



Efficient Living Pty Ltd
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2 Mactier St
NARRABEEN NSW 2101

ARCHITECTURAL PROJECTS

DA Application for:

48A Queenscliff Road
QUEENSCLIFF
Units A and B

BASIX Assessment

Issue No.	Description	Author	Date
01	Assessment and certification		28/03/11
02	BASIX Update	KH	03/12/12
03	Thermal and BASIX Assessment Update	DG	24/03/16

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Redshift. Efficient Living prepares all reports in accordance with the ABSA code of practice and is backed by professional indemnity insurance. This report takes into account our client's instructions and preferred building inclusions.

PREPARED FOR :	PREPARED BY :
Architectural Projects 1/181 Lawson Street Darlington NSW 2008 Contact : Jennifer Hill Phone : (02) 9319 1122 Fax : (02) 9319 1128	Efficient Living 13/13 Lagoon Street NARRABEEN NSW 2101 Contact: Phone : (02) 9970 6181 Email: info@efficientliving.com.au

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BASIX CERTIFICATE



INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed alterations and additions to be built at 48A Queenscliff Road, QUEENSCLIFF. Heating and cooling loads for the development have been determined using BERS thermal simulation software. The report is based on the architectural drawings provided by Blackwood Architects. For further details, refer to the individual BASIX certificates and ABSA reports respectively.

ANALYSIS

The BASIX assessment is divided into three sections, each independently measuring the efficiency of the development. These are Water, Thermal Comfort and Energy.

BASIX requires a minimum target of 40% for the Water section. A BERS pass or fail is required for the thermal comfort section and a minimum required target of 35% for the energy section.

WATER

The proposed development has achieved the BASIX Water target of 40%.

The water usage of the development is calculated based on the number and efficiency of permanent fixtures and appliances such as: taps, showerheads and toilets, the dish washer and clothes washing machine.

The size of the rain tank and number of connections has a huge impact on your water score as does the area of gardens and lawns and whether or not low-water plant species are incorporated.

THERMAL COMFORT

Thermal Comfort targets are set by the department of planning in the form of heating and cooling caps. The buildings thermal physics is measured using BERS thermal performance assessment tools. This equates an expected level of energy consumption to heat and cool each dwelling per annum expressed in MJ (mega joules) per square meter of floor area.

Each unit has individual heating and cooling caps and a weighted average heating and cooling load for the whole development. The weighted average caps are a lot harder to achieve than the individual unit caps.

ENERGY

The proposed development has achieved the energy target of 35% to pass this section.

The energy usage of the development is calculated based on the efficiency of fixed appliances that will be used. This includes the air conditioning system, hot water system, lighting, exhaust fans and the cook top, oven, and clothes drying facilities.

BASIX Inclusions

All units in this development have reached the targets as set for new dwellings in NSW. The inclusions outlined in the table below have been incorporated in each unit to allow them to reach their environmental sustainability targets.

Construction general	
Glazing	Doors / windows: Single glazed clear U-value: 6.57 SHGC: 0.74
Roof / ceiling insulation	Roof: Concrete slab roof Roof insulation: None Ceiling: Plasterboard Ceiling insulation: None
Wall / floor insulation	External walls: Cavity brick External wall insulation: R1.0 Internal walls within units: Single skin brick - no insulation Floors: Concrete Floors insulation: R1.0 to Unit A, none to Unit B
BASIX Water inclusions – Score 40/40	
Fixtures	Showerheads: 3 star (>6 but ≤7.5 L/min) Toilets: 4 star Kitchen taps: 4 star Bath taps: 5 star
Appliances	Dishwashers: 4 star Clothes washers: Occupants are expected to provide clothes washing machines with a water efficiency of 4 stars or greater.
Central rainwater storage	None
BASIX Thermal Comfort – Score Pass/Pass	
Average star rating	4.5 stars
BASIX Energy inclusions – Score 35/35	
Hot water system	Gas Instantaneous – 6 Star
Appliances & other efficiency measures	Electric cooktop & electric oven Dishwashers: 4 star Clothes washer: 3 star Clothes dryers: 3 star Well ventilated fridge spaces
Heating & cooling	All units to have individual one-phase reverse cycle air conditioning: All units: 3 star (new rating) – Cooling and 3 star (new rating) - Heating
Ventilation systems	Bathroom ventilation: Individual fan, ducted to roof or façade – manual switch on/off Laundry ventilation: Individual fan, ducted to roof or façade – manual switch on/off Kitchen ventilation: Individual fan, ducted to roof or facade– manual switch on/off
Artificial lighting	Rooms primarily lit by fluorescent or LED lamps: Bedrooms Bathroom/toilets Laundry Hallways Living areas



NatHERS Certificate

New Dwelling



5.0 Stars

Simulation Software

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

Simulation Details

Project Name Queenscliff - Unit A_1
Date 24/03/2016
Location QUEENSCLIFF PC 2096
Climate file climat56.TXT
Adjusted Star Rating 5.0 Stars
Conditioned Area 186.57 m²
Unconditioned Area 0.00 m²
Adjusted Cooling 21.0 MJ/m²
Adjusted Heating 40.3 MJ/m²
Adjusted Total 61.3 MJ/m²

Dwelling Address

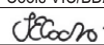
DP Number
Unit Number
Lot Number
House Number 48a
Street Name Queenscliff Road
Development Name
Suburb Queenscliff NSW 2096

Client Details

Name Architectural Projects
Phone 9319 1122 Fax
Email
Postal Address
Street Details Studio 1/181 Lawson Street, Darlington NSW 2008

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
<input type="checkbox"/> single-dwelling rating		14734088
<input checked="" type="checkbox"/> multi-unit development (attach listing of ratings) <small>If selected, data specified is the average across the entire development</small>	heating 40 MJ/m ² cooling 21 MJ/m ²	5.0 stars
Recessed downlights confirmation: <input type="checkbox"/> Rated with <input checked="" type="checkbox"/> Rated without		
Assessor Name/Number Tracey Cools VIC/BDAV/12/1473		
Assessor Signature 		Date 24/03/16

Signed by the Assessor..........Date 24/ 03/ 16.....

*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 Queenscliff - Unit A Run 1
QUEENSCLIFF PC 2096 Lat -33.80 Long 151.30 Climate File climat56.TXT

Summary
Conditioned Area 186.6 m²
Unconditioned Area 0.0 m²
Total Floor Area 186.6 m²
Total Glazed Area 46.6 m²
Total External Solid door Area 0.0 m²
Glass to Floor Area 25.0 %
Gross External Wall Area 217.7 m²
Net External Wall Area 171.1 m²

Window
46.6 m² GGG-05-001a Generics Uval 6.57 SHGC 0.74
 Glass Single Glazed Clear
 Frame Aluminium


External Wall
162.6 m² Cavity Brick Bulk Insulation R 1.0
8.6 m² Single Skin Brick No Insulation

Internal Wall
154.0 m² Single Skin Brick No Insulation

External Floor
88.7 m² Concrete Slab on Ground Carpet 10mm Bulk Insulation in Contact with Floor R 1.0
97.9 m² Concrete Slab on Ground Ceramic Tiles 8mm Bulk Insulation in Contact with Floor R 1.0

External Ceiling
186.6 m² Concrete, Plasterboard No Insulation Apartment above

Roof (Horizontal area)
186.6 m² Concrete No Insulation, Only an Air Gap 0° slope Hip roof



Energy Rating

Certificate Number **14734088**

☐ single-dwelling rating

☒ multi-unit development (attach listing of ratings)
If selected, data specified is the average across the entire development


heating **5.0** stars

cooling **40** MJ/m²

cooling **21** MJ/m²

Recessed downlights confirmation: ☐ Rated with ☒ Rated without

Assessor Name/Number Tracey Cools VIC/BDAV/12/1473

Assessor Signature  Date **24/03/16**



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 Queenscliff - Unit B_1
Date 24/03/2016
Location QUEENSLIFF PC 2096
Climate file climat56.TXT
Adjusted Star Rating 4.0 Stars
Conditioned Area 167.95 m²
Unconditioned Area 3.97 m²
Adjusted Cooling 47.6 MJ/m²
Adjusted Heating 28.7 MJ/m²
Adjusted Total 76.3 MJ/m²

Dwelling Address


DP Number
Unit Number
Lot Number
House Number 48a
Street Name Queenscliff Road
Development Name
Suburb Queenscliff NSW 2096

Client Details

Name Architectural Projects
Phone 9319 1122 Fax
Email
Postal Address
Street Details Studio 1/181 Lawson Street, Darlington NSW 2008

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
<input type="checkbox"/> single-dwelling rating		14734088
<input checked="" type="checkbox"/> multi-unit development (attach listing of ratings) <small>If selected, data specified is the average across the entire development</small>	heating 5.0 stars	
	cooling 48 MJ/m ²	
	cooling 29 MJ/m ²	
Recessed downlights confirmation: <input type="checkbox"/> Rated with <input checked="" type="checkbox"/> Rated without		
Assessor Name/Number Tracey Cools VIC/BDAV/12/1473		
Assessor Signature  Date 24/03/16		

Signed by the Assessor..........Date 24 / 03 / 16

*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 Queenscliff - Unit B Run 1
QUEENSCLIFF PC 2096 Lat -33.80 Long 151.30 Climate File climat56.TXT

Summary
Conditioned Area 168.0 m²
Unconditioned Area 4.0 m²
Total Floor Area 171.9 m²
Total Glazed Area 37.5 m²
Total External Solid door Area 3.4 m²
Glass to Floor Area 21.8 %
Gross External Wall Area 140.6 m²
Net External Wall Area 99.7 m²

Window
37.5 m² GGG-05-001a Generics Uval 6.57 SHGC 0.74
 Glass Single Glazed Clear
 Frame Aluminium


External Wall
27.6 m² Cavity Brick No Insulation
56.7 m² Cavity Brick Bulk Insulation R 1.0
15.5 m² Single Skin Brick Bulk Insulation R 1.0

Internal Wall
75.8 m² Single Skin Brick No Insulation

External Floor
24.2 m² Concrete Slab, Unit Below Ceramic Tiles 8mm No Insulation
147.7 m² Concrete Slab, Unit Below Carpet 10mm No Insulation

External Ceiling
171.9 m² Concrete, Plasterboard No Insulation Apartment above

Roof (Horizontal area)
171.9 m² Concrete No Insulation, Only an Air Gap 0° slope Hip roof

**Energy Rating**

Certificate Number **14734088**

☐ single-dwelling rating

☒ multi-unit development (attach listing of ratings)
If selected, data specified is the average across the entire development


heating **5.0** stars

cooling **48** MJ/m²

cooling **29** MJ/m²

Recessed downlights confirmation: ☐ Rated with ☒ Rated without

Assessor Name/Number **Tracey Cools VIC/BDAV/12/1473**

Assessor Signature  Date **24/03/16**

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 360540M_03

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 the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 360540M lodged with the consent authority or certifier on 11 March 2011 with application 2011/0360.

It is the responsibility of the applicant to verify with the consent authority that the original, or any revised certificate, complies with the requirements of Schedule 1 Clause 2A, 4A or 6A of the Environmental Planning and Assessment Regulation 2000

Secretary

Date of issue: Thursday, 24 March 2016

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



Project summary

Project name	Blackwood - Queenscliff_03
Street address	48a Queenscliff Road Queenscliff 2096
Local Government Area	Warringah Council
Plan type and plan number	strata 4129
Lot no.	-
Section no.	-
No. of residential flat buildings	1
No. of units in residential flat buildings	2
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 35	Target 35

Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82 116 346 082

Description of project

Project address

Project name	Blackwood - Queenscliff_03
Street address	48a Queenscliff Road Queenscliff 2096
Local Government Area	Warringah Council
Plan type and plan number	strata 4129
Lot no.	-
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	2
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	1081
Roof area (m ²)	330
Non-residential floor area (m ²)	0.0
Residential car spaces	2
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	0.0
Common area garden (m ²)	0.0
Area of indigenous or low water use species (m ²)	0.0

Assessor details

Assessor number	BDAV/12/1473
Certificate number	14734088
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 35	Target 35

Description of project

The tables below describe the dwellings and common areas within the project

Residential flat buildings - New units A & B, 2 dwellings, 3 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A	2	187.0	0.0	45.0	10.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B	2	168.0	4.0	0.0	0.0

No common areas specified.

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - New units A & B

(a) Dwellings

- (i) Water
- (ii) Energy
- (iii) Thermal Comfort

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

- (i) Water
- (ii) Energy

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.

1. Commitments for Residential flat buildings - New units A & B

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✓	✓
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star (> 6 but <= 7.5 L/min)	4 star	6 star	6 star	no	4 star	4 star	-	-	-	-	-	-	-

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
None	-	-	-	-	-	-	-	-

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
A	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning EER 3.0 - 3.5 (zoned)	1-phase airconditioning EER 3.0 - 3.5 (zoned)	2	2	no	yes	yes	yes	1	no
B	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning EER 3.0 - 3.5 (zoned)	1-phase airconditioning EER 3.0 - 3.5 (zoned)	2	2	no	yes	yes	yes	2	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	3 star	3 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) 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 a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol 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.			
(e) 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.			
(f) 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.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A	40.0	21.0
All other dwellings	48.0	29.0

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	no common facility	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

4. Commitments for common areas and central systems/facilities for the development (non-building specific)

(b) Common areas and central systems/facilities

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a showerhead, toilet, tap or clothes washer into a common area, then that item must meet the specifications listed for it in the table.		✓	✓
(b) The applicant must install (or ensure that the development is serviced by) the alternative water supply system(s) specified in the "Central systems" column of the table below. In each case, the system must be sized, be configured, and be connected, as specified in the table.	✓	✓	✓
(c) A swimming pool or spa listed in the table must not have a volume (in kLs) greater than that specified for the pool or spa in the table.	✓	✓	
(d) A pool or spa listed in the table must have a cover or shading if specified for the pool or spa in the table.		✓	
(e) The applicant must install each fire sprinkler system listed in the table so that the system is configured as specified in the table.		✓	✓
(f) The applicant must ensure that the central cooling system for a cooling tower is configured as specified in the table.		✓	✓

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	no common facility	no common laundry facility

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) If, in carrying out the development, the applicant installs a ventilation system to service a common area specified in the table below, then that ventilation system must be of the type specified for that common area, and must meet the efficiency measure specified.		✓	✓
(b) In carrying out the development, the applicant must install, as the "primary type of artificial lighting" for each common area specified in the table below, the lighting specified for that common area. This lighting must meet the efficiency measure specified. The applicant must also install a centralised lighting control system or Building Management System (BMS) for the common area, where specified.		✓	✓
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. 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).
2. 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.
3. Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).