Nationwide House Energy Rating Scheme
NatHERS Certificate No. 0007817851

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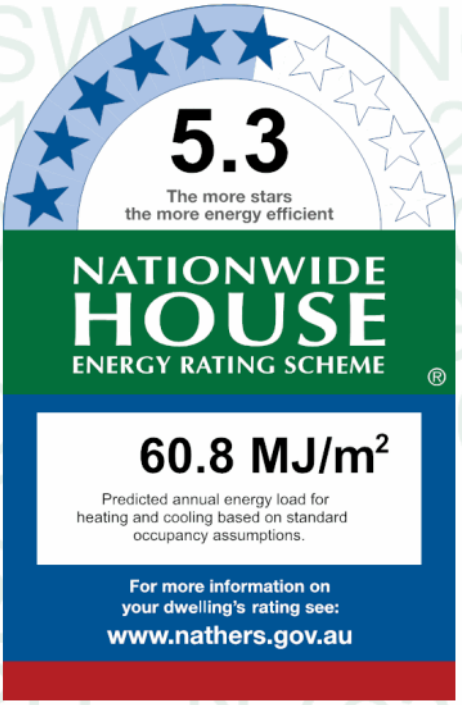

Property

Address	75 Coolawin Rd , Northbridge , NSW , 2065
Lot/DP	21/3586
NCC Class*	1A
Type	New Dwelling

Plans

Main Plan	Issue H dated 24.05.22 recived 21/6/2022
Prepared by	BJB Architects

Construction and environment

Assessed floor area (m^2)*		**Exposure Type**
Conditioned*	306.0	Suburban
Unconditioned*	49.0	**NatHERS climate zone**
Total	355.0	56
Garage	30.0	

Thermal performance

Heating	Cooling
45.7 MJ/m^2	15.1 MJ/m^2

About the rating

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

Accredited assessor

Name	John Caley
Business name	Ecological Design Pty Ltd
Email	john@ecologicaldesign.com.au
Phone	0418 262 706
Accreditation No.	20570

Assessor Accrediting Organisation

ABSA

Declaration of interest Declared, refer to Additional Notes on page 2

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=ndhcHsgdw.
When using either link, ensure you are visiting hstar.com.au

National Construction Code (NCC) requirements

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

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

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

Certificate check

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

Genuine certificate

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

Ceiling penetrations*

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

Windows

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

Apartment entrance doors

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

Exposure*

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

Provisional* values

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

Additional notes

The assessor has provided design advice to the client
I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*

Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-01 A	ALM-002-01 A Aluminium B SG Clear	6.7	0.70	0.66	0.73
ALM-001-01 A	ALM-001-01 A Aluminium A SG Clear	6.7	0.57	0.54	0.60
ALM-004-01 A	ALM-004-01 A Aluminium B DG Air Fill Clear-Clear	4.8	0.59	0.56	0.62

Custom* windows

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

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
store/bath/hall	ALM-002-01 A	n/a	2400	900	n/a	00	N	No
store/bath/hall	ALM-002-01 A	n/a	2400	900	n/a	00	N	No
store/bath/hall	ALM-002-01 A	n/a	2400	900	n/a	00	N	No
laundry	ALM-002-01 A	n/a	1400	2400	n/a	45	N	No
laundry	ALM-001-01 A	n/a	2600	900	n/a	90	E	No
Kitchen/Living/	ALM-004-01 A	n/a	950	3000	n/a	00	S	No
Kitchen/Living/	ALM-002-01 A	n/a	2620	1150	n/a	00	N	No
Kitchen/Living/	ALM-002-01 A	n/a	1800	1040	n/a	00	E	No
Kitchen/Living/	ALM-004-01 A	n/a	2700	3000	n/a	45	N	No
Kitchen/Living/	ALM-004-01 A	n/a	2700	8000	n/a	45	E	No
Bedroom_G	ALM-002-01 A	n/a	2700	2530	n/a	45	W	Yes
Bedroom_G	ALM-001-01 A	n/a	1400	1080	n/a	90	N	No
Ens_G	ALM-002-01 A	n/a	750	1200	n/a	45	W	Yes
Master_Bedroom	ALM-001-01 A	n/a	1250	700	n/a	10	N	No
Master_Bedroom	ALM-002-01 A	n/a	2200	4760	n/a	45	E	No
Ens_master	ALM-002-01 A	n/a	500	1500	n/a	45	N	No
Bedroom_2/WIR	ALM-002-01 A	n/a	2200	2810	n/a	45	E	No
Stair/landing/v	ALM-002-01 A	n/a	2200	1500	n/a	00	W	No
Stair/landing/v	ALM-002-01 A	n/a	2630	1800	n/a	00	N	No
Study	ALM-002-01 A	n/a	2200	2800	n/a	45	W	Yes
bath	ALM-002-01 A	n/a	1200	1500	n/a	90	S	Yes
Bedroom_3	ALM-002-01 A	n/a	1250	2900	n/a	60	W	No
Bedroom_3	ALM-002-01 A	n/a	2200	2000	n/a	45	N	No
Ens_B3	ALM-002-01 A	n/a	500	840	n/a	45	W	Yes
pantry	ALM-001-01 A	n/a	950	1500	n/a	90	S	No

Roof window *type and performance*

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					

* Refer to glossary.

Roof window *schedule*

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight *type and performance*

Skylight ID	Skylight description
GEN-04-008a	Double-glazed clear, Timber and Aluminium Frame

Skylight *schedule*

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m^2)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
Master_Bedroom	GEN-04-008a	n/a	200	0.10	N	None	No	0.80
Ens_master	GEN-04-008a	n/a	50	1.00	N	None	No	0.50
Stair/landing/v	GEN-04-008a	n/a	50	1.00	N	None	No	0.50

External door *schedule*

Location	Height (mm)	Width (mm)	Opening %	Orientation
store/bath/hall	2040	820	90	W
store/bath/hall	2040	820	90	E
Kitchen/Living/	2700	1480	90	W
Garage	2040	820	90	E
Garage	2700	4740	90	W

External wall *type*

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Cavity Brick	0.50	Medium	Foil Anti-glare one side and Reflective other of the Bulk Insulation R1.2	Yes
EW-2	Cavity Brick	0.50	Medium	Foil Anti-glare one side and Reflective other of the Bulk Insulation R1.2	Yes

External wall *schedule*

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
store/bath/hall	EW-1	2700	4150	S	0	NO
store/bath/hall	EW-1	2700	4200	W	0	YES
store/bath/hall	EW-1	2700	2050	S	0	YES
store/bath/hall	EW-1	2700	1400	E	0	YES
store/bath/hall	EW-1	2700	1150	S	0	NO
store/bath/hall	EW-1	2700	2600	W	0	NO

* Refer to glossary.

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
store/bath/hall	EW-1	2700	7295	N	0	NO
store/bath/hall	EW-1	2700	3850	E	0	YES
laundry	EW-1	2700	4495	N	0	NO
laundry	EW-1	2700	1550	E	0	NO
laundry	EW-1	2700	4495	S	0	YES
Kitchen/Living/	EW-1	2700	7295	S	0	NO
Kitchen/Living/	EW-1	2700	1740	W	0	YES
Kitchen/Living/	EW-1	2700	2345	N	0	NO
Kitchen/Living/	EW-1	2700	1550	E	0	YES
Kitchen/Living/	EW-1	2700	9500	N	0	YES
Kitchen/Living/	EW-1	2700	10200	E	0	NO
Bedroom_G	EW-1	2700	3145	W	0	NO
Bedroom_G	EW-1	2700	3945	N	0	NO
Ens_G	EW-1	2700	1200	S	0	YES
Ens_G	EW-1	2700	2595	W	0	NO
Master_Bedroom	EW-1	2400	7445	N	800	NO
Master_Bedroom	EW-1	2400	6095	E	3000	NO
Ens_master	EW-1	2400	1790	N	800	YES
Bedroom_2/WIR	EW-1	2400	3995	E	3000	NO
Bedroom_2/WIR	EW-1	2400	6795	S	800	NO
Stair/landing/v	EW-1	2400	1840	W	2000	YES
Stair/landing/v	EW-1	2630	2395	N	800	NO
Stair/landing/v	EW-1	2400	900	E	12400	YES
Study	EW-1	2400	4195	S	800	NO
Study	EW-1	2400	3995	W	2000	NO
bath	EW-1	2400	3490	S	800	NO
Garage	EW-2	2700	1550	E	0	YES
Garage	EW-1	2700	5450	S	0	NO
Garage	EW-1	2700	5150	W	0	NO
Garage	EW-1	2700	673	NW	0	NO
Garage	EW-1	2700	850	N	0	YES
Bedroom_3	EW-1	2400	2995	W	800	NO
Bedroom_3	EW-1	2400	3995	N	800	NO
Ens_B3	EW-1	2400	1200	S	6800	YES
Ens_B3	EW-1	2400	1995	W	800	NO
pantry	EW-1	2700	3140	S	0	YES

Internal wall *type*

Wall ID	Wall type	Area (m^2)	Bulk insulation
IW-1 - Single Skin Brick		214.00	No insulation

Floor *type*

Location	Construction	Area (m^2)	Sub-floor ventilation	Added insulation (R-value)	Covering
store/bath/hall	Concrete Slab on Ground 100mm	27.80	None	No Insulation	60/40 Carpet 10mm/Ceramic
laundry	Concrete Slab on Ground 100mm	7.00	None	No Insulation	Ceramic Tiles 8mm
Kitchen/Living//store/bath/hall	Timber Above Plasterboard 100mm	20.30		No Insulation	60/40 Carpet 10mm/Ceramic
Kitchen/Living/	Suspended Concrete Slab 100mm	97.00	Open	Bulk Insulation in Contact with Floor R2	60/40 Carpet 10mm/Ceramic
Bedroom_G	Suspended Concrete Slab 100mm	13.50	Open	Bulk Insulation in Contact with Floor R2	Carpet 10mm
Ens_G	Suspended Concrete Slab 100mm	4.80	Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm
Master_Bedroom/Kitchen/Living/	Concrete Above Plasterboard 150mm	44.10		No Insulation	Carpet 10mm
Ens_master/Kitchen/Living/	Concrete Above Plasterboard 150mm	6.40		No Insulation	Ceramic Tiles 8mm
Bedroom_2/WIR/Kitchen/Living/	Concrete Above Plasterboard 100mm	28.30		No Insulation	Carpet 10mm
Bedroom_2/WIR/pantry	Concrete Above Plasterboard 100mm	0.50		No Insulation	Carpet 10mm
Stair/landing/v/Kitchen/Living/	Concrete Above Plasterboard 150mm	27.40		No Insulation	Carpet 10mm
Study/Garage	Concrete Above Plasterboard 100mm	16.20		No Insulation	Carpet 10mm
Study/pantry	Concrete Above Plasterboard 100mm	0.50		No Insulation	Carpet 10mm
bath/Kitchen/Living/	Concrete Above Plasterboard 100mm	2.70		No Insulation	Ceramic Tiles 8mm
bath/pantry	Concrete Above Plasterboard 100mm	9.40		No Insulation	Ceramic Tiles 8mm
Garage	Suspended Concrete Slab 100mm	30.00	Open	Bulk Insulation in Contact with Floor R2	Bare
Bedroom_3/Kitchen/Living/	Concrete Above Plasterboard 100mm	3.40		No Insulation	Carpet 10mm
Bedroom_3/Bedroom_G	Concrete Above Plasterboard 100mm	11.00		No Insulation	Carpet 10mm
Bedroom_3/Ens_G	Concrete Above Plasterboard 100mm	1.00		No Insulation	Carpet 10mm
Ens_B3/Kitchen/Living/	Concrete Above Plasterboard 150mm	0.70		No Insulation	Ceramic Tiles 8mm
Ens_B3/Ens_G	Concrete Above Plasterboard 150mm	3.50		No Insulation	Ceramic Tiles 8mm
pantry	Suspended Concrete Slab 100mm	10.40	Open	Bulk Insulation in Contact with Floor R2	Ceramic Tiles 8mm

Ceiling *type*

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

* Refer to glossary.

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
store/bath/hall	Plasterboard	Bulk Insulation R3.5	No
store/bath/hall	Timber Above Plasterboard	No Insulation	No
laundry	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living/	Plasterboard	Bulk Insulation R3.5	No
Kitchen/Living/	Concrete Above Plasterboard	No Insulation	No
Bedroom_G	Plasterboard	Bulk Insulation R3.5	No
Bedroom_G	Concrete Above Plasterboard	No Insulation	No
Ens_G	Concrete Above Plasterboard	No Insulation	No
Master_Bedroom	Plasterboard	Bulk Insulation R3.5	No
Ens_master	Plasterboard	Bulk Insulation R3.5	No
Bedroom_2/WIR	Plasterboard	Bulk Insulation R3.5	No
Stair/landing/v	Plasterboard	Bulk Insulation R3.5	No
Study	Plasterboard	Bulk Insulation R3.5	No
bath	Plasterboard	Bulk Insulation R3.5	No
Garage	Plasterboard	Bulk Insulation R3.5	No
Garage	Concrete Above Plasterboard	No Insulation	No
Bedroom_3	Plasterboard	Bulk Insulation R3.5	No
Ens_B3	Plasterboard	Bulk Insulation R3.5	No
pantry	Concrete Above Plasterboard	No Insulation	No

Ceiling *penetrations**

Location	Quantity	Type	Diameter (mm^2)	Sealed/unsealed
store/bath/hall	10	Downlights - LED	150	Sealed
store/bath/hall	1	Exhaust Fans	300	Sealed
laundry	3	Downlights - LED	150	Sealed
laundry	1	Exhaust Fans	300	Sealed
Kitchen/Living/	46	Downlights - LED	150	Sealed
Kitchen/Living/	1	Exhaust Fans	300	Sealed
Bedroom_G	5	Downlights - LED	150	Sealed
Ens_G	2	Downlights - LED	150	Sealed
Ens_G	1	Exhaust Fans	300	Sealed
Master_Bedroom	17	Downlights - LED	150	Sealed
Ens_master	3	Downlights - LED	150	Sealed
Ens_master	1	Exhaust Fans	300	Sealed
Bedroom_2/WIR	11	Downlights - LED	150	Sealed
Stair/landing/v	11	Downlights - LED	150	Sealed
Study	6	Downlights - LED	150	Sealed
bath	2	Downlights - LED	150	Sealed

* Refer to glossary.

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
bath	1	Exhaust Fans	300	Sealed
Bedroom_3	6	Downlights - LED	150	Sealed
Ens_B3	1	Downlights - LED	150	Sealed
Ens_B3	1	Exhaust Fans	300	Sealed
pantry	4	Downlights - LED	150	Sealed

Ceiling *fans*

Location	Quantity	Diameter (mm)
No Data Available		

Roof *type*

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R1	0.85	Dark

Explanatory notes

About this report

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

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

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

Accredited assessors

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

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

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

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

Disclaimer

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

The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

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

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au.
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar light well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).

* Refer to glossary.