

# Nationwide House Energy Rating Scheme

## NatHERS Certificate No. I3NK8AW891

Generated on 26 Apr 2021 using FirstRate5: 5.3.1 (3.21)

### Property

**Address** Lot C, 863 MONTPELIER DRIVE , THE OAKS , NSW, 2570  
**Lot/DP** 12/1232323  
**NCC Class\*** Class 1a  
**Type** New Home

### Plans

**Main plan** 0272 / REV. H  
**Prepared by** ALVARO ARCHITECTS P/L

### Construction and environment

<b>Assessed floor area (m<sup>2</sup>)*</b>	<b>Exposure type</b>
Conditioned* 244.1	suburban
Unconditioned* 64.5	<b>NatHERS climate zone</b>
Total 308.6	28, THE OAKS
Garage 49.9	



### Accredited assessor

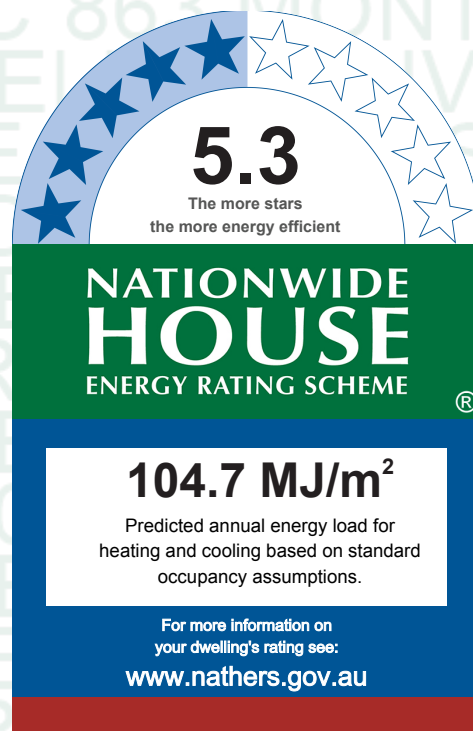
**Name** Nermein Loka  
**Business name** Loka Consulting Engineers  
**Email** info@lceng.com.au  
**Phone** 80659689  
**Accreditation No.** 101399  
**Assessor Accrediting Organisation** ABSA  
**Declaration of interest** Declaration completed: no conflicts

### National Construction Code (NCC) requirements

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

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

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



### Thermal performance

<b>Heating</b>	<b>Cooling</b>
<b>49.5</b>	<b>55.2</b>
<b>MJ/m<sup>2</sup></b>	<b>MJ/m<sup>2</sup></b>

### About the rating

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

### Verification

To verify this certificate, scan the QR code or visit <https://www.fr5.com.au/QRCodeLanding?PublicId=I3NK8AW891> When using either link, ensure you are visiting [www.FR5.com.au](http://www.FR5.com.au).



## Certificate Check

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

### Genuine certificate

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

### Ceiling penetrations\*

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

### Windows

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

### 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
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61
ALM-001-03 A	Aluminium A SG High Solar Gain Low-E	5.4	0.49	0.47	0.51

#### Custom\* windows

				Substitution tolerance 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*
Master bed	ALM-002-03 A	W316	2700	2410	fixed	0.0	N	No
Master bed	ALM-002-03 A	W317	2700	1640	fixed	0.0	W	No
WIR	ALM-001-03 A	W301	2100	1850	casement	30.0	S	No
ENS	ALM-001-03 A	W302	2100	730	casement	60.0	S	No

Bedroom 3	ALM-001-03 A	W303	2100	1850	casement	30.0	S	No
Bedroom 2	ALM-001-03 A	W304	2100	1850	casement	30.0	S	No
BATHROOM	ALM-001-03 A	W306	1370	2170	casement	45.0	W	No
Bedroom 1	ALM-001-03 A	W307	2100	1850	casement	30.0	S	No
RUMPUS	ALM-002-03 A	D301	2700	2410	sliding	45.0	E	No
RUMPUS	ALM-001-03 A	W308	2700	2580	casement	60.0	E	No
Corridor	ALM-001-03 A	W305	940	1570	casement	45.0	S	No
Corridor	ALM-002-03 A	D307	2700	3610	sliding	60.0	N	No
Garage 11	ALM-001-03 A	D303	2400	1000	casement	100.0	N	No
Garage 11	ALM-001-03 A	W311	944	1800	casement	45.0	N	No
LAUNDRY	ALM-001-03 A	D304	2400	1000	casement	100.0	N	No
LAUNDRY	ALM-002-03 A	W312	2400	203	fixed	0.0	N	No
ENTRY HALLWAY	ALM-001-03 A	W309	2700	1200	casement	30.0	E	No
ENTRY HALLWAY	ALM-001-03 A	D305	2400	1000	casement	100.0	N	No
ENTRY HALLWAY	ALM-002-03 A	W313	2400	210	fixed	0.0	N	No
Kitchen/Living 17	ALM-002-03 A	W314	750	4210	fixed	0.0	N	No
Kitchen/Living 17	ALM-002-03 A	W315	2700	6690	fixed	0.0	N	No
Kitchen/Living 17	ALM-002-03 A	D306	2700	5460	other	90.0	W	No

## Roof window type and performance value

### Default\* roof windows

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

### Custom\* roof windows

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

## Roof window schedule

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

## Skylight type and performance

Skylight ID	Skylight description
GEN-04-001a	SC: Single Clear

## Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m <sup>2</sup> )	Orient-ation	Outdoor shade	Diffuser	Skylight shaft reflectance
Corridor	GEN-04-001a	Element 2	1000	0.6	N	None	No	0.75

Corridor	GEN-04-001a	Element 3	1000	0.6	N	None	No	0.75
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## External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage 11	2100	5067	100.0	S
ENTRY HALLWAY	2700	1200	100.0	E

## External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Brick Veneer	0.5	Medium	Glass fibre batt: R2.0 (R2.0)	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	2700	3868	N	2060	Yes
Master bed	1	2700	1869	W	1092	Yes
Master bed	1	2700	598	N	0	Yes
Master bed	1	2700	3637	W	494	No
Master bed	1	2700	4466	S	0	No
WIR	1	2700	1541	N	0	Yes
WIR	1	2700	2534	S	488	No
ENS	1	2700	1761	S	485	No
Bedroom 3	1	2700	3939	S	481	No
Bedroom 2	1	2700	3926	S	486	No
Bedroom 2	1	2700	2981	E	0	Yes
BATHROOM	1	2700	2937	W	0	Yes
BATHROOM	1	2700	2944	S	488	No
Bedroom 1	1	2700	3941	S	486	No
RUMPUS	1	2700	3813	S	0	No
RUMPUS	1	2700	5517	E	1079	Yes
RUMPUS	1	2700	543	N	0	Yes
Corridor	1	2700	1521	S	0	Yes
Corridor	1	2700	1001	N	0	Yes
Corridor	1	2700	600	E	0	Yes
Corridor	1	2700	4959	N	0	Yes
Corridor	1	2700	587	W	0	Yes
Corridor	1	2700	3673	N	2046	Yes
Garage 11	1	2700	690	W	0	Yes
Garage 11	1	2700	609	N	0	Yes
Garage 11	1	2700	1103	W	0	Yes
Garage 11	1	2700	7649	S	0	Yes

\* Refer to glossary.

Garage 11	1	2700	6243	E	0	No
Garage 11	1	2700	7638	N	0	No
LAUNDRY	1	2700	2505	N	0	Yes
ENTRY HALLWAY	1	2700	2625	E	1623	Yes
ENTRY HALLWAY	1	2700	2090	S	0	Yes
ENTRY HALLWAY	1	2700	1157	N	0	Yes
Kitchen/Living 17	1	2700	4140	N	0	Yes
Kitchen/Living 17	1	2700	635	W	0	Yes
Kitchen/Living 17	1	2700	6913	N	1231	Yes
Kitchen/Living 17	1	2700	7060	W	3993	Yes
Kitchen/Living 17	1	2700	199	N	0	Yes
Kitchen/Living 17	1	2700	635	E	0	Yes

### Internal wall type

Wall ID	Wall type	Area (m²)	Bulk insulation
1	FR5 - Internal Plasterboard Stud Wall	226.7	
2	FR5 - Internal Plasterboard Stud Wall	12.3	Glass fibre batt: R2.0 (R2.0)

### Floor type

Location	Construction	Area (m²)	Sub-floor ventilation	Added insulation (R-value)	Covering
Master bed	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	23.5	Enclosed	R0.0	Carpet
WIR	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	11.5	Enclosed	R0.0	Tiles
ENS	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	5.3	Enclosed	R0.0	Tiles
Bedroom 3	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	16.7	Enclosed	R0.0	Carpet
Bedroom 2	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	16.6	Enclosed	R0.0	Carpet
BATHROOM	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	8.6	Enclosed	R0.0	Tiles
Bedroom 1	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	16.7	Enclosed	R0.0	Carpet
RUMPUS	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	21	Enclosed	R0.0	Tiles
Corridor	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	31.2	Enclosed	R0.0	Tiles
STORE	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	3.4	Enclosed	R0.0	Tiles
Garage 11	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	49.9	Enclosed	R0.0	Tiles
LAUNDRY	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	5.9	Enclosed	R0.0	Tiles

POWDER ROOM	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	2.7	Enclosed	R0.0	Tiles
PANTRY	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	3.6	Enclosed	R0.0	Tiles
ENTRY HALLWAY	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	17.4	Enclosed	R0.0	Tiles
Kitchen/Living 17	FR5 - 225mm waffle pod, 100mm concrete (R0.60)	74.4	Enclosed	R0.0	Tiles

## Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
Master bed	Plasterboard	R6.0	Yes
WIR	Plasterboard	R6.0	Yes
ENS	Plasterboard	R6.0	Yes
Bedroom 3	Plasterboard	R6.0	Yes
Bedroom 2	Plasterboard	R6.0	Yes
BATHROOM	Plasterboard	R6.0	Yes
Bedroom 1	Plasterboard	R6.0	Yes
RUMPUS	Plasterboard	R6.0	Yes
Corridor	Plasterboard	R6.0	Yes
STORE	Plasterboard	R6.0	Yes
Garage 11	Plasterboard	R6.0	Yes
LAUNDRY	Plasterboard	R6.0	Yes
POWDER ROOM	Plasterboard	R6.0	Yes
PANTRY	Plasterboard	R6.0	Yes
ENTRY HALLWAY	Plasterboard	R6.0	Yes
Kitchen/Living 17	Plasterboard	R6.0	Yes

## Ceiling penetrations\*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
Master bed	6	Downlights	50	Sealed
WIR	3	Downlights	50	Sealed
ENS	2	Downlights	50	Sealed
ENS	1	Exhaust Fans	100	Sealed
Bedroom 3	4	Downlights	50	Sealed
Bedroom 2	4	Downlights	50	Sealed
BATHROOM	2	Downlights	50	Sealed
BATHROOM	1	Exhaust Fans	100	Sealed
Bedroom 1	4	Downlights	50	Sealed
RUMPUS	6	Downlights	50	Sealed
Corridor	12	Downlights	50	Sealed
STORE	1	Downlights	50	Sealed

LAUNDRY	2	Downlights	50	Sealed
LAUNDRY	1	Exhaust Fans	100	Sealed
POWDER ROOM	1	Downlights	50	Sealed
POWDER ROOM	1	Exhaust Fans	100	Sealed
PANTRY	1	Downlights	50	Sealed
PANTRY	1	Exhaust Fans	100	Sealed
ENTRY HALLWAY	12	Downlights	50	Sealed
Kitchen/Living 17	28	Downlights	50	Sealed
Kitchen/Living 17	1	Exhaust Fans	150	Sealed

### Ceiling fans

Location	Quantity	Diameter (mm)
No Data Available		

### Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Cont:Attic-Continuous	0.0	0.5	Medium



## Explanatory Notes

### About this report

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

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

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

### Accredited assessors

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

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

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

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

### Disclaimer

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

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

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

## Glossary

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



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