Living 1	3	2700	2835	N	0	No
Kitchen/Living 1	4	2700	3051	N	0	No
Kitchen/Living 1	4	2700	2002	S	0	No
Kitchen/Living 1	3	2700	1037	S	0	No
Kitchen/Living 1	4	2700	2847	S	0	No
Bathroom	4	2700	1658	S	0	No
Corridor	4	2700	4685	N	0	No
Corridor	3	2700	1959	E	0	No
Corridor	3	2700	1198	N	0	No
Corridor	5	2700	2999	W	2665	Yes
Bedroom 4	5	2700	874	W	0	Yes
Bedroom 4	5	2700	2135	W	2644	Yes
Bedroom 4	4	2700	4102	S	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	35.9	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 5	FR5 - CSOG: Slab on Ground	1698.8	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	24	Enclosed	R3.2	Timber
Bathroom	FR5 - 400mm concrete slab	5.4	Enclosed	R3.2	Tiles
Corridor	FR5 - 400mm concrete slab	8.6	Enclosed	R3.2	Timber
Bedroom 4	FR5 - 400mm concrete slab	11.6	Enclosed	R3.2	Carpet

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 5	FR5 - 400mm concrete slab	R3.2	No
Shared 5	Plasterboard	R0.0	No

\* Refer to glossary.



**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	9	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Corridor	4	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

## Explanatory Notes

### About this report

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Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

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## Glossary

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** G.07, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	42.7	suburban
Unconditioned*	5.4	<b>NatHERS climate zone</b>
Total	48.1	21 Melbourne RO
Garage	-	



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**66 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>52.9</b>	<b>13.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-07 B	Series EC35TB Awning Window DG 4Gn-12-4	3.24	0.42	0.4	0.44

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 7	2700	4150	sliding	45.0	E	No
Bedroom 4	THC-023-07 B	Opening 8	1700	2000	awning	30.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Corridor	2400	920	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
3	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
4	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

5 97 Alma Road - WE-L1

0.5 Medium

Glass fibre batt (k = 0.044 density = 12 kg/m<sup>3</sup>) (R2.7) No

### External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 5	1	3300	29568	N	0	No
Shared 5	1	3300	57520	W	0	No
Shared 5	1	3300	29615	S	0	No
Shared 5	1	3300	57301	E	0	No
Kitchen/Living 1	2	2700	2847	N	0	No
Kitchen/Living 1	3	2700	1037	N	0	No
Kitchen/Living 1	2	2700	2002	N	0	No
Kitchen/Living 1	2	2700	3051	S	0	No
Kitchen/Living 1	3	2700	2822	S	0	No
Kitchen/Living 1	4	2700	4078	E	2411	Yes
Bathroom	2	2700	1658	N	0	No
Corridor	5	2700	2801	W	2642	Yes
Corridor	3	2700	1195	S	0	No
Corridor	3	2700	1767	E	0	No
Corridor	2	2700	4703	S	0	No
Bedroom 4	2	2700	4102	N	0	No
Bedroom 4	5	2700	2135	W	2612	Yes
Bedroom 4	5	2700	874	W	0	Yes

### Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	36.1	

### Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 5	FR5 - CSOG: Slab on Ground	1698.8	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 200mm concrete slab	24	Enclosed	R3.2	Timber
Bathroom	FR5 - 200mm concrete slab	5.4	Enclosed	R3.2	Tiles
Corridor	FR5 - 200mm concrete slab	8.4	Enclosed	R3.2	Timber
Bedroom 4	FR5 - 200mm concrete slab	11.6	Enclosed	R3.2	Carpet

### Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 5	FR5 - 200mm concrete slab	R3.2	No
Shared 5	Plasterboard	R0.0	No

\* Refer to glossary.

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	10	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Corridor	4	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium



## Explanatory Notes

### About this report

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** G.13, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**26.6 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	74.3	suburban
Unconditioned*	1486.8	<b>NatHERS climate zone</b>
Total	1561.1	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>15.2</b>	<b>11.4</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

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### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

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Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

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Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 89	1700	1200	casement	90.0	W	No
Bedroom 1	THC-023-03 B	Opening 90	1700	1770	awning	30.0	E	No
Kitchen/Living	THC-010-21 A	Opening 88	2700	3640	sliding	45.0	W	No

\* Refer to glossary.

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2500	891	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	FR5 - Cast Concrete	0.5	Medium		No
4	FR5 - Brick Veneer	0.5	Medium		No
5	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
7	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

8	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
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External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared Carpark	1	4120	24865	N	0	No
Shared Carpark	2	4120	8453	W	0	No
Shared Carpark	2	4120	1274	S	0	No
Shared Carpark	2	4120	2187	W	0	No
Shared Carpark	2	4120	4882	S	0	No
Shared Carpark	2	4120	1800	E	0	No
Shared Carpark	2	4120	5943	S	0	No
Shared Carpark	2	4120	2593	W	0	No
Shared Carpark	2	4120	2876	N	0	No
Shared Carpark	2	4120	8860	W	0	No
Shared Carpark	2	4120	1398	S	0	No
Shared Carpark	2	4120	3076	W	0	No
Shared Carpark	2	4120	3974	N	0	No
Shared Carpark	2	4120	3062	E	0	No
Shared Carpark	2	4120	1380	S	0	No
Shared Carpark	2	4120	1539	E	0	No
Shared Carpark	2	4120	10252	N	0	No
Shared Carpark	3	4120	1521	W	0	No
Shared Carpark	3	4120	1022	W	0	No
Shared Carpark	4	4120	5952	W	0	No
Shared Carpark	4	4120	1187	W	0	No
Shared Carpark	1	4120	32527	W	0	No
Shared Carpark	2	4120	26559	S	0	No
Shared Carpark	1	4120	60944	E	0	No
Bedroom 2	5	2700	2979	W	0	Yes
Bedroom 2	6	2400	3972	S	0	No
Bathroom	6	2400	3481	S	0	No
Bedroom 1	6	2400	4035	S	0	No
Bedroom 1	7	2400	1984	E	0	Yes
Bedroom 1	7	2400	840	S	0	Yes
Bedroom 1	7	2400	997	E	2581	Yes
Kitchen/Living	7	2400	1505	E	2595	Yes
Kitchen/Living	7	2400	679	N	0	No

\* Refer to glossary.

Kitchen/Living	7	2400	2125	E	0	No
Kitchen/Living	8	2400	12003	N	0	No
Kitchen/Living	5	2700	3652	W	2283	Yes

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	49.9	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared Carpark	FR5 - CSOG: Slab on Ground	117.8	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	268	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	170	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	203.7	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	55.2	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	57.6	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	30.1	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	96.1	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	12.3	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	59.2	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	414.9	Enclosed	R0.0	none
Bedroom 2	FR5 - 200mm concrete slab	11.8	Enclosed	R3.2	Carpet
Powder	FR5 - 200mm concrete slab	1.9	Enclosed	R3.2	Tiles
Bathroom	FR5 - 200mm concrete slab	6.8	Enclosed	R3.2	Tiles
Bedroom 1	FR5 - 200mm concrete slab	12.9	Enclosed	R3.2	Carpet
Kitchen/Living	FR5 - 200mm concrete slab	2.5	Enclosed	R3.2	Timber
Kitchen/Living	FR5 - 200mm concrete slab	43.4	Enclosed	R3.2	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared Carpark	FR5 - 200mm concrete slab	R3.2	No
Shared Carpark	FR5 - 200mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Kitchen/Living	Plasterboard	R3.2	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bedroom 2	5	Downlights	80	Sealed
Powder	1	Downlights	80	Sealed
Powder	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed

## NatHERS Certificate

8.9 Star Rating as of 22 May 2024

Bathroom	1	Exhaust Fans	200	Sealed
Bedroom 1	5	Downlights	80	Sealed
Kitchen/Living	18	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium



## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** G.14, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 2  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**70.7 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	80.5	suburban
Unconditioned*	6.9	<b>NatHERS climate zone</b>
Total	87.4	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>48</b>	<b>22.7</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting \[www.FR5.com.au\]\(http://www.FR5.com.au\).](#)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-023-03 B	Opening 18	2000	1200	casement	90.0	N	No

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Kitchen/Living	THC-023-03 B	Opening 19	2000	1200	casement	90.0	N	No
Kitchen/Living	THC-010-21 A	Opening 17	2800	4170	sliding	45.0	W	No
Bedroom 2	THC-023-03 B	Opening 21	2400	1200	casement	90.0	N	No
Bedroom 1	THC-023-03 B	Opening 22	2400	1200	casement	90.0	N	No
Double	THC-033-07 B	Opening 20	2300	4170	fixed	0.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2700	929	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	97 Alma Road - WE-M3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-L2	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WP-L3	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
7	97 Alma Road - WE-M4	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R0.7)	No
8	97 Alma Road - WE-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 1	1	4000	57240	E	0	No
Shared 1	1	4000	28160	N	0	No
Shared 1	1	4000	57200	W	0	No
Shared 1	1	4000	28160	S	0	No
Kitchen/Living	2	2750	12086	N	0	Yes
Kitchen/Living	3	2750	4094	W	0	Yes
Kitchen/Living	4	2750	12753	S	0	No
Kitchen/Living	5	2750	1524	E	2608	Yes
Kitchen/Living	5	2750	660	N	0	No
Kitchen/Living	5	2750	2570	E	0	No
Bedroom 2	6	2400	3406	S	0	No
Bedroom 2	2	2400	3021	N	0	Yes
Bathroom	2	2400	1095	N	0	Yes
Bathroom	7	2400	1310	N	0	Yes
Bathroom	2	2400	1101	N	0	Yes
Corridor	6	2400	3113	S	0	No
Bedroom 1	2	2400	3028	N	0	Yes
Bedroom 1	6	2400	3751	S	0	No
Bedroom 1	5	2400	1503	E	2541	Yes
Bedroom 1	5	2400	723	N	0	No
Bedroom 1	5	2400	2653	E	0	No
Double	2	2400	902	N	0	Yes

\* Refer to glossary.

## NatHERS Certificate

7.4 Star Rating as of 22 May 2024

Double	7	2400	1125	N	0	Yes
Double	3	2400	4124	W	2197	No
Double	8	2400	866	S	0	Yes
Double	6	2400	1149	S	0	No

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	38	

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 1	FR5 - CSOG: Slab on Ground	1611.3	Enclosed	R0.0	none
Kitchen/Living	FR5 - 200mm concrete slab Lined	50.5	Enclosed	R3.2	Timber
Bedroom 2	FR5 - 200mm concrete slab	12.8	Enclosed	R0.0	Carpet
Bathroom	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Tiles
Corridor	FR5 - 200mm concrete slab	6.7	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 200mm concrete slab	13.7	Enclosed	R0.0	Carpet
Double	No Floor	8.3	Enclosed	R0.0	No Floor

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 1	FR5 - 200mm concrete slab Lined	R3.2	No
Shared 1	Plasterboard	R0.0	No
Kitchen/Living	FR5 - 200mm concrete slab	R0.0	No
Kitchen/Living	Plasterboard	R0.0	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	20	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Bedroom 2	5	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Corridor	3	Downlights	80	Sealed
Bedroom 1	5	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
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\* Refer to glossary.

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Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
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Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium
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## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THA01, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**138.5 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 141.5	suburban
Unconditioned* 1008.3	<b>NatHERS climate zone</b>
Total 1149.8	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>114.6</b>	<b>23.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting \[www.FR5.com.au\]\(http://www.FR5.com.au\).](#)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 3	THC-023-03 B	Opening 23	2500	1400	casement	90.0	W	No

\* Refer to glossary.

## NatHERS Certificate

5.3 Star Rating as of 22 May 2024

Room	Window ID	Opening	Area (m <sup>2</sup> )	Height (mm)	Type	U-value	Orientation	SHGC
Bedroom 2	THC-023-03 B	Opening 24	2940	1000	casement	90.0	E	No
Bedroom 2	THC-033-07 B	Opening 27	2940	2000	fixed	0.0	E	No
Entry GF	THC-023-03 B	Opening 21	2940	1000	casement	100.0	E	No
Entry GF	THC-033-07 B	Opening 26	2700	1100	fixed	0.0	E	No
Kitchen/Living	THC-023-03 B	Opening 19	2500	1400	casement	90.0	W	No
Kitchen/Living	THC-010-21 A	Opening 20	2900	5100	sliding	45.0	E	No
Bedroom 1	THC-023-03 B	Opening 17	2500	1400	casement	90.0	W	No
Void	THC-033-07 B	Opening 18	2700	5100	fixed	0.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry GF	2400	1000	100.0	W
Stairs L3	2400	867	100.0	S

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No

\* Refer to glossary.

2	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
3	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared Carpark	1	3000	38206	W	0	No
Shared Carpark	1	3000	26613	S	0	No
Shared Carpark	1	3000	34337	E	0	No
Shared Carpark	1	3000	1552	ESE	0	No
Stairs Stairs Basement	2	3000	2075	E	0	No
Shared 1	1	3000	62264	E	0	No
Shared 1	1	3000	24857	N	0	No
Shared 1	1	3000	2913	E	0	No
Shared 1	1	3000	5983	N	0	No
Shared 1	1	3000	24215	W	0	No
Shared 1	1	3000	1838	WSW	0	No
Shared 1	1	3000	2759	WSW	0	No
Shared 1	1	3000	1796	SW	0	No
Shared 1	1	3000	1580	W	0	No
Shared 1	1	3000	34447	W	0	No
Bedroom 3	3	2950	200	N	0	Yes
Bedroom 3	4	2950	1035	NNW	0	Yes
Bedroom 3	4	2950	1618	W	0	Yes
Bedroom 3	4	2950	1012	SW	0	Yes
Bedroom 3	4	2950	335	W	0	Yes
Bedroom 3	5	2950	3703	S	0	No
Bathroom GF	5	2950	2624	S	0	No
Bedroom 2	5	2950	3620	S	0	No
Bedroom 2	6	3120	2961	E	2306	Yes
Entry GF	4	2950	3493	N	0	Yes
Entry GF	4	2950	4037	N	0	Yes
Entry GF	4	2950	2009	W	0	Yes

\* Refer to glossary.

**NatHERS Certificate**

**5.3 Star Rating as of 22 May 2024**

Entry GF	3	2950	164	S	0	Yes
Entry GF	6	3120	2023	E	2303	Yes
Laundry	4	2950	1513	N	0	Yes
Lift GF	4	2950	870	NNE	0	Yes
Kitchen/Living	4	2950	5593	N	0	Yes
Kitchen/Living	4	2950	2131	W	0	Yes
Kitchen/Living	4	2950	1095	NNW	0	Yes
Kitchen/Living	4	2950	1626	W	0	Yes
Kitchen/Living	4	2950	1091	SW	0	Yes
Kitchen/Living	4	2950	291	WNW	0	Yes
Kitchen/Living	5	2950	10174	S	0	No
Kitchen/Living	6	2950	5167	E	2522	Yes
Kitchen/Living	4	2950	3591	N	0	Yes
Lift L1	4	2950	725	NNE	0	Yes
Corridor	4	2800	5391	N	0	Yes
Corridor	4	2800	2024	W	0	Yes
Corridor	4	2800	1562	N	0	Yes
Lift L2	4	2800	830	N	0	Yes
Bedroom 1	4	2800	1023	NNW	0	Yes
Bedroom 1	4	2800	1591	W	0	Yes
Bedroom 1	4	2800	1063	SW	0	Yes
Bedroom 1	4	2800	329	WNW	0	Yes
Bedroom 1	5	2800	5886	S	0	No
Ensuite	5	2800	2074	S	0	No
Void	4	2800	2004	N	0	Yes
Void	5	2800	1985	S	0	No
Void	6	2800	5058	E	2472	Yes
Stairs L3	6	2400	3642	S	1116	Yes
Stairs L3	6	2400	1031	S	1116	Yes
Stairs L3	6	2400	999	E	3533	Yes
Stairs L3	4	2400	4674	N	0	No
Stairs L3	6	2400	986	W	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	34	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)
2	FR5 - Internal Plasterboard Stud Wall	206.5	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared Carpark	FR5 - CSOG: Slab on Ground	310	Enclosed	R0.0	none

\* Refer to glossary.

Shared Carpark	FR5 - CSOG: Slab on Ground	53.5	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	430.4	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	211.9	Enclosed	R0.0	none
Stairs Stairs Basement	FR5 - CSOG: Slab on Ground	8.6	Enclosed	R0.0	Timber
Lift Basement	FR5 - CSOG: Slab on Ground	0.9	Enclosed	R0.0	Timber
Shared 1	FR5 - CSOG: Slab on Ground	1773.4	Enclosed	R0.0	none
Bedroom 3	FR5 - 400mm concrete slab	13	Enclosed	R3.2	Carpet
Bathroom GF	FR5 - 400mm concrete slab	7.8	Enclosed	R3.2	Tiles
Bedroom 2	FR5 - 400mm concrete slab	10.6	Enclosed	R3.2	Carpet
Entry GF	FR5 - 400mm concrete slab	9.9	Enclosed	R3.2	Timber
Entry GF	FR5 - 400mm concrete slab	8.2	Enclosed	R0.0	Timber
Laundry	FR5 - 400mm concrete slab	1.3	Enclosed	R3.2	Tiles
Lift GF	FR5 - 400mm concrete slab	0.8	Enclosed	R0.0	Timber
Kitchen/Living	97Alma - Timber flooring	53.2	Enclosed	R0.0	Timber
Lift L1	97Alma - Timber flooring	0.7	Enclosed	R0.0	Timber (Jarrah)
Corridor	97Alma - Timber flooring	11.3	Enclosed	R0.0	Timber
Corridor	97Alma - Timber flooring	3.8	Enclosed	R0.0	Timber
Lift L2	97Alma - Timber flooring	0.8	Enclosed	R0.0	Timber (Jarrah)
Bedroom 1	97Alma - Timber flooring	19.2	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber flooring	6.1	Enclosed	R0.0	Tiles
Void	No Floor	10.1	Enclosed	R0.0	No Floor
Stairs L3	97Alma - Timber flooring	4.6	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	FR5 - 400mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	FR5 - 400mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Stairs Stairs Basement	FR5 - 400mm concrete slab	R3.2	No
Stairs Stairs Basement	FR5 - 400mm concrete slab	R0.0	No
Lift Basement	FR5 - 400mm concrete slab	R3.2	No
Lift Basement	FR5 - 400mm concrete slab	R0.0	No
Shared 1	Plasterboard	R0.0	No
Bedroom 3	97Alma - Timber flooring	R0.0	No

\* Refer to glossary.



Bathroom GF	97Alma - Timber flooring	R0.0	No
Bedroom 2	97Alma - Timber flooring	R0.0	No
Entry GF	97Alma - Timber flooring	R0.0	No
Entry GF	97Alma - Timber flooring	R0.0	No
Laundry	97Alma - Timber flooring	R0.0	No
Lift GF	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No
Kitchen/Living	FR5 - Timber	R0.0	No
Lift L1	97Alma - Timber flooring	R0.0	No
Corridor	Plasterboard	R8.3	No
Corridor	97Alma - Timber flooring	R0.0	No
Lift L2	97Alma - Timber flooring	R0.0	No
Lift L2	Plasterboard	R8.3	No
Bedroom 1	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Void	Plasterboard	R8.3	No
Stairs L3	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs Stairs Basement	3	Downlights	80	Sealed
Bedroom 3	6	Downlights	80	Sealed
Bathroom GF	3	Downlights	80	Sealed
Bathroom GF	1	Exhaust Fans	200	Sealed
Bedroom 2	5	Downlights	80	Sealed
Entry GF	7	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	24	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	7	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Ensuite	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Void	5	Downlights	80	Sealed
Stairs L3	2	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

\* Refer to glossary.

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

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<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THA02, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	142	suburban
Unconditioned*	1.3	<b>NatHERS climate zone</b>
Total	143.3	21 Melbourne RO
Garage	-	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



### Thermal performance

Heating	Cooling
<b>76.2</b>	<b>22.3</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 3	THC-023-03 B	Opening 23	2500	1400	casement	90.0	W	No

\* Refer to glossary.

## NatHERS Certificate

6.4 Star Rating as of 22 May 2024

Bedroom 2	THC-023-03 B	Opening 24	2940	801	casement	90.0	E	No
Bedroom 2	THC-033-07 B	Opening 27	2940	2000	fixed	0.0	E	No
Entry GF	THC-023-03 B	Opening 21	2940	1000	casement	100.0	E	No
Entry GF	THC-033-07 B	Opening 26	2700	930	fixed	0.0	E	No
Kitchen/Living	THC-010-21 A	Opening 20	2900	5100	sliding	45.0	E	No
Kitchen/Living	THC-023-03 B	Opening 19	2500	1400	casement	90.0	W	No
Bedroom 1	THC-023-03 B	Opening 17	2500	1400	casement	90.0	W	No
Void	THC-033-07 B	Opening 18	2700	5016	fixed	0.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry GF	2400	987	100.0	W
Stairs L3	2400	867	100.0	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WI-L21	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

\* Refer to glossary.

2	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
3	97 Alma Road - Retaining	0.5	Medium		No
4	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
5	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
6	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
7	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
8	Alma Rd 97 - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs Stairs Basement	1	3000	3658	S	0	No
Stairs Stairs Basement	2	3000	2041	E	0	No
Lift Basement	1	3000	861	S	0	No
Shared 1	3	3000	26760	S	0	No
Shared 1	3	3000	23320	E	0	No
Shared 1	4	3000	4902	N	0	No
Shared 1	4	3000	2532	E	0	No
Shared 1	3	3000	72470	E	0	No
Shared 1	3	3000	24857	N	0	No
Shared 1	3	3000	2913	E	0	No
Shared 1	3	3000	5983	N	0	No
Shared 1	3	3000	24215	W	0	No
Shared 1	3	3000	1838	WSW	0	No
Shared 1	3	3000	2759	WSW	0	No
Shared 1	3	3000	1796	SW	0	No
Shared 1	3	3000	1580	W	0	No
Shared 1	2	3000	72749	W	0	No
Bedroom 3	5	2950	3703	N	0	No
Bedroom 3	6	2950	335	WNW	0	Yes
Bedroom 3	6	2950	1012	NNW	0	Yes
Bedroom 3	6	2950	1618	W	0	Yes
Bedroom 3	6	2950	1035	SW	0	Yes

\* Refer to glossary.



**NatHERS Certificate**

**6.4 Star Rating as of 22 May 2024**

Bedroom 3	4	2950	200	S		0	Yes
Bathroom GF	5	2950	2624	N		0	No
Bedroom 2	7	3120	2961	E		2465	Yes
Bedroom 2	5	2950	3620	N		0	No
Entry GF	7	3120	2023	E		2478	Yes
Entry GF	4	2950	164	NNE		0	Yes
Entry GF	6	2950	2008	W		0	Yes
Entry GF	5	2950	3845	S		0	No
Entry GF	5	2950	3610	S		0	No
Laundry	5	2950	1480	S		0	No
Lift GF	5	2950	884	S		0	No
Kitchen/Living	5	2950	3591	S		0	No
Kitchen/Living	7	2950	5167	E		2398	Yes
Kitchen/Living	5	2950	10174	N		0	No
Kitchen/Living	6	2950	291	W		0	Yes
Kitchen/Living	6	2950	1091	NNW		0	Yes
Kitchen/Living	6	2950	1626	W		0	Yes
Kitchen/Living	6	2950	1095	SW		0	Yes
Kitchen/Living	6	2950	2131	W		0	Yes
Kitchen/Living	5	2950	5593	S		0	No
Lift L1	5	2950	725	S		0	No
Corridor	5	2800	1562	S		0	No
Corridor	6	2800	2024	W		0	Yes
Corridor	5	2800	5391	S		0	No
Lift L2	5	2800	830	S		0	No
Bedroom 1	5	2800	5886	N		0	No
Bedroom 1	6	2800	329	W		0	Yes
Bedroom 1	6	2800	1063	NNW		0	Yes
Bedroom 1	6	2800	1591	W		0	Yes
Bedroom 1	6	2800	1023	SW		0	Yes
Ensuite	5	2800	2074	N		0	No
Void	7	2800	5058	E		2421	Yes
Void	5	2800	1985	N		0	No
Void	5	2800	2004	S		0	No
Stairs L3	7	2400	986	W		0	No
Stairs L3	8	2400	4674	S		0	No
Stairs L3	7	2400	999	E		957	Yes
Stairs L3	7	2400	1031	N		563	Yes
Stairs L3	7	2400	3642	N		563	Yes

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
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\* Refer to glossary.

1	FR5 - Internal Plasterboard Stud Wall	126.6	
2	97 Alma Road - WI-M1	19.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs Stairs Basement	FR5 - CSOG: Slab on Ground	8.5	Enclosed	R0.0	Timber
Lift Basement	FR5 - CSOG: Slab on Ground	0.9	Enclosed	R0.0	Timber
Shared 1	FR5 - CSOG: Slab on Ground	50.3	Enclosed	R0.0	none
Shared 1	FR5 - CSOG: Slab on Ground	2720.3	Enclosed	R0.0	none
Bedroom 3	FR5 - 400mm concrete slab	13	Enclosed	R3.2	Carpet
Bathroom GF	FR5 - 400mm concrete slab	7.8	Enclosed	R3.2	Tiles
Bedroom 2	FR5 - 400mm concrete slab	10.6	Enclosed	R3.2	Carpet
Entry GF	FR5 - 400mm concrete slab	9.7	Enclosed	R3.2	Timber
Entry GF	FR5 - 400mm concrete slab	8.3	Enclosed	R0.0	Timber
Laundry	FR5 - 400mm concrete slab	1.3	Enclosed	R3.2	Tiles
Lift GF	FR5 - 400mm concrete slab	0.8	Enclosed	R0.0	Timber
Kitchen/Living	97Alma - Timber flooring	53.2	Enclosed	R0.0	Timber
Lift L1	97Alma - Timber flooring	0.7	Enclosed	R0.0	Timber (Jarrah)
Corridor	97Alma - Timber flooring	11.3	Enclosed	R0.0	Timber
Corridor	97Alma - Timber flooring	3.8	Enclosed	R0.0	Timber
Lift L2	97Alma - Timber flooring	0.8	Enclosed	R0.0	Timber (Jarrah)
Bedroom 1	97Alma - Timber flooring	19.2	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber flooring	6.1	Enclosed	R0.0	Tiles
Void	No Floor	10.1	Enclosed	R0.0	No Floor
Stairs L3	97Alma - Timber flooring	4.6	Enclosed	R0.0	Timber

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs Stairs Basement	FR5 - 400mm concrete slab	R3.2	No
Stairs Stairs Basement	FR5 - 400mm concrete slab	R0.0	No
Lift Basement	FR5 - 400mm concrete slab	R3.2	No
Lift Basement	FR5 - 400mm concrete slab	R0.0	No
Shared 1	FR5 - 400mm concrete slab	R3.2	No
Shared 1	Plasterboard	R0.0	No
Bedroom 3	97Alma - Timber flooring	R0.0	No
Bathroom GF	97Alma - Timber flooring	R0.0	No
Bedroom 2	97Alma - Timber flooring	R0.0	No

\* Refer to glossary.

Entry GF	97Alma - Timber flooring	R0.0	No
Entry GF	97Alma - Timber flooring	R0.0	No
Laundry	97Alma - Timber flooring	R0.0	No
Lift GF	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No
Kitchen/Living	FR5 - Timber	R0.0	No
Lift L1	97Alma - Timber flooring	R0.0	No
Corridor	97Alma - Timber flooring	R0.0	No
Corridor	Plasterboard	R8.3	No
Corridor	97Alma - Timber flooring	R0.0	No
Lift L2	97Alma - Timber flooring	R0.0	No
Lift L2	Plasterboard	R8.3	No
Bedroom 1	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Void	Plasterboard	R8.3	No
Stairs L3	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs Stairs Basement	3	Downlights	80	Sealed
Bedroom 3	6	Downlights	80	Sealed
Bathroom GF	3	Downlights	80	Sealed
Bathroom GF	1	Exhaust Fans	200	Sealed
Bedroom 2	5	Downlights	80	Sealed
Entry GF	7	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	24	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	7	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Ensuite	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Void	5	Downlights	80	Sealed
Stairs L3	2	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
No Data Available			

\* Refer to glossary.

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Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

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## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

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<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
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<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THA03, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

**141.4 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 144.1	suburban
Unconditioned* 2811	<b>NatHERS climate zone</b>
Total 2955.1	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>120.5</b>	<b>20.9</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 3	THC-023-03 B	Opening 23	2500	1400	casement	90.0	W	No

\* Refer to glossary.



Bedroom 2	THC-033-07 B	Opening 24	2940	2000	fixed	0.0	E	No
Bedroom 2	THC-023-03 B	Opening 29	2940	1000	casement	90.0	E	No
Entry GF	THC-023-03 B	Opening 21	2940	1000	casement	100.0	E	No
Entry GF	THC-033-07 B	Opening 28	2700	1100	fixed	0.0	E	No
Kitchen/Living	THC-023-03 B	Opening 19	2500	1400	casement	90.0	W	No
Kitchen/Living	THC-010-21 A	Opening 20	2900	5100	sliding	45.0	E	No
Bedroom 1	THC-023-03 B	Opening 17	2500	1400	casement	90.0	W	No
Void	THC-033-07 B	Opening 18	2700	5100	fixed	0.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Entry GF	2400	1000	100.0	W
Stairs L3	2400	867	100.0	SSW

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No

2	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared Carpark	1	3000	26834	S	0	No
Shared Carpark	1	3000	23563	E	0	No
Shared Carpark	1	3000	25775	E	0	No
Shared Carpark	1	3000	49203	E	0	No
Shared Carpark	1	3000	25008	N	0	No
Shared Carpark	1	3000	2736	E	0	No
Shared Carpark	1	3000	6024	N	0	No
Shared Carpark	1	3000	23678	W	0	No
Shared Carpark	1	3000	2063	W	0	No
Shared Carpark	1	3000	1905	WSW	0	No
Shared Carpark	1	3000	2287	SW	0	No
Shared Carpark	1	3000	1625	WSW	0	No
Shared Carpark	1	3000	73613	W	0	No
Stairs B	2	3000	2017	ESE	0	No
Bedroom 3	3	2950	1113	NNW	0	Yes
Bedroom 3	3	2950	1606	W	0	Yes
Bedroom 3	3	2950	1066	SW	0	Yes
Bedroom 3	3	2950	314	W	0	Yes
Bedroom 3	4	2950	3664	S	0	No
Bathroom GF	4	2950	2629	S	0	No
Bedroom 2	4	2950	3654	S	0	No
Bedroom 2	5	3120	3000	E	2934	Yes
Entry GF	3	2950	3731	N	0	No
Entry GF	3	2950	3842	N	0	No
Entry GF	3	2950	2040	W	0	Yes
Entry GF	5	3120	2073	E	2970	Yes
Laundry	3	2950	1466	N	0	No
Lift GF	3	2950	835	N	0	No

\* Refer to glossary.

**NatHERS Certificate**

5.2 Star Rating as of 22 May 2024

Kitchen/Living	3	2950	5434	N	0	No
Kitchen/Living	3	2950	2092	W	0	Yes
Kitchen/Living	3	2950	1064	NNW	0	Yes
Kitchen/Living	3	2950	1600	W	0	Yes
Kitchen/Living	3	2950	1089	SW	0	Yes
Kitchen/Living	3	2950	320	W	0	Yes
Kitchen/Living	4	2950	10193	S	0	No
Kitchen/Living	5	2950	5147	E	2695	Yes
Kitchen/Living	3	2950	3669	N	0	No
Lift L1	3	2950	852	N	0	No
Corridor	3	2800	5403	N	0	No
Corridor	3	2800	2056	W	0	Yes
Corridor	3	2800	1588	N	0	No
Lift L2	3	2800	832	N	0	No
Bedroom 1	3	2800	1015	NNW	0	Yes
Bedroom 1	3	2800	1600	W	0	Yes
Bedroom 1	3	2800	1095	SW	0	Yes
Bedroom 1	3	2800	306	VNW	0	Yes
Bedroom 1	4	2800	5852	S	0	No
Ensuite	4	2800	2083	S	0	No
Void	3	2800	2006	N	0	No
Void	4	2800	1958	S	0	No
Void	5	2800	5139	E	3113	Yes
Stairs L3	5	2400	3688	S	943	Yes
Stairs L3	5	2400	961	SSW	0	Yes
Stairs L3	5	2400	920	ESE	0	Yes
Stairs L3	3	2400	4657	N	0	No
Stairs L3	5	2400	885	W	0	No

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	162.2	

**Floor type**

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared Carpark	FR5 - CSOG: Slab on Ground	297.1	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	67.6	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	640.6	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	1250.2	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	553.1	Enclosed	R0.0	none
Stairs B	FR5 - CSOG: Slab on Ground	8.4	Enclosed	R0.0	Timber

\* Refer to glossary.

Lift B	FR5 - CSOG: Slab on Ground	0.9	Enclosed	R0.0	Timber
Bedroom 3	FR5 - 400mm concrete slab	13	Enclosed	R3.2	Carpet
Bathroom GF	FR5 - 400mm concrete slab	8	Enclosed	R3.2	Tiles
Bedroom 2	FR5 - 400mm concrete slab	10.8	Enclosed	R3.2	Carpet
Entry GF	FR5 - 400mm concrete slab	9.5	Enclosed	R3.2	Timber
Entry GF	FR5 - 400mm concrete slab	8.9	Enclosed	R0.0	Timber
Laundry	FR5 - 400mm concrete slab	1.4	Enclosed	R3.2	Tiles
Lift GF	FR5 - 400mm concrete slab	0.8	Enclosed	R0.0	none
Kitchen/Living	97Alma - Timber flooring	53.4	Enclosed	R0.0	Timber
Lift L1	97Alma - Timber flooring	0.8	Enclosed	R0.0	Timber (Jarrah)
Corridor	97Alma - Timber flooring	10.2	Enclosed	R0.0	Timber
Corridor	97Alma - Timber flooring	5.1	Enclosed	R0.0	Timber
Lift L2	97Alma - Timber flooring	0.8	Enclosed	R0.0	Timber (Jarrah)
Bedroom 1	97Alma - Timber flooring	19.5	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber flooring	6.3	Enclosed	R0.0	Tiles
Void	No Floor	10.1	Enclosed	R0.0	No Floor
Stairs L3	97Alma - Timber flooring	4.2	Enclosed	R0.0	Timber

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared Carpark	FR5 - 400mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R3.2	No
Shared Carpark	Plasterboard	R3.2	No
Shared Carpark	Plasterboard	R3.2	No
Shared Carpark	Plasterboard	R3.2	No
Shared Carpark	FR5 - 400mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R3.2	No
Stairs B	FR5 - 400mm concrete slab	R3.2	No
Stairs B	FR5 - 400mm concrete slab	R0.0	No
Lift B	FR5 - 400mm concrete slab	R0.0	No
Bedroom 3	97Alma - Timber flooring	R0.0	No
Bathroom GF	97Alma - Timber flooring	R0.0	No
Bedroom 2	97Alma - Timber flooring	R0.0	No
Entry GF	97Alma - Timber flooring	R0.0	No
Entry GF	97Alma - Timber flooring	R0.0	No
Laundry	97Alma - Timber flooring	R0.0	No
Lift GF	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No
Kitchen/Living	FR5 - Timber	R0.0	No

\* Refer to glossary.

Lift L1	97Alma - Timber flooring	R0.0	No
Corridor	Plasterboard	R8.3	No
Corridor	97Alma - Timber flooring	R0.0	No
Lift L2	97Alma - Timber flooring	R0.0	No
Lift L2	Plasterboard	R8.3	No
Bedroom 1	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Void	Plasterboard	R8.3	No
Stairs L3	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs B	4	Downlights	80	Sealed
Bedroom 3	6	Downlights	80	Sealed
Bathroom GF	3	Downlights	80	Sealed
Bathroom GF	1	Exhaust Fans	200	Sealed
Bedroom 2	5	Downlights	80	Sealed
Entry GF	7	Downlights	80	Sealed
Laundry	1	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Kitchen/Living	24	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Corridor	7	Downlights	80	Sealed
Bedroom 1	7	Downlights	80	Sealed
Ensuite	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Void	5	Downlights	80	Sealed
Stairs L3	2	Downlights	80	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

\* Refer to glossary.

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THA04, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

**105.2 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
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Conditioned* 144	suburban
Unconditioned* 1406.6	<b>NatHERS climate zone</b>
Total 1550.6	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>74.1</b>	<b>31.1</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

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### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

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Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
CAP-148-05 B	Capral Futureline 440 TB Fixed Resid Wind DG 6ET-12Ar-6	1.99	0.54	0.51	0.57
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	CAP-148-05 B	Opening 17	2940	2035	fixed	0.0	E	No

\* Refer to glossary.

Bedroom 2	THC-023-03 B	Opening 56	2900	931	casement	90.0	E	No
Bedroom 8	THC-010-21 A	Opening 26	1460	1500	sliding	45.0	W	No
Kitchen/Living 9	THC-023-03 B	Opening 29	2500	1500	casement	90.0	W	No
Kitchen/Living 9	THC-010-21 A	Opening 28	3000	5115	sliding	45.0	E	Yes
Double 12	THC-010-21 A	Opening 32	2400	5118	sliding	45.0	E	Yes
Bedroom 14	THC-023-03 B	Opening 37	2200	1500	casement	90.0	WNW	Yes

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GF Corridor	2400	922	100.0	W
GF Corridor	2900	900	100.0	E
Stair L3	2400	819	100.0	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

3	FR5 - Internal Plasterboard Stud Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
4	97 Alma Road - WI-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
6	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
7	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8), Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
8	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	2900	12294	S	0	No
Shared 10	1	2900	982	ESE	0	No
Shared 10	1	2900	22840	S	0	No
Shared 10	1	2900	12474	E	0	No
Shared 10	2	2900	8575	N	0	No
Shared 10	2	2900	4929	E	0	No
Shared 10	1	2900	8676	E	0	No
Shared 10	3	2900	4803	N	0	No
Shared 10	3	2900	2689	E	0	No
Shared 10	3	2900	140	S	0	No
Shared 10	1	2900	18650	E	0	No
Shared 10	2	2900	25983	N	0	No
Shared 10	1	2900	50783	W	0	No
Base Lift	4	2900	1296	S	0	No
Base Stairs	4	2900	3099	S	0	No
Base Stairs	5	2900	2156	E	0	No
Bedroom 2	6	3000	676	N	0	No
Bedroom 2	7	3000	3489	N	0	No
Bedroom 2	8	3000	3023	E	3128	Yes
GF Corridor	6	3000	1999	W	0	Yes
GF Corridor	7	3000	1141	S	0	No
GF Corridor	7	3000	759	S	0	No
GF Corridor	8	3000	2000	E	0	Yes
Stair	7	3000	3354	S	0	No
Lift	7	3000	860	S	0	No

\* Refer to glossary.

Stair	7	3000	2840	S		0	No
Bathroom	7	3000	2444	N		0	No
Bedroom 8	7	3000	4079	N		0	No
Bedroom 8	6	3000	453	W		0	Yes
Bedroom 8	6	3000	1055	NNW		0	Yes
Bedroom 8	6	3000	1551	W		0	Yes
Bedroom 8	6	3000	1058	SW		0	Yes
Pantry	7	3000	1455	S		0	No
Kitchen/Living 9	6	3000	936	N		0	Yes
Kitchen/Living 9	7	3000	9898	N		0	No
Kitchen/Living 9	6	3000	467	VNW		0	Yes
Kitchen/Living 9	6	3000	1036	NNW		0	Yes
Kitchen/Living 9	6	3000	1571	W		0	Yes
Kitchen/Living 9	6	3000	1097	SW		0	Yes
Kitchen/Living 9	6	3000	2105	W		0	Yes
Kitchen/Living 9	7	3000	5629	S		0	No
Kitchen/Living 9	7	3000	4286	S		0	No
Kitchen/Living 9	8	3000	5185	E		0	Yes
Lift	7	3000	864	S		0	No
Double 12	6	2700	952	NNE		0	Yes
Double 12	7	2700	1495	NNE		0	No
Double 12	7	2700	2441	S		0	No
Double 12	8	2700	5078	E	3214	0	Yes
Study	6	2700	1053	W		0	Yes
Study	7	2700	1159	S		0	No
Study	7	2700	1725	S		0	No
Bedroom 14	7	2700	3238	N		0	No
Bedroom 14	6	2700	442	VNW		0	Yes
Bedroom 14	6	2700	1028	NNW		0	Yes
Bedroom 14	6	2700	1503	VNW		0	Yes
Bedroom 14	6	2700	1124	SW		0	Yes
Lift	7	2700	882	S		0	No
Bathroom	7	2700	1711	N		0	No
Stair	6	2700	869	VNW		0	Yes
Stair	7	2700	4401	S		0	No
WIR	7	2700	3303	N		0	No
Stair L3	8	2400	4476	N	3436	0	Yes
Stair L3	8	2400	868	W		0	No
Stair L3	7	2400	4485	S		0	No
Stair L3	8	2400	884	E	3683	0	Yes

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	25.2	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)
2	97 Alma Road - WI-L31	170.7	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1401.4	Enclosed	R0.0	none
Base Lift	FR5 - CSOG: Slab on Ground	1.1	Enclosed	R0.0	Timber
Base Stairs	FR5 - CSOG: Slab on Ground	8.3	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 400mm concrete slab	10.4	Enclosed	R3.2	Carpet
Bedroom 2	FR5 - CSOG: Slab on Ground	2.3	Enclosed	R0.0	Carpet
GF Corridor	FR5 - 400mm concrete slab	11.5	Enclosed	R3.2	Carpet
GF Corridor	FR5 - CSOG: Slab on Ground	1.6	Enclosed	R0.0	Carpet
Stair	FR5 - 400mm concrete slab	3	Enclosed	R3.2	Carpet
Lift	FR5 - 400mm concrete slab	0.8	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	2.5	Enclosed	R3.2	Carpet
Bathroom	FR5 - 400mm concrete slab	7.3	Enclosed	R3.2	Tiles
Bedroom 8	FR5 - 400mm concrete slab	14.2	Enclosed	R3.2	Carpet
Pantry	FR5 - 400mm concrete slab	1.3	Enclosed	R3.2	Timber
Kitchen/Living 9	97Alma - Timber Flooring	1.9	Enclosed	R0.0	Timber
Kitchen/Living 9	97Alma - Timber Flooring	55.5	Enclosed	R0.0	Timber
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Double 12	No Floor	12.5	Enclosed	R0.0	No Floor
Study	97Alma - Timber Flooring	1.3	Enclosed	R0.0	Carpet
Study	97Alma - Timber Flooring	12.1	Enclosed	R0.0	Carpet
Bedroom 14	97Alma - Timber Flooring	11.8	Enclosed	R0.0	Carpet
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Bathroom	97Alma - Timber Flooring	5.2	Enclosed	R0.0	Tiles
Stair	97Alma - Timber Flooring	0.6	Enclosed	R0.0	Carpet
Stair	97Alma - Timber Flooring	3.3	Enclosed	R0.0	Carpet
WIR	97Alma - Timber Flooring	7.9	Enclosed	R0.0	Carpet
Stair L3	97Alma - Timber Flooring	3.9	Enclosed	R0.0	Carpet

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Base Lift	FR5 - 400mm concrete slab	R3.2	No
Base Stairs	FR5 - 400mm concrete slab	R3.2	No

\* Refer to glossary.

Bedroom 2	97Alma - Timber Flooring	R0.0	No
Bedroom 2	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Bedroom 8	97Alma - Timber Flooring	R0.0	No
Pantry	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No
Double 12	Plasterboard	R8.3	No
Study	97Alma - Timber Flooring	R0.0	No
Study	Plasterboard	R8.3	No
Bedroom 14	Plasterboard	R8.3	No
Lift	Plasterboard	R8.3	No
Bathroom	Plasterboard	R8.3	No
Stair	Plasterboard	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
WIR	Plasterboard	R8.3	No
Stair L3	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Base Stairs	1	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
GF Corridor	5	Downlights	80	Sealed
Stair	1	Downlights	80	Sealed
Stair	1	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Bedroom 8	6	Downlights	80	Sealed
Pantry	1	Downlights	80	Sealed
Kitchen/Living 9	1	Exhaust Fans	200	Sealed
Kitchen/Living 9	22	Downlights	80	Sealed
Study	5	Downlights	80	Sealed
Bedroom 14	6	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Stair	2	Downlights	80	Sealed

\* Refer to glossary.

WIR	2	Downlights	80	Sealed
Stair L3	2	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.



<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate


Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THA05, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**6.2**  
The more stars  
the more energy efficient

**106.3 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 152.8	suburban
Unconditioned* 1297.5	<b>NatHERS climate zone</b>
Total 1450.3	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>77.3</b>	<b>29</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting \[www.FR5.com.au\]\(http://www.FR5.com.au\).](#)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	THC-023-03 B	Opening 17	2940	1979	fixed	0.0	E	No
Bedroom 2	THC-023-03 B	Opening 55	2940	895	casement	90.0	E	No
Bedroom 8	THC-023-03 B	Opening 26	1460	1489	casement	90.0	W	No

\* Refer to glossary.

## NatHERS Certificate

6.2 Star Rating as of 22 May 2024

Room	Window ID	Opening no.	Area (m <sup>2</sup> )	Orientation	Opening type	U-value	SHGC	Indoor shade
Kitchen/Living 9	THC-010-21 A	Opening 28	3000	5012	sliding	45.0	E	Yes
Kitchen/Living 9	THC-023-03 B	Opening 29	2500	1361	casement	90.0	W	No
Double 12	THC-010-21 A	Opening 32	2400	4809	sliding	45.0	E	Yes
Bedroom 14	THC-023-03 B	Opening 37	2200	1479	casement	90.0	W	Yes

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GF Corridor	2940	905	60.0	E
GF Corridor	2400	922	100.0	W
Stair L3	2400	819	100.0	S

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	FR5 - Internal Plasterboard Stud Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

4	97 Alma Road - WI-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
7	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
8	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	2900	50783	W	0	No
Shared 10	2	2900	25983	S	0	No
Shared 10	1	2900	18650	E	0	No
Shared 10	3	2900	140	N	0	No
Shared 10	3	2900	2461	E	0	No
Shared 10	3	2900	4826	S	0	No
Shared 10	1	2900	26168	E	0	No
Shared 10	1	2900	14240	N	0	No
Shared 10	1	2900	982	E	0	No
Shared 10	1	2900	12294	N	0	No
Base Lift	4	2900	1296	N	0	No
Base Stairs	5	2900	2156	E	0	No
Base Stairs	4	2900	3099	N	0	No
Bedroom 2	6	3000	3053	E	2566	Yes
Bedroom 2	7	3000	2053	SSW	0	No
Bedroom 2	8	3000	1550	S	0	No
GF Corridor	6	3000	1940	E	0	Yes
GF Corridor	7	3000	770	NNE	0	Yes
GF Corridor	7	3000	907	NNE	0	No
GF Corridor	7	3000	1141	N	0	No
GF Corridor	8	3000	1999	W	0	Yes
Stair	7	3000	3354	N	0	No
Lift	7	3000	860	N	0	No
Stair	7	3000	4374	N	0	No
Bathroom	7	3000	2090	S	0	No
Bedroom 8	8	3000	1058	NNW	0	Yes
Bedroom 8	8	3000	1551	W	0	Yes

\* Refer to glossary.

## NatHERS Certificate

6.2 Star Rating as of 22 May 2024

Bedroom 8	8	3000	1055	SW	0	Yes
Bedroom 8	8	3000	453	VNW	0	Yes
Bedroom 8	7	3000	4079	S	0	No
Pantry	7	3000	1614	S	0	No
Kitchen/Living 9	6	3000	5124	E	0	Yes
Kitchen/Living 9	7	3000	5159	N	0	No
Kitchen/Living 9	7	3000	5629	N	0	No
Kitchen/Living 9	8	3000	2105	W	0	Yes
Kitchen/Living 9	8	3000	1097	NNW	0	Yes
Kitchen/Living 9	8	3000	1571	W	0	Yes
Kitchen/Living 9	8	3000	1036	SW	0	Yes
Kitchen/Living 9	8	3000	467	W	0	Yes
Kitchen/Living 9	7	3000	11706	S	0	No
Lift	7	3000	864	N	0	No
Double 12	6	2700	5122	E	2428	Yes
Double 12	7	2700	3288	N	0	No
Double 12	7	2700	3228	S	0	No
Study	7	2700	1725	N	0	No
Study	7	2700	1159	N	0	No
Study	8	2700	1053	W	0	Yes
Bedroom 14	8	2700	1124	NNW	0	Yes
Bedroom 14	8	2700	1503	W	0	Yes
Bedroom 14	8	2700	1028	SW	0	Yes
Bedroom 14	8	2700	442	W	0	Yes
Bedroom 14	7	2700	3219	S	0	No
Lift	7	2700	882	N	0	No
Bathroom	7	2700	1711	S	0	No
Stair	7	2700	4401	N	0	No
Stair	8	2700	869	W	0	Yes
WIR	7	2700	3322	S	0	No
Stair L3	6	2400	884	E	3683	Yes
Stair L3	7	2400	4485	N	0	No
Stair L3	6	2400	868	W	0	No
Stair L3	6	2400	4476	S	3436	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	25.2	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)
2	97 Alma Road - WI-L31	152.4	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)
3	FR5 - Internal Plasterboard Stud Wall	27.1	

## Floor type

\* Refer to glossary.

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1292.3	Enclosed	R0.0	none
Base Lift	FR5 - CSOG: Slab on Ground	1.1	Enclosed	R0.0	Timber
Base Stairs	FR5 - CSOG: Slab on Ground	8.3	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 400mm concrete slab	6.2	Enclosed	R3.2	Carpet
Bedroom 2	FR5 - CSOG: Slab on Ground	5	Enclosed	R0.0	Carpet
GF Corridor	FR5 - 400mm concrete slab	11.5	Enclosed	R3.2	Timber
GF Corridor	FR5 - CSOG: Slab on Ground	3.3	Enclosed	R0.0	Tiles
Stair	FR5 - 400mm concrete slab	3	Enclosed	R3.2	Timber
Lift	FR5 - 400mm concrete slab	0.8	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	4	Enclosed	R3.2	Timber
Bathroom	FR5 - 400mm concrete slab	6.5	Enclosed	R3.2	Tiles
Bedroom 8	FR5 - 400mm concrete slab	14.2	Enclosed	R3.2	Carpet
Pantry	FR5 - 400mm concrete slab	4.9	Enclosed	R3.2	Tiles
Kitchen/Living 9	97Alma - Timber Flooring	1.9	Enclosed	R0.0	Timber
Kitchen/Living 9	97Alma - Timber Flooring	59.8	Enclosed	R0.0	Timber
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Double 12	No Floor	16.7	Enclosed	R0.0	No Floor
Study	97Alma - Timber Flooring	1.3	Enclosed	R0.0	Carpet
Study	97Alma - Timber Flooring	12.1	Enclosed	R0.0	Carpet
Bedroom 14	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Carpet
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Bathroom	97Alma - Timber Flooring	5.2	Enclosed	R0.0	Tiles
Stair	97Alma - Timber Flooring	0.6	Enclosed	R0.0	Carpet
Stair	97Alma - Timber Flooring	3.3	Enclosed	R0.0	Carpet
WIR	97Alma - Timber Flooring	8	Enclosed	R0.0	Carpet
Stair L3	97Alma - Timber Flooring	3.9	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Base Lift	FR5 - 400mm concrete slab	R3.2	No
Base Stairs	FR5 - 400mm concrete slab	R3.2	No
Bedroom 2	97Alma - Timber Flooring	R0.0	No
Bedroom 2	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No

\* Refer to glossary.

## NatHERS Certificate

6.2 Star Rating as of 22 May 2024

Stair	97Alma - Timber Flooring	R0.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Bedroom 8	97Alma - Timber Flooring	R0.0	No
Pantry	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No
Double 12	Plasterboard	R8.3	No
Study	97Alma - Timber Flooring	R0.0	No
Study	Plasterboard	R8.3	No
Bedroom 14	Plasterboard	R8.3	No
Lift	Plasterboard	R8.3	No
Bathroom	Plasterboard	R8.3	No
Stair	Plasterboard	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
WIR	Plasterboard	R8.3	No
Stair L3	Plasterboard	R8.3	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Base Stairs	1	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
GF Corridor	5	Downlights	80	Sealed
Stair	1	Downlights	80	Sealed
Stair	1	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Bedroom 8	6	Downlights	80	Sealed
Pantry	2	Downlights	80	Sealed
Kitchen/Living 9	1	Exhaust Fans	200	Sealed
Kitchen/Living 9	22	Downlights	80	Sealed
Study	5	Downlights	80	Sealed
Bedroom 14	6	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Stair	2	Downlights	80	Sealed
WIR	2	Downlights	80	Sealed
Stair L3	2	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

\* Refer to glossary.



**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THA06, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**109.4 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure type
Conditioned*	162.2	suburban
Unconditioned*	0	<b>NatHERS climate zone</b>
Total	162.2	21 Melbourne RO
Garage	-	

### Thermal performance

Heating	Cooling
<b>92.8</b>	<b>16.6</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au.](http://www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
CAP-148-05 B	Capral Futureline 440 TB Fixed Resid Wind DG 6ET-12Ar-6	1.99	0.54	0.51	0.57
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bedroom 2	CAP-148-05 B	Opening 17	2940	2044	fixed	0.0	E	No

\* Refer to glossary.

Bedroom 2	THC-023-03 B	Opening 53	2940	825	casement	90.0	E	No
Bedroom 8	THC-023-03 B	Opening 26	1460	1489	casement	90.0	W	No
Kitchen/Living 9	THC-023-03 B	Opening 29	2500	1361	casement	90.0	W	No
Kitchen/Living 9	THC-010-21 A	Opening 28	3000	5023	sliding	45.0	E	Yes
Double 12	THC-010-21 A	Opening 32	2400	4883	sliding	45.0	E	Yes
Bedroom 14	THC-023-03 B	Opening 37	2200	1479	casement	90.0	WNW	Yes

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
GF Corridor	2400	922	100.0	W
GF Corridor	2940	905	90.0	E
Stair L3	2400	819	100.0	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

3	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	2900	59582	W	0	No
Shared 10	1	2900	11879	SSW	0	No
Shared 10	1	2900	1077	E	0	No
Shared 10	1	2900	23154	S	0	No
Shared 10	1	2900	12629	E	0	No
Shared 10	2	2900	8604	N	0	No
Shared 10	2	2900	5160	E	0	No
Shared 10	1	2900	19810	E	0	No
Shared 10	1	2900	4929	ESE	0	No
Shared 10	1	2900	8575	S	0	No
Shared 10	1	2900	12474	E	0	No
Shared 10	1	2900	22840	N	0	No
Shared 10	1	2900	982	E	0	No
Shared 10	1	2900	12294	N	0	No
Base Stairs	3	2900	2085	E	0	No
Bedroom 2	4	3000	1550	NNE	0	No
Bedroom 2	5	3000	2053	N	0	No
Bedroom 2	6	3000	3053	E	2566	Yes
GF Corridor	4	3000	1999	W	0	Yes
GF Corridor	4	3000	1141	S	0	Yes
GF Corridor	4	3000	1678	S	0	Yes
GF Corridor	6	3000	1940	E	0	Yes
Stair GF 2	4	3000	3354	S	0	Yes
Lift	4	3000	860	S	0	Yes
Stair	4	3000	4374	S	0	Yes
Bathroom	5	3000	2090	N	0	No
Bedroom 8	5	3000	4079	N	0	No
Bedroom 8	4	3000	453	W	0	Yes

\* Refer to glossary.

## NatHERS Certificate

6.1 Star Rating as of 22 May 2024

Bedroom 8	4	3000	1055	NNW	0	Yes
Bedroom 8	4	3000	1551	W	0	Yes
Bedroom 8	4	3000	1058	SW	0	Yes
Pantry	5	3000	1614	N	0	No
Kitchen/Living 9	5	3000	11706	N	0	No
Kitchen/Living 9	4	3000	467	WNW	0	Yes
Kitchen/Living 9	4	3000	1036	NNW	0	Yes
Kitchen/Living 9	4	3000	1571	W	0	Yes
Kitchen/Living 9	4	3000	1097	SW	0	Yes
Kitchen/Living 9	4	3000	2105	W	0	Yes
Kitchen/Living 9	4	3000	5629	S	0	Yes
Kitchen/Living 9	4	3000	5159	S	0	Yes
Kitchen/Living 9	6	3000	5124	E	0	Yes
Lift	4	3000	864	S	0	Yes
Double 12	5	2700	3228	N	0	No
Double 12	4	2700	3288	S	0	Yes
Double 12	6	2700	5122	E	2428	Yes
Study	4	2700	1053	W	0	Yes
Study	4	2700	1159	S	0	Yes
Study	4	2700	1725	S	0	Yes
Bedroom 14	5	2700	3230	N	0	No
Bedroom 14	4	2700	442	WNW	0	Yes
Bedroom 14	4	2700	1028	NNW	0	Yes
Bedroom 14	4	2700	1503	WNW	0	Yes
Bedroom 14	4	2700	1124	SW	0	Yes
Lift	4	2700	882	S	0	Yes
Bathroom	5	2700	1711	N	0	No
Stair L2	4	2700	869	WNW	0	Yes
Stair L2	4	2700	4401	S	0	Yes
WIR	5	2700	3311	N	0	No
Stair L3	6	2400	4476	N	3628	Yes
Stair L3	6	2400	868	W	0	No
Stair L3	4	2400	4485	S	0	No
Stair L3	6	2400	884	E	3708	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	38.3	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)
2	97 Alma Road - WI-L31	153.7	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)
3	FR5 - Internal Plasterboard Stud Wall	25.7	

## Floor type

\* Refer to glossary.



Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1750.1	Enclosed	R0.0	none
Base Lift	FR5 - CSOG: Slab on Ground	1.3	Enclosed	R0.0	Timber
Base Stairs	FR5 - CSOG: Slab on Ground	8.2	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 400mm concrete slab	6.2	Enclosed	R3.2	Carpet
Bedroom 2	FR5 - CSOG: Slab on Ground	5	Enclosed	R0.0	Carpet
GF Corridor	FR5 - 400mm concrete slab	11.5	Enclosed	R3.2	Carpet
GF Corridor	FR5 - CSOG: Slab on Ground	3.3	Enclosed	R0.0	Carpet
Stair GF 2	FR5 - 400mm concrete slab	3	Enclosed	R3.2	Carpet
Lift	FR5 - 400mm concrete slab	0.8	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	4	Enclosed	R3.2	Carpet
Bathroom	FR5 - 400mm concrete slab	6.5	Enclosed	R3.2	Tiles
Bedroom 8	FR5 - 400mm concrete slab	14.2	Enclosed	R3.2	Carpet
Pantry	FR5 - 400mm concrete slab	4.9	Enclosed	R3.2	none
Kitchen/Living 9	97Alma - Timber Flooring	1.9	Enclosed	R0.0	Timber
Kitchen/Living 9	97Alma - Timber Flooring	59.8	Enclosed	R0.0	Timber
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Double 12	No Floor	16.7	Enclosed	R0.0	No Floor
Study	97Alma - Timber Flooring	1.3	Enclosed	R0.0	Carpet
Study	97Alma - Timber Flooring	12	Enclosed	R0.0	Carpet
Bedroom 14	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Carpet
Lift	97Alma - Timber Flooring	0.8	Enclosed	R0.0	Timber
Bathroom	97Alma - Timber Flooring	5.2	Enclosed	R0.0	Tiles
Stair L2	97Alma - Timber Flooring	0.6	Enclosed	R0.0	Carpet
Stair L2	97Alma - Timber Flooring	3.3	Enclosed	R0.0	Carpet
WIR	97Alma - Timber Flooring	8	Enclosed	R0.0	Carpet
Stair L3	97Alma - Timber Flooring	3.9	Enclosed	R0.0	Carpet

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Base Lift	FR5 - 400mm concrete slab	R3.2	No
Base Stairs	FR5 - 400mm concrete slab	R3.2	No
Bedroom 2	97Alma - Timber Flooring	R0.0	No
Bedroom 2	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
GF Corridor	97Alma - Timber Flooring	R0.0	No
Stair GF 2	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No

\* Refer to glossary.

## NatHERS Certificate

6.1 Star Rating as of 22 May 2024

Stair	97Alma - Timber Flooring	R0.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Bedroom 8	97Alma - Timber Flooring	R0.0	No
Pantry	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 9	97Alma - Timber Flooring	R0.0	No
Lift	97Alma - Timber Flooring	R0.0	No
Double 12	Plasterboard	R8.3	No
Study	97Alma - Timber Flooring	R0.0	No
Study	Plasterboard	R8.3	No
Bedroom 14	Plasterboard	R8.3	No
Lift	Plasterboard	R8.3	No
Bathroom	Plasterboard	R8.3	No
Stair L2	Plasterboard	R0.0	No
Stair L2	97Alma - Timber Flooring	R0.0	No
WIR	Plasterboard	R8.3	No
Stair L3	Plasterboard	R8.3	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Base Stairs	1	Downlights	80	Sealed
Bedroom 2	5	Downlights	80	Sealed
GF Corridor	5	Downlights	80	Sealed
Stair GF 2	1	Downlights	80	Sealed
Stair	1	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Bedroom 8	6	Downlights	80	Sealed
Pantry	2	Downlights	80	Sealed
Kitchen/Living 9	1	Exhaust Fans	200	Sealed
Kitchen/Living 9	22	Downlights	80	Sealed
Study	5	Downlights	80	Sealed
Bedroom 14	6	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	2	Downlights	80	Sealed
Stair L2	2	Downlights	80	Sealed
WIR	2	Downlights	80	Sealed
Stair L3	2	Downlights	80	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

\* Refer to glossary.

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THB07, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**58.2 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	136.9	suburban
Unconditioned*	6.6	<b>NatHERS climate zone</b>
Total	143.5	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>45.5</b>	<b>12.7</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting \[www.FR5.com.au\]\(http://www.FR5.com.au\).](#)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 2	THC-010-21 A	Opening 2	2700	3700	sliding	45.0	S	No
Kitchen/Living 2	THC-023-03 B	Opening 1	2200	1500	casement	60.0	NNE	No
Bedroom 4	THC-023-03 B	Opening 5	2300	1600	casement	90.0	N	Yes

\* Refer to glossary.

Bedroom 4	THC-023-03 B	Opening 25	2300	619	awning	90.0	N	No
Bedroom 9	THC-023-03 B	Opening 7	1630	1355	casement	50.0	S	No
Bedroom 10	THC-023-03 B	Opening 10	1200	2600	awning	90.0	S	No
Bedroom 10	THC-010-21 A	Opening 9	2400	2490	sliding	45.0	N	Yes

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Corridor	Velux:VEL-011-01 W	Element 3	0.0	1	N	None	None
Bedroom 10	Velux:VEL-011-01 W	Element 2	0.0	0.2	N	None	None
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 2	2400	1072	100.0	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No



4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-M12	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
6	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
7	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 1	1	3200	8674	N	0	No
Shared 1	1	3200	4984	E	0	No
Shared 1	2	3200	65583	E	0	No
Shared 1	1	3200	26520	N	0	No
Shared 1	2	3200	84194	W	0	No
Shared 1	2	3200	12018	S	0	No
Shared 1	2	3200	1158	ESE	0	No
Shared 1	2	3200	18245	S	0	No
Shared 1	2	3200	3540	S	0	No
Shared 1	2	3200	12679	E	0	No
Stairs	3	3200	1119	S	0	No
Kitchen/Living 2	4	2700	11584	W	0	No
Kitchen/Living 2	5	2700	5488	S	1500	Yes
Kitchen/Living 2	5	2700	11606	E	0	Yes
Kitchen/Living 2	5	2700	916	N	0	Yes
Kitchen/Living 2	6	2700	958	E	0	Yes
Kitchen/Living 2	6	2700	1809	NNE	0	Yes
Kitchen/Living 2	6	2700	1028	VNW	0	Yes
Kitchen/Living 2	6	2700	2018	N	0	Yes
Bedroom 4	4	2700	3378	W	0	No
Bedroom 4	5	2700	3387	E	0	No
Bedroom 4	6	2700	950	N	0	Yes
Bedroom 4	6	2700	1029	E	0	Yes
Bedroom 4	6	2700	1845	N	0	Yes
Bedroom 4	6	2700	992	VNW	0	Yes
Bedroom 4	6	2700	1791	N	0	Yes
Corridor	4	3000	8056	W	0	No
Corridor	6	2700	1913	S	0	Yes

\* Refer to glossary.

## NatHERS Certificate

7.8 Star Rating as of 22 May 2024

Bathroom	5	2700	2089	E	0	No
Laundry	5	2700	1666	E	0	No
Bedroom 9	6	2700	997	SSW	0	No
Bedroom 9	6	2700	1535	S	0	Yes
Bedroom 9	6	2700	783	S	0	No
Bedroom 9	5	2700	4125	E	0	No
Bedroom 10	7	2900	3451	S	0	Yes
Bedroom 10	7	2900	7127	E	0	No
Bedroom 10	7	2900	2761	N	0	Yes
Ensuite	6	2900	1054	E	0	Yes
Ensuite	6	2900	1666	N	0	Yes
Ensuite	4	2900	1006	WNW	0	Yes
Ensuite	4	2900	1846	WNW	0	No
Stairs	4	2900	5253	W	0	No
Stairs	7	2900	1022	S	0	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	40.5	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)
2	97 Alma Road - WI-L31	53.2	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)
3	FR5 - Internal Plasterboard Stud Wall	27.5	

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 1	FR5 - CSOG: Slab on Ground	3.2	Enclosed	R0.0	none
Shared 1	FR5 - CSOG: Slab on Ground	2308.9	Enclosed	R0.0	none
Stairs	FR5 - CSOG: Slab on Ground	1	Enclosed	R0.0	Timber
Stairs	FR5 - CSOG: Slab on Ground	5.6	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 400mm concrete slab	65.2	Enclosed	R3.2	Timber
Bedroom 4	97Alma - Timber Flooring	13.3	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	6.6	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	9.4	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	6.2	Enclosed	R0.0	Carpet
Bathroom	97Alma - Timber Flooring	1.4	Enclosed	R0.0	Tiles
Bathroom	97Alma - Timber Flooring	5.4	Enclosed	R0.0	Tiles
Laundry	97Alma - Timber Flooring	1.1	Enclosed	R0.0	Tiles
Laundry	97Alma - Timber Flooring	4.4	Enclosed	R0.0	Tiles
Bedroom 9	97Alma - Timber Flooring	2.4	Enclosed	R0.0	Carpet
Bedroom 9	97Alma - Timber Flooring	11.2	Enclosed	R0.0	Carpet
Bedroom 10	97Alma - Timber Flooring	22.6	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber Flooring	4.9	Enclosed	R0.0	Tiles

\* Refer to glossary.

Stairs	97Alma - Timber Flooring	6	Enclosed	R0.0	Tiles
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**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 1	Plasterboard	R0.0	No
Shared 1	FR5 - 400mm concrete slab	R3.2	No
Shared 1	Plasterboard	R0.0	No
Stairs	Plasterboard	R3.2	No
Stairs	FR5 - 400mm concrete slab	R3.2	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R5.0	No
Corridor	97Alma - Timber Flooring	R0.0	No
Corridor	Plasterboard	R5.0	No
Bathroom	Plasterboard	R5.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Laundry	Plasterboard	R5.0	No
Laundry	97Alma - Timber Flooring	R0.0	No
Bedroom 9	97Alma - Timber Flooring	R0.0	No
Bedroom 9	Plasterboard	R5.0	No
Bedroom 10	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Stairs	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs	3	Downlights	80	Sealed
Kitchen/Living 2	1	Exhaust Fans	200	Sealed
Kitchen/Living 2	26	Downlights	80	Sealed
Bedroom 4	8	Downlights	80	Sealed
Corridor	6	Downlights	80	Sealed
Bathroom	3	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Laundry	2	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Bedroom 9	5	Downlights	80	Sealed
Bedroom 10	9	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed
Stairs	3	Downlights	80	Sealed

\* Refer to glossary.

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THB08, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**53 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	140	suburban
Unconditioned*	5.4	<b>NatHERS climate zone</b>
Total	145.4	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>41.5</b>	<b>11.5</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 2	THC-023-03 B	Opening 1	2200	1500	casement	60.0	N	No
Kitchen/Living 2	THC-010-21 A	Opening 2	2700	3661	sliding	45.0	S	No
Bedroom 4	THC-023-03 B	Opening 5	2300	1600	casement	90.0	N	Yes

\* Refer to glossary.



Bedroom 4	THC-023-03 B	Opening 25	2300	500	casement	90.0	N	No
Bedroom 9	THC-023-03 B	Opening 7	1630	1400	casement	60.0	S	No
Bedroom 10	THC-010-21 A	Opening 9	2400	2500	sliding	45.0	N	Yes
Bedroom 10	THC-023-03 B	Opening 10	1200	2600	awning	90.0	S	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Corridor	Velux:VEL-011-01 W	Element 1	0.0	1.2	N	None	None
Bedroom 10	Velux:VEL-011-01 W	Element 3	0.0	0.3	N	None	None
Ensuite	Velux:VEL-011-01 W	Element 2	0.0	1.2	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 2	2400	1011	100.0	N

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 1	1	3200	8674	N	0	No
Shared 1	1	3200	4984	E	0	No
Shared 1	2	3200	65583	E	0	No
Shared 1	1	3200	26520	N	0	No
Shared 1	2	3200	84194	W	0	No
Shared 1	2	3200	12018	S	0	No
Shared 1	2	3200	1158	ESE	0	No
Shared 1	2	3200	13026	S	0	No
Shared 1	2	3200	8649	S	0	No
Shared 1	2	3200	12587	E	0	No
Stairs	3	3200	959	S	0	No
Kitchen/Living 2	4	2700	432	NNE	0	Yes
Kitchen/Living 2	4	2700	1001	E	0	Yes
Kitchen/Living 2	4	2700	1892	N	0	Yes
Kitchen/Living 2	4	2700	1032	VNW	0	Yes
Kitchen/Living 2	4	2700	1887	N	0	Yes
Kitchen/Living 2	5	2700	4333	W	0	No
Kitchen/Living 2	5	2700	1603	W	0	No
Kitchen/Living 2	4	2700	4930	S	1729	Yes
Kitchen/Living 2	5	2700	11584	E	0	No
Stair	5	2700	5467	W	0	No
Bedroom 4	4	2700	392	NNE	0	Yes
Bedroom 4	4	2700	1008	E	0	Yes
Bedroom 4	4	2700	1921	N	0	Yes
Bedroom 4	4	2700	1031	VNW	0	Yes
Bedroom 4	4	2700	1857	N	0	Yes
Bedroom 4	5	2700	2987	W	0	No
Bedroom 4	5	2700	2992	E	0	No
Corridor	5	2700	8490	W	0	No
Corridor	4	2700	1883	S	0	Yes

\* Refer to glossary.

## NatHERS Certificate

8 Star Rating as of 22 May 2024

Bathroom	5	2700	2354	E	0	No
Laundry	5	2700	1729	E	0	No
Bedroom 9	4	2700	652	S	0	Yes
Bedroom 9	4	2700	1664	S	0	Yes
Bedroom 9	4	2700	560	S	0	Yes
Bedroom 9	5	2700	4176	E	0	No
Bedroom 10	6	2900	3199	N	2106	Yes
Bedroom 10	6	2900	3942	S	0	Yes
Bedroom 10	5	2900	7131	E	0	No
Ensuite	4	2900	1566	NNE	0	Yes
Ensuite	5	2900	990	W	0	Yes
Ensuite	5	2900	1878	W	0	No
Ensuite	4	2900	1045	E	3155	Yes
Stairs	5	2900	5235	W	0	No
Stairs	6	2900	906	S	0	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	39.2	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)
2	97 Alma Road - WI-L31	97.5	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 1	FR5 - CSOG: Slab on Ground	3.2	Enclosed	R0.0	none
Shared 1	FR5 - CSOG: Slab on Ground	2307.9	Enclosed	R0.0	none
Stairs	FR5 - CSOG: Slab on Ground	0.8	Enclosed	R0.0	Timber
Stairs	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - CSOG: Slab on Ground	1.8	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 400mm concrete slab	51.7	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	4.7	Enclosed	R3.2	Carpet
Bedroom 4	97Alma - Timber Flooring	5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	11.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	9.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	6.2	Enclosed	R0.0	Carpet
Bathroom	97Alma - Timber Flooring	6.9	Enclosed	R0.0	Tiles
Laundry	97Alma - Timber Flooring	4.9	Enclosed	R0.0	Tiles
Bedroom 9	97Alma - Timber Flooring	2.5	Enclosed	R0.0	Carpet
Bedroom 9	97Alma - Timber Flooring	9.6	Enclosed	R0.0	Carpet
Bedroom 10	97Alma - Timber Flooring	26	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber Flooring	4.5	Enclosed	R0.0	Tiles
Stairs	97Alma - Timber Flooring	5.3	Enclosed	R0.0	Tiles

\* Refer to glossary.

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 1	Plasterboard	R0.0	No
Shared 1	FR5 - 400mm concrete slab	R3.2	No
Shared 1	Plasterboard	R0.0	No
Stairs	Plasterboard	R3.2	No
Stairs	FR5 - 400mm concrete slab	R3.2	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R5.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Corridor	97Alma - Timber Flooring	R0.0	No
Corridor	Plasterboard	R5.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Laundry	97Alma - Timber Flooring	R0.0	No
Bedroom 9	97Alma - Timber Flooring	R0.0	No
Bedroom 9	Plasterboard	R5.0	No
Bedroom 10	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Stairs	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs	2	Downlights	80	Sealed
Kitchen/Living 2	1	Exhaust Fans	200	Sealed
Kitchen/Living 2	21	Downlights	80	Sealed
Stair	2	Downlights	80	Sealed
Bedroom 4	6	Downlights	80	Sealed
Corridor	6	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Laundry	2	Downlights	80	Sealed
Bedroom 9	5	Downlights	80	Sealed
Bedroom 10	10	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed
Stairs	2	Downlights	80	Sealed

\* Refer to glossary.

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

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<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THB09, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	140	suburban
Unconditioned*	5.4	<b>NatHERS climate zone</b>
Total	145.4	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
40.7	11.4
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au.](http://www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 2	THC-023-03 B	Opening 1	2200	1500	casement	60.0	N	No
Kitchen/Living 2	THC-010-21 A	Opening 2	2700	3287	sliding	45.0	S	No
Bedroom 4	THC-023-03 B	Opening 5	2300	1600	casement	90.0	N	Yes

\* Refer to glossary.

Bedroom 4	THC-023-03 B	Opening 24	2300	500	casement	90.0	N	No
Bedroom 9	THC-023-03 B	Opening 7	1630	1400	casement	60.0	S	No
Bedroom 10	THC-010-21 A	Opening 9	2400	2500	sliding	45.0	N	Yes
Bedroom 10	THC-023-03 B	Opening 10	1200	2600	awning	90.0	S	No

### Roof window type and performance value

#### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

### Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Corridor	Velux:VEL-011-01 W	Element 3	0.0	1.4	N	None	None
Bedroom 10	Velux:VEL-011-01 W	Element 2	0.0	0.1	N	None	None
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1.3	N	None	None

### Skylight type and performance

Skylight ID	Skylight description
No Data Available	

### Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

### External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 2	2400	1011	100.0	N

### External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

\* Refer to glossary.

4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 1	1	3200	8674	N	0	No
Shared 1	1	3200	4984	E	0	No
Shared 1	2	3200	65583	E	0	No
Shared 1	1	3200	26520	N	0	No
Shared 1	2	3200	84194	W	0	No
Shared 1	2	3200	12018	S	0	No
Shared 1	2	3200	1158	ESE	0	No
Shared 1	2	3200	13026	S	0	No
Shared 1	2	3200	8649	S	0	No
Shared 1	2	3200	12587	E	0	No
Stairs	3	3200	959	S	0	No
Kitchen/Living 2	4	2700	432	NNE	0	Yes
Kitchen/Living 2	4	2700	1001	E	0	Yes
Kitchen/Living 2	4	2700	1892	N	0	Yes
Kitchen/Living 2	4	2700	1032	VNW	0	Yes
Kitchen/Living 2	4	2700	1887	N	0	Yes
Kitchen/Living 2	5	2700	4333	W	0	No
Kitchen/Living 2	5	2700	1603	W	0	No
Kitchen/Living 2	4	2700	4930	S	1729	Yes
Kitchen/Living 2	5	2700	11584	E	0	No
Stair	5	2700	5467	W	0	No
Bedroom 4	4	2700	392	NNE	0	Yes
Bedroom 4	4	2700	1008	E	0	Yes
Bedroom 4	4	2700	1921	N	0	Yes
Bedroom 4	4	2700	1031	VNW	0	Yes
Bedroom 4	4	2700	1857	N	0	Yes
Bedroom 4	5	2700	2987	W	0	No
Bedroom 4	5	2700	2992	E	0	No
Corridor	5	2700	8490	W	0	No
Corridor	4	2700	1883	S	0	Yes

\* Refer to glossary.

## NatHERS Certificate

8.1 Star Rating as of 22 May 2024

Bathroom	5	2700	2354	E	0	No
Laundry	5	2700	1729	E	0	No
Bedroom 9	4	2700	652	S	0	Yes
Bedroom 9	4	2700	1664	S	0	Yes
Bedroom 9	4	2700	560	S	0	Yes
Bedroom 9	5	2700	4176	E	0	No
Bedroom 10	6	2900	3199	N	2106	Yes
Bedroom 10	6	2900	3942	S	0	Yes
Bedroom 10	5	2900	7131	E	0	No
Ensuite	4	2900	1566	NNE	0	Yes
Ensuite	5	2900	990	W	0	Yes
Ensuite	5	2900	1878	W	0	No
Ensuite	4	2900	1045	E	3155	Yes
Stairs	5	2900	5235	W	0	No
Stairs	6	2900	906	S	0	Yes

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	39.2	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)
2	97 Alma Road - WI-L31	97.5	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 1	FR5 - CSOG: Slab on Ground	3.2	Enclosed	R0.0	none
Shared 1	FR5 - CSOG: Slab on Ground	2307.9	Enclosed	R0.0	none
Stairs	FR5 - CSOG: Slab on Ground	0.8	Enclosed	R0.0	Timber
Stairs	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - CSOG: Slab on Ground	1.8	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 400mm concrete slab	51.7	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	4.7	Enclosed	R3.2	Carpet
Bedroom 4	97Alma - Timber Flooring	5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	11.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	9.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	6.2	Enclosed	R0.0	Carpet
Bathroom	97Alma - Timber Flooring	6.9	Enclosed	R0.0	Tiles
Laundry	97Alma - Timber Flooring	4.9	Enclosed	R0.0	Tiles
Bedroom 9	97Alma - Timber Flooring	2.5	Enclosed	R0.0	Carpet
Bedroom 9	97Alma - Timber Flooring	9.6	Enclosed	R0.0	Carpet
Bedroom 10	97Alma - Timber Flooring	26	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber Flooring	4.5	Enclosed	R0.0	Tiles
Stairs	97Alma - Timber Flooring	5.3	Enclosed	R0.0	Tiles

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**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 1	Plasterboard	R0.0	No
Shared 1	FR5 - 400mm concrete slab	R3.2	No
Shared 1	Plasterboard	R0.0	No
Stairs	Plasterboard	R3.2	No
Stairs	FR5 - 400mm concrete slab	R3.2	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R5.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
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Corridor	Plasterboard	R5.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
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Bedroom 9	Plasterboard	R5.0	No
Bedroom 10	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Stairs	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs	2	Downlights	80	Sealed
Kitchen/Living 2	1	Exhaust Fans	200	Sealed
Kitchen/Living 2	21	Downlights	80	Sealed
Stair	2	Downlights	80	Sealed
Bedroom 4	6	Downlights	80	Sealed
Corridor	6	Downlights	80	Sealed
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Bathroom	3	Downlights	80	Sealed
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<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THB10, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**67.9 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 141.2	suburban
Unconditioned* 5.4	<b>NatHERS climate zone</b>
Total 146.6	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>56.2</b>	<b>11.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://www.FR5.com.au).



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 2	THC-023-03 B	Opening 1	2200	1500	casement	60.0	N	No
Kitchen/Living 2	THC-010-21 A	Opening 2	2700	3617	sliding	45.0	S	No
Bedroom 4	THC-023-03 B	Opening 5	2300	1600	casement	90.0	N	Yes

\* Refer to glossary.

Bedroom 4	THC-023-03 B	Opening 24	2300	500	casement	90.0	N	No
Bedroom 9	THC-023-03 B	Opening 7	1630	1400	casement	60.0	S	No
Bedroom 10	THC-010-21 A	Opening 9	2400	2500	sliding	45.0	N	Yes
Bedroom 10	THC-023-03 B	Opening 10	1200	2600	awning	90.0	S	No

### Roof window type and performance value

#### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

### Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Corridor	Velux:VEL-011-01 W	Element 1	0.0	1.3	N	None	None
Bedroom 10	Velux:VEL-011-01 W	Element 3	0.0	0.2	N	None	None
Ensuite	Velux:VEL-011-01 W	Element 2	0.0	1.1	N	None	None

### Skylight type and performance

Skylight ID	Skylight description
No Data Available	

### Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

### External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 2	2400	1011	100.0	N

### External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	97 Alma Road - Retaining R2.7	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
5	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 1	1	3200	8674	N	0	No
Shared 1	1	3200	4984	E	0	No
Shared 1	2	3200	65583	E	0	No
Shared 1	1	3200	26520	N	0	No
Shared 1	2	3200	84194	W	0	No
Shared 1	2	3200	12018	S	0	No
Shared 1	2	3200	1158	ESE	0	No
Shared 1	2	3200	2815	S	0	No
Shared 1	2	3200	19073	S	0	No
Shared 1	2	3200	12587	E	0	No
Stairs	3	3200	956	S	0	No
Kitchen/Living 2	4	2700	432	NNE	0	Yes
Kitchen/Living 2	4	2700	1001	E	0	Yes
Kitchen/Living 2	4	2700	1892	N	0	Yes
Kitchen/Living 2	4	2700	1032	VNW	0	Yes
Kitchen/Living 2	4	2700	1887	N	0	Yes
Kitchen/Living 2	4	2700	4333	W	0	Yes
Kitchen/Living 2	4	2700	1603	W	0	Yes
Kitchen/Living 2	4	2700	4930	S	1729	Yes
Kitchen/Living 2	5	2700	11584	E	0	No
Stair	4	2700	5467	W	0	Yes
Bedroom 4	4	2700	392	NNE	0	Yes
Bedroom 4	4	2700	1008	E	0	Yes
Bedroom 4	4	2700	1921	N	0	Yes
Bedroom 4	4	2700	1031	VNW	0	Yes
Bedroom 4	4	2700	1857	N	0	Yes
Bedroom 4	4	2700	2987	W	0	No
Bedroom 4	5	2700	2992	E	0	No
Corridor	4	2700	8490	W	0	Yes
Corridor	4	2700	1883	S	0	Yes

\* Refer to glossary.

## NatHERS Certificate

7.5 Star Rating as of 22 May 2024

Bathroom	5	2700	2354	E	0	No
Laundry	5	2700	1729	E	0	No
Bedroom 9	4	2700	652	S	0	Yes
Bedroom 9	4	2700	1664	S	0	Yes
Bedroom 9	4	2700	560	S	0	Yes
Bedroom 9	5	2700	4176	E	0	No
Bedroom 10	6	2900	3199	N	2106	Yes
Bedroom 10	6	2900	3942	S	0	No
Bedroom 10	5	2900	7131	E	0	No
Ensuite	4	2900	1566	NNE	0	Yes
Ensuite	4	2900	2868	W	0	Yes
Ensuite	4	2900	1045	E	3155	Yes
Stairs	4	2900	2039	W	0	Yes
Stairs	6	2900	3196	W	0	Yes
Stairs	6	2900	906	S	0	No

## Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	97 Alma Road - WI-M1	39.3	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)
2	97 Alma Road - WI-L31	97.5	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 1	FR5 - CSOG: Slab on Ground	3.2	Enclosed	R0.0	none
Shared 1	FR5 - CSOG: Slab on Ground	2307.7	Enclosed	R0.0	none
Stairs	FR5 - CSOG: Slab on Ground	0.8	Enclosed	R0.0	Timber
Stairs	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 400mm concrete slab	53.6	Enclosed	R3.2	Timber
Stair	FR5 - 400mm concrete slab	4.7	Enclosed	R3.2	Carpet
Bedroom 4	97Alma - Timber Flooring	5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	11.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	9.8	Enclosed	R0.0	Carpet
Corridor	97Alma - Timber Flooring	6.2	Enclosed	R0.0	Carpet
Bathroom	97Alma - Timber Flooring	6.9	Enclosed	R0.0	Tiles
Laundry	97Alma - Timber Flooring	4.9	Enclosed	R0.0	Tiles
Bedroom 9	97Alma - Timber Flooring	2.5	Enclosed	R0.0	Carpet
Bedroom 9	97Alma - Timber Flooring	9.6	Enclosed	R0.0	Carpet
Bedroom 10	97Alma - Timber Flooring	26	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber Flooring	4.5	Enclosed	R0.0	Tiles
Stairs	97Alma - Timber Flooring	5.3	Enclosed	R0.0	Tiles

\* Refer to glossary.

**Ceiling type**

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 1	Plasterboard	R0.0	No
Shared 1	FR5 - 400mm concrete slab	R3.2	No
Shared 1	Plasterboard	R0.0	No
Stairs	Plasterboard	R0.0	No
Stairs	FR5 - 400mm concrete slab	R3.2	No
Kitchen/Living 2	97Alma - Timber Flooring	R0.0	No
Stair	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R5.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Corridor	97Alma - Timber Flooring	R0.0	No
Corridor	Plasterboard	R5.0	No
Bathroom	97Alma - Timber Flooring	R0.0	No
Laundry	97Alma - Timber Flooring	R0.0	No
Bedroom 9	97Alma - Timber Flooring	R0.0	No
Bedroom 9	Plasterboard	R5.0	No
Bedroom 10	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Stairs	Plasterboard	R8.3	No

**Ceiling penetrations\***

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs	2	Downlights	80	Sealed
Kitchen/Living 2	1	Exhaust Fans	200	Sealed
Kitchen/Living 2	21	Downlights	80	Sealed
Stair	2	Downlights	80	Sealed
Bedroom 4	6	Downlights	80	Sealed
Corridor	6	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Laundry	2	Downlights	80	Sealed
Bedroom 9	5	Downlights	80	Sealed
Bedroom 10	10	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed
Stairs	2	Downlights	80	Sealed

**Ceiling fans**

\* Refer to glossary.

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.



<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC11, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**61.7 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 107.6	suburban
Unconditioned* 5.1	<b>NatHERS climate zone</b>
Total 112.7	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>49.3</b>	<b>12.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://www.FR5.com.au).



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

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State and territory variations and additions to the NCC may also apply.

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Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-010-21 A	Opening 20	2700	4499	sliding	65.0	W	Yes
Kitchen/Living	THC-023-03 B	Opening 28	1800	2333	casement	30.0	S	No
Kitchen/Living	THC-023-03 B	Opening 34	1800	1462	casement	90.0	E	No

\* Refer to glossary.

Room	Window ID	Opening	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Type	SHGC	Orientation	Shade
Bedroom 1	THC-023-03 B	Opening 27	1400	2183	awning	30.0	W	No
Bedroom 2	THC-023-03 B	Opening 25	2400	1100	casement	60.0	E	No
Bedroom 3	THC-023-03 B	Opening 35	2400	1100	casement	60.0	S	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	1000	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
2	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
3	97 Alma Road - WE-M1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

## External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Stairs Stairs GF	1	2950	1222	N	0	No
Kitchen/Living	1	2950	6192	N	0	No
Kitchen/Living	2	2950	5239	W	0	Yes
Kitchen/Living	2	2950	11455	S	0	Yes
Kitchen/Living	2	2950	5217	E	0	Yes
Kitchen/Living	1	2950	3857	N	0	No
Bedroom 1	1	2850	2963	N	0	No
Bedroom 1	2	2850	5340	W	0	Yes
Bedroom 1	2	2850	2921	S	0	No
Ensuite	2	2850	1651	S	0	No
Bedroom 2	1	2850	2970	N	0	No
Bedroom 2	2	2850	2903	S	0	Yes
Bedroom 2	2	2850	5305	E	0	Yes
Stairs L1	1	2850	5355	N	0	No
Bedroom 3	3	2850	3639	S	0	No

## Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	62.7	

## Floor *type*

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Stairs Stairs GF	FR5 - 400mm concrete slab	1.1	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 400mm concrete slab	58.5	Enclosed	R0.0	Timber
Bedroom 1	97Alma - Timber flooring	15.7	Enclosed	R0.0	Carpet
Ensuite	97Alma - Timber flooring	5.1	Enclosed	R0.0	Tiles
Bedroom 2	97Alma - Timber flooring	15.6	Enclosed	R0.0	Carpet
Stairs L1	97Alma - Timber flooring	11.1	Enclosed	R0.0	Timber
Bedroom 3	97Alma - Timber flooring	11.3	Enclosed	R0.0	Carpet

## Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Stairs Stairs GF	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No
Bedroom 1	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No
Bedroom 2	Plasterboard	R8.3	No

\* Refer to glossary.

Stairs L1	Plasterboard	R8.3	No
Bedroom 3	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Stairs Stairs GF	1	Downlights	80	Sealed
Kitchen/Living	23	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Bedroom 1	6	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Bedroom 2	6	Downlights	80	Sealed
Stairs L1	5	Downlights	80	Sealed
Bedroom 3	5	Downlights	80	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorbance	Roof shade
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC12, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**103.5 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

Assessed floor area (m <sup>2</sup> )*		Exposure type
Conditioned*	105.4	suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
Total	110.9	21 Melbourne RO
Garage	-	

### Thermal performance

Heating	Cooling
<b>85.3</b>	<b>18.2</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-023-03 B	Opening 32	2300	1200	casement	90.0	E	No
Kitchen/Living 1	THC-010-21 A	Opening 11	2700	3031	sliding	65.0	W	Yes
Bedroom 3	THC-023-03 B	Opening 6	2100	1289	casement	90.0	E	No

\* Refer to glossary.

Bedroom 4	THC-023-03 B	Opening 15	1600	1988	awning	30.0	W	No
Master	THC-023-03 B	Opening 1	2400	1300	casement	60.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1000	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	97 Alma - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No

6	97 Alma Road - WE-M12	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
7	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
8	97 Alma Road - WI-L31	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	2900	12348	S	0	No
Shared 10	1	2900	1152	ESE	0	No
Shared 10	1	2900	23215	S	0	No
Shared 10	1	2900	12633	E	0	No
Shared 10	2	2900	8503	N	0	No
Shared 10	3	2900	4993	E	0	No
Shared 10	1	2900	36204	E	0	No
Shared 10	2	2900	26150	N	0	No
Shared 10	1	2900	55373	W	0	No
Kitchen/Living 1	4	2850	4156	E	749	Yes
Kitchen/Living 1	5	2850	11542	N	0	No
Kitchen/Living 1	4	2850	4141	W	0	Yes
Kitchen/Living 1	5	2850	11459	S	0	No
Bedroom 3	6	2550	760	E	0	Yes
Bedroom 3	6	2550	2228	E	0	Yes
Bedroom 3	5	2550	4017	S	0	No
Bedroom 4	7	2550	3011	W	0	No
Bedroom 4	5	2550	3603	S	0	No
Hall	6	2550	521	E	0	Yes
Hall	6	2550	505	E	0	Yes
Hall	8	2550	11446	N	0	No
Hall	7	2550	981	W	0	No
Bath	5	2550	3550	S	0	No
Ensuite	7	2550	2999	W	0	Yes
Ensuite	5	2550	1862	S	0	No
Master	5	2550	6834	S	0	No
Master	6	2550	4115	E	0	Yes
Master	8	2550	854	N	0	No
Stairs L2	8	2550	7867	N	0	No
Stairs L2	7	2550	939	W	0	Yes

**Internal wall type**

\* Refer to glossary.

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	72.9	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1559.2	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	47.7	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	12	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10.8	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	15.1	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	7	Enclosed	R0.0	Tiles
Ensuite	97Alma - Timber Flooring	5.5	Enclosed	R0.0	Tiles
Master	97Alma - Timber Flooring	21.4	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	7.5	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Hall	Plasterboard	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Ensuite	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	19	Downlights	80	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed
Hall	6	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed

Master	8	Downlights	80	Sealed
Stairs L2	3	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

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## Glossary

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THC13, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

**105.6 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.  
For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	104.9	suburban
Unconditioned*	5.5	<b>NatHERS climate zone</b>
Total	110.4	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>87.5</b>	<b>18.1</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au.](http://www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 11	2700	3017	sliding	65.0	W	Yes
Kitchen/Living 1	THC-023-03 B	Opening 32	2300	1200	casement	90.0	E	No
Bedroom 3	THC-023-03 B	Opening 6	2100	1289	casement	90.0	E	No

\* Refer to glossary.

Bedroom 4	THC-023-03 B	Opening 15	1600	1988	awning	30.0	W	No
Master	THC-023-03 B	Opening 1	2400	1300	casement	60.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1000	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	97 Alma - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
4	97 Alma Road - WP-L1	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
5	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

6	97 Alma Road - WE-M12	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
7	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No
8	97 Alma Road - WI-L31	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	2900	12348	S	0	No
Shared 10	1	2900	1152	ESE	0	No
Shared 10	1	2900	23215	S	0	No
Shared 10	1	2900	12633	E	0	No
Shared 10	2	2900	8503	N	0	No
Shared 10	3	2900	4993	E	0	No
Shared 10	1	2900	36204	E	0	No
Shared 10	2	2900	26150	N	0	No
Shared 10	1	2900	55373	W	0	No
Kitchen/Living 1	4	2850	11459	N	0	No
Kitchen/Living 1	5	2850	4141	W	0	Yes
Kitchen/Living 1	4	2850	11542	S	0	No
Kitchen/Living 1	5	2850	4156	E	749	Yes
Bedroom 3	4	2550	4017	N	0	No
Bedroom 3	6	2550	2228	E	0	Yes
Bedroom 3	6	2550	760	E	0	Yes
Bedroom 4	4	2550	3603	N	0	No
Bedroom 4	7	2550	3011	W	0	No
Hall	7	2550	981	W	0	No
Hall	8	2550	11446	S	0	No
Hall	6	2550	505	E	0	Yes
Hall	6	2550	521	E	0	Yes
Bath	4	2550	3550	N	0	No
Ensuite	4	2550	1862	NNE	0	No
Ensuite	7	2550	2999	W	0	Yes
Master	8	2550	854	S	0	No
Master	6	2550	4115	E	0	Yes
Master	4	2550	6834	N	0	No
Stairs L2	7	2550	939	W	0	Yes
Stairs L2	8	2550	7867	S	0	No

**Internal wall type**

\* Refer to glossary.

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	72.9	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1559.2	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	47.7	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	12	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10.8	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	15.1	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	7	Enclosed	R0.0	Tiles
Ensuite	97Alma - Timber Flooring	5.5	Enclosed	R0.0	Tiles
Master	97Alma - Timber Flooring	21.4	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	7.5	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Bedroom 4	Plasterboard	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Hall	Plasterboard	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Ensuite	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Kitchen/Living 1	19	Downlights	80	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed
Hall	6	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	2	Downlights	80	Sealed

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Master	8	Downlights	80	Sealed
Stairs L2	3	Downlights	80	Sealed

**Ceiling fans**

Location	Quantity	Diameter (mm)
No Data Available		

**Roof type**

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC14, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	123.9	suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
Total	128.6	21 Melbourne RO
Garage	-	



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

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**49.6 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>33.5</b>	<b>16.1</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### About the rating

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## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No

\* Refer to glossary.

Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1037	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

4	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	5165	E	640	Yes
Kitchen/Living 1	4	2850	11464	N	0	No
Kitchen/Living 1	3	2850	5182	W	0	Yes
Kitchen/Living 1	4	2850	11425	S	0	No
Bedroom 3	3	2700	3851	E	0	Yes
Bedroom 3	5	2700	2979	N	0	Yes
Bedroom 3	4	2700	3021	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Bedroom 4	4	2700	3767	N	0	No
Hall	4	2700	5613	S	0	No
Bath	4	2700	1818	N	0	No
Double 7	4	2700	2580	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	4	2700	2595	S	0	No
Master	3	2550	2089	E	0	Yes
Master	5	2550	3142	N	0	Yes
Master	5	2550	1263	E	0	Yes
Master	4	2550	5706	N	0	No
Master	5	2550	5122	W	0	No
Master	4	2550	1320	S	0	No
Stairs L2	4	2550	4394	S	0	No
Ensuite	4	2550	2915	S	0	No
Ensuite	3	2550	1619	E	0	Yes

**Internal wall type**

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	Plasterboard	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Double 7	97Alma - Timber Flooring	R0.0	No
Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed
Hall	5	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

8.1 Star Rating as of 22 May 2024

Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC15, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



**45.6 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	124.1	suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
Total	128.8	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>32.5</b>	<b>13.1</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting \[www.FR5.com.au\]\(http://www.FR5.com.au\).](#)



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes

\* Refer to glossary.

Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	994	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

3	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	11425	N	0	No
Kitchen/Living 1	4	2850	5182	W	0	Yes
Kitchen/Living 1	3	2850	11464	S	0	No
Kitchen/Living 1	4	2850	5165	E	640	Yes
Bedroom 3	3	2700	3021	N	0	No
Bedroom 3	5	2700	2979	S	0	Yes
Bedroom 3	4	2700	3851	E	0	Yes
Bedroom 4	3	2700	3767	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Hall	3	2700	5613	N	0	No
Bath	3	2700	1818	S	0	No
Double 7	3	2700	2595	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	3	2700	2580	S	0	No
Master	3	2550	1320	N	0	No
Master	5	2550	5122	W	0	No
Master	3	2550	5706	S	0	No
Master	5	2550	1263	E	0	Yes
Master	5	2550	3142	S	0	Yes
Master	4	2550	2089	E	0	Yes
Stairs L2	3	2550	4394	N	0	No
Ensuite	4	2550	1619	E	0	Yes
Ensuite	3	2550	2915	N	0	No

Internal wall *type*

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
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\* Refer to glossary.

1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Double 7	97Alma - Timber Flooring	R0.0	No
Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

8.3 Star Rating as of 22 May 2024

Hall	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed: Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

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## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC16, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	123.9	suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
Total	128.6	21 Melbourne RO
Garage	-	



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	gary@giw.com.au
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to; insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.



**50.1 MJ/m<sup>2</sup>**

Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>35.7</b>	<b>14.4</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No

\* Refer to glossary.

Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1037	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

4	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	5165	E	640	Yes
Kitchen/Living 1	4	2850	11464	N	0	No
Kitchen/Living 1	3	2850	5182	W	0	Yes
Kitchen/Living 1	4	2850	11425	S	0	No
Bedroom 3	3	2700	3851	E	0	Yes
Bedroom 3	5	2700	2979	N	0	Yes
Bedroom 3	4	2700	3021	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Bedroom 4	4	2700	3767	N	0	No
Hall	4	2700	5613	S	0	No
Bath	4	2700	1818	N	0	No
Double 7	4	2700	2580	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	4	2700	2595	S	0	No
Master	3	2550	2089	E	0	Yes
Master	5	2550	3142	N	0	Yes
Master	5	2550	1263	E	0	Yes
Master	4	2550	5706	N	0	No
Master	5	2550	5122	W	0	No
Master	4	2550	1320	S	0	No
Stairs L2	4	2550	4394	S	0	No
Ensuite	4	2550	2915	S	0	No
Ensuite	3	2550	1619	E	0	Yes

**Internal wall type**

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	Plasterboard	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
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Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed
Hall	5	Downlights	80	Sealed

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## NatHERS Certificate

8.1 Star Rating as of 22 May 2024

Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

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<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THC17, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	124.1	suburban
Unconditioned*	4.7	<b>NatHERS climate zone</b>
Total	128.8	21 Melbourne RO
Garage	-	

### Thermal performance

Heating	Cooling
<b>32.6</b>	<b>13</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://www.FR5.com.au).



### Accredited assessor

<b>Name</b>	Gary Wertheimer
<b>Business name</b>	GIW Environmental Solutions
<b>Email</b>	<a href="mailto:gary@giw.com.au">gary@giw.com.au</a>
<b>Phone</b>	0390445111
<b>Accreditation No.</b>	DMN/10/2024
<b>Assessor Accrediting Organisation</b>	Design Matters National
<b>Declaration of interest</b>	Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes

\* Refer to glossary.

Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	994	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

3	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	11425	N	0	No
Kitchen/Living 1	4	2850	5182	W	0	Yes
Kitchen/Living 1	3	2850	11464	S	0	No
Kitchen/Living 1	4	2850	5165	E	640	Yes
Bedroom 3	3	2700	3021	N	0	No
Bedroom 3	5	2700	2979	S	0	Yes
Bedroom 3	4	2700	3851	E	0	Yes
Bedroom 4	3	2700	3767	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Hall	3	2700	5613	N	0	No
Bath	3	2700	1818	S	0	No
Double 7	3	2700	2595	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	3	2700	2580	S	0	No
Master	3	2550	1320	N	0	No
Master	5	2550	5122	W	0	No
Master	3	2550	5706	S	0	No
Master	5	2550	1263	E	0	Yes
Master	5	2550	3142	S	0	Yes
Master	4	2550	2089	E	0	Yes
Stairs L2	3	2550	4394	N	0	No
Ensuite	4	2550	1619	E	0	Yes
Ensuite	3	2550	2915	N	0	No

Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
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\* Refer to glossary.

1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Double 7	97Alma - Timber Flooring	R0.0	No
Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

8.3 Star Rating as of 22 May 2024

Hall	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed: Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC18, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 123.9	suburban
Unconditioned* 4.7	<b>NatHERS climate zone</b>
Total 128.6	21 Melbourne RO
Garage -	



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

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**50.3 MJ/m<sup>2</sup>**  
Predicted annual energy load for heating and cooling based on standard occupancy assumptions.

For more information on your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Thermal performance

Heating	Cooling
<b>35.8</b>	<b>14.5</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au).



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Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No

\* Refer to glossary.

Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	1037	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
3	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

4	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	5165	E	640	Yes
Kitchen/Living 1	4	2850	11464	N	0	No
Kitchen/Living 1	3	2850	5182	W	0	Yes
Kitchen/Living 1	4	2850	11425	S	0	No
Bedroom 3	3	2700	3851	E	0	Yes
Bedroom 3	5	2700	2979	N	0	Yes
Bedroom 3	4	2700	3021	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Bedroom 4	4	2700	3767	N	0	No
Hall	4	2700	5613	S	0	No
Bath	4	2700	1818	N	0	No
Double 7	4	2700	2580	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	4	2700	2595	S	0	No
Master	3	2550	2089	E	0	Yes
Master	5	2550	3142	N	0	Yes
Master	5	2550	1263	E	0	Yes
Master	4	2550	5706	N	0	No
Master	5	2550	5122	W	0	No
Master	4	2550	1320	S	0	No
Stairs L2	4	2550	4394	S	0	No
Ensuite	4	2550	2915	S	0	No
Ensuite	3	2550	1619	E	0	Yes

**Internal wall type**

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)

\* Refer to glossary.

## Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	Plasterboard	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Double 7	97Alma - Timber Flooring	R0.0	No
Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed
Hall	5	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

8.1 Star Rating as of 22 May 2024

Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

### Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

## Glossary

<b>Annual energy load</b>	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
<b>Assessed floor area</b>	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
<b>Ceiling penetrations</b>	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
<b>Conditioned</b>	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
<b>Custom windows</b>	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
<b>Default windows</b>	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
<b>Entrance door</b>	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
<b>Exposure category - exposed</b>	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
<b>Exposure category - open</b>	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
<b>Exposure category - suburban</b>	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
<b>Exposure category - protected</b>	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
<b>Horizontal shading feature</b>	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

### Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way. Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

<b>National Construction Code (NCC) Class</b>	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at <a href="http://www.abcb.gov.au">www.abcb.gov.au</a> .
<b>Opening Percentage</b>	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
<b>Provisional value</b>	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at <a href="http://www.nathers.gov.au">www.nathers.gov.au</a>
<b>Reflective wrap</b> (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
<b>Roof window</b>	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
<b>Shading device</b>	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
<b>Shading features</b>	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
<b>Solar heat gain coefficient (SHGC)</b>	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
<b>Skylight</b> (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
<b>U-value</b>	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
<b>Unconditioned</b>	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
<b>Vertical shading features</b>	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



# Nationwide House Energy Rating Scheme

## NatHERS Certificate

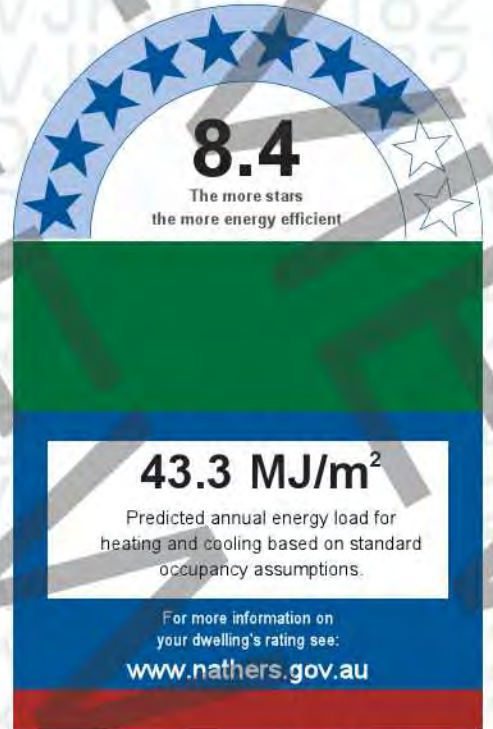
Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)

### Property

**Address** THC19, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -



### Construction and environment

Assessed floor area (m <sup>2</sup> )*	Exposure type
Conditioned* 124.1	suburban
Unconditioned* 4.7	<b>NatHERS climate zone</b>
Total 128.8	21 Melbourne RO
Garage -	

### Thermal performance

Heating	Cooling
<b>30.6</b>	<b>12.7</b>
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** gary@giw.com.au  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49
THC-033-07 B	EC45TB Fixed Window TPS Spacer DG 6ET/12Ar/6	2.09	0.51	0.48	0.54

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 1	THC-010-21 A	Opening 11	2200	4100	sliding	45.0	W	Yes

\* Refer to glossary.

Kitchen/Living 1	THC-023-03 B	Opening 15	2000	1330	casement	90.0	E	No
Bedroom 3	THC-023-03 B	Opening 6	1900	1330	casement	90.0	E	No
Bedroom 4	THC-023-03 B	Opening 15	1900	1100	casement	90.0	E	No
Double 7	THC-033-07 B	Opening 6	1500	980	fixed	0.0	W	No
Master	THC-023-03 B	Opening 1	1500	3000	casement	30.0	W	No
Master	THC-023-03 B	Opening 29	2300	1300	casement	60.0	E	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
Velux:VEL-011-01 W	VELUX FS - Fixed Skylight DG 3mm LoE 366 / 8.5mm Argon Gap / 5.36mm Clear La	2.58	0.24	0.23	0.25

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
Ensuite	Velux:VEL-011-01 W	Element 1	0.0	1	N	None	None

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Skylight shaft reflectance
No Data Available							

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living 1	2400	994	100.0	E

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	97 Alma Road - Retaining	0.5	Medium		No
2	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No

3	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
5	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared 10	1	3660	26616	S	0	No
Shared 10	1	3660	54875	E	0	No
Shared 10	2	3660	26389	N	0	No
Shared 10	1	3660	55082	W	0	No
Kitchen/Living 1	3	2850	11425	N	0	No
Kitchen/Living 1	4	2850	5182	W	0	Yes
Kitchen/Living 1	3	2850	11464	S	0	No
Kitchen/Living 1	4	2850	5165	E	640	Yes
Bedroom 3	3	2700	3021	N	0	No
Bedroom 3	5	2700	2979	S	0	Yes
Bedroom 3	4	2700	3851	E	0	Yes
Bedroom 4	3	2700	3767	S	0	No
Bedroom 4	5	2700	1318	E	0	Yes
Hall	3	2700	5613	N	0	No
Bath	3	2700	1818	S	0	No
Double 7	3	2700	2595	N	0	No
Double 7	5	2700	5185	W	0	No
Double 7	3	2700	2580	S	0	No
Master	3	2550	1320	N	0	No
Master	5	2550	5122	W	0	No
Master	3	2550	5706	S	0	No
Master	5	2550	1263	E	0	Yes
Master	5	2550	3142	S	0	Yes
Master	4	2550	2089	E	0	Yes
Stairs L2	3	2550	4394	N	0	No
Ensuite	4	2550	1619	E	0	Yes
Ensuite	3	2550	2915	N	0	No

Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
---------	-----------	------------------------	-----------------

\* Refer to glossary.

1	FR5 - Internal Plasterboard Stud Wall	44.8	
2	97 Alma Road - WI-L31	27.8	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R1.8)

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared 10	FR5 - CSOG: Slab on Ground	1457	Enclosed	R0.0	none
Kitchen/Living 1	FR5 - 400mm concrete slab	3.2	Enclosed	R3.2	Timber
Kitchen/Living 1	FR5 - 400mm concrete slab	55.9	Enclosed	R3.2	Timber
Bedroom 3	97Alma - Timber Flooring	11.5	Enclosed	R0.0	Carpet
Bedroom 4	97Alma - Timber Flooring	10	Enclosed	R0.0	Carpet
Hall	97Alma - Timber Flooring	11.7	Enclosed	R0.0	Timber
Bath	97Alma - Timber Flooring	6.4	Enclosed	R0.0	Tiles
Double 7	No Floor	13.4	Enclosed	R0.0	No Floor
Master	97Alma - Timber Flooring	31.2	Enclosed	R0.0	Carpet
Stairs L2	97Alma - Timber Flooring	4.2	Enclosed	R0.0	Timber
Ensuite	97Alma - Timber Flooring	4.7	Enclosed	R0.0	Tiles

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared 10	FR5 - 400mm concrete slab	R3.2	No
Shared 10	Plasterboard	R0.0	No
Kitchen/Living 1	Plasterboard	R5.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Kitchen/Living 1	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 3	97Alma - Timber Flooring	R0.0	No
Bedroom 4	97Alma - Timber Flooring	R0.0	No
Hall	97Alma - Timber Flooring	R0.0	No
Bath	97Alma - Timber Flooring	R0.0	No
Double 7	97Alma - Timber Flooring	R0.0	No
Double 7	Plasterboard	R8.3	No
Master	Plasterboard	R8.3	No
Stairs L2	Plasterboard	R8.3	No
Ensuite	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living 1	24	Downlights	80	Sealed
Kitchen/Living 1	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed
Bedroom 4	4	Downlights	80	Sealed

\* Refer to glossary.

## NatHERS Certificate

8.4 Star Rating as of 22 May 2024

Hall	5	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	3	Downlights	80	Sealed
Master	8	Downlights	80	Sealed
Stairs L2	2	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed

## Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

## Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab: Slab - Suspended Slab : 400mm: 400mm Suspended Slab	0.0	0.5	Medium
Ceil: Ceiling	0.0	0.5	Medium
Framed: Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

### About this report

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# Nationwide House Energy Rating Scheme

## NatHERS Certificate

Generated on 22 May 2024 using FirstRate5: 5.3.2b (3.21)



### Property

**Address** THC20, 97 Alma Rd, St Klida, VIC, 3182  
**Lot/DP** -  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** -  
**Prepared by** -

85.5 MJ/m<sup>2</sup>  
Predicted annual energy load for  
heating and cooling based on standard  
occupancy assumptions.  
For more information on  
your dwelling's rating see:  
[www.nathers.gov.au](http://www.nathers.gov.au)

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>		<b>Exposure type</b>
Conditioned*	139.2	suburban
Unconditioned*	1573.3	<b>NatHERS climate zone</b>
Total	1712.5	21 Melbourne RO
Garage	-	

### Thermal performance

<b>Heating</b>	<b>Cooling</b>
71.5	14
MJ/m <sup>2</sup>	MJ/m <sup>2</sup>

#### About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

#### Verification

To verify this certificate, scan the QR code or visit [When using either link, ensure you are visiting www.FR5.com.au](http://When using either link, ensure you are visiting www.FR5.com.au)



### Accredited assessor

**Name** Gary Wertheimer  
**Business name** GIW Environmental Solutions  
**Email** [gary@giw.com.au](mailto:gary@giw.com.au)  
**Phone** 0390445111  
**Accreditation No.** DMN/10/2024  
**Assessor Accrediting Organisation** Design Matters National  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to; insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at [www.abcb.gov.au](http://www.abcb.gov.au).

State and territory variations and additions to the NCC may also apply.

\* Refer to glossary.

## Certificate Check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

### Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page?  
Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

### Ceiling penetrations\*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

### Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

### Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

### Exposure\*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

### Provisional\* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

## Additional Notes

### Window and glazed door *type and performance*

#### Default\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

#### Custom\* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
THC-010-21 A	Series EC95 TB Sliding Door DG 4mmEnTech-12Ar-4mmClr	2.93	0.49	0.47	0.51
THC-023-03 B	Series EC35TB Awning Window DG 4ET-12Ar-4	2.51	0.47	0.45	0.49

### Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	THC-010-21 A	Opening 13	2700	4000	sliding	65.0	W	Yes
Kitchen/Living	THC-023-03 B	Opening 14	1850	1500	casement	90.0	ENE	No
Bedroom 7	THC-023-03 B	Opening 21	2400	1154	casement	90.0	E	No

\* Refer to glossary.

## NatHERS Certificate

6.9 Star Rating as of 22 May 2024

Bedroom 7	THC-023-03 B	Opening 17	2400	1105	casement	90.0	ENE	No
Void	THC-023-03 B	Opening 16	1400	830	awning	90.0	W	No
Bedroom 2	THC-023-03 B	Opening 22	2200	1154	casement	60.0	E	No
Bedroom 2	THC-023-03 B	Opening 19	2200	1022	casement	30.0	ENE	No
Bedroom 3	THC-023-03 B	Opening 18	2220	1844	awning	30.0	W	No

## Roof window type and performance value

### Default\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

### Custom\* roof windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

## Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Indoor shade
No Data Available							

## Skylight type and performance

Skylight ID	Skylight description
No Data Available	

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

## External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Kitchen/Living	2400	1000	100.0	E
Day 8	2100	817	100.0	W

## External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
2	97 Alma Road - Retaining	0.5	Medium		No
3	FR5 - Brick Veneer	0.5	Medium		No
4	97 Alma Road - WE-M11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m <sup>3</sup> ) (R2.7)	No

\* Refer to glossary.

5	97 Alma Road - WP-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8); Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.8)	No
6	97 Alma Road - WE-L11	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

**External wall schedule**

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Shared Carpark	1	3000	26735	N	0	No
Shared Carpark	2	3000	55229	W	0	No
Shared Carpark	2	3000	12300	S	0	No
Shared Carpark	2	3000	1172	E	0	No
Shared Carpark	2	3000	23273	S	0	No
Shared Carpark	2	3000	12694	E	0	No
Shared Carpark	1	3000	8648	N	0	No
Shared Carpark	1	3000	4909	E	0	No
Shared Carpark	3	3000	276	N	0	Yes
Shared Carpark	2	3000	36458	E	0	No
Kitchen/Living	4	2700	4672	N	0	Yes
Kitchen/Living	4	2400	5746	N	0	Yes
Kitchen/Living	4	2700	5115	W	0	Yes
Kitchen/Living	5	2700	11422	S	0	No
Kitchen/Living	4	2700	3016	E	0	Yes
Kitchen/Living	4	2700	2371	ENE	0	Yes
Ensuite	4	2550	1823	N	0	No
WIR	4	2550	3461	N	0	No
Bedroom 7	4	2550	3054	E	0	Yes
Bedroom 7	4	2550	2358	ENE	0	Yes
Bedroom 7	4	2550	2280	N	0	Yes
Bedroom 7	5	2550	3300	S	0	No
Void	4	2550	2553	N	0	Yes
Void	4	2550	5214	W	0	No
Void	5	2550	2595	S	0	No
Stairwell / FF Landing	5	2550	5428	S	0	No
Bedroom 2	4	2500	2979	E	0	Yes
Bedroom 2	4	2500	2381	ENE	0	Yes
Bedroom 2	4	2500	2274	N	0	Yes
Bedroom 2	5	2500	3269	S	0	No
Bathroom	4	2400	1655	N	0	No
Bedroom 3	4	2400	3618	N	0	No

\* Refer to glossary.

Bedroom 3	6	2500	2961	W	0	Yes
Day 8	6	2400	2127	W	0	Yes
Day 8	5	2400	5433	S	0	No

### Internal wall type

Wall ID	Wall type	Area (m <sup>2</sup> )	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	84.8	

### Floor type

Location	Construction	Area (m <sup>2</sup> )	Sub-floor ventilation	Added insulation (R-value)	Covering
Shared Carpark	FR5 - CSOG: Slab on Ground	375.9	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	281.1	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	623.8	Enclosed	R0.0	none
Shared Carpark	FR5 - CSOG: Slab on Ground	291	Enclosed	R0.0	none
Kitchen/Living	FR5 - 300mm concrete slab	29.5	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 300mm concrete slab	2.2	Enclosed	R0.0	Timber
Kitchen/Living	FR5 - 300mm concrete slab	26	Enclosed	R3.2	Timber
Ensuite	97Alma - Timber flooring	5.4	Enclosed	R0.0	Tiles
WIR	97Alma - Timber flooring	8	Enclosed	R0.0	Tiles
Bedroom 7	97Alma - Timber flooring	15.9	Enclosed	R0.0	Carpet
Void	No Floor	9.2	Enclosed	R0.0	No Floor
Void	No Floor	4.1	Enclosed	R0.0	No Floor
Laundry	97Alma - Timber flooring	1.4	Enclosed	R0.0	Tiles
Stairwell / FF Landing	97Alma - Timber flooring	11.9	Enclosed	R5.0	Timber
Bedroom 2	97Alma - Timber flooring	15.8	Enclosed	R0.0	Carpet
Bathroom	97Alma - Timber flooring	4.9	Enclosed	R0.0	Tiles
Bedroom 3	97Alma - Timber flooring	10.7	Enclosed	R0.0	Carpet
Day 8	97Alma - Timber flooring	11.5	Enclosed	R0.0	Timber

### Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	FR5 - 300mm concrete slab	R0.0	No
Shared Carpark	FR5 - 300mm concrete slab	R3.2	No
Shared Carpark	Plasterboard	R0.0	No
Shared Carpark	Plasterboard	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R5.0	No
Kitchen/Living	97Alma - Timber flooring	R0.0	No

Kitchen/Living	97Alma - Timber flooring	R0.0	No
Kitchen/Living	97Alma - Timber flooring	R5.0	No
Ensuite	97Alma - Timber flooring	R0.0	No
WIR	97Alma - Timber flooring	R0.0	No
Bedroom 7	97Alma - Timber flooring	R0.0	No
Void	Plasterboard	R5.0	No
Void	Plasterboard	R5.0	No
Laundry	97Alma - Timber flooring	R0.0	No
Stairwell / FF Landing	97Alma - Timber flooring	R0.0	No
Stairwell / FF Landing	97Alma - Timber flooring	R0.0	No
Bedroom 2	Plasterboard	R8.3	No
Bathroom	Plasterboard	R8.3	No
Bedroom 3	Plasterboard	R8.3	No
Day 8	Plasterboard	R8.3	No

### Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Kitchen/Living	21	Downlights	80	Sealed
Ensuite	2	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
WIR	3	Downlights	80	Sealed
Bedroom 7	6	Downlights	80	Sealed
Laundry	1	Exhaust Fans	200	Sealed
Laundry	1	Downlights	80	Sealed
Bedroom 2	6	Downlights	80	Sealed
Bathroom	2	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Slab:Slab - Suspended Slab : 250mm: 250mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.5	Medium

## Explanatory Notes

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Appendix C: Preliminary Part J1.5 Façade Calculator.

## J1.5 Façade Calculator

Address	97 Alma Road, St Kilda
Climate Zone	6
Building Classification	Class 6
Level	GF

	North	East	South	West	Internal
Façade area (m2)	13.3	0.0	0.0	0.0	0.0

Number of Rows

Window No.	Orientation	Height (m)	Dimensions		Shading (m)	
			Width (m)	Area (m2)	P	H
North	North	2.2	1.8	3.96	1	2.7
North	North	2.5	2.8	7	1	2.7

### RESULTS

Method 1	U-Value	SHGC	Min. Wall R-values
North	2.22	0.21	1
East	7.50	0.87	1.4
South	7.50	0.87	1.4
West	7.50	0.87	1.4
Internal	7.50		1.4

Method 2	U-Value	SHGC
Method 2	2.22	0.21

## Appendix D: Renewable Energy

### Inputs Solar PV

Peak Wattage of System	49.6 kWp
Azimuth	0 degrees
Inclination	10 degrees

### Outputs Solar PV

Electricity Produced per Year	66,471 kWh
No. Panels Required	124
Total Roof Area Required	257 sqm
Annual Carbon Savings	74,448 kg CO2

### Economic Output

Cost of System	74,400 \$
Annual Savings	13,294 \$
Simple Payback	6 Years

## Appendix E: Daylight Modelling

### Scope of Modelling

We have undertaken daylight modelling for 6 apartments assessing both living and bedroom areas. Apartment G.02, G.07, G.08, 1.01 and 1.12 have been selected with consideration of internal layout, inherent and adjacent building shading features. These apartments reflect a worst-case scenario with all other units anticipated to achieve the BESS performance requirements.

The development has been modelled under an existing scenario with a triple storey brick building on the east and a double storey brick dwelling on the west.

### Methodology

The daylight levels in apartments are benchmarked against the best practice requirements as set out under the Built Environment Sustainability Scorecard (BESS) tool: Indoor Environment Quality (IEQ) – Daylight Access Living Areas and Bedrooms. These levels are as follows:

*"Dwellings should achieve the following daylight factors (DF)*

- *80% of the total number of living rooms achieve a daylight factor greater than 1% to 90% of the floor area of each living area, including kitchens.*
- *80% of the total number of bedrooms achieve a daylight factor greater than 0.5% to 90% of the floor area in each room."*

The daylight modelling has been completed using the Radiance software suite, an accurate computing program used to predict light levels in a space prior to construction. Scene geometric data and material properties are interfaced into the Radiance software using DesignBuilder.

Daylight Factor has been calculated using a CIE uniform cloudy sky.

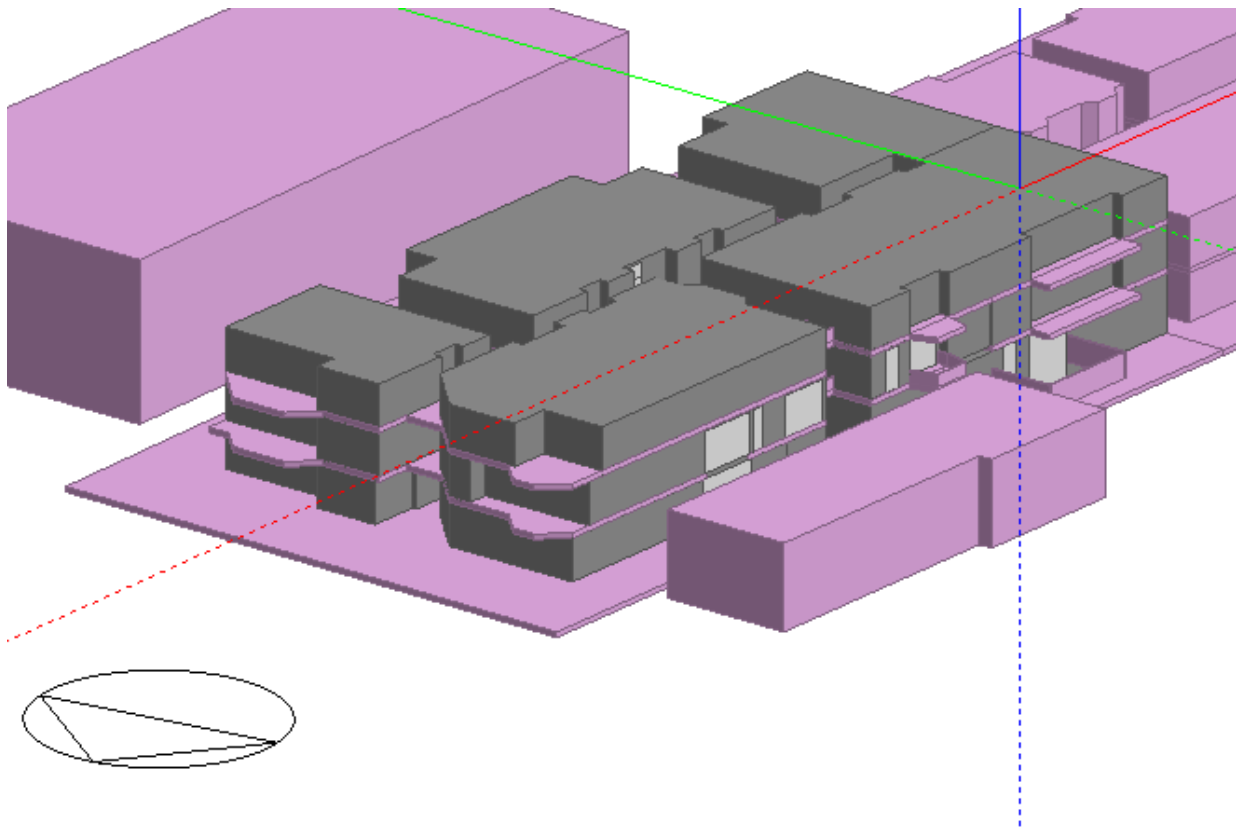


Figure 4 – DesignBuilder model of proposed and adjacent buildings

## Modelling Assumptions

The following assumptions have been made with respect to the modelling:

- Modelled window dimensions and shading structures are as depicted on the Architectural drawings.
- The glazing performance used for external windows is as follows:
  - Windows: double glazed, clear window with a total system VLT of 0.68.
  - Opaque windows: double glazed, opaque glazing is applied to 1.7m height with VLT of 0.50.
- The reflectance of all materials is in accordance with the below:
  - Floors: 0.5 (light timber or carpet)
  - External Walls: 0.4
  - Internal Walls: 0.8
  - Ceilings: 0.8
  - External tiles: 0.6
- Floor to ceiling height is in accordance with the below:
  - G.02, 1.01 and 1.12: 2.7m
  - G.07, G.08 and G.12: 3.8m
- Transient and unoccupied spaces such as corridors and wardrobes have been excluded from the modelled area.
- The reflectance of external buildings and structures is assumed to be 0.4.

## Daylight Results – Numerical

The daylight results for living areas of 97 Alma Road, St Kilda East can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF1 (m2)	% of floor area above DF1	Status
G.02 Living	31.9	15.0	47.0	Non-compliant
G.07 Living	23.1	21.9	94.6	Compliant
G.08 Living	24.1	24.0	99.5	Compliant
G.12 Living	30.6	30.5	99.6	Compliant
1.01 Living	27.3	22.0	80.5	Non-compliant
1.12 Living	27.5	22.1	80.2	Non-compliant

The daylight results for bedrooms of 97 Alma Road, St Kilda East can be summarised as follows:

Area	Floor Area (m2)	Floor Area above DF0.5 (m2)	% of floor area above DF0.5	Status
G.02 Bed 1	9.9	9.9	100.0	Compliant
G.02 Bed 2	10.2	0.1	1.2	Non-compliant
G.07 Bed 1	9.9	5.8	58.1	Non-compliant
G.08 Bed 1	9.9	9.9	100.0	Compliant
G.08 Bed 2	8.4	7.8	92.9	Compliant
G.12 Bed 1	10.9	10.8	98.8	Compliant
G.12 Bed 2	8.7	4.3	49.4	Non-compliant
1.01 Bed 1	10.2	10.2	100.0	Compliant
1.01 Bed 2	10.6	6.2	58.2	Non-compliant
1.12 Bed 1	8.3	8.3	100.0	Compliant
1.12 Bed 2	10.5	7.6	72.1	Non-compliant

### Daylight Results – Visual

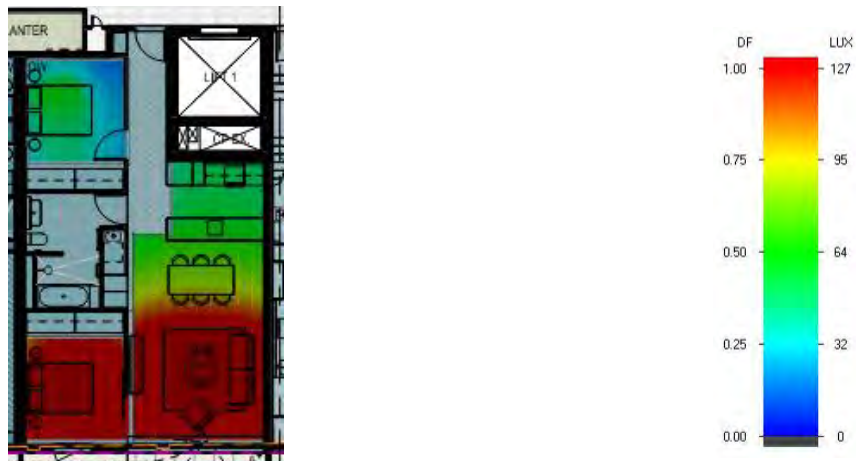


Figure 5 - Daylight Map – G.02

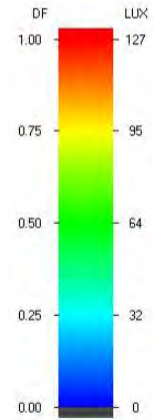


Figure 6 - Daylight Map – G.07

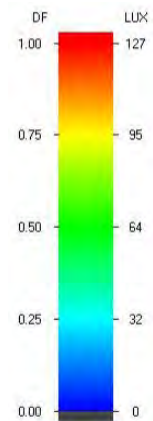


Figure 7 - Daylight Map – G.08

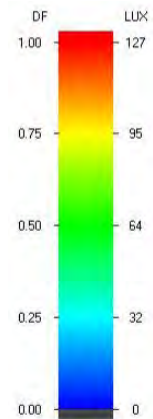


Figure 8 - Daylight Map – G.12



Figure 9 - Daylight Map -1.01



Figure 10 - Daylight Map – 1.12

### Overall Building Results

Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
G.01	1	1	2	1
G.02	1	0	2	1
G.03	1	1	1	0
G.04	1	1	3	3
G.05	1	1	2	2
G.06	1	1	1	0
G.07	1	1	1	0
G.08	1	1	2	2
G.09	1	1	1	1
G.10	1	1	3	3



Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
G.11	1	1	3	3
G.12	1	1	2	1
G.13	1	1	2	1
G.14	1	1	2	1
1.01	1	0	2	1
1.02	1	1	3	2
1.03	1	1	3	3
1.04	1	1	2	2
1.05	1	0	2	2
1.06	1	0	2	2
1.07	1	1	2	2
1.08	1	1	2	2
1.09	1	1	3	3
1.1	1	0	3	3
1.11	1	0	2	1
1.12	1	0	2	1
2.01	1	1	1	1
2.02	1	1	2	2
2.03	1	1	3	3
2.04	1	1	3	3
2.05	1	1	2	2
2.06	1	1	2	2
2.07	1	1	3	3
2.08	1	1	3	3
2.09	1	1	2	2
2.10	1	1	2	2
2.11	1	1	1	1
3.01	1	1	1	1
3.02	1	1	2	2
3.03	1	1	3	3
3.04	1	1	3	3

Apartment No.	Total Living Areas	Living Areas Compliant	Total Bedrooms	Bedrooms Compliant
3.05	1	1	2	2
3.06	1	1	1	1
3.07	1	1	1	1
3.08	1	1	2	2
3.09	1	1	2	2
3.10	1	1	1	1
<b>TOTAL</b>	<b>47</b>	<b>40</b>	<b>97</b>	<b>85</b>
<b>Percentage</b>	<b>85%</b>		<b>88%</b>	

### Conclusion

The development has been assessed and it has been determined that 85% of the living areas and 88% of bedrooms will achieve the daylight factors as prescribed under BESS and therefore the development will meet the BESS IEQ guidelines for daylight.

## Appendix F: BESS Assessment

# BESS Report

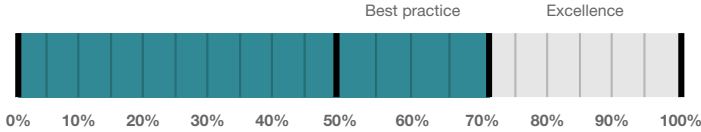
Built Environment Sustainability Scorecard



This BESS report outlines the sustainable design commitments of the proposed development at 97 Alma Rd St Kilda Victoria 3182. The BESS report and accompanying documents and evidence are submitted in response to the requirement for a Sustainable Design Assessment or Sustainability Management Plan at Port Phillip City Council.

Note that where a Sustainability Management Plan is required, the BESS report must be accompanied by a report that further demonstrates the development's potential to achieve the relevant environmental performance outcomes and documents the means by which the performance outcomes can be achieved.

## Your BESS Score



# 73%

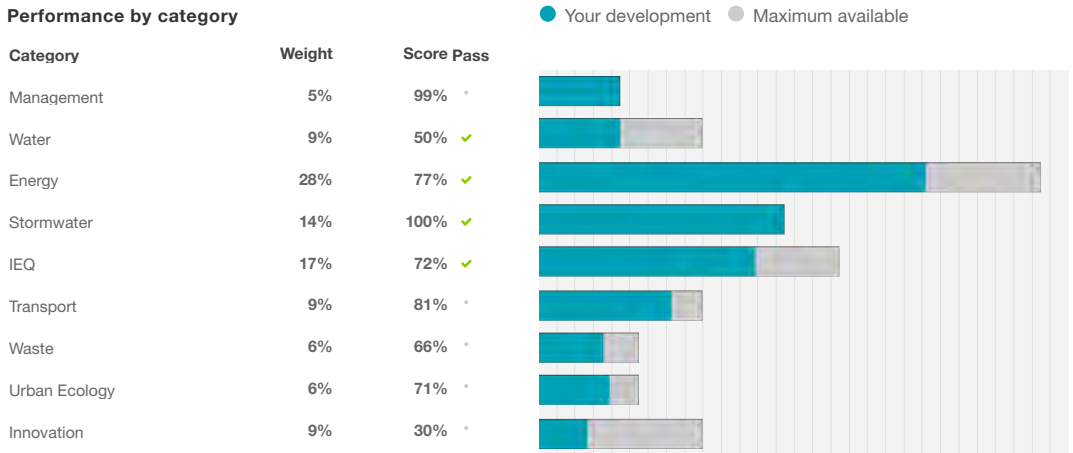
## Project details

**Address** 97 Alma Rd St Kilda Victoria 3182  
**Project no** 7571D69F-R4  
**BESS Version** BESS-6

**Site type** Mixed use development  
**Account** info@giv.com.au  
**Application no.**  
**Site area** 4,997.00 m<sup>2</sup>  
**Building floor area** 7,703.00 m<sup>2</sup>  
**Date** 22 May 2024  
**Software version** 1.8.1-B.407



## Performance by category



## Buildings

Name	Height	Footprint	% of total footprint
APT Building	4	4,392 m <sup>2</sup>	57%
TH Buildings	3	3,278 m <sup>2</sup>	42%

## Dwellings & Non Res Spaces

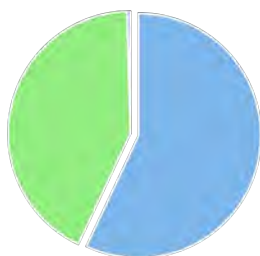
### Dwellings

Name	Quantity	Area	Building	% of total area
<b>Townhouse</b>				
TH - West Block	10	153 m <sup>2</sup>	TH Buildings	19%
TH - East Block	6	179 m <sup>2</sup>	TH Buildings	13%
TH - South Block	4	168 m <sup>2</sup>	TH Buildings	8%
<b>Total</b>	<b>20</b>	<b>3,278 m<sup>2</sup></b>	<b>42%</b>	
<b>Apartment</b>				
Three-Bedroom	13	128 m <sup>2</sup>	APT Building	21%
Two-Bedroom	19	83.5 m <sup>2</sup>	APT Building	20%
One-Bedroom	10	60.0 m <sup>2</sup>	APT Building	7%
Two-Bedroom Duplex	5	107 m <sup>2</sup>	APT Building	6%
<b>Total</b>	<b>47</b>	<b>4,392 m<sup>2</sup></b>	<b>57%</b>	

### Non-Res Spaces

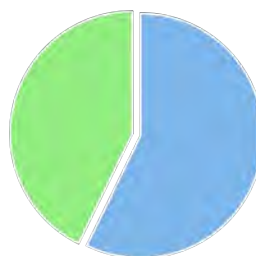
Name	Quantity	Area	Building	% of total area
<b>Shop</b>				
Shop 1	1	33.0 m <sup>2</sup>	APT Building	< 1%
<b>Total</b>	<b>1</b>	<b>33 m<sup>2</sup></b>	<b>&lt; 1%</b>	

Building Type composition



● Apartment ● Townhouse ● Shop

Building composition



● APT Building ● TH Buildings

## Supporting information

### Floorplans & elevation notes

Credit	Requirement	Response	Status
Management 3.1	Individual utility meters annotated		-
Management 3.2	Individual utility meters annotated		-
Management 3.3	Common area submeters annotated		-
Water 3.1	Water efficient garden annotated		-
Energy 3.1	Carpark with natural ventilation or CO monitoring system		-
Energy 3.3	External lighting sensors annotated		-
Energy 3.4	Clothes line annotated (if proposed)		-
Energy 4.2	Floor plans showing location of photovoltaic panels as described.		-
Energy 4.5	Floor plans showing location of photovoltaic panels as described.		-
Stormwater 1.1	Location of any stormwater management systems used in STORM or MUSIC modelling (e.g. Rainwater tanks, raingarden, buffer strips)		-
IEQ 1.1	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.2	If using BESS daylight calculator, references to floorplans and elevations showing window sizes and sky angles.		-
IEQ 1.5	Floor plans with compliant bedrooms marked		-
IEQ 2.1	Dwellings meeting the requirements for being 'naturally ventilated'		-
IEQ 2.2	Dwellings meeting the requirements for having 'natural cross flow ventilation'		-
IEQ 3.1	Glazing specification to be annotated		-
Transport 1.1	All nominated residential bicycle parking spaces		-
Transport 1.2	All nominated residential visitor bicycle parking spaces		-
Transport 1.4	All nominated non-residential bicycle parking spaces		-
Transport 1.5	All nominated non-residential visitor bicycle parking spaces		-
Transport 2.1	Location of electric vehicle charging infrastructure		-
Transport 2.3	All nominated motorbicycle parking spaces		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 1.1	Size and location of communal spaces		-
Urban Ecology 2.1	Vegetated areas		-
Urban Ecology 2.3	Green facade		-
Urban Ecology 2.4	Taps and floor waste on balconies / courtyards		-
Urban Ecology 3.1	Food production areas		-

### Supporting evidence

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Management 2.3a	Section J glazing assessment		-
Energy 1.1	Energy Report showing calculations of reference case and proposed buildings		-
Energy 3.1	Provide a written explanation of either the fully natural carpark ventilation or carbon monoxide monitoring, describing how these systems will work, what systems are required for them to be fully integrated and who will be responsible for their implementation throughout the design, procurement and operational phases of the building life.		-
Energy 3.5	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Energy 3.6	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-

Credit	Requirement	Response	Status
Energy 3.7	Provide a written description of the average lighting power density to be installed in the development and specify the lighting type(s) to be used.		-
Energy 4.2	Specifications of the solar photovoltaic system(s).		-
Energy 4.5	Specifications of the solar photovoltaic system(s).		-
Stormwater 1.1	STORM report or MUSIC model		-
IEQ 1.1	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.2	If using an alternative daylight modelling program, a short report detailing assumptions used and results achieved.		-
IEQ 1.4	A short report detailing assumptions used and results achieved.		-
IEQ 1.5	A list of compliant bedrooms		-
IEQ 2.1	A list of naturally ventilated dwellings		-
IEQ 2.2	A list of dwellings with natural cross flow ventilation		-
IEQ 3.1	Reference to floor plans or energy modelling showing the glazing specification (U-value and Solar Heat Gain Coefficient, SHGC)		-

## Credit summary

### Management Overall contribution 4.5%

		<b>99%</b>
1.1 Pre-Application Meeting		100%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential		100%
2.3 Thermal Performance Modelling - Non-Residential		50%
3.1 Metering - Residential		100%
3.2 Metering - Non-Residential		100%
3.3 Metering - Common Areas		100%
4.1 Building Users Guide		100%

### Water Overall contribution 9.0%

		<b>Minimum required 50%</b>	<b>50%</b>	<b>✓ Pass</b>
1.1 Potable water use reduction			40%	
3.1 Water Efficient Landscaping			100%	
4.1 Building Systems Water Use Reduction			N/A	✚ Scoped Out
N/A				

**Energy Overall contribution 27.5%**

		Minimum required 50%	77%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential			12%	
1.2 Thermal Performance Rating - Residential			59%	
2.1 Greenhouse Gas Emissions			100%	
2.2 Peak Demand			0%	
2.3 Electricity Consumption			100%	
2.4 Gas Consumption			N/A	✦ Scoped Out
No gas connection in use				
2.5 Wood Consumption			N/A	✦ Scoped Out
No wood heating system present				
3.1 Carpark Ventilation			100%	
3.2 Hot Water			100%	
3.3 External Lighting			100%	
3.4 Clothes Drying			100%	
3.5 Internal Lighting - Residential Single Dwelling			100%	
3.6 Internal Lighting - Residential Multiple Dwellings			100%	
3.7 Internal Lighting - Non-Residential			100%	
4.1 Combined Heat and Power (cogeneration / trigeneration)			N/A	✦ Scoped Out
No cogeneration or trigeneration system in use.				
4.2 Renewable Energy Systems - Solar			99%	
4.4 Renewable Energy Systems - Other			0%	⊘ Disabled
No other (non-solar PV) renewable energy is in use.				
4.5 Solar PV - Houses and Townhouses			100%	

**Stormwater Overall contribution 13.5%**

		Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment			100%	



**IEQ Overall contribution 16.5%**

		Minimum required 50%	72%	✓ Pass
1.1	Daylight Access - Living Areas			66%
1.2	Daylight Access - Bedrooms			66%
1.3	Winter Sunlight			0%
1.4	Daylight Access - Non-Residential			40% ✓ Achieved
1.5	Daylight Access - Minimal Internal Bedrooms			100%
2.1	Effective Natural Ventilation			100%
2.2	Cross Flow Ventilation			100%
2.3	Ventilation - Non-Residential			33% ✓ Achieved
3.1	Thermal comfort - Double Glazing			100%
3.2	Thermal Comfort - External Shading			0%
3.3	Thermal Comfort - Orientation			0%
3.4	Thermal comfort - Shading - Non-residential			100%
3.5	Thermal Comfort - Ceiling Fans - Non-Residential			0%
4.1	Air Quality - Non-Residential			100%

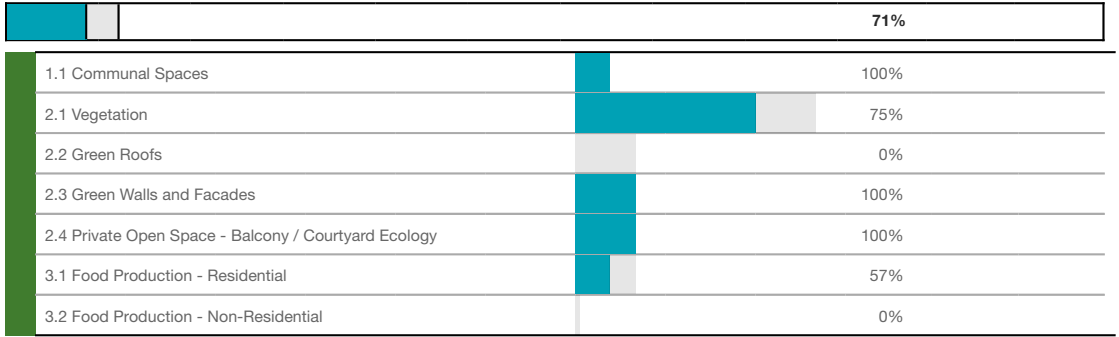
**Transport Overall contribution 9.0%**

		81%	
1.1	Bicycle Parking - Residential		100%
1.2	Bicycle Parking - Residential Visitor		100%
1.3	Bicycle Parking - Convenience Residential		0%
1.4	Bicycle Parking - Non-Residential		100%
1.5	Bicycle Parking - Non-Residential Visitor		100%
1.6	End of Trip Facilities - Non-Residential		0%
2.1	Electric Vehicle Infrastructure		100%
2.2	Car Share Scheme		0%
2.3	Motorbikes / Mopeds		100%

**Waste Overall contribution 5.5%**

		66%	
1.1	Construction Waste - Building Re-Use		0%
2.1	Operational Waste - Food & Garden Waste		100%
2.2	Operational Waste - Convenience of Recycling		100%

**Urban Ecology Overall contribution 5.5%**



**Innovation Overall contribution 9.0%**



## Credit breakdown

### Management Overall contribution 4%

<b>1.1 Pre-Application Meeting</b>	100%
Score Contribution	This credit contributes 42.0% towards the category score.
Criteria	Has an ESD professional been engaged to provide sustainability advice from schematic design to construction? AND Has the ESD professional been involved in a pre-application meeting with Council?
Question	Criteria Achieved ?
Project	Yes
<b>2.2 Thermal Performance Modelling - Multi-Dwelling Residential</b>	100%
Score Contribution	This credit contributes 27.9% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Townhouse	Yes
Apartment	Yes
<b>2.3 Thermal Performance Modelling - Non-Residential</b>	50%
Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	Has a preliminary facade assessment been undertaken in accordance with NCC2019 Section J1.5?
Question	Criteria Achieved ?
Shop	Yes
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?
Question	Criteria Achieved ?
Shop	No
<b>3.1 Metering - Residential</b>	100%
Score Contribution	This credit contributes 8.0% towards the category score.
Criteria	Have utility meters been provided for all individual dwellings?
Question	Criteria Achieved ?
Apartment	Yes
<b>3.2 Metering - Non-Residential</b>	100%
Score Contribution	This credit contributes 0.1% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Shop	Yes

<b>3.3 Metering - Common Areas</b>		100%
Score Contribution	This credit contributes 8.0% towards the category score.	
Criteria	Have all major common area services been separately submetered?	
Question	Criteria Achieved ?	
Apartment	Yes	
Shop	Yes	
<b>4.1 Building Users Guide</b>		100%
Score Contribution	This credit contributes 14.0% towards the category score.	
Criteria	Will a building users guide be produced and issued to occupants?	
Question	Criteria Achieved ?	
Project	Yes	

**Water** Overall contribution 4% Minimum required 50%

<b>Water Approach</b>	
What approach do you want to use for Water?:	Use the built in calculation tools
<b>Project Water Profile Question</b>	
Do you have a reticulated third pipe or an on-site water recycling system?:	No
Are you installing a swimming pool?:	No
Are you installing a rainwater tank?:	Yes
<b>Water fixtures, fittings and connections</b>	
<b>Showerhead:</b>	
One-Bedroom	4 Star WELS (>= 6.0 but <= 7.5)
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	
TH - South Block	
TH - West Block	
Shop 1	Scope out
<b>Bath:</b>	
One-Bedroom	Medium Sized Contemporary Bath
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	
TH - South Block	
TH - West Block	
Shop 1	Scope out
<b>Kitchen Taps: All</b>	>= 5 Star WELS rating
<b>Bathroom Taps: All</b>	>= 5 Star WELS rating
<b>Dishwashers: All</b>	>= 5 Star WELS rating
<b>WC: All</b>	>= 4 Star WELS rating
<b>Urinals: All</b>	Scope out
<b>Washing Machine Water Efficiency:</b>	
One-Bedroom	Occupant to Install
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	
TH - South Block	
TH - West Block	
Shop 1	Scope out

<b>Which non-potable water source is the dwelling/space connected to?:</b>	
One-Bedroom	APT RWT
Two-Bedroom	
Shop 1	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	TH RWT
TH - South Block	
TH - West Block	
<b>Non-potable water source connected to Toilets: All</b>	Yes
<b>Non-potable water source connected to Laundry (washing machine): All</b>	No
<b>Non-potable water source connected to Hot Water System: All</b>	No
<b>Rainwater Tanks</b>	
<b>What is the total roof area connected to the rainwater tank?:</b>	
APT RWT	1,270 m <sup>2</sup>
TH RWT	1,198 m <sup>2</sup>
<b>Tank Size:</b>	
APT RWT	32,000 Litres
TH RWT	30,000 Litres
<b>Irrigation area connected to tank:</b>	
APT RWT	-
TH RWT	-
<b>Is connected irrigation area a water efficient garden?:</b>	
APT RWT	-
TH RWT	-
<b>Other external water demand connected to tank?:</b>	
APT RWT	-
TH RWT	-

<b>1.1 Potable water use reduction</b>		40%
Score Contribution	This credit contributes 83.3% towards the category score.	
Criteria	What is the reduction in total potable water use due to efficient fixtures, appliances, rainwater use and recycled water use? To achieve points in this credit there must be >25% potable water reduction.	
Output	Reference	
Project	11467 kL	
Output	Proposed (excluding rainwater and recycled water use)	
Project	9438 kL	
Output	Proposed (including rainwater and recycled water use)	
Project	8416 kL	
Output	% Reduction in Potable Water Consumption	
Project	26 %	
Output	% of connected demand met by rainwater	
Project	100 %	
Output	How often does the tank overflow?	
Project	Very Often	
Output	Opportunity for additional rainwater connection	
Project	4234 kL	
<b>3.1 Water Efficient Landscaping</b>		100%
Score Contribution	This credit contributes 16.7% towards the category score.	
Criteria	Will water efficient landscaping be installed?	
Question	Criteria Achieved ?	
Project	Yes	
<b>4.1 Building Systems Water Use Reduction</b>		N/A  Scoped Out
This credit was scoped out	N/A	

**Energy** Overall contribution 21% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	No
<b>Dwellings Energy Approach</b>	
What approach do you want to use for Energy?:	Use the built in calculation tools
<b>Project Energy Profile Question</b>	
Are you installing any solar photovoltaic (PV) system(s)?:	Yes
Are you installing any other renewable energy system(s)?:	No
Gas supplied into building:	No gas connection
<b>Dwelling Energy Profiles</b>	
<b>Building:</b>	
One-Bedroom	APT Building
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	TH Buildings
TH - South Block	
TH - West Block	
<b>Below the floor is:</b>	
One-Bedroom	Another Occupancy
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	Ground or Carpark
TH - South Block	
TH - West Block	
<b>Above the ceiling is:</b>	
One-Bedroom	Another Occupancy
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	Outside
TH - South Block	
TH - West Block	
Exposed sides: All	2
<b>NatHERS Annual Energy Loads - Heat:</b>	
One-Bedroom	46.2 MJ/sqm
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	61.7 MJ/sqm
TH - South Block	
TH - West Block	



**NatHERS Annual Energy Loads - Cool:**

One-Bedroom	15.0 MJ/sqm
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	16.9 MJ/sqm
TH - South Block	
TH - West Block	

**NatHERS star rating:**

One-Bedroom	7.5
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	7.0
TH - South Block	
TH - West Block	

**Type of Heating System:**

One-Bedroom	D Reverse cycle space
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	E Reverse cycle ducted
TH - South Block	
TH - West Block	

**Heating System Efficiency:** All 3 Star

**Type of Cooling System:**

One-Bedroom	Refrigerative space
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	Refrigerative ducted
TH - South Block	
TH - West Block	

**Cooling System Efficiency:** All 3 Stars

**Type of Hot Water System:** All C Electric Heat Pump

**Is the hot water system shared by multiple dwellings?:** All Yes

**Clothes Line:**

One-Bedroom	B Shared clothesline
Two-Bedroom	
Two-Bedroom Duplex	
Three-Bedroom	
TH - East Block	D Private outdoor clothesline
TH - South Block	
TH - West Block	

**Clothes Dryer:** All Occupant to Install

**Non-Residential Building Energy Profile**

**Heating, Cooling & Comfort Ventilation - Electricity - reference fabric and reference services:** 1,000 kWh

Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and reference services:	1,000 kWh
Heating, Cooling & Comfort Ventilation - Electricity - proposed fabric and proposed services:	1,000 kWh
Heating - Wood - reference fabric and reference services:	-
Heating - Wood - proposed fabric and reference services:	-
Heating - Wood - proposed fabric and proposed services:	-
Hot Water - Electricity - Baseline:	1,000 kWh
Hot Water - Electricity - Proposed:	1,000 kWh
Lighting - Baseline:	1,000 kWh
Lighting - Proposed:	1,000 kWh
Peak Thermal Cooling Load - Baseline:	-
Peak Thermal Cooling Load - Proposed:	-

<b>Solar Photovoltaic systems</b>	
System Size (lesser of inverter and panel capacity):	
APT Solar	9.6 kW peak
TH Solar	40.0 kW peak
Orientation (which way is the system facing)?:	
APT Solar	North
TH Solar	North
Inclination (angle from horizontal):	
APT Solar	10.0 Angle (degrees)
TH Solar	10.0 Angle (degrees)
Which Building Class does this apply to?:	
APT Solar	Apartment
TH Solar	Townhouse

<b>1.1 Thermal Performance Rating - Non-Residential</b>	12%
Score Contribution	This credit contributes 0.2% towards the category score.
Criteria	What is the % reduction in heating and cooling energy consumption against the reference case (NCC 2019 Section J)?
Output	Total Improvement
Shop	0 %

<b>1.2 Thermal Performance Rating - Residential</b>	59%
Score Contribution	This credit contributes 30.7% towards the category score.
Criteria	What is the average NatHERS rating?
Output	Average NATHERS Rating (Weighted)
Townhouse	7.0 Stars
Apartment	7.5 Stars

**2.1 Greenhouse Gas Emissions**



100%

Score Contribution	This credit contributes 10.3% towards the category score.
Criteria	What is the % reduction in annual greenhouse gas emissions against the benchmark?
Output	Reference Building with Reference Services (BCA only)
Townhouse	222,399 kg CO2
Apartment	344,930 kg CO2
Shop	15.2 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Townhouse	76,983 kg CO2
Apartment	115,860 kg CO2
Shop	15.2 kg CO2
Output	% Reduction in GHG Emissions
Townhouse	65 %
Apartment	66 %
Shop	0 %

**2.2 Peak Demand**

0%

Score Contribution	This credit contributes 5.1% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?
Output	Peak Thermal Cooling Load - Baseline
Townhouse	274 kW
Apartment	574 kW
Output	Peak Thermal Cooling Load - Proposed
Townhouse	259 kW
Apartment	521 kW
Output	Peak Thermal Cooling Load - % Reduction
Townhouse	5 %
Apartment	9 %



<b>2.3 Electricity Consumption</b>		100%
Score Contribution	This credit contributes 10.3% towards the category score.	
Criteria	What is the % reduction in annual electricity consumption against the benchmark?	
Output	Reference	
Townhouse	218,038 kWh	
Apartment	338,167 kWh	
Shop	14.9 kWh	
Output	Proposed	
Townhouse	75,474 kWh	
Apartment	113,588 kWh	
Shop	14.9 kWh	
Output	Improvement	
Townhouse	65 %	
Apartment	66 %	
Shop	0 %	
<b>2.4 Gas Consumption</b>		N/A  Scoped Out
This credit was scoped out	No gas connection in use	
<b>2.5 Wood Consumption</b>		N/A  Scoped Out
This credit was scoped out	No wood heating system present	
<b>3.1 Carpark Ventilation</b>		100%
Score Contribution	This credit contributes 10.3% towards the category score.	
Criteria	If you have an enclosed carpark, is it: (a) fully naturally ventilated (no mechanical ventilation system) or (b) 40 car spaces or less with Carbon Monoxide monitoring to control the operation and speed of the ventilation fans?	
Question	Criteria Achieved ?	
Project	Yes	

<b>3.2 Hot Water</b>		100%
Score Contribution	This credit contributes 5.1% towards the category score.	
Criteria	What is the % reduction in annual energy consumption (gas and electricity) of the hot water system against the benchmark?	
Output	Reference	
Townhouse	300,588 MJ	
Apartment	552,581 MJ	
Shop	26.8 MJ	
Output	Proposed	
Townhouse	110,323 MJ	
Apartment	217,380 MJ	
Shop	26.8 MJ	
Output	Improvement	
Townhouse	63 %	
Apartment	60 %	
Shop	0 %	

<b>3.3 External Lighting</b>		100%
Score Contribution	This credit contributes 2.2% towards the category score.	
Criteria	Is the external lighting controlled by a motion detector?	
Question	Criteria Achieved ?	
Townhouse	Yes	

<b>3.4 Clothes Drying</b>		100%
Score Contribution	This credit contributes 5.1% towards the category score.	
Criteria	What is the % reduction in annual energy consumption (gas and electricity) from a combination of clothes lines and efficient driers against the benchmark?	
Output	Reference	
Townhouse	13,970 kWh	
Apartment	24,649 kWh	
Output	Proposed	
Townhouse	2,794 kWh	
Apartment	17,255 kWh	
Output	Improvement	
Townhouse	80 %	
Apartment	30 %	

<b>3.5 Internal Lighting - Residential Single Dwelling</b>		100%
Score Contribution	This credit contributes 2.2% towards the category score.	
Criteria	Does the development achieve a maximum illumination power density of 4W/sqm or less?	
Question	Criteria Achieved?	
Townhouse	Yes	

<b>3.6 Internal Lighting - Residential Multiple Dwellings</b>		100%
Score Contribution	This credit contributes 5.9% towards the category score.	
Criteria	Is the maximum illumination power density (W/m2) in at least 90% of the relevant building class at least 20% lower than required by Table J6.2a of the NCC 2019 Vol 1 (Class 2-9) and Clause 3.12.5.5 NCC 2019 Vol 2 (Class 1 & 10)?	
Question	Criteria Achieved ?	
Apartment	Yes	
<b>3.7 Internal Lighting - Non-Residential</b>		100%
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	Does the maximum illumination power density (W/m2) in at least 90% of the area of the relevant building class meet the requirements in Table J6.2a of the NCC 2019 Vol 1?	
Question	Criteria Achieved ?	
Shop	Yes	
<b>4.1 Combined Heat and Power (cogeneration / trigeneration)</b>		N/A  Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.	
<b>4.2 Renewable Energy Systems - Solar</b>		99%
Score Contribution	This credit contributes 3.0% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Apartment	11,634 kWh	
Output	% of Building's Energy	
Apartment	10 %	
<b>4.4 Renewable Energy Systems - Other</b>		0%  Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.	
<b>4.5 Solar PV - Houses and Townhouses</b>		100%
Score Contribution	This credit contributes 4.4% towards the category score.	
Criteria	What % of the estimated energy consumption of the building class it supplies does the solar power system provide?	
Output	Solar Power - Energy Generation per year	
Townhouse	48,473 kWh	
Output	% of Building's Energy	
Townhouse	64 %	

**Stormwater** Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:		Melbourne Water STORM tool
<b>1.1 Stormwater Treatment</b>		100%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	Has best practice stormwater management been demonstrated?	
Question	STORM score achieved	
Project	108	
Output	Min STORM Score	
Project	100	

**IEQ** Overall contribution 12% Minimum required 50%

<b>IEQ DTS</b>		
Use the BESS Deemed to Satisfy (Dts) method for IEQ?:	No	
<b>Dwellings IEQ Approach</b>		
What approach do you want to use for dwellings?:	Provide our own calculations	
<b>1.1 Daylight Access - Living Areas</b>		66%
Score Contribution	This credit contributes 18.1% towards the category score.	
Criteria	What % of living areas achieve a daylight factor greater than 1%	
Question	Percentage Achieved ?	
Apartment	85 %	
<b>1.2 Daylight Access - Bedrooms</b>		66%
Score Contribution	This credit contributes 18.1% towards the category score.	
Criteria	What % of bedrooms achieve a daylight factor greater than 0.5%	
Question	Percentage Achieved ?	
Apartment	88 %	
<b>1.3 Winter Sunlight</b>		0%
Score Contribution	This credit contributes 6.0% towards the category score.	
Criteria	Do 70% of dwellings receive at least 3 hours of direct sunlight in all Living areas between 9am and 3pm in mid-winter?	
Question	Criteria Achieved ?	
Apartment	No	
<b>1.4 Daylight Access - Non-Residential</b>	40%	✔ Achieved
Score Contribution	This credit contributes 0.3% towards the category score.	
Criteria	What % of the nominated floor area has at least 2% daylight factor?	
Question	Percentage Achieved?	
Shop	40 %	
<b>1.5 Daylight Access - Minimal Internal Bedrooms</b>		100%
Score Contribution	This credit contributes 6.0% towards the category score.	
Criteria	Do at least 90% of dwellings have an external window in all bedrooms?	
Question	Criteria Achieved ?	
Apartment	Yes	
<b>2.1 Effective Natural Ventilation</b>		100%
Score Contribution	This credit contributes 18.1% towards the category score.	
Criteria	What % of dwellings are effectively naturally ventilated?	
Question	Percentage Achieved?	
Apartment	100 %	



<b>2.2 Cross Flow Ventilation</b>		100%
Score Contribution	This credit contributes 4.5% towards the category score.	
Criteria	Are all habitable rooms designed to achieve natural cross flow ventilation?	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>2.3 Ventilation - Non-Residential</b>		33% <span style="color: green;">✔</span> Achieved
Score Contribution	This credit contributes 0.3% towards the category score.	
Criteria	What % of the regular use areas are effectively naturally ventilated?	
Question	Percentage Achieved?	
Shop	0 %	
Criteria	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668.2:2012?	
Question	What increase in outdoor air is available to regular use areas compared to the minimum required by AS 1668:2012?	
Shop	50 %	
Criteria	What CO2 concentrations are the ventilation systems designed to achieve, to monitor and to maintain?	
Question	Value	
Shop	-	
<b>3.1 Thermal comfort - Double Glazing</b>		100%
Score Contribution	This credit contributes 9.0% towards the category score.	
Criteria	Is double glazing (or better) used to all habitable areas?	
Question	Criteria Achieved ?	
Townhouse	Yes	
<b>3.2 Thermal Comfort - External Shading</b>		0%
Score Contribution	This credit contributes 4.5% towards the category score.	
Criteria	Is appropriate external shading provided to east, west and north facing glazing?	
Question	Criteria Achieved ?	
Townhouse	No	
<b>3.3 Thermal Comfort - Orientation</b>		0%
Score Contribution	This credit contributes 4.5% towards the category score.	
Criteria	Are at least 50% of living areas orientated to the north?	
Question	Criteria Achieved ?	
Townhouse	No	
<b>3.4 Thermal comfort - Shading - Non-residential</b>		100%
Score Contribution	This credit contributes 0.1% towards the category score.	
Criteria	What percentage of east, north and west glazing to regular use areas is effectively shaded?	
Question	Percentage Achieved?	
Shop	100 %	

<b>3.5 Thermal Comfort - Ceiling Fans - Non-Residential</b>		0%
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	What percentage of regular use areas in tenancies have ceiling fans?	
Question	Percentage Achieved?	
Shop	-	
<b>4.1 Air Quality - Non-Residential</b>		100%
Score Contribution	This credit contributes 10.6% towards the category score.	
Criteria	Do all paints, sealants and adhesives meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	
Criteria	Does all carpet meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	
Criteria	Does all engineered wood meet the maximum total indoor pollutant emission limits?	
Question	Criteria Achieved ?	
Project	Yes	

**Transport** Overall contribution 7%

<b>1.1 Bicycle Parking - Residential</b>		100%
Score Contribution	This credit contributes 23.2% towards the category score.	
Criteria	How many secure and undercover bicycle spaces are there per dwelling for residents?	
Question	Bicycle Spaces Provided ?	
Townhouse	20	
Apartment	47	
Output	Min Bicycle Spaces Required	
Townhouse	20	
Apartment	47	
<b>1.2 Bicycle Parking - Residential Visitor</b>		100%
Score Contribution	This credit contributes 23.2% towards the category score.	
Criteria	How many secure bicycle spaces are there per 5 dwellings for visitors?	
Question	Visitor Bicycle Spaces Provided ?	
Townhouse	4	
Apartment	10	
Output	Min Visitor Bicycle Spaces Required	
Townhouse	4	
Apartment	10	
<b>1.3 Bicycle Parking - Convenience Residential</b>		0%
Score Contribution	This credit contributes 6.7% towards the category score.	
Criteria	Are bike parking facilities for residents located at ground or entry level?	
Question	Criteria Achieved ?	
Apartment	No	
<b>1.4 Bicycle Parking - Non-Residential</b>		100%
Score Contribution	This credit contributes 0.1% towards the category score.	
Criteria	Have the planning scheme requirements for employee bicycle parking been exceeded by at least 50% (or a minimum of 2 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	Yes	
Question	Bicycle Spaces Provided ?	
Shop	2	
<b>1.5 Bicycle Parking - Non-Residential Visitor</b>		100%
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	Have the planning scheme requirements for visitor bicycle parking been exceeded by at least 50% (or a minimum of 1 where there is no planning scheme requirement)?	
Question	Criteria Achieved ?	
Shop	Yes	
Question	Bicycle Spaces Provided ?	
Shop	2	

<b>1.6 End of Trip Facilities - Non-Residential</b>		0%
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	Where adequate bicycle parking has been provided. Is there also: * 1 shower for the first 5 employee bicycle spaces plus 1 to each 10 employee bicycles spaces thereafter, * changing facilities adjacent to showers, and * one secure locker per employee bicycle space in the vicinity of the changing / shower facilities?	
Question	Number of showers provided ?	
Shop	-	
Question	Number of lockers provided ?	
Shop	-	
Output	Min Showers Required	
Shop	1	
Output	Min Lockers Required	
Shop	2	
<b>2.1 Electric Vehicle Infrastructure</b>		100%
Score Contribution	This credit contributes 23.3% towards the category score.	
Criteria	Are facilities provided for the charging of electric vehicles?	
Question	Criteria Achieved ?	
Project	Yes	
<b>2.2 Car Share Scheme</b>		0%
Score Contribution	This credit contributes 11.7% towards the category score.	
Criteria	Has a formal car sharing scheme been integrated into the development?	
Question	Criteria Achieved ?	
Project	No	
<b>2.3 Motorbikes / Mopeds</b>		100%
Score Contribution	This credit contributes 11.7% towards the category score.	
Criteria	Are a minimum of 5% of vehicle parking spaces designed and labelled for motorbikes (must be at least 5 motorbike spaces)?	
Question	Criteria Achieved ?	
Project	Yes	

**Waste** Overall contribution 4%

<b>1.1 - Construction Waste - Building Re-Use</b>		0%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used?	
Question	Criteria Achieved ?	
Project	No	
<b>2.1 - Operational Waste - Food &amp; Garden Waste</b>		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are facilities provided for on-site management of food and garden waste?	
Question	Criteria Achieved ?	
Project	Yes	
<b>2.2 - Operational Waste - Convenience of Recycling</b>		100%
Score Contribution	This credit contributes 33.3% towards the category score.	
Criteria	Are the recycling facilities at least as convenient for occupants as facilities for general waste?	
Question	Criteria Achieved ?	
Project	Yes	

**Urban Ecology** Overall contribution 4%

<b>1.1 Communal Spaces</b>		100%
Score Contribution	This credit contributes 6.7% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m <sup>2</sup> for each of the first 50 occupants * Additional 0.5m <sup>2</sup> for each occupant between 51 and 250 * Additional 0.25m <sup>2</sup> for each occupant above 251?	
Question	Common space provided	
Apartment	146 m <sup>2</sup>	
Shop	8.8 m <sup>2</sup>	
Output	Minimum Common Space Required	
Apartment	77 m <sup>2</sup>	
Shop	3 m <sup>2</sup>	
<b>2.1 Vegetation</b>		75%
Score Contribution	This credit contributes 46.7% towards the category score.	
Criteria	How much of the site is covered with vegetation, expressed as a percentage of the total site area?	
Question	Percentage Achieved ?	
Project	27 %	
<b>2.2 Green Roofs</b>		0%
Score Contribution	This credit contributes 11.7% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
<b>2.3 Green Walls and Facades</b>		100%
Score Contribution	This credit contributes 11.7% towards the category score.	
Criteria	Does the development incorporate a green wall or green façade?	
Question	Criteria Achieved ?	
Project	Yes	
<b>2.4 Private Open Space - Balcony / Courtyard Ecology</b>		100%
Score Contribution	This credit contributes 11.6% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?	
Question	Criteria Achieved ?	
Townhouse	Yes	
Apartment	Yes	

<b>3.1 Food Production - Residential</b>		57%
Score Contribution	This credit contributes 11.6% towards the category score.	
Criteria	What area of space per resident is dedicated to food production?	
Question	Food Production Area	
Townhouse	0.0 m <sup>2</sup>	
Apartment	27.0 m <sup>2</sup>	
Output	Min Food Production Area	
Townhouse	16 m <sup>2</sup>	
Apartment	27 m <sup>2</sup>	
<b>3.2 Food Production - Non-Residential</b>		0%
Score Contribution	This credit contributes 0.0% towards the category score.	
Criteria	What area of space per occupant is dedicated to food production?	
Question	Food Production Area	
Shop	-	
Output	Min Food Production Area	
Shop	1 m <sup>2</sup>	

**Innovation** Overall contribution 3%

<b>Innovations</b>		
<b>Description:</b>		
Carbon Neutral Commitment	NIL gas connection and all electric services. The proposed development will be established with a carbon neutral power agreement between developer, owner's corporation, and electrical retailer to provide GreenPower for all energy consumed by building (including communal areas, apartments and retail tenancies). It is the intent to maintain this agreement for a minimum of 10 years. Additionally, the development is committed to provide on-site renewable energy generation to meet minimum of 5% of electricity consumed by residents at the site per the Embedded Networks Review.	
ESD Verification	An ESD professional will be engaged throughout the design and construction process. The ESD professional will perform a minimum of 2 site inspections during the construction phase to ensure suitable implementation of the ESD initiatives. Any deficiencies compared to the endorsed SMP will be escalated to the project manager and resolved.	
<b>Points Targeted:</b>		
Carbon Neutral Commitment	2	
ESD Verification	1	
<b>1.1 Innovation</b>		30%
Score Contribution	This credit contributes 100.0% towards the category score.	
Criteria	What percentage of the Innovation points have been claimed (10 points maximum)?	

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