



IGS INTEGRATED
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Thornton Central Village (DA1) 184, 192 & 41 Lord Sheffield Circuit, Penrith NSW

BASIX Assessment Report

28th January 2022



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CONTENTS

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	4
3. BUILDING DESCRIPTION	5
3.1 Information Used in Review.....	5
4. BASIX WATER SECTION	7
5. BASIX THERMAL COMFORT SECTION	8
5.1 Modelling Assumptions.....	8
6. BASIX ENERGY SECTION	11
7. DISCLAIMER.....	12
8. SUMMARY & CONCLUSION	13
APPENDIX A – BASIX CERTIFICATE	14

1. EXECUTIVE SUMMARY

IGS has been commissioned to assess the interaction of the residential area for Thornton Central Village (DA1) at 184, 192 & 41 Lord Sheffield Circuit, Penrith 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. 1265384M).

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:

- Energy Efficiency: 27% reduction (minimum requirements under BASIX: 25%)
- Water Efficiency: 40% reduction (minimum requirements under BASIX: 40%)
- 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 25% 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 184, 192 & 41 Lord Sheffield Circuit, Penrith NSW.

3.1 Information Used in Review

Our review is based on the following architectural drawings provided by Crone Architects in November 2021.

Drawing Title	Drawing Number
COVER SHEET	00001
SURVEY PLAN	10000
LOCATION AND SITE PLAN	10001
SITE ANALYSIS	10002
PROPOSED FLOOR PLAN - LEVEL B1	10509
PROPOSED FLOOR PLAN - GROUND FLOOR	10510
PROPOSED FLOOR PLAN - LEVEL 01	10511
PROPOSED FLOOR PLAN - LEVEL 02	10512
PROPOSED FLOOR PLAN - LEVEL 03	10513
PROPOSED FLOOR PLAN - LEVEL 04	10514
PROPOSED FLOOR PLAN - LEVEL 05	10515
PROPOSED FLOOR PLAN - LEVEL 06	10516
PROPOSED FLOOR PLAN - LEVEL 07	10517
PROPOSED FLOOR PLAN - LEVEL 08	10518
PROPOSED FLOOR PLAN - LEVEL 09	10519
PROPOSED FLOOR PLAN - LEVEL 10	10520
PROPOSED FLOOR PLAN - LEVEL 11	10521
PROPOSED FLOOR PLAN - LEVEL 12	10522
PROPOSED FLOOR PLAN - LEVEL 13	10523
PROPOSED FLOOR PLAN - LEVEL 14	10524
PROPOSED FLOOR PLAN - LEVEL 15	10525
PROPOSED FLOOR PLAN - LEVEL 16	10526
PROPOSED FLOOR PLAN - LEVEL 17	10527
PROPOSED FLOOR PLAN - LEVEL 18	10528
PROPOSED FLOOR PLAN - LEVEL 19	10529
PROPOSED FLOOR PLAN - LEVEL 20	10530
PROPOSED FLOOR PLAN - LEVEL 21	10531
PROPOSED FLOOR PLAN - LEVEL 22	10532
PROPOSED FLOOR PLAN - LEVEL 23	10533
PROPOSED FLOOR PLAN - LEVEL 24	10534
PROPOSED FLOOR PLAN - LEVEL 25	10535
PROPOSED FLOOR PLAN - LEVEL 26	10536
PROPOSED FLOOR PLAN - LEVEL 27	10537
PROPOSED FLOOR PLAN - LEVEL 28	10538
PROPOSED FLOOR PLAN - LEVEL 29	10539
PROPOSED FLOOR PLAN - LEVEL 30	10540
PROPOSED FLOOR PLAN - LEVEL 31	10541
PROPOSED FLOOR PLAN - ROOF	10542
NORTH ELEVATION	21501
SOUTH ELEVATION	21502
EAST ELEVATION	21503
WEST ELEVATION	21504
SECTION A	31501
SECTION B	31502
SECTION C	31503
SECTION D	31504



ELEVATION & SECTION DETAILS - TOWER A	40001
ELEVATION & SECTION DETAILS - TOWER B	40002
ELEVATION & SECTION DETAILS - SHOPFRONTS	40003
ELEVATION & SECTION DETAILS - SUPERMARKET	40004
SHOPFRONTS MOODBOARD SHEET 1	40005
SHOPFRONTS MOODBOARD SHEET 2	40006
GFA SHEET 1	70501
GFA SHEET 2	70502
GFA SHEET 3	70503
GFA SHEET 4	70504
SHADOW ANALYSIS SHEET 1 - WINTER SOLSTICE	70520
SHADOW ANALYSIS SHEET 2 - WINTER SOLSTICE	70521
COMMUNAL OPEN SPACE	70522
CROSS VENTILATION	70530
SOLAR ACCESS SHEET 1	70540
SOLAR ACCESS SHEET 2	70541
SOLAR ACCESS SHEET 3	70542
SOLAR ACCESS SHEET 4	70543
VIEWS FROM SUN SHEET 1	70544
VIEWS FROM SUN SHEET 2	70545
ADAPTABLE APARTMENTS - TA	70561
ADAPTABLE APARTMENTS - TB	70562
SILVER APARTMENTS	70563
SILVER APARTMENTS	70564
SCHEDULES SHEET 1	70565
SCHEDULES SHEET 2	70566
PERSPECTIVE SHEET 1	98001
PERSPECTIVE SHEET 2	98002
PERSPECTIVE SHEET 3	98003

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, rain water 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. 1265384M.

Table 1: Water Commitments

Common Areas and Central Systems	
Common areas	- No common facility for showerheads - No common facility for toilets 4-star (water rated) taps - No common facility for clothes washers
Central systems	Rainwater tank (No. 1) with capacity of minimum 10,000L (minimum), collecting run-off from minimum 1600m² of roof area, used for irrigation of common area landscape with minimum area of 449.3m² and 2 car washing bays on the site.
Private Dwellings	
Fixtures for apartments	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 3-star (Water Rating) dishwashers

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	- Lightweight Clad Battened (Refl Cavity) Stud Wall with added R2.0 insulation - Brick Veneer Stud Wall with Reflective Sarking with added R2.5 insulation - Brick veneer on battens over Concrete Panel with added R2.5 insulation - Hebel Panel Partition wall with Acoustic Insulation with added R2.0 insulation - FC Sheet Clad on battens over Concrete Panel with added R2.0 insulation - Internal Plasterboard Stud Wall with added R2.0 insulation
Internal walls	- Hebel Panel Partition wall with Acoustic Insulation with added R2.0 insulation - Brick Veneer Stud Wall with Reflective Sarking with added R2.0 insulation - Internal Plasterboard Stud Wall with added R2.0 insulation - Lightweight Clad Battened (Refl Cavity) Stud Wall with no added insulation - Concrete Block 190mm Concrete - Plasterboard Internally with added R2.0 insulation - FC Sheet Clad on battens over Concrete Panel with added R2.0 insulation
Floor	Suspended Concrete Slab Floor (200mm) - Lined Below with added R2.0 insulation
Ceiling	Concrete Slab (200mm) with Suspended PB Ceiling with added R2.0 insulation
Roof	Concrete Slab (200mm) with Suspended PB Ceiling with added R3.0 insulation
Glazing (Building A)	A501-A508, A601-A608, A701-A708, A801-A808, A901-A908, A1001-A1003, A1004-A1008, A1101-A1103, A1104-A1108, A1201-A1203, A1204-A1208, A1301-A1303, A1304-A1308, A1401-A1403, A1404-A1408, A1501-A1503, A1504-A1508, A1601-A1603, A1604-A1608, A1701-A1703, A1704-A1708, A1801-A1803, A1804-A1808, A1901-A1903, A1904-A1908, A2001-A2003, A2004-A2008, A2101-A2103, A2104-A2108, A2201-A2203, A2204-A2208, A2301-A2303, A2304-A2308, A2401-A2403, A2404-A2408, A2501-A2503, A2504-A2505, A2601-A2603, A2604-A2605, A2701-A2703, A2704-A2705, A2801-A2803, A2804-A2805, A2901-A2903, A2904-A2905, A3001-A3002, A3004-A3005: - Sliding windows: System U-Value: 6.18 SHGC: 0.52-0.58 - Sliding windows: System U-Value: 6.21 SHGC: 0.47-0.51



Element	Insulation / glazing
	A3003: - Sliding windows: System U-Value: 4.80 SHGC: 0.56-0.62 A3004_b: - Sliding windows: System U-Value: 4.80 SHGC: 0.48-0.54 A509, A609, A709, A809, A909, A1009, A1109, A1209, A1309, A1409, A1509, A1609, A1709, A1809, A1909, A2009, A2109, A2209, A2309, A2409: - Sliding windows: System U-Value: 5.88 SHGC: 0.51-0.57 - Sliding windows: System U-Value: 6.18 SHGC: 0.52-0.58 A1004_b, A1104_b, A1204_b, A1304_b, A1404_b, A1504_b, A1604_b, A1704-b, A1804_b, A1904_b, A2004_b, A2104_b, A2204_b, A2304_b, A2404_b: - Sliding windows: System U-Value: 6.18 SHGC: 0.52-0.58 A2504_b, A2604_b, A2704_b, A2704_b, A2804_b, A2904_b: - Sliding windows: System U-Value: 6.21 SHGC: 0.47-0.51 A2506-A2507, A2606-A2607, A2706-A2707, A2806-A2807, A2906-A2907: - Sliding windows: System U-Value: 6.18 SHGC: 0.52-0.58
(Building B) Glazing	B201: - Sliding windows: System U-Value: 6.70 SHGC: 0.66-0.73 B202-B203, B205: - Sliding windows: System U-Value: 6.60 SHGC: 0.47-0.51 B204, B1204: - Sliding windows: System U-Value: 5.40 SHGC: 0.55-0.61 B301, B303, B305, B401-B404, B406-B407, B501-B504: - Sliding windows: System U-Value: 5.95 SHGC: 0.58-0.64 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 B302, B1004: - Sliding windows: System U-Value: 5.40 SHGC: 0.55-0.61 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 B304: - Sliding windows: System U-Value: 5.95 SHGC: 0.58-0.64 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 - Sliding windows: System U-Value: 5.40 SHGC: 0.55-0.61 B405, B505-B507, B605-B607, B705-B707, B805-B807, B905-B907: - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 B508, B601-B604, B608, B701-B704, B708, B801-B804, B808, B901-B904, B908, B1001-B1002: - Sliding windows: System U-Value: 5.95 SHGC: 0.58-0.64 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 B1003, B1006, B1103, B1105: - Sliding windows: System U-Value: 5.40 SHGC: 0.55-0.61 - Sliding windows: System U-Value: 6.48 SHGC: 0.47-0.53 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59

Element	Insulation / glazing
	B1005: - Sliding windows: System U-Value: 5.40 SHGC: 0.55-0.61 - Sliding windows: System U-Value: 6.48 SHGC: 0.47-0.53 B1101-B1102, B1104, B1106, B1201-B1202: - Sliding windows: System U-Value: 6.48 SHGC: 0.47-0.53 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59 B1203: - Sliding windows: System U-Value: 5.20 SHGC: 0.33-0.37 B1205: - Sliding windows: System U-Value: 4.80 SHGC: 0.48-0.54 - Sliding windows: System U-Value: 6.48 SHGC: 0.47-0.53 B1206: - Sliding windows: System U-Value: 4.80 SHGC: 0.48-0.54 - Sliding windows: System U-Value: 6.27 SHGC: 0.53-0.59

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 25% as long as the energy commitments detailed in Table are installed.

Table 3: Energy Commitments

Component		Commitment
Common Areas of residential areas	Lifts	Quantity: 5, Gearless traction with VVVF motor
	Swimming pool / Sauna	N/A
	Ventilation	- Carpark: ventilation (supply & exhaust). Controlled with carbon monoxide monitor + VSD fan. - Switch Room: ventilation (supply only), interlocked to light. - Garbage: ventilation (exhaust only). - Plant or service rooms: ventilation (supply & exhaust). Thermostatically controlled. - Ground floor lobby type: Air conditioning system, Time clock or BMS controlled. - Hallway areas: ventilation (supply only), Time clock or BMS controlled.
	Lighting	- Carpark: LED lighting with motion sensors - Lifts: LED lighting, connected to lift call button - Switch Room: LED lighting with manual on / manual off. - Garbage: 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 - Hallway areas: LED lighting with time clock and motion sensors
	Hot Water	- Central hot water system 1: Gas-fired boiler with R0.6 (~25 mm) insulation to the pipes - Central hot water system 2: Gas-fired storage (manifolded) with R0.6 (~25 mm) insulation to the pipes
	Alternative Energy Supply	65 kW Solar PV system
Private Dwellings	Ventilation	- Kitchen & Laundry Exhaust: Individual fan, ducted to façade or roof, manual on/off switch. - Bathroom Exhaust: Individual fan, ducted to façade or roof, interlocked to light.

Component		Commitment
	Heating & Cooling	Building A Units A508, A608, A708, A808, A908, A2505, A2506, A2507, A2605, A2606, A260, A2705, A2706, A2707, A2805, A2806, A2807, A2905, A2906, A2907, A3005: - Cooling to living and bedroom areas: 1-phase air-conditioning EER 3.0-3.5 (Zoned) - Heating to living and bedroom areas: 1-phase air-conditioning EER 3.5-4.0 (Zoned) All other units: - Cooling to living areas: 1-phase air-conditioning EER 3.0-3.5 (Zoned) - Heating to living and bedroom areas: 1-phase air-conditioning EER 3.5-4.0 (Zoned) Building B units: - Cooling to living areas: 1-phase air-conditioning EER 3.0-3.5 (Zoned) - Heating to living and bedroom areas: 1-phase air-conditioning EER 3.5-4.0 (Zoned)
	Lighting	Fluorescent or LED lights with dedicated fittings
	Other	- Gas cooktops and electric ovens - No ventilated fridge space 4-star (energy rating) dishwashers. 5.5-star (energy rating) clothes dryers. - No Indoor or 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. The 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 2019; 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 1265384M provided.

APPENDIX A – BASIX CERTIFICATE

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 1265384M

This certificate confirms that the proposed development will meet the NSW government's requirements for sustainability, if it is built in accordance with the commitments set out below. Terms used in this certificate, or in the commitments, have the meaning given by the document entitled "BASIX Definitions" dated 10/09/2020 published by the Department. This document is available at www.basix.nsw.gov.au

Secretary

Date of issue: Friday, 28 January 2022

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



Planning,
Industry &
Environment

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

- Project reference: 184 Lord Sheffield Circuit, Penrith NSW 2750
- Contact number: 0430 108 801

Project summary

Project name	Thornton Central Village (DA-01)
Street address	184 Lord Sheffield Circuit Penrith NSW 2750
Local Government Area	Penrith City Council
Plan type and plan number	deposited 1184498
Lot no.	3003
Section no.	-
No. of residential flat buildings	2
No. of units in residential flat buildings	316
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 27	Target 25

Certificate Prepared by

Name / Company Name: IGS

ABN (if applicable): 68163019029

Description of project

Project address

Project name	Thornton Central Village (DA-01)
Street address	184 Lord Sheffield Circuit Penrith NSW 2750
Local Government Area	Penrith City Council
Plan type and plan number	deposited 1184498
Lot no.	3003
Section no.	-

Project type

No. of residential flat buildings	2
No. of units in residential flat buildings	316
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	6303
Roof area (m ²)	2027.5
Non-residential floor area (m ²)	4222.0
Residential car spaces	333
Non-residential car spaces	120

Common area landscape

Common area lawn (m ²)	346.7
Common area garden (m ²)	1166.7
Area of indigenous or low water use species (m ²)	555.0

Assessor details

Assessor number	DMN/14/1658
Certificate number	HR-OTCN5H-01
Climate zone	28
Ceiling fan in at least one bedroom	No
Ceiling fan in at least one living room or other conditioned area	No

Project score

Water	 40	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 27	Target 25

Description of project

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

Residential flat buildings - Building A, 241 dwellings, 32 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)
A501	2	82.2	5.3	0.0	0.0
A506	1	51.9	4.6	0.0	0.0
A602	2	71.0	4.5	0.0	0.0
A607	2	71.1	4.3	0.0	0.0
A703	1	44.4	4.5	0.0	0.0
A708	3	87.5	4.8	0.0	0.0
A804	2	82.6	7.1	0.0	0.0
A809	1	44.8	6.5	0.0	0.0
A905	2	71.5	4.3	0.0	0.0
A10012		82.2	5.3	0.0	0.0
A10062		73.0	0.0	0.0	0.0
A11012		82.2	5.3	0.0	0.0
A11062		73.3	0.0	0.0	0.0
A12012		82.2	5.3	0.0	0.0
A12062		73.3	0.0	0.0	0.0
A13012		82.2	5.3	0.0	0.0
A13062		73.3	0.0	0.0	0.0
A14012		82.2	5.3	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A502	2	71.0	4.5	0.0	0.0
A507	2	71.1	4.3	0.0	0.0
A603	1	44.4	4.5	0.0	0.0
A608	3	87.5	4.8	0.0	0.0
A704	2	82.6	7.1	0.0	0.0
A709	1	44.8	6.5	0.0	0.0
A805	2	71.5	4.3	0.0	0.0
A901	2	82.2	5.3	0.0	0.0
A906	2	73.3	0.0	0.0	0.0
A10022		71.0	4.5	0.0	0.0
A10072		71.1	4.3	0.0	0.0
A11022		71.0	4.5	0.0	0.0
A11072		71.1	4.3	0.0	0.0
A12022		71.0	4.5	0.0	0.0
A12072		71.1	4.3	0.0	0.0
A13022		71.0	4.5	0.0	0.0
A13072		71.1	4.3	0.0	0.0
A14022		71.0	4.5	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A503	1	44.4	4.5	0.0	0.0
A508	3	87.5	4.8	0.0	0.0
A604	2	82.6	7.1	0.0	0.0
A609	1	44.8	6.5	0.0	0.0
A705	2	71.5	4.3	0.0	0.0
A801	2	82.2	5.3	0.0	0.0
A806	2	67.7	5.6	0.0	0.0
A902	2	71.0	4.5	0.0	0.0
A907	2	71.1	4.3	0.0	0.0
A10031		44.4	4.5	0.0	0.0
A10082		77.3	4.8	0.0	0.0
A11031		44.4	4.5	0.0	0.0
A11082		69.1	4.8	0.0	0.0
A12031		44.4	4.5	0.0	0.0
A12082		69.1	4.8	0.0	0.0
A13031		44.4	4.5	0.0	0.0
A13082		69.1	4.8	0.0	0.0
A14031		44.4	4.5	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A504	2	82.6	7.1	0.0	0.0
A509	1	47.4	5.2	0.0	0.0
A605	2	71.5	4.3	0.0	0.0
A701	2	82.2	5.3	0.0	0.0
A706	2	73.3	0.0	0.0	0.0
A802	2	71.0	4.5	0.0	0.0
A807	2	71.1	4.3	0.0	0.0
A903	1	44.4	4.5	0.0	0.0
A908	3	87.5	4.8	0.0	0.0
A10041		54.0	0.0	0.0	0.0
A10091		44.8	6.5	0.0	0.0
A11041		54.0	0.0	0.0	0.0
A11091		44.8	6.5	0.0	0.0
A12041		54.0	0.0	0.0	0.0
A12091		44.8	6.5	0.0	0.0
A13041		54.0	0.0	0.0	0.0
A13091		44.8	6.5	0.0	0.0
A14041		54.0	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A505	2	71.5	4.3	0.0	0.0
A601	2	82.2	5.3	0.0	0.0
A606	2	73.3	0.0	0.0	0.0
A702	2	71.0	4.5	0.0	0.0
A707	2	71.1	4.3	0.0	0.0
A803	1	44.4	4.5	0.0	0.0
A808	3	87.5	4.8	0.0	0.0
A904	2	82.6	7.1	0.0	0.0
A909	1	44.8	6.5	0.0	0.0
A10052		71.5	4.3	0.0	0.0
A10101		34.2	0.0	0.0	0.0
A11052		71.5	4.3	0.0	0.0
A11101		34.0	0.0	0.0	0.0
A12052		71.5	4.3	0.0	0.0
A12101		34.0	0.0	0.0	0.0
A13052		71.5	4.3	0.0	0.0
A13101		34.0	0.0	0.0	0.0
A14052		71.5	4.3	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A14062	73.3	0.0	0.0	0.0	0.0
A15012	82.2	5.3	0.0	0.0	0.0
A15062	73.3	0.0	0.0	0.0	0.0
A16012	82.2	5.3	0.0	0.0	0.0
A16062	73.3	0.0	0.0	0.0	0.0
A17012	82.2	5.3	0.0	0.0	0.0
A17062	73.3	0.0	0.0	0.0	0.0
A18012	82.2	5.3	0.0	0.0	0.0
A18062	73.3	0.0	0.0	0.0	0.0
A19012	82.2	5.3	0.0	0.0	0.0
A19062	73.3	0.0	0.0	0.0	0.0
A20012	82.2	5.3	0.0	0.0	0.0
A20062	73.3	0.0	0.0	0.0	0.0
A21012	82.2	5.3	0.0	0.0	0.0
A21062	73.3	0.0	0.0	0.0	0.0
A22012	82.2	5.3	0.0	0.0	0.0
A22062	73.3	0.0	0.0	0.0	0.0
A23012	82.2	5.3	0.0	0.0	0.0
A23062	73.3	0.0	0.0	0.0	0.0
A24012	82.2	5.3	0.0	0.0	0.0
A24062	73.3	0.0	0.0	0.0	0.0
A25012	82.2	5.3	0.0	0.0	0.0
A25063	100.9	4.6	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A14072	71.1	4.3	0.0	0.0	0.0
A15022	71.0	4.5	0.0	0.0	0.0
A15072	71.1	4.3	0.0	0.0	0.0
A16022	71.0	4.5	0.0	0.0	0.0
A16072	71.1	4.3	0.0	0.0	0.0
A17022	71.0	4.5	0.0	0.0	0.0
A17072	71.1	4.3	0.0	0.0	0.0
A18022	71.0	4.5	0.0	0.0	0.0
A18072	71.1	4.3	0.0	0.0	0.0
A19022	71.0	4.5	0.0	0.0	0.0
A19072	71.1	4.3	0.0	0.0	0.0
A20022	71.0	4.5	0.0	0.0	0.0
A20072	71.1	4.3	0.0	0.0	0.0
A21022	71.0	4.5	0.0	0.0	0.0
A21072	71.1	4.3	0.0	0.0	0.0
A22022	71.0	4.5	0.0	0.0	0.0
A22072	71.1	4.3	0.0	0.0	0.0
A23022	71.0	4.5	0.0	0.0	0.0
A23072	71.1	4.3	0.0	0.0	0.0
A24022	71.0	4.5	0.0	0.0	0.0
A24072	71.1	4.3	0.0	0.0	0.0
A25022	71.0	4.5	0.0	0.0	0.0
A25073	110.7	4.5	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A14082	69.1	4.8	0.0	0.0	0.0
A15031	44.4	4.5	0.0	0.0	0.0
A15082	69.1	4.8	0.0	0.0	0.0
A16031	44.4	4.5	0.0	0.0	0.0
A16082	69.1	4.8	0.0	0.0	0.0
A17031	44.4	4.5	0.0	0.0	0.0
A17082	69.1	4.8	0.0	0.0	0.0
A18031	44.4	4.5	0.0	0.0	0.0
A18082	69.1	4.8	0.0	0.0	0.0
A19031	44.4	4.5	0.0	0.0	0.0
A19082	69.1	4.8	0.0	0.0	0.0
A20031	44.4	4.5	0.0	0.0	0.0
A20082	69.1	4.8	0.0	0.0	0.0
A21031	44.4	4.5	0.0	0.0	0.0
A21082	69.1	4.8	0.0	0.0	0.0
A22031	44.4	4.5	0.0	0.0	0.0
A22082	69.1	4.8	0.0	0.0	0.0
A23031	44.4	4.5	0.0	0.0	0.0
A23082	69.1	4.8	0.0	0.0	0.0
A24031	44.4	4.5	0.0	0.0	0.0
A24082	69.1	4.8	0.0	0.0	0.0
A25031	44.4	4.5	0.0	0.0	0.0
A25081	30.1	4.3	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A14091	44.4	6.5	0.0	0.0	0.0
A15041	54.0	0.0	0.0	0.0	0.0
A15091	44.8	6.5	0.0	0.0	0.0
A16041	54.0	0.0	0.0	0.0	0.0
A16091	44.8	6.5	0.0	0.0	0.0
A17041	54.0	0.0	0.0	0.0	0.0
A17091	44.8	6.5	0.0	0.0	0.0
A18041	54.0	0.0	0.0	0.0	0.0
A18091	44.8	6.5	0.0	0.0	0.0
A19041	54.0	0.0	0.0	0.0	0.0
A19091	44.8	6.5	0.0	0.0	0.0
A20041	54.0	0.0	0.0	0.0	0.0
A20091	44.8	6.5	0.0	0.0	0.0
A21041	54.0	0.0	0.0	0.0	0.0
A21091	44.8	6.5	0.0	0.0	0.0
A22041	54.0	0.0	0.0	0.0	0.0
A22091	44.8	6.5	0.0	0.0	0.0
A23041	54.0	0.0	0.0	0.0	0.0
A23091	44.8	6.5	0.0	0.0	0.0
A24041	54.0	0.0	0.0	0.0	0.0
A24091	44.8	6.5	0.0	0.0	0.0
A25041	54.0	0.0	0.0	0.0	0.0
A26012	82.2	5.3	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A14101	34.2	0.0	0.0	0.0	0.0
A15052	71.5	4.3	0.0	0.0	0.0
A15101	34.2	0.0	0.0	0.0	0.0
A16052	71.5	4.3	0.0	0.0	0.0
A16101	34.2	0.0	0.0	0.0	0.0
A17052	71.5	4.3	0.0	0.0	0.0
A17101	34.2	0.0	0.0	0.0	0.0
A18052	71.0	4.3	0.0	0.0	0.0
A18101	34.2	0.0	0.0	0.0	0.0
A19052	71.5	4.3	0.0	0.0	0.0
A19101	34.2	0.0	0.0	0.0	0.0
A20052	71.5	4.3	0.0	0.0	0.0
A20101	34.2	0.0	0.0	0.0	0.0
A21052	71.5	4.3	0.0	0.0	0.0
A21101	34.2	0.0	0.0	0.0	0.0
A22052	71.5	4.3	0.0	0.0	0.0
A22101	34.2	0.0	0.0	0.0	0.0
A23052	71.5	4.3	0.0	0.0	0.0
A23101	34.2	0.0	0.0	0.0	0.0
A24052	71.5	4.3	0.0	0.0	0.0
A24101	34.2	0.0	0.0	0.0	0.0
A25053	80.9	10.5	0.0	0.0	0.0
A26022	71.0	4.5	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A26031	44.4	4.5	0.0	0.0	
A26081	30.1	4.3	0.0	0.0	
A27053	80.9	10.5	0.0	0.0	
A28022	71.0	4.5	0.0	0.0	
A28073	110.7	4.5	0.0	0.0	
A29041	54.0	0.0	0.0	0.0	
A30012	82.2	5.3	0.0	0.0	
A30061	30.1	4.3	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A26041	54.0	0.0	0.0	0.0	
A27012	82.2	5.3	0.0	0.0	
A27063	100.9	4.6	0.0	0.0	
A28031	44.4	4.5	0.0	0.0	
A28081	30.1	4.3	0.0	0.0	
A29053	80.9	10.5	0.0	0.0	
A30022	71.0	4.5	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A26053	80.9	10.5	0.0	0.0	
A27022	71.0	4.5	0.0	0.0	
A27073	110.7	4.5	0.0	0.0	
A28041	54.0	0.0	0.0	0.0	
A29012	82.2	5.3	0.0	0.0	
A29063	100.9	4.6	0.0	0.0	
A30031	44.4	4.5	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A26063	100.9	4.6	0.0	0.0	
A27031	44.4	4.5	0.0	0.0	
A27081	30.1	4.3	0.0	0.0	
A28053	80.9	10.5	0.0	0.0	
A29022	71.0	4.5	0.0	0.0	
A29073	110.7	4.5	0.0	0.0	
A30041	54.0	0.0	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
A26073	110.7	4.5	0.0	0.0	
A27041	54.0	0.0	0.0	0.0	
A28012	82.2	5.3	0.0	0.0	
A28063	100.9	4.6	0.0	0.0	
A29031	44.4	4.5	0.0	0.0	
A29081	30.1	4.3	0.0	0.0	
A30053	80.9	10.5	0.0	0.0	

Residential flat buildings - Building B, 75 dwellings, 14 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)
B201	1	51.8	4.4	0.0	0.0
B301	1	49.8	4.5	0.0	0.0
B401	1	59.3	0.0	0.0	0.0
B406	1	68.3	0.0	0.0	0.0
B504	2	83.9	5.5	0.0	0.0
B601	1	54.6	4.7	0.0	0.0
B606	2	71.0	6.1	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B202	2	72.9	6.7	0.0	0.0
B302	2	76.9	6.7	0.0	0.0
B402	2	82.7	0.0	0.0	0.0
B407	1	50.3	0.0	0.0	0.0
B505	1	59.0	6.0	0.0	0.0
B602	2	77.8	4.9	0.0	0.0
B607	2	85.0	4.8	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B203	1	60.0	4.9	0.0	0.0
B303	1	49.4	5.1	0.0	0.0
B403	1	50.1	0.0	0.0	0.0
B501	1	54.6	4.7	0.0	0.0
B506	2	71.0	6.1	0.0	0.0
B603	1	43.7	6.4	0.0	0.0
B608	1	48.3	4.7	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B204	2	89.0	6.1	0.0	0.0
B304	2	83.9	5.5	0.0	0.0
B404	2	83.9	5.5	0.0	0.0
B502	2	77.8	4.9	0.0	0.0
B507	2	85.0	4.8	0.0	0.0
B604	2	73.9	5.5	0.0	0.0
B701	1	54.6	4.7	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B205	1	51.8	6.4	0.0	0.0
B305	1	49.7	6.4	0.0	0.0
B405	1	65.1	0.0	0.0	0.0
B503	1	43.7	6.4	0.0	0.0
B508	1	48.3	4.7	0.0	0.0
B605	1	59.0	6.0	0.0	0.0
B702	2	77.8	4.9	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B703	1	43.7	6.4	0.0	0.0
B708	1	48.3	4.7	0.0	0.0
B805	1	59.0	6.0	0.0	0.0
B902	2	77.8	4.9	0.0	0.0
B907	2	85.0	4.8	0.0	0.0
B10041	59.0	6.0	0.0	0.0	
B11032	83.9	5.5	0.0	0.0	
B12022	73.2	4.6	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B704	2	83.9	5.5	0.0	0.0
B801	1	54.6	4.7	0.0	0.0
B806	2	71.0	6.1	0.0	0.0
B903	1	43.7	6.4	0.0	0.0
B908	1	48.3	4.7	0.0	0.0
B10052	88.6	7.6	0.0	0.0	
B11041	59.0	6.0	0.0	0.0	
B12032	83.9	5.5	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B705	1	59.0	6.0	0.0	0.0
B802	2	77.8	4.9	0.0	0.0
B807	2	85.0	4.8	0.0	0.0
B904	2	83.9	5.5	0.0	0.0
B10013	104.1	4.8	0.0	0.0	
B10063	101.6	5.4	0.0	0.0	
B11052	88.6	7.6	0.0	0.0	
B12041	59.0	6.0	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B706	2	71.0	6.1	0.0	0.0
B803	1	43.7	6.4	0.0	0.0
B808	1	48.3	4.7	0.0	0.0
B905	1	59.0	6.0	0.0	0.0
B10022	73.2	4.6	0.0	0.0	
B11013	104.1	4.8	0.0	0.0	
B11063	101.6	6.4	0.0	0.0	
B12052	88.6	7.6	0.0	0.0	

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
B707	2	85.0	4.8	0.0	0.0
B804	2	83.9	5.5	0.0	0.0
B901	1	54.6	4.7	0.0	0.0
B906	2	71.0	6.1	0.0	0.0
B10032	83.9	5.5	0.0	0.0	
B11022	73.2	4.6	0.0	0.0	
B12013	104.1	4.8	0.0	0.0	
B12063	101.6	6.4	0.0	0.0	

Description of project

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

Common areas of unit building - Building A

Common area	Floor area (m ²)
Lift car (No.1)	-

Common area	Floor area (m ²)
Lift car (No.2)	-

Common area	Floor area (m ²)
Lift car (No.3)	-

Common areas of unit building - Building B

Common area	Floor area (m ²)
Lift car (No.4)	-

Common area	Floor area (m ²)
Lift car (No.5)	-

Common areas of the development (non-building specific)

Common area	Floor area (m ²)
Car park areas	12650.0
Plant or service rooms	932.0

Common area	Floor area (m ²)
Switch rooms	23.9
Ground floor lobby type	189.0

Common area	Floor area (m ²)
Garbage rooms	134.0
Hallway/lobby type	3029.0

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building A

(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 B

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

3. Commitments for multi-dwelling houses

4. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

The commitments set out below regulate how the proposed development is to be carried out. It is a condition of any development consent granted, or complying development certificate issued, for the proposed development, that BASIX commitments be complied with.

1. Commitments for Residential flat buildings - Building A

(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	-	-	3 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	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	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
A508, A608, A708, A808, A908, A2505, A2506, A2507, A2605, A2606, A2607, A2705, A2706, A2707, A2805, A2806, A2807, A2905, A2906, A2907, A3005	1-phase airconditioning EER 3.0 - 3.5 (zoned)	1-phase airconditioning EER 3.0 - 3.5 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
A503, A506, A509, A603, A609, A703, A709, A803, A809, A903, A909, A1003, A1004, A1009, A1010, A1103, A1104, A1109, A1110, A1203, A1204, A1209, A1210, A1303, A1304, A1309, A1310, A1403, A1404, A1409, A1410, A1503, A1504, A1509, A1510, A1603, A1604, A1609, A1610,	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	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 dining rooms	Each kitchen	All bathrooms/ toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
A1703, A1704, A1709, A1710, A1803, A1804, A1809, A1810, A1903, A1904, A1909, A1910, A2003, A2004, A2009, A2010, A2103, A2104, A2109, A2110, A2203, A2204, A2209, A2210, A2303, A2304, A2309, A2310, A2403, A2404, A2409, A2410, A2503, A2504, A2508, A2603, A2604, A2608, A2703,												

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
A2704, A2708, A2803, A2804, A2808, A2903, A2904, A2908, A3003, A3004, A3006												
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	no	4 star	-	5.5 star	no	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
A501	18.6	47.3
A502	28.7	47.3
A503	51.2	42.4
A504	37.9	36.9
A505	22.8	23.1
A506	19.1	31.1
A507	27.9	24.1

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A508	7.3	29.3
A509	46.1	61.1
A601	20.4	46.8
A602	30.4	47.4
A603	49.4	41.9
A604	40.0	35.9
A605	24.4	24.2
A606	28.0	27.6
A607	30.1	24.2
A608	8.2	29.5
A609	50.9	59.8
A701	21.2	46.2
A702	31.1	46.3
A703	50.0	41.1
A704	40.6	35.7
A705	29.4	24.5
A706	28.0	27.2
A707	31.1	23.7
A708	8.5	29.1
A709	51.6	59.2
A801	21.5	45.8
A802	31.6	45.9
A803	50.6	40.9
A804	40.4	35.5
A805	25.0	22.6
A806	29.9	28.7
A807	31.2	23.5

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A808	9.2	28.7
A809	52.1	58.8
A901	21.7	45.1
A902	31.9	45.6
A903	51.0	40.5
A904	41.3	35.4
A905	25.4	24.2
A906	28.5	26.9
A907	31.8	23.1
A908	8.8	28.7
A909	52.5	58.1
A1001	23.2	42.4
A1002	33.6	34.4
A1003	53.2	39.0
A1004	24.0	27.8
A1005	27.0	23.3
A1006	30.3	25.0
A1007	35.4	21.1
A1008	19.7	27.5
A1009	54.8	52.6
A1010	43.7	54.9
A1101	53.2	42.4
A1102	33.6	43.4
A1103	57.2	39.3
A1104	20.1	32.6
A1105	25.3	24.3
A1106	28.2	30.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A1107	34.4	23.2
A1108	19.0	44.4
A1109	53.4	52.8
A1110	43.7	54.8
A1201	23.4	42.1
A1202	33.9	42.9
A1203	57.6	39.4
A1204	20.4	32.4
A1205	25.6	24.4
A1206	28.5	29.2
A1207	34.7	22.9
A1208	19.2	42.8
A1209	55.2	52.7
A1210	43.9	54.7
A1301	23.6	41.7
A1302	34.0	42.9
A1303	57.8	39.1
A1304	20.5	32.7
A1305	25.7	24.2
A1306	28.7	29.3
A1307	34.8	22.7
A1308	19.4	42.9
A1309	55.4	52.2
A1310	44.1	54.7
A1401	23.8	41.6
A1402	34.3	42.4
A1403	58.1	39.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A1404	20.7	32.5
A1405	26.0	24.1
A1406	28.8	29.1
A1407	35.0	22.8
A1408	19.6	42.6
A1409	55.8	52.3
A1410	44.5	54.8
A1501	23.9	41.0
A1502	34.4	43.1
A1503	58.3	38.7
A1504	20.8	32.1
A1505	26.0	23.9
A1506	29.5	29.0
A1507	35.2	22.6
A1508	19.6	42.5
A1509	55.9	51.5
A1510	44.5	54.3
A1601	24.0	40.9
A1602	34.5	42.7
A1603	58.5	38.9
A1604	21.0	32.0
A1605	26.2	24.1
A1606	29.2	29.0
A1607	35.3	22.5
A1608	19.7	42.3
A1609	56.1	51.1
A1610	44.7	54.1

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A1701	24.3	4.7
A1702	34.8	42.0
A1703	58.8	38.9
A1704	21.2	31.9
A1705	26.3	24.0
A1706	29.3	28.4
A1707	35.5	22.5
A1708	19.9	42.2
A1709	56.4	50.5
A1710	44.9	53.6
A1801	24.3	40.7
A1802	34.9	41.9
A1803	58.7	38.9
A1804	21.3	31.9
A1805	26.4	23.7
A1806	29.4	28.2
A1807	35.7	22.5
A1808	20.0	42.1
A1809	56.6	50.2
A1810	45.1	53.8
A1901	24.5	40.4
A1902	35.0	41.6
A1903	57.1	38.8
A1904	21.4	31.9
A1905	26.5	23.5
A1906	29.5	28.2
A1907	35.8	22.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A1908	20.1	41.7
A1909	56.7	50.3
A1910	45.6	54.4
A2001	24.4	40.5
A2002	35.1	41.6
A2003	57.3	38.7
A2004	21.5	31.8
A2005	26.7	23.7
A2006	29.7	28.1
A2007	35.9	22.6
A2008	20.2	41.8
A2009	56.9	49.8
A2010	45.7	55.2
A2101	24.7	40.5
A2102	35.3	41.2
A2103	57.5	38.6
A2104	21.6	31.4
A2105	26.7	23.3
A2106	30.4	28.0
A2107	36.1	22.3
A2108	20.2	41.5
A2109	57.0	49.8
A2110	45.9	56.9
A2201	24.8	40.3
A2202	35.4	41.0
A2203	57.6	38.4
A2204	21.8	31.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A2205	26.8	23.4
A2206	30.5	27.7
A2207	36.2	21.9
A2208	20.3	41.3
A2209	57.2	49.9
A2210	45.8	55.4
A2301	24.9	39.7
A2302	35.5	41.0
A2303	57.6	38.5
A2304	21.9	31.6
A2305	26.9	23.3
A2306	30.2	27.7
A2307	36.3	22.0
A2308	20.4	41.3
A2309	57.3	49.8
A2310	46.2	55.0
A2401	24.9	39.5
A2402	35.5	40.6
A2403	58.0	38.5
A2404	21.9	31.7
A2405	27.0	23.4
A2406	30.7	27.7
A2407	36.3	22.1
A2408	20.4	41.0
A2409	57.2	49.6
A2410	46.0	54.9
A2501	25.9	39.1

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
A2502	35.8	40.6
A2503	58.2	38.3
A2504	21.0	31.1
A2505	33.4	27.6
A2507	40.2	28.0
A2508	39.4	61.1
A2601	26.0	39.0
A2602	35.9	40.9
A2603	58.5	38.5
A2604	21.2	30.7
A2607	40.4	28.0
A2608	49.8	62.9
A2701	26.0	38.9
A2702	35.9	40.5
A2703	54.6	38.2
A2704	21.2	30.6
A2706	34.5	30.8
A2707	40.4	28.7
A2708	49.5	60.2
A2801	26.1	38.7
A2802	36.1	40.6
A2803	58.7	38.0
A2804	21.3	31.0
A2805	33.6	27.4
A2806	34.6	31.0
A2807	40.5	27.8
A2808	49.9	60.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
A2901	26.2	38.7
A2902	36.2	40.1
A2903	55.0	38.2
A2904	21.4	30.8
A2905	33.7	27.6
A2906	34.8	30.9
A2907	40.6	27.6
A2908	50.6	61.6
A3001	43.3	49.9
A3002	53.5	51.2
A3003	51.0	44.4
A3004	40.4	44.9
A3005	59.8	36.9
A3006	48.3	61.5
A2506, A2606	34.4	30.9
All other dwellings	33.4	27.5

(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	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000.0	To collect run-off from at least: - 1600.0 square metres of roof area of buildings in the development - 0.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 0.0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 449.3 square metres of common landscaped area on the site - car washing in 2 car washing bays 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.		✓	✓
(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	No
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.3)	-	-	light-emitting diode	connected to lift call button	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.6 (~25 mm); (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 32
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 32
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 32

2. 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: (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	-	-	3 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 2	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	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
B1001, B1006, B1101, B1106, B1201, B1206	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
B201, B203, B205, B301, B303, B305, B401, B403, B405, B406, B407, B501, B503, B505, B508, B601, B603, B605, B608, B701, B703, B705, B708, B801, B803, B805, B808, B901, B903, B905, B908, B1004, B1104, B1204	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	-	1-phase airconditioning EER 3.5 - 4.0 (zoned)	1-phase airconditioning EER 3.5 - 4.0 (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	-

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	no	4 star	-	5.5 star	no	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(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)
B201	9.1	23.2
B202	59.2	36.4
B203	37.7	27.8
B204	51.7	31.1
B205	17.6	27.9
B301	16.2	24.3
B302	57.8	24.4
B303	41.9	18.7
B304	61.4	35.7
B305	32.3	32.9
B401	15.6	26.8
B402	25.7	21.9
B403	40.1	17.8
B404	60.4	44.0
B405	13.8	40.2
B406	22.7	21.7
B407	22.9	31.7
B501	22.2	30.8
B502	2.2	26.6
B503	25.0	24.2
B504	53.0	46.7
B505	53.9	39.0
B506	44.1	27.4
B507	46.9	49.9
B508	26.1	32.3
B601	19.0	30.4
B602	21.9	26.3

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
B603	25.3	24.3
B604	52.4	47.8
B605	50.6	39.2
B606	44.1	27.1
B607	46.1	49.6
B608	29.4	32.1
B701	19.3	30.1
B702	22.1	26.2
B703	25.0	24.6
B704	52.6	48.3
B705	51.1	39.1
B706	44.5	27.0
B707	46.5	49.0
B708	27.2	30.5
B801	19.4	30.0
B802	22.2	26.2
B803	25.2	24.6
B804	52.7	47.9
B805	51.0	39.1
B806	44.4	26.9
B807	46.9	49.2
B808	27.0	30.7
B901	18.5	27.3
B902	21.8	23.7
B903	25.3	23.0
B904	53.0	43.7
B905	51.9	37.3

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
B906	44.2	26.5
B907	47.9	43.7
B908	25.8	28.6
B1001	25.4	22.1
B1002	15.3	26.1
B1003	43.0	57.3
B1004	46.4	39.4
B1005	56.0	37.5
B1006	50.3	41.2
B1101	24.7	22.3
B1102	15.1	28.0
B1103	37.5	59.4
B1104	51.6	42.5
B1105	61.0	38.0
B1106	55.0	42.0
B1201	40.6	35.1
B1202	28.2	42.3
B1203	50.9	54.4
B1204	49.0	51.7
B1205	63.0	43.3
All other dwellings	60.3	48.0

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	4 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.	✓	✓	✓

	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
Lift car (No.4)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No.5)	-	-	light-emitting diode	connected to lift call button	No

Central energy systems	Type	Specification
Central hot water system (No. 2)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (a) Piping external to building: R0.6 (~25 mm); (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 14
Lift (No. 5)	gearless traction with V V V F motor	Number of levels (including basement): 14

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	no common facility	4 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.	✓	✓	✓

	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
Car park areas	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	motion sensors	No
Switch rooms	ventilation supply only	interlocked to light	light-emitting diode	manual on / manual off	No
Garbage rooms	ventilation exhaust only	-	light-emitting diode	motion sensors	No
Plant or service rooms	ventilation (supply + exhaust)	thermostatically controlled	light-emitting diode	manual on / manual off	No
Ground floor lobby type	air conditioning system	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	No
Hallway/lobby type	ventilation supply only	time clock or BMS controlled	light-emitting diode	time clock and motion sensors	No

Central energy systems	Type	Specification
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 65.0 peak kW

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).