

Thermal Comfort Assessment

**BUILDING
SUSTAINABILITY
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RSL Life Care

Development application for:

Unit 14 Cutler Village,

Narrabeen, NSW 2101

Issue	File Ref	Description	Author	Date
01	9604	BASIX assessment with Thermal Comfort simulation	DA	14/12/15

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Humel Architects. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our client's instructions and preferred building inclusions.



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: 14733737 BASIX adjusted conditioned area: 100m² Area adjusted heating load: 50 MJ/m²/pa BASIX adjusted un-conditioned area: 14m² Area adjusted cooling load: 26 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.
Floors	Concrete slab on ground
Walls	External walls: Brick veneer with R2.0 bulk insulation except for garage Garage walls single skin brickwork with featured lightweight cladding on studs, no insulation Default colour modelled Internal walls: Plasterboard on studs, no insulation
Windows	Aluminium frames with single clear glass U-Value (equal to or lower than): 6.57 SHGC (+ or - 10%): 0.74 Given values are NFRC, total window values
Ceilings	Plasterboard with R3.5 bulk insulation (garage excluded) Note: Loss of ceiling insulation due to penetrations from down lights have been accounted for in accordance with BCA Technical Note 2 and assume non-ventilated LED down lights.
Roof	Concrete roof tiles – no insulation Dark colour (SA > 0.7)
Floor Coverings	Tiles to wet areas, carpet to all living areas and bedrooms.
External shade	Eaves with covered entry + balcony 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.
Report contact	Name: David Arnott Ph: 02 9970 6181 Email: david@efficientliving.com.au
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 Unit 14 - Cutler Village_1
Date 13/02/2015
Location NARRABEEN PC 2101
Climate file climat56.TXT
Adjusted Star Rating 4.0 Stars
Conditioned Area 99.88 m²
Unconditioned Area 37.42 m²
Adjusted Cooling 26.3 MJ/m²
Adjusted Heating 49.5 MJ/m²
Adjusted Total 75.8 MJ/m²

Dwelling Address

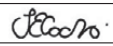
DP Number 752038
Unit Number
Lot Number 2641
House Number
Street Name
Development Name Cutler Village
Suburb Narrabeen NSW 2101

Client Details

Name Humel Architects
Phone 02 9981 6511 Fax 02 9981 1913
Email info@humel.com.au
Postal Address PO Box 1666 Dee why NSW 2099
Street Details

Assessor Details

Name Tracey Cools
Phone 02 9970 6181 Fax 02 9970 6181
Email admin@efficientliving.com.au
Postal Address
Street Details 13/13 Lagoon Street, Narrabeen NSW 2101

		Energy Rating	Certificate Number 14733737
☒ single-dwelling rating			4.0 stars
☐ multi-unit development (attach listing of ratings) If selected, data specified is the average across the entire development	heating	50	MJ/m ²
	cooling	26	MJ/m ²
Recessed downlights confirmation: ☒ Rated with ☐ Rated without			
Assessor Name/Number Tracey Cools VIC/BDAV/12/1473			
Assessor Signature 		Date 14.12.15	

Signed by the Assessor..........Date.....14/ 12 /15.....

*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 Unit 14 - Cutler Village Run 1
NARRABEEN PC 2101 Lat -33.70 Long 151.30 Climate File climat56.TXT

Summary

Conditioned Area	99.9 m ²
Unconditioned Area	37.4 m ²
Total Floor Area	137.3 m ²
Total Glazed Area	39.1 m ²
Total External Solid door Area	7.8 m ²
Glass to Floor Area	28.5 %
Gross External Wall Area	150.9 m ²
Net External Wall Area	104.0 m ²

Window

39.1 m ²	GGG-05-001a	Generics	Uval 6.57	SHGC 0.74
	Glass	Single Glazed	Clear	
	Frame	Aluminium		

External Wall

10.9 m ²	Single Skin Brick	No Insulation
6.3 m ²	Weatherboard Cavity Panel	No Insulation
86.8 m ²	Brick Veneer	Bulk Insulation R 2.0

Internal Wall

24.2 m ²	Cavity Panel 70mm gap	Bulk Insulation R 1.5
84.4 m ²	Cavity Panel 70mm gap	No Insulation

External Floor

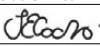
23.6 m ²	Concrete Slab on Ground	Bare	No Insulation
58.6 m ²	Concrete Slab on Ground	80/20 Carpet 10mm/Ceramic	No Insulation
13.8 m ²	Concrete Slab on Ground	Ceramic Tiles 8mm	No Insulation
41.3 m ²	Concrete Slab on Ground	Carpet 10mm	No Insulation

External Ceiling

23.6 m ²	Plasterboard	No Insulation	Unventilated roofspace
113.7 m ²	Plasterboard	Bulk Insulation R3.2	Unventilated roofspace

Roof (Horizontal area)

137.3 m ²	Roof Tiles	No Insulation, Only an Air Gap	17° slope	Hip roof
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	Energy Rating	Certificate Number 14733737
☒ single-dwelling rating		4.0 stars
☐ multi-unit development (attach listing of ratings)	heating	50 MJ/m ²
If selected, data specified is the average across the entire development	cooling	26 MJ/m ²
Recessed downlights confirmation:	☒ Rated with	☐ Rated without
Assessor Name/Number	Tracey Cools VIC/BDAV/12/1473	
Assessor Signature		Date 14.12.15

BASIX[®]Certificate

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

Single Dwelling

Certificate number: 692020S

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 18/09/2014 published by Planning & Infrastructure. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Monday, 14 December 2015

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



Project summary		
Project name	Unit 14 Cutler Village	
Street address	14 Cutler Circuit Narrabeen 2101	
Local Government Area	Warringah Council	
Plan type and plan number	deposited 752038	
Lot no.	2641	
Section no.	-	
Project type	separate dwelling house	
No. of bedrooms	2	
Project score		
Water	✔ 40	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 41	Target 40

Certificate Prepared by
Name / Company Name: Efficient Living
ABN (if applicable): 82116346082

Description of project

Project address

Project name	Unit 14 Cutler Village
Street address	14 Cutler Circuit Narrabeen 2101
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Plan type and plan number	Deposited Plan 752038
Lot no.	2641
Section no.	-

Project type

Project type	separate dwelling house
No. of bedrooms	2

Site details

Site area (m ²)	400
Roof area (m ²)	203
Conditioned floor area (m2)	100.0
Unconditioned floor area (m2)	14.0
Total area of garden and lawn (m2)	130

Assessor details and thermal loads

Assessor number	BDAV/12/1473
Certificate number	14733737
Climate zone	56
Area adjusted cooling load (MJ/m ² .year)	26
Area adjusted heating load (MJ/m ² .year)	50

Other

none	n/a
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Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 41	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 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.		✓	
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 200 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:			
• all toilets 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	All or part of floor area 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: gas instantaneous with a performance of 6 stars.	✓	✓	✓
Cooling system			
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 living area: 1-phase airconditioning; Energy rating: 2 Star (new rating)		✓	✓
The applicant must install the following cooling system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: 2 Star (new rating)		✓	✓
Heating system			
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 living area: 1-phase airconditioning; Energy rating: 2.5 Star (new rating)		✓	✓
The applicant must install the following heating system, or a system with a higher energy rating, in at least 1 bedroom: 1-phase airconditioning; Energy rating: 2.5 Star (new rating)		✓	✓
Ventilation			
The applicant must install the following exhaust systems in the development:			
At least 1 Bathroom: no mechanical ventilation (ie. natural); Operation control: n/a		✓	✓
Kitchen: individual fan, not ducted; Operation control: manual switch on/off		✓	✓
Laundry: natural ventilation only, or no laundry; Operation control: n/a		✓	✓
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;		✓	✓
• at least 1 of the living / dining rooms;		✓	✓
• the kitchen;		✓	✓

Energy Commitments	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
• 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.			
Other			
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 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.