

# BASIX<sup>®</sup>Certificate

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

## Single Dwelling

Certificate number: 545808S

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 Planning & Infrastructure. This document is available at [www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

Director-General

Date of issue: Thursday, 15 May 2014

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



Planning &  
Infrastructure

### Project summary

|                           |                                     |
|---------------------------|-------------------------------------|
| Project name              | 214025-Lot 2218 Thornton            |
| Street address            | William Hart Crescent Thornton 2750 |
| Local Government Area     | Penrith City Council                |
| Plan type and plan number | deposited 1171491                   |
| Lot no.                   | 2218                                |
| Section no.               | -                                   |
| Project type              | separate dwelling house             |
| No. of bedrooms           | 6                                   |

### Project score

|                 |        |             |
|-----------------|--------|-------------|
| Water           | ✓ 42   | Target 40   |
| Thermal Comfort | ✓ Pass | Target Pass |
| Energy          | ✓ 49   | Target 40   |

### Certificate Prepared by

Name / Company Name: ZAC HOMES

ABN (if applicable): 47060679576

# Description of project

## Project address

|                           |                                         |
|---------------------------|-----------------------------------------|
| Project name              | 214025-Lot 2218 Thornton                |
| Street address            | n/a William Hart Crescent Thornton 2750 |
| Local Government Area     | Penrith City Council                    |
| Plan type and plan number | Deposited Plan 1171491                  |
| Lot no.                   | 2218                                    |
| Section no.               | -                                       |

## Project type

|                 |                         |
|-----------------|-------------------------|
| Project type    | separate dwelling house |
| No. of bedrooms | 6                       |

## Site details

|                                    |     |
|------------------------------------|-----|
| Site area (m <sup>2</sup> )        | 289 |
| Roof area (m <sup>2</sup> )        | 175 |
| Conditioned floor area (m2)        | 190 |
| Unconditioned floor area (m2)      | 11  |
| Total area of garden and lawn (m2) | 134 |

## 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           | ✓ 42   | Target 40   |
| Thermal Comfort | ✓ Pass | Target Pass |
| Energy          | ✓ 49   | 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>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 4 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 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 175 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>the cold water tap that supplies each clothes washer 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> |                  | ✓<br>✓<br>✓                  | ✓<br>✓<br>✓     |

## Thermal Comfort Commitments

Show on  
DA plans

Show on CC/CDC  
plans & specs

Certifier  
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                                      |                                               |
| floor - suspended floor above garage, framed                    | 0.3 (or 1 including construction) (down) |                                               |
| external wall - brick veneer                                    | 1.66 (or 2.20 including construction)    |                                               |
| external wall - framed (weatherboard, fibre cement, metal clad) | 1.80 (or 2.20 including construction)    |                                               |
| ceiling and roof - flat ceiling / pitched roof                  | ceiling: 3 (up), roof: foil/sarking      | unventilated; dark (solar absorptance > 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>                                                                           |                  | ✓                            | ✓               |

| Window/glazed door no. | Orientation | Maximum area (square metres) | Type                                                          | Shading                                      | Overshadowing    |
|------------------------|-------------|------------------------------|---------------------------------------------------------------|----------------------------------------------|------------------|
| W1                     | N           | 3.36                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/pergola/balcony 1,201-1,500 mm | not overshadowed |
| W2                     | N           | 2.16                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/pergola/balcony 601-750 mm     | not overshadowed |
| W3                     | N           | 1.80                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/pergola/balcony 1,201-1,500 mm | not overshadowed |
| W4                     | N           | 2.70                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | none                                         | not overshadowed |
| W5                     | S           | 5.44                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/pergola/balcony 451-600 mm     | not overshadowed |
| W6                     | S           | 3.30                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/pergola/balcony >2,000 mm      | not overshadowed |

| Window/glazed door no. | Orientation | Maximum area (square metres) | Type                                                          | Shading                                       | Overshadowing    |
|------------------------|-------------|------------------------------|---------------------------------------------------------------|-----------------------------------------------|------------------|
| W7                     | W           | 1.92                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/ pergola/balcony 451-600 mm     | not overshadowed |
| W8                     | W           | 0.48                         | timber or uPVC, single clear (or U-value:5.71, SHGC:0.66)     | none                                          | not overshadowed |
| W9                     | W           | 3.30                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | none                                          | not overshadowed |
| W10                    | W           | 3.36                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/ pergola/balcony >2,000 mm      | not overshadowed |
| W11                    | S           | 6.72                         | standard aluminium, single clear (or U-value:7.63, SHGC:0.75) | eave/verandah/ pergola/balcony 1,201-1,500 mm | not overshadowed |



| 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: gas instantaneous with a performance of 5.5 stars.                                                                                                                                                                                        | ✓                | ✓                            | ✓               |
| <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: 3-phase airconditioning; Energy rating: EER 3.0 - 3.5                                                                                                                                                                                   |                  | ✓                            | ✓               |
| The cooling system must provide for day/night zoning between living areas and bedrooms.                                                                                                                                                                                                                                                                          |                  | ✓                            | ✓               |
| <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 3.5 - 4.0                                                                                                                                                                               |                  | ✓                            | ✓               |
| 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 3.5 - 4.0                                                                                                                                                                                   |                  | ✓                            | ✓               |
| The heating system must provide for day/night zoning between living areas and bedrooms.                                                                                                                                                                                                                                                                          |                  | ✓                            | ✓               |
| <b>Ventilation</b>                                                                                                                                                                                                                                                                                                                                               |                  |                              |                 |
| The applicant must install the following exhaust systems in the development:<br>At least 1 Bathroom: no mechanical ventilation (ie. natural); Operation control: n/a<br><br>Kitchen: individual fan, not ducted; Operation control: manual switch on/off<br><br>Laundry: natural ventilation only, or no laundry; Operation control: n/a                         |                  | ✓<br>✓<br>✓                  | ✓<br>✓<br>✓     |
| <b>Artificial lighting</b>                                                                                                                                                                                                                                                                                                                                       |                  |                              |                 |
| 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:<br>• at least 6 of the bedrooms / study; |                  | ✓                            | ✓               |

| Energy Commitments                                                                                                                                                                                      | Show on DA plans                                                                    | Show on CC/CDC plans & specs                                                                                                                                                                                                                                                                                                                                                                                                                    | Certifier check                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at least 3 of the living / dining rooms;</li> <li>• the kitchen;</li> <li>• all bathrooms/toilets;</li> <li>• the laundry;</li> <li>• all hallways;</li> </ul> |                                                                                     | <br><br><br><br> | <br><br><br><br> |
| <b>Natural lighting</b>                                                                                                                                                                                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| The applicant must install a window and/or skylight in 1 bathroom(s)/toilet(s) in the development for natural lighting.                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                              |
| <b>Other</b>                                                                                                                                                                                            |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| The applicant must install a gas cooktop & electric oven in the kitchen of the dwelling.                                                                                                                |                                                                                     |                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 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.