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LIVING

BASIX Large Boarding House Assessment



Holman Engineering Pty Ltd Proposed Boarding House Development

To be built at 14 Wyatt Avenue, Belrose

Issue	File Ref	Description	Author	Date
A	18-1179	NatHERS and BASIX Assessment	NM	17/08/2018
B	18-1179	BASIX Energy update	DH	20/08/2018
C	21-2553	NatHERS and BASIX Assessment	NR	23/11/2021

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Holman Engineering Pty Ltd. 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.



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Prepared For:

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Unit E3, 15 Narabang Way
Belrose NSW 2085
99863005:

Introduction

Efficient Living has investigated the estimated water and energy usage under the BASIX large boarding house alternative assessment method. The proposed development is to be built at 14 Wyatt Avenue Belrose.

Large boarding houses include student accommodation developments that are designed to accommodate more than 12 people or with a gross floor area of more than 300m².

The report is based on the architectural drawings provided by Platform Architects. For further details refer to the individual BASIX certificate and Efficient Living's inclusions summary respectively.

This report is based on the following plans prepared by Platform Architects. *Project WAB, Page 00 - 18*

Analysis

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

BASIX requires a minimum target of 40% for the water section and a minimum required target of 25% for the energy section. Thermal comfort results are entered as an average and a Section J façade calculation is completed to determine the building fabric requirements.

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 toilet, the dish washer and clothes washing machine.

The size of the rainwater tank and number of connections may have a significant impact on your water score as does the area of gardens and lawns whether or not low water plant species are incorporated.

Thermal Comfort

The alternative assessment process allows the thermal comfort of a large boarding house development to be assessed at a later stage against the Section J requirements of the National Construction Code (NCC). If a building only contains a large boarding house, and all of the dwellings are Class 3, then a NatHERS assessment is not required for any of the dwellings. If a building contains both a large boarding house and Class 2 apartments (that are not part of the boarding house), then a NatHERS assessment is required for each of the apartments.

The maximum heating load and maximum cooling load for each room are entered into the thermal comfort results table in BASIX as a dummy figure. The department of planning will remove rooms not applicable to NatHERS and replace with an additional comment specifying thermal comfort of the dwelling is to be determined under Section J of the NCC. The Section J report is required to be completed prior to obtaining a construction certificate.



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, cook top, oven, and clothes drying facilities.

BASIX water inclusions

Score 40/40

Fixtures within units

Showerheads: Low Flow (<=6 L/min)

Toilets: 4.0 star

Kitchen taps: 5.0 star

Bathroom vanity taps: 4.0 star

Fixtures within common areas

Toilets: 4.0 star

Taps: 5.0 star

Clothes Washers: 3 star

Appliances within units

Not specified

Central rainwater storage

Tank size: 8,000L

Collecting from 480m² roof area

Connected to outdoor tap for irrigation of common landscaping

Fire sprinkler test water

Fire sprinkler test water must be contained in a closed loop system

Indigenous and low water use species

100m²

BASIX Energy Inclusions

Score 36/35



Hot water system

Central electric heat pump (air-sourced) with R1.0 (~38mm) insulation to ring main and supply risers

Lift motors

All lifts to have gearless traction with VVVF motor

Appliances and other efficiency measures within units

Electric cooktop & electric oven

Refrigerator: 3.5 star

Heating and cooling within units

All units to have individual, single phase, reverse cycle air conditioning to living and bedroom areas

A minimum efficiency of 3 stars is required for cooling; and

A minimum efficiency of 3.5 stars is required for heating.

Artificial lighting within units

All light fittings within each room are to have LED fixtures with dedicated fittings

Ventilation within units

Bathroom: individual fan, ducted to roof or façade - manual on/off switch

Kitchen range hood: Individual fan, ducted to roof or façade - manual on/off switch

Ventilation to common areas

Car park area - supply & exhaust air with a carbon monoxide monitor & VSD fan

Car park lobby - supply & exhaust air

Garbage rooms - Naturally ventilated

Storage - Naturally ventilated

Community Rooms - Naturally ventilated

Ground floor lobbies and hallways - Naturally ventilated

Rainwater tank - Ventilation exhaust only

Accessible WC - Naturally ventilated

Bike Storage - supply & exhaust air

Laundry - Naturally ventilated

(Please note: Any air-conditioned commons areas that are not exclusive to residents must comply with NCC Section J glazing and insulation requirements. Independent reports should be requested prior to CC if relevant)



Artificial lighting to common areas

Car park area - Fluorescent lights with zoned switching and motion sensors

Lifts - LED lights connected to lift call button

Garbage rooms - Fluorescent lights with motion sensor

Community rooms - Light emitting diodes (LEDs) with manual on / manual off switch

Storage - Light emitting diodes (LEDs) with manual on / manual off switch

Rainwater tank - Fluorescent lights with motion sensor

Accessible WC - Light emitting diodes (LEDs) with manual on / timer off

Bike storage - Fluorescent lights with motion sensor

Laundry - Light emitting diodes (LEDs) with manual on / timer off

Ground floor lobby - Light emitting diodes (LEDs) with motion sensors

Hallways - Light emitting diodes (LEDs) with zoned switching and motion sensors

Alternative Energy

5.0kW solar photovoltaic system

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 953744M_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 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary

Date of issue: Tuesday, 23 November 2021

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






Planning,
Industry &
Environment

Project summary		
Project name	14 Wyatt Avenue_03	
Street address	14 Wyatt Avenue Belrose 2085	
Local Government Area	Northern Beaches Council	
Plan type and plan number	deposited 752038	
Lot no.	2597	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	25	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	✓ 40	Target 40
Thermal Comfort	✓	concession Target Pass
Energy	✓ 38	Target 35

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

Description of project

Project address	
Project name	14 Wyatt Avenue_03
Street address	14 Wyatt Avenue Belrose 2085
Local Government Area	Northern Beaches Council
Plan type and plan number	deposited 752038
Lot no.	2597
Section no.	-
Project type	
No. of residential flat buildings	1
No. of units in residential flat buildings	25
No. of multi-dwelling houses	0
No. of single dwelling houses	0
Site details	
Site area (m ²)	2298
Roof area (m ²)	480
Non-residential floor area (m ²)	440.4
Residential car spaces	14
Non-residential car spaces	0

Common area landscape	
Common area lawn (m ²)	780.0
Common area garden (m ²)	370.5
Area of indigenous or low water use species (m ²)	100.0
Assessor details	
Assessor number	N/A
Certificate number	N/A
Climate zone	N/A
Ceiling fan in at least one bedroom	N/A
Ceiling fan in at least one living room or other conditioned area	N/A
Project score	
Water	 40 Target 40
Thermal Comfort	 concessionTarget Pass
Energy	 38 Target 35

Description of project

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

Residential flat buildings - 14 Wyatt Avenue, 25 dwellings, 4 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)
U.01	1	24.0	0.0	0.0	0.0
U.06	1	24.0	0.0	0.0	0.0
U.11	1	25.5	0.0	0.0	0.0
U.16	1	25.0	0.0	0.0	0.0
U.21	1	26.0	0.0	0.0	0.0

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)
U.02	1	24.0	0.0	0.0	0.0
U.07	1	24.0	0.0	15.0	0.0
U.12	1	25.5	0.0	0.0	0.0
U.17	1	25.0	0.0	0.0	0.0
U.22	1	26.0	0.0	0.0	0.0

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)
U.03	1	24.0	0.0	0.0	0.0
U.08	1	24.0	0.0	0.0	0.0
U.13	1	24.0	0.0	0.0	0.0
U.18	1	25.0	0.0	0.0	0.0
U.23	1	26.0	0.0	0.0	0.0

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)
U.04	1	24.0	0.0	0.0	0.0
U.09	1	24.0	0.0	0.0	0.0
U.14	1	21.5	0.0	0.0	0.0
U.19	1	21.5	0.0	0.0	0.0
U.24	1	21.5	0.0	0.0	0.0

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)
U.05	1	26.0	0.0	0.0	0.0
U.10	1	26.0	0.0	18.0	0.0
U.15	1	21.5	0.0	0.0	0.0
U.20	1	21.5	0.0	0.0	0.0
U.25	1	24.0	0.0	0.0	0.0

Description of project

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

Common areas of unit building - 14 Wyatt Avenue

Common area	Floor area (m ²)
Car park area	428.0
Community rooms	82.0
Accessible WC	7.0
Hallway/lobby	160.0

Common area	Floor area (m ²)
Lift car (No.1)	-
Storage	12.0
Bike storage	28.0
Carpark lobby	12.0

Common area	Floor area (m ²)
Garbage room	22.0
Rainwater tank	9.0
Laundry	11.0

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - 14 Wyatt Avenue

(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 - 14 Wyatt Avenue

(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: <ul style="list-style-type: none"> (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.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	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	4 star (> 4.5 but <= 6 L/min)	4 star	5 star	4 star	no	-	-	-	-	-	-	-	-	-

Dwelling no.	Alternative water source							
	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	central hot water system 1	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off	natural ventilation only, or no laundry	-

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
U.05, U.06, U.11, U.12, U.18	1-phase airconditioning 3 Star (old label)	1-phase airconditioning 3 Star (old label)	1-phase airconditioning 3.5 Star (old label)	1-phase airconditioning 3.5 Star (old label)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes
All other dwellings	1-phase airconditioning 3 Star (old label)	1-phase airconditioning 3 Star (old label)	1-phase airconditioning 3.5 Star (old label)	1-phase airconditioning 3.5 Star (old label)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	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	-	-	-	-	electric cooktop & electric oven	3.5 star	no	-	-	-	no	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The development will be a Class 3 building. The applicant must include in the documentation accompanying the application for a construction certificate (or complying development certificate, if applicable), a report demonstrating that the development will meet Section J of the National Construction Code - Volume 1.	✔	✔	✔

(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	4 star	5 star	3 star

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	8000.0	To collect run-off from at least: - 480.0 square metres of roof area of buildings in the development - 0.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 0.0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 1150.5 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

(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.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Lift car (No.1)	-	-	light-emitting diode	connected to lift call button	No
Garbage room	no mechanical ventilation	-	fluorescent	motion sensors	No
Community rooms	no mechanical ventilation	-	light-emitting diode	manual on / manual off	No
Storage	no mechanical ventilation	-	light-emitting diode	manual on / manual off	No
Rainwater tank	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Accessible WC	no mechanical ventilation	-	light-emitting diode	manual on / timer off	No
Bike storage	ventilation (supply + exhaust)	time clock or BMS controlled	fluorescent	motion sensors	No
Laundry	no mechanical ventilation	-	light-emitting diode	manual on / timer off	No
Hallway/lobby	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	No
Carpark lobby	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	motion sensors	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	electric heat pump - air sourced	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R1.0 (~38 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 4

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	4 star	5 star	3 star

(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.	✓	✓	✓

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 5.0 peak kW
Other	Common area electric/gas clothes dryer rating: 3.5 star Common area clothes washer rating: 3.5 star	-

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).