

# BASIX<sup>®</sup>Certificate

Building Sustainability Index [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

## Single Dwelling

Certificate number: 320162S\_02

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 29/06/2009 published by the Department of Planning. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

This certificate is a revision of certificate number 320162S lodged with the consent authority or certifier on 20 July 2010 with application 320162S.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Director-General

Date of issue: Monday, 21 October 2013

To be valid, this certificate must be lodged within 3 months of the date of issue.






Project summary		
Project name	136 Anzac Avenue - Lot 2_02	
Street address	136 Anzac Avenue Collaroy 2097	
Local Government Area	Warringah Council	
Plan type and plan number	deposited 235748	
Lot no.	Lot 2	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	4	
Project score		
Water	✓ 46	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 56	Target 40

Certificate Prepared by
Name / Company Name: Quattro Architecture Pty Limited
ABN (if applicable): 150 198 842

# Description of project

Project address	
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Street address	136 Anzac Avenue Collaroy 2097
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Plan type and plan number	Deposited Plan 235748
Lot no.	Lot 2
Section no.	-
Project type	
Project type	separate dwelling house
No. of bedrooms	4
Site details	
Site area (m <sup>2</sup> )	520
Roof area (m <sup>2</sup> )	213
Conditioned floor area (m2)	192
Unconditioned floor area (m2)	23
Total area of garden and lawn (m2)	169

Assessor details and thermal loads		
Assessor number	n/a	
Certificate number	n/a	
Climate zone	n/a	
Area adjusted cooling load (MJ/m <sup>2</sup> .year)	n/a	
Area adjusted heating load (MJ/m <sup>2</sup> .year)	n/a	
Other		
none	n/a	
Project score		
Water	 46	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 56	Target 40

## Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

Water Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Landscape</b>			
The applicant must plant indigenous or low water use species of vegetation throughout 70.8 square metres of the site.	✓	✓	
<b>Fixtures</b>			
The applicant must install showerheads with a minimum rating of 3 star (> 7.5 but <= 9 L/min) in all showers in the development.		✓	✓
The applicant must install a toilet flushing system with a minimum rating of 3 star in each toilet in the development.		✓	✓
The applicant must install taps with a minimum rating of 4 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 4 star in each bathroom in the development.		✓	
<b>Alternative water</b>			
<b>Rainwater tank</b>			
The applicant must install a rainwater tank of at least 5000 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.	✓	✓	✓
The applicant must configure the rainwater tank to collect rain runoff from at least 212 square metres of the roof area of the development (excluding the area of the roof which drains to any stormwater tank or private dam).		✓	✓
The applicant must connect the rainwater tank to: <ul style="list-style-type: none"> <li>all toilets in the development</li> <li>at least one outdoor tap in the development (Note: NSW Health does not recommend that rainwater be used for human consumption in areas with potable water supply.)</li> </ul>		✓ ✓	✓ ✓

**Thermal Comfort Commitments**Show on  
DA plansShow on CC/CDC  
plans & specsCertifier  
check**Floor, walls and ceiling/roof**

The applicant must construct the floor(s), walls, and ceiling/roof of the dwelling in accordance with the specifications listed in the table below.



Construction	Additional insulation required (R-Value)	Other specifications
floor - concrete slab on ground	nil	
external wall - brick veneer	1.36 (or 1.90 including construction)	
external wall - brick veneer	1.36 (or 1.90 including construction)	
external wall - brick veneer	1.36 (or 1.90 including construction)	
external wall - brick veneer	1.36 (or 1.90 including construction)	
ceiling and roof - flat ceiling / pitched roof	ceiling: 2.5 (up), roof: foil/sarking	unventilated; medium (solar absorptance 0.475-0.70)

**Note** Insulation specified in this Certificate must be installed in accordance with Part 3.12.1.1 of the Building Code of Australia.

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Windows, glazed doors and skylights</b>			
The applicant must install the windows, glazed doors and shading devices described in the table below, in accordance with the specifications listed in the table. Relevant overshadowing specifications must be satisfied for each window and glazed door.	✓	✓	✓
The dwelling may have 1 skylight (<0.7 square metres) and up to 2 windows/glazed doors (<0.7 square metres) which are not listed in the table.	✓	✓	✓
The following requirements must also be satisfied in relation to each window and glazed door:	✓	✓	✓
<ul style="list-style-type: none"> <li>Except where the glass is 'single clear' or 'single toned', each window and glazed door must have a U-value no greater than that listed and a Solar Heat Gain Coefficient (SHGC) +/-10% of that listed. Total system U-values and SHGC must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions.</li> </ul>			✓
<ul style="list-style-type: none"> <li>The leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 millimetres above the head of the window or glazed door, except that a projection greater than 500 mm and up to 1500 mm above the head must be twice the value in the table.</li> </ul>	✓	✓	✓
<ul style="list-style-type: none"> <li>Pergolas with polycarbonate roof or similar translucent material must have a shading coefficient of less than 0.35.</li> </ul>		✓	✓
<ul style="list-style-type: none"> <li>Unless they have adjustable shading, pergolas must have fixed battens parallel to the window or glazed door above which they are situated, unless the pergola also shades a perpendicular window. The spacing between battens must not be more than 50 mm.</li> </ul>		✓	✓
<ul style="list-style-type: none"> <li>Pergolas with adjustable shading may have adjustable blades or removable shade cloth (not less than 80% shading ratio). Adjustable blades must overlap in plan view.</li> </ul>		✓	✓
<ul style="list-style-type: none"> <li>Overshadowing buildings/vegetation must be of the height and distance from the centre and the base of the window and glazed door, as specified in the 'overshadowing' column.</li> </ul>	✓	✓	✓

Window/glazed door no.	Orientation	Maximum area (square metres)	Type	Shading	Overshadowing
G.12	N	6.75	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/pergola/balcony 751-900 mm	not overshadowed
G.13, G.14	E	3.91	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	>4m high, 5-8 m away
G.16	S	3.35	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	>4m high, 8-12 m away
G.17	N	3.07	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	>4m high, 2-5 m away

Window/glazed door no.	Orientation	Maximum area (square metres)	Type	Shading	Overshadowing
G.018, G.19	W	6.13	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	>4m high, 2-5 m away
G.20	S	3.68	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	>4m high, 2-5 m away
G.21	W	0.85	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	none	2-4m high, 2 m away
1.13, 1.14, 1.15, 1. 16	E	5.26	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/ pergola/balcony 601-750 mm	>4m high, 2-5 m away
1.17, 1.18	S	8.23	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/ pergola/balcony 901-1,200 mm	2-4m high, 8-12 m away
1.19	N	2.72	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/ pergola/balcony 901-1,200 mm	2-4m high, 2-5 m away
1.20, 1.21	W	5.45	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/ pergola/balcony 901-1,200 mm	2-4m high, 2-5 m away
1.22	N	4.55	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	eave/verandah/ pergola/balcony 751-900 mm	not overshadowed
G.15	S	13.31	timber or uPVC, single pyrolytic low-e (U-value:3.99, SHGC:0.4)	pergola (adjustable shade) >2,000 mm	>4m high, 8-12 m away

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<b>Hot water</b>			
The applicant must install the following hot water system in the development, or a system with a higher energy rating: solar (gas boosted) with a performance of 26 to 30 RECs or better.	✓	✓	✓
<b>Cooling system</b>			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: ceiling fans + 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
<b>Heating system</b>			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5		✓	✓
<b>Ventilation</b>			
<p>The applicant must install the following exhaust systems in the development:</p> <p>At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: interlocked to light</p> <p>Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off</p> <p>Laundry: natural ventilation only, or no laundry; Operation control: n/a</p>		<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>
<b>Artificial lighting</b>			
<p>The applicant must ensure that the "primary type of artificial lighting" is fluorescent or light emitting diode (LED) lighting in each of the following rooms, and where the word "dedicated" appears, the fittings for those lights must only be capable of accepting fluorescent or light emitting diode (LED) lamps:</p> <ul style="list-style-type: none"> <li>• at least 4 of the bedrooms / study; dedicated</li> <li>• at least 2 of the living / dining rooms; dedicated</li> <li>• the kitchen; dedicated</li> </ul>		<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
<ul style="list-style-type: none"> <li>• all bathrooms/toilets; dedicated</li> <li>• the laundry; dedicated</li> <li>• all hallways; dedicated</li> </ul>		<p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p>	<p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p> <p style="text-align: center;">✓</p>
Natural lighting			
The applicant must install a window and/or skylight in the kitchen of the dwelling for natural lighting.	✓	✓	✓
The applicant must install a window and/or skylight in 5 bathroom(s)/toilet(s) in the development for natural lighting.	✓	✓	✓
Other			
The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.		✓	
The applicant must construct each refrigerator space in the development so that it is "well ventilated", as defined in the BASIX definitions.		✓	
The applicant must install a fixed outdoor clothes drying line as part of the development.		✓	



## Legend

In these commitments, "applicant" means the person carrying out the development.

Commitments identified with a ✓ in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).

Commitments identified with a ✓ in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.

Commitments identified with a ✓ in the "Certifier check" column must be certified by a certifying authority as having been fulfilled, before a final occupation certificate (either interim or final) for the development may be issued.