Nationwide House Energy Rating Scheme®
NatHERS® Certificate No. 4UC6NI2D74

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 1, Section 32, 51 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors	
Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	85.5	suburban
Unconditioned*	2.4	**NatHERS climate zone**
Total	87.9	24 Canberra Airport
Garage	-	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

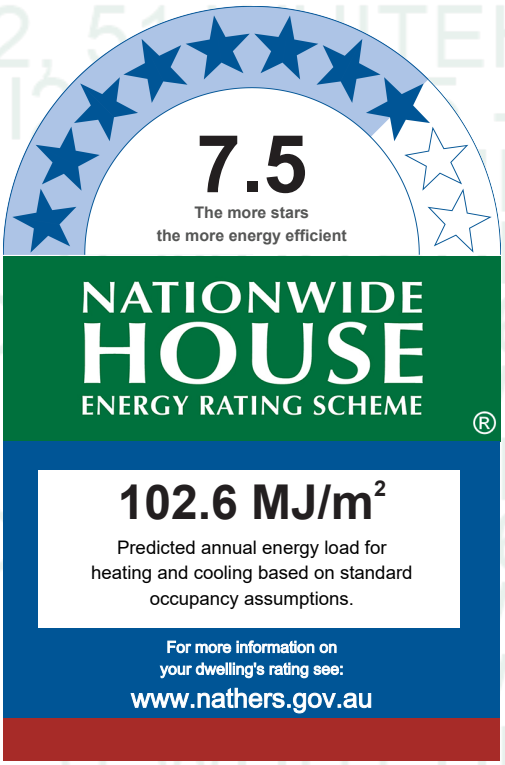
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

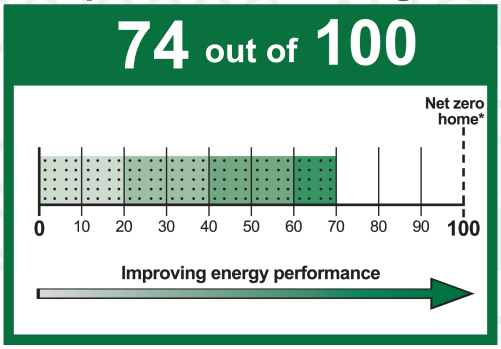
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	94	8.6
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=4UC6NI2D74 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No
- NA – not applicable

Outdoor living area:

- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:

- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **46 out of 100**

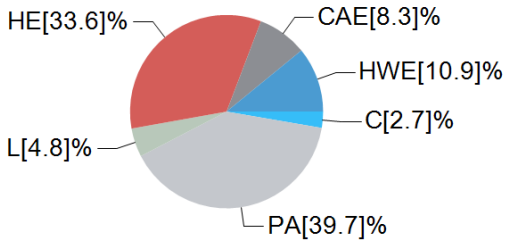
This home's annual greenhouse gas emissions: 231kg CO2e (with solar)
986kg CO2e (without solar)

Predicted annual electricity generated: 4318kWh
Exported to the grid: 60%
Used by the home: 40%

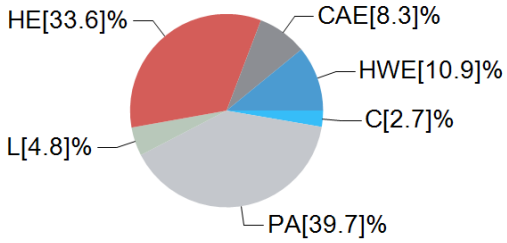
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

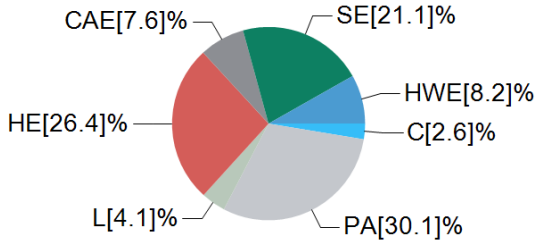
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Kitchen/Living	kitchen	38.8
WC	dayTime	2.8
Laundry	unconditioned	2.4
Spandrel	dayTime	2.9
Bedroom 2	bedroom	12
Bedroom 1	bedroom	11.9
FF Halls	dayTime	17.6
Bathroom	dayTime	4.8

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	SE	No
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Kitchen/Living	AWS-036-25 A	W11	2400	1800	sliding	45.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

Roof window* *type and performance value*

*Refer to glossary.

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1000	100.0	SE
Kitchen/Living	2400	1000	100.0	NE
Spandrel	2400	1000	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GT5 - R2.7 Insulated Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)

*Refer to glossary.

Kitchen/Living	1	2700	3326	SE	3447	No
Kitchen/Living	1	2700	3890	SE	0	Yes
Kitchen/Living	1	2700	3566	NE	0	No
Kitchen/Living	1	2700	1110	NE	300	No
Kitchen/Living	2	2700	1262	NW	0	No
Kitchen/Living	1	2700	5540	SW	0	Yes
WC	2	2700	1504	NW	0	No
Laundry	1	2700	1892	NE	0	No
Laundry	2	2700	1278	NW	0	No
Spandrel	2	2700	2772	NW	0	No
Spandrel	1	2700	1049	SW	0	No
Bedroom 2	1	2700	3861	SE	0	No
Bedroom 2	1	2700	3388	SW	0	Yes
Bedroom 1	1	2700	3248	SE	0	Yes
Bedroom 1	1	2700	3363	NE	0	No
FF Halls	1	2700	1392	NE	0	No
FF Halls	2	2700	4157	NW	0	No
FF Halls	1	2700	3198	SW	0	Yes
Bathroom	1	2700	1632	NE	0	No
Bathroom	2	2700	2922	NW	0	No

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	69.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	225 Waffle Pod, Concrete Slab on Ground	38.8	Enclosed	R0.6	Timber
WC	225 Waffle Pod, Concrete Slab on Ground	2.8	Enclosed	R0.6	Tiles
Laundry	225 Waffle Pod, Concrete Slab on Ground	2.4	Enclosed	R0.6	Tiles
Spandrel	225 Waffle Pod, Concrete Slab on Ground	2.9	Enclosed	R0.6	Tiles
Bedroom 2	TBS Floor Cassette System	12	Enclosed	R4.0	Carpet
Bedroom 1	TBS Floor Cassette System	11.9	Enclosed	R4.0	Carpet
FF Halls	TBS Floor Cassette System	17.6	Enclosed	R4.0	Timber
Bathroom	TBS Floor Cassette System	4.8	Enclosed	R4.0	Tiles

*Refer to glossary.

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living	TBS Floor Cassette System	R4.0	No
WC	TBS Floor Cassette System	R4.0	No
Laundry	TBS Floor Cassette System	R4.0	No
Spandrel	TBS Floor Cassette System	R4.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Bathroom	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	4	Downlights	90	90	Sealed
Kitchen/Living	1	Exhaust Fans	200	200	Sealed
WC	1	Downlights	90	90	Sealed
WC	1	Exhaust Fans	200	200	Sealed
Laundry	1	Downlights	90	90	Sealed
Laundry	1	Exhaust Fans	200	200	Sealed
Spandrel	1	Downlights	90	90	Sealed
Bedroom 2	1	Downlights	90	90	Sealed
Bedroom 1	1	Downlights	90	90	Sealed
FF Halls	2	Downlights	90	90	Sealed
Bathroom	1	Downlights	90	90	Sealed
Bathroom	1	Exhaust Fans	200	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Kitchen/Living	1	1200
Bedroom 2	1	1200
Bedroom 1	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

*Refer to glossary.

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Kitchen/Living, Bedroom 2, Bedroom 1, Ff Halls, WC, Spandrel , Bathroom	Electricity	2 Star (ZERL)	9.3kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living, Bedroom 2, Bedroom 1	Electricity	100%	4.5kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, WC, Spandrel , Bathroom	Electricity	1 Star (ZERL)	3.1kW

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
Heat pump (continuous)	Electricity	21 STCs	5	24	94L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	120°	3kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

*Refer to glossary.

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme®
NatHERS® Certificate No. DHQ6CJNKVV

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 2, Section 32, 49 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	85.5	suburban
Unconditioned*	2.4	**NatHERS climate zone**
Total	87.9	24 Canberra Airport
Garage	-	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

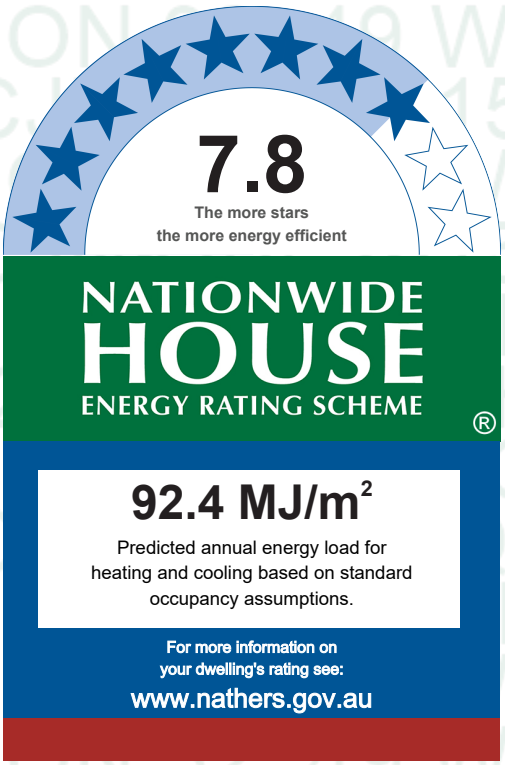
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

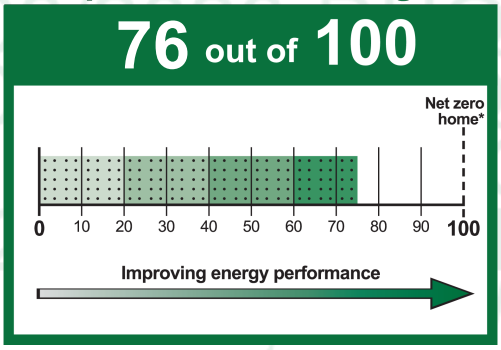
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	82.9	9.5
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=DHQ6CJNKVV When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:

- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:

- Yes
- No
- NA – not applicable

Outdoor living area:

- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:

- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **49 out of 100**

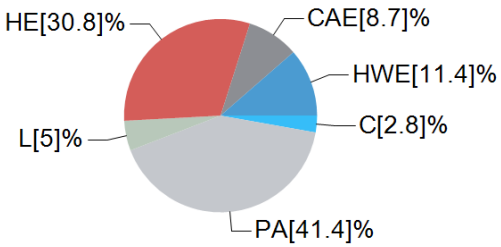
This home's annual greenhouse gas emissions: 158kg CO2e (with solar) 947kg CO2e (without solar)

Predicted annual electricity generated: 4507kWh
Exported to the grid: 61%
Used by the home: 39%

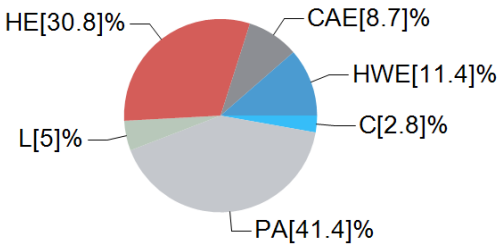
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

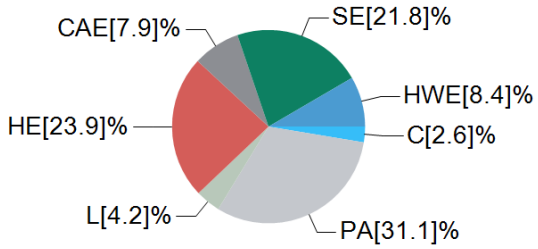
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Kitchen/Living	kitchen	38.8
WC	dayTime	2.8
Laundry	unconditioned	2.4
Spandrel	dayTime	2.9
Bedroom 2	bedroom	12
Bedroom 1	bedroom	11.9
FF Halls	dayTime	17.6
Bathroom	dayTime	4.8

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	AWS-036-25 A	W11	2400	1800	sliding	45.0	SW	No
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	NW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	NW	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No

Roof window* *type and performance value*

*Refer to glossary.

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1000	100.0	NE
Kitchen/Living	2400	1000	100.0	NW
Spandrel	2400	1000	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

*Refer to glossary.

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Kitchen/Living	1	2700	5540	SW	0	Yes
Kitchen/Living	2	2700	1262	SE	0	No
Kitchen/Living	1	2700	1110	NE	300	No
Kitchen/Living	1	2700	3566	NE	0	Yes
Kitchen/Living	1	2700	3890	NW	0	Yes
Kitchen/Living	1	2700	3326	NW	3447	No
WC	2	2700	1504	SE	0	No
Laundry	2	2700	1278	SE	0	No
Laundry	1	2700	1892	NE	0	No
Spandrel	1	2700	1049	SW	0	No
Spandrel	2	2700	2772	SE	0	No
Bedroom 2	1	2700	3388	SW	0	Yes
Bedroom 2	1	2700	3861	NW	0	No
Bedroom 1	1	2700	3363	NE	0	No
Bedroom 1	1	2700	3248	NW	0	Yes
FF Halls	1	2700	3198	SW	0	Yes
FF Halls	2	2700	4157	SE	0	No
FF Halls	1	2700	1392	NE	0	No
Bathroom	2	2700	2922	SE	0	No
Bathroom	1	2700	1632	NE	0	No

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	69.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	225 Waffle Pod, Concrete Slab on Ground	38.8	Enclosed	R0.6	Timber
WC	225 Waffle Pod, Concrete Slab on Ground	2.8	Enclosed	R0.6	Tiles
Laundry	225 Waffle Pod, Concrete Slab on Ground	2.4	Enclosed	R0.6	Tiles
Spandrel	225 Waffle Pod, Concrete Slab on Ground	2.9	Enclosed	R0.6	Tiles
Bedroom 2	TBS Floor Cassette System	12	Enclosed	R4.0	Carpet
Bedroom 1	TBS Floor Cassette System	11.9	Enclosed	R4.0	Carpet
FF Halls	TBS Floor Cassette System	17.6	Enclosed	R4.0	Timber

*Refer to glossary.

Bathroom	TBS Floor Cassette System	4.8	Enclosed	R4.0	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living	TBS Floor Cassette System	R4.0	No
WC	TBS Floor Cassette System	R4.0	No
Laundry	TBS Floor Cassette System	R4.0	No
Spandrel	TBS Floor Cassette System	R4.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Bathroom	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	4	Downlights	90	90	Sealed
Kitchen/Living	1	Exhaust Fans	200	200	Sealed
WC	1	Downlights	90	90	Sealed
WC	1	Exhaust Fans	200	200	Sealed
Laundry	1	Downlights	90	90	Sealed
Laundry	1	Exhaust Fans	200	200	Sealed
Spandrel	1	Downlights	90	90	Sealed
Bedroom 2	1	Downlights	90	90	Sealed
Bedroom 1	1	Downlights	90	90	Sealed
FF Halls	2	Downlights	90	90	Sealed
Bathroom	1	Downlights	90	90	Sealed
Bathroom	1	Exhaust Fans	200	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Kitchen/Living	1	1200
Bedroom 2	1	1200
Bedroom 1	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]

*Refer to glossary.

Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Kitchen/Living, Bedroom 2, Bedroom 1, Ff Halls, Spandrel, WC, Bathroom	Electricity	2 Star (ZERL)	9.2kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living, Bedroom 2, Bedroom 1	Electricity	100%	4.3kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, Spandrel, WC, Bathroom	Electricity	1 Star (ZERL)	2.6kW

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
Heat pump (continuous)	Electricity	21 STCs	5	24	94L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	300°	3kW

Battery *schedule*

*Refer to glossary.

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme®
NatHERS® Certificate No. 1BWMJNQ0SG

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 3, Section 32, 47 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	85.5	suburban
Unconditioned*	2.4	**NatHERS climate zone**
Total	87.9	24 Canberra Airport
Garage	-	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

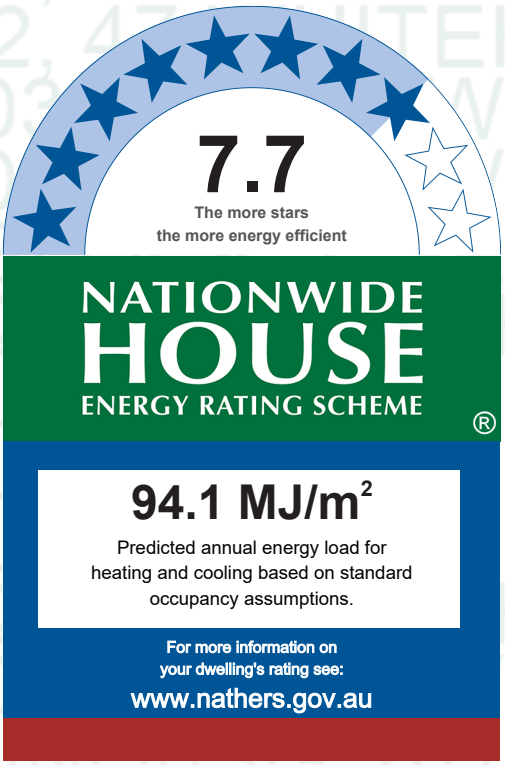
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

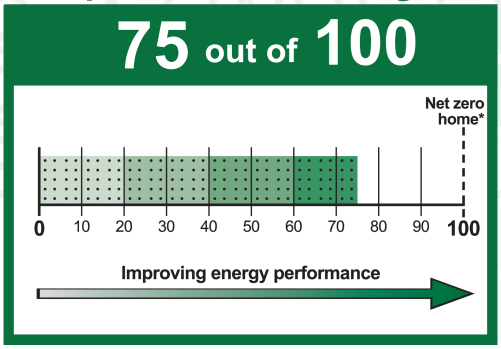
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	85.5	8.6
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=1BWMJNQ0SG When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **48 out of 100**

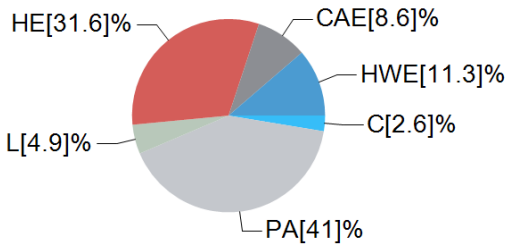
This home's annual greenhouse gas emissions: 200kg CO2e (with solar) 956kg CO2e (without solar)

Predicted annual electricity generated: 4318kWh
Exported to the grid: 61%
Used by the home: 39%

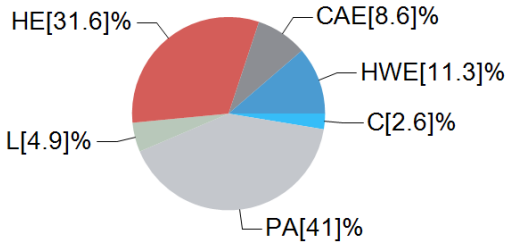
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

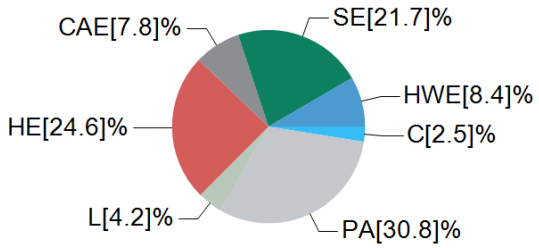
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Kitchen/Living	kitchen	38.8
WC	dayTime	2.8
Laundry	unconditioned	2.4
Spandrel	dayTime	2.9
Bedroom 2	bedroom	12
Bedroom 1	bedroom	11.9
FF Halls	dayTime	17.6
Bathroom	dayTime	4.8

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

Window ID	Window description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	SE	No
Kitchen/Living	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Kitchen/Living	AWS-036-25 A	W11	2400	1800	sliding	45.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
FF Halls	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

Roof window* *type and performance value*

*Refer to glossary.

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Kitchen/Living	2400	1000	100.0	SE
Kitchen/Living	2400	1000	100.0	NE
Spandrel	2400	1000	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

*Refer to glossary.

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Kitchen/Living	1	2700	3326	SE	3447	No
Kitchen/Living	1	2700	3890	SE	0	Yes
Kitchen/Living	1	2700	3566	NE	0	No
Kitchen/Living	1	2700	1110	NE	300	No
Kitchen/Living	2	2700	1262	NW	0	No
Kitchen/Living	1	2700	5540	SW	0	Yes
WC	2	2700	1504	NW	0	No
Laundry	1	2700	1892	NE	0	No
Laundry	2	2700	1278	NW	0	No
Spandrel	2	2700	2772	NW	0	No
Spandrel	1	2700	1049	SW	0	No
Bedroom 2	1	2700	3861	SE	0	No
Bedroom 2	1	2700	3388	SW	0	Yes
Bedroom 1	1	2700	3248	SE	0	Yes
Bedroom 1	1	2700	3363	NE	0	No
FF Halls	1	2700	1392	NE	0	No
FF Halls	2	2700	4157	NW	0	No
FF Halls	1	2700	3198	SW	0	Yes
Bathroom	1	2700	1632	NE	0	No
Bathroom	2	2700	2922	NW	0	No

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	69.8	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Kitchen/Living	225 Waffle Pod, Concrete Slab on Ground	38.8	Enclosed	R0.6	Timber
WC	225 Waffle Pod, Concrete Slab on Ground	2.8	Enclosed	R0.6	Tiles
Laundry	225 Waffle Pod, Concrete Slab on Ground	2.4	Enclosed	R0.6	Tiles
Spandrel	225 Waffle Pod, Concrete Slab on Ground	2.9	Enclosed	R0.6	Tiles
Bedroom 2	TBS Floor Cassette System	12	Enclosed	R4.0	Carpet
Bedroom 1	TBS Floor Cassette System	11.9	Enclosed	R4.0	Carpet
FF Halls	TBS Floor Cassette System	17.6	Enclosed	R4.0	Timber

*Refer to glossary.

Bathroom	TBS Floor Cassette System	4.8	Enclosed	R4.0	Tiles

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Kitchen/Living	TBS Floor Cassette System	R4.0	No
WC	TBS Floor Cassette System	R4.0	No
Laundry	TBS Floor Cassette System	R4.0	No
Spandrel	TBS Floor Cassette System	R4.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Bathroom	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Kitchen/Living	4	Downlights	90	90	Sealed
Kitchen/Living	1	Exhaust Fans	200	200	Sealed
WC	1	Downlights	90	90	Sealed
WC	1	Exhaust Fans	200	200	Sealed
Laundry	1	Downlights	90	90	Sealed
Laundry	1	Exhaust Fans	200	200	Sealed
Spandrel	1	Downlights	90	90	Sealed
Bedroom 2	1	Downlights	90	90	Sealed
Bedroom 1	1	Downlights	90	90	Sealed
FF Halls	2	Downlights	90	90	Sealed
Bathroom	1	Downlights	90	90	Sealed
Bathroom	1	Exhaust Fans	200	200	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Kitchen/Living	1	1200
Bedroom 2	1	1200
Bedroom 1	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]

*Refer to glossary.

Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Kitchen/Living, Bedroom 2, Bedroom 1, Ff Halls, WC, Spandrel , Bathroom	Electricity	2 Star (ZERL)	9.7kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living, Bedroom 2, Bedroom 1	Electricity	100%	4.4kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, WC, Spandrel , Bathroom	Electricity	1 Star (ZERL)	2.6kW

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
Heat pump (continuous)	Electricity	21 STCs	5	24	94L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	120°	3kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme®
NatHERS® Certificate No. 2SY5UK95C0-01

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 4, Section 32, 45 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors	
Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	96.2	suburban
Unconditioned*	23.2	**NatHERS climate zone**
Total	119.4	24 Canberra Airport
Garage	19.8	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

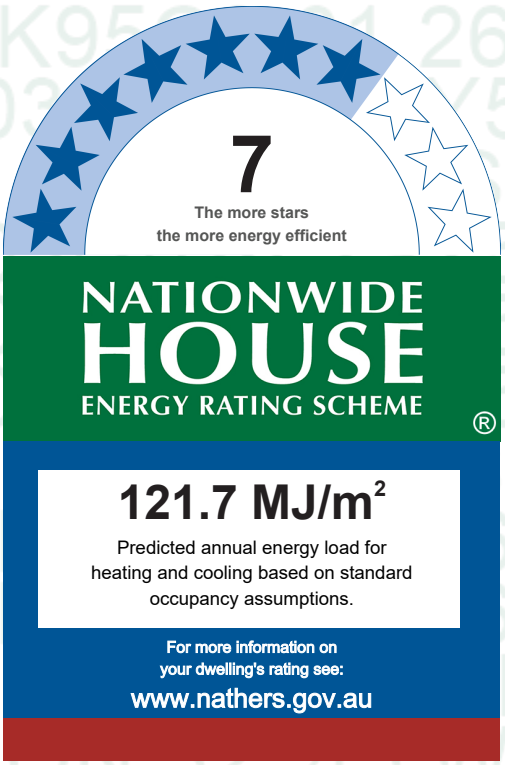
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

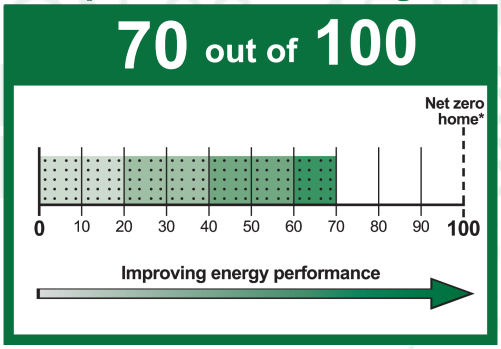
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	114.1	7.6
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=2SY5UK95C0-01 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **42 out of 100**

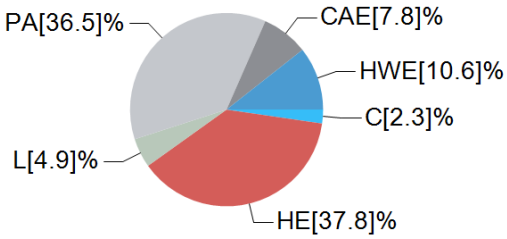
This home's annual greenhouse gas emissions: 314kg CO2e (with solar) 1086kg CO2e (without solar)

Predicted annual electricity generated: 4411kWh
Exported to the grid: 58%
Used by the home: 42%

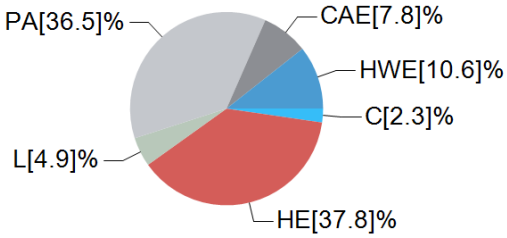
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

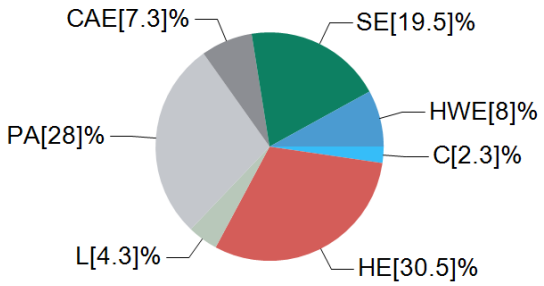
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Garage	garage	19.8
GF Halls	dayTime	17.6
Ensuite	nightTime	4.8
Master Bed	bedroom	13
Bath	unconditioned	3.5
FF Halls	dayTime	5.9
Kitchen/Living/Dining	kitchen	39.1
Bedroom 1	bedroom	11.3
Bedroom 2	bedroom	11.3

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 AI Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum AI Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Ensuite	AWS-010-82 A	W_Ensuite	600	900	awning	90.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Kitchen/Living/-Dining	AWS-036-25 A	SD_Living	2400	2400	sliding	30.0	NE	No
Kitchen/Living/-Dining	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

*Refer to glossary.

Roof window* *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	2400	100.0	NE
GF Halls	2400	1000	100.0	NE
GF Halls	2400	1000	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

*Refer to glossary.

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Garage	1	2700	3279	NE	4892	Yes
Garage	2	2700	6014	SE	0	No
GF Halls	1	2700	2281	NE	4890	Yes
GF Halls	1	2700	9628	NW	0	No
GF Halls	1	2700	1075	SW	534	Yes
Ensuite	1	2700	1175	SW	0	Yes
Ensuite	2	2700	4063	SE	0	No
Master Bed	1	2700	583	NW	0	Yes
Master Bed	1	2700	3189	SW	0	Yes
Bath	2	2700	2119	SE	0	No
FF Halls	1	2900	1077	NW	0	No
Kitchen/Living/Dining	1	2800	5677	NE	2180	Yes
Kitchen/Living/Dining	1	2950	5769	NW	0	No
Kitchen/Living/Dining	1	2900	1743	NW	0	No
Kitchen/Living/Dining	2	2900	858	SE	0	No
Kitchen/Living/Dining	2	2950	5612	SE	0	No
Bedroom 1	1	2700	2784	SW	495	Yes
Bedroom 1	2	2900	4070	SE	0	No
Bedroom 2	1	2900	4050	NW	0	No
Bedroom 2	1	2700	2791	SW	520	Yes

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	100.2	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Garage	225 Waffle Pod, Concrete Slab on Ground	19.8	Enclosed	R0.6	none
GF Halls	225 Waffle Pod, Concrete Slab on Ground	17.6	Enclosed	R0.6	Timber
Ensuite	225 Waffle Pod, Concrete Slab on Ground	4.8	Enclosed	R0.6	Tiles
Master Bed	225 Waffle Pod, Concrete Slab on Ground	13	Enclosed	R0.6	Carpet
Bath	TBS Floor Cassette System	3.5	Enclosed	R4.0	Tiles

*Refer to glossary.

FF Halls	TBS Floor Cassette System	5.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	23.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	15.2	Elevated	R4.0	Timber
Bedroom 1	TBS Floor Cassette System	11.3	Enclosed	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	0.7	Elevated	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	10.6	Enclosed	R4.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Garage	TBS Floor Cassette System	R4.0	No
GF Halls	TBS Floor Cassette System	R4.0	No
Ensuite	TBS Floor Cassette System	R4.0	No
Master Bed	TBS Floor Cassette System	R4.0	No
Bath	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Garage	1	Downlights	90	90	Sealed
GF Halls	2	Downlights	90	90	Sealed
GF Halls	1	Exhaust Fans	200	200	Sealed
Ensuite	1	Downlights	90	90	Sealed
Ensuite	1	Exhaust Fans	200	200	Sealed
Master Bed	2	Downlights	90	90	Sealed
Bath	1	Downlights	90	90	Sealed
Bath	1	Exhaust Fans	200	200	Sealed
FF Halls	1	Downlights	90	90	Sealed
FF Halls	1	Exhaust Fans	200	200	Sealed
Kitchen/Living/Dining	3	Downlights	90	90	Sealed
Kitchen/Living/Dining	1	Exhaust Fans	200	200	Sealed
Bedroom 1	1	Downlights	90	90	Sealed

*Refer to glossary.

Bedroom 2	1	Downlights	90	90	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Master Bed	1	1200
Kitchen/Living/Dining	1	1200
Bedroom 1	1	1200
Bedroom 2	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Ff Halls, Kitchen/Living/Dining, Gf Halls, Master Bed, Ensuite, Bedroom 2, Bedroom 1	Electricity	2 Star (ZERL)	8.3kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living/Dining, Master Bed, Bedroom 2, Bedroom 1	Electricity	100%	5.8kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, Gf Halls, Ensuite	Electricity	1 Star (ZERL)	2.7kW

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load

*Refer to glossary.

Heat pump (continuous)	Electricity	21 STCs	5	24	102L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	30°	1.5kW
Solar PV	210°	1.5kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. 52950JVM03-01

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 5, Section 32, 43 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	96.2	suburban
Unconditioned*	23.2	**NatHERS climate zone**
Total	119.4	24 Canberra Airport
Garage	19.8	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

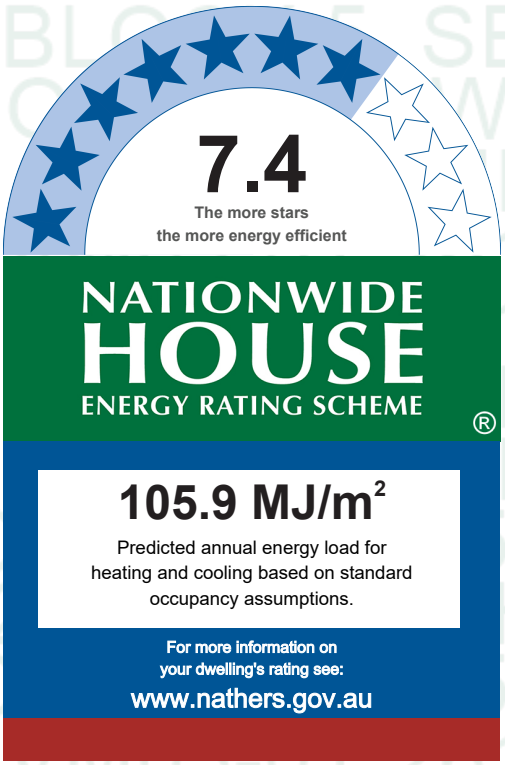
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

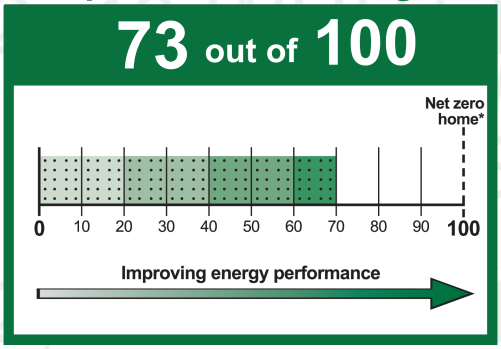
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	99	6.9
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=52950JVM03-01 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **46 out of 100**

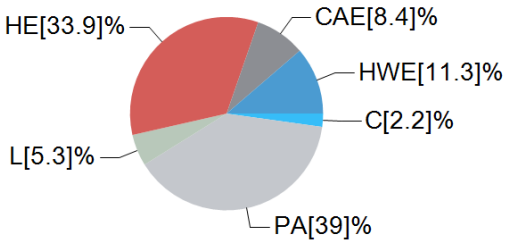
This home's annual greenhouse gas emissions: 245kg CO2e (with solar) 1017kg CO2e (without solar)

Predicted annual electricity generated: 4411kWh
Exported to the grid: 60%
Used by the home: 40%

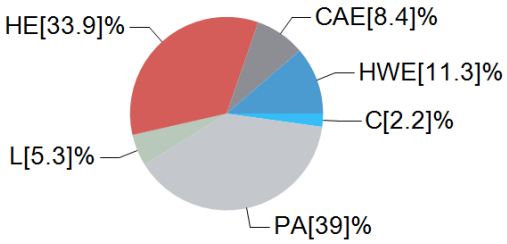
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

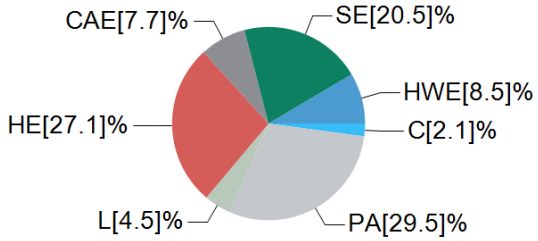
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Garage	garage	19.8
GF Halls	dayTime	17.6
Ensuite	nightTime	4.8
Master Bed	bedroom	13
Bath	unconditioned	3.5
FF Halls	dayTime	5.9
Kitchen/Living/Dining	kitchen	39.1
Bedroom 1	bedroom	11.3
Bedroom 2	bedroom	11.3

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Ensuite	AWS-010-82 A	W_Ensuite	600	900	awning	90.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Kitchen/Living/-Dining	AWS-036-25 A	SD_Living	2400	2400	sliding	30.0	NE	No
Kitchen/Living/-Dining	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

*Refer to glossary.

Roof window* *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	2400	100.0	NE
GF Halls	2400	1000	100.0	SW
GF Halls	2400	1000	100.0	NE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

*Refer to glossary.

3	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Garage	1	2700	6014	NW	0	No
Garage	2	2700	3279	NE	4892	Yes
GF Halls	3	2700	1075	SW	574	Yes
GF Halls	1	2700	9628	SE	0	No
GF Halls	2	2700	2281	NE	4890	Yes
Ensuite	1	2700	4063	NW	0	No
Ensuite	3	2700	1175	SW	0	No
Master Bed	3	2700	3189	SW	0	Yes
Master Bed	3	2700	583	SE	0	Yes
Bath	1	2700	2119	NW	0	No
FF Halls	1	2900	1077	SE	0	No
Kitchen/Living/Dining	1	2950	5612	NW	0	No
Kitchen/Living/Dining	1	2900	858	NW	0	No
Kitchen/Living/Dining	1	2900	1743	SE	0	No
Kitchen/Living/Dining	1	2950	5769	SE	0	No
Kitchen/Living/Dining	3	2800	5677	NE	2220	Yes
Bedroom 1	1	2900	4070	NW	0	No
Bedroom 1	3	2700	2784	SW	535	Yes
Bedroom 2	3	2700	2791	SW	560	Yes
Bedroom 2	1	2900	4050	SE	0	No

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	100.2	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Garage	225 Waffle Pod, Concrete Slab on Ground	19.8	Enclosed	R0.6	none
GF Halls	225 Waffle Pod, Concrete Slab on Ground	17.6	Enclosed	R0.6	Timber
Ensuite	225 Waffle Pod, Concrete Slab on Ground	4.8	Enclosed	R0.6	Tiles

*Refer to glossary.

Master Bed	225 Waffle Pod, Concrete Slab on Ground	13	Enclosed	R0.6	Carpet
Bath	TBS Floor Cassette System	3.5	Enclosed	R4.0	Tiles
FF Halls	TBS Floor Cassette System	5.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	23.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	15.2	Elevated	R4.0	Timber
Bedroom 1	TBS Floor Cassette System	11.3	Enclosed	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	0.7	Elevated	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	10.6	Enclosed	R4.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Garage	TBS Floor Cassette System	R4.0	No
GF Halls	TBS Floor Cassette System	R4.0	No
Ensuite	TBS Floor Cassette System	R4.0	No
Master Bed	TBS Floor Cassette System	R4.0	No
Bath	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Garage	1	Downlights	90	90	Sealed
GF Halls	2	Downlights	90	90	Sealed
GF Halls	1	Exhaust Fans	200	200	Sealed
Ensuite	1	Downlights	90	90	Sealed
Ensuite	1	Exhaust Fans	200	200	Sealed
Master Bed	2	Downlights	90	90	Sealed
Bath	1	Downlights	90	90	Sealed
Bath	1	Exhaust Fans	200	200	Sealed
FF Halls	1	Downlights	90	90	Sealed
FF Halls	1	Exhaust Fans	200	200	Sealed

*Refer to glossary.

Kitchen/Living/Dining	3	Downlights	90	90	Sealed
Kitchen/Living/Dining	1	Exhaust Fans	200	200	Sealed
Bedroom 1	1	Downlights	90	90	Sealed
Bedroom 2	1	Downlights	90	90	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Master Bed	1	1200
Kitchen/Living/Dining	1	1200
Bedroom 1	1	1200
Bedroom 2	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Ff Halls, Kitchen/Living/Dining, Ensuite, Master Bed, Gf Halls, Bedroom 2, Bedroom 1	Electricity	2 Star (ZERL)	7.3kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living/Dining, Master Bed, Bedroom 2, Bedroom 1	Electricity	100%	5.1kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, Ensuite, Gf Halls	Electricity	1 Star (ZERL)	2.2kW

*Refer to glossary.

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
Heat pump (continuous)	Electricity	21 STCs	5	24	102L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	30°	1.5kW
Solar PV	210°	1.5kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. J7D1A55CTV-01

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 6, Section 32, 41 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	96.2	suburban
Unconditioned*	23.2	**NatHERS climate zone**
Total	119.4	24 Canberra Airport
Garage	19.8	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

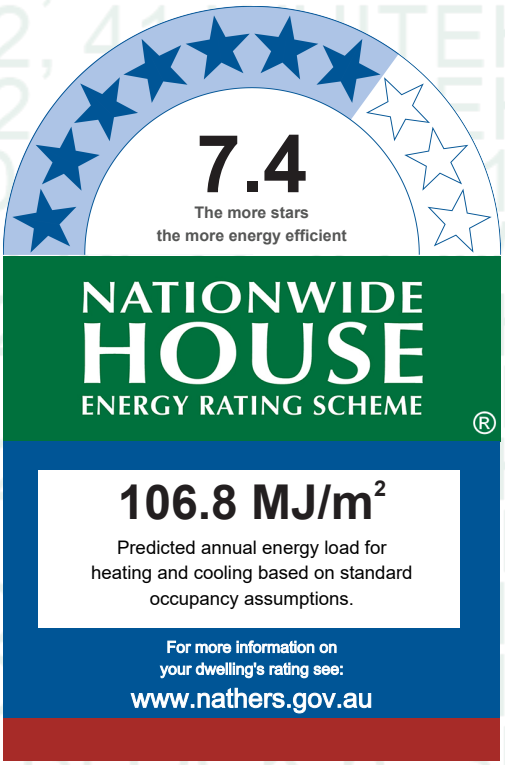
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

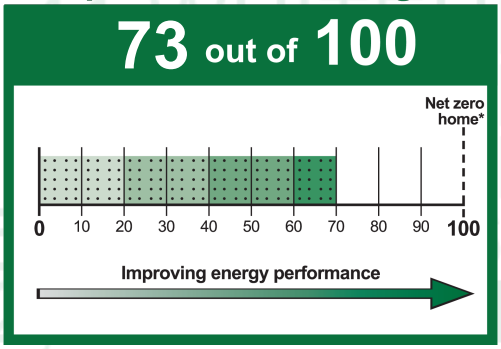
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	99.8	7
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=J7D1A55CTV-01 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **46 out of 100**

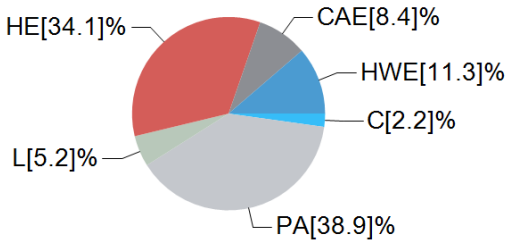
This home's annual greenhouse gas emissions: 248kg CO2e (with solar) 1019kg CO2e (without solar)

Predicted annual electricity generated: 4411kWh
Exported to the grid: 60%
Used by the home: 40%

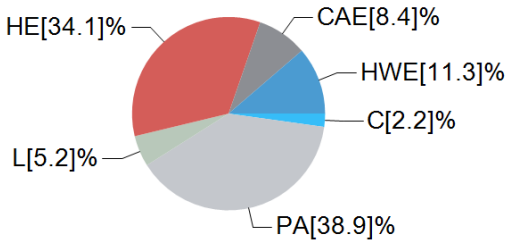
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

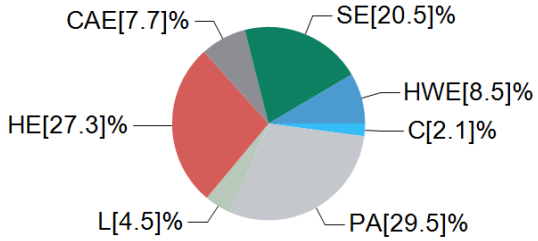
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Garage	garage	19.8
GF Halls	dayTime	17.6
Ensuite	nightTime	4.8
Master Bed	bedroom	13
Bath	unconditioned	3.5
FF Halls	dayTime	5.9
Kitchen/Living/Dining	kitchen	39.1
Bedroom 1	bedroom	11.3
Bedroom 2	bedroom	11.3

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

				Substitution tolerance ranges	
Window ID	Window description	Maximum U-value*	SHGC*	SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Ensuite	AWS-010-82 A	W_Ensuite	600	900	awning	90.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Kitchen/Living/-Dining	AWS-036-25 A	SD_Living	2400	2400	sliding	30.0	NE	No
Kitchen/Living/-Dining	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

*Refer to glossary.

Roof window* *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	2400	100.0	NE
GF Halls	2400	1000	100.0	NE
GF Halls	2400	1000	100.0	SW

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

*Refer to glossary.

3	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Garage	1	2700	3279	NE	4892	Yes
Garage	2	2700	6014	SE	0	No
GF Halls	1	2700	2281	NE	4890	Yes
GF Halls	2	2700	9628	NW	0	No
GF Halls	3	2700	1075	SW	574	Yes
Ensuite	3	2700	1175	SW	0	No
Ensuite	2	2700	4063	SE	0	No
Master Bed	3	2700	583	NW	0	Yes
Master Bed	3	2700	3189	SW	0	Yes
Bath	2	2700	2119	SE	0	No
FF Halls	2	2900	1077	NW	0	No
Kitchen/Living/Dining	3	2800	5677	NE	2220	Yes
Kitchen/Living/Dining	2	2950	5769	NW	0	No
Kitchen/Living/Dining	2	2900	1743	NW	0	No
Kitchen/Living/Dining	2	2900	858	SE	0	No
Kitchen/Living/Dining	2	2950	5612	SE	0	No
Bedroom 1	3	2700	2784	SW	535	Yes
Bedroom 1	2	2900	4070	SE	0	No
Bedroom 2	2	2900	4050	NW	0	No
Bedroom 2	3	2700	2791	SW	560	Yes

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	100.2	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Garage	225 Waffle Pod, Concrete Slab on Ground	19.8	Enclosed	R0.6	none
GF Halls	225 Waffle Pod, Concrete Slab on Ground	17.6	Enclosed	R0.6	Timber
Ensuite	225 Waffle Pod, Concrete Slab on Ground	4.8	Enclosed	R0.6	Tiles

*Refer to glossary.

Master Bed	225 Waffle Pod, Concrete Slab on Ground	13	Enclosed	R0.6	Carpet
Bath	TBS Floor Cassette System	3.5	Enclosed	R4.0	Tiles
FF Halls	TBS Floor Cassette System	5.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	23.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	15.2	Elevated	R4.0	Timber
Bedroom 1	TBS Floor Cassette System	11.3	Enclosed	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	0.7	Elevated	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	10.6	Enclosed	R4.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Garage	TBS Floor Cassette System	R4.0	No
GF Halls	TBS Floor Cassette System	R4.0	No
Ensuite	TBS Floor Cassette System	R4.0	No
Master Bed	TBS Floor Cassette System	R4.0	No
Bath	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Garage	1	Downlights	90	90	Sealed
GF Halls	2	Downlights	90	90	Sealed
GF Halls	1	Exhaust Fans	200	200	Sealed
Ensuite	1	Downlights	90	90	Sealed
Ensuite	1	Exhaust Fans	200	200	Sealed
Master Bed	2	Downlights	90	90	Sealed
Bath	1	Downlights	90	90	Sealed
Bath	1	Exhaust Fans	200	200	Sealed
FF Halls	1	Downlights	90	90	Sealed
FF Halls	1	Exhaust Fans	200	200	Sealed

*Refer to glossary.

Kitchen/Living/Dining	3	Downlights	90	90	Sealed
Kitchen/Living/Dining	1	Exhaust Fans	200	200	Sealed
Bedroom 1	1	Downlights	90	90	Sealed
Bedroom 2	1	Downlights	90	90	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Master Bed	1	1200
Kitchen/Living/Dining	1	1200
Bedroom 1	1	1200
Bedroom 2	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Ff Halls, Kitchen/Living/Dining, Gf Halls, Master Bed, Ensuite, Bedroom 2, Bedroom 1	Electricity	2 Star (ZERL)	7.5kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living/Dining, Master Bed, Bedroom 2, Bedroom 1	Electricity	100%	5.1kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, Gf Halls, Ensuite	Electricity	1 Star (ZERL)	2.2kW

*Refer to glossary.

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load
Heat pump (continuous)	Electricity	21 STCs	5	24	102L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	30°	1.5kW
Solar PV	210°	1.5kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.

Nationwide House Energy Rating Scheme® NatHERS® Certificate No. IJHIF7WGFV-01

Generated on 25 Mar 2026 using FirstRate5: 5.5.5a (3.22)

Property

Address	Block 7, Section 32, 39 Whitehead Lane, MACNAMARA, ACT, 2615
Lot/DP	-
NCC Class*	Class 1a
Floor/all Floors Type	New Home

Plans

Main plan	Job.No.2024.128
Prepared by	AMC Architecture

Construction and environment

Assessed floor area [m²]*		**Exposure type**
Conditioned*	96.2	suburban
Unconditioned*	23.2	**NatHERS climate zone**
Total	119.4	24 Canberra Airport
Garage	19.8	

Accredited assessor

Name	Andrew Champness
Business name	Aerotight
Email	andrew@aerotight.com.au
Phone	0488990065
Accreditation No.	101591
Assessor Accrediting Organisation	ABSA
Declaration of interest	Yes, managed

NCC Requirements

NCC provisions	Volume 2
State/Territory variation	Yes

National Construction Code (NCC) requirements

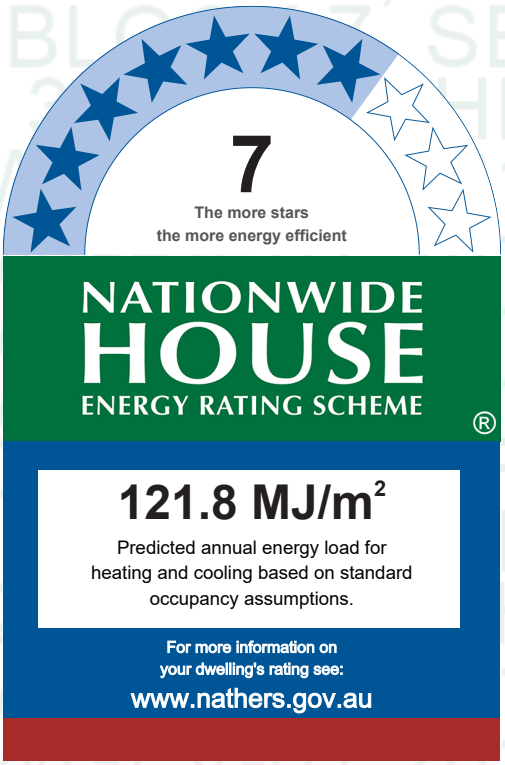
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance star rating



Thermal performance [MJ/m²]

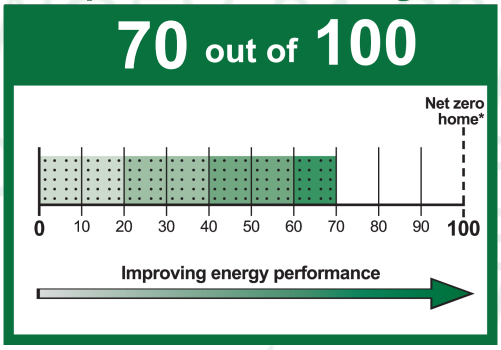
Limits taken from ABCB Standard 2022

	Heating	Cooling
Modelled	113.8	7.9
Load limits	129	34

Features determining load limits

Floor type (lowest conditioned area)	CSOG
NCC climate zone 1 or 2	N
Outdoor living area	N
Outdoor living area ceiling fan	N

Whole of Home performance rating



Verification

To verify this certificate, scan the QR code or visit https://www.fr5.com.au/QRCodeLanding?PublicId=IJHIF7WGFV-01 When using either link, ensure you are visiting www.fr5.com.au.

*Refer to glossary.

About the ratings

Thermal performance rating

NatHERS thermal software models the expected heating and cooling energy loads using information about the design, construction, climate and common patterns of household use. The thermal performance rating (shown as a star rating on this Certificate) does not take into account appliances, apart from the airflow impacts from ceiling fans.

Whole of Home performance rating

NatHERS Whole of Home software uses the heating and cooling energy loads combined with the energy performance of the home's appliances (heating, cooling, hot water, lighting, pool/spa pump and onsite renewable energy generation and storage) and models the expected energy value* of the whole home. The Whole of Home performance rating is shown as a score out of 100 on this Certificate.

Heating & Cooling Load Limits

Additional information

In some locations under the NCC NatHERS pathway, separate heating and cooling load limits may apply. Minimum required star ratings in northern parts of Australia may also be affected by the presence or absence of an outdoor living area and/or an outdoor living area ceiling fan. Refer to the ABCB NatHERS heating and cooling load limits Standard 2022 for details or contact the relevant local building regulating authority, noting that State and Territory variations may also apply.

Setting options:

Floor type:
- CSOG – Concrete Slab on Ground
- SF – Suspended Floor (or a mixture of CSOG and SF)
- NA – Not Applicable

NCC climate Zone 1 or 2:
- Yes
- No
- NA – not applicable

Outdoor living area:
- Yes
- No
- NA – not applicable

Outdoor living area ceiling fan:
- Yes
- No
- NA – not applicable

Predicted onsite renewable energy impact

Your Whole of Home energy use* rating excluding onsite renewable energy generation is **42 out of 100**

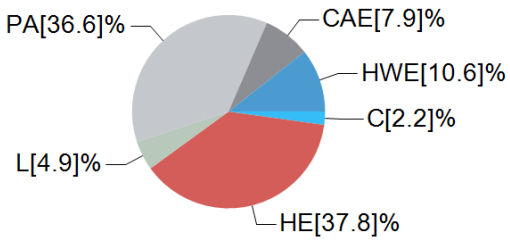
This home's annual greenhouse gas emissions: 312kg CO2e (with solar) 1084kg CO2e (without solar)

Predicted annual electricity generated: 4411kWh
Exported to the grid: 59%
Used by the home: 41%

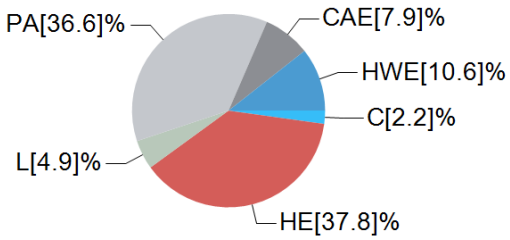
Predicted Whole of Home annual impact by appliance

Shows the contribution each appliance has on the home's annual energy use, greenhouse gas emissions and cost without solar

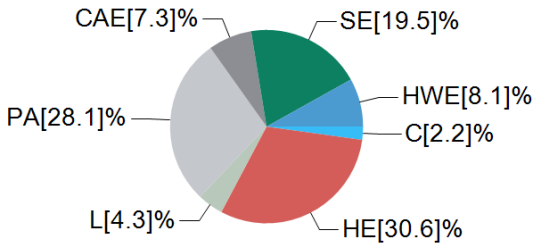
Energy use:



Greenhouse gas emissions:



Cost:



Graph key:

Colour:	Code:	Name:	Fuel type:
	HE	Heating	electric
	HG	Heating	gas
	HW	Heating	wood
	C	Cooling	electric
	HWE	Hot water	electric
	HWG	Hot water	gas
	HWW	Hot water	wood
	L	Lights	electric
	P	Pool/Spa equipment	electric
	PA	Plug-in appliances	electric
	CAE	Cooking appliances	electric
	CAG	Cooking appliances	gas
	SG	Supply charge	gas
	SE	Supply charge	electric

*Refer to glossary.

Certificate check

The checklist covers important items impacting the dwelling's ratings.
It is recommended that the accuracy of the whole certificate is checked.

Note: The boxes indicate when and who should check each item.
It is not mandatory to complete this checklist.

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Genuine certificate check					
Does this Certificate match the one available at the web address or QR code verification link on the front page?		☐	☐	☐	☐
Does the NatHERS certificate number on the NatHERS-stamped plans match the number on this Certificate?		☐	☐	☐	☐
Thermal performance check					
Windows and glazed doors					
Does the window size, opening type and location shown on the NatHERS-stamped plans or as installed match what is shown in *'Window and glazed door schedule'* and *'Roof window schedule'* tables on this Certificate?	☐	☐	☐	☐	☐
Does the installed windows meet the substitution tolerances (AFRC* based SHGC* and U-values*) as shown in the *'Window and glazed door type and performance'* and *'Roof window type and performance'* tables on this Certificate?			☐	☐	☐
External walls					
Does the external wall bulk insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the External wall type table on this Certificate?	☐	☐	☐	☐	☐
Does the external wall shade (colour) match what is shown in the *'External wall type'* table on this Certificate?	☐	☐	☐	☐	☐
Floor					
Does the floor insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Floor type'* table on this certificate?	☐	☐	☐	☐	☐
Ceiling penetrations*					
Does the *'quantity'* and *'type'* of ceiling penetrations* (e.g. downlights, exhaust fans, etc) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling penetrations'* table on this Certificate?	☐	☐	☐	☐	☐
Ceiling					
Does the ceiling insulation (R-value) shown on the NatHERS-stamped plans or as installed match what is shown in the *'Ceiling type'* table on this Certificate?	☐	☐	☐	☐	☐
Roof					
Does the external roof shade (colour) on the NatHERS stamped plans or as installed match what is shown in the *'Roof type'* table on this Certificate?	☐	☐	☐	☐	☐
Apartment entrance doors (NCC Class 2 assessments only)					
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 type (terrain) (shown on page 1) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".	☐	☐		☐	☐
Heating and cooling load limits*					
Do the load limits settings (shown on page 1) match the values in the ABCB Standard 2022: NAtHERS heating and cooling load limits for the appropriate climate zone?	☐	☐	☐	☐	☐

*Refer to glossary.

Certificate check

Continued

	Approval stage		Construction stage		
	Assessor checked	Consent authority/ surveyor checked	Builder checked	Consent authority/ surveyor checked	Occupancy/other
Additional NCC requirements for thermal performance (not included in the NatHERS assessment)					
Thermal bridging					
Does the dwelling meet the NCC requirement for thermal bridging?		☐	☐	☐	☐
Insulation installation method					
Has the insulation been installed according to the NCC requirements?			☐	☐	☐
Building sealing					
Does the dwelling meet the NCC requirements for Building Sealing?		☐	☐	☐	☐
Whole of Home performance check (not applicable if a Whole of Home performance assessment is not conducted)					
Appliances					
Does the cooling appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the Appliance schedule on this Certificate?	☐	☐	☐	☐	☐
Does the heating appliance/s type, location and efficiency/performance shown on the NatHERS-stamped plans or installed, match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the hot water system type and efficiency/performance shown on the NatHERS-stamped plans or as installed match the location and minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the pool pump efficiency/performance shown on the NatHERS-stamped plans or as installed match the minimum efficiency/performance requirements shown in the *'Appliance schedule'* on this Certificate?	☐	☐	☐	☐	☐
Does the onsite renewable energy system type, orientation and system size or generation capacity shown on the NatHERS stamped plans or installed match the *'Onsite Renewable Energy schedule'* on this Certificate?	☐	☐	☐	☐	☐
Additional NCC Requirements for Services (not included in the NatHERS assessment)					
Does the lighting meet the artificial lighting requirements specified in the NCC?		☐	☐	☐	☐
Does the hot water system meet the additional requirements specified in the NCC?		☐	☐	☐	☐
Provisional values* check					
Have provisional values* been used in the assessment and, if so, are they noted in *'Additional notes'* table below?	☐	☐			
Other NCC requirements					

Note: This Certificate only covers the energy efficiency requirements in the NCC. Additional requirements that must also be satisfied include, but are not limited to: condensation, structural and fire safety requirements and any state or territory variations to the NCC energy efficiency requirements.

Additional notes

1. All specifications written in this report must be followed in the design and construction of the project. To achieve a rating of 7 stars or more, the client has been advised to ensure that the specifications reflected in this assessment are accurately shown on the plans. Should there be any inconsistency between the plans and this assessment, the details in this report (NatHERS certificate) shall prevail.
2. Exterior and internal wall colours have been modelled as 0.50 SA.
3. Roof colour has been modelled according to the project's external colour schedule.
4. Recessed light fittings have been modelled as 90mmx90mm.
5. Exhaust fans have been modelled as 200mmx200mm.

*Refer to glossary.

6. The following provisions for assumed neighbouring buildings have been applied:

- The sizes of the neighboring buildings have been modelled based on standard heights for two-story structures, while the horizontal dimensions and building offsets have been aligned with the specifications outlined in the site development plan.

- The setback from the street of the neighbouring building has been treated as the same setback from the street as the dwelling being rated.

7. The actual windows of the project must follow the maximum u-values specified on this report.

8. The actual windows of the project must follow the SHGC value(s), and their tolerance ranges, written on this report.

9. For simplification purposes and where applicable, study areas were zoned together with spaces sharing the same open area.

10. All roofs consist of panelised systems that create a warm roof assembly. Accordingly, the roof panels were considered as ceilings within the thermal envelope and the NatHERS model, resulting in raked ceilings across the roofed spaces of the model.

11. Unit orientations have been modelled in accordance with their respective unit type key plan.

12. For the purposes of NatHERS Whole-of-Home assessment, electric resistance heating has been adopted in lieu of panel radiators, as panel radiators are not currently available as a system option.

Room *schedule*

Room	Zone Type	Area [m²]
Garage	garage	19.8
GF Halls	dayTime	17.6
Ensuite	nightTime	4.8
Master Bed	bedroom	13
Bath	unconditioned	3.5
FF Halls	dayTime	5.9
Kitchen/Living/Dining	kitchen	39.1
Bedroom 1	bedroom	11.3
Bedroom 2	bedroom	11.3

Window and glazed door *type and performance*

Default* windows

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

Custom* windows

				Substitution tolerance ranges	
Window ID	**Window description**	**Maximum U-value***	**SHGC***	SHGC lower limit	SHGC upper limit
AWS-010-82 A	517 Al Awining Window DG 4EnviroClr-10Ar-4KlymetShieldC- lr	4	0.53	0.5	0.56
AWS-036-25 A	618 Magnum Al Sliding Door DG 4/10/4	4	0.6	0.57	0.63

Window and glazed door *schedule*

Location	Window ID	Window no.	Height [mm]	Width [mm]	Window type	Opening %	Orientation	Window shading device*
Ensuite	AWS-010-82 A	W_Ensuite	600	900	awning	90.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Master Bed	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Kitchen/Living/-Dining	AWS-036-25 A	SD_Living	2400	2400	sliding	30.0	NE	No
Kitchen/Living/-Dining	AWS-010-82 A	W03	1800	900	awning	60.0	NE	No
Bedroom 1	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No
Bedroom 2	AWS-010-82 A	W03	1800	900	awning	60.0	SW	No

*Refer to glossary.

Roof window* *type and performance value*

Default* roof windows

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

Custom* roof windows

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

Roof window* *schedule*

Location	Window ID	Window no.	Opening %	Area [m²]	Width [mm]	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight* *type and performance*

Skylight ID	Skylight description	Skylight shaft reflectance
No Data Available		

Skylight* *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length [mm]	Area [m²]	Orient-ation	Outdoor shade	Diffuser
No Data Available							

External door *schedule*

Location	Height [mm]	Width [mm]	Opening %	Orientation
Garage	2400	2400	100.0	NE
GF Halls	2400	1000	100.0	SW
GF Halls	2400	1000	100.0	NE

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade [colour]	Bulk insulation [R-value]	Reflective wall wrap*
1	Inter-Tenancy Wall	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7);Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No
2	GT5 - R2.7 Insulated Wall with External Cladding	0.5	Medium	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)	No

*Refer to glossary.

External wall *schedule*

Location	Wall ID	Height [mm]	Width [mm]	Orientation	Horizontal shading feature* maximum projection [mm]	Vertical shading feature* (yes/no)
Garage	1	2700	6014	NW	0	No
Garage	2	2700	3279	NE	4892	Yes
GF Halls	2	2700	1075	SW	534	Yes
GF Halls	2	2700	9628	SE	0	No
GF Halls	2	2700	2281	NE	4890	Yes
Ensuite	1	2700	4063	NW	0	No
Ensuite	2	2700	1175	SW	0	No
Master Bed	2	2700	3189	SW	0	Yes
Master Bed	2	2700	583	SE	0	Yes
Bath	1	2700	2119	NW	0	No
FF Halls	2	2900	1077	SE	0	No
Kitchen/Living/Dining	1	2950	5612	NW	0	No
Kitchen/Living/Dining	1	2900	858	NW	0	No
Kitchen/Living/Dining	2	2900	1743	SE	0	No
Kitchen/Living/Dining	2	2950	5769	SE	0	No
Kitchen/Living/Dining	2	2800	5677	NE	2180	Yes
Bedroom 1	1	2900	4070	NW	0	No
Bedroom 1	2	2700	2784	SW	495	Yes
Bedroom 2	2	2700	2791	SW	520	Yes
Bedroom 2	2	2900	4050	SE	0	No

Internal wall *type*

Wall ID	Wall type	Area [m²]	Bulk insulation
1	GT5 - R2.7 Insulated Internal Wall	100.2	Glass fibre batt (k = 0.044 density = 12 kg/m3) (R2.7)

Floor *type*

Location	Construction	Area [m²]	Sub-floor ventilation	Added insulation [R-value]	Covering
Garage	225 Waffle Pod, Concrete Slab on Ground	19.8	Enclosed	R0.6	none
GF Halls	225 Waffle Pod, Concrete Slab on Ground	17.6	Enclosed	R0.6	Timber
Ensuite	225 Waffle Pod, Concrete Slab on Ground	4.8	Enclosed	R0.6	Tiles
Master Bed	225 Waffle Pod, Concrete Slab on Ground	13	Enclosed	R0.6	Carpet
Bath	TBS Floor Cassette System	3.5	Enclosed	R4.0	Tiles

*Refer to glossary.

FF Halls	TBS Floor Cassette System	5.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	23.9	Enclosed	R4.0	Timber
Kitchen/Living/D- ining	TBS Floor Cassette System	15.2	Elevated	R4.0	Timber
Bedroom 1	TBS Floor Cassette System	11.3	Enclosed	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	0.7	Elevated	R4.0	Carpet
Bedroom 2	TBS Floor Cassette System	10.6	Enclosed	R4.0	Carpet

Ceiling *type*

Location	Construction material/type	Bulk insulation R-value [may include edge batt values]	Reflective wrap*
Garage	TBS Floor Cassette System	R4.0	No
GF Halls	TBS Floor Cassette System	R4.0	No
Ensuite	TBS Floor Cassette System	R4.0	No
Master Bed	TBS Floor Cassette System	R4.0	No
Bath	Plasterboard	R5.0	No
FF Halls	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Kitchen/Living/D- ining	Plasterboard	R5.0	No
Bedroom 1	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No
Bedroom 2	Plasterboard	R5.0	No

Ceiling *penetrations**

Location	Quantity	Type	Height [mm]	Width [mm]	Sealed/unsealed
Garage	1	Downlights	90	90	Sealed
GF Halls	2	Downlights	90	90	Sealed
GF Halls	1	Exhaust Fans	200	200	Sealed
Ensuite	1	Downlights	90	90	Sealed
Ensuite	1	Exhaust Fans	200	200	Sealed
Master Bed	2	Downlights	90	90	Sealed
Bath	1	Downlights	90	90	Sealed
Bath	1	Exhaust Fans	200	200	Sealed
FF Halls	1	Downlights	90	90	Sealed
FF Halls	1	Exhaust Fans	200	200	Sealed
Kitchen/Living/Dining	3	Downlights	90	90	Sealed
Kitchen/Living/Dining	1	Exhaust Fans	200	200	Sealed
Bedroom 1	1	Downlights	90	90	Sealed

*Refer to glossary.

Bedroom 2	1	Downlights	90	90	Sealed

Ceiling *fans*

Location	Quantity	Diameter [mm]
Master Bed	1	1200
Kitchen/Living/Dining	1	1200
Bedroom 1	1	1200
Bedroom 2	1	1200

Roof *type*

Construction	Added insulation [R-value]	Solar absorptance	Roof shade [colour]
Framed:Flat - Flat Framed (Metal Deck)	0.0	0.3	Light

Thermal bridging *schedule for steel frame elements*

Building element	Steel section dimensions [height x width, mm]	Frame spacing [mm]	Steel thickness [BMT,mm]	Thermal break [R-value]
No Data Available				

Appliance *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

Note: A flat assumption of 5W/m2 is used for lighting, therefore lighting is not included in the appliance schedule.

Cooling system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Unknown or none (Default - Room refrigerative - variable capacity)	Ff Halls, Kitchen/Living/Dining, Ensuite, Master Bed, Gf Halls, Bedroom 2, Bedroom 1	Electricity	2 Star (ZERL)	8.1kW

Heating system

Appliance/ system type	Location	Fuel type	Minimum efficiency/ performance	Recommended capacity
Electric resistance - without fan	Kitchen/Living/Dining, Master Bed, Bedroom 2, Bedroom 1	Electricity	100%	5.8kW
Unknown or none (Default - Room RAC - variable capacity)	Ff Halls, Ensuite, Gf Halls	Electricity	1 Star (ZERL)	2.7kW

Hot water system

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Hot Water CER Zone	Zone 3 STC	Assessed daily load

*Refer to glossary.

Heat pump (continuous)	Electricity	21 STCs	5	24	102L

Pool/spa equipment

Appliance/ system type	Fuel type	Minimum efficiency/ performance	Recommended capacity
No Data Available			

Onsite renewable energy *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Orientation	System size or generation capacity
Solar PV	30°	1.5kW
Solar PV	210°	1.5kW

Battery *schedule*

(not applicable if a Whole of Home performance assessment is not conducted for this certificate)

System type	Size [battery storage capacity]
No Data Available	

*Refer to glossary.

Explanatory Notes

About this report

NatHERS ratings are a reliable guide for comparing different dwelling designs and to demonstrate that designs meet the energy efficiency requirements in the National Construction Code.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the heating and cooling energy loads and energy value* of the whole home. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy generation and storage to estimate the homes energy value*.

The actual energy loads, cost and greenhouse gas emissions of a home may vary from that predicted. This is because the assumptions will not always match the actual occupant usage patterns. For example, the number of occupants and how people use their appliances will vary. Energy efficient homes use less energy, are warmer on cool days, cooler on hot days and cost less to run.

Accredited assessors

For quality assured NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in the certificate is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy load, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings 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, behaviour, appliance performance, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
AFRC	Australian Fenestration Rating Council
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, range hoods, 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.
COP	Coefficient of performance
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.
EER	Energy Efficiency Ratio, measure of how much cooling can be achieved by an air conditioner for a single kWh of electricity input
Energy use	This is your homes rating without solar or batteries.
Energy value	The net cost to society including, but not limited to, costs to the building user, the environment and energy networks (as defined in the ABCB Housing Provisions Standard).
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.
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.
Net zero home	a home that achieves a net zero energy value*.
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
Recommended capacity	this is the capacity or size of equipment that is recommended by NatHERS to achieve the desired comfort conditions in the zone or zones serviced. This is a recommendation and the final selection sizing should be confirmed by a suitably qualified person.
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate air gap 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 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.

*Refer to glossary.

STCs	Small-scale Technology Certificates, certificates created by the REC registry for renewable energy technologies that may be bought and sold as part of the Small-scale Renewable Energy Scheme operated by the Clean Energy Regulatory
Thermal breaks	are materials with an R-value greater than or equal to 0.2 that must separate the metal frame from the cladding. This includes, but is not limited to, materials such as timber battens greater than or equal to 20mm thick, continuous thermal breaks such as polystyrene insulation sheeting, plastic strips or furring channels.
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).
Window shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes horizontal* or vertical shading features* (eg eaves and balconies)

*Refer to glossary.