

BASIX[®]Certificate

Building Sustainability Index www.basix.nsw.gov.au

Single Dwelling

Certificate number: 984836S




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 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary

Date of issue: Friday, 22 March 2019

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



| Project summary | | |
|---------------------------|--|-------------|
| Project name | Carrington Parade | |
| Street address | 72 Carrington Parade Curl Curl 2096 | |
| Local Government Area | Northern Beaches Council | |
| Plan type and plan number | deposited 366860 | |
| Lot no. | 1 | |
| Section no. | - | |
| Project type | separate dwelling house | |
| No. of bedrooms | 3 | |
| Project score | | |
| Water |  40 | Target 40 |
| Thermal Comfort |  Pass | Target Pass |
| Energy |  52 | Target 50 |

| Certificate Prepared by |
|--|
| Name / Company Name: Breakspear Architects Pty Ltd |
| ABN (if applicable): 81601670991 |

Description of project

Project address

| | |
|---------------------------|-------------------------------------|
| Project name | Carrington Parade |
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| Lot no. | 1 |
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Project type

| | |
|-----------------|-------------------------|
| Project type | separate dwelling house |
| No. of bedrooms | 3 |

Site details

| | |
|------------------------------------|-------|
| Site area (m ²) | 281 |
| Roof area (m ²) | 142 |
| Conditioned floor area (m2) | 265.0 |
| Unconditioned floor area (m2) | 20.0 |
| Total area of garden and lawn (m2) | 50 |

Assessor details and thermal loads

| | |
|--|-----|
| Assessor number | n/a |
| Certificate number | n/a |
| Climate zone | n/a |
| Area adjusted cooling load (MJ/m ² .year) | n/a |
| Area adjusted heating load (MJ/m ² .year) | n/a |

Project score

| | | |
|-----------------|--------|-------------|
| Water | ✓ 40 | Target 40 |
| Thermal Comfort | ✓ Pass | Target Pass |
| Energy | ✓ 52 | Target 50 |

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 |
|--|------------------|------------------------------|-----------------|
| Landscape | | | |
| The applicant must plant indigenous or low water use species of vegetation throughout 20 square metres of the site. | ✓ | ✓ | |
| Fixtures | | | |
| The applicant must install showerheads with a minimum rating of 4 star (> 4.5 but ≤ 6 L/min plus spray force and/or coverage tests) in all showers in the development. | | ✓ | ✓ |
| The applicant must install a toilet flushing system with a minimum rating of 5 star in each toilet in the development. | | ✓ | ✓ |
| The applicant must install taps with a minimum rating of 5 star in the kitchen in the development. | | ✓ | |
| The applicant must install basin taps with a minimum rating of 5 star in each bathroom in the development. | | ✓ | |
| Alternative water | | | |
| Rainwater tank | | | |
| The applicant must install a rainwater tank of at least 3000 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 100 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"> 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.) a tap that is located within 10 metres of the outdoor spa in the development | | ✓ ✓ | ✓ ✓ |
| Outdoor Spa | | | |
| The spa must not have a volume greater than 3.75 kilolitres. | ✓ | ✓ | |

Water Commitments

Show on
DA plans

Show on CC/CDC
plans & specs

Certifier
check

The spa must have a spa cover.



| Thermal Comfort Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|---|------------------|------------------------------|-----------------|
| General features | | | |
| The dwelling must not have more than 2 storeys. | ✓ | ✓ | ✓ |
| The conditioned floor area of the dwelling must not exceed 300 square metres. | ✓ | ✓ | ✓ |
| The dwelling must not contain open mezzanine area exceeding 25 square metres. | ✓ | ✓ | ✓ |
| The dwelling must not contain third level habitable attic room. | ✓ | ✓ | ✓ |
| 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 | 1 (slab edge) | in-slab heating system |
| floor - suspended floor above garage, concrete | nil | in-slab heating system |
| external wall - brick veneer | 2.86 (or 3.40 including construction) | |
| internal wall shared with garage - plasterboard | nil | |
| ceiling and roof - flat ceiling / flat roof, framed | ceiling: 4.5 (up), roof: foil backed blanket (55 mm) | framed; light (solar absorptance < 0.475) |

| | |
|------|--|
| Note | • Insulation specified in this Certificate must be installed in accordance with Part 3.12.1.1 of the Building Code of Australia. |
| Note | • In some climate zones, insulation should be installed with due consideration of condensation and associated interaction with adjoining building materials. |

| Thermal Comfort Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|--|------------------|------------------------------|-----------------|
| Windows, glazed doors and skylights | | | |
| 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) which is not listed in the table. | ✓ | ✓ | ✓ |
| <p>The following requirements must also be satisfied in relation to each window and glazed door:</p> <ul style="list-style-type: none">For the following glass and frame types, the certifier check can be performed by visual inspection.<ul style="list-style-type: none">Aluminium single clearAluminium double (air) clearTimber/uPVC/fibreglass single clearTimber/uPVC/fibreglass double (air) clearFor other glass or frame types, each window and glazed door must be accompanied with certification showing a U value no greater than that listed and a Solar Heat Gain Coefficient (SHGC) within the range of those listed. Total system U values and SHGC must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions. Frame and glass types shown in the table below are for reference only.Vertical external louvres and blinds must fully shade the window or glazed door beside which they are situated when fully drawn or closed.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. | ✓ | ✓ | ✓ |

Windows, glazed doors and skylights

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) which is not listed in the table.

The following requirements must also be satisfied in relation to each window and glazed door:

- For the following glass and frame types, the certifier check can be performed by visual inspection.
 - Aluminium single clear
 - Aluminium double (air) clear
 - Timber/uPVC/fibreglass single clear
 - Timber/uPVC/fibreglass double (air) clear
- For other glass or frame types, each window and glazed door must be accompanied with certification showing a U value no greater than that listed and a Solar Heat Gain Coefficient (SHGC) within the range of those listed. Total system U values and SHGC must be calculated in accordance with National Fenestration Rating Council (NFRC) conditions. Frame and glass types shown in the table below are for reference only.
- Vertical external louvres and blinds must fully shade the window or glazed door beside which they are situated when fully drawn or closed.
- 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.

| Window/glazed door no. | Maximum height (mm) | Maximum width (mm) | Type | Shading Device (Dimension within 10%) | Overshadowing |
|------------------------|---------------------|--------------------|--|---|----------------------|
| North facing | | | | | |
| W01 | 1100 | 1410 | U-value: 3.6, SHGC: 0.423 - 0.517 (aluminium: thermally broken, double (air), clear) | eave 365 mm, 0 mm above head of window or glazed door | 2-4 m high, 2 m away |
| W02 | 2100 | 1270 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 525 mm, 0 mm above head of window or glazed door | 2-4 m high, 2 m away |




















North facing

| | | | | | |
|-----|------|------|--|---|----------------------|
| W01 | 1100 | 1410 | U-value: 3.6, SHGC: 0.423 - 0.517 (aluminium: thermally broken, double (air), clear) | eave 365 mm, 0 mm above head of window or glazed door | 2-4 m high, 2 m away |
| W02 | 2100 | 1270 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 525 mm, 0 mm above head of window or glazed door | 2-4 m high, 2 m away |

| Window/glazed door no. | Maximum height (mm) | Maximum width (mm) | Type | Shading Device (Dimension within 10%) | Overshadowing |
|--------------------------|---------------------|--------------------|--|--|-------------------------|
| W03 | 2100 | 1270 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 780 mm, 0 mm above head of window or glazed door | 2-4 m high, 2 m away |
| W04 | 700 | 800 | U-value: 3.6, SHGC: 0.423 - 0.517 (aluminium: thermally broken, double (air), clear) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| W12 | 2700 | 2250 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 1100 mm, 0 mm above head of window or glazed door | not overshadowed |
| W13 | 1000 | 1800 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| W19 | 2250 | 4230 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 1800 mm, 0 mm above head of window or glazed door | 1-2 m high, <1.5 m away |
| W21 | 1200 | 4040 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | external louvre/vertical blind (adjustable) | not overshadowed |
| North-East facing | | | | | |
| W05 | 1170 | 1950 | U-value: 3.6, SHGC: 0.423 - 0.517 (aluminium: thermally broken, double (air), clear) | none | not overshadowed |
| W14 | 2250 | 4000 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| East facing | | | | | |
| W06 | 2100 | 3600 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 600 mm, 0 mm above head of window or glazed door | not overshadowed |
| W15 | 3300 | 3600 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 600 mm, 0 mm above head of window or glazed door | not overshadowed |
| W20 | 2250 | 3645 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | eave 220 mm, 0 mm above head of window or glazed door | 1-2 m high, <1.5 m away |


| Window/glazed door no. | Maximum height (mm) | Maximum width (mm) | Type | Shading Device (Dimension within 10%) | Overshadowing |
|--------------------------|---------------------|--------------------|--|--|-------------------------|
| South-East facing | | | | | |
| W07 | 2275 | 1480 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | none | 1-2 m high, <1.5 m away |
| W16 | 2875 | 1480 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | none | 1-2 m high, <1.5 m away |
| South facing | | | | | |
| W17 | 2250 | 4230 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | eave 220 mm, 0 mm above head of window or glazed door | 1-2 m high, <1.5 m away |
| W08 | 1700 | 900 | U-value: 3.6, SHGC: 0.270 - 0.330 (aluminium: thermally broken, double (air), tint) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| W09 | 1700 | 900 | U-value: 3.6, SHGC: 0.270 - 0.330 (aluminium: thermally broken, double (air), tint) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| W10 | 1700 | 900 | U-value: 3.6, SHGC: 0.270 - 0.330 (aluminium: thermally broken, double (air), tint) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| W11 | 1700 | 900 | U-value: 3.6, SHGC: 0.270 - 0.330 (aluminium: thermally broken, double (air), tint) | eave 220 mm, 0 mm above head of window or glazed door | not overshadowed |
| West facing | | | | | |
| W18 | 2700 | 3645 | U-value: 3.6, SHGC: 0.423 - 0.517 (aluminium: thermally broken, double (air), clear) | solid overhang 1000 mm, 0 mm above head of window or glazed door | 2-4 m high, 2-5 m away |
| D05 | 2700 | 1030 | U-value: 3.6, SHGC: 0.486 - 0.594 (aluminium: thermally broken, double (air), clear) | solid overhang 1000 mm, 350 mm above head of window or glazed door | 2-4 m high, 2 m away |


| Energy Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|---|------------------|------------------------------|-----------------|
| Hot water | | | |
| The applicant must install the following hot water system in the development, or a system with a higher energy rating: gas storage. | ✓ | ✓ | ✓ |
| Cooling system | | | |
| The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: ceiling fans + 3-phase airconditioning; Energy rating: EER < 2.5 | | ✓ | ✓ |
| 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 < 2.5 | | ✓ | ✓ |
| Heating system | | | |
| The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: gas hydronic system; Energy rating: n/a | | ✓ | ✓ |
| The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: gas hydronic system; Energy rating: n/a | | ✓ | ✓ |
| Ventilation | | | |
| The applicant must install the following exhaust systems in the development: | | | |
| At least 1 Bathroom: individual fan, ducted to façade or roof; Operation control: manual on / timer off | | ✓ | ✓ |
| Kitchen: individual fan, ducted to façade or roof; Operation control: manual switch on/off | | ✓ | ✓ |
| Laundry: individual fan, ducted to façade or roof; Operation control: manual on / timer off | | ✓ | ✓ |
| Artificial lighting | | | |
| 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: | | | |
| • at least 3 of the bedrooms / study; dedicated | | ✓ | ✓ |
| • at least 2 of the living / dining rooms; dedicated | | ✓ | ✓ |
| • the kitchen; | | ✓ | ✓ |


| Energy Commitments | Show on DA plans | Show on CC/CDC plans & specs | Certifier check |
|--|---|---|---|
| <ul style="list-style-type: none"> all bathrooms/toilets; the laundry; all hallways; | |    |    |
| 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 2 bathroom(s)/toilet(s) in the development for natural lighting. |  |  |  |
| Outdoor spa | | | |
| The applicant must install the following heating system for the spa in the development (or alternatively must not install any heating system for the spa): solar (gas boosted) | |  | |
| The applicant must install a timer for the spa pump in the development. | |  | |
| Alternative energy | | | |
| The applicant must install a photovoltaic system with the capacity to generate at least 2 peak kilowatts of electricity as part of the development. The applicant must connect this system to the development's electrical system. |  |  |  |
| Other | | | |
| The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling. | |  | |
| The applicant must install a fixed indoor or sheltered 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.