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COMPLIANCE ENERGY RATING

SUMMARY OF REPORT

CLIENT:	Jim & Marcel		Date:	16/07/2020		
PLANS BY:	Petridis Architects					
PLANS JOB No.:	20/08		REF No.:	CER171		
	RATED ADDRESS		LOT \ UNIT NO.	STAR RATING		
			1	7.7		
1	70-171 Highbury Road,		7	6.5		
M	ount Waverley, VIC 3149		10	6.6		
			12	7.7		
	Average Star Ratin	g		7.1		
Concrete suspended	slah enclosed.	No in	sulation required			
WALL DETAILS	i siab chelosed.	No insulation required				
Fibre Cement Walls	:	R2.5 insulation plus 1 anti glare reflective foil				
Internal walls betwe	een dwellings/corridor:	R2.5 insulation required				
ROOF & CEILING	DETAILS					
Concrete suspended	l slab roof:	R3.5 insulation required				
WINDOWS, GLAZ	ING					
FRAMES:		Aluminium Frames				
GLAZING:		Windows to be Double Glazed with				
		U-Value=3.10, SHGC=0.27				
		U vaiu	e to be equal or less & SP	AGC can be within 5%		
AIR LEAKAGE		LI	GHTING			
• Exhaust fa	ns to be sealed.	The	e lamp illumination po	wer density or artificial		
Windows	and sliding doors are fitted with	ligh	nting not to exceed:			
weather se	als.	•In	Class 1 building (with	in the building), 5W/sqm		
External de	oors to be weather stripped.	•0	n a verandah or balcor	y attached to the class 1		
 Gaps & Cracks around doors, windows and 		4W/sqm				

- •In a class 10 building (Garage, Shed...) 3W/sqm
- All other: as per energy report and plans.

service penetrations are sealed.

Nationwide House Energy Rating Scheme NatHERS Certificate No. UC0UCD8ZR1

1, 170-171 Highbury Road, Mount Waverley, VIC, 3149

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21)

Property

Address Lot/DP NCC Class* Type

Class 2 New Home

Plans

Main plan Prepared by

Petridis Architects

Construction and environment

20-08

Assessed floor area (m²)* Conditioned* 75.3 Unconditioned* 4.2 Total 79.5 Garage Exposure type protected NatHERS climate zone 62, Mount Waverley

T A SESSOR

Accredited assessor

NameTerryBusiness nameCompEmailterryPhone0400Accreditation No.DMN.Assessor Accrediting OrganisationDMNDeclaration of interestDeclaration

Terry Stamatopoulos Compliance Energy Rating terry@complianceenergy.com.au 0400665738 DMN/10/1015

Declaration completed: no conflicts

69.9 MJ/m²

10

The more stars the more energy efficient

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

For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performanceHeatingCooling58.611.3MJ/m²MJ/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.

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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 1, 170-171 Highbury Road, Mount

UC0UCD8ZR1 NatHERS Certificate

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

				Jubstitution to	ferance runges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain Iow-E -Clear	3.1	0.27	0.26	0.28
Custom* windows				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit

No Data Available

Window and glazed door Schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	shading device*
Kit/Liv/Din	ATB-003-04 B	Opening 55	2700	2800	sliding	45.0	W	No
Bedroom 1	ATB-003-04 B	Opening 54	2700	1900	sliding	45.0	W	No
Bedroom 2	ATB-003-04 B	Opening 56	2700	2800	sliding	45.0	W	No

* Refer to glossary.

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Roof window type and performance value

Default* roof windows					Substit	tution tolerance	ranges
			Maximum		SUCCION		unner linst
Window ID	Window description		U-value*	SHGC	SHGCION	ver limit SHGC	upper limit
No Data Available							
Custom* roof windows					Substit	tution tolerance	e ranges
			Maximum		-		
Window ID	Window description		U-value*	SHGC	SHGCION	ver limit ShGC	upper limit
No Data Available							
Roof window so	chedule			Area	1	Outdoor	Indoor
Location	Window ID	Window no.	Opening	% (m²)	Orientation	shade	shade
No Data Available			-				2.
Skylight type an Skylight ID No Data Available	nd performance		Skylight des	scription			
Skylight schedu	lle	Skylight	Skylight shaft	Area Ori	ent- Outdoor	Sky	light shaft
				The second s		C S S S S S S S S S S S S S S S S S S S	
Location	Skylight ID	No.	length (mm)	(m²) atio	on shade	Diffuser re	flectance
No Data Available	Skylight ID	No.	length (mm)	(m²) atio	on shade	Diffuser re	flectance
No Data Available	chedule	No.	length (mm)	(m²) atic	on shade	Diffuser re	flectance
No Data Available External door s Location	Skylight ID Chedule Height	No.	length (mm) Width (mm)	(m²) atio	on shade Opening %	Diffuser re Orientation	flectance
No Data Available External door s Location Kit/Liv/Din External wall tv	Skylight ID chedule Height 210	No. (mm)	length (mm) Width (mm) 920	(m²) atic	on shade Opening % 100.0	Diffuser ref Orientation E	flectance
No Data Available External door se Location Kit/Liv/Din External wall ty	Skylight ID Chedule Height 210 pe	No. (mm)	length (mm) Width (mm) 920 Solar	(m²) atic	on shade Opening % 100.0 e	Diffuser re Orientation E	Reflective
No Data Available External door s Location Kit/Liv/Din External wall ty	Skylight ID chedule Height 210 pe	No. (mm)	length (mm) Width (mm) 920 Solar absorptance	(m²) atic Wall shad (colour)	on shade Opening % 100.0 e Bulk insulatio	Diffuser re Orientation E	Reflective wall wrap*
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C	Skylight ID chedule Height 210 210 210	No. (mm)	length (mm) Width (mm) 920 Solar absorptance 0.5	(m²) atic Wall shad (colour) Medium	on shade Opening % 100.0 e Bulk insulatio Glass fibre ba	Diffuser rel Orientation E on (R-value) att: R2.5 (R2.5)	Reflective wall wrap* Yes
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Internal	Skylight ID chedule Height 210 210 210 210 210 210 210 210 210 210	No. (mm))0	length (mm) Width (mm) 920 Solar absorptance 0.5 0.5	(m²) ation Wall shad (colour) Medium Medium	on shade Opening % 100.0 e Bulk insulatio Glass fibre ba Glass fibre ba	Diffuser rel Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5)	Reflective wall wrap* Yes No
No Data Available External door state Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Interna External wall so	Skylight ID chedule Height 210 210 210 210 210 210 210 210	No. (mm)	length (mm) Width (mm) 920 Solar absorptance 0.5 0.5	(m²) atio	on shade Opening % 100.0 e Bulk insulatio Glass fibre ba Glass fibre ba	Diffuser ref	Reflective wall wrap* Yes No
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Interna External wall so	Skylight ID chedule Height 210 200 Clad Framed I Plasterboard Stud Wall Chedule	No. (mm)	length (mm) Width (mm) 920 Solar absorptance 0.5 0.5	(m²) atio Wall shad (colour) Medium Medium	on shade Opening % 100.0 e Bulk insulatio Glass fibre ba Glass fibre ba Glass fibre ba	Diffuser ref	Reflective wall wrap* Yes No
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Internal External wall so	Skylight ID chedule Height 210 210 210 210 210 210 210 210 210 210	No. (mm))0	Vidth (mm) 920 Solar absorptance 0.5 0.5 Height Width	(m²) atio	Opening % Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat	Diffuser rel Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad	Reflective wall wrap* Yes No
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Interna External wall sc Location Kit/Liv/Din	Skylight ID chedule Height 210 200 210 210 210 210 210 210 210 210	No. (mm) 00 Wall ID	Vidth (mm) 920 Solar absorptance 0.5 0.5 Height Width (mm) (mm)	(m²) ation Wall shad (colour) Medium Medium	Opening % Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat	Diffuser ref Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad n (mm) (yes	Reflective wall wrap* Yes No ical ding feature /no)
Location No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Interna External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID chedule Height 210 200 210 210 210 210 210 210 210 210	No. (mm) 00 Wall ID 1	Width (mm) 920 Solar absorptance 0.5 0.5 0.5 200 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	(m²) ation Wall shad (colour) Medium Medium Orientatio W	Opening % Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat Glas fibre bat Glas fibre bat Glas fibre	Diffuser ref Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad n (mm) (yes 3 No	Reflective wall wrap* Yes No ical ding feature /no)
Location No Data Available External door set Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Internal External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID chedule Height 210 210 210 210 210 210 210 210 210 210	No. (mm))0 Wall ID 1 2	Width (mm) 920 Solar absorptance 0.5 0.5 0.5 2700 3094	(m²) ation Wall shad (colour) Medium Medium Orientation W S	Opening % Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat Glass fibre bat Opening % Opening % 100.0 e Bulk insulation Glass fibre bat Opening % Opening % Op	Diffuser ref Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad n (mm) (yes 3 No No	Reflective wall wrap* Yes No ical ding feature /no)
No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Interna External wall sc Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID chedule Height 210 200 21ad Framed I Plasterboard Stud Wall chedule	No. (mm) 00 Wall ID 1 2 2	Width (mm) 920 Solar absorptance 0.5 0.5 0.5 0.5 0.5 2700 3094 2700 1193	(m²) ation Wall shad (colour) Medium Medium Orientatio W S E	Opening % Opening % 100.0 e Bulk insulation Glass fibre base Glass fibre base Glass fibre base Horizontal feature* main projection 998 0 0	Diffuser ref Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad n (mm) (yes 3 No No No	Reflective wall wrap* Yes No ical ding feature /no)
Location No Data Available External door s Location Kit/Liv/Din External wall type 1 FR5 - Fibro C 2 FR5 - Internal External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID chedule Height 210 200 210 210 210 210 210 210 210 210	No. (mm) 00 Wall ID 1 2 2 2	length (mm) Width (mm) 920 Solar absorrtance 0.5 0.5 0.5 0.5 0.5 2700 3094 2700 2700 1193 2700 5393	(m²) ation Wall shad (colour) Medium Medium Orientatio W S E S	Opening % 100.0 e Bulk insulation Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat Glass fibre bat 0 0 0 0 0 0 0	Diffuser ref Orientation E on (R-value) att: R2.5 (R2.5) att: R2.5 (R2.5) shading Verti aximum shad n (mm) (yes 3 No No No No	Reflective wall wrap* Yes No ical ding feature /no)

* Refer to glossary.

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UC0UCD8ZR1 NatHERS Certificate

7.7 Star Rating as of 16 Jul 2020

		- 10 M				
Kit/Liv/Din	2	2700	1072	E	0	No
Bedroom 1	2	2700	3340	N	0	No
Bedroom 1	1	2700	2141	W	1016	Yes
Bedroom 1	1	2700	520	N	0	Yes
Bedroom 1	1	2700	815	W	0	No
WIR	2	2700	1762	N	0	No
Ensuite	2	2700	2159	N	0	No
Bathroom	2	2700	2171	N	0	No
Laundry	2	2700	1946	E	0	No
Laundry	2	2700	1561	N	0	No
Bedroom 2	1	2700	2971	s	0	Yes
Bedroom 2	2	2700	1316	E	0	No
Bedroom 2	2	2700	590	S	0	No
Bedroom 2	2	2700	1651	Е	0	No
Bedroom 2	1	2700	2967	W	1002	No

Internal wall type

Wall ID Wall type		Area (m ²) Bulk insulation	
1 FR5 - Internal Plasterboard Stud	Wall	64.2	
Floor type			

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv/Din	FR5 - 300mm concrete slab	44.6	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 300mm concrete slab	10.3	Enclosed	R0.0	Carpet
WIR	FR5 - 300mm concrete slab	3,4	Enclosed	R0.0	Carpet
Ensuite	FR5 - 300mm concrete slab	4.2	Enclosed	R0.0	Tiles
Bathroom	FR5 - 300mm concrete slab	4.2	Enclosed	R0.0	Tiles
Laundry	FR5 - 300mm concrete slab	3	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 300mm concrete slab	9.8	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction material/type		Bulk insulation R-value (ma include edge batt values)	y Reflective wrap*	
Kit/Liv/Din	Plasterboard		R3.5		
Bedroom 1	Plasterboard		R3.5	No	
WIR	Plasterboard		R3.5	No	
Ensuite	Plasterboard		R3.5	No	
Bathroom	Plasterboard		R3.5	No	
Laundry	Plasterboard		R3.5	No	
Bedroom 2	Plasterboard		R3.5	No	

Ceiling penetrations*

* Refer to glossary.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 1, 170-171 Highbury Road, Mount

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UC0UCD8ZR1 NatHERS Certificate 7.	7 Star Rating as o	of 16 Jul 2020			
Location	Quantity	Туре	Diameter (mm)	Sealed/unsealed	1
Kit/Liv/Din	1	Exhaust Fans	150	Sealed	
Ensuite	1	Exhaust Fans	200	Sealed	
Bathroom	1	Exhaust Fans	200	Sealed	
Ceiling fans					
Location	Quantity		Diamet	er (mm)	
No Data Available					
Roof type					
Construction A	dded insulation (I	R-value) Sola	rabsorptance R	oof shade	_
Slab:Slab - Suspended Slab : 300mm: 300mm	0.0		0.5 N	ledium	
Suspended Slab					
	A				

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* Refer to glossary. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 1, 170-171 Highbury Road, Mount

UC0UCD8ZR1 NatHERS Certificate

7.7 Star Rating as of 16 Jul 2020

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.
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.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 1, 170-171 Highbury Road, Mount

UC0UCD8ZR1 NatHERS Certificate

7.7 Star Rating as of 16 Jul 2020

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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 1, 170-171 Highbury Road, Mount Page 7 of 7

Nationwide House Energy Rating Scheme NatHERS Certificate No. FWNI45SGG9

7, 170-171 Highbury Road , Mount Waverley , VIC, 3149

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21)

Property

Address Lot/DP NCC Class* Type

Class 2 New Home

Plans

Main plan Prepared by

Petridis Architects

20-08

Construction and environment

Assessed floor area (m²)* Conditioned* 64 Unconditioned* 2.9 Total 66.9 Garage Exposure type protected NatHERS climate zone 62, Mount Waverley



Accredited assessor

NameTerryBusiness nameCompEmailterryPhone0400Accreditation No.DMN.Assessor Accrediting OrganisationDMNDeclaration of interestDeclaration

Terry Stamatopoulos Compliance Energy Rating terry@complianceenergy.com.au 0400665738 DMN/10/1015 sation

Declaration completed: no conflicts

6.5 The more stars the more energy efficient

107.9 MJ/m²

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

For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performanceHeatingCooling87.420.5MJ/m²MJ/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.

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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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 7, 170-171 Highbury Road , Mount

FWNI45SGG9 NatHERS Certificate

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

				Substitution to	ferance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain Iow-E -Clear	3.1	0.27	0.26	0.28
Custom* windows				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit

No Data Available

Window and glazed door Schedule

								Window		
Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	shading device*		
Kit/Liv/Din	ATB-003-04 B	Opening 55	1500	1650	awning	90.0	E	No		
Kit/Liv/Din	ATB-003-04 B	Opening 57	2400	1800	sliding	45.0	N	No		
Kit/Liv/Din	ATB-003-04 B	Opening 58	2400	2500	sliding	45.0	E	No		
Kit/Liv/Din	ATB-003-04 B	Opening 60	1500	2750	fixed	0.0	N	No		

* Refer to glossary.

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FWNI45SGG9 Na	AtHERS Certificate	6.5	Star Ratir	ng as of 1	6 Jul 2020				
Kit/Liv/Din	ATB-003-04 B	Opening 59	2400	2500	sliding	45.0	w	No	
Kit/Liv/Din	ATB-003-04 B	Opening 56	2400	1600	sliding	45.0	N	No	
Bedroom 1	ATB-003-04 B	Opening 53	1500	1650	awning	25.0	E	No	
Bedroom 2	ATB-003-04 B	Opening 54	1500	1650	awning	25.0	E	No	
Roof window	N type and per	formance	alue						
Default* roof windo	ows					Substi	itution tol	erance ran	des
			1	Maximum		CLICC In	ven lineit	SUCCUM	gee au linait
Window ID	Window desc	ription		U-value*	SHGC*	SHGC IO	ver limit	SHGC upp	
No Data Available					· · · ·				
Custom* roof wind	ows					Substi	itution tol	erance ran	ges
				Maximum		SHGC lov	wer limit	SHGC upp	er limit
Window ID	Window desc	ription		U-value*	SHGC			33 82	
Roof window Location No Data Available	w schedule Window ID	Windo	w no.	Openir	Area ng % (m²)	Orientation	Outdoo shade	r Indo sha	oor de
Skylight type	e and perform	ance		Skylight	description				
No Data Available			-						<u> </u>
Skylight sch	nedule Skylight ID	Skyli No.	ght Sky lei	/light sha ngth (mm	ft Area Ori) (m²) atic	ent- Outdoor on shade	r Diffuse	Skylight r reflecta	shaft ance
									-
External doo	or <i>schedule</i>	Height (mm)	M	lidth (mr		Opening %	Orier	ntation	
Entry		2100		920	,	100.0	W		
External wa	ll type			<u>_</u>					
Wall ID Wall two			at	Solar	Wall shad	e Bulk insulati	ion (P-val	Ref	lective
1 ER5- F	ibro Clad Framed		au	0.5	Medium	Glass fibre b	att: R2.5.	R25) Ve	i wiap
2 FR5- In	iternal Plasterboard Si	ud Wall		0.5	Medium	Glass fibre b	att: R2.5 (R2.5) No	
External wa	II schedule					Horizontal	shading	Vertical	
Location			Wall Heig ID (mr	ght Widt m) (mm	h) Orientatio	feature* m n projectio	iaximum n (mm)	shading f (yes/no)	leature

* Refer to glossary.

Kit/Liv/Din

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2700

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No

999

FWNI45SGG9 NatHERS Certificate

6.5 Star Rating as of 16 Jul 2020

Kit/Liv/Din	1	2700	2023	Ν	1014	Yes
Kit/Liv/Din	1	2700	2800	E	954	Yes
Kit/Liv/Din	1	2700	2747	N	1075	No
Kit/Liv/Din	1	2700	2798	W	1010	Yes
Kit/Liv/Din	1	2700	1882	N	1008	Yes
Kit/Liv/Din	2	2700	3353	W	0	No
Entry	2	2700	774	W	0	No
Entry	2	2700	1557	w	0	No
Entry	2	2700	2945	S	0	No
Entry	2	2700	2617	W	0	No
Entry	2	2700	1786	N	0	No
Bedroom 1	2	2700	1915	s	0	No
Bedroom 1	2	2700	594	W	0	No
Bedroom 1	1	2700	3455	S	0	No
Bedroom 1	1	2700	2959	E	1010	No
Bedroom 2	1	2700	2971	E	1016	No

Internal wall type

 Wall ID
 Wall type
 Area (m²)
 Bulk insulation

 1
 FR5 - Internal Plasterboard Stud Wall
 58.1

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv/Din	FR5 - 300mm concrete slab	28.4	Enclosed	R0.0	Timber
Entry	FR5 - 300mm concrete slab	9.9	Enclosed	R0.0	Timber
Bathroom	FR5 - 300mm concrete slab	2.9	Enclosed	R0.0	Tiles
Ensuite	FR5 - 300mm concrete slab	2.9	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 300mm concrete slab	12.8	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 300mm concrete slab	10	Enclosed	R0.0	Carpet

Ceiling type

Location	Construction mate	erial/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Kit/Liv/Din	Plasterboard		R3.5	No
Entry	Plasterboard		R3.5	No
Bathroom	Plasterboard		R3.5	No
Ensuite	Plasterboard		R3.5	No
Bedroom 1	Plasterboard		R3.5	No
Bedroom 2	Plasterboard		R3.5	No

Ceiling penetrations*

Quantity Type

Diameter (mm) Sealed/unsealed

* Refer to glossary.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 7, 170-171 Highbury Road , Mount

FWNI45SGG9 NatHERS Certificate	6.5 Star Rating as of 16 Jul 2	020	
Kit/Liv/Din	1 Exhaust	Fans 150	Sealed
Bathroom	1 Exhaust	Fans 200	Sealed
Ensuite	1 Exhaust	Fans 200	Sealed
Ceiling fans Location	Quantity	Dian	neter (mm)
No Data Available			
Roof type	Added insulation (P-value)	Solar abcomtance	Poof shade
Slab:Slab - Suspended Slab : 300mm: 300mm	Audeu Insulation (R-value)	Solal absorptance	Rooi silade
Suspended Slab	0.0	0.5	Medium

6

* Refer to glossary. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 7, 170-171 Highbury Road , Mount

FWNI45SGG9 NatHERS Certificate

6.5 Star Rating as of 16 Jul 2020

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.
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.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 7, 170-171 Highbury Road , Mount

FWNI45SGG9 NatHERS Certificate

6.5 Star Rating as of 16 Jul 2020

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.
Ú-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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 7, 170-171 Highbury Road , Mount Page 7 of 7

Nationwide House Energy Rating Scheme NatHERS Certificate No. C82CK184IE

10, 170-171 Highbury Road, Mount Waverley, VIC, 3149

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21)

Property

Address Lot/DP NCC Class* Type

Class 2 New Home

Plans

Main plan Prepared by 20-08 Petridis Architects

Construction and environment

Assessed floor area (m²)* Conditioned* 73 Unconditioned* 4.6 Total 77.6 Garage

Nat

Assessed floor area (m²)* Exposure type

protected NatHERS climate zone 62, Mount Waverley

CCREDINE T SSESSOF

Accredited assessor

NameTerryBusiness nameCompEmailterryPhone0400Accreditation No.DMN.Assessor Accrediting OrganisationDMNDeclaration of interestDeclaration

Terry Stamatopoulos Compliance Energy Rating terry@complianceenergy.com.au 0400665738 DMN/10/1015 ation

Declaration completed: no conflicts

105.8 MJ/m²

the more energy efficient

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

For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performanceHeatingCooling86.719.1MJ/m²MJ/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.

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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

C82CK184IE NatHERS Certificate

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

				Substitution to	ferance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain Iow-E -Clear	3.1	0.27	0.26	0.28
Custom* windows				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit

No Data Available

Window and glazed door Schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*	
Kit/Liv/Din	ATB-003-04 B	Opening 61	1500	1600	awning	10.0	s	No	
Kit/Liv/Din	ATB-003-04 B	Opening 62	2400	5350	sliding	45.0	E	No	
Kit/Liv/Din	ATB-003-04 B	Opening 64	2400	3900	fixed	0.0	N	No	-
Kit/Liv/Din	ATB-003-04 B	Opening 63	2400	1100	fixed	0.0	E	No	0

* Refer to glossary.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

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										-	
C82CK184IE NatHER	RS Certificate		6.6 Star	Rating	as of 1	6 Jul 2020					
Bedroom 2	ATB-003-04 B	Opening 60	D 1	500	1600	awning	2	5.0	s	_	No
Bedroom 1	ATB-003-04 B	Opening 59	э 1	500	1600	awning	2	5.0	s		No
				in a second							
Roof window t	ype and pe	formanc	e valu	Ie							
Default* roof windows											
				Ma	aximum			Substit	ution tol	erance	ranges
Window ID	Window des	cription		U	-value*	SHGO	SH	GC low	er limit	SHGC	upper limit
No Data Available											
Custom* roof windows											
				Ma	aximum		_	Substit	ution tol	erance	ranges
Window ID	Window des	cription		U	-value*	SHGO	* SH	GC low	er limit	SHGC	upper limit
No Data Available											
Destuindau	chadula									÷.	
Root window s	scriedule					Area	a		Outdoo	r I	ndoor
Location	Window ID	Wi	ndow no.		Openin	ig % (m²)	Orient	ation	shade		shade
No Data Available		· · .		\leq		-					<u> </u>
Skylight type	and perform	2000									
Skylight ID	ind periorin	ance		sł	kylight o	escription					
No Data Available											
							c)				
Skylight sched	lule		المراجع المراجع	Plan di						Ola di	
Location	Skylight ID	S N	kylight Io.	leng	gnt sna jth (mm)) (m²) at	ion sh	utdoor 1ade	Diffuser	skyll r refl	ectance
No Data Available											
External door	schedule	Height (mm		Wiz	dth (mm	Ň	Onenin	a 9/	Orien	tation	
Entry		2100		VVIC	920	<u>,</u>	100.0	9 /0 0	W	lation	
External wall t	ype										
				ahe	Solar	Wall sha	de Bulk ir	neulatio	n (P-val	ua)	Reflective
1 FR5 - Fibro	Clad Framed			aus	0.5	Medium	Glass	fibre ba	tt: R2.5 (R2.5)	Yes
2 FR5 - Intern	al Plasterboard S	tud Wall			0.5	Medium	Glass	fibre ba	tt: R2.5 (R2.5)	No
External wall s	schedule										
			Wall	Heigh	t Widt	h	Hori feat	zontal s ure* ma	shading ximum	Vertic	al ng feature
Location			ID	(mm)	(mm) Orientati	on pro	jection	(mm)	(yes/r	10)
Kit/Liv/Din			1	2700	4698	s s		0		No	
Kit/Liv/Din			1	2700	5337	7 E		981		No	

Kit/Liv/Din

6

* Refer to glossary. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

1

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Yes

0

C82CK184IE NatHERS Certificate

6.6 Star Rating as of 16 Jul 2020

		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
Kit/Li∨/Din	1	2700	1341	E	1000	Yes
Kit/Liv/Din	2	2700	3685	N	0	No
Laundry	2	2700	1651	W	0	No
Laundry	2	2700	1643	N	0	No
Bathroom	2	2700	1655	E	0	No
Bathroom	2	2700	2762	N	0	No
Entry	2	2700	1161	W	0	No
Entry	2	2700	1509	s	0	No
Entry	2	2700	498	N	0	No
Bedroom 2	1	2700	3575	s	0	No
Bedroom 1	1	2700	2968	s	0	No
Bedroom 1	2	2700	3511	W	0	No
Ensuite	2	2700	1764	W	0	No

Internal wall type

Wall ID	Wall type	Area (m ²) Bulk insulation	
1	FR5 - Internal Plasterboard Stud Wall	69.1	

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv/Din	FR5 - 300mm concrete slab	37.9	Enclosed	R0.0	Timber
Laundry	FR5 - 300mm concrete slab	2.7	Enclosed	R0.0	Tiles
Bathroom	FR5 - 300mm concrete slab	4.6	Enclosed	R0.0	Tiles
Entry	FR5 - 300mm concrete slab	5.9	Enclosed	R0.0	Timber
Bedroom 2	FR5 - 300mm concrete slab	9.7	Enclosed	R0.0	Carpet
Bedroom 1	FR5 - 300mm concrete slab	13.6	Enclosed	R0.0	Carpet
Ensuite	FR5 - 300mm concrete slab	3.3	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	 Reflective wrap*
Kit/Liv/Din	Plasterboard	R3.5	No
Laundry	Plasterboard	R3.5	No
Bathroom	Plasterboard	R3.5	No
Entry	Plasterboard	R3.5	No
Bedroom 2	Plasterboard	R3.5	No
Bedroom 1	Plasterboard	R3.5	No
Ensuite	Plasterboard	R3.5	No
Ceiling per	etrations*		
Location		Quantity Type Diameter (mm)	Sealed/unsealed

1

Exhaust Fans

150

Kit/Liv/Din

* Refer to glossary.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

Sealed

	C82CK184IE NatHERS Certificate	6.6 Star Rating as	of 16 Jul 2020		
	Bathroom	1	Exhaust Fans	200 S	Sealed
	Ensuite	1	Exhaust Fans	200 5	Sealed
	Ceiling fans	Quantity		Diameter (mm)
٩.	No Data Available				
	Roof type Construction	Added insulation (R-value) Solar a	absorptance Roof	shade
	Slab:Slab - Suspended Slab : 300mm: 300mm				
ſ	Suspended Slab	0.0		0.5 Medi	um
	7			7	e
F					۰ ۱
				0	
	* Refer to glossary.	6			Page 5 of 7

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Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

C82CK184IE NatHERS Certificate

6.6 Star Rating as of 16 Jul 2020

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.

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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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* Refer to glossary.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount

C82CK184IE NatHERS Certificate

6.6 Star Rating as of 16 Jul 2020

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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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 10, 170-171 Highbury Road, Mount Page 7 of 7

Nationwide House Energy Rating Scheme NatHERS Certificate No. V98J7KPQ0C

12, 170-171 Highbury Road, Mount Waverley , VIC, 3149

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21)

Property

Address Lot/DP NCC Class* Type

Class 2 New Home

Plans

Main plan 20-08 Prepared by Petrid

Petridis Architects

Construction and environment

Assessed floor area (m²)* Conditioned* 47.1 Unconditioned* 4.5 Total 51.6 Garage _ Exposure type protected NatHERS climate zone 62, Mount Waverley



Accredited assessor

NameTerryBusiness nameCompEmailterryPhone0400Accreditation No.DMN.Assessor Accrediting OrganisationDMNDeclaration of interestDeclaration

Terry Stamatopoulos Compliance Energy Rating terry@complianceenergy.com.au 0400665738 DMN/10/1015 ation

Declaration completed: no conflicts

68 MJ/m²

XX

The more stars the more energy efficient

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

For more information on your dwelling's rating see: www.nathers.gov.au

Thermal performanceHeatingCooling59.28.8MJ/m²MJ/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.

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.

Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 12, 170-171 Highbury Road, Mount

V98J7KPQ0C NatHERS Certificate

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

				Substitution to	ferance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
ATB-003-04 B	Al Thermally Broken A DG Air Fill Low Solar Gain Iow-E -Clear	3.1	0.27	0.26	0.28
Custom* windows				Substitution to	lerance ranges
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit

No Data Available

Window and glazed door Schedule

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	shading device*
Kit/Liv/Din	ATB-003-04 B	Opening 59	2400	3000	sliding	45.0	S	No
Kit/Liv/Din	ATB-003-04 B	Opening 60	2400	900	fixed	0.0	E	No
Bedroom 1	ATB-003-04 B	Opening 61	2400	1300	other	25.0	s	No

* Refer to glossary.

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V98J7KPQ0C NatHERS Certificate

7.7 Star Rating as of 16 Jul 2020

Roof window type and performance value

5 - 5							
Default* roof windows					Substitu	tion toleran	ce ranges
			Maximum		CLICCION		Common limite
Window ID	Window description		U-value*	SHGC*	SHGC lowe		sc upper limit
No Data Available							
Custom* roof windows							
					Substitu	tion toleran	ce ranges
Window ID	Window description		Maximum	SHCC*	SHGC lowe	er limit SHO	GC upper limit
No Data Available	window description		0-value	Silde			
Roof window so	chedule			Area		Outdoor	Indeer
Location	Window ID	Window no.	Opening	% (m²)	Orientation	shade	shade
No Data Available			-				ŝ.
	6						
Skylight type an	nd performance						
Skylight ID			Skylight de	scription			
No Data Available							
Skylight schedu	lle	Oladiaht	Ola distat alsoft	Anna 01			and a start of
		SKVIIIIII	Sevul and share				
Location	Skylight ID	No.	length (mm)	(m ²) atio	on shade	Diffuser I	reflectance
Location No Data Available	Skylight ID	No.	length (mm)	(m²) atio	on shade	Diffuser I	reflectance
Location No Data Available	Skylight ID	No.	length (mm)	(m²) atio	on shade	Diffuser i	reflectance
Location No Data Available External door so	Skylight ID	No.	length (mm)	(m²) atio	on shade	Diffuser	
Location No Data Available External door so Location	Skylight ID Chedule Height	(mm)	Width (mm)	(m²) atio	Opening %	Diffuser i Orientatio	reflectance
Location No Data Available External door so Location Kit/Liv/Din	Skylight ID Chedule Height 210	(mm)	Width (mm) 920	(m²) atio	Opening %	Orientatio N	
Location No Data Available External door so Location Kit/Liv/Din	Skylight ID Chedule Height 210	(mm)	Width (mm) 920	(m²) atio	Opening %	Orientation	
Location No Data Available External door so Location Kit/Liv/Din External wall ty/	Skylight ID chedule Height 210 pe	(mm)	Width (mm) 920	(m²) atio	Opening %	Orientatio	
Location No Data Available External door so Location Kit/Liv/Din External wall ty/	Skylight ID chedule Height 210 pe	(mm)	Width (mm) 920 Solar	(m²) atio	Opening % 100.0	Orientatio N	Reflective
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Wall ID Wall type	Skylight ID chedule Height 210 pe	(mm)	Width (mm) 920 Solar absorptance	Wall shade (colour)	Opening % 100.0 Bulk insulation	Orientation	Reflective wall wrap*
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Wall ID Wall type 1 FR5 - Internal 2 FR5 - Eibro C	Skylight ID Chedule Height 210 pe	(mm)	Width (mm) 920 Solar absorptance 0.5	Wall shade (colour) Medium	Opening % 100.0 Bulk insulation Glass fibre batt	Orientation N (R-value) t: R2.5 (R2.5	Reflective wall wrap*
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Wall ID Wall type 1 FR5 - Internal 2 FR5 - Fibro C	Skylight ID Chedule Height 210 210 210 210 210 210 210 210 210 210	(mm) 00	Width (mm) 920 Solar absorptance 0.5 0.5	Wall shade (colour) Medium Medium	Opening % 100.0 Bulk insulation Glass fibre batt	Orientation N (R-value) 1: R2.5 (R2.5 1: R2.5 (R2.5	Reflective wall wrap*) No) Yes
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Wall ID Wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so	Skylight ID Chedule Height 210 De I Plasterboard Stud Wall Had Framed	(mm)	Width (mm) 920 Solar absorptance 0.5 0.5	Wall shade (colour) Medium Medium	Opening % 100.0 Bulk insulation Glass fibre batt Glass fibre batt	Orientatio N h (R-value) t: R2.5 (R2.5 t: R2.5 (R2.5	Reflective wall wrap*) No) Yes
Location No Data Available External door so Location Kit/Liv/Din External wall type 1 FR5- Internal 2 FR5- Fibro C External wall so	Skylight ID Chedule Height 210 De I Plasterboard Stud Wall Flad Framed	(mm)	Width (mm) 920 Solar absorptance 0.5 0.5	Wall shade (colour) Medium Medium	Opening % 100.0 Bulk insulation Glass fibre batt Glass fibre batt	Orientation N 1 (R-value) 1: R2.5 (R2.5) 1: R2.5 (R2.5) 1: R2.5 (R2.5)	Reflective wall wrap*) No) Yes
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Mall ID Wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so	Skylight ID Chedule Height 210 210 210 210 210 210 210 210 210 210	(mm) DO Wall	Width (mm) 920 Solar absorptance 0.5 0.5 Height Width	Wall shade (colour) Medium Medium	Opening % 100.0 Bulk insulation Glass fibre batt Glass fibre batt Horizontal st feature* max	Orientation N (R-value) t: R2.5 (R2.5 t: R2.5 (R2.5 t: R2.5 (R2.5 hading Ve	Reflective wall wrap*) No) Yes
Location No Data Available External door so Location Kit/Liv/Din External wall ty/ Wall ID Wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so Location Kit/Liv/Din	Skylight ID chedule Height 210 210 210 210 210 210 210 210	(mm) 00 Wall ID	Width (mm) 920 Solar absorptance 0.5 0.5 Height Width (mm) (mm)	Wall shade (m ²) atio	Opening % 100.0 Bulk insulation Glass fibre batt Glass fibre batt Horizontal si feature* may n projection	Orientatio N h (R-value) t: R2.5 (R2.5 t: R2.5 (R2.5 t: R2.5 (R2.5 hading Ve kimum sh (mm) (ye	Reflective wall wrap*) No) Yes rtical ading feature es/no)
Location No Data Available External door so Location Kit/Liv/Din External wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID Chedule Height 210 De I Plasterboard Stud Wall Stad Framed Schedule	(mm) 00 Wall ID 1	Width (mm) 920 Solar absorptance 0.5 0.5 0.5 2700 2915 2700 2920	Wall shade (colour) Medium Medium Orientation	Opening % Opening % 100.0 e Bulk insulation Glass fibre batt Glass fibre batt Glass fibre batt Horizontal st feature* max n projection 0	Orientation N Corientation Co	Reflective wall wrap*) No) Yes rtical ading feature es/no)
Location No Data Available External door so Location Kit/Liv/Din External wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID Chedule Height 210 pe I Plasterboard Stud Wall Rad Framed Schedule	(mm) DO Wall ID 1 1	Width (mm) 920 Solar absorptance 0.5 0.5 2700 2700 2700 2700 2700	Wall shade (m²) atio	Opening % Opening % 100.0 e Bulk insulation Glass fibre batt Glass fibre batt Glass fibre batt horizontal sl feature* max n projection 0 0	Orientation N N (R-value) t: R2.5 (R2.5 t: R2.5 (R2.5 t: R2.5 (R2.5 hading Ve kimum sh (mm) (ye No Ye	Reflective wall wrap*) No) Yes rtical ading feature es/no)
Location No Data Available External door so Location Kit/Liv/Din External wall type 1 FR5 - Internal 2 FR5 - Fibro C External wall so Location Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din Kit/Liv/Din	Skylight ID chedule Height 210 210 210 210 210 210 210 210	(mm) 00 Wall ID 1 1	Width (mm) 920 Solar absorptance 0.5 0.5 200 Solar 200 Solar 200 Solar 200 200 0.5 0.5 200	Wall shade (m²) atio	Opening % 100.0 Bulk insulation Glass fibre batt Glass fibre batt Glass fibre batt Horizontal sl feature* max n projection 0 0 0	Orientatio N N t: R2.5 (R2.5 t: R2.5 (R2.5 t: R2.5 (R2.5 hading Ve kimum sh (mm) (ye No Ye No	Reflective wall wrap*) No) Yes rtical ading feature es/no) o
Location No Data Available External door so Location Kit/Liv/Din Kit/Liv/Din Cocation Kit/Liv/Din	Skylight ID Chedule Height 210 De I Plasterboard Stud Wall Stad Framed Schedule	(mm) 00 Wall ID 1 1 1 2	Width (mm) 920 Solar absorptance 0.5 0.5 2700 2700 2700 2700 2700 3005 2700 2700	Wall shade (m²) ation Wall shade (colour) Medium Medium Orientation W S VV S	Opening % 100.0 e Bulk insulation Glass fibre batt Glass fibre batt Glass fibre batt Horizontal st feature* max n projection 0 0 0 0 0 0 0 0 0 0 0 0 0	Orientation N Corientation Corientation N Corientation Corientation N Corientatio	Reflective wall wrap*) No) Yes rtical ading feature es/no)

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Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 12, 170-171 Highbury Road, Mount

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V98J7KPQ0C NatHERS Certificate 7.7 Star Rating as of 16 Jul 2020 Kit/Liv/Din 2700 1 1317 N 0 No Kit/Liv/Din 2700 2129 N 0 1 No Bedroom 1 2 1749 2700 1408 S Yes Bedroom 1 1 2700 1217 E 0 No Bedroom 1 1 2700 1463 S 0 No 3281 E Bedroom 1 1 2700 0 No WIR 2700 1856 E 0 No 1 Bathroom 2700 1958 E 0 1 No Bathroom 1 2700 2682 N 0 No

Internal wall type

Wall ID	Wall type	Area (m ²) Bulk insulation	
1	FR5 - Internal Plasterboard Stud Wall	37.9	

Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Kit/Liv/Din	FR5 - 300mm concrete slab	31.6	Enclosed	R0.0	Timber
Bedroom 1	FR5 - 300mm concrete slab	11.1	Enclosed	R0.0	Carpet
WIR	FR5 - 300mm concrete slab	4.4	Enclosed	R0.0	Carpet
Bathroom	FR5 - 300mm concrete slab	4.5	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value (include edge batt value	may Reflective s) wrap*
Kit/Liv/Din	Plasterboard	R3.5	No
Bedroom 1	Plasterboard	R3.5	No
WIR	Plasterboard	R3.5	No
Bathroom	Plasterboard	R3.5	No

Ceiling penetrations

Location	Quantity	Туре	Diameter (mr	n) Sealed/unsealed
Kit/Liv/Din	1	Exhaust Fans	150	Sealed
Bathroom	1	Exhaust Fans	200	Sealed
Ceiling fans				
Location	Quantity		Diam	neter (mm)
No Data Available Roof type				
Construction	Added insulation (I	R-value) Sola	r absorptance	Roof shade
Slab:Slab - Suspended Slab : 300mm: 300mm Suspended Slab	0.0		0.5	Medium

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V98J7KPQ0C NatHERS Certificate

7.7 Star Rating as of 16 Jul 2020

Explanatory Notes

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Ú-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. Generated on 16 Jul 2020 using FirstRate5: 5.3.0a (3.21) for 12, 170-171 Highbury Road, Mount Page 6 of 6