SUSTAINABLE MANAGEMENT PLAN

PROPOSED MIXED USE DEVELOPMENT

1 Brighton Road, St Kilda

GIW19200
Revision D

Prepared for:
Twenty20 Property Group Pty Ltd

14 October 2021

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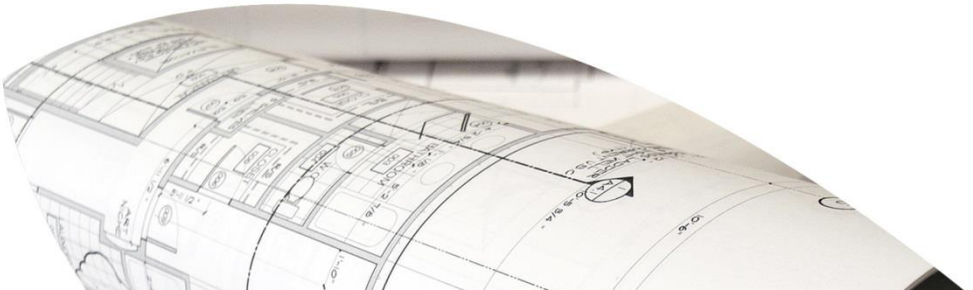

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Revision History

Revision Number	Date Issued	Author	Approved	Comments
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C	01/09/2020	IB	GW	Final
D	14/10/2021	IB/NP	GW	For Endorsement

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Contents

Introduction

Project Information

GIW Environmental Solutions Pty Ltd ("GIW") has been engaged by Twenty20 Property Group Pty Ltd to provide Environmentally Sustainable Design (ESD) consulting services for the proposed mixed use development at 1 Brighton Road, St Kilda.

The proposed development will include 34 apartments and 2 retail tenancies constructed over 7 levels plus basement carpark and will consist of the following:

- 25 x 2 bedroom apartments
- 9 x 3 bedroom apartments
- 336m^2 retail

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 City of Port Phillip Planning Scheme - Clause 22.13 Environmentally Sustainable Development.

Location

The site located at 1 Brighton Road, St Kilda has an approximate surface area of 911m^2 and is currently vacant. Distance from the site to Melbourne CBD is approximately 6.7km.

Figure 1 - Pre-existing sites at 1 Brighton Road, St Kilda.

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)

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

Responsibilities & Implementation

Twenty20 Property Group Pty Ltd 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:

- Bruce Henderson Architects – Job No. 40020 – TP-203-TP-204 Rev D; TP-205 Rev G; TP-206-TP-207 Rev E; TP-208-TP-210 Rev F; TP-211-TP-212 Rev E; TP-301-TP-302 Rev E; TP-401-TP-403 Rev D; TP-404 Rev A; TP-501-TP-502 Rev A.
- Municipal Association of Victoria - SDAPP Explained; Building Design for a Sustainable Future
- Built Environment Sustainability Scorecard (BESS)
- Green Star Design & As Built v1.1 Submission Guidelines
- CSIRO 1999, Urban Stormwater – Best Practise Environmental Management Guidelines
- City of Port Phillip - Planning Permit No. 665/2016

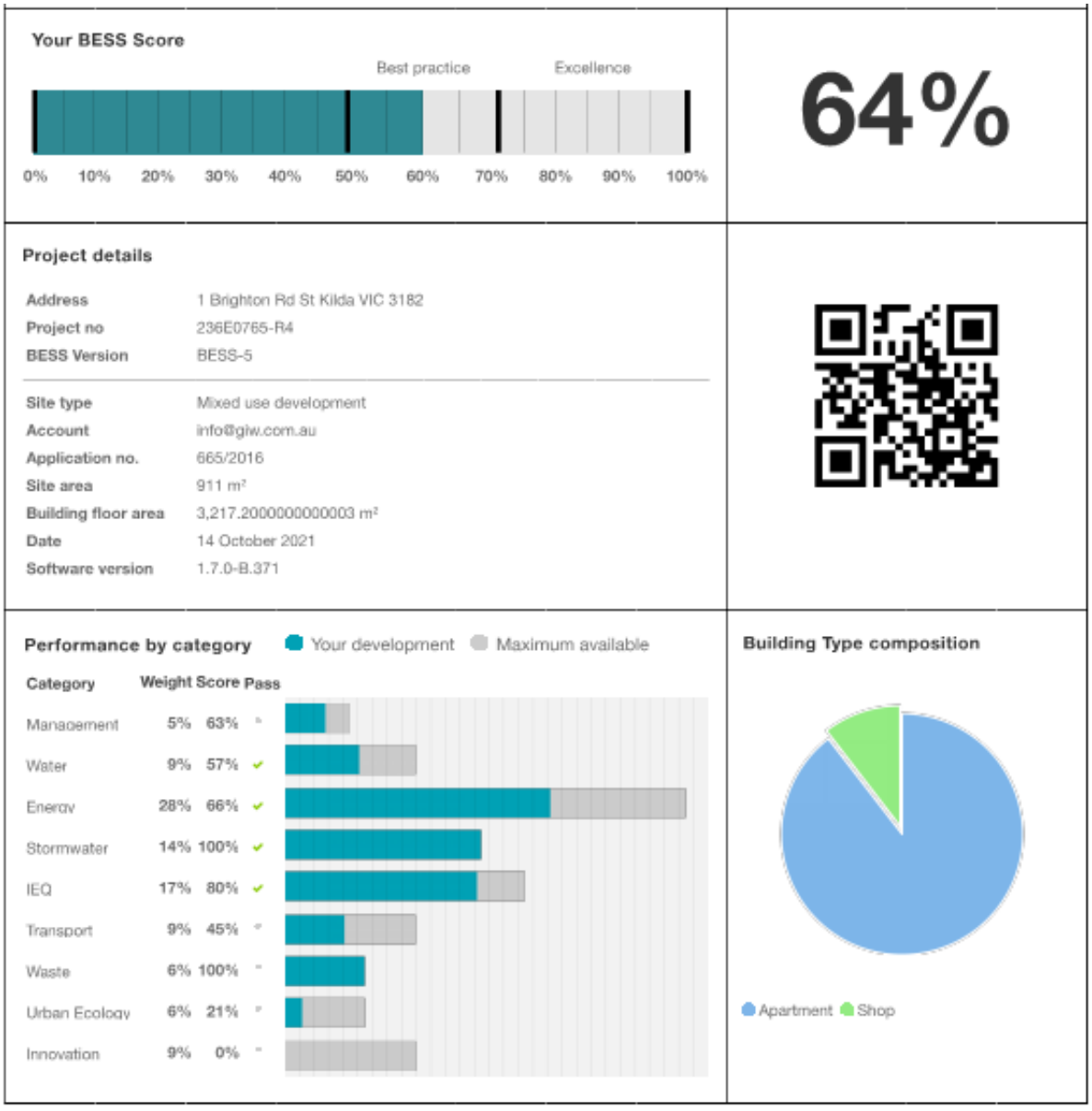
ESD Summary

The proposed mixed-use development at 1 Brighton Road, St Kilda will implement the following ESD initiatives:

1. The project achieves a total BESS score of 64% with no mandatory category (IEQ, Energy, Water, Stormwater) below 50%.
2. 62% (21 out of 34) of the development's apartments are naturally cross-ventilated.
3. The BESS built-in calculator has been applied to demonstrate that the proposed development will achieve an equivalent daylight result to the endorsed design.
4. The non-residential areas are achieving a 2% DF to 51% of the nominated area.
5. 74% (25 out of 34) of apartments achieve at least 3 hours of sunlight.
6. The development is to achieve a 7.0 Star average NatHERS Energy Rating result.
7. The non-residential areas aim to reduce heating and cooling energy consumption 10% below the reference case (BCA Section J).
8. The development is to utilise a centralised gas hot water system.
9. A 10kW Solar PV system is to be located on the roof of the proposed development.
10. Individual cold and hot water, electricity meters will be provided to the apartments and communal areas.
11. Water efficient fixtures are applied throughout.
12. A 15,000 litre rainwater tank will harvest rainwater from the upper and lower roof. This tank will be connected to all WCs.
13. A Melbourne STORM rating of 110% is achieved.
14. In total 41 bicycle spaces are to be provided for residents and employees.
15. 2 new and 10 existing bicycle spaces for residential visitors and visitors of the commercial tenancies are provided at ground floor.

BESS Performance

The project achieves a total BESS score of 64% 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.



ESD Assessment

Indoor Environment Quality

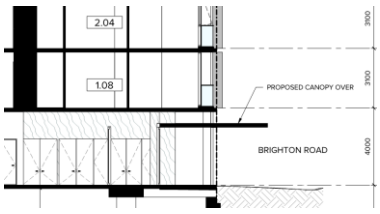
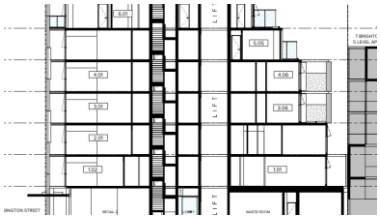
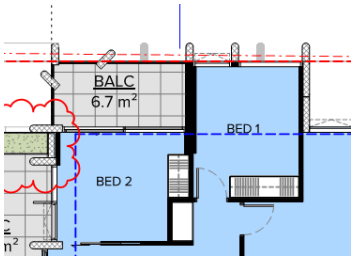
Council ESD objectives:

- 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
Natural Ventilation	At least 60% of a development's apartments should be naturally ventilated.	62% (21 out of 34) of the development's apartments are naturally cross-ventilated. Apartments are provided with windows on opposite or adjacent facades.  Typical natural cross-ventilated apartment
Daylight	Daylight DTS Criteria	The previous endorsed SMP for 1 Brighton Road utilized the STEPS framework, which does not include daylight requirements for the apartments. As the current application has been assessed against the BESS tool, the BESS built-in calculator has been applied to demonstrate that the proposed development will achieve a compliant daylight result under BESS which would be regarded an equivalent daylight result to the endorsed design. Refer Appendix E – BESS Assessment. Glass only VLT is to be in accordance with (or higher then) the VLTs outlined in the BESS built-in calculator inputs as follows: - Clear: 0.71 - Blue: 0.58 - Dark Grey: 0.16 The non-residential areas are achieving a 2% DF to 51% of the nominated area. As the retail areas will be provided with back of house areas for storage or food preparation, this is deemed an acceptable outcome. Refer Appendix A – Daylight Hand

Council Best Practice Standard

Criteria		Development Provision
		Calculations.
	90% of bedrooms have an external window.	NIL internal bedrooms.
Winter Sunlight	70% of dwellings receive at least 3 hours of direct sunlight in all living areas between 9am and 3pm in mid-winter.	74% (25 out of 34) of apartments achieve at least 3 hours of sunlight.
Thermal Comfort	Appropriate external shading is provided to east, west and north facing living area and bedroom windows.	The development is provided with a comprehensive shading strategy:  North and east retail glazing will be shaded by a canopy overhead  East, West and North facing recessed windows will be shaded by the overhanging balconies slab from the floor above.  North, west and east oriented permitter windows will be shaded by vertical elements on the façade.  Level 6 north and east oriented windows will be shaded by the overhanging roof.
Indoor Air Quality	To reduce indoor pollutants and	The development will incorporate low VOC paints, sealants and adhesives in line with table 13.1.1 of the Green Star Design & As-

Council Best Practice Standard

Criteria		Development Provision
	improve air quality	Built v1.3 Submission Guidelines. The development will incorporate E1 or E0-grade engineered wood products (e.g. MDF, plywood and / or engineered-wood flooring).

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	Demonstrate energy efficiencies beyond minimum BCA compliance benchmarks (e.g. 10% or + 1 star).	The National Construction Code (NCC) Class 2 – Sole Occupancy Unit(s) residential building component is to be designed in accordance with NCC Section J (2016) NatHERS requirements. The residential units must achieve an average 7.0 Star rating, with no unit achieving below 5 Stars. The apartments are currently achieving a 7.1 Star average. This represents > 10% improvement on minimum NCC compliance benchmarks. The below sample ratings demonstrate the developments ability to achieve this average. Refer Appendix B for Preliminary FirstRate Certificates.

Apartment No.	ACE Total MJ/M2	ACE Heating	ACE Cooling	ACE NCFA	Star Rating
1.07	65.5	37.3	28.2	62.5	7.6
2.01	92.5	78.1	14.4	97.9	6.7
3.03	52.2	27.8	24.4	59	8.1
4.01	108.3	74.2	34.1	56	6.2
5.05	70	40.3	29.7	60.9	7.4
6.02	103.7	72.9	30.8	107.7	6.3
Average	**82.0**	**55.1**	**26.9**	**74.0**	**7.1**

*Apartments are assessed using FirstRate5 v5.3.0

Construction assumptions for preliminary FirstRate 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.

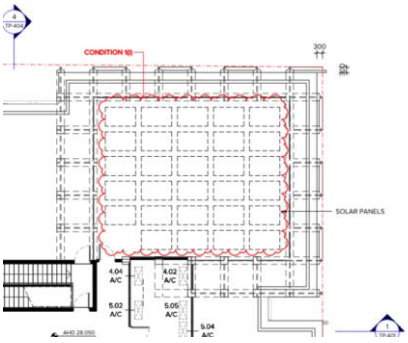
Council Best Practice Standard

Criteria	Development Provision		
	Element	Material	Insulation Value
	Floor	Concrete	R2.5
	External Walls	Fibre Cement, AAC Panel	R2.5
	Internal Walls	Plasterboard Concrete Core wall	R1.5 R1.5
	Roof	Concrete	R4 (Roof) R2.5(Terrace above)
	Fixed Windows	Aluminium framed, Argon filled, double glazed, clear	U-Value = 3.42 SHGC = 0.61
	Sliding Doors	Aluminium framed, Argon filled, double glazed, clear	U-Value = 3.81 SHGC = 0.55
	Awning Windows	Aluminium framed, Argon filled, double glazed, clear	U-Value = 4.89 SHGC = 0.46
	Fixed Windows	Aluminium framed, Argon filled, double glazed, dark grey	U-Value = 3.54 SHGC = 0.39
	Awning Windows	Aluminium framed, Argon filled, double glazed, dark grey	U-Value = 4.88 SHGC = 0.3
	Fixed Windows	Aluminium framed, Argon filled, double glazed, light blue	U-Value = 3.42 SHGC = 0.43
	Sliding Doors	Aluminium framed, Argon filled, double glazed, light blue	U-Value = 3.33 SHGC = 0.46

Council Best Practice Standard

Criteria		Development Provision
		Awning Windows — Aluminium framed, Argon filled, double glazed, light blue — U-Value = 4.55 SHGC = 0.34 The non-residential areas aim to reduce heating and cooling energy consumption 10% below the reference case (BCA Section J). Refer Appendix C – Preliminary Energy Modelling.
Hot Water System	Install energy efficient (high star rating) HWS	The development is to utilise a centralised gas hot water system, with either: • 7 Star energy rating for instantaneous units; or • Minimum 90% energy efficiency for a single water heater.
Peak Energy Demand	Demonstrate Instantaneous (peak-hour) demand has been reduced by >25%	High performance thermal envelope in conjunction with high efficiency HVAC systems and lighting systems reduce energy demand at peak times.
Efficient HVAC Systems	Specify energy efficient (high star rating) heating and cooling systems.	When outdoor conditions are not conducive to natural ventilation, air conditioning will be used. Inverter split system units 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. The retail areas will be provided with VRV air-to-air heat pump units with a COP of 3.5 or equivalent system.
	Carpark ventilation is either fully naturally ventilated or uses CO monitoring to control the operation of the ventilation fans	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. The mechanical services engineer is responsible for the design and specification of the system. The contractor is to procure and install the specified system. Maintenance requirements of the CO sensor system are to be included in the O&M manual.

Council Best Practice Standard

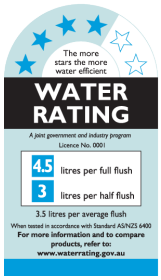
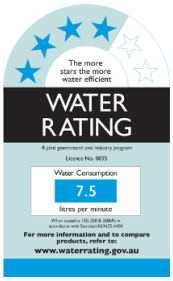
Criteria		Development Provision
Efficient Lighting	Maximum illumination power density (W/m2) in at least 90% of the relevant Building Class is at least 20% lower than required by current BCA requirements	Lighting for the residential and non-residential development is to be LED types. High efficiency fluorescent T5 type lighting will be provided to the carpark and services areas only. Lighting power density shall be as follows: • Dwellings: No greater than average 4W/m^2 • Veranda/balcony/terrace: No greater than average 4W/m^2 • Back of house and indoor car parks: No greater than average 5W/m^2 • Retail: No greater than average 18W/m^2 All common area, external and carpark lighting is to be controlled with daylight, motion sensors or timers (whichever is deemed appropriate).
Renewable Electricity Generation	Solar power system provides 5% of the building's energy consumption.	A 10kW Solar PV system is to be located on the roof of the proposed development. The system is expected to generate approximately 14,46kWh and will be provide 31% of common area lighting and power.  Location Solar PV System Refer Appendix D – Renewable Energy

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
Potable Water Reduction	>25% potable water reduction.	WELS 4 Star - Toilets  WELS 5 Star - Taps  WELS 4 Star - Showerhead  WELS 5 Star - Dishwasher 
Rainwater Collection & Reuse	25-75% reduction of potable water demand due to rainwater collection and reuse systems.	A 15,000 litre rainwater tank will harvest rainwater from the upper and lower roof. This tank will be connected to all WCs. It is estimated that this will save more than 192kL of potable water every year and meet 37% of the demand in these areas. Stormwater drainage mechanism is to be determined by the hydraulics services engineer at the design development phase. Refer Appendix E – WSUD Response
Water Metering	The installation of separate water meters in individual dwellings.	The apartments and commercial tenancies are to have individual cold and hot water meters. This measure is aimed at encouraging user awareness and accountability and it is likely to lead to more responsible water use.
Landscape Irrigation	Are water efficiency principles used for landscaped areas.	The majority of landscaping is to be native vegetation.
Building Systems Water	Where applicable, have measures	>80% of the fire test water will be reused on-site OR no potable water will be expelled during testing.

Council Best Practice Standard

Criteria		Development Provision
Use Reduction	been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems.	All HVAC systems will be air cooled.

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

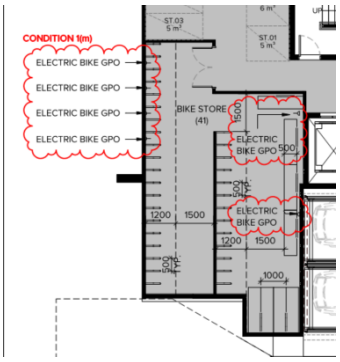
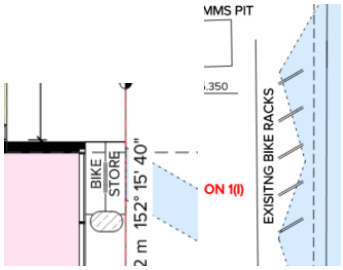
Criteria		Development Provision
STORM Rating	Exceed Victoria's best practice standards by achieving a MUSIC / STORM rating of at least 100% or equivalent modelling results.	The Melbourne Water - Stormwater Treatment Objective Relative Measure (STORM) tool has been applied to determine performance relative 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. A Melbourne STORM rating of 110% is achieved via the following: • Rainwater is to be collected from the upper and lower roof and directed into the 15,000 litre rainwater tank. WC's are to be connected to the rainwater tank. Refer Appendix E – WSUD Response.

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

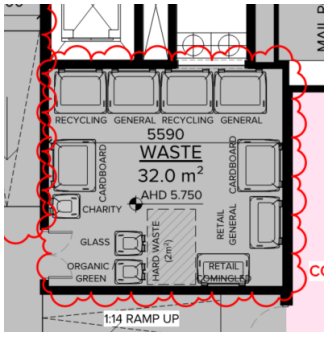
Criteria		Development Provision	
Bicycle Facilities	For residential developments, provide at least one secure bicycle parking space per dwelling for residents and one bicycle space per 4 dwellings for visitors	 In total 41 bicycle spaces are to be provided for residents and employees. This will provide a ratio of approximately 1 resident bicycle space for every 1 apartment(s).	 2 new and 10 existing bicycle spaces for residential visitors and visitors of the commercial tenancies are provided at ground floor.
End Of Trip Facilities	Provide accessible showers (1 per 10 bicycles spaces), changing facilities and one secure locker per bicycle space in the changing facilities.	An accessible WC and shower, change area and 5 lockers will be provided at ground floor.	
Electric Vehicle Charging	Provide facilities for charging of electric vehicles.	6 electric bicycle charging points will be incorporated into the design.	

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
Construction Waste Management	Adopt a recycling target of at least 70% for all demolition and construction waste (by mass.)	The contractor will implement a waste management plan to ensure that at least 80% of demolition and construction waste (by mass) is recycled. The waste management plan will be developed in accordance with the MBAV Guidelines.
	If the development is on a site that has been previously developed, has at least 30% of the existing building been re-used.	None of the existing structure is re-used.
Operational Waste Management	Are the recycling facilities at least as convenient for occupants as facilities for general waste.	 Separate general, recycling, cardboard, green and glass waste storage will be provided at ground floor.
	Are facilities provided for on-site management of food and garden waste.	Green waste storage is provided at ground floor bin room.

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
Ecological Value	Enhance the ecological value of your site through the protection of existing vegetation.	The proposed site is currently vacant. Redeveloping the site will not only reduce the burden on previously undeveloped sites and greenfield urban sprawl, but also provides regeneration to the location and help to create a more socially cohesive and environmentally friendly residential community.
Vegetation	Provide additional vegetation that serves the amenity and environmental performance of the development.	Planter boxes are to be located on ground floor, level 1-3, 5 and level 6.
	Is there a tap and floor waste on every balcony / in every courtyard	Balconies or private open space have been provided with a tap allowing residents to cultivate their own gardens.
Communal Spaces	Common space: -1m^2 for each of the first 50 occupants - Additional 0.5m^2 for each occupant between 51 and 250 - Additional 0.25m^2 for each occupant above 251	NIL

Management

Council ESD objectives:

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

Construction and Building Management Actions

Metering	Electricity and cold / hot water metering are to be provided to each individual apartment and commercial tenancy. This measure is aimed at encouraging user awareness and accountability and it is likely to lead to more responsible energy use. Lighting and general power to common areas is to be separately metered to quantify energy used for common areas spaces.
Building Tuning	Provision of comprehensive pre-commissioning, quality monitoring and building tuning for all building services in accordance with CIBSE and ASHRAE (for mechanical systems) guidelines will be the responsibility of the development team. This is in line with the Green Star Design & As-Built tool credit criteria 'Building Commissioning' and 'Building System Tuning'.
Building User's Guide	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: • Energy and Environmental Strategy • Options for purchasing a ≥3 Star Washing Machine • Monitoring and Targeting • Building Services • Transport Facilities • Materials and Waste Policy • Expansion/Re-fit Considerations • References and Further Information
ISO14001 Accreditation Builder	ISO14001 Accreditation will be positively weighted as part of the selection criteria.
Construction Management Plan	A site specific Environmental Management Plan in accordance with Section 3 of the NSW Environmental Management System guidelines 2007 will be implemented for the development. This is in line with the Green Star Design & As-Built tool credit criteria for 'Environmental Management Plan'.

Appendices

Appendix A: Daylight Hand Calculations

The BESS tool notes under 1.4 Daylight Access – Non-residential state that the Green Star Hand Calculation Method is an acceptable method of demonstrating compliance with this credit.

The Green Star – Daylight and Views Hand Calculation Guide defines the zone of compliance as follows:

$$h = height\ of\ the\ window\ head\ above\ desktop - \ table\ top\ level\ (700mm)$$
$$Depth\ of\ the\ zone\ of\ Compliance = h * 2$$
$$Width\ of\ the\ \ zone\ of\ compliance = width\ of\ glazing = w$$
$$Zone\ of\ compliance = h * 2 * w$$

The daylight assessment includes all retail areas at ground floor. The below table and figures demonstrate the results.

Area	Total Area (m2)	Area of compliance (m2)	Percentage of compliance (%)
Retail 1	155.2	53.3	34
Retail 2	180.7	119.3	66
Total	**335.9**	**172.6**	**51**

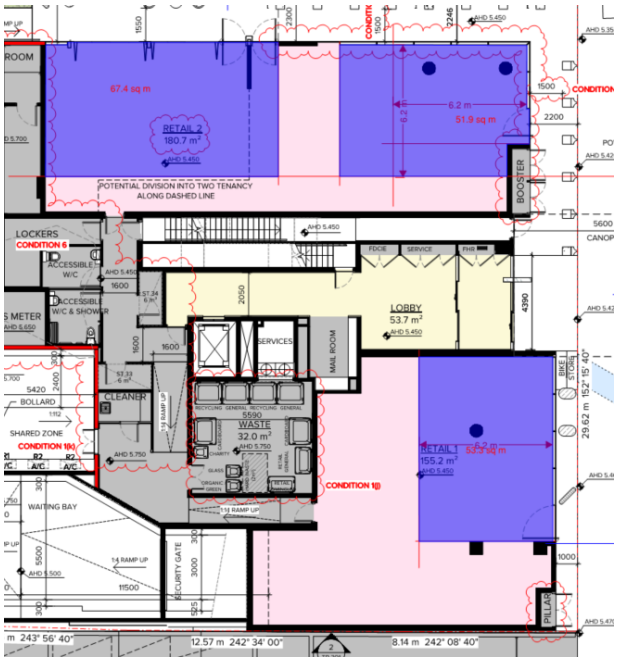


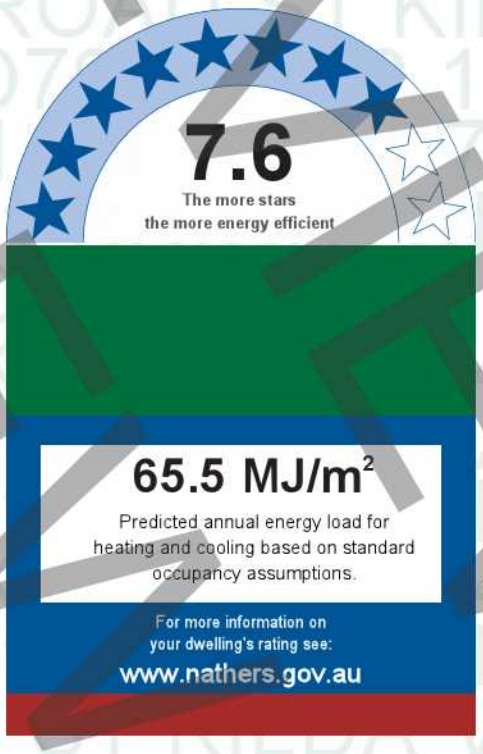
Figure 3: Daylight Hand Calculations GF Retail

Based on this analysis we deem that 51% of the retail area will achieve a DF2.

Appendix B: Preliminary FirstRate Certificates

Nationwide House Energy Rating Scheme
NatHERS Certificate No. V1RU07D79U

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	1.07, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	62.5
Unconditioned*	3.8
Total	66.3
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
37.3 MJ/m²	28.2 MJ/m²

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.

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.

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?

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-041-03 A	Capral 425 Fixed Window DG 6Gy/12/6	3.54	0.39	0.37	0.41
CAP-061-05 A	Capral 50 Series Awning in 400 Series DG 6Gy-12Ar-6	4.88	0.3	0.28	0.32
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Master Bed	CAP-041-03 A	Master FW	2900	1210	fixed	0.0	NNW	No
Master Bed	CAP-061-05 A	MasterBed AW	2900	1210	awning	60.0	NNW	No

* Refer to glossary

Liv/Kit/Corrido- r	CAP-061-05 A	Living AW	2900	1210	awning	60.0	ENE	No
Liv/Kit/Corrido- r	CAP-041-03 A	Living FW	2900	1210	fixed	0.0	ENE	No
Liv/Kit/Corrido- r	CAP-057-09 A	Living SD	2900	2500	sliding	45.0	NNW	No
Bed1	CAP-061-05 A	Bed1 AW	2900	1200	awning	60.0	ENE	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 (m²)	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 (m²)	Orient- ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.5);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.5)	No
3	1BRGHTRD - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

* Refer to glossary

4	1BRGHTRD - Concrete Ext	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Master Bed	1	2900	2529	WSW	3571	Yes
Master Bed	2	2900	2098	WSW	0	No
Master Bed	1	2900	2934	ENE	3428	Yes
Master Bed	1	2900	1478	NNW	0	Yes
Master Bed	1	2900	1610	NNW	0	Yes
Liv/Kit/Corridor	1	2900	1637	ENE	0	Yes
Liv/Kit/Corridor	1	2900	1719	ENE	0	Yes
Liv/Kit/Corridor	1	2900	3154	NNW	3042	Yes
Liv/Kit/Corridor	2	2900	3193	NNW	0	No
Liv/Kit/Corridor	3	2900	1852	WSW	0	No
Liv/Kit/Corridor	2	2900	6580	SSE	0	No
Liv/Kit/Corridor	1	2900	1991	ENE	0	No
Bed1	2	2900	560	SSE	0	No
Bed1	4	2900	2402	SSE	0	Yes
Bed1	1	2900	1602	ENE	0	Yes
Bed1	1	2900	1441	ENE	0	No
ENS	2	2900	2789	WSW	0	No
Bath	2	2900	2010	WSW	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	58.9	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Master Bed	FR5 - 200mm concrete slab	9.3	Enclosed	R0.0	Carpet
Master Bed	1BR - Concrete 200mm R2.5	3.6	Elevated	R2.5	Carpet
Liv/Kit/Corridor	1BR - Concrete 200mm R2.5	6.4	Elevated	R2.5	Timber
Liv/Kit/Corridor	FR5 - 200mm concrete slab	9.5	Enclosed	R0.0	Tiles
Liv/Kit/Corridor	FR5 - 200mm concrete slab	9.6	Enclosed	R0.0	Timber
Liv/Kit/Corridor	FR5 - 200mm concrete slab	10.2	Enclosed	R0.0	Timber
Bed1	FR5 - 200mm concrete slab	3.7	Enclosed	R0.0	Carpet
Bed1	1BR - Concrete 200mm R2.5	6.1	Elevated	R2.5	Carpet
ENS	FR5 - 200mm concrete slab	4.1	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	3.8	Enclosed	R0.0	Tiles

* Refer to glossary

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
Master Bed	6	Downlights	80	Sealed
Liv/Kit/Corridor	14	Downlights	80	Sealed
Liv/Kit/Corridor	1	Exhaust Fans	500	Sealed
Bed1	4	Downlights	80	Sealed
ENS	1	Exhaust Fans	500	Sealed
ENS	2	Downlights	80	Sealed
Bath	1	Exhaust Fans	500	Sealed
Bath	2	Downlights	0	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

* Refer to glossary

Explanatory Notes

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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

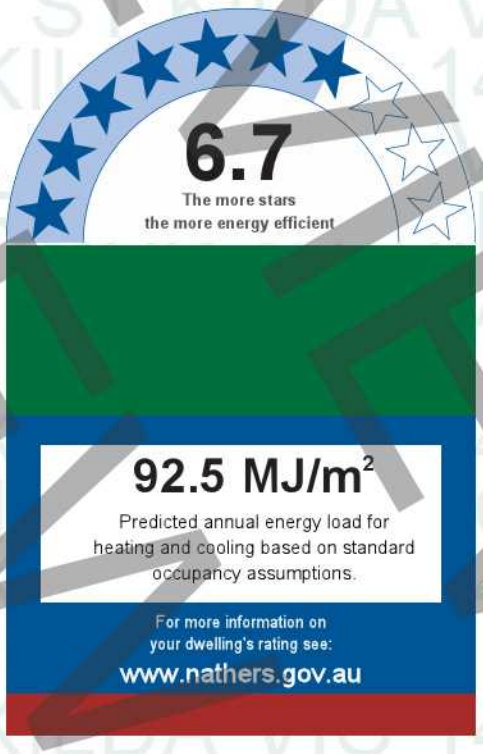
Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	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.
Conditioned	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.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	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.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	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).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

* Refer to glossary

National Construction Code (NCC) Class	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 www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	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 No. 3O6K1Z55CR

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	2.01, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	97.9
Unconditioned*	0
Total	97.9
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
78.1 MJ/m²	14.4 MJ/m²

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.

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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?

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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.

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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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-051-04 A	Capral 35 Awning in 400 Frame DG 6/12Ar/6	4.89	0.46	0.44	0.48

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living 2	CAP-057-09 A	Opening 25	2900	3600	sliding	45.0	ENE	No
Master	CAP-051-04 A	Opening 28	2900	3000	awning	20.0	SSE	No
Bedroom 6	CAP-051-04 A	Opening 27	2900	3000	awning	20.0	SSE	No

* Refer to glossary

Study	CAP-051-04 A	Opening 26	2900	1900	awning	30.0	ENE	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No
2	1BRGHTRD - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.5)	No
3	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
4	1BRGHTRD - Concrete Ext	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.5)	No

External wall *schedule*

* Refer to glossary

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Corridor	1	2900	2402	ENE	0	No
Corridor	2	2900	1645	NNW	0	No
Kitchen/Living 2	3	2900	3746	ENE	2435	Yes
Kitchen/Living 2	1	2900	8274	NNW	0	No
Master	1	2900	5650	WSW	0	No
Master	3	2900	2996	SSE	0	No
Ensuite	1	2900	3612	WSW	0	No
Ensuite	4	2900	2480	NNW	0	No
Bathroom	3	2900	3603	SSE	0	No
Bedroom 6	3	2900	3054	SSE	0	No
Study	3	2900	3587	SSE	0	No
Study	3	2900	3146	ENE	1493	Yes
Study	3	2900	945	NNW	3763	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Brick Veneer	95.2	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Corridor	FR5 - 200mm concrete slab	0.1	Enclosed	R0.0	Timber
Corridor	FR5 - 200mm concrete slab	11	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 200mm concrete slab	1.7	Enclosed	R0.0	Timber
Kitchen/Living 2	FR5 - 200mm concrete slab	32.7	Enclosed	R0.0	Timber
Master	FR5 - 200mm concrete slab	7.8	Enclosed	R0.0	Carpet
Master	FR5 - 200mm concrete slab	7.7	Enclosed	R0.0	Carpet
Ensuite	FR5 - 200mm concrete slab	9	Enclosed	R0.0	Tiles
Bathroom	FR5 - 200mm concrete slab	6.9	Enclosed	R0.0	Tiles
Bedroom 6	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Carpet
Bedroom 6	FR5 - 200mm concrete slab	2.2	Enclosed	R0.0	Carpet
Study	FR5 - 200mm concrete slab	2.7	Elevated	R2.5	Carpet
Study	FR5 - 200mm concrete slab	1.4	Enclosed	R0.0	Carpet
Study	FR5 - 200mm concrete slab	6.2	Enclosed	R0.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kitchen/Living 2	Plasterboard	R2.5	No
Master	Plasterboard	R2.5	No

* Refer to glossary

Bathroom	Plasterboard	R2.5	No
Bedroom 6	Plasterboard	R2.5	No
Study	Plasterboard	R2.5	No
Study	Plasterboard	R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Corridor	4	Downlights	80	Sealed
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Kitchen/Living 2	14	Downlights	80	Sealed
Master	6	Downlights	80	Sealed
Ensuite	1	Exhaust Fans	200	Sealed
Ensuite	4	Downlights	80	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Bathroom	3	Downlights	80	Sealed
Bedroom 6	4	Downlights	80	Sealed
Study	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

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Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	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.
Conditioned	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.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	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.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

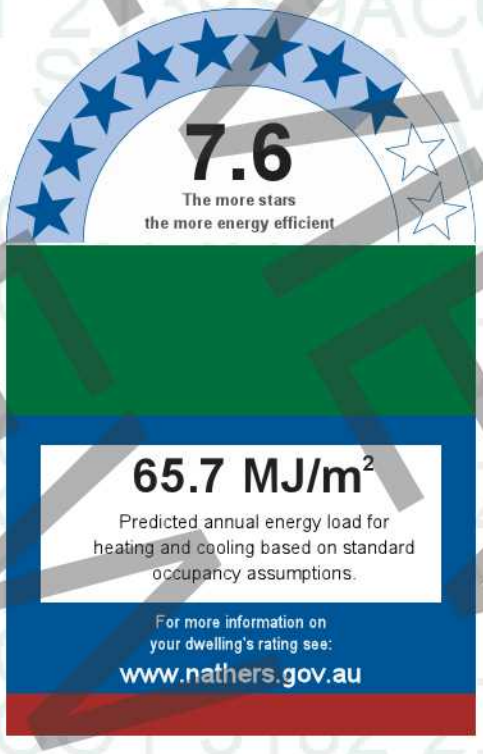
* Refer to glossary.

National Construction Code (NCC) Class	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 www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	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).

* Refer to glossary

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 2139S9ACO1

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	2.08, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	62.4
Unconditioned*	3.4
Total	65.8
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
48.4 MJ/m²	17.3 MJ/m²

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.

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.

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?

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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-051-04 A	Capral 35 Awning in 400 Frame DG 6/12Ar/6	4.89	0.46	0.44	0.48
CAP-041-35 A	Capral 425 Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-079-02 A	Genesis Hinged Door 80mm Frame Open Out DG 5-12Ar-5	3.89	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*
Kit/Liv	CAP-057-09 A	Living SD	2900	3450	sliding	45.0	ENE	No

* Refer to glossary

Master Bed	CAP-051-04 A	Master AW	2900	1050	awning	60.0	ENE	No
Master Bed	CAP-041-35 A	Master FW\	2900	750	fixed	0.0	NNW	No
Master Bed	CAP-051-04 A	Master AW	2900	750	awning	60.0	NNW	No
Bed1	CAP-079-02 A	Bed1 AW	2900	1200	casement	90.0	SSE	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt: R1.5 (R1.5);Glass fibre batt: R1.5 (R1.5)	No
2	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
3	FR5 - Internal Plasterboard Stud Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
4	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No

* Refer to glossary

5	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Liv	1	2900	2652	WSW	0	No
Kit/Liv	2	2900	3621	ENE	2410	Yes
Kit/Liv	1	2900	8229	NNW	0	No
Kit/Liv	1	2900	748	ENE	0	No
Kit/Liv	3	2900	1275	NNW	0	No
Master Bed	4	2900	3994	SSE	0	No
Master Bed	4	2900	3306	ENE	647	No
Master Bed	2	2900	1790	NNW	3737	Yes
ENS	5	2900	1788	SSE	0	No
Bed1	4	2900	3583	SSE	0	No
Bed1	2	2900	2710	WSW	3401	Yes
Bath	1	2900	2335	WSW	0	No
Bath	2	2900	1384	SSE	2701	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	52.6	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv	FR5 - 200mm concrete slab	27.4	Enclosed	R0.0	Timber
Kit/Liv	1BR - Concrete 200mm R2.5	6.1	Enclosed	R0.0	Tiles
Master Bed	FR5 - 200mm concrete slab	4.9	Enclosed	R0.0	Carpet
Master Bed	FR5 - 200mm concrete slab	2.6	Enclosed	R0.0	Carpet
Master Bed	FR5 - 200mm concrete slab	5.5	Enclosed	R0.0	Carpet
ENS	FR5 - 200mm concrete slab	3.7	Enclosed	R0.0	Tiles
ENS	FR5 - 200mm concrete slab	1.2	Enclosed	R0.0	Tiles
Bed1	FR5 - 200mm concrete slab	8.4	Enclosed	R0.0	Carpet
Bed1	FR5 - 200mm concrete slab	2.5	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	3.4	Enclosed	R0.0	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Master Bed	Plasterboard	R2.5	No
Master Bed	Plasterboard	R4.0	Yes
ENS	Plasterboard	R4.0	Yes

* Refer to glossary

Bed1	Plasterboard	R4.0	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Liv	14	Downlights	80	Sealed
Kit/Liv	1	Exhaust Fans	200	Sealed
Master Bed	5	Downlights	80	Sealed
ENS	2	Downlights	80	Sealed
ENS	1	Exhaust Fans	200	Sealed
Bed1	3	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	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 : 200mm: 200mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	1.3	0.5	Medium
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	1.3	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

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 NatHERSAdministrator. 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.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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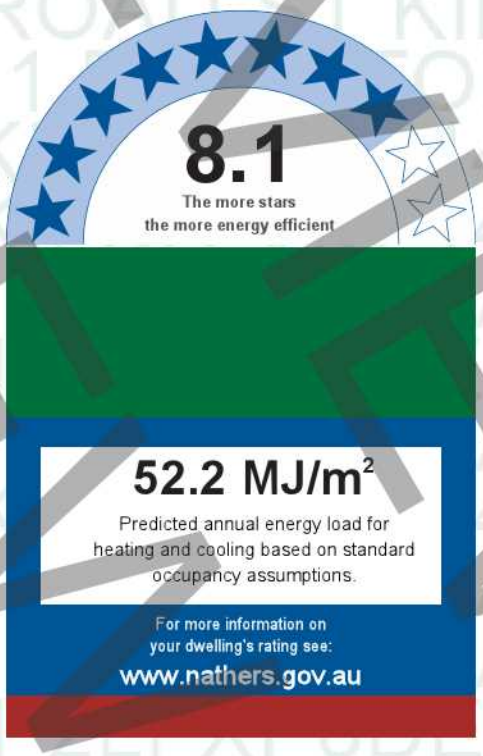
Nationwide House Energy Rating Scheme
NatHERS Certificate No. 2LFXP8DENR

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	3.03, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	59
Unconditioned*	3.6
Total	62.6
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
27.8 MJ/m²	24.4 MJ/m²

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

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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?

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-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-041-03 A	Capral 425 Fixed Window DG 6Gy/12/6	3.54	0.39	0.37	0.41
CAP-061-05 A	Capral 50 Series Awning in 400 Series DG 6Gy-12Ar-6	4.88	0.3	0.28	0.32
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door *Schedule*

* Refer to glossary

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
MasterBed	CAP-061-04 A	Master AW	2900	1200	awning	60.0	NNW	No
Bed1	CAP-055-35 A	Bed1 FW	2900	1000	fixed	0.0	ENE	No
Bed1	CAP-041-03 A	Bed1 FW	2900	1200	fixed	0.0	NNW	No
Bed1	CAP-061-05 A	Bed1 AW	2900	1201	awning	60.0	NNW	No
Kit/Liv	CAP-057-09 A	Kit/Liv SD	2900	3300	sliding	45.0	NNW	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt: R1.5 (R1.5);Glass fibre batt: R1.5 (R1.5)	No

* Refer to glossary

2	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
3	1BRGHTRD - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
4	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
MasterBed	1	2900	5500	WSW	0	No
MasterBed	2	2900	1264	NNW	0	Yes
Bed1	2	2900	1547	ENE	3649	Yes
Bed1	2	2900	1105	ENE	0	Yes
Bed1	2	2900	3009	NNW	0	No
Bed1	2	2900	1524	WSW	0	Yes
Kit/Liv	3	2900	1875	SSE	0	No
Kit/Liv	1	2900	330	ENE	0	No
Kit/Liv	1	2900	3064	SSE	0	No
Kit/Liv	1	2900	6654	ENE	0	No
Kit/Liv	2	2900	3534	NNW	2663	Yes
Bath	4	2900	1389	SSE	0	No
ENS	1	2900	2532	WSW	0	No
ENS	1	2900	1544	SSE	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	49.9	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
MasterBed	FR5 - 200mm concrete slab	12.6	Enclosed	R0.0	Carpet
Bed1	FR5 - 200mm concrete slab	10.6	Enclosed	R0.0	Carpet
Kit/Liv	FR5 - 200mm concrete slab	23.6	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	8.2	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	3.6	Enclosed	R0.0	Tiles
ENS	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Tiles

Ceiling *type*

* Refer to glossary

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
MasterBed	6	Downlights	80	Sealed
Bed1	4	Downlights	80	Sealed
Kit/Liv	11	Downlights	80	Sealed
Kit/Liv	1	Exhaust Fans	200	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	2	Downlights	80	Sealed
ENS	2	Downlights	80	Sealed
ENS	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

* Refer to glossary

Explanatory Notes

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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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
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Ceiling penetrations	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.
Conditioned	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.
Custom windows	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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Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
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Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
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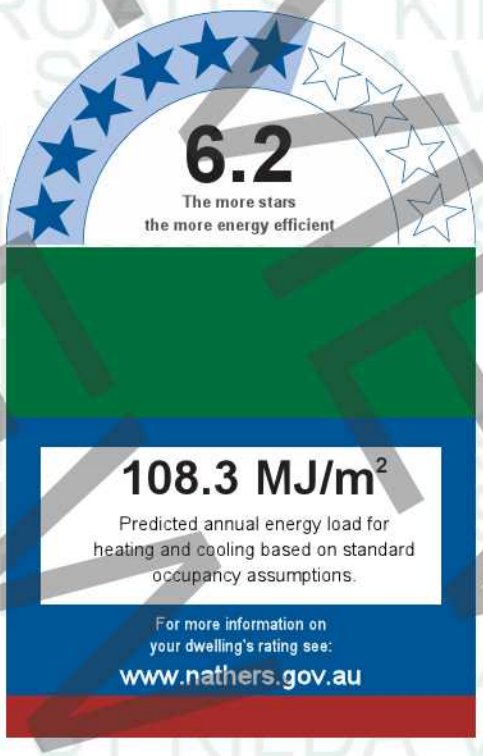
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

* Refer to glossary.

National Construction Code (NCC) Class	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 www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	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 No. 05X5A7FF9A

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	4.01, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	56
Unconditioned*	5.8
Total	61.8
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
74.2 MJ/m²	34.1 MJ/m²

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.

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.

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?

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-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-051-04 A	Capral 35 Awning in 400 Frame DG 6/12Ar/6	4.89	0.46	0.44	0.48
CAP-051-06 A	Capral 35 Awning in 400 Frame DG 6EA/12Ar/6	4.42	0.41	0.39	0.43

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Kit/Liv	CAP-057-09 A	Liv/Kit SD	2900	4300	sliding	45.0	WSW	No
Bed1	CAP-051-04 A	Bed1 AW	2900	1110	awning	60.0	SSE	No

* Refer to glossary

MasterBed	CAP-051-04 A	Master AW	2900	1100	awning	60.0	WSW	No
MasterBed	CAP-051-06 A	Opening 43	2900	1300	awning	60.0	WSW	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	1BRGHTRD - Concrete Int	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
3	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No

* Refer to glossary

4	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No
5	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Kit/Liv	1	2900	5530	WSW	2200	Yes
Kit/Liv	2	2900	3028	ENE	0	No
Kit/Liv	3	2900	2448	NNW	0	No
Kit/Liv	1	2900	2124	NNW	0	Yes
Bath	4	2900	2861	ENE	0	No
Bath	2	2900	2326	NNW	0	No
Bed1	5	2900	1747	SSE	0	No
Bed1	5	2900	1290	SSE	491	No
Bed1	4	2900	3760	ENE	0	No
ENS	5	2900	1488	SSE	0	No
MasterBed	5	2900	4101	WSW	0	No
MasterBed	5	2900	3054	SSE	0	No
MasterBed	5	2900	681	NNW	5516	Yes

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	50.9	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv	FR5 - 200mm concrete slab	18.6	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	9.1	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	5.8	Enclosed	R0.0	Tiles
Bed1	FR5 - 200mm concrete slab	5.7	Enclosed	R0.0	Carpet
Bed1	FR5 - 200mm concrete slab	5.6	Enclosed	R0.0	Carpet
ENS	FR5 - 200mm concrete slab	1.3	Enclosed	R0.0	Tiles
ENS	FR5 - 200mm concrete slab	3.3	Enclosed	R0.0	Carpet
MasterBed	FR5 - 200mm concrete slab	4.7	Enclosed	R0.0	Carpet
MasterBed	FR5 - 200mm concrete slab	7.8	Enclosed	R0.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*

* Refer to glossary

Bed1	Plasterboard	R4.0	Yes
ENS	Plasterboard	R4.0	Yes
MasterBed	Plasterboard	R4.0	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Kit/Liv	11	Downlights	80	Sealed
Kit/Liv	1	Exhaust Fans	200	Sealed
Bath	2	Downlights	80	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bed1	4	Downlights	80	Sealed
ENS	1	Exhaust Fans	200	Sealed
ENS	2	Downlights	80	Sealed
MasterBed	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 : 200mm: 200mm Suspended Slab	0.0	0.5	Medium
Framed:Flat - Flat Framed (Metal Deck)	1.3	0.2	Light

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U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
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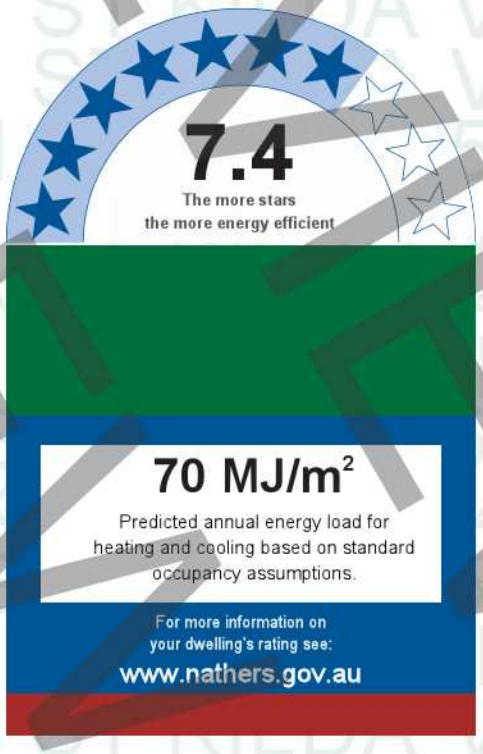
Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21) for 4.01, 1 Brighton Road, St Kilda, VIC,

Nationwide House Energy Rating Scheme
NatHERS Certificate No. 8W75FBS5R3

Generated on 14 Oct 2021 using FirstRate5: 5.3.1a (3.21)



Property

Address	5.05, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	60.9
Unconditioned*	3.8
Total	64.7
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
40.3 MJ/m²	29.7 MJ/m²

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.

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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?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate?

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-061-04 A	Capral 50 Series Awning in 400 Series DG 6-12Ar-6	4.88	0.45	0.43	0.47
CAP-051-04 A	Capral 35 Awning in 400 Frame DG 6/12Ar/6	4.89	0.46	0.44	0.48
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58

Window and glazed door *Schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
MasterBed	CAP-061-04 A	Master AW	2900	1210	awning	60.0	ENE	No
Bed1	CAP-051-04 A	Bed1 AW	2900	2914	awning	20.0	ENE	No

* Refer to glossary

Kit/Liv	CAP-057-09 A	Kit/Liv SD	2900	3250	awning	45.0	ENE	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
2	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No
3	1BRGHTRD - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
4	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No

External wall *schedule*

* Refer to glossary

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
MasterBed	1	2900	1358	ENE	0	Yes
MasterBed	2	2900	5181	NNW	0	No
Bed1	1	2900	2015	SSE	3640	Yes
Bed1	1	2900	3024	ENE	906	Yes
Bed1	1	2900	1883	NNW	0	Yes
Kit/Liv	3	2900	2010	WSW	0	No
Kit/Liv	2	2900	2408	WSW	0	No
Kit/Liv	2	2900	6194	SSE	0	No
Kit/Liv	4	2900	1491	SSE	0	Yes
Kit/Liv	1	2900	3462	ENE	2921	Yes
Kit/Liv	3	2900	162	NNW	0	No
Bath	3	2900	1672	WSW	0	No
ENS	2	2900	2029	NNW	0	No
ENS	2	2900	190	NNW	0	Yes
ENS	3	2900	1729	WSW	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	1BRGHTRD - Fibre Cement	4.5	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)
2	FR5 - Internal Plasterboard Stud Wall	46.9	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
MasterBed	FR5 - 200mm concrete slab	13.7	Enclosed	R0.0	Carpet
Bed1	FR5 - 200mm concrete slab	8.4	Enclosed	R0.0	Carpet
Bed1	FR5 - 200mm concrete slab	2.3	Enclosed	R0.0	Carpet
Kit/Liv	FR5 - 200mm concrete slab	26.5	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	6.1	Enclosed	R0.0	Tiles
Bath	FR5 - 200mm concrete slab	3.8	Enclosed	R0.0	Tiles
ENS	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed1	Plasterboard	R2.5	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
MasterBed	6	Downlights	80	Sealed
Bed1	4	Downlights	80	Sealed

* Refer to glossary

Kit/Liv	10	Downlights	80	Sealed
Kit/Liv	3	Downlights	80	Unsealed
Kit/Liv	1	Exhaust Fans	200	Sealed
Bath	1	Exhaust Fans	200	Sealed
Bath	2	Downlights	80	Sealed
ENS	2	Downlights	80	Sealed
ENS	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
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.2	Light

* Refer to glossary

Explanatory Notes

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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

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	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.
Ceiling penetrations	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.
Conditioned	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.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	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.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	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).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

* Refer to glossary.

National Construction Code (NCC) Class	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 www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	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 No. 1ZJHHSIJ53

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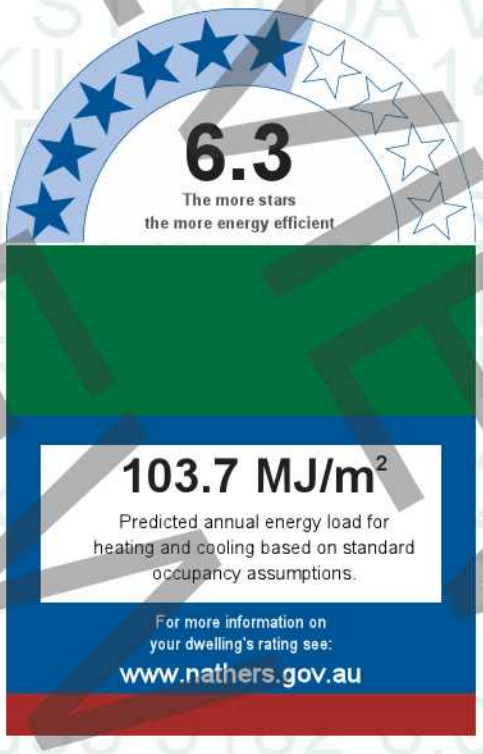

Property

Address	6.02, 1 Brighton Road, St Kilda, VIC, 3182
Lot/DP	-
NCC Class*	Class 2
Type	New Home

Plans

Main plan	24.06.20
Prepared by	YC

Construction and environment

Assessed floor area (m²)*	
Conditioned*	107.7
Unconditioned*	8.6
Total	116.3
Garage	-

Exposure type
protected

NatHERS climate zone
21 Melbourne RO

Thermal performance

Heating	Cooling
72.9 MJ/m²	30.8 MJ/m²

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.

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.

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?

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-057-20 A	Capral 900 Sliding Door DG 6Sn-12Ar-6	3.33	0.46	0.44	0.48
CAP-057-09 A	Capral 900 Sliding Door DG 6/12Ar/6	3.81	0.55	0.52	0.58
CAP-051-08 A	Capral 35 Awning in 400 Frame DG 6Sn-12Ar-6	4.55	0.34	0.32	0.36
CAP-055-35 A	Capral 419 Flushline Fixed Window DG 6/12Ar/6	3.42	0.61	0.58	0.64
CAP-051-04 A	Capral 35 Awning in 400 Frame DG 6/12Ar/6	4.89	0.46	0.44	0.48

Window and glazed door *Schedule*

* Refer to glossary

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
Bed2	CAP-057-20 A	Bed2 FW	2900	2600	sliding	45.0	ENE	No
Kit/Liv	CAP-057-09 A	Kit/Liv SD	2900	2800	sliding	45.0	ENE	No
Kit/Liv	CAP-051-08 A	Kit/Liv AW	2900	2600	awning	30.0	ENE	No
Bed1	CAP-057-09 A	Bed1 SD	2900	2920	sliding	45.0	ENE	No
Master	CAP-057-09 A	Master SD	2900	3210	sliding	45.0	SSE	No
ENS	CAP-055-35 A	Opening 66	2300	2100	fixed	0.0	WSW	No
ENS	CAP-051-04 A	ENS AW	2900	850	awning	20.0	SSE	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 (m²)	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 (m²)	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
No Data Available				

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	1BRGHTRD - Fibre Cement	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No

* Refer to glossary

2	1BRGHTRD - Internal Party Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No
3	FR5 - Internal Plasterboard Stud Wall	0.5	Medium		No
4	1BRGHTRD - Plasterboard Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.5)	No
5	1BRGHTRD - Lighweight Rendered	0.5	Medium	Glass fibre batt: R2.5 (R2.5)	No
6	1BRGHTRD - Concrete Int	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R1.7)	No

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
Bed2	1	2900	3506	ENE	2477	Yes
Bed2	2	2900	3661	NNW	0	No
Bed2	2	2900	2521	WSW	0	No
Bed2	3	2900	991	WSW	0	No
Kit/Liv	2	2900	327	NNW	0	No
Kit/Liv	2	2900	150	ENE	0	No
Kit/Liv	3	2900	999	ENE	0	No
Kit/Liv	2	2900	3319	NNW	0	No
Kit/Liv	2	2900	4496	WSW	0	No
Kit/Liv	4	2900	1976	WSW	0	No
Kit/Liv	1	2900	2934	ENE	1884	No
Kit/Liv	1	2900	825	NNW	0	Yes
Kit/Liv	1	2900	3936	ENE	0	Yes
Bed1	5	2900	1223	SSE	0	Yes
Bed1	5	2900	2292	SSE	0	No
Bed1	1	2900	3595	ENE	1908	No
Bath	5	2900	2058	SSE	0	Yes
Master	5	2900	3212	SSE	0	Yes
Master	4	2900	1133	NNW	0	No
Master	4	2900	2819	WSW	0	No
WIR	5	2900	2889	SSE	0	No
WIR	4	2900	1116	NNW	0	No
WIR	2	2900	229	WSW	0	No
WIR	6	2900	1770	NNW	0	No
ENS	5	2900	2077	WSW	0	No
ENS	5	2900	4141	SSE	0	No

* Refer to glossary

ENS	6	2900	4168	NNW	0	No

Internal wall *type*

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	72.3	

Floor *type*

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Bed2	FR5 - 200mm concrete slab	12.8	Enclosed	R0.0	Carpet
Kit/Liv	FR5 - 200mm concrete slab	26.3	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	2.1	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	2.5	Enclosed	R0.0	Timber
Kit/Liv	FR5 - 200mm concrete slab	22.3	Enclosed	R0.0	Tiles
Bed1	FR5 - 200mm concrete slab	13.4	Enclosed	R0.0	Carpet
Bath	FR5 - 200mm concrete slab	3.9	Enclosed	R0.0	Carpet
Master	FR5 - 200mm concrete slab	6.5	Enclosed	R0.0	Carpet
Master	FR5 - 200mm concrete slab	11.5	Enclosed	R0.0	Carpet
WIR	FR5 - 200mm concrete slab	6.4	Enclosed	R0.0	Carpet
ENS	FR5 - 200mm concrete slab	8.6	Enclosed	R0.0	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Bed2	Plasterboard	R2.5	No
Kit/Liv	Plasterboard	R2.5	Yes
Kit/Liv	Plasterboard	R2.5	No
Kit/Liv	Plasterboard	R2.5	No
Kit/Liv	Plasterboard	R2.5	No
Bed1	Plasterboard	R2.5	Yes
Bath	Plasterboard	R2.5	Yes
Master	Plasterboard	R2.5	No
Master	Plasterboard	R2.5	No
WIR	Plasterboard	R2.5	Yes
ENS	Plasterboard	R2.5	Yes

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Bed2	4	Downlights	80	Sealed
Kit/Liv	19	Downlights	80	Sealed
Kit/Liv	1	Exhaust Fans	200	Sealed
Bed1	5	Downlights	0	Sealed
Bath	2	Downlights	80	Sealed

* Refer to glossary

Master	5	Downlights	80	Sealed
WIR	2	Downlights	80	Sealed
ENS	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	0.2	Light
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.2	Light

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Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	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.
Exposure category - exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category - open	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).
Exposure category - suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category - protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.

* Refer to glossary

National Construction Code (NCC) Class	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 www.abcb.gov.au.
Opening Percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	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 www.nathers.gov.au
Reflective wrap (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.
Roof window	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.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	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.
Skylight (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.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	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).

Appendix C: Preliminary Energy Modelling

Scope of Modelling

The proposed development is located in Climate Zone 6 and is classified as a Class 6 Retail Building under the National Construction Code (NCC) 2016.

The NCC states that alternative solution: Verification Method JV3 may be applied as a viable Assessment Method to demonstrate achievement of the Performance Requirements JP1 & JP3. The services documentation is to be certified by the projects RBP.

JV3 modelling simulates predicted annual energy consumption for three building Models as follows:

Model 1: Simulates the building with full DTS compliance and is known as the 'Reference Building';
Model 2: Simulates the building as it has been depicted in the contract documentation, and is known as the 'proposed building';
Model 3: Simulates the architecture as depicted in the contract documentation with services modelled as DTS compliant.

To determine a compliant result for the proposed building, the predicted annual energy consumption of Models 2 and 3 is to be less than that of Model 1.

JV3 Compliance Requirements

The following thermal performance requirements form the basis of the preliminary JV3 Compliance Modelling.

Glazing	Thermal Performance	Recommended Product
Fixed Windows	Total System U-value ≤ 3.50 Total System SHGC = 0.64 ±10%	Aluminium Frame, Double Glazed, Clear
Casement Doors	Total System U-value ≤ 4.2 Total System SHGC = 0.49 ±10%	Aluminium Frame, Double Glazed, Clear

Walls	Thermal Performance (Added Insulation Value)	Recommended Product
Ext. Wall – Concrete Block	R2.5 Bulk Insulation	Bradford Gold Hi-performance Wall batts 90mm thick R2.5
Int. Wall – Concrete wall adjacent to lift shaft / stairwells / Unconditioned residential lobbies	R2.0 Bulk Insulation	Bradford Gold Hi-performance Wall batts 75mm thick R2.0

Roofs	Thermal Performance	Recommended Product
Concrete slab where exposed above	R4.0 Insulation Value	Kingspan K10FM soffit board 80mm thick R4.0

Floors	Thermal Performance	Recommended Product
Concrete Slab on Ground	NIL	NIL
Suspended concrete slab where exposed / unconditioned below	R1.9 Insulation Value	Kingspan K10FM soffit board 40mm thick R1.9

Modelling Software

Simulation Package Software	DesignBuilder
Weather Data	Representative Meteorological Year (RMY) file for Melbourne

Reference Building Input Data

The following tables list the building thermal performance values applied within the Reference Model:

Walls	Description	Total R-Value
External Walls	Concrete Blockwork wall	R2.8
Internal Walls where adjacent to unconditioned	Precast Concrete wall	R1.8
Roof	Concrete Slab	R3.2
Floor (Suspended)	Suspended Concrete Slab	R2.0
Floor (on Ground)	Concrete slab on ground	R0.5
Infiltration		1 Air Change per Hour (ac/h) for perimeter zones when plant is operating.

The following table lists the glazing performance values required by the Reference Model:

Glazing by Orientation	Total System U-value	SHGC
Ground Floor		
North East	5.8	0.44
North West	5.8	0.15

Building Services Inputs

The services have been modelled in accordance with the table below:

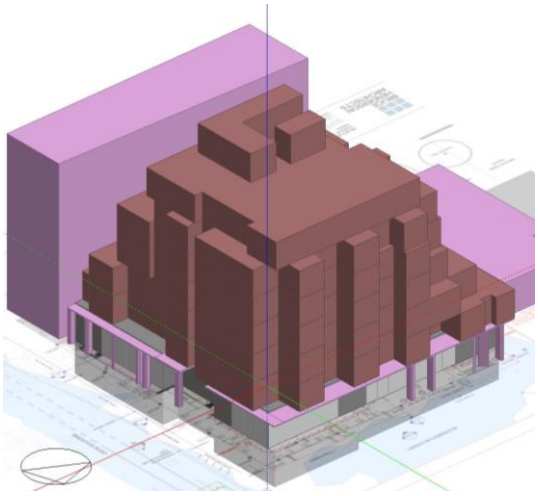
Services	Reference Building Services	Proposed Building Services
Artificial lighting	NCC 2016 Section J Part J6.2 - Table 6.2b – Maximum Power Illumination Densities.	20% reduction compared to NCC requirements.
Cooling – Spaces conditioned	Retail areas are assumed to be conditioned.	Per Reference Building
Heating – Spaces conditioned	Retail areas are assumed to be conditioned.	Per Reference Building
Cooling – System type	VRV units specified modelled as air-to-air heat pump units with COP of 3.1 (per minimum MEPS requirements for split systems).	VRV units specified modelled as air-to-air heat pump units with COP of 3.5.
Heating – System type	VRV units specified modelled as air-to-air heat pump units with COP of 3.1 (per minimum MEPS requirements for split systems).	VRV units specified modelled as air-to-air heat pump units with COP of 3.5.
Services Operating Profile	Per NCC Section J – Specification JV Table 2c . These profiles are modified in some instances to better represent the usage of certain spaces.	Per Reference Building
Heating and Cooling Setpoints	Cooling - 24°C Heating - 21°C	Per Reference Building
Airflow rates	Modelled in accordance with AS1668	Modelled in accordance with AS1668

Activity Profiles

All zones include an activity profile which model occupancy, appliance and equipment, and associated operation profiles. The heat gains from these sources must be accounted for within the modelling. The same profiles are applied in all models per the requirements of Verification Method JV3. These can be summarised as follows:

Activity Profile Item	All Models
Occupant Density	Occupant density is per NCC Section D – Part D1.13 and AS1668.2-2012.
Occupancy Schedule	Per NCC Section J – Specification JV Table 2c . These profiles are modified in some instances to better represent the usage of certain spaces.
Occupancy Heat Gains	Per NCC Section J – Specification JV Table 2j.
Appliance Heat Gains	Per NCC Section J – Specification JV Table 2h where applicable. Custom heat gains have been calculated as required.
Appliance Schedule	Per NCC Section J – Specification JV Table 2c . These profiles are modified in some instances to better represent the usage of certain spaces.

Results



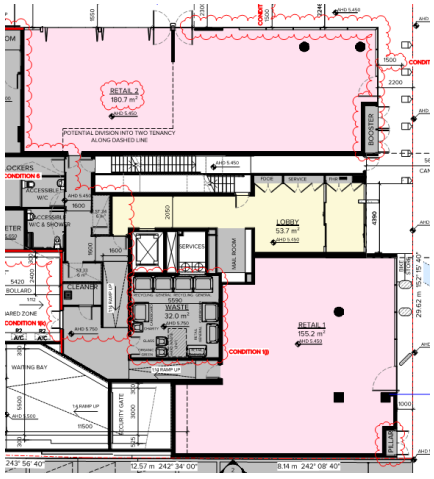


Figure 1 – Model of proposed building for energy simulations

The results below show that the Proposed Building Fabric and Services (Models 2 and 3) use less energy than the Reference Building (Model 1). This result indicates that the Proposed Building achieves Section J Performance Requirements JP1 and JP3.

	Model 1 – Reference Building (kWh/Annum)	Model 2 - Proposed Building with Proposed Services (kWh/Annum)	Model 3 - Proposed Building with Reference Services (kWh/Annum)
Lighting	35,387	28,254	35,318
Heating (Electricity)	9,516	7,316	7,572
Cooling (Electricity)	1,673	1,593	2,034
TOTAL	**46,576**	**37,163**	**44,924**
MJ/yr/m^2	499.17	398.29	481.47
Percentage Heating & Cooling Improvement over Reference Building		20%	4%

Appendix D: Renewable Energy

Solar PV

Inputs Solar PV

Peak Wattage of System	10.0	kWp
Azimuth	0	degrees
Inclination	30	degrees

Outputs Solar PV

Electricity Produced per Year	14,416	kWh
No. Panels Required	32	
Total Roof Area Required	66	sqm
Annual Carbon Savings	16,146	kg CO2

Economic Output

Cost of System	15,000	$
Annual Savings	2,883	$
Simple Payback	5	Years

Annual Common Area Demand

Annual Demand Class 2 Non-Residential Areas	18,318	kWh/year
Annual Demand Carpark / Services	28,049	kWh/year
Total Annual Demand	46,367	kWh/year

Demand / Supply

Contribution Solar PV to Communal Area Power	31%

Appendix E: WSUD Response

Site layout Plan

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

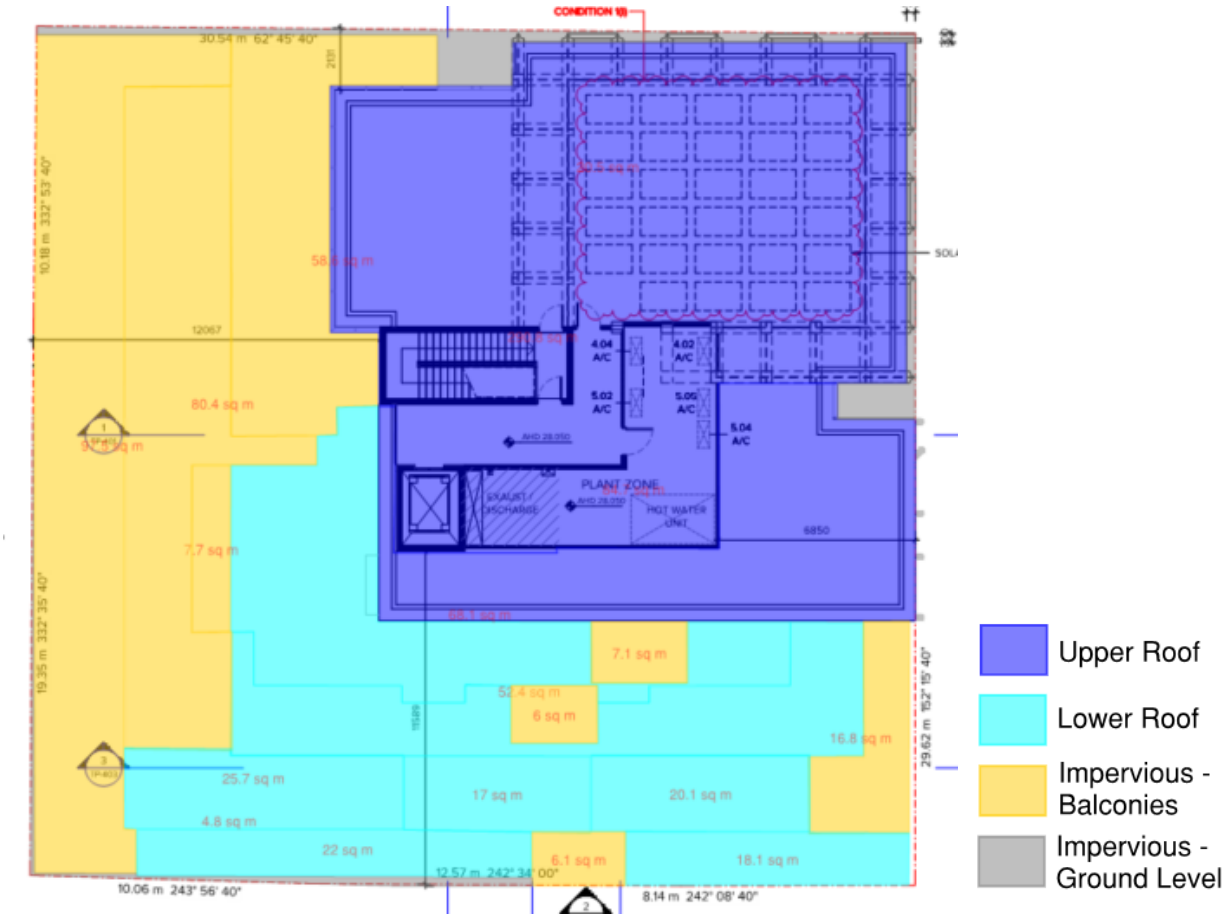


Figure 1 - Mark-up of water catchment and impervious areas

STORM Rating Report

A STORM rating of ≥100% can be achieved by implementing the following initiatives:

- Rainwater collection off the upper and lower roof directed into a 15,000 litre rainwater tank connected to all WC's.

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:

Melbourne Water **STORM Rating Report**

TransactionID:	1237360	
Municipality:	PORT PHILLIP	
Rainfall Station:	PORT PHILLIP	
Address:	1 Brighton Rd	
	St Kilda	
	VIC	3168
Assessor:	GIW	
Development Type:	Residential - Mixed Use	
Allotment Site (m2):	911.00	
STORM Rating %:	110	

Description	Impervious Area (m2)	Treatment Type	Treatment Area/Volume (m2 or L)	Occupants / Number Of Bedrooms	Treatment %	Tank Water Supply Reliability (%)
Upper & Lower Roofs	599.00	Rainwater Tank	15,000.00	80	166.80	80.00
Impervious - Balconies	280.00	None	0.00	0	0.00	0.00
Impervious - GF	32.00	None	0.00	0	0.00	0.00

WSUD Strategy

The development will include the provision of a 15,000 litre rainwater tank and associated pump in the basement garage. The rainwater tank is to be connected to all WC's.

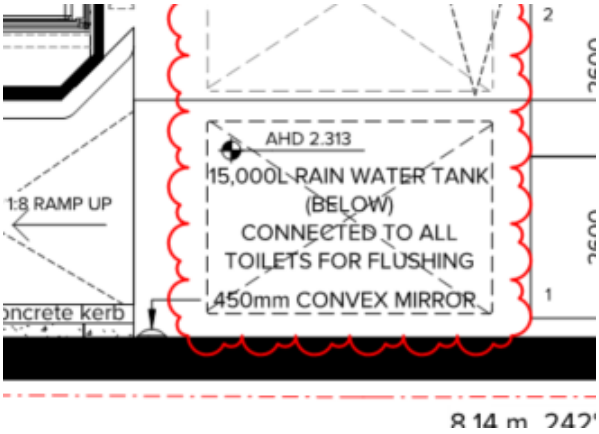


Figure 2 – Location Rainwater Tank

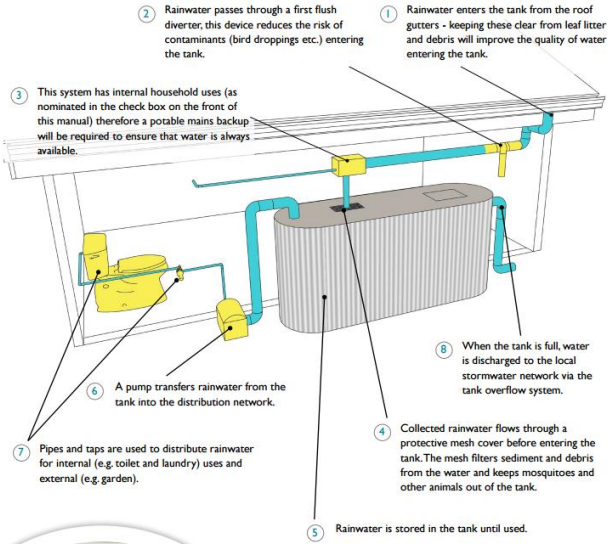


Figure 3 – Cross-section Tank
(City of Port Phillip)

Rainwater Reuse

Inputs

Catchment Area	599	sqm
Number of Bedrooms	77	
Bin Washout	No	
Irrigation Area	0	sqm
Tank Capacity	15,000	Litre

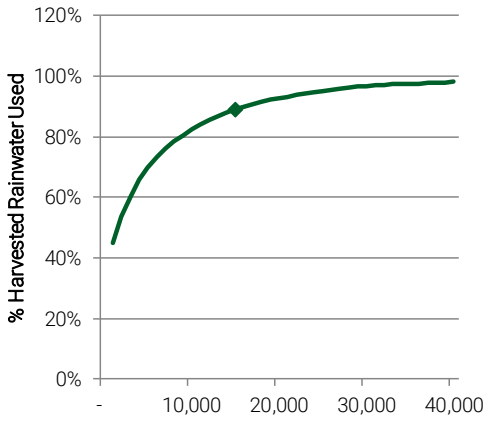
Outputs

% Served by Rainwater	37.4%	
% Harvested Rainwater Used	91.6%	
Total Potable Water Saved	192,430	Litre

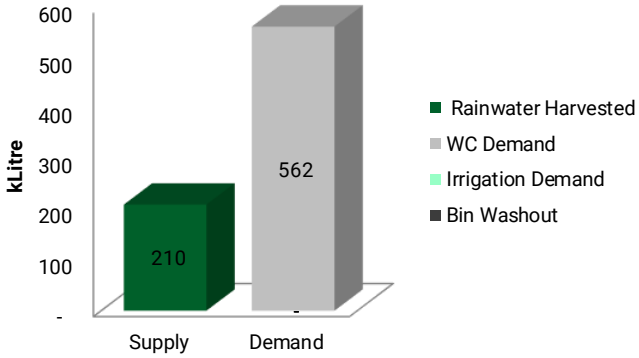
Rainwater Balance (Monthly Averages)

Month	Rainwater Harvested (L)	Irrigation Demand (L)	WC Demand (L)	Bin Washout (L)
Jan	13,661	0	47,740	0
Feb	17,110	0	43,120	0
Mar	15,599	0	47,740	0
Apr	18,327	0	46,200	0
May	16,632	0	47,740	0
Jun	18,006	0	46,200	0
Jul	13,356	0	47,740	0
Aug	17,199	0	47,740	0
Sep	17,899	0	46,200	0
Oct	18,653	0	47,740	0
Nov	25,198	0	46,200	0
Dec	18,327	0	47,740	0
Total	209,967	0	562,100	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 pervert 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 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

Appendix F: BESS Assessment

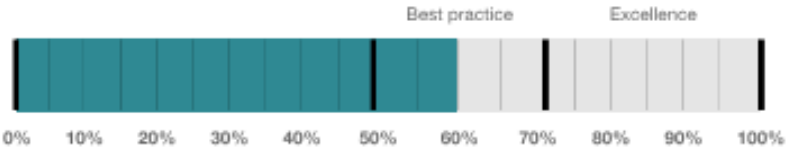
BESS Report

Built Environment Sustainability Scorecard

This BESS report outlines the sustainable design commitments of the proposed development at 1 Brighton Rd St Kilda VIC 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

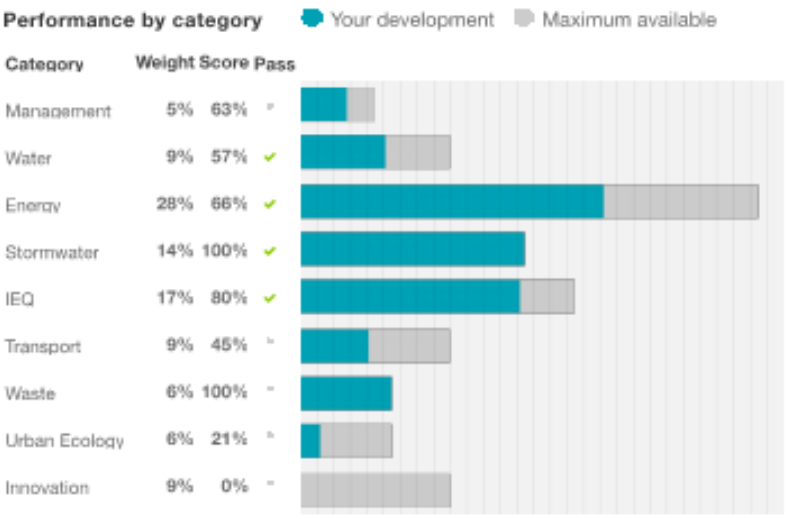


64%

Project details

Address	1 Brighton Rd St Kilda VIC 3182
Project no	236E0765-R4
BESS Version	BESS-5
Site type	Mixed use development
Account	info@giw.com.au
Application no.	665/2016
Site area	911 m²
Building floor area	3,217.2000000000003 m²
Date	14 October 2021
Software version	1.7.0-B.371

Performance by category



Building Type composition

Dwellings & Non Res Spaces

Dwellings

Name	Quantity	Area	% of total area
Apartment			
3.01, 4.01, 5.01	3	95.6 m²	8%
1.01, 2.01	2	120 m²	7%
3.04, 4.04, 5.04	3	73.0 m²	6%
3.03, 4.03, 5.03	3	74.2 m²	6%
3.02, 4.02, 5.02	3	69.8 m²	6%
1.05, 1.06, 2.05	3	72.3 m²	6%
1.02, 2.02	2	105 m²	6%
1.07, 2.06	2	73.8 m²	4%
6.01	1	142 m²	4%
3.06, 4.06	2	68.9 m²	4%
3.05, 4.05	2	75.9 m²	4%
1.08, 2.07	2	73.4 m²	4%
1.03, 2.03	2	78.0 m²	4%
2.04	1	113 m²	3%
6.02	1	118 m²	3%
5.05	1	88.2 m²	2%
1.04	1	75.9 m²	2%
Total	**34**	**2,881 m²**	**89%**

Non-Res Spaces

Name	Quantity	Area	% of total area
Shop			
Retail 2	1	181 m²	5%
Retail 1	1	155 m²	4%
Total	**2**	**335 m²**	**10%**

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 4.2	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.		-

Credit	Requirement	Response	Status
IEQ 1.3	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'		-
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 1.6	Showers, change rooms and lockers as nominated		-
Waste 2.1	Location of food and garden waste facilities		-
Waste 2.2	Location of recycling facilities		-
Urban Ecology 2.1	Vegetated areas		-
Urban Ecology 2.4	Taps and floor waste on balconies / courtyards		-

Supporting evidence

Credit	Requirement	Response	Status
Management 2.2	Preliminary NatHERS assessments		-
Management 2.3	Preliminary modelling report		-
Management 2.4	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 monxide 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 3.6	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.		-
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).		-
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 1.3	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		-

Credit summary

Management Overall contribution 4.5%

	63%
1.1 Pre-Application Meeting	0%
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
2.3 Thermal Performance Modelling - Non-Residential	100%
2.4 Thermal Performance Modelling - Non-Residential	100%
3.1 Metering	100%
3.2 Metering	100%
3.3 Metering	100%
4.1 Building Users Guide	100%

Water Overall contribution 9.0%

	Minimum required 50%	57%	✔ Pass
1.1 Potable water use reduction		40%	
3.1 Water Efficient Landscaping		100%	
4.1 Building Systems Water Use Reduction		100%	

Energy Overall contribution 27.5%

	Minimum required 50%	66%	✔ Pass
1.1 Thermal Performance Rating - Non-Residential		38%	
1.2 Thermal Performance Rating - Residential		50%	
2.1 Greenhouse Gas Emissions		100%	
2.2 Peak Demand		0%	
2.3 Electricity Consumption		100%	
2.4 Gas Consumption		100%	
3.1 Carpark Ventilation		100%	
3.2 Hot Water		10%	
3.4 Clothes Drying		0%	
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		90%	
4.4 Renewable Energy Systems - Other		N/A	⊘ Disabled
			No other (non-solar PV) renewable energy is in use.

Stormwater Overall contribution 13.5%

	Minimum required 100%	100%	✔ Pass
1.1 Stormwater Treatment		100%	

IEQ Overall contribution 16.5%

	Minimum required 50%	80%	✔ Pass
1.1 Daylight Access - Living Areas		100%	
1.2 Daylight Access - Bedrooms		67%	
1.3 Winter Sunlight		100%	
1.4 Daylight Access - Non-Residential		33%	
1.5 Daylight Access - Minimal Internal Bedrooms		100%	
2.1 Effective Natural Ventilation		67%	

Transport Overall contribution 9.0%

45%

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	100%
2.1 Electric Vehicle Infrastructure	0%
2.2 Car Share Scheme	0%
2.3 Motorbikes / Mopeds	0%

Waste Overall contribution 5.5%

100%

1.1 - Construction Waste - Building Re-Use	N/A Scoped Out
	N/A site is currently vacant
2.1 - Operational Waste - Food & Garden Waste	100%
2.2 - Operational Waste - Convenience of Recycling	100%

Urban Ecology Overall contribution 5.5%

21%

1.1 Communal Spaces	0%
2.1 Vegetation	25%
2.2 Green Roofs	0%
2.3 Green Walls and Facades	0%
2.4 Private Open Space - Balcony / Courtyard Ecology	100%
3.1 Food Production - Residential	0%
3.2 Food Production - Non-Residential	0%

Innovation Overall contribution 9.0%

0%

1.1 Innovation	N/A Disabled
	None

Credit breakdown

Management Overall contribution 3%

1.1 Pre-Application Meeting	0%
Score Contribution	This credit contributes 37.0% 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	No
2.2 Thermal Performance Modelling - Multi-Dwelling Residential	100%
Score Contribution	This credit contributes 22.1% towards the category score.
Criteria	Have preliminary NatHERS ratings been undertaken for all thermally unique dwellings?
Question	Criteria Achieved ?
Apartment	Yes
2.3 Thermal Performance Modelling - Non-Residential	100%
Score Contribution	This credit contributes 2.6% towards the category score.
Criteria	Has preliminary modelling been undertaken in accordance with either NCC2019 Section J (Energy Efficiency), NABERS or Green Star?
Annotation	Section J has been modelled in accordance with NCC 2016.
Question	Criteria Achieved ?
Shop	Yes
2.4 Thermal Performance Modelling - Non-Residential	100%
Score Contribution	This credit contributes 1.3% towards the category score.
Criteria	Has a preliminary Section J facade assessment been undertaken?
Question	Criteria Achieved ?
Shop	Yes
3.1 Metering	100%
Score Contribution	This credit contributes 11.1% towards the category score.
Criteria	Have utility meters been provided for all individual dwellings?
Question	Criteria Achieved ?
Apartment	Yes
3.2 Metering	100%
Score Contribution	This credit contributes 1.3% towards the category score.
Criteria	Have utility meters been provided for all individual commercial tenants?
Question	Criteria Achieved ?
Shop	Yes

3.3 Metering	100%
Score Contribution	This credit contributes 12.3% towards the category score.
Criteria	Have all major common area services been separately submetered?
Question	Criteria Achieved ?
Apartment	Yes
Shop	Yes

4.1 Building Users Guide	100%
Score Contribution	This credit contributes 12.3% towards the category score.
Criteria	Will a building users guide be produced and issued to occupants?
Question	Criteria Achieved ?
Project	Yes

Water

Overall contribution 5% Minimum required 50%

Water Approach	
What approach do you want to use Water?:	Use the built in calculation tools

Project Water Profile Question	
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

Water fixtures, fittings and connections	
Showerhead:	
Retail 1 Retail 2	Scope out
1.01, 2.01 1.02, 2.02 1.03, 2.03 1.05, 1.06, 2.05 1.08, 2.07 3.01, 4.01, 5.01 3.02, 4.02, 5.02 3.03, 4.03, 5.03 3.04, 4.04, 5.04 3.05, 4.05 3.06, 4.06 6.01 6.02 1.04 2.04 1.07, 2.06	4 Star WELS (>= 6.0 but <= 7.5)
5.05	4 Star WELS (>= 4.5 but <= 6.0)
Bath: All	Scope out
Kitchen Taps: All	>= 5 Star WELS rating
Bathroom Taps: All	>= 5 Star WELS rating

Dishwashers:	
Retail 1 Retail 2	Scope out
1.01, 2.01 1.02, 2.02 1.03, 2.03 1.05, 1.06, 2.05 1.08, 2.07 3.01, 4.01, 5.01 3.02, 4.02, 5.02 3.03, 4.03, 5.03 3.04, 4.04, 5.04 3.05, 4.05 3.06, 4.06 6.01 6.02 1.04 2.04 1.07, 2.06 5.05	>= 5 Star WELS rating
WC: All	>= 4 Star WELS rating
Urinals: All	Scope out
Washing Machine Water Efficiency:	
Retail 1 Retail 2	Scope out
1.01, 2.01 1.02, 2.02 1.03, 2.03 1.05, 1.06, 2.05 1.08, 2.07 3.01, 4.01, 5.01 3.02, 4.02, 5.02 3.03, 4.03, 5.03 3.04, 4.04, 5.04 3.05, 4.05 3.06, 4.06 6.01 6.02 1.04 2.04 1.07, 2.06 5.05	Default or unrated

Rainwater Tank	
What is the total roof area connected to the rainwater tank?: Basement rain water tank	599 m^2
Tank Size: Basement rain water tank	15,000 Litres
Irrigation area connected to tank: Basement rain water tank	0.0 m^2
Is connected irrigation area a water efficient garden?: Basement rain water tank	No

Other external water demand connected to tank?: Basement rain water tank	0.0 Litres/Day

1.1 Potable water use reduction	40%
Score Contribution	This credit contributes 71.4% 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	4799 kL
Output	Proposed (excluding rainwater and recycled water use)
Project	3794 kL
Output	Proposed (including rainwater and recycled water use)
Project	3431 kL
Output	% Reduction in Potable Water Consumption
Project	28 %
Output	% of connected demand met by rainwater
Project	67 %
Output	How often does the tank overflow?
Project	Never / Rarely
Output	Opportunity for additional rainwater connection
Project	1712 kL

3.1 Water Efficient Landscaping	100%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Will water efficient landscaping be installed?
Question	Criteria Achieved ?
Project	Yes

4.1 Building Systems Water Use Reduction	100%
Score Contribution	This credit contributes 14.3% towards the category score.
Criteria	Where applicable, have measures been taken to reduce potable water consumption by >80% in the buildings air-conditioning chillers and when testing fire safety systems?
Question	Criteria Achieved ?
Project	Yes

Energy Overall contribution 18% Minimum required 50%

Use the BESS Deem to Satisfy (DtS) method for Energy?:	No
Dwellings Energy Approach	
What approach do you want to use for Energy?:	Use the built in calculation tools
Project Energy Profile Question	
Are you installing a solar photovoltaic (PV) system?:	Yes
Are you installing any other renewable energy system(s)?:	No
Gas supplied into building:	Natural Gas
Are you installing a cogeneration or trigeneration system?:	No
Dwelling Energy Profiles	
Below the floor is:	
1.01, 2.01 1.02, 2.02 1.03, 2.03 1.05, 1.06, 2.05 1.08, 2.07 1.04	Ground or Carpark
3.01, 4.01, 5.01 3.02, 4.02, 5.02 3.03, 4.03, 5.03 3.04, 4.04, 5.04 3.05, 4.05 3.06, 4.06 6.01 6.02 2.04 1.07, 2.06 5.05	Another Occupancy
Above the ceiling is:	
1.01, 2.01 1.02, 2.02 1.03, 2.03 1.05, 1.06, 2.05 1.08, 2.07 3.01, 4.01, 5.01 3.02, 4.02, 5.02 3.03, 4.03, 5.03 3.04, 4.04, 5.04 3.05, 4.05 3.06, 4.06 1.04 2.04 1.07, 2.06 5.05	Another Occupancy
6.01 6.02	Outside

Exposed sides:	
1.01, 2.01 1.03, 2.03 3.01, 4.01, 5.01 3.03, 4.03, 5.03 3.05, 4.05 3.06, 4.06 6.01 6.02 1.04 2.04 5.05	2
1.02, 2.02 1.05, 1.06, 2.05 1.08, 2.07 3.02, 4.02, 5.02 3.04, 4.04, 5.04 1.07, 2.06	1
NatHERS Annual Energy Loads - Heat: All	55.1 MJ/sqm
NatHERS Annual Energy Loads - Cool: All	26.9 MJ/sqm
NatHERS star rating: All	7.1
Type of Heating System: All	D Reverse cycle space
Heating System Efficiency: All	3 Star
Type of Cooling System: All	Refrigerative space
Cooling System Efficiency: All	3 Stars
Type of Hot Water System: All	H Gas Storage 7 star
% Contribution from solar hot water system: All	0 %
Is the hot water system shared by multiple dwellings?: All	Yes
Clothes Line: All	A No drying facilities
Clothes Dryer: All	F Clothes dryer 1 stars
Non-Residential Spaces Energy Profiles	
Heating, Cooling & Comfort Ventilation - Electricity **Reference fabric & services:**	
Retail 1	5,594 kWh
Retail 2	5,597 kWh
Heating, Cooling & Comfort Ventilation - Electricity **Proposed fabric & reference services:** All	4,803 kWh
Heating, Cooling & Comfort Ventilation - Electricity **Proposed fabric & services:** All	4,454 kWh
Heating - Gas **Reference fabric & services:** All	-
Heating - Gas **Proposed fabric & reference services:** All	-
Heating - Gas **Proposed fabric & services:** All	-
Heating - Wood **Reference fabric & services:** All	-

Heating - Wood **Proposed fabric & reference services:** All	-
Heating - Wood **Proposed fabric & services:** All	-
Hot Water - Electricity **Reference:** All	0.0 kWh
Hot Water - Electricity **Proposed:** All	0.0 kWh
Hot Water - Gas **Reference:** All	10,000 MJ
Hot Water - Gas **Proposed:** All	8,999 MJ
Lighting - Reference: All	17,693 kWh
Lighting - Proposed: All	14,127 kWh
Peak Thermal Cooling Load **Reference fabric and services:** All	-
Peak Thermal Cooling Load **Proposed fabric and services:** All	-

Solar Photovoltaic system	
System Size (lesser of inverter and panel capacity): PV 1	10.0 kW peak
Orientation (which way is the system facing)?: PV 1	North-West
Inclination (angle from horizontal): PV 1	30.0 Angle (degrees)
Which Building Class does this apply to?: PV 1	Apartment

1.1 Thermal Performance Rating - Non-Residential		38%
Score Contribution	This credit contributes 3.9% 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	14 %	

1.2 Thermal Performance Rating - Residential		50%
Score Contribution	This credit contributes 25.5% towards the category score.	
Criteria	What is the average NatHERS rating?	
Output	Average NATHERS Rating (Weighted)	
Apartment	7.1 Stars	

2.1 Greenhouse Gas Emissions	100%
Score Contribution	This credit contributes 9.5% 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)
Apartment	150,643 kg CO2
Shop	6,220 kg CO2
Output	Proposed Building with Proposed Services (Actual Building)
Apartment	74,419 kg CO2
Shop	5,006 kg CO2
Output	% Reduction in GHG Emissions
Apartment	50 %
Shop	19 %

2.2 Peak Demand	0%
Score Contribution	This credit contributes 4.7% towards the category score.
Criteria	What is the % reduction in the instantaneous (peak-hour) demand against the benchmark?
Output	Peak Thermal Cooling Load - Baseline
Apartment	506 kW
Output	Peak Thermal Cooling Load - Proposed
Apartment	472 kW
Output	Peak Thermal Cooling Load - % Reduction
Apartment	6 %

2.3 Electricity Consumption	100%
Score Contribution	This credit contributes 9.5% towards the category score.
Criteria	What is the % reduction in annual electricity consumption against the benchmark?
Output	Reference
Apartment	124,351 kWh
Shop	5,594 kWh
Output	Proposed
Apartment	52,576 kWh
Shop	4,454 kWh
Output	Improvement
Apartment	57 %
Shop	20 %

2.4 Gas Consumption	100%
Score Contribution	This credit contributes 9.5% towards the category score.
Criteria	What is the % reduction in annual gas consumption against the benchmark?
Output	Reference
Apartment	463,116 MJ
Shop	10,000 MJ
Output	Proposed
Apartment	404,506 MJ
Shop	8,999 MJ
Output	Improvement
Apartment	12 %
Shop	10 %

3.1 Carpark Ventilation	100%
Score Contribution	This credit contributes 9.5% 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

3.2 Hot Water	10%
Score Contribution	This credit contributes 4.7% towards the category score.
Criteria	What is the % reduction in annual hot water system energy use (gas and electricity) against the benchmark?
Output	Reference
Apartment	128,643 kWh
Shop	2,778 kWh
Output	Proposed
Apartment	117,499 kWh
Shop	2,500 kWh
Output	Improvement
Apartment	8 %
Shop	10 %

3.4 Clothes Drying		0%	
Score Contribution	This credit contributes 4.2% towards the category score.		
Criteria	Does the combination of clothes lines and efficient dryers reduce energy (gas+electricity) consumption by more than 10%?		
Output	Reference		
Apartment	17,021 kWh		
Output	Proposed		
Apartment	17,021 kWh		
Output	Improvement		
Apartment	0 %		

3.6 Internal Lighting - Residential Multiple Dwellings		100%	
Score Contribution	This credit contributes 8.5% 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		

3.7 Internal Lighting - Non-Residential		100%	
Score Contribution	This credit contributes 1.0% 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		

4.1 Combined Heat and Power (cogeneration / trigeneration)		N/A	⌖ Scoped Out
This credit was scoped out	No cogeneration or trigeneration system in use.		

4.2 Renewable Energy Systems - Solar		90%	
Score Contribution	This credit contributes 4.7% towards the category score.		
Criteria	Does the solar power system provide 5% of the estimated energy consumption of the building class it supplies?		
Output	Solar Power - Energy Generation per year		
Apartment	12,509 kWh		
Output	% of Building's Energy		
Apartment	7 %		

4.4 Renewable Energy Systems - Other		N/A	⊘ Disabled
This credit is disabled	No other (non-solar PV) renewable energy is in use.		

Stormwater

Overall contribution 14% Minimum required 100%

Which stormwater modelling are you using?:	Melbourne Water STORM tool
1.1 Stormwater Treatment	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	110
Output	Min STORM Score
Project	100

IEQ

Overall contribution 13% Minimum required 50%

Section Notes:

IEQ DTS	
Use the BESS Deemed to Satisfy (DtS) method for IEQ?:	No

Dwellings IEQ Approach	
What approach do you want to use for IEQ?:	Use the built in calculation tools

Dwelling Daylight Room Profile Questions	
Room Designation:	
Living 1.01 Living 2.01 All Other Living Areas Living 2.03 Living 2.02 Living 6.01 Living 6.02	Living
Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02 All Other Bedrooms North Bedrooms (grey tint) East Bedrooms (grey tinted)	Bedroom

	Quantity:
1	Living 1.01 Living 2.01 Master 1.01 Living 2.03 Living 2.02 Living 6.01 Living 6.02
28	All Other Living Areas
2	Master & Bed 1 1.02
4	Bed 2 & Master 2.01, Master & Bed 2 2.02
55	All Other Bedrooms
10	North Bedrooms (grey tint)
5	East Bedrooms (grey tinted)

Auto-Pass:	
Living 1.01 Living 2.01 All Other Living Areas All Other Bedrooms	Yes
Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02 North Bedrooms (grey tint) East Bedrooms (grey tinted) Living 2.03 Living 2.02 Living 6.01 Living 6.02	No
Room Floor Area:	
Living 1.01	23.9 m²
Living 2.01	26.0 m²
All Other Living Areas All Other Bedrooms	-
Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02	12.6 m²
North Bedrooms (grey tint)	10.1 m²
East Bedrooms (grey tinted)	8.4 m²
Living 2.03	31.0 m²
Living 2.02	36.3 m²
Living 6.01	45.0 m²
Living 6.02	40.8 m²
Vertical Angle:	
Living 1.01	0.0 Angle (degrees)
Living 2.01	43.0 Angle (degrees)
All Other Living Areas All Other Bedrooms	-
Master 1.01 Master & Bed 1 1.02	6.0 Angle (degrees)
Bed 2 & Master 2.01, Master & Bed 2 2.02	12.0 Angle (degrees)
North Bedrooms (grey tint) East Bedrooms (grey tinted)	180 Angle (degrees)
Living 2.03 Living 2.02	98.6 Angle (degrees)
Living 6.01 Living 6.02	94.1 Angle (degrees)

Horizontal Angle:	
Living 1.01 Living 2.01 Master 1.01	0.0 Angle (degrees)
All Other Living Areas All Other Bedrooms	-
Master & Bed 1 1.02	6.0 Angle (degrees)
Bed 2 & Master 2.01, Master & Bed 2 2.02	18.0 Angle (degrees)
North Bedrooms (grey tint) East Bedrooms (grey tinted)	141 Angle (degrees)
Living 2.03	133 Angle (degrees)
Living 2.02	145 Angle (degrees)
Living 6.01 Living 6.02	180 Angle (degrees)
Window Area:	
Living 1.01	9.3 m^2
Living 2.01	9.6 m^2
All Other Living Areas All Other Bedrooms	-
Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02	8.7 m^2
North Bedrooms (grey tint) Living 2.03	7.0 m^2
East Bedrooms (grey tinted)	3.5 m^2
Living 2.02	14.2 m^2
Living 6.01	33.6 m^2
Living 6.02	15.5 m^2
Window Orientation:	
Living 1.01 Living 2.01 Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02	South
All Other Living Areas All Other Bedrooms	-
North Bedrooms (grey tint) Living 6.01	North
East Bedrooms (grey tinted) Living 6.02	East
Living 2.03 Living 2.02	West

Glass Type:	
Living 1.01 Living 2.01 Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02	Clear Double (VLT 0.71)
All Other Living Areas All Other Bedrooms	-
North Bedrooms (grey tint) East Bedrooms (grey tinted)	Dark grey Double (VLT 0.16)
Living 2.03 Living 2.02 Living 6.01 Living 6.02	Green Double (VLT 0.58)

Daylight Criteria Achieved?:	
Living 1.01 Living 2.01 All Other Living Areas All Other Bedrooms North Bedrooms (grey tint) East Bedrooms (grey tinted) Living 2.03 Living 2.02 Living 6.01 Living 6.02	Yes
Master 1.01 Master & Bed 1 1.02 Bed 2 & Master 2.01, Master & Bed 2 2.02	No

1.1 Daylight Access - Living Areas		100%
Score Contribution	This credit contributes 26.4% towards the category score.	
Criteria	What % of living areas achieve a daylight factor greater than 1%	
Output	Calculated percentage	
Apartment	100 %	

1.2 Daylight Access - Bedrooms		67%
Score Contribution	This credit contributes 26.4% towards the category score.	
Criteria	What % of bedrooms achieve a daylight factor greater than 0.5%	
Output	Calculated percentage	
Apartment	90 %	

1.3 Winter Sunlight		100%
Score Contribution	This credit contributes 8.8% 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	Yes	

1.4 Daylight Access - Non-Residential	33%
Score Contribution	This credit contributes 3.1% towards the category score.
Criteria	What % of the nominated floor area has at least 2% daylight factor?
Question	Percentage Achieved?
Shop	51 %

1.5 Daylight Access - Minimal Internal Bedrooms	100%
Score Contribution	This credit contributes 8.8% towards the category score.
Criteria	Do at least 90% of dwellings have an external window in all bedrooms?
Question	Criteria Achieved ?
Apartment	Yes

2.1 Effective Natural Ventilation	67%
Score Contribution	This credit contributes 26.4% towards the category score.
Criteria	What % of dwellings are effectively naturally ventilated?
Question	Percentage Achieved?
Apartment	62 %

Transport Overall contribution 4%

1.1 Bicycle Parking - Residential	100%
Score Contribution	This credit contributes 20.1% towards the category score.
Criteria	Is there at least one secure bicycle space per dwelling?
Question	Bicycle Spaces Provided ?
Apartment	39
Output	Min Bicycle Spaces Required
Apartment	34

1.2 Bicycle Parking - Residential Visitor	100%
Score Contribution	This credit contributes 20.1% towards the category score.
Criteria	Is there at least one visitor bicycle space per 5 dwellings?
Question	Visitor Bicycle Spaces Provided ?
Apartment	7
Output	Min Visitor Bicycle Spaces Required
Apartment	7

1.3 Bicycle Parking - Convenience Residential	0%
Score Contribution	This credit contributes 10.1% towards the category score.
Criteria	Are bike parking facilities for residents located at ground level?
Question	Criteria Achieved ?
Apartment	No

1.4 Bicycle Parking - Non-Residential	100%
Score Contribution	This credit contributes 2.3% 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

1.5 Bicycle Parking - Non-Residential Visitor	100%
Score Contribution	This credit contributes 1.2% 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	3

1.6 End of Trip Facilities - Non-Residential	100%
Score Contribution	This credit contributes 1.2% 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	1
Question	Number of lockers provided ?
Shop	5
Output	Min Showers Required
Shop	1
Output	Min Lockers Required
Shop	2

2.1 Electric Vehicle Infrastructure	0%
Score Contribution	This credit contributes 22.5% towards the category score.
Criteria	Are facilities provided for the charging of electric vehicles?
Question	Criteria Achieved ?
Project	No

2.2 Car Share Scheme	0%
Score Contribution	This credit contributes 11.2% towards the category score.
Criteria	Has a formal car sharing scheme been integrated into the development?
Question	Criteria Achieved ?
Project	No

2.3 Motorbikes / Mopeds	0%
Score Contribution	This credit contributes 11.2% 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	No

Waste Overall contribution 6%

1.1 - Construction Waste - Building Re-Use		N/A	Scoped Out
This credit was scoped out	N/A site is currently vacant		
2.1 - Operational Waste - Food & Garden Waste		100%	
Score Contribution	This credit contributes 50.0% towards the category score.		
Criteria	Are facilities provided for on-site management of food and garden waste?		
Question	Criteria Achieved ?		
Project	Yes		
2.2 - Operational Waste - Convenience of Recycling		100%	
Score Contribution	This credit contributes 50.0% 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 1%

1.1 Communal Spaces		0%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Is there at least the following amount of common space measured in square meters : * 1m² for each of the first 50 occupants * Additional 0.5m² for each occupant between 51 and 250 * Additional 0.25m² for each occupant above 251?	
Question	Common space provided	
Apartment	0.0 m²	
Shop	0.0 m²	
Output	Minimum Common Space Required	
Apartment	61 m²	
Shop	33 m²	
2.1 Vegetation		25%
Score Contribution	This credit contributes 45.0% 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	7 %	
2.2 Green Roofs		0%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green roof?	
Question	Criteria Achieved ?	
Project	No	
2.3 Green Walls and Facades		0%
Score Contribution	This credit contributes 11.2% towards the category score.	
Criteria	Does the development incorporate a green wall or facade?	
Question	Criteria Achieved ?	
Project	No	
2.4 Private Open Space - Balcony / Courtyard Ecology		100%
Score Contribution	This credit contributes 10.1% towards the category score.	
Criteria	Is there a tap and floor waste on every balcony / in every courtyard?	
Question	Criteria Achieved ?	
Apartment	Yes	

3.1 Food Production - Residential		0%
Score Contribution	This credit contributes 10.1% towards the category score.	
Criteria	Is there at least 0.25m² of space per resident dedicated to food production?	
Question	Food Production Area	
Apartment	0.0 m²	
Output	Min Food Production Area	
Apartment	19 m²	

3.2 Food Production - Non-Residential		0%
Score Contribution	This credit contributes 1.2% towards the category score.	
Criteria	Is there at least 0.25m² of space per occupant dedicated to food production?	
Question	Food Production Area	
Shop	0.0 m²	
Output	Min Food Production Area	
Shop	9 m²	

Innovation

Overall contribution 0%

1.1 Innovation		N/A	⊘ Disabled
This credit is disabled	None		

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