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## **Part 2.6 – Energy Efficiency**

NCC 2016 Building Code of Australia, Volume Two

**Compliance assessment of:**  
Residential building - BCA Class 1a

**Date:**

26 October 2017

**Site:**

Dwelling 4  
4 Redwood Street  
ROSTREVOR SA 5073  
BCA Climate Zone 5  
NatHERS Climate Zone 16

**Client:**

Mr Coscia

**Reference no:**

170248-4

**Assessor:**

Nathan Prince

## 1. Objective

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### O2.6

The objective of this section of the building code is to reduce greenhouse gas emissions

## 2. Functional Statement

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### F2.6

To reduce greenhouse gas emissions, to the degree necessary—

- (a) a building, including its domestic services, is to be capable of efficiently using energy; and
- (b) a building's domestic services for heating are to obtain their energy from—
  - (i) a low greenhouse gas intensity source; or
  - (ii) an on-site renewable energy source; or
  - (iii) another process as reclaimed energy.

## 3. Performance Requirements

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### P2.6.1 Building

A building must have, to the degree necessary, a level of thermal performance to facilitate the efficient use of energy for artificial heating and cooling appropriate to—

- (a) the function and use of the building; and
- (b) the internal environment; and
- (c) the geographic location of the building; and
- (d) the effects of nearby permanent features such as topography, structures and buildings; and
- (e) Solar radiation being—
  - (i) utilised for heating; and
  - (ii) controlled to minimise energy for cooling; and
- (f) the sealing of the building *envelope* against air leakage; and
- (g) the utilisation of air movement to assist cooling.

### P2.6.2 Services

Domestic services, including any associated distribution system and components must, to the degree necessary—

- (a) have features that facilitate the efficient use of energy appropriate to—
  - (i) the domestic service and its usage; and
  - (ii) the geographic location of the building; and
  - (iii) the location of the domestic service; and
  - (iv) the energy source; and
- (b) obtain heating energy from—
  - (i) a source that has a greenhouse gas intensity that does not exceed 100 g CO<sub>2</sub>-e/MJ of thermal energy load; or
  - (ii) an on-site renewable energy source; or
  - (iii) another process as reclaimed energy.

## Summary

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### Actions required to comply with Part 2.6

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#### P2.6.1 – Building

##### Additional requirements

Note: All the information required to verify that the thermal performance of the building is satisfied has not been fully provided, the following acceptable construction practices must be undertaken in order to achieve compliance with the NCC2016:

1. 3.12.1.1 Building fabric thermal insulation must comply with AS/NZS 4859.1 and installation is to comply with this section.
2. 3.12.3.3 External windows and doors must be sealed to comply with this section.
3. 3.12.3.4 Exhaust fans must be fitted with a sealing device such as a self-closing damper, filter or the like when serving a conditioned space; or a habitable room.
4. 3.12.3.5 Building sealing for the construction of roofs, walls and floors must comply with this section.

#### P2.6.2 – Services

##### Additional requirements

Note: All the information to verify that the domestic services requirements is satisfied has not been fully provided, the following acceptable construction manuals or practices must be undertaken in order to achieve compliance with the NCC2016:

5. 3.12.5.0 A heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.
6. 3.12.5.1 Thermal insulation of central heating water piping and heating and cooling ductwork must comply with this section.
7. 3.12.5.2 Thermal insulation of central heating water piping that is not within a conditioned space must comply with this section.
8. 3.12.5.3 Installation of heating and cooling ductwork must comply with this section.
9. 3.12.5.4 Electric resistance space heating must comply with this section.
10. 3.12.5.5 Artificial lighting lamp power density or illumination power density must comply with this section. Halogen lamps must be separately switched from fluorescent lamps and artificial lighting around the perimeter of the building must be controlled by a daylight sensor; or have an average light source efficacy of not less than 40 Lumens/W.
11. 3.12.5.6 A water heater in a heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.

## Compliance

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To comply with Part 2.6 Energy Efficiency a building must meet the Performance Requirements P2.6.1 Building.

### **SA 3.12.0.1(a) – Heating and cooling loads**

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(a) To reduce heating and cooling loads, a building must—

- (i) achieve an energy rating using house energy rating software of not less than 6 stars;

**This assessment has been undertaken using FirstRate5® house energy rating software and has achieved a star rating of not less than 6 stars. (associated report is attached)**

To comply with Part 2.6 Energy Efficiency a building must meet the Performance Requirements P2.6.2 Services.

Insufficient information has been provided by the client relating to the building's domestic services in order to fully verify compliance. The relevant 'Deemed-to-Satisfy requirements under Part 3.12.5 of NCC2016 – Volume Two have been stipulated in full in the appendix.

## Appendix A – P2.6.1 Building

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### Section 3.12.1 - Building Fabric

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#### 3.12.1.1 Building fabric thermal insulation

- (a) Where required, insulation must comply with AS/NZS 4859.1 and be installed so that it—
- (i) abuts or overlaps adjoining insulation other than at supporting members such as columns, studs, noggings, joists, furring channels and the like where the insulation must butt against the member; and
  - (ii) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and
  - (iii) does not affect the safe or effective operation of a domestic service or fitting.
- (b) Where required, reflective insulation must be installed with—
- (i) the necessary airspace, to achieve the required R-Value between a reflective side of the reflective insulation and a building lining or cladding; and
  - (ii) the reflective insulation closely fitted against any penetration, door or window opening; and
  - (iii) the reflective insulation adequately supported by framing members; and
  - (iv) each adjoining sheet of roll membrane being—
    - (A) overlapped not less than 150 mm; or
    - (B) taped together
- (c) Where required, bulk insulation must be installed so that—
- (i) it maintains its position and thickness, other than where it crosses roof battens, water pipes, electrical cabling or the like; and
  - (ii) in a ceiling, where there is no bulk insulation or reflective insulation in the external wall beneath, it overlaps the external wall by not less than 50 mm.

### Section 3.12.3 Building Sealing

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#### 3.12.3.1 Chimneys and flues

The chimney or flue of an open solid-fuel burning appliance must be provided with a damper or flap that can be closed to seal the chimney or flue.

#### 3.12.3.2 Roof lights

- (a) A roof light must be sealed, or capable of being sealed, when serving—
- (i) a conditioned space; or
  - (ii) a habitable room in climate zones 4, 5, 6, 7 and 8.
- (b) A roof light required by (a) to be sealed, or capable of being sealed, must be constructed with—
- (i) an impermeate ceiling diffuser or the like installed at the ceiling or internal lining level; or
  - (ii) a weatherproof seal; or
  - (iii) a shutter system readily operated either manually, mechanically or electronically by the occupant.

### 3.12.3.3 External windows and doors

- (a) A seal to restrict air infiltration must be fitted to each edge of an external door, openable window and other such opening—
  - (i) when serving a conditioned space; or
  - (ii) in climate zones 4, 5, 6, 7 and 8, when serving a habitable room.
- (b) A window complying with the maximum air infiltration rates specified in AS 2047 need not comply with (a).
- (c) A seal required by (a)—
  - (i) for the bottom edge of an external swing door, must be a draft protection device; and
  - (ii) for the other edges of an external swing door or the edges of an openable window or other such opening, may be a foam or rubber compressible strip, fibrous seal or the like.

### 3.12.3.4 Exhaust fans

An exhaust fan must be fitted with a sealing device such as a self-closing damper, filter or the like when serving—

- (a) a conditioned space; or
- (b) a habitable room in climate zones 4, 5, 6, 7 and 8.

### 3.12.3.5 Construction of roof and walls

- (a) Roofs, external walls, external floors and any opening such as a window frame, door frame, roof light frame or the like must be constructed to minimise air leakage in accordance with (b) when forming part of the external fabric of—
  - (i) a conditioned space; or
  - (ii) a habitable room in climate zones 4, 5, 6, 7 and 8.
- (b) Construction required by (a) must be—
  - (i) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or
  - (ii) sealed by caulking, skirting, architraves, cornices or the like.

### 3.12.3.6 Evaporative coolers

An evaporative cooler must be fitted with a self-closing damper or the like when serving—

- (a) a heated space; or
- (b) a habitable room in climate zones 4, 5, 6, 7 or 8.

## Appendix B – P2.6.2 Services

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### Section 3.12.5 - Services

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#### 3.12.5.0

A heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia

### 3.12.5.1 Insulation of services

Thermal insulation for central heating water piping and heating and cooling ductwork must—

- (a) be protected against the effects of weather and sunlight; and
- (b) be able to withstand the temperatures within the piping or ductwork; and
- (c) use thermal insulation material in accordance with AS/NZS 4859.1.

### 3.12.5.2 Central heating water piping

Central heating water piping that is not within a conditioned space must be thermally insulated to achieve the minimum material R-Value as below:

#### 1. Internal piping

- (a) All flow and return piping that is—
  - (i) within an unventilated wall space; or
  - (ii) within an internal floor between storeys; or
  - (iii) between ceiling insulation and a ceiling.

and all hot water piping encased within a concrete floor slab (except that which is part of a floor heating system) must have an R-Value greater than 0.2

#### 2. Piping located within a ventilated wall space, an enclosed building sub-floor or a roof space

- (a) All flow and return piping.
- (b) Cold water supply piping — within 500 mm of the connection to the central water heating system.
- (c) Relief valve piping — within 500 mm of the connection to the central water heating system,

must achieve an R-value of 0.3 or greater as required for climate zone 5

#### 3. Piping located outside the building or in an unenclosed building sub-floor or roof space

- (a) All flow and return piping.
- (b) Cold water supply piping — within 500 mm of the connection to the central water heating system.
- (c) Relief valve piping — within 500 mm of the connection to the central water heating system.

must achieve an R-value of 0.3 or greater as required for climate zone 5.

### 3.12.5.3 Heating and cooling ductwork

#### (a) Heating and cooling ductwork and fittings must—

- (i) achieve the material R-Value in Table 3.12.5.2; and
- (ii) be sealed against air loss—
  - (A) by closing all openings in the surface, joints and seams of ductwork with adhesives, mastics, sealants or gaskets in accordance with AS 4254 Parts 1 and 2 for a Class C seal; or
  - (B) for flexible ductwork, with a draw band in conjunction with a sealant or adhesive tape.

#### (b) Duct insulation must—

- (i) about adjoining duct insulation to form a continuous barrier; and
- (ii) be installed so that it maintains its position and thickness, other than at flanges and supports; and
- (iii) where located outside the building, under a suspended floor, in an attached Class 10a building or in a roof space—
  - (A) be protected by an outer sleeve of protective sheeting to prevent the insulation becoming damp; and

- (B) have the outer protective sleeve sealed with adhesive tape not less than 48 mm wide creating an airtight and waterproof seal.
- (c) The requirements of (a) do not apply to heating and cooling ductwork and fittings located within the insulated building envelope including a service riser within the conditioned space, internal floors between storeys and the like.

#### 3.12.5.4 Electric resistance space heating

An electric resistance space heating system that serves more than one room must have—

- (a) separate isolating switches for each room; and
- (b) a separate temperature controller and time switch for each group of rooms with common heating needs; and
- (c) power loads of not more than 110 W/m<sup>2</sup> for living areas, and 150 W/m<sup>2</sup> for bathrooms.

#### 3.12.5.5 Artificial Lighting

- (a) The lamp power density or illumination power density of artificial lighting, excluding heaters that emit light, must not exceed the allowance of—
  - (i) 5 W/m<sup>2</sup> in a Class 1 building; and
  - (ii) 4 W/m<sup>2</sup> on a verandah, balcony or the like attached to a Class 1 building; and
  - (iii) 3 W/m<sup>2</sup> in a Class 10a building associated with a Class 1 building.
- (b) The illumination power density allowance in (a) may be increased by dividing it by the illumination power density adjustment factor for a control device in Table 3.12.5.3 as applicable.
- (c) When designing the lamp power density or illumination power density, the power of the proposed installation must be used rather than nominal allowances for exposed batten holders or luminaires.
- (d) Halogen lamps must be separately switched from fluorescent lamps.
- (e) Artificial lighting around the perimeter of a building must—
  - (i) be controlled by a daylight sensor; or
  - (ii) have an average light source efficacy of not less than 40 Lumens/W.

#### 3.12.5.6 Water heater in a hot water supply system

A water heater in a heated water supply system must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia



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## Disclaimer

This report has been prepared by Lelio Bibbo Pty. Ltd. based on information and architectural plans supplied by D'Andrea & Associates on 26.10.17

Although great care has been taken to prepare the report, Lelio Bibbo Pty. Ltd. does not give any warranties or assurances as to the accuracy or completeness of the information contained in the Report or that the Report is free from errors or omission.

Some clauses in the NCC2016 Building Code are unable to be assessed by Lelio Bibbo Pty. Ltd. as they involve requirements beyond our control or involve information which has not been provided or is not available at the time the report was compiled. Compliance with these clauses must be undertaken by others.

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# House Energy Rating - NON-ACCREDITED\*

Rating document number: JPTPDOE8EL

Date of rating: 25 Oct 2017

★ Star rating: 6.2

## Completed by

Other Accreditation  
Number: HE010  
Name: Nathan Prince  
Organisation: Lelio Bibbo Engineering  
Email: -  
Phone: 08 8212 7966  
Declaration of interest: Employed by designer of the building  
Software used: FirstRate5: 5.2.6 (3.13)

## Overview

### Dwelling details

Address: 4, 4 Redwood Street  
Suburb: Rostrevor  
State: SA  
Type: New Home  
Lot/DP number: -  
Exposure: suburban  
Postcode: 5073  
NCC Class: Class 1a  
NatHERS climate zone: 16

### Key construction and insulation materials

(see following pages for details)

Construction: Wall: Brick veneer/EPS/FC  
Roof: Attic - metal deck  
Floor: Concrete slab  
Insulation: Wall: R2.5  
Roof: R5.0 (+ R1 roof blanket)  
Floor:  
Glazing: Aluminium  
Single glazed Low-e

### Ceiling penetrations

(see following pages for details)

Sealed: 2  
Unsealed: 0  
TOTAL: 2

**\*\*NOTE:** This total is the maximum number of ceiling penetrations allowed to a ceiling (under a roof) for this certificate. If this number is exceeded in construction then this certificate IS NOT VALID and a new certificate is required. Loss of ceiling insulation for the penetrations listed has been taken into account with the rating.

Principal downlight type: Compact fluorescent

### Net floor area (m<sup>2</sup>)

Conditioned: 79.9  
Unconditioned: 4.8  
Garage: 17.7  
TOTAL: 102.4

### Annual thermal performance loads (MJ/m<sup>2</sup>)

Heating: 51.9  
Cooling: 37.7  
TOTAL: 89.6

### Window selection - default windows only

Note on allowable window values: Only a 5% tolerance to the nominated SHGC window values shown on page 2 can be used with this rating.

**Note:** Only a +/-5% SHGC tolerance is allowed with this rating.

NB: This tolerance ONLY applies to SHGC, the U-value can always be lower but not higher than the values stated on page 2.

If any of the windows selected are outside the 5% tolerance then this certificate is no longer valid and the dwelling will need to be rerated to confirm compliance.

Scan to access this certificate online and confirm this is valid.



<https://www.fr5.com.au/QRCodeLandIng?PublicId=JPTPDOE8EL>

### Plan documents

Plan ref/date: 25.10.17  
Prepared by: D'Andrea & Associates

## House Energy Rating - NON-ACCREDITED\*

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### Building Features

#### Windows type and performance value

Window ID	Window type	U-value	SHGC
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58

#### Windows schedule

Window ID	Window no.	Height (mm)	Width (mm)	Orientation	Zone name	Outdoor shade
ALM-002-03 A	Opening 7	610	2080	S	Laundry	No
ALM-002-03 A	Opening 8	2400	1830	S	Cook/Dine/Living	Yes
ALM-002-03 A	Opening 9	1280	1210	S	Cook/Dine/Living	Yes
ALM-002-03 A	Opening 6	2400	1625	N	Cook/Dine/Living	Yes
ALM-002-03 A	Opening 16	1600	1210	S	Bedroom 2	Yes
ALM-002-03 A	Opening 14	2400	875	N	Bedroom 1	No
ALM-002-03 A	Opening 13	1800	2135	N	Bedroom 1	Yes
ALM-002-03 A	Opening 15	1600	810	E	Ensuite	Yes
ALM-002-03 A	Opening 17	2400	610	S	Activities	Yes

#### Roof windows and skylight type and performance value

ID	Window type	U-value	SHGC
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#### Roof window and skylight schedule

ID	Roof window/ skylight no.	Area (m <sup>2</sup> )	Orientation	Zone name	Outdoor shade	Indoor shade/ diffuser
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#### External wall type

Type	Insulation	Wall wrap
1 : FR5 - Brick Veneer	Glass fibre batt: R2.5 (R2.5)	No
2 : FR5 - Internal Plasterboard Stud Wall	Glass fibre batt: R2.0 (R2.0)	No
3 : FR5 - 75mm Expanded Polystyrene Clad	Glass fibre batt: R2.0 (R2.0)	No
4 : FR5 - Fibro Clad Framed	Glass fibre batt: R2.0 (R2.0)	No

#### External wall schedule

Wall type	Area (m <sup>2</sup> )	Orientation	Zone name	Fixed shade	Eaves
1 : FR5 - Brick Veneer	5.5	S	Laundry	No	No
1 : FR5 - Brick Veneer	1.5	W	Laundry	Yes	No
1 : FR5 - Brick Veneer	14	S	Cook/Dine/Living	No	Yes

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1 : FR5 - Brick Veneer	5.4	N	Cook/Dine/Living	No	Yes
1 : FR5 - Brick Veneer	8.6	N	Cook/Dine/Living	No	Yes
2 : FR5 - Internal Plasterboard Stud Wall	18.3	W	Cook/Dine/Living	No	No
1 : FR5 - Brick Veneer	15.2	E	Garage	No	No
1 : FR5 - Brick Veneer	8.5	N	Garage	No	No
1 : FR5 - Brick Veneer	4.1	E	WC	No	No
1 : FR5 - Brick Veneer	2.7	S	WC	No	No
3 : FR5 - 75mm Expanded Polystyrene Clad	10.4	S	Bedroom 2	No	Yes
3 : FR5 - 75mm Expanded Polystyrene Clad	6.6	E	Bedroom 2	No	Yes
4 : FR5 - Fibro Clad Framed	1.9	E	Bedroom 2	No	Yes
3 : FR5 - 75mm Expanded Polystyrene Clad	0.9	E	Bedroom 1	Yes	Yes
4 : FR5 - Fibro Clad Framed	8.1	N	Bedroom 1	No	No
3 : FR5 - 75mm Expanded Polystyrene Clad	1.2	W	Bedroom 1	Yes	No
3 : FR5 - 75mm Expanded Polystyrene Clad	6.2	N	Bedroom 1	No	Yes
4 : FR5 - Fibro Clad Framed	6.9	E	Ensuite	No	Yes
3 : FR5 - 75mm Expanded Polystyrene Clad	2.8	E	Ensuite	No	Yes
3 : FR5 - 75mm Expanded Polystyrene Clad	2.3	N	Ensuite	No	No
4 : FR5 - Fibro Clad Framed	8.9	S	Activities	No	Yes
3 : FR5 - 75mm Expanded Polystyrene Clad	2.5	N	Activities	No	Yes
2 : FR5 - Internal Plasterboard Stud Wall	18.4	W	Activities	No	No

#### Internal wall type

Type	Area (m <sup>2</sup> )	Insulation
1 : FR5 - Internal Plasterboard Stud Wall	105.2	
2 : FR5 - Internal Plasterboard Stud Wall	41	Glass fibre batt: R2.0 (R2.0)
3 : FR5 - Brick Veneer	5.8	Glass fibre batt: R2.5 (R2.5)

#### Floors

Location	Construction	Area (m <sup>2</sup> )	Sub floor ventilation	Added insulation	Covering
Laundry	CSOG: Slab on Ground	2.5	Enclosed	0.0	Tiles
Laundry	CSOG: Slab on Ground	0.5	Enclosed	0.0	Tiles
Cook/Dine/Living	CSOG: Slab on Ground	35.1	Enclosed	0.0	Tiles
Garage	CSOG: Slab on Ground	11.1	Enclosed	0.0	none
Garage	CSOG: Slab on Ground	5.6	Enclosed	0.0	none

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### Building Features

WC	CSOG: Slab on Ground	1.6	Enclosed	0.0	Tiles
Bedroom 2	Timber	11.9	Enclosed	0.0	Carpet
Bedroom 1	Timber	17.5	Enclosed	0.0	Carpet
Ensuite	Timber	5.6	Enclosed	0.0	Tiles
Activities	Timber	13.5	Enclosed	0.0	Carpet

#### Ceiling type

Location	Material	Added insulation	Roof space above
Laundry	Plasterboard	0.0	No
Laundry	Plasterboard	5.0	Yes
Cook/Dine/Living	Plasterboard	0.0	No
Cook/Dine/Living	Plasterboard	0.0	No
Cook/Dine/Living	Plasterboard	0.0	No
Garage	Plasterboard	0.0	No
Garage	Plasterboard	0.0	No
Garage	Plasterboard	0.0	No
Garage	Plasterboard	5.0	Yes
WC	Plasterboard	5.0	Yes
Bedroom 2	Plasterboard	5.0	Yes
Bedroom 1	Plasterboard	5.0	Yes
Ensuite	Plasterboard	5.0	Yes
Activities	Plasterboard	5.0	Yes

#### Ceiling penetrations

Location	Number	Type	Width (mm)	Length (mm)	Seal/ unsealed
Cook/Dine/Living	1	Exhaust Fans	100	100	Sealed
Ensuite	1	Exhaust Fans	100	100	Sealed

#### Ceiling fans

Location	Number	Diameter (mm)
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#### Roof type

Material	Added insulation	Roof colour
Cont:Attic-Continuous	1.0	dark

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### Additional information

## Explanatory notes

### About this report

Residential energy ratings address the quality of the building fabric i.e. walls, windows, floors and roof/ceilings. Ratings do not cover the energy or water efficiency of appliances including heating and cooling, hot water, dishwashers, ovens, fridges, TVs etc. or solar panel or water tank requirements. The efficiency or specification of these items is generally covered by other regulations, standards or guidelines.

### General Information

A House Energy Rating is a comprehensive, dynamic computer modelling evaluation of the floorplans, elevations and specifications to predict an energy load of a home. Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country.

The actual energy consumption of your home may vary significantly from the predicted energy load figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating or cooling.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparative purposes between different house designs and for demonstrating that the design meets the required regulatory compliance.

Homes that are energy efficient use less energy, are warmer in winter, cooler in summer and cost less to run. The higher the star rating the more energy efficient.

This House Energy Rating report was prepared using an underlying engine developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy loads presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes and to demonstrate minimum regulatory compliance. The standard assumptions include figures for occupancy, indoor air temperature and are based on a unique climate file for your region.

### Raters/Assessors

Non-accredited assessors may not have completed a recognised software training course, do not undertake quality assurance processes, do not have any on-going training requirements and are not supported or recognised under the NatHERS scheme.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance.

If your rater is unable to address your questions or concerns, please contact your state or territory building code authority.

### Disclaimer

The energy values quoted are for comparison purposes only; they are not a prediction of actual energy use. This rating only applies to the floor plan, construction details, orientation and climate as submitted and included in the attached drawing set that bears a stamp with the same number as this certificate. Changes to any of these details could affect the rating.

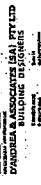
For more information on energy efficient design and insulation visit [www.yourhome.gov.au](http://www.yourhome.gov.au)

**RYL: DENOTES 200L RAINWATER  
DETENTION TANK 1000L STORAGE  
PLUMBED TO WC**

**REFER TO ENGINEER'S SITE WORKS AND  
DRAINAGE PLAN FOR ALL SITE WORKS AND  
DRAINAGE**

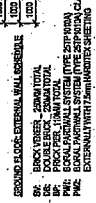
GROUND MAIN LIVING	42.62	31.962	Shed 6 to 12
GARAGE		22.962	UPPER LIVING TO 12
COURT		22.962	
UPPER MAIN LIVING D2	73.562		
UPPER MAIN LIVING D2	63.62		
BALCONY D2	34.2		
BALCONY D2	13.062		
PWELLING 3			
GROUND MAIN LIVING	42.62		
GARAGE		13.962	
UPPER MAIN LIVING	43.62		
PWELLING 4			
GROUND MAIN LIVING	43.62		
GARAGE		13.962	
UPPER MAIN LIVING	43.62		
TOTAL SITE ENTRY AREA	66.602		

**MR COSCIA**



Sheet 106  
**PLANNING APPLICATION**  
**FLOOR PLANS**

Doc. number  
A 0000



2 Level 00  
SCALE 1:100

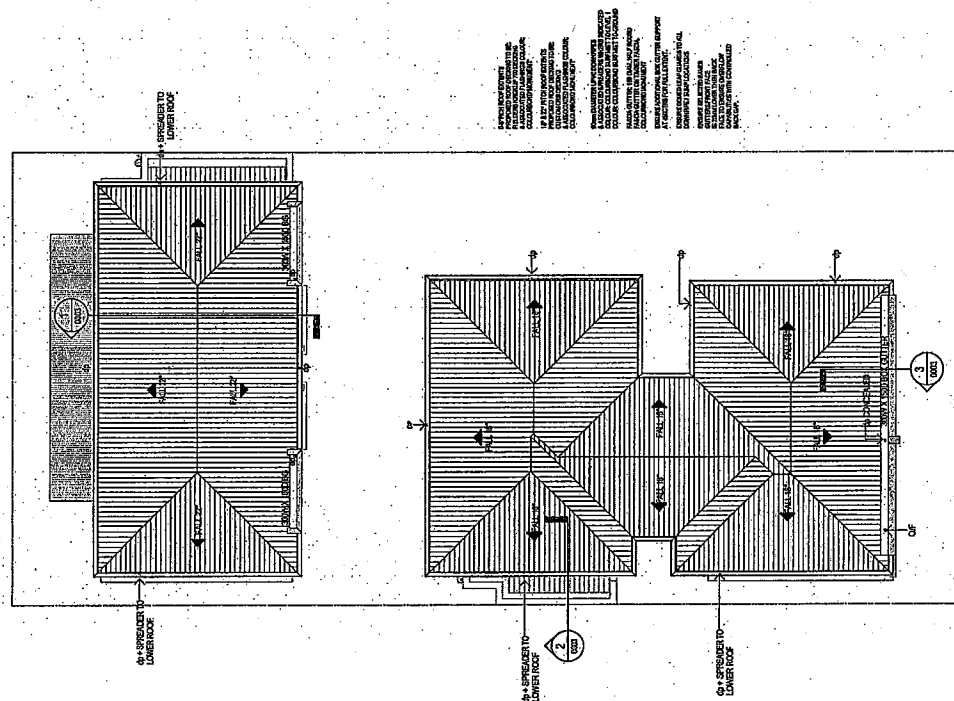


1 Level 00 - SITE SET-OUT  
SCALE 1:100

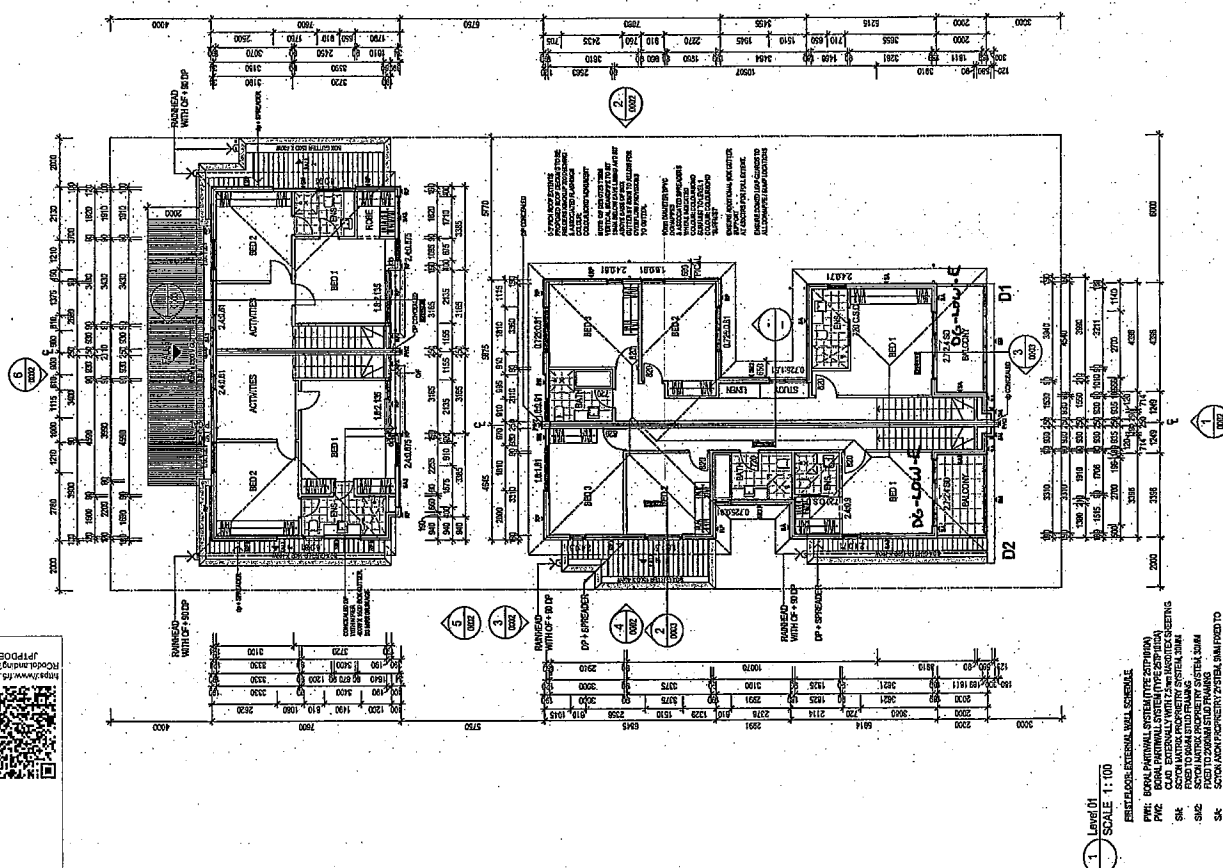


## 6.2 STARS

Doc generated: 1/20/2017 12:43:40 PM 251 JOB FILE 2017012005CA - 4 Redwood Dr, Rosemead CA - Rosemead Property, LLC



2. ROOF PLAN  
SCALE 1/4" = 1'-0"

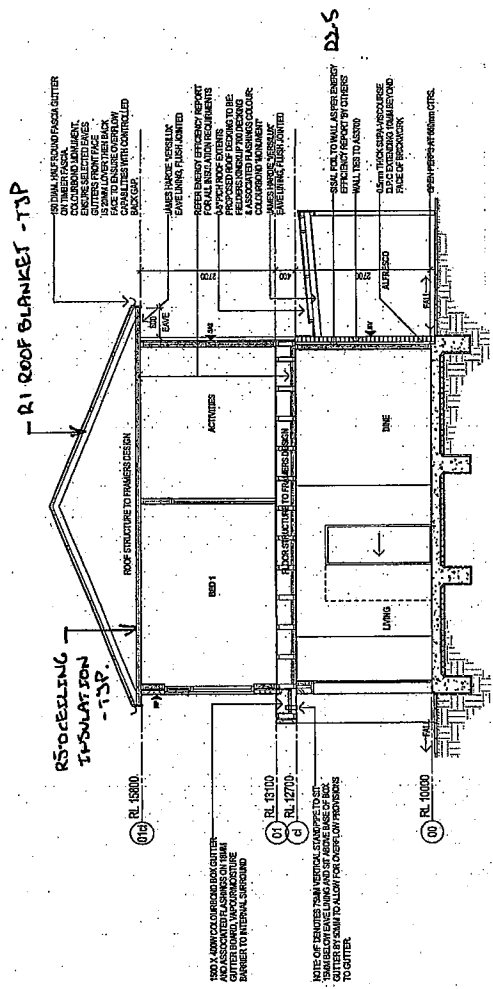


Level 01

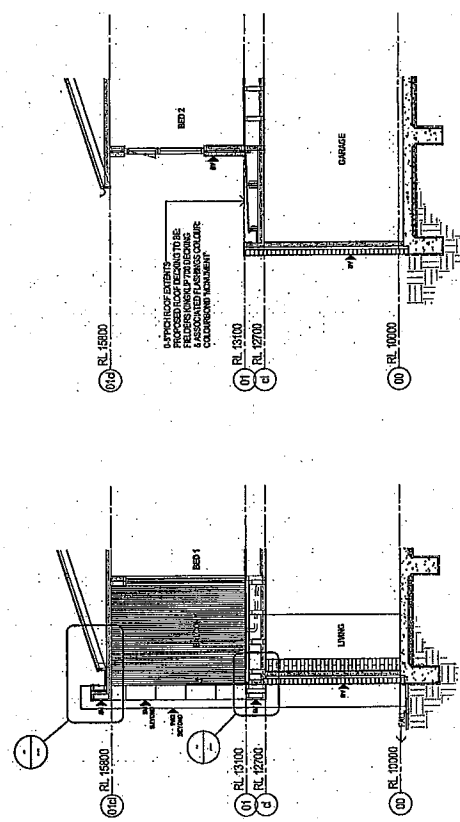
PW1:	BORG PARTIAL SYSTEM (TYPE 20) 100N
PW2:	BORG PARTIAL SYSTEM (TYPE 20) 100N
S1C:	CLAD EXTERNALLY WITH 7.5mm HANCOCK SHEETINGS
S1D:	FIXED TO MAIN STUD FRAMING
S2C:	CLAD EXTERNALLY WITH 7.5mm HANCOCK SHEETINGS
S2D:	FIXED TO 200MM STUD FRAMING
S3C:	CLAD EXTERNALLY WITH 7.5mm HANCOCK SHEETINGS
S3D:	FIXED TO 200MM STUD FRAMING
S4C:	CLAD EXTERNALLY WITH 7.5mm HANCOCK SHEETINGS
S4D:	FIXED TO 200MM STUD FRAMING
FP:	25MM TYPICAL POLYSTYRENE FOAM PANEL ON 25MM TO
FP2:	FIXED TO 200MM TUBER STUD FRAMING IN GRADE ROOM
FP2:	25MM TYPICAL POLYSTYRENE FOAM PANEL ON 25MM TO
FP2:	FIXED TO 200MM TUBER STUD FRAMING IN GRADE ROOM



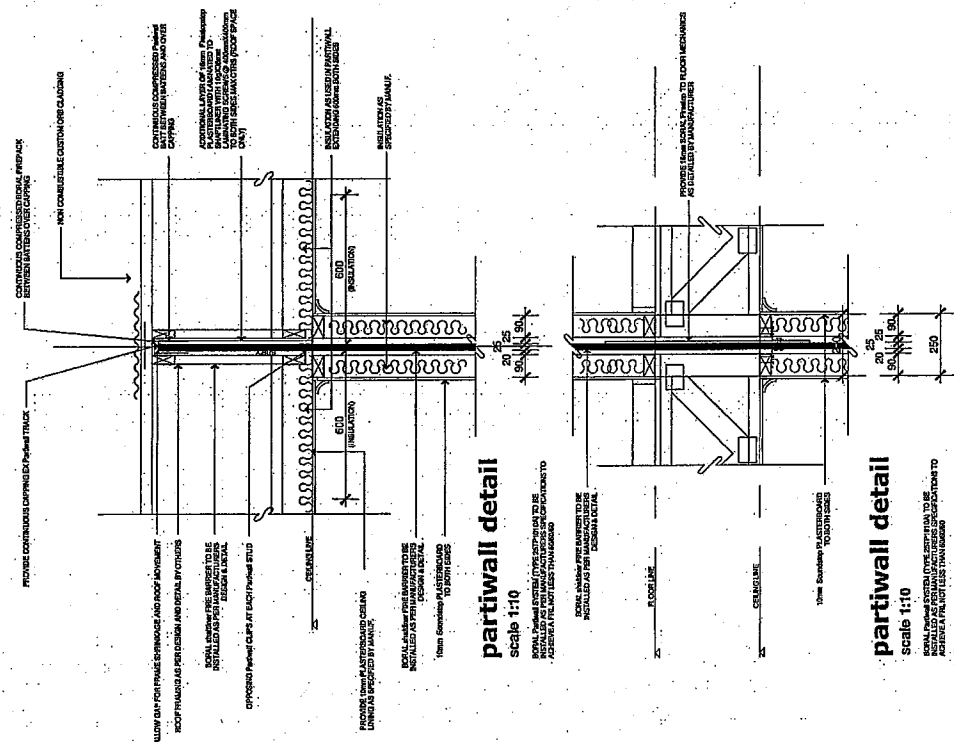




1 Section 4  
SCALE 1:50



3 Section 2  
SCALE 1:50



**partivall detail**  
scale 1:10

**4 PARTWALL - TYPICAL**