

BUILDING
SUSTAINABILITY
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Development application for:

J & C Mantilla

Lot 6 Paddock Close

Elmore Vale, NSW, 2287

Issue	File Ref	Description	Author	Date
A	8283	Original Thermal & BASIX Assessment	KH	05/09/14



Thermal Comfort Assessment

This home has been assessed under the thermal simulation method of the BASIX Protocol

Assessor Tracey Cools

Accreditation Number VIC/BDAV/12/1473

BASIX Details

Certificate Number: 14731991

BASIX adjusted conditioned area: 335

BASIX adjusted un-conditioned area: 26

Area adjusted cooling load: 39 MJ/m²/pa

Area adjusted heating load: 63 MJ/m²/pa

Specification

The following specification was used to achieve the thermal performance values. Modelling proxies are used at times and if the buildings element details vary the thermal performance specifications below shall take precedence.

If there is a change to this specification during design or construction phases please contact Efficient Living for advice and if required an updated certificate will be issued.

Thermal Performance Specifications

Floors	Concrete slab on ground with waffle pods (R1.0 equivalent) Timber first floor, no insulation required between levels internally Timber first floor, R2.0 insulation to the enclosed sub floor
Walls	<u>External walls:</u> Brick veneer with an R2.0 bulk insulation Weatherboard with an R2.0 bulk insulation Single skin brick, no insulation – garage only <u>Colour:</u> light colour (SA< 0.475) <u>Internal walls:</u> Plasterboard on studs, no insulation
Windows	Aluminium frames with Low-E glazing – To all windows/glazed doors U-Value (equal to or lower than): 4.64 SHGC (+ or - 10%): 0.48 Given values are NFRC, total window values
Skylights	None
Ceilings	Plasterboard with R3.0 bulk insulation It has been assumed at DA stage that the area of all ceiling penetrations is less than 0.5% of the total ceiling area. If down lights are proposed at a later stage, BCA loss of insulation calculations will be required.
Roof	Tiled roof with sarking medium colour (SA 0.475-0.7)
Floor coverings	Tiles to wet areas and living areas. Carpet to bedroom, halls, media, study and office.
External shade	Eaves as per plans
Ventilation	All external doors have weather seals, all exhaust fans and chimneys have dampers, any down lights proposed will have capped fittings.

BCA requirements

In addition to the BASIX requirements; all new residential dwellings (class 1 buildings)

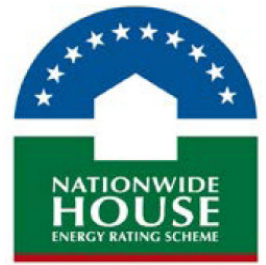
Must comply with; NSW PART 3.12.1 Building sealing & 3.12.5.0 - 3.12.5.3





NatHERS Certificate

New Dwelling



4.0 Stars

Simulation Software

Software Name BERS Pro 4.2
Software Version Release 110811/A
Engine Version CHENATH V2.13

Simulation Details

Project Name Mantilla _1
Date 8/28/2014
Location ELERMORE VALE PC 2287
Climate file climat15.TXT
Adjusted Star Rating 4.0 Stars
Conditioned Area 334.47 m²
Unconditioned Area 95.77 m²
Adjusted Cooling 38.8 MJ/m²
Adjusted Heating 63.3 MJ/m²
Adjusted Total 102.1 MJ/m²

Dwelling Address

DP Number -
Unit Number -
Lot Number 6
House Number -
Street Name Paddock Close
Development Name -
Suburb Elernore Vale NSW 2287

Client Details

Name Tullipan Homes
Phone 4353 8644 Fax -
Email -
Postal Address PO Box 5148 Chitaway Bay, NSW
Street Details Suite 18, 1 Reliance Drive, Tuggerah Business Park, Tuggerah

Assessor Details

Name Tracey Cools
Phone 9970 6181 Fax 9970 6181
Email info@efficientliving.com.au
Postal Address 13/13 Lagoon Street, Narrabeen
Street Details 13/13 Lagoon Street, Narrabeen

	Energy Rating	Certificate Number <u>14731991</u>
<input checked="" type="checkbox"/> single-dwelling rating		<u>4.0</u> stars
<input type="checkbox"/> multi-unit development (attach listing of ratings)	heating <u>63</u> MJ/m ²	
<small>If selected, data specified is the average across the entire development</small>	cooling <u>39</u> MJ/m ²	
Recessed downlights confirmation: <input type="checkbox"/> Rated with	<input checked="" type="checkbox"/> Rated without	
Assessor Name/Number <u>Tracey Cools VIC/BDAV/12/1473</u>		
Assessor Signature <u></u>	Date <u>05/09/14</u>	

Signed by the Assessor..........Date.....05 / 09 / 14.....

*Tilted roof windows with blinds cannot be modelled using this version of BERSPro.
All windows are modelled with Holland Blinds for regulatory purposes.*

Building Element Details

Project Mantilla Run 1
ELERMORE VALE PC 2287 Lat -32.90 Long 151.70 Climate File climat15.TXT

Summary

Conditioned Area	334.5 m ²
Unconditioned Area	95.8 m ²
Total Floor Area	430.2 m ²
Total Glazed Area	86.5 m ²
Total External Solid door Area	23.6 m ²
Glass to Floor Area	20.1 %
Gross External Wall Area	394.8 m ²
Net External Wall Area	284.8 m ²

Window

86.5 m² CAS-04-013a Crane Aluminium Systems Uval 4.64 SHGC 0.48
Glass 6.38mm ComfortPlus Neutral
Frame Crane: Mk7 Aluminium Sliding Window - Single/Double Glazed

External Wall

48.5 m² Single Skin Brick No Insulation
210.2 m² Brick Veneer Bulk Insulation R 2.0
26.1 m² Brick Veneer to earth Bulk Insulation R 2.0

Internal Wall

256.2 m² Cavity Panel 70mm gap No Insulation

External Floor

70.0 m² Concrete Slab on Ground Bare Bulk Insulation in Contact with Floor R 1.0
25.3 m² Concrete Slab on Ground Carpet 10mm Bulk Insulation in Contact with Floor R 1.0
54.6 m² Concrete Slab on Ground Ceramic Tiles 8mm Bulk Insulation in Contact with Floor R 1.0
61.0 m² Suspended Timber Floor Carpet 10mm Bulk Insulation in Contact with Floor R 2.0
82.6 m² Suspended Timber Floor Ceramic Tiles 8mm Bulk Insulation in Contact with Floor R 2.0

External Ceiling



293.5 m² Plasterboard Bulk Insulation R3.0 Unventilated roofspace

Internal Floor/Ceiling

149.9 m² Timber Above Plasterboard No Insulation

Roof (Horizontal area)

293.5 m² Roof Tiles Foil, Gap Above, Reflective Side Down, Anti-glare Up 25° slope Hip roof

	Energy Rating	Certificate Number <u>14731991</u>
<input checked="" type="checkbox"/> single-dwelling rating		<u>4.0</u> stars
<input type="checkbox"/> multi-unit development (attach listing of ratings) <small>If selected, data specified is the average across the entire development</small>	heating <u>63</u> MJ/m ²	cooling <u>39</u> MJ/m ²
Recessed downlights confirmation:	<input type="checkbox"/> Rated with	<input checked="" type="checkbox"/> Rated without
Assessor Name/Number	<u>Tracey Cools VIC/BDAV/12/1473</u>	
Assessor Signature		Date <u>05/09/14</u>

BASIX[®]Certificate

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

Single Dwelling

Certificate number: 571526S_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 Planning & Infrastructure. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Friday, 05 September 2014

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



Project summary		
Project name	J & C Mantilla_02	
Street address	Paddock Close Elernmore Vale 2287	
Local Government Area	Newcastle City Council	
Plan type and plan number	deposited -	
Lot no.	6	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	6	
Project score		
Water	✓ 44	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 40	Target 40




Certificate Prepared by

Name / Company Name: Efficient Living

ABN (if applicable): 82116346082

Description of project

Project address	
Project name	J & C Mantilla_02
Street address	n/a Paddock Close Elernore Vale 2287
Local Government Area	Newcastle City Council
Plan type and plan number	Deposited Plan -
Lot no.	6
Section no.	-
Project type	
Project type	separate dwelling house
No. of bedrooms	6
Site details	
Site area (m ²)	1420
Roof area (m ²)	410
Conditioned floor area (m2)	335
Unconditioned floor area (m2)	26
Total area of garden and lawn (m2)	250

Assessor details and thermal loads		
Assessor number	BDAV/12/1473	
Certificate number	14731991	
Climate zone	15	
Area adjusted cooling load (MJ/m ² .year)	39	
Area adjusted heating load (MJ/m ² .year)	63	
Other		
none	n/a	
Project score		
Water	 44	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 40	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
Fixtures			
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 3 star in the kitchen in the development.		✓	
The applicant must install basin taps with a minimum rating of 3 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 410 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"> all toilets in the development the cold water tap that supplies each clothes washer in the development 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.) 		✓ ✓ ✓	✓ ✓ ✓

Thermal Comfort Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
Simulation Method			
The applicant must attach the certificate referred to under "Assessor Details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for an occupation certificate for the proposed development.			
The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX certificate, including the Cooling and Heating loads shown on the front page of this certificate.			
The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Assessor Certificate requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor to certify that this is the case. The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.			
The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✔	✔
The applicant must construct the floors and walls of the dwelling in accordance with the specifications listed in the table below.	✔	✔	✔


Floor and wall construction	Area
floor - concrete slab on ground	80.0 square metres
floor - suspended floor/enclosed subfloor	144.0 square metres


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: solar (gas boosted) with a performance of 21 to 25 RECs or better.	✓	✓	✓
Cooling system			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: airconditioning ducting only; Energy rating: n/a		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: airconditioning ducting only; Energy rating: n/a		✓	✓
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 fixed flued heater; Energy rating: 4 Star		✓	✓
The bedrooms must not incorporate any heating system, or any ducting which is designed to accommodate a heating system.		✓	✓
Ventilation			
<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: manual switch on/off</p> <p>Kitchen: individual fan, not ducted; 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>
Artificial lighting			
<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"> • at least 5 of the bedrooms / study; • at least 4 of the living / dining rooms; • all hallways; 		<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
Natural lighting			
The applicant must install a window and/or skylight in 3 bathroom(s)/toilet(s) in the development for natural lighting.	✓	✓	✓
Other			
The applicant must install an induction 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.