efficient LIVING

NatHERS and BASIX Assessment

Capital One Funds Management
Proposed Residential Development

To be built at **1803-1803a Pittwater Road, Mona Vale NSW 2103**

Issue	File Ref	Description	Author	Date
A	2502060	NatHERS and BASIX Assessment – DRAFT for review	SS/LP	16/09/25
B	2502060	NatHERS and BASIX Assessment	SS/LP/SC	22/10/25

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Capital One Funds Management. 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.

Sustainable Building Consultants
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22 October 2025

Capital One Funds Management
1803-1803a Pittwater Road, Mona Vale

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Prepared For:

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Introduction

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 1803-1803a Pittwater Road, Mona Vale.

Heating and cooling loads for the development have been determined using Hero v4.1 thermal comfort simulation software. The report is based on the architectural drawings provided by Capital One Funds Management. For further details refer to the individual BASIX Certificate(s) and Efficient Living's inclusions summary respectively.

This report is based on the floor plans, elevations and sections prepared by Studio McCue received on 13/10/2025.

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, a pass or fail for the thermal comfort section, and a minimum required target of 60% 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 toilet, the dishwasher 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

Thermal Comfort targets are set by the Department of Planning in the form of heating and cooling caps. The buildings thermal physics are measured using Hero v4.1 Thermal Comfort Simulation Software. This calculates the expected level of energy required to heat and cool each dwelling per annum, expressed in megajoules per square metre of floor area (MJ/m^2).

Each unit has individual heating and cooling caps applied. Accompanying these individual caps are average heating and cooling caps applied to the whole development. The average caps are lower, or harder to comply with than the individual unit caps.

Energy

The proposed development has achieved the Energy target of 60% 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.

Inclusions Summary

The inclusions as outlined below have been incorporated in each unit to allow them to reach their environmental sustainability targets.

Glazing Doors/Windows

Group A – awning

U-value: 4.80 (equal to or lower than) SHGC: 0.51 (±5%)

Group B – sliding doors/windows + fixed glazing + double hung + louvred windows

U-value: 4.80 (equal to or lower than) SHGC: 0.59 (±5%)

Upgrade: applied as per thermal comfort upgrades table (no upgrade to louvre windows):

Group A – awning

U-value: 3.2 (equal to or lower than) SHGC: 0.46 (±5%)

Group B – sliding doors/windows + fixed glazing + double hung

U-value: 3.2 (equal to or lower than) SHGC: 0.49 (±5%)

Given values are AFRC total window system values (glass and frame)

Note: BASIX Thermal Comfort Protocol Table 1 SHGC value of the unit should be within the range specified on the Assessor Certificate.

Window frame Colour

(0.475 < SA < 0.7)

Window restrictors

Window restrictors are modelled in bedrooms to all windows with a sill height under 1.7m and a fall height over 2m from the floor level of the room.

Roof and ceiling

Concrete roof with minimum R2.0 rigid board over

Plasterboard ceiling, no insulation where neighbouring units are above

Upgrade: R4.0 as per thermal comfort upgrades table

External Colour

Concrete (SA 0.62)

Ceiling Penetrations

Sealed LED downlights at a maximum of one every 5.0m² (one fitting per 5m² as an upgrade option with a note required on a plan). Once lighting plan has been developed NatHERS certificate can be updated to improve specification.

External Walls

200mm concrete, metal stud and plasterboard lining, with a minimum R2.5 insulation (insulation only value)

Any concrete columns within the external wall envelope are assumed to have the same R2.5 insulation

Thermal break applied as per NCC 2022 requirements.

External Colour

Default Medium (0.475 < SA < 0.7)

Inter-tenancy walls

Double steel stud walls between units, R1.5 each side

Minimum 150mm concrete with furring channel and plasterboard lining to all walls adjacent to lift shafts and fire stairs. No insulation required

Thermal break applied as per NCC 2022 requirements.

Walls within dwellings

Plasterboard on studs – no insulation

Floors

Concrete with a minimum R1.0 subfloor insulation (insulation only value) required to units with carpark below

Concrete with a minimum R1.0 subfloor insulation (insulation only value) required where part open subfloor is below

Concrete between levels, no insulation required

Floor coverings

Tiles to bathrooms and laundry, timber elsewhere

External Shading

Shading as per stamped documentation

BASIX water inclusions

Water Score 41/40

Fixtures within units

Showerheads: 4 star mid flow (>6L but ≤7.5L/min)

Toilets: 4 star

Kitchen taps: 5 star

Bathroom vanity taps: 5 star

Fixtures within common areas

Showerheads: 4 star mid flow (>6L but ≤7.5L/min)

Toilets: 4 star

Taps: 5 star

Appliances within units

Clothes washers: 4.0 stars

Dishwashers: 4.0 stars

Central rainwater storage

Tank size: 10,000L

Collecting from 300m² roof area

Connected to outdoor tap for irrigation of 355m² common area landscaping & 1 car wash bay

Fire sprinkler test water

Two fire sprinkler systems nominated in BASIX: one for basement parking, one for residential levels

Both systems: No BASIX restriction

Indigenous and low water use species

No BASIX restriction

Swimming pools and spas

Private spas: Unit G01 & G02
Volume: 3 kL each Shaded: no Cover: yes

BASIX Energy Inclusions

Energy Score 60/60

Hot water system

Central electric heat pump – air sourced with unit efficiency of 2.5 < COP ≤ 3.0 and 0.6 (~25mm) insulation to ring main and supply risers

Lift motors

All lifts to have gearless traction with VVVF motor with lift load capacity of ≥1,001kg but ≤1,500kg

Appliances and other efficiency measures within units

Induction cooktop & electric oven

Dishwashers: 3.0 star

Clothes dryers: 2.0 star

Heating and cooling within units

All units to have individual, single phase, reverse cycle air conditioning to living areas, and at least 1 bedroom

A minimum efficiency of EER 3.0 – 3.5 is required for cooling; and

A minimum efficiency of EER 3.0 – 3.5 is required for heating

Artificial lighting within units

Minimum of 80% of all light fittings within each room are to have dedicated LED fixtures installed

Ventilation within units

Bathroom: individual fan, ducted to roof or façade – connected to light, timer off

Laundry: 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 and exhaust air with a carbon monoxide monitor & VSD fan

Garbage rooms – Exhaust air only, running continuously

Plant / service rooms (enclosed) – Supply and exhaust air, thermostatically controlled

Lobbies and hallways – Supply air only, time clock or BMS controlled

Artificial lighting to common areas

Lighting control system / BMS : No

Car park area – Light emitting diodes (LEDs) with zoned switching and motion sensors

Lifts – Light emitting diodes (LEDs) connected to lift call button

Garbage rooms – Light emitting diodes (LEDs) with motion sensors

Plant / service rooms – Light emitting diodes (LEDs) with manual on / manual off switch

Lobbies and hallways – Light emitting diodes (LEDs) with zoned switching and motion sensors

Alternative Energy

No BASIX requirement

Swimming pools and spas

Private spas: Unit G01 & G02
Spa heating source: electric heat pump Spa pump: controlled by timer

Thermal Comfort Upgrades

Proposed Residential Development

1801 1803A Pittwater Rd, Mona Vale

Certificate #HR-Z6LU2X-02 **Accreditation # HERA10035**

Thermal performance specifications

Unit Number	Number of Bedrooms	Floor area (m^2)		Predicted loads (MJ/m²/y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
G01	3	112.7	0	20.1	8.4	7.1	
G02	2	82	0	4.4	12.2	8.4	
G03	2	79.8	0	6.5	7.5	8.8	
G04	3	133.9	7.5	23.8	12.5	6.2	glazing upgrade
101	3	112.6	0	8.6	10.5	8.2	
102	2	84.1	0	2.5	7.6	9.3	
103	2	84.9	0	3.7	6.6	9.3	
104	3	126.7	7.5	17.8	14	6.8	
201	3	112.7	0	9.2	10.1	8.2	
202	2	84	0	2.7	8	9.2	
203	2	84.8	0	4	6.7	9.2	
204	3	126.7	7.5	18.8	14	6.7	
301	3	112.7	0	14	11.9	7.4	
302	2	84.1	0	3.6	8.5	8.9	
303	2	85.1	0	7.8	7.5	8.6	
304	3	126.7	7.5	20.5	11.9	6.7	glazing upgrade
401	3	159.8	0	8.2	8.8	8.4	
402	3	140.7	0	20.4	13.3	6.5	
501	3	142.7	0	14.9	9.3	7.6	insulation + glazing upgrade
502	3	129.5	0	20.1	11.6	6.8	insulation + glazing upgrade

Nationwide House Energy Rating Scheme®
Class 2 Summary
NatHERS® Certificate No. #HR-Z6LU2X-02

Generated on 22 Oct 2025 using Hero 4.1

Property

Address	1803-1803A PITTWATER ROAD, MONA VALE, NSW, 2103
Lot/DP	
NatHERS climate zone	56 - Mascot AMO

Accredited assessor

Name	Stefanie Simpson
Business name	Efficient Living
Email	stefanie@efficientliving.com.au
Phone	+61 299706181
Accreditation No.	10035
Assessor Accrediting Organisation	HERA

Verification

To verify this certificate, scan the QR code or visit http://www.hero-software.com.au/pdf/HR-Z6LU2X-02. When using either link, ensure you are visiting http://www.hero-software.com.au

National Construction Code (NCC) requirements

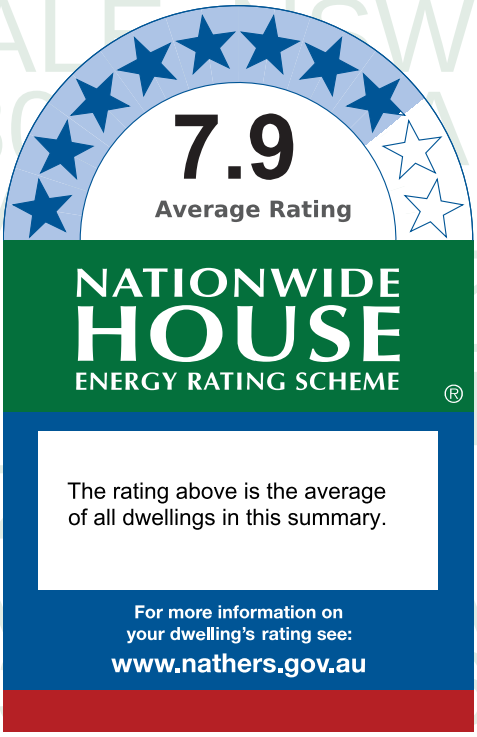
The NCC allows the use of NatHERS accredited software to comply with the energy efficiency requirements for houses (Class 1 buildings) and apartments (Class 2 sole-occupancy units and Class 4 parts of buildings). The applicable requirements for houses are detailed in Specification 42 of NCC Volume Two. For apartments the requirements are detailed in clauses J3D3 and J3D15 of NCC Volume One.

NCC 2022 includes enhanced thermal performance requirements for houses and apartments. It also includes a new whole-of-home annual energy use budget which applies to the major equipment in the home.

The NCC, and associated ABCB Standards and support material, can be accessed at www.abcb.gov.au.

Note, variations and additions to the NCC energy efficiency requirements may apply in some states and territories.

Thermal performance Star rating



NCC heating and cooling maximum loads MJ/m².yr

Limits taken from ABCB Standard 2022

	Heating	Cooling
Average load	11.6	10.0
Maximum load	23.8	14.0
Average limit	28.1	20.0
Maximum limit	34.4	21.4

Whole of Home performance rating

No Whole of Home performance rating generated for this certificate or not completed for all dwellings.

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-KKZQRS-02	G01	20.1 (34)	8.4 (21)	28.6	7.1	n/a
HR-Z79SCI-02	G02	4.4 (34)	12.2 (21)	16.6	8.4	n/a
HR-8JVV06-02	G03	6.5 (34)	7.5 (21)	14.0	8.8	n/a

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (load limit) (MJ/m².yr)	Cooling load (load limit) (MJ/m².yr)	Total load (MJ/m².yr)	Star Rating	Whole of Home Rating
HR-VHE95S-02	G04	23.8 (34)	12.5 (21)	36.3	6.2	n/a
HR-NDNO75-02	101	8.6 (34)	10.5 (21)	19.1	8.2	n/a
HR-80XZCG-02	102	2.5 (34)	7.6 (21)	10.1	9.3	n/a
HR-6IENIE-02	103	3.7 (34)	6.6 (21)	10.3	9.3	n/a
HR-9DBNRN-02	104	17.8 (34)	14.0 (21)	31.8	6.8	n/a
HR-JNS3JG-02	201	9.2 (34)	10.1 (21)	19.3	8.2	n/a
HR-O27BBA-02	202	2.7 (34)	8.0 (21)	10.7	9.2	n/a
HR-4ILETQ-02	203	4.0 (34)	6.7 (21)	10.7	9.2	n/a
HR-3MG05C-02	204	18.8 (34)	14.0 (21)	32.8	6.7	n/a
HR-F01DND-02	301	14.0 (34)	11.9 (21)	25.9	7.4	n/a
HR-4T6U5B-02	302	3.6 (34)	8.5 (21)	12.0	8.9	n/a
HR-CVS4VR-02	303	7.8 (34)	7.5 (21)	15.2	8.6	n/a
HR-K7LO45-02	304	20.5 (34)	11.9 (21)	32.3	6.7	n/a
HR-SR0IBY-02	401	8.2 (34)	8.8 (21)	17.0	8.4	n/a
HR-0X7FW6-02	402	20.4 (34)	13.3 (21)	33.6	6.5	n/a
HR-8HZG0D-02	501	14.9 (34)	9.3 (21)	24.2	7.6	n/a
HR-QU51VF-02	502	20.1 (34)	11.6 (21)	31.7	6.8	n/a
Averages	20x (Total)	11.6	10.0	21.6	7.9	n/a
Maximum Loads and Minimum Ratings		23.8	14.0	36.3	6.2	n/a

Explanatory notes

About the ratings

The thermal performance star rating in this Certificate is the average rating of all NCC Class 2 dwellings in an apartment block. The Whole of Home performance rating in this Certificate is the lowest rating for the apartment block. Individual unit ratings are listed in the *'Summary of all dwellings'* section of this Certificate.

NatHERS ratings use computer modelling to evaluate a home's energy efficiency and performance. They use localised climate data and standard assumptions on how people use their home to predict the energy loads and societal cost. The thermal performance star rating uses the home's building specifications, layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings) to predict the heating and cooling energy loads. The Whole of Home performance rating uses information about the home's appliances and onsite energy production and storage to estimate the homes societal cost.
For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

For high quality NatHERS Certificates, always use an accredited or licenced assessor registered with an Assessor Accrediting Organisation (AAO). AAOs have strict quality assurance processes, and professional development requirements ensuring consistently high standards for assessments.

Non-accredited assessors (Raters) have no ongoing training requirements and are not quality assured.

Licensed assessors in the Australian Capital Territory (ACT) can produce assessments for regulatory purposes only, using endorsed software, as listed on the ACT licensing register.

Any queries about this report should be directed to the assessor. If the assessor is unable to address questions or concerns, contact the AAO specified on the front of this certificate.

Disclaimer

The NatHERS Certificate format is developed by the NatHERS Administrator. However, the content in certificates is entered by the assessor. It is the assessor's responsibility to use NatHERS accredited software correctly and follow the NatHERS Technical Note to produce a NatHERS Certificate.

The predicted annual energy use, cost and greenhouse gas emissions in this NatHERS Certificate are an estimate based on an assessment of the dwelling's design by the assessor. It is not a prediction of actual energy use, cost or emissions. The information and ratings may be used to compare how other dwellings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, behaviour, appliance performance, indoor air temperature and local climate.

Not all assumptions made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

BASIX™ Certificate

Building Sustainability Index
www.planningportal.nsw.gov.au/development-and-assessment/basix

Multi Dwelling

Certificate number: 1818309M_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 10/09/2020 published by the Department. This document is available at www.planningportal.nsw.gov.au/definitions

Secretary
Date of issue: Wednesday, 22 October 2025
To be valid, this certificate must be submitted with a development application or lodged with a complying development certificate application within 3 months of the date of issue.

When submitting this BASIX certificate with a development application or complying development certificate application, it must be accompanied by NatHERS certificate HR-Z6LU2X-02.

Project summary	
Project name	1803-1083A Pittwater Road, Mona Vale_02
Street address	1803 PITTWATER ROAD MONA VALE 2103
Local Government Area	NORTHERN BEACHES
Plan type and plan number	Deposited Plan 588908
Lot No.	11
Section no.	-
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	20
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Project score			
Water	✔	41	Target 40
Thermal Performance	✔	Pass	Target Pass
Energy	✔	60	Target 60
Materials	✔	-100	Target n/a

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

Description of project

Project address	
Project name	1803-1083A Pittwater Road, Mona Vale_02
Street address	1803 PITTWATER ROAD MONA VALE 2103
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Lot No.	11
Section no.	-

Project type	
No. of residential flat buildings	1
Residential flat buildings: no. of dwellings	20
Multi-dwelling housing: no. of dwellings	0
No. of single dwelling houses	0

Site details	
Site area (m²)	1560
Roof area (m²)	462
Non-residential floor area (m²)	0
Residential car spaces	49
Non-residential car spaces	-

Common area landscape	
Common area lawn (m²)	0
Common area garden (m²)	355
Area of indigenous or low water use species (m²)	0

Assessor details and thermal loads	
Assessor number	HERA10035
Certificate number	HR-Z6LU2X-02
Climate zone	56

Project score			
Water	✔	41	Target 40
Thermal Performance	✔	Pass	Target Pass
Energy	✔	60	Target 60
Materials	✔	-100	Target n/a

Description of project

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

Residential flat buildings - Building1, 20 dwellings, 6 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
101	3	112.6	0	1.1	0
201	3	112.7	0	1.1	0
301	3	112.7	0	1.1	0
401	3	159.8	0	5.4	0
G01	3	112.7	0	12.6	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
102	2	84.1	0	1.2	0
202	2	84	0	1.2	0
302	2	84.1	0	1.2	0
402	3	140.7	0	43.2	0
G02	2	82	0	35	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
103	2	84.9	0	1.7	0
203	2	84.8	0	1.7	0
303	2	85.1	0	1.7	0
501	3	142.7	0	2.7	0
G03	2	79.8	0	2.9	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
104	3	126.7	7.5	2.6	0
204	3	126.7	7.5	2.6	0
304	3	126.7	7.5	2.6	0
502	3	129.5	0	2.4	0
G04	3	133.9	7.5	45.7	0

Description of project

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

Common areas of unit building - Building1

Common area	Floor area (m²)
Undercover car park area	1605
Hallways & lobbies	130

Common area	Floor area (m²)
Garbage room	25
Lift bank (No. 1)	-

Common area	Floor area (m²)
Plant or service room (enclosed)	25

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building1

(a) Buildings

(i) Materials

(b) Dwellings

(i) Water

(ii) Energy

(iii) Thermal Performance

(c) Common areas and central systems/facilities

(i) Water

(ii) Energy

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

(b) Common areas and central systems/facilities

(i) Water

(ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carriedout. 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 - Building1

(a) Buildings

(i) Materials	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) 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 “Floor types”, “External wall types”, “Internal wall types”, “Ceiling and roof types”, “Frames” and “Glazing” tables below.			✔
(b) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all specifications included in the tables below.		✔	
(c) The applicant must construct the floors, walls, roof, ceiling and roof, windows, glazed doors and skylights of the development in accordance with the specifications listed in the tables below. In the case of glazing, a 5% variance from the area values listed in the “Frames” and “Glazing” tables is permitted.	✔	✔	✔
(d) The applicant must show through receipts that the materials purchased for construction are consistent with the specifications listed in the below tables.			✔

Floor types			
Floor type	**Area (m2)**	**Insulation**	**Low emissions option**
suspended floor above garage, frame: suspended concrete slab	410	-	-
floors above habitable rooms, frame: suspended concrete slab	1821.9	-	-
concrete slab on ground, frame:	430.6	-	none
suspended floor above open subfloor, frame: suspended concrete slab	291.9	-	-
garage floor, frame: concrete slab on ground	721.61	-	-
garage floor, frame: suspended concrete slab	844.33	-	none
suspended floor above enclosed subfloor, frame: suspended concrete slab	217	-	-

External wall types				
External wall type	**Construction type**	**Area (m2)**	**Low emissions option**	**Insulation**
External wall type 1	off form concrete,frame:no frame	218	none	-
External wall type 2	off form concrete,frame:light steel frame	1539.1	none	-

Internal wall types			
Internal wall type	**Construction type**	**Area (m2)**	**Insulation**
Internal wall type 1	plasterboard, frame:light steel frame	677.4	-
Internal wall type 2	plasterboard, frame:light steel frame	1637.6	-

Reinforcement concrete frames/columns		
Building has reinforced concrete frame/columns?	**Volume (m^3)**	**Low emissions option**
-	-	-

Ceiling and roof types			
Ceiling and roof type	**Area (m^2)**	**Roof Insulation**	**Ceiling Insulation**
concrete - plasterboard internal, frame: no frame	470	-	-

Glazing types			Frame types				
Single glazing (m^2)	**Double glazing (m^2)**	**Triple glazing (m^2)**	**Aluminium frames (m^2)**	**Timber frames (m^2)**	**uPVC frames (m^2)**	**Steel frames (m^2)**	**Composite frames (m^2)**
-	735.2	-	735.2	-	-	-	-

(b) 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
G01, G02	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	-	4 star	4 star	-	-	-	-	3	yes	no

	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 other dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	-	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
All dwellings	No alternative water supply	-	-	-	-	-	-	-

(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.		✔	✔
(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.	✔	✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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 (No. 1)	individual fan, ducted to façade or roof	interlocked to light with timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

	Cooling		Heating		Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bathrooms or toilets	Main kitchen
All dwellings	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	1-phase airconditioning - ducted / EER 3.0 - 3.5	0	-

	Individual pool			Individual spa		Appliances other efficiency measures				
Dwelling no.	Pool heating system	Pool Pump	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Dishwasher	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
G01, G02	-	-	-	electric heat pump	yes	induction cooktop & electric oven	3 star	2 star	no	no
All other dwellings	-	-	-	-	-	induction cooktop & electric oven	3 star	2 star	no	no

(iii) Thermal Performance	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.			
(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.	✔	✔	✔

(iii) Thermal Performance	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(i) The applicant must show on The plans accompanying The development application for The proposed development, The locations of ceiling fans set out in The Assessor Certificate.	✔		
(j) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), the locations of ceiling fans set out in the Assessor Certificate.		✔	

	Thermal loads		
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)	Area adjusted total load (in MJ/m²/yr)
101	8.6	10.5	19.100
102	2.50	7.6	10.100
103	3.70	6.6	10.300
104	17.80	14	31.800
201	9.20	10.1	19.300
202	2.70	8	10.700
203	4	6.7	10.700
204	18.80	14	32.800
301	14.00	11.9	25.900
302	3.60	8.5	12.100
303	7.80	7.5	15.300
304	20.50	11.9	32.400
401	8.20	8.8	17.000
402	20.40	13.3	33.700
501	14.90	9.3	24.200
502	20.10	11.6	31.700
G01	20.10	8.4	28.500
G02	4.40	12.2	16.600
G03	6.50	7.5	14.000
All other dwellings	23.80	12.5	36.300

(c) 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	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 300 square metres of roof area of buildings in the development	- irrigation of 355 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Fire sprinkler system (No. 1)	-	-	-
Fire sprinkler system (No. 2)	-	-	-

(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.		✔	✔

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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 ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/ BMS
Undercover car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	no
Garbage room	ventilation exhaust only	-	light-emitting diode	motion sensors	no
Plant or service room (enclosed)	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	manual on / manual off	no
Hallways & lobbies	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	no
Lift bank (No. 1)	-	-	light-emitting diode	connected to lift call button	no

Central energy systems	Type	Specification
Lift bank (No. 1)	gearless traction with V V V F motor	Number of levels with apartments served by a lift: 6 number of levels from the bottom of the lift shaft to the top of the lift shaft: 8 number of lifts: 2 lift load capacity: >= 1001 kg but <= 1500kg
Central hot water system (No. 1)	electric heat pump – air sourced	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.6 (~25 mm); (b) Piping internal to building: R0.6 (~25 mm) (c) Unit Efficiency: 2.5 < COP <= 3.0

2. 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	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	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.	✔	✔	✔

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 0 peak kW
Other	-	-

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).