



IGS INTEGRATED
GROUP
SERVICES



149-163 Milton St, Ashbury NSW

BASIX Assessment Report

26th January 2024



IGS INTEGRATED
GROUP
SERVICES

Suite 1.11, 75 Mary Street,
St Peters NSW 2044

Phone: +61 2 8488 4600

Fax: +61 2 9475 4588

Email: admin@igs.com.au

Web: www.igs.com.au



[linkedin.com/company/3213174](https://www.linkedin.com/company/3213174)

ABN: 68 163 019 029

Document Control

Revision	Date	Author
1.0	08 November 2023	B. Shojaei
2.0	26 January 2024	B. Shojaei

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1. EXECUTIVE SUMMARY

IGS has been commissioned to assess the interaction of the residential area of the proposed development at 149-163 Milton St, Ashbury NSW, with the local environment in terms of BASIX compliance.

A BASIX Certificate is a regulatory requirement and demonstrates compliance with the NSW Government's sustainability targets. BASIX assessment and certification has been completed for this project (Certificate No. 1123393M_04).

Dwellings within the development have been assessed in terms of their passive energy design using the BASIX Thermal Comfort protocol. They have also been assessed in terms of their ability to conserve water and also to minimise energy consumption via appliances and hot water etc.

With the recommendations provided in the BASIX certificate the development meets and exceeds the minimum requirements for all following areas.

- Energy Efficiency
- Water Efficiency
- Thermal Comfort

This development achieves the following targets:

- Water Efficiency: 42% reduction (minimum requirements under BASIX: 40%)
- Energy Efficiency: 50% reduction (minimum requirements under BASIX: 50%)
- Thermal Comfort: Will pass the thermal performance requirements under BASIX.

2. INTRODUCTION

BASIX is an NSW State Planning Policy Tool which assesses the environmental performance of new residential premises against a range water, energy, and greenhouse gas emissions targets. The assessment has three core components, BASIX Thermal Comfort, BASIX Water and BASIX Energy.

The thermal comfort assessment requires that the thermal performance of dwellings is evaluated, and measures put in place to ensure annual heating and cooling loads do not exceed pre-defined limits without compromising the occupant's thermal comfort. This assessment uses computer simulation to evaluate the estimated building fabric thermal performance and passive solar design features such as orientation and solar shading.

The energy section evaluates gas and electrical energy used for heating, cooling lighting, ventilation, and appliances. The BASIX Energy target requires the development to uses 50% less energy than the NSW average.

The water assessment takes account of landscaping, stormwater management as well as water efficiency performance of fixtures and fitting such as taps and showers. The BASIX target for water requires that potable water consumption is at least 40% lower than the NSW average.

Note: this report is only a guide to the BASIX certificate, for full details of BASIX requirements please refer to the BASIX certificate.

3. BUILDING DESCRIPTION

The proposed development will be located at 149-163 Milton St, Ashbury NSW.

3.1 Information Used in Review

Our review is based on the following architectural drawings provided by SJB Architects.

Drawing Title	Drawing Number
Overall Plan - Basement	DA-0101
Overall Plan - Ground Floor	DA-0110
Overall Plan - Level 1	DA-0111
Overall Plan - Level 2	DA-0112
Overall Plan - Level 3	DA-0113
Overall Plan - Level 4	DA-0114
Overall Plan - Level 5	DA-0115
Overall Plan - Roof	DA-0116
Elevations - North & East	DA-0501
Elevations - South & West	DA-0502
Elevations - Internal Sheet 1	DA-0503
Elevations - Internal Sheet 2	DA-0504
Elevations - Internal Sheet 3	DA-0505
Sections - Sheet 1	DA-0601
Sections - Sheet 2	DA-0602

4. BASIX WATER SECTION

The water efficiency performance of the development has been assessed using the online BASIX Tool. The assessment has considered the common area and central system features including the landscape design, plant species, water catchment areas, rainwater tank size and efficiency of preferred fixtures and fittings in the dwellings.

The proposed development will meet the mandatory BASIX water target of 40% as long as the water commitments detailed in Table 1 are installed. For details of the requirements necessary to achieve this target, please refer to the BASIX Certificate No. 1123393M_04.

Table 1: Water Commitments

Common Areas and Central Systems	
Common areas	<ul style="list-style-type: none"> • 5-star (water rated) taps • No common facility for showerheads • No common facility for toilets • No common facility for clothes washers
Central systems	<ul style="list-style-type: none"> • Rainwater tanks (No.1 & No.2) each with capacity of minimum 1,000L (minimum), collecting run-off from minimum 620 m2 of roof area, used for irrigation of common area landscape with minimum area of 613.5 m2. • Fire Sprinkler system. • Swimming Pool: Volume: 168kLs, not shaded
Private Dwellings	
Fixtures for apartments	<ul style="list-style-type: none"> • 3-star (Water Rating) showerheads with a flow rate > 6 but <= 7.5 L/min • 4-star (Water Rating) toilets • 5-star (Water Rating) kitchen taps • 5-star (Water Rating) bathroom taps • 4-star (Water Rating) dish washers • No hot water recirculation
Alternative water source	<ul style="list-style-type: none"> • Individual rainwater tank with capacity of minimum 3,000L (minimum), collecting run-off from minimum 1240 m2 of roof area, connected to toilets (Buildings D1, D2, F1, F2, A & E).

5. BASIX THERMAL COMFORT SECTION

The preliminary thermal performance of the development has been evaluated using BERS Pro software; this computer simulation of residential developments is used to assess the potential of a residential development to have low heating and cooling energy requirements once operational.

5.1 Modelling Assumptions

BERS Pro software calculates the transient hourly heat gains and losses for each space inside a building taking into account the building's thermal storage, typical residential occupancy and operational profiles plus hourly weather data for the site.

Building geometry and orientation were modelled according to supplied drawings.

The "base-case" building fabric and estimated glazing and thermal performance requirements are described in table below. Please note the estimated requirements below are based on the nominated construction materials by the architect.

Element	Insulation / glazing
External walls	<ul style="list-style-type: none"> 90mm FC Sheet with added R2.0 insulation Brick Cavity Dividing wall with added R1.0 insulation Brick Veneer with added R2.5 insulation 90mm Weatherboard with added R2.0 insulation Ret Walls - Conc. Block 190mm Retaining Walls with no added insulation Concrete Block 190mm Retaining Walls with no added insulation
Internal walls	<ul style="list-style-type: none"> Internal Plasterboard Stud Wall with no added insulation Brick Cavity Dividing wall with added R1.0 insulation Concrete Block 190mm Core Filled with no added insulation Brick Veneer with added R2.0 insulation
Floor	<ul style="list-style-type: none"> Concrete slab Lined with no added insulation Slab on Ground with no added insulation
Ceiling	<ul style="list-style-type: none"> Plasterboard with added R4.0 insulation
Roof	<ul style="list-style-type: none"> Roof with added R1.30 insulation
Glazing	<p>To ensure glazing consistency, identical glazing performance has been nominated for all aspects (based on the minimum requirements):</p> <ul style="list-style-type: none"> System U-Value ≤ 4.1 System SHGC: $0.4 \pm 5\%$

Note:

The preliminary thermal insulation and glazing performance requirements outlined in this report nominate the estimated minimum BASIX requirements only. The specified performance values therefore do not consider requirements for any other disciplines such as Acoustics, Fire or Safety compliance. Where required, the development shall comply with any additional requirements related to the local council or other design disciplines in addition to the compliance requirements detailed in this report.

Compliance with the minimum BASIX requirements does not warrant thermal comfort. All services consultants and contractors shall design and construct the development to comply with the minimum requirements of the NCC Vol 1 & 2 and NSW Section J requirements.

6. BASIX ENERGY SECTION

The Energy performance of the development has been assessed using the online BASIX Tool. The assessment has considered Common Area and Central System features including the lifts, ventilation and lighting for common areas (corridors, lobbies, car park etc.), centralised domestic hot water and the efficiency of preferred lighting and appliances in the dwellings. The proposed development will meet the mandatory BASIX Energy target of 50% as long as the energy commitments detailed in Table are installed.

Table 3: Energy Commitments

Component		Commitment
Common Areas of residential areas	Lifts	<ul style="list-style-type: none"> Quantity: 6, Gearless traction with VVVF motor
	Swimming pool	<ul style="list-style-type: none"> Heating source: gas To be controlled by timer.
	Ventilation	<ul style="list-style-type: none"> Carpark: ventilation (supply + exhaust). Controlled with carbon monoxide monitor + VSD fan. Lift motor room: ventilation (supply & exhaust), Thermostatically controlled. Switch room: ventilation (supply & exhaust), Thermostatically controlled. Garbage: ventilation exhaust only. Plant or service rooms: ventilation (supply & exhaust). Thermostatically controlled. Ground floor lobby type: ventilation (supply & exhaust). Time clock or BMS controlled. Corridors: ventilation (supply & exhaust). Time clock or BMS controlled.
	Lighting	<ul style="list-style-type: none"> Carpark: LED lighting with time clock and motion sensors. Lifts: LED lighting, connected to lift call button. Lift motor room: LED lighting with manual on / manual off. Switch room: LED lighting with manual on / manual off. Garbage room: LED lighting with motion sensors. Plant or service rooms: LED lighting with manual on / manual off. Ground floor lobby type: LED lighting with time clock and motion sensors Corridors: LED lighting with time clock and motion sensors
	Alternative Energy Supply	<ul style="list-style-type: none"> 120 kW Solar PV system
Private Dwellings	Ventilation	<ul style="list-style-type: none"> Kitchen Exhaust: Individual fan, ducted to façade or roof, manual on/off switch. Bathroom & Laundry Exhaust: Individual fan, ducted to façade or roof, interlocked to light.
	Hot Water	<ul style="list-style-type: none"> 4.5-Star Gas instantaneous

Component		Commitment
	Heating & Cooling to living and bedroom areas	<ul style="list-style-type: none"> • Heating: 1-phase air-conditioning 5 star (average zone) • Cooling: 1-phase air-conditioning 5 star (average zone)
	Lighting	<ul style="list-style-type: none"> • Fluorescent or LED lights with dedicated fittings
	Appliances	<ul style="list-style-type: none"> • Gas cooktops and electric ovens • 4-star (energy rating) dishwashers. • 3-star (energy rating) clothes dryers. • Private outdoor clothes drying line

7. DISCLAIMER

This report is prepared using the information described above and inputs from other consultants. Whilst IGS has endeavoured to ensure the information used is accurate, no responsibility or liability to any third party is accepted for any loss or damage arising out of the use of this report by any third party. Any third party wishing to act upon any material contained in this report should first contact IGS for detailed advice which will take into account that party's particular requirements.

Computer performance assessment provides an estimate of building performance. This estimate is based on a necessarily simplified and idealised version of the building that does not and cannot fully represent all the intricacies of the building once built. As a result, simulation results only represent an interpretation of the potential performance of the building. Although great care has been taken to prepare this report, IGS does not make any representations or give any warranties or assurances as to the accuracy or completeness of the information contained in the report or that the report is free from errors or omission. IGS and its employees and agents shall not be liable for any loss arising because of, any person using or relying on the report and whether caused by reason or error, negligent act or omission in the report. This draft BASIX assessment and certification has been prepared based on the preliminary architectural and building services design with the view to conduct a detailed assessment once the design is further developed.

Performance of the completed building may be significantly affected by the quality of construction; commissioning, ongoing management of the building, and the way the building is operated, monitored and maintained. Building fabric inputs require verifiable manufacturer data to confirm thermal properties.

This report is intended as a guide to assist with the application of BASIX. It should be read in conjunction with the BASIX and the NCC applicable to the development; specific applications may vary during the design development of the project.

8. SUMMARY & CONCLUSION

The proposed development has been assessed in terms of its ability to conserve water and minimise energy consumption. Furthermore, the thermal performance (passive and fabric design) of the development will comply with the BASIX thermal comfort requirements.

Subject to the provisions of this report the proposed development will be able to achieve the BASIX requirements. For further details, please refer to the BASIX Certificate 1123393M_04 provided.

APPENDIX A – BASIX CERTIFICATE

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 1123393M_04

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

This certificate is a revision of certificate number 1123393M_02 lodged with the consent authority or certifier on 16 November 2021 with application DA-826/2020.

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 Environment Planning and Assessment Regulation 2000

Secretary

Date of issue: Friday, 26 January 2024

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



Project summary

Project name	143-163 Milton Street, Ashbury NSW 2_02_04
Street address	149-163 MILTON STREET ASHBURY 2193
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 30778
Lot no.	B, C
Section no.	-
No. of residential flat buildings	2
No. of units in residential flat buildings	71
No. of multi-dwelling houses	62
No. of single dwelling houses	0

Project score

Water	✓ 42	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 50	Target 50

If any changes to this BASIX certificate are required, please contact IGS with following details:

- Project reference: 149-163 Milton St, Ashbury NSW 2193
- Contact number: 0430 108 801

Certificate Prepared by

Name / Company Name: IGS

ABN (if applicable): 68163019029

Description of project

Project address	
Project name	143-163 Milton Street, Ashbury NSW 2_02_04
Street address	149-163 MILTON STREET ASHBURY 2193
Local Government Area	CANTERBURY-BANKSTOWN
Plan type and plan number	Deposited Plan 30778
Lot no.	B, C
Section no.	-
Project type	
No. of residential flat buildings	2
No. of units in residential flat buildings	71
No. of multi-dwelling houses	62
No. of single dwelling houses	0
Site details	
Site area (m²)	16220
Roof area (m²)	6200
Non-residential floor area (m²)	-
Residential car spaces	251
Non-residential car spaces	-

Common area landscape		
Common area lawn (m²)	889.00	
Common area garden (m²)	2249.00	
Area of indigenous or low water use species (m²)	1911.00	
Assessor details and thermal loads		
Assessor number	DMN/14/1658	
Certificate number	FEGRMRISVN	
Climate zone	56	
Ceiling fan in at least one bedroom	No	
Ceiling fan in at least one living room or other conditioned area	No	
Project score		
Water	✓ 42	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 50	Target 50

Description of project

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

Residential flat buildings - Building B, 32 dwellings, 6 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)
B001	3	121.50	2.30	14.00	0.00
B101	3	121.50	2.30	0.00	0.00
B105	3	124.00	2.30	0.00	0.00
B203	2	66.60	4.30	0.00	0.00
B301	3	121.50	2.30	0.00	0.00
B305	3	124.00	2.30	0.00	0.00
B403	2	66.60	4.30	0.00	0.00
B501	2	66.60	4.30	0.00	0.00

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)
B002	3	121.70	2.30	13.00	0.00
B102	3	120.30	2.50	0.00	0.00
B106	2	69.80	5.20	0.00	0.00
B204	3	126.20	2.40	0.00	0.00
B302	3	120.40	2.50	0.00	0.00
B306	2	69.80	5.20	0.00	0.00
B404	3	126.20	2.40	0.00	0.00
B502	3	126.20	2.40	0.00	0.00

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)
B003	3	121.70	5.70	10.00	0.00
B103	1	46.60	5.40	0.00	0.00
B201	3	121.50	2.30	0.00	0.00
B205	3	124.00	2.30	0.00	0.00
B303	2	66.60	4.30	0.00	0.00
B401	3	121.50	2.30	0.00	0.00
B405	3	124.00	2.30	0.00	0.00
B503	3	96.90	5.60	0.00	0.00

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)
B004	1	112.90	7.00	32.00	0.00
B104	3	126.20	2.40	0.00	0.00
B202	3	120.30	2.50	0.00	0.00
B206	2	69.80	5.20	0.00	0.00
B304	3	126.20	2.40	0.00	0.00
B402	3	109.30	5.30	0.00	0.00
B406	2	69.80	5.20	0.00	0.00
B504	2	69.80	5.20	0.00	0.00

Residential flat buildings - Building C, 39 dwellings, 5 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)
C002	3	129.70	6.30	32.00	0.00
C006	3	112.60	6.20	18.00	0.00
C101	2	73.00	5.00	0.00	0.00
C105	3	126.80	2.30	0.00	0.00
C204	2	99.40	3.30	0.00	0.00

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)
C003	3	113.60	6.20	26.00	0.00
C007	3	127.80	6.20	24.00	0.00
C102	1	48.10	4.40	0.00	0.00
C201	2	88.30	4.40	0.00	0.00
C205	3	126.80	2.30	0.00	0.00

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)
C004	3	118.00	6.20	26.00	0.00
C008	3	126.80	2.30	0.00	0.00
C103	1	49.50	4.40	0.00	0.00
C202	1	48.10	4.40	0.00	0.00
C206	1	43.50	4.20	0.00	0.00

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)
C005	3	118.00	6.20	26.00	0.00
C009	2	99.40	3.30	0.00	0.00
C104	2	99.40	3.30	0.00	0.00
C203	1	49.50	4.40	0.00	0.00
C207	3	120.50	2.40	0.00	0.00

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)
C208	3	117.00	2.60	0.00	0.00
C304	1	43.50	4.20	0.00	0.00
C308	3	126.8	2.3	0	0
C404	1	43.50	4.20	0.00	0.00
C502	1	49.5	4.4	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)
C301	2	88.30	4.40	0.00	0.00
C305	3	120.50	2.40	0.00	0.00
C401	2	88.30	4.40	0.00	0.00
C405	3	120.50	2.40	0.00	0.00
C503	1	43.5	4.2	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)
C302	1	51.70	4.40	0.00	0.00
C306	3	117.00	2.60	0.00	0.00
C402	1	48.10	4.40	0.00	0.00
C406	3	111.50	2.60	0.00	0.00
C504	3	120.5	2.4	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)
C303	1	49.50	4.40	0.00	0.00
C307	3	126.8	2.3	0	0
C403	1	49.50	4.40	0.00	0.00
C501	3	120.5	2.4	0	0

Multi-dwelling houses

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)
AT01	3	121.20	2.50	3.00	0.00
AT05	3	117.40	6.20	4.00	0.00
AT09	3	117.40	6.20	4.00	0.00
DT03	3	141.40	11.80	50.00	0.00
DT07	3	141.40	11.80	50.00	0.00
DT11	3	109.80	72.20	50.00	0.00
DT15	3	141.40	11.80	50.00	0.00
DT19	3	141.40	11.80	50.00	0.00
DT23	3	109.80	31.80	50.00	0.00
DT27	3	141.40	11.80	50.00	0.00
ET01	3	121.20	2.50	2.00	0.00
ET05	3	117.40	6.20	2.00	0.00
ET09	3	117.40	6.20	2.00	0.00

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)
AT02	3	121.20	2.50	3.00	0.00
AT06	3	117.40	6.20	4.00	0.00
AT10	3	117.40	6.20	4.00	0.00
DT04	3	141.40	11.80	50.00	0.00
DT08	3	109.80	31.90	50.00	0.00
DT12	3	141.40	11.80	50.00	0.00
DT16	3	141.80	11.80	50.00	0.00
DT20	3	109.80	31.90	50.00	0.00
DT24	3	141.40	11.80	50.00	0.00
DT28	3	141.40	11.80	50.00	0.00
ET02	3	121.20	2.50	2.00	0.00
ET06	3	117.40	6.20	2.00	0.00
ET10	3	117.40	6.20	2.00	0.00

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)
AT03	3	121.20	2.50	3.00	0.00
AT07	3	117.40	6.20	4.00	0.00
DT01	3	141.40	11.80	60.00	0.00
DT05	3	109.80	31.90	50.00	0.00
DT09	3	141.40	11.80	50.00	0.00
DT13	3	141.40	58.60	50.00	0.00
DT17	3	109.80	31.90	50.00	0.00
DT21	3	141.40	11.80	50.00	0.00
DT25	3	141.40	11.80	50.00	0.00
DT29	3	109.80	31.90	50.00	0.00
ET03	3	121.20	2.50	2.00	0.00
ET07	3	117.40	6.20	2.00	0.00
FT02	3	121.00	47.00	32.00	0.00

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)
AT04	3	121.20	2.50	3.00	0.00
AT08	3	117.40	6.20	4.00	0.00
DT02	3	109.80	31.90	50.00	0.00
DT06	3	141.40	11.80	50.00	0.00
DT10	3	141.40	11.80	50.00	0.00
DT14	3	109.80	72.20	50.00	0.00
DT18	3	141.40	11.80	50.00	0.00
DT22	3	141.40	11.80	50.00	0.00
DT26	3	109.80	31.90	50.00	0.00
DT30	3	141.40	58.60	50.00	0.00
ET04	3	121.20	2.50	2.00	0.00
ET08	3	117.40	6.20	2.00	0.00
FT03	3	114.20	10.90	21.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
FT04	3	84.80	9.10	24.00	0.00
FT08	3	116.20	47.00	28.00	0.00
FT12	3	115.00	47.00	27.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
FT05	3	115.00	47.00	21.00	0.00
FT09	3	112.80	10.90	22.00	0.00
FT13	3	113.10	10.90	26.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
FT06	3	115.00	47.00	21.00	0.00
FT10	3	115.00	47.00	21.00	0.00

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
FT07	3	115.00	47.00	21.00	0.00
FT11	3	115.00	47.00	21.00	0.00

Description of project

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

Common areas of the development (non-building specific)

Common area	Floor area (m²)	Common area	Floor area (m²)	Common area	Floor area (m²)
Car park area	8930.00	Lift car (No. 5)	0.00	Lift car (No. 6)	0.00
Lift motor room	25.00	Switch room	30.00	Garbage room	265.00
Plant or service room	410.00	Ground floor lobby type	100.00	Hallway/lobby type	570.00

Common areas of unit building - Building B

Common area	Floor area (m²)	Common area	Floor area (m²)
Lift car (No. 3)	0.00	Lift car (No. 4)	0.00

Common areas of unit building - Building C

Common area	Floor area (m²)	Common area	Floor area (m²)
Lift car (No. 1)	0.00	Lift car (No. 2)	0.00

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building B

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for Residential flat buildings - Building C

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

3. Commitments for single dwelling houses

4. Commitments for multi-dwelling houses

(a) Dwellings

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

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

(a) 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 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 - Building 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: <div style="margin-left: 20px;">(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</div> <div style="margin-left: 20px;">(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.</div>		✓ ✓	✓ ✓
(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	5 star	5 star	-	not specified	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	-	-	-	-	-	-	-
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.		✓	✓

(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 - 4.5 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	interlocked to light

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or diningroom	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
B004, B103	1-phase airconditioning / 5 star	1-phase airconditioning / 5 star	1-phase airconditioning / 5 star	1-phase airconditioning / 5 star	1(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or diningroom	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
	(average zone)	(average zone)	(average zone)	(average zone)								
B106, B203, B206, B303, B306, B403, B406, B501, B504	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	2(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-
All other dwellings	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	3(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	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	not specified	-	4 star	not specified	3 star	-	yes

(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.											

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)
B001	23.80	8.60
B002	27.80	10.70
B003	26.70	15.10
B004	44.10	28.10
B101	10.40	14.90
B102	19.80	16.40
B103	27.20	20.90
B104	21.80	25.80
B105	25.50	29.20
B106	3.80	24.70
B201	12.20	14.30
B202	22.70	14.70

	Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m²/yr)	Area adjusted cooling load (in MJ/m²/yr)
B203	26.70	11.00
B204	22.80	25.40
B205	26.80	28.80
B206	4.30	23.80
B301	12.80	14.10
B302	25.50	11.80
B303	27.60	10.80
B401	28.20	17.30
B402	36.20	15.10
B403	28.30	10.50
B501	40.00	13.30
B502	41.20	25.70
B503	37.10	28.60
B504	12.90	27.10
B304, B404	23.60	24.70
B305, B405	27.70	27.90
All other dwellings	6.20	20.40

(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	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	1000.00	To collect run-off from at least: - 620.00 square metres of roof area of buildings in the development - 0.00 square metres of impervious area in the development - 0.00 square metres of garden/lawn area in the development - 0.00 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 613.50 square metres of common landscaped area on the site

(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	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
Lift car (No. 3)	-	-	light-emitting diode	connected to lift call button	-
Lift car (No. 4)	-	-	light-emitting diode	connected to lift call button	-

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 7
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 7

2. Commitments for Residential flat buildings - Building C

(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
C307, C308, C501,	3 star (> 6 but ≤ 7.5 L/min)	4 star	5 star	5 star	-	not specified	4 star	-	-	-	-	-	-	-

	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
C502, C503, C504														
All other dwellings	3 star (> 6 but ≤ 7.5 L/min)	4 star	5 star	5 star	-	not specified	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	-	-	-	-	-	-	-
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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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.	✓	✓	✓
(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 - 4.5 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	interlocked to light

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or diningroom	Each kitchen	All bathrooms/ toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
C502, C503	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	no
C307, C308, C501, C504	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	3(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	no
C009, C101, C104, C201, C204, C301, C401	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	2(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-
C102, C103, C202, C203, C206, C302, C303, C304, C402, C403, C404	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-
All other dwellings	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	3(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	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
C307, C308, C501, C502, C503, C504	-	-	-	-	gas cooktop & electric oven	not specified	-	4 star	not specified	3 star	-	yes
All other dwellings	-	-	-	-	gas cooktop & electric oven	not specified	-	4 star	not specified	3 star	-	yes

(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.			
(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.	✓	✓	✓

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)
C002	31.50	10.90
C003	25.80	9.60
C004	27.10	17.10
C005	28.20	17.70
C006	33.20	17.20
C007	24.40	24.10
C008	42.00	11.80
C009	23.40	14.70
C101	6.20	21.80
C102	2.70	23.00
C104	5.10	16.70
C105	44.80	12.00
C201	8.80	28.50
C202	3.00	21.70
C204	14.80	18.70
C205	31.90	15.70
C206	33.80	25.50
C207	28.90	28.80
C208	13.90	25.80
C301	11.60	19.30
C302	4.20	15.60
C303	27.40	14.60
C304	34.80	24.80
C305	29.80	28.30
C306	16.80	19.30
C401	20.20	23.10

	Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)
C402	11.40	16.30
C403	38.40	16.70
C404	44.30	27.90
C405	44.20	19.60
C406	42.00	27.60
C502	38.4	16.7
C503	44.3	27.9
C103, C203	18.80	17.60
C307, C308	31.9	15.7
All other dwellings	44.2	19.6

(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	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 2)	1000.00	To collect run-off from at least: - 620.00 square metres of roof area of buildings in the development - 0.00 square metres of impervious area in the development - 0.00 square metres of garden/lawn area in the development - 0.00 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 613.50 square metres of common landscaped area on the site

(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	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
Lift car (No. 1)	-	-	light-emitting diode	connected to lift call button	-
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	-

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 7
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 7

4. Commitments for multi-dwelling houses

(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	5 star	5 star	-	not specified	4 star	-	-	-	-	-	-	-

Dwelling no.	Alternative water source							
	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up
All dwellings	Individual water tank (No. 1)	Tank size (min) 3000.00 liters	To collect run-off from at least: 1240.00 square metres of roof area; 0.00 square metres of impervious area; 0.00 square metres of garden and lawn area; and 0.00 square metres of planter box area.	-	yes	-	-	-
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.	✓	✓	✓
(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		✓	

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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".		✓	
(j) The applicant must install the photovoltaic system specified for the dwelling under the "Photovoltaic system" heading of the "Alternative energy" column of the table below, and connect the system to that dwelling's electrical system.	✓	✓	✓

	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 - 4.5 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	interlocked to light

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or diningroom	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
All dwellings	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	1-phase airconditioning / 5 star (average zone)	3(dedicated)	1(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	yes(dedicated)	0	-

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	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	not specified	-	4 star	not specified	3 star	-	yes

	Alternative energy
Dwelling no.	Photovoltaic system (min rated electrical output in peak kW)
All dwellings	-

(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.			
(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: <p>(aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or</p> <p>(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.</p>	✓	✓	✓

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
DT01	21.80	15.40
DT02	45.00	18.10
DT11	40.00	13.40
DT12	17.60	14.10
DT13	21.00	14.10
DT14	42.40	20.90
DT29	37.00	21.10
DT30	18.30	14.10
FT02	4.20	14.00
FT03	16.00	14.90
FT04	14.70	15.20
FT08	27.40	20.30
FT09	27.10	24.50
FT10	15.90	14.50
FT11	20.10	14.70
FT12	23.10	15.50
FT13	40.70	19.20
AT01, ET01	39.60	14.20
AT02, ET02	39.70	11.10
AT03, ET03	39.60	11.30
AT04, ET04	37.00	12.90
AT05, ET05	17.10	11.50
AT06, ET06	13.10	10.70
AT07, ET07	13.80	10.40
AT08, ET08	13.70	10.40
AT09, ET09	13.60	10.40

	Thermal loads	
Dwelling no.	Area adjusted heating load (in MJ/m ² /yr)	Area adjusted cooling load (in MJ/m ² /yr)
AT10, ET10	22.00	12.00
FT05, FT06, FT07	12.30	15.10
DT05, DT08, DT17, DT20, DT23, DT26	42.50	20.60
DT03, DT06, DT09, DT15, DT18, DT21, DT24, DT27	11.80	12.60
All other dwellings	13.60	12.50

	Construction of floors and walls				
Dwelling no.	Concrete slab on ground (m ²)	Suspended floor with open subfloor (m ²)	Suspended floor with enclosed subfloor (m ²)	Suspended floor above garage (m ²)	Primarily rammed earth or mudbrick walls
All dwellings	-	-	90.00	-	no

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

(a) 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	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Swimming pool (No. 1)	Volume: 168 kLs	Location: Other Pool shaded: no	-
Fire sprinkler system (No. 1)	-	-	-

(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	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	light-emitting diode	time clock and motion sensors	-
Lift car (No. 5)	-	-	light-emitting diode	connected to lift call button	-
Lift car (No. 6)	-	-	light-emitting diode	connected to lift call button	-
Lift motor room	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	manual on / manual off	-
Switch room	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	manual on / manual off	-
Garbage room	ventilation exhaust only	-	light-emitting diode	motion sensors	-
Plant or service room	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	manual on / manual off	-
Ground floor lobby type	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	-
Hallway/lobby type	ventilation (supply + exhaust)	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	-

Central energy systems	Type	Specification
Swimming pool (No. 1)	Heating source: gas	Pump controlled by timer: yes
Lift (No. 5)	gearless traction with V V V F motor	Number of levels (including basement): 2
Lift (No. 6)	gearless traction with V V V F motor	Number of levels (including basement): 2
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 120 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).