

Nationwide House Energy Rating Scheme

NatHERS Certificate No. 3FKTZW87WJ

Generated on 19 Sep 2023 using FirstRate5: 5.3.2b (3.21)

Property

Address 105, 105 Letitia Street, Oatley, NSW, 2223
Lot/DP 39/6848
NCC Class* Class 1a
Type New Home

Plans

Main plan CD1502, ISSUE A 01.09.2023 CDC
Prepared by CORNERSTONE DESISGN

Construction and environment

Assessed floor area (m ²)*	Exposure type
Conditioned*	225.6
Unconditioned*	41.1
Total	266.7
Garage	33.7

NatHERS climate zone
56 Mascot AMO



Accredited assessor

Name Dimitrios Harakidas
Business name AENEC
Email info@aenec.com.au
Phone 0416316204
Accreditation No. HERA10042
Assessor Accrediting Organisation
HERA
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.

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

6.4
The more stars
the more energy efficient

NATIONWIDE HOUSE
ENERGY RATING SCHEME

45.4 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 performance

Heating	Cooling
33.5	11.9
MJ/m ²	MJ/m ²

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=3FKTZW87WJ> When using either link, ensure you are visiting www.FR5.com.au.



* Refer to glossary.

Certificate Check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional Notes

Default ceiling penetration density calculated as lighting plan has not been provided. All openable windows are assumed to be fully openable as per NCC 2019 > Volume 2 > 3.9.2.6 (a), (b)(i)(B) as safety devices (STEEL MESH) are in place. North Pointer shown on the plans has been calculated to be the True North. No trees have been modelled as no relevant information has been provided. For all insulation installed the rating called out in the NatHERS is the primary factor and not its description. If these are not in place then this NatHERS must be revised.

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-002-01 A	Aluminium B SG Clear	6.7	0.7	0.66	0.74
ALM-001-01 A	Aluminium A SG Clear	6.7	0.57	0.54	0.6

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				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*
----------	-----------	------------	-------------	------------	-------------	-----------	-------------	------------------------



LG STAIRS	ALM-002-01 A	STAIRS	600	1810	fixed	0.0	NNE	No
Kitchen/Living	ALM-001-01 A	KITCHEN	600	600	awning	90.0	NNE	No
Kitchen/Living	ALM-002-01 A	KITCHEN	600	960	fixed	0.0	NNE	No
Kitchen/Living	ALM-001-01 A	KITCHEN	600	600	awning	90.0	NNE	No
Kitchen/Living	ALM-002-01 A	KITCHEN	600	960	fixed	0.0	NNE	No
Kitchen/Living	ALM-002-01 A	KITCHEN	2700	2790	sliding	45.0	WNW	No
Kitchen/Living	ALM-002-01 A	LIVING	2700	2640	sliding	60.0	NNE	No
Kitchen/Living	ALM-002-01 A	LIVING	2700	3515	sliding	60.0	WNW	No
Bedroom 2	ALM-002-01 A	BED 2	1400	2070	sliding	45.0	WNW	No
ENS 3	ALM-001-01 A	ENS 3	900	1200	awning	90.0	NNE	No
Bedroom 3	ALM-002-01 A	BED 3	900	1355	fixed	0.0	NNE	No
Bedroom 3	ALM-001-01 A	BED 3	900	1355	awning	90.0	NNE	No
BATH GF	ALM-002-01 A	BATHROOM	600	1810	sliding	45.0	SSW	No
Bedroom 4	ALM-002-01 A	BED 4	1400	2160	sliding	45.0	WNW	No
Garage	ALM-001-01 A	GARAGE	1000	850	awning	90.0	WNW	No
Bedroom 5	ALM-001-01 A	BED 5	1350	800	awning	90.0	ESE	No
Bedroom 5	ALM-002-01 A	BED 5	450	800	fixed	0.0	ESE	No
Bedroom 5	ALM-002-01 A	BED 5	1350	1110	fixed	0.0	ESE	No
Bedroom 5	ALM-002-01 A	BED 5	450	1110	fixed	0.0	ESE	No
Bedroom 5	ALM-001-01 A	BED 5	1350	800	awning	90.0	ESE	No
Bedroom 5	ALM-002-01 A	BED 5	450	800	fixed	0.0	ESE	No
ENTRY - CORRIDOR	ALM-002-01 A	STAIRS	600	1810	fixed	0.0	NNE	No
Bedroom M	ALM-001-01 A	M BED	1650	800	casement	90.0	ESE	No
Bedroom M	ALM-002-01 A	M BED	450	800	fixed	0.0	ESE	No
Bedroom M	ALM-002-01 A	M BED	1650	2000	fixed	0.0	ESE	No
Bedroom M	ALM-002-01 A	M BED	450	2000	fixed	0.0	ESE	No
Bedroom M	ALM-001-01 A	M BED	1650	800	casement	90.0	ESE	No
Bedroom M	ALM-002-01 A	M BED	450	800	fixed	0.0	ESE	No
ENS M	ALM-001-01 A	ENS M	700	1210	awning	90.0	ESE	No
ENS M	ALM-001-01 A	ENS M	700	1210	awning	45.0	ESE	No
LANDING - RETREAT	ALM-002-01 A	STAIRS	1800	850	fixed	0.0	WNW	No
LANDING - RETREAT	ALM-002-01 A	RETREAT	2400	3200	sliding	45.0	WNW	No
LANDING - RETREAT	ALM-002-01 A	STAIRS	600	1800	fixed	0.0	NNE	No
LANDING - RETREAT	ALM-002-01 A	STAIRS	600	1800	fixed	0.0	NNE	No

Roof window type and performance value

Default* roof windows

Substitution tolerance ranges

* Refer to glossary.

Generated on 19 Sep 2023 using FirstRate5: 5.3.2b (3.21) for 39/6848, U 105, 105 Letitia Street,

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

Custom* roof windows

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

Roof window schedule

Location	Window ID	Window no.	Opening %	Area (m ²)	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 ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
ENS M	GEN-04-001a	SKYLIGHT	520	0.4	E	None	No	0.75

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
Garage	2400	2710	100.0	ESE
ENTRY - CORRIDOR	2400	1210	100.0	ESE

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
1	FR5 - Brick Cavity	0.5	Medium		No
2	AENEC - BRICK CAVITY-RETAINING	0.5	Medium	Polystyrene expanded (k = 0.039) (R0.5)	Yes
3	AENEC - CAVITY BRICK FOILBOARD	0.5	Medium	Polystyrene expanded (k = 0.039) (R0.5)	Yes

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
LDRY	1	2700	1799	SSW	0	No
LG BATH	1	2700	1202	SSW	0	No
LG BATH	2	1320	3801	ESE	0	No
PANTRY	3	1550	2549	NNE	0	Yes

* Refer to glossary.

PANTRY	2	1150	2549	NNE	0	No
LG STAIRS	2	1320	888	SSE	0	No
LG STAIRS	2	1320	3464	SSW	0	No
LG STAIRS	2	1850	3159	ESE	0	No
LG STAIRS	2	1450	4542	NNE	0	No
LG STAIRS	3	1550	4542	NNE	0	Yes
Kitchen/Living	3	2300	6478	NNE	0	Yes
Kitchen/Living	2	700	6478	NNE	0	No
Kitchen/Living	3	3000	3695	WNW	5339	Yes
Kitchen/Living	3	3000	2647	NNE	3961	Yes
Kitchen/Living	3	3000	3998	WNW	2692	Yes
Kitchen/Living	1	3000	9125	SSW	0	No
Bedroom 2	3	2700	4250	NNE	502	Yes
Bedroom 2	3	1600	3099	WNW	493	Yes
ENS 3	3	2700	1185	NNE	502	Yes
Bedroom 3	3	2700	4039	NNE	502	Yes
BATH GF	3	1480	3383	SSW	500	Yes
Bedroom 4	3	1600	491	WNW	493	Yes
Bedroom 4	3	1630	660	NNE	500	Yes
Bedroom 4	3	1630	2798	WNW	644	No
Bedroom 4	3	1500	4847	SSW	500	Yes
Garage	3	1020	1202	WNW	500	Yes
Garage	1	2700	10999	SSW	0	No
Garage	3	2700	3001	ESE	929	Yes
Garage	3	2700	588	NNE	5078	Yes
Bedroom 5	3	2700	711	SSW	4614	Yes
Bedroom 5	3	2700	3107	ESE	806	Yes
Bedroom 5	3	2700	4454	NNE	100	Yes
Bedroom 5	3	2700	279	WNW	0	Yes
ENTRY - CORRIDOR	3	2700	1651	ESE	1517	Yes
ENTRY - CORRIDOR	3	2700	4530	NNE	0	Yes
Bedroom M	3	2700	5812	ESE	574	Yes
Bedroom M	3	2700	4682	NNE	397	No
Bedroom M	3	2700	402	WNW	391	Yes
Bedroom M	3	2700	1520	SSW	2000	Yes
ENS M	1	2700	3162	SSW	0	No
ENS M	3	2700	2180	ESE	2094	Yes
LANDING - RETREAT	3	2700	3268	WNW	394	Yes
LANDING - RETREAT	3	2700	800	NNE	390	Yes
LANDING - RETREAT	3	2700	4432	WNW	390	Yes
LANDING - RETREAT	1	2700	4077	SSW	0	No

LANDING - RETREAT 3 2700 3277 NNE 392 Yes

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
1	AENEC - CAVITY BRICK FOILBOARD	36.3	Polystyrene expanded (k = 0.039) (R0.5)
2	FR5 - Single Brick Finished	190	
3	FR5 - Internal Plasterboard Stud Wall	13	

Floor type

Location	Construction	Area (m ²)	Sub-floor ventilation	Added insulation (R-value)	Covering
LDRY	FR5 - CSOG: Slab on Ground	0.4	Enclosed	R0.0	Tiles
LDRY	FR5 - CSOG: Slab on Ground	6.4	Enclosed	R0.0	Tiles
LG BATH	FR5 - CSOG: Slab on Ground	4.6	Enclosed	R0.0	Tiles
PANTRY	FR5 - CSOG: Slab on Ground	5.9	Enclosed	R0.0	Tiles
LG STAIRS	FR5 - CSOG: Slab on Ground	18.5	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - CSOG: Slab on Ground	13.3	Enclosed	R0.0	Tiles
Kitchen/Living	FR5 - CSOG: Slab on Ground	47.2	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 200mm concrete slab Lined	11.9	Enclosed	R0.0	Tiles
Bedroom 2	FR5 - 200mm concrete slab Lined	1.3	Elevated	R0.0	Tiles
ENS 3	FR5 - 200mm concrete slab Lined	2.9	Enclosed	R0.0	Tiles
Bedroom 3	FR5 - 200mm concrete slab Lined	12.5	Enclosed	R0.0	Tiles
BATH GF	FR5 - 200mm concrete slab Lined	7.4	Enclosed	R0.0	Tiles
Bedroom 4	FR5 - 200mm concrete slab Lined	0.2	Enclosed	R0.0	Tiles
Bedroom 4	FR5 - 200mm concrete slab Lined	14.3	Enclosed	R0.0	Tiles
Garage	FR5 - 200mm concrete slab	2.3	Enclosed	R0.0	none
Garage	FR5 - 200mm concrete slab	22.7	Enclosed	R0.0	none
Garage	FR5 - 200mm concrete slab Lined	7.9	Enclosed	R0.0	Tiles
Garage	FR5 - 200mm concrete slab Lined	0.9	Enclosed	R0.0	Tiles
Bedroom 5	FR5 - 200mm concrete slab	13.8	Enclosed	R2.0	Tiles
ENTRY - CORRIDOR	FR5 - 200mm concrete slab Lined	11.4	Enclosed	R0.0	Tiles
ENTRY - CORRIDOR	FR5 - 200mm concrete slab Lined	12.2	Enclosed	R0.0	Tiles
ENTRY - CORRIDOR	FR5 - 200mm concrete slab	10.9	Enclosed	R2.0	Tiles
Bedroom M	FR5 - 200mm concrete slab Lined	25.3	Enclosed	R0.0	Tiles
Bedroom M	FR5 - 200mm concrete slab Lined	1.9	Elevated	R0.0	Tiles
ENS M	FR5 - 200mm concrete slab Lined	6.9	Enclosed	R0.0	Tiles
LANDING - RETREAT	FR5 - 200mm concrete slab Lined	28.8	Enclosed	R0.0	Tiles

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
LDRY	FR5 - 200mm concrete slab Lined	R0.0	No
LG BATH	FR5 - 200mm concrete slab Lined	R0.0	No
PANTRY	FR5 - 200mm concrete slab Lined	R0.0	No
LG STAIRS	FR5 - 200mm concrete slab Lined	R0.0	No
Kitchen/Living	Plasterboard	R4.0	Yes
Kitchen/Living	FR5 - 200mm concrete slab Lined	R0.0	No
Bedroom 2	Plasterboard	R4.0	Yes
Bedroom 2	Plasterboard	R0.0	No
ENS 3	Plasterboard	R4.0	Yes
Bedroom 3	Plasterboard	R4.0	Yes
BATH GF	Plasterboard	R4.0	Yes
Bedroom 4	Plasterboard	R4.0	Yes
Garage	Plasterboard	R0.0	No
Garage	FR5 - 200mm concrete slab Lined	R0.0	No
Garage	Plasterboard	R4.0	Yes
Garage	FR5 - 200mm concrete slab Lined	R0.0	No
Bedroom 5	FR5 - 200mm concrete slab Lined	R0.0	No
ENTRY - CORRIDOR	Plasterboard	R4.0	Yes
ENTRY - CORRIDOR	FR5 - 200mm concrete slab Lined	R0.0	No
ENTRY - CORRIDOR	FR5 - 200mm concrete slab Lined	R0.0	No
Bedroom M	Plasterboard	R4.0	Yes
Bedroom M	Plasterboard	R4.0	Yes
ENS M	Plasterboard	R4.0	Yes
LANDING - RETREAT	Plasterboard	R4.0	Yes

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
LDRY	2	Downlights	80	Sealed
LDRY	1	Exhaust Fans	200	Sealed
LG BATH	1	Downlights	80	Sealed
LG BATH	1	Exhaust Fans	200	Sealed
PANTRY	1	Downlights	80	Sealed
Kitchen/Living	23	Downlights	80	Sealed
Kitchen/Living	1	Exhaust Fans	200	Sealed
Bedroom 2	4	Downlights	80	Sealed
ENS 3	1	Exhaust Fans	200	Sealed
Bedroom 3	5	Downlights	80	Sealed

* Refer to glossary.

BATH GF	1	Exhaust Fans	200	Sealed
BATH GF	2	Downlights	80	Sealed
Bedroom 4	5	Downlights	80	Sealed
Garage	11	Downlights	80	Sealed
Bedroom 5	5	Downlights	80	Sealed
ENTRY - CORRIDOR	4	Downlights	80	Sealed
Bedroom M	10	Downlights	80	Sealed
ENS M	2	Downlights	80	Sealed
ENS M	1	Exhaust Fans	200	Sealed
LANDING - RETREAT	11	Downlights	80	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
Slab:Slab - Suspended Slab : 200mm: 200mm Suspended Slab	0.0	0.5	Medium

Explanatory Notes

About this report

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

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

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

Accredited assessors

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

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

Glossary

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).