

STRATHFIELD COUNCIL
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Gazcorp Pty Ltd

27-35 Punchbowl Road, Belfield

BASIX Assessment Report

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Date	01/11/2018
Revision	04
Subject	27-35 Punchbowl Road, Belfield – BASIX Assessment Report

1. SITE APPRECIATION

The proposed development is located at 27-35 Punchbowl Road, Belfield and consists of:

- 122 new residential units

2. BASIX WATER SECTION

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. 678913M_05.

Table 1: BASIX Water Commitments

Common Areas and Central Systems	
<u>Area of Indigenous or low water species</u>	<ul style="list-style-type: none"> • See Appendix B
<u>Rainwater collection</u>	<ul style="list-style-type: none"> • 95,800L rainwater tank • Roof collection area - 2953m² • Rainwater to be used for Common areas landscape irrigation
<u>Fire Sprinkler</u>	<ul style="list-style-type: none"> • Test water to be diverted to a closed system
<u>Fixtures for common areas</u>	<ul style="list-style-type: none"> • 4-star (Water Rating) toilets • 5-star (Water Rating) taps
Private Dwellings	
<u>Fixtures for apartments</u>	<ul style="list-style-type: none"> • 3-star (Water Rating) showerheads with a flow rate > 6.0L/min & ≤ 7.5L/min • 4-star (Water Rating) toilets • 5-star (Water Rating) kitchen taps • 5-star (Water Rating) bathroom taps • 4-star (Water Rating) dishwasher

3. BASIX THERMAL COMFORT SECTION

The thermal performance of the development has been evaluated using BERS Pro 2nd Generation software. The BERS Pro computer simulation of residential developments forms

part of the Nationwide House Energy Rating Scheme, and is used to assess the potential of a residential development to have low heating and cooling energy requirements once operational.

3.1 MODELLING ASSUMPTIONS

The “base-case” building fabric and glazing and associated thermal performance specifications are described in Table 2 below as these assumptions are based on the nominated preferred construction materials indicated by the architect.

Note: Table 2 must be read in conjunction with Table 3 to Table 8. Table 3 to Table 8 outlines additional thermal enhancements / treatments to meet the mandatory thermal load targets to achieve compliance.

Table 2: Base Case Assumptions on Construction and Fabric

Element	Material	Detail
External walls	Brick Veneer Fibre Cement Metal Cladding	Insulation: See Table 3
		Medium colour: $0.7 < \text{absorptance} < 0.475$
		Dark colour: $\text{Absorptance} > 0.7$
		Light colour: $\text{Absorptance} < 0.475$
Internal walls	Plasterboard	
Party walls	Power Panel	Neighbours
	Concrete block, lined	Common corridors
	Tilt concrete, lined	Fire stairs & lifts
Windows	6mm Single glazed, clear with Aluminium frame	Holland Blinds to all glazing except to bathrooms (BASIX Modelling Protocol, Developer is not obligated to install any curtains/blinds at CC Stage)
	Total Window System Properties:	U-value 6.57 & SHGC 0.74
	Window Operability	Balcony windows: 45% & 60% (i.e. sliding) as per plans & elevations Bedroom windows: 10% (BCA D2.24) All other non-balcony windows: 0% & 65% (i.e. fixed or awning)
Skylight	Single glazed, clear	
Roof	Concrete	Insulation: See Table 3
		Light colour: $\text{Absorptance} < 0.475$
Ceilings	Plasterboard	Insulation: See Table 3
Floors	Concrete	Insulation: See Table 3
		Carpet: Bedrooms only
		Tiles: Elsewhere
Common corridors naturally ventilated		Yes to Ground floor lobbies only.
Recessed downlights assessed		No

3.2 BERS PRO RESULTS (THERMAL COMFORT)

The simulated heating and cooling loads per dwelling are summarised in Table 3 to Table 8 below. Where the dwellings have failed to meet the thermal load targets additional thermal enhancements / treatments are provided. This is typically in the form of bulk insulation. These additional thermal treatments are required to pass the BASIX Thermal performance requirements.

Table 3: BERS Pro Thermal Loads for Building A

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
A401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	42.0	12.3	5.5	Pass
A402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	22.6	20.6	6.5	Pass
A403	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	33.0	14.2	6.0	Pass
A501	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	41.7	10.1	5.5	Pass
A502	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	21.2	14.7	7.0	Pass
A503	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	38.0	9.4	6.0	Pass
A601	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	45.7	9.7	5.5	Pass
A602	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	21.7	14.5	7.0	Pass
A603	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	37.1	11.4	6.0	Pass
A701	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	61.7	10.2	4.5	Pass
A702	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	22.0	11.9	7.0	Pass
A703	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	38.4	9.4	6.0	Pass
A801	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation to exposed areas only, Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows	55.8	10.6	4.5	Pass
A802	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	62.8	54.6	3.0	Pass
A803	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	57.3	9.4	4.5	Pass

Table 4: BERS Pro Thermal Loads for Building B

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
B401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	43.8	15.8	5.0	Pass
B402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	18.6	14.7	7.0	Pass
B403	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	54.5	22.9	4.0	Pass
B501	R1.5 Bulk External Wall Insulation including walls	47.9	12.8	5.0	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
	adjacent to fire stairs & lifts				
B502	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	21.5	11.2	7.0	Pass
B503	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	58.7	18.9	4.0	Pass
B601	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	48.6	12.5	5.0	Pass
B602	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	21.8	11.2	7.0	Pass
B603	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	59.4	18.4	4.0	Pass
B701	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	48.7	12.3	5.0	Pass
B702	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	16.8	11.5	7.5	Pass
B703	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	58.2	17.7	4.0	Pass
B801	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation to exposed areas only, Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows	52.9	10.8	5.0	Pass
B802	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation to exposed areas only	32.8	11.5	6.5	Pass
B803	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation to exposed areas only, Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows	58.1	14.9	4.5	Pass

Table 5: BERS Pro Thermal Loads for Building C

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
C201	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridor, fire stairs & lifts, R2.0 Roof Insulation (exposed areas only), Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows	57.0	14.4	4.5	Pass
C301	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	28.7	17.5	6.0	Pass
C302	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	44.0	12.8	5.5	Pass
C303	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	38.3	18.9	5.5	Pass
C401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	36.2	18.4	5.5	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
C402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	48.9	12.3	5.0	Pass
C403	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	35.5	18.1	5.5	Pass
C501	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	38.5	13.2	5.5	Pass
C502	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	51.4	10.2	5.0	Pass
C503	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	39.0	14.5	5.5	Pass
C601	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	58.4	14.5	4.5	Pass
C602	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation, Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows, Skylight to be double glazed clear	58.4	40.0	3.5	Pass
C603	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	57.4	14.3	4.5	Pass

Table 6: BERS Pro Thermal Loads for Building D

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
D301	R1.0 Bulk Floor Insulation (adjacent to services areas only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	60.8	18.4	4.0	Pass
D302	R1.0 Bulk Floor Insulation (adjacent to services only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	43.4	20.4	5.0	Pass
D303	R1.0 Bulk Floor Insulation (adjacent to services only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	32.2	12.9	6.0	Pass
D304	R1.0 Bulk Floor Insulation (adjacent to services only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	50.4	14.5	5.0	Pass
D401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	26.1	10.7	7.0	Pass
D402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	25.5	21.2	6.0	Pass
D403	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	14.3	13.6	7.5	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
D404	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	32.5	15.8	6.0	Pass
D405	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	32.2	13.0	6.0	Pass
D406	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	29.6	14.1	6.5	Pass
D407	R1.0 Bulk Floor Insulation (adjacent to driveway only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	53.4	11.6	5.0	Pass
D501	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	28.7	9.1	7.0	Pass
D502	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation to exposed areas only	38.1	16.2	5.5	Pass
D503	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	15.3	10.7	8.0	Pass
D504	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	26.1	13.0	6.5	Pass
D505	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	35.6	11.2	6.0	Pass
D506	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	32.7	10.8	6.5	Pass
D507	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	34.6	10.6	6.0	Pass
D601	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	28.9	9.4	7.0	Pass
D602	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	43.7	19.0	5.0	Pass
D603	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	42.4	23.7	4.5	Pass
D604	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	29.7	9.4	6.5	Pass
D605	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	36.6	11.5	6.0	Pass
D606	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	34.2	11.1	6.0	Pass
D701	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	42.4	10.0	5.5	Pass
D702	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	53.5	19.9	4.5	Pass
D703	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	43.0	22.7	5.0	Pass
D704	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	29.9	9.3	6.5	Pass
D705	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	49.0	12.5	5.0	Pass
D706	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	50.7	12.6	5.0	Pass
D801	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation, Skylight to be double glazed clear	63.6	38.7	3.5	Pass
D802	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk	49.2	32.2	4.0	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
	Roof Insulation				
D803	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	49.7	19.1	4.5	Pass
D804	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	34.6	20.4	5.5	Pass
D805	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation, Low-E pyrolytic glass of window properties U-value 4.7 & SHGC 0.63 to all windows	51.6	23.1	4.5	Pass

Table 7: BERS Pro Thermal Loads for Building E

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
E101	R1.0 Bulk Floor Insulation (adjacent to car park only), R2.0 Bulk External Wall Insulation including walls adjacent to common corridors, car park, fire stairs & lifts	61.4	22.7	4.0	Pass
E102	R1.5 Bulk Floor Insulation (adjacent to car park only), R2.0 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	65.4	12.1	4.0	Pass
E103	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, car park, fire stairs & lifts	52.2	11.7	5.0	Pass
E104	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	43.0	12.9	5.5	Pass
E201	R1.5 Bulk External Wall Insulation including walls adjacent to loading dock, fire stairs & lifts	25.8	17.9	6.5	Pass
E202	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	36.2	13.4	6.0	Pass
E203	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	19.0	18.3	7.0	Pass
E204	R1.5 Bulk External Wall Insulation including walls adjacent to loading dock, fire stairs & lifts	17.5	17.1	7.0	Pass
E301	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	22.5	18.4	6.5	Pass
E302	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs &	36.2	13.4	6.0	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
	lifts				
E303	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	19.0	18.3	7.0	Pass
E304	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	19.9	17.8	7.0	Pass
E401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	24.9	15.8	6.5	Pass
E402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	32.9	16.4	6.0	Pass
E403	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	21.4	15.5	7.0	Pass
E404	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	22.5	15.7	7.0	Pass
E501	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	57.3	38.0	3.5	Pass
E502	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	31.7	23.9	5.5	Pass
E503	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	37.3	29.1	4.5	Pass
E504	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	40.3	14.0	5.5	Pass

Table 8: BERS Pro Thermal Loads for Building F

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
F101	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	51.4	14.0	5.0	Pass
F102	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	25.3	11.4	7.0	Pass
F103	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	22.9	13.8	7.0	Pass
F104	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	42.3	11.3	5.5	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m².yr)	Cooling Load (MJ/m².yr)	Stars	Pass/Fail
F105	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to common corridors, fire stairs & lifts	32.1	9.0	6.5	Pass
F106	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	50.5	16.9	4.5	Pass
F201	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	28.2	15.8	6.5	Pass
F202	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	12.9	16.5	7.5	Pass
F203	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	11.2	15.6	7.5	Pass
F204	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	17.9	12.6	7.5	Pass
F205	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	11.2	10.7	8.0	Pass
F206	R1.0 Bulk Floor Insulation (adjacent to car park only), R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	39.5	13.6	5.5	Pass
F301	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	28.2	15.8	6.5	Pass
F302	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	12.9	16.5	7.5	Pass
F303	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	11.2	15.6	7.5	Pass
F304	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	17.9	12.6	7.5	Pass
F305	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	11.2	10.7	8.0	Pass
F306	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts	20.4	14.9	7.0	Pass
F401	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	49.2	14.5	5.0	Pass
F402	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	29.3	16.2	6.0	Pass
F403	R1.5 Bulk External Wall Insulation	55.9	40.1	3.5	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
	including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation, Skylight to be double glazed opal				
F404	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation, Skylight to be double glazed opal	64.2	38.7	3.5	Pass
F405	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	31.2	11.6	6.5	Pass
F406	R1.5 Bulk External Wall Insulation including walls adjacent to fire stairs & lifts, R2.0 Bulk Roof Insulation	20.4	26.1	6.0	Pass

4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target of 30% as long as the energy commitments detailed in Table 9 are installed.

Table 9: BASIX Energy Commitments

Component		Commitment
Common Areas and Central Systems	<u>Hot Water System</u>	<ul style="list-style-type: none"> See Individual Systems
	<u>Lifts</u>	<ul style="list-style-type: none"> All lifts to use Gearless traction with VVVF motor servicing all levels
	<u>Others</u>	<ul style="list-style-type: none"> Building Management System (BMS) must be installed
	<u>Ventilation</u>	<ul style="list-style-type: none"> Car park: Ventilation (supply & exhaust) with a CO monoxide monitor & VSD fan Garbage Rooms: Ventilation (exhaust only), continuous Plant/Service Rooms: Ventilation (supply only), continuous Community room: No mechanical ventilation Other internal common areas: No mechanical ventilation Ground floor hallways & lobbies: No mechanical ventilation Other hallways & lobbies: Ventilation (supply only) connected to a time clock or BMS control

Component		Commitment
	<u>Lighting</u>	<ul style="list-style-type: none"> Car park: Fluorescent lighting with time clocks and motion sensors Lift Cars: Fluorescent lighting connected to lift call button Garbage Rooms: Fluorescent lighting with manual on/off switch Community room: Fluorescent lighting with manual on/off switch Plant/Service Room: Fluorescent lighting with manual on/off switch Other internal common area: Fluorescent lighting with manual on/off switch All Hallways & lobbies: Compact Fluorescent lighting with motion sensors + time clock
Private Dwellings	<u>Hot Water System</u>	<ul style="list-style-type: none"> Individual Instantaneous Gas Hot Water System with 6 Stars Rating
	<u>Ventilation</u>	<ul style="list-style-type: none"> Kitchen Exhaust: Individual fan, not ducted, with manual on/off switch Bathroom Exhaust: Individual fan, ducted to roof or façade, interlocked to light switch Laundry Exhaust: Individual fan, ducted to roof or façade, with manual on/ timer off switch
	<u>Heating & Cooling</u>	<ul style="list-style-type: none"> Heating: Living & Beds to have individual 1-phase 3-star (new rating) air-conditioning Cooling: Living & Beds to have individual 1 phase 2.5 star (new rating) air-conditioning Air conditioning to be day-night zoned between bedrooms and living areas
	<u>Lighting</u>	<ul style="list-style-type: none"> At least 80% of light fittings (including the main light fitting) in all bedrooms, living, kitchen, bathrooms , laundries and hallways to use Fluorescent or LED lights with dedicated fittings¹
	<u>Other</u>	<ul style="list-style-type: none"> Gas cook top and electric oven Well-ventilated fridge space. Install a 3.5-star (Energy Rating) dishwasher Install a 2-star (Energy Rating) clothes dryer Install an indoor clothes drying line (e.g. line over bath or a screened line on balconies)

5. CONCLUSION

The proposed development has been assessed to optimise its thermal performance (passive and fabric design) using the Nationwide House Energy Rating scheme (NatHERS) and also

¹ Definition of dedicated fittings is a light fitting that is only capable of accepting fluorescent or LED (Light Emitting Diode) lamps. It will not accept incandescent, halogen or any other non-fluorescent or non-LED lamps.

been assessed in terms of its ability to conserve water and minimise energy consumption through BASIX Tool.

With the commitment recommendations contained within this report the proposed development is able to meet BASIX requirements and is BASIX compliant.

For further details, please refer to the BASIX Certificate No. 678913M_05 provided.

APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by Olsson & Associates Architects received on 31st October 2018.

DRAWING LIST			
DWG NO.	DRAWING NAME	SCALE	ISSUE
A-000	COVER SHEET	NTS	5
A-010	PROJECT SUMAMRY	NTS	5
A-110	SITE PLAN	1:500	5
A-180	EXISTING / DEMOLITION PLAN	1:200	NOT ISSUED
A-2B2	RL 8.00 PLAN - BASEMENT LEVEL 2	1:200	5
A-2B1	RL 11.00 PLAN - BASEMENT LEVEL 1	1:200	5
A-201	RL 14.00 PLAN - LOWER GROUND LEVEL	1:200	5
A-202	RL 17.00 PLAN - GROUND LEVEL	1:200	5
A-203	RL 20.00 PLAN - UPPER GROUND LEVEL	1:200	5
A-204	RL 23.00 PLAN - LEVEL 2	1:200	5
A-205	RL 26.00 PLAN - LEVEL 3	1:200	5
A-206	RL 29.00 PLAN - LEVEL 4	1:200	5
A-207	RL 32.00 PLAN - LEVEL 5	1:200	5
A-208	RL 35.00 PLAN - LEVEL 6	1:200	5
A-209	ROOF PLAN	1:200	5
A-250	ADAPTABLE APARTMENTS	1:100	5
A-301	NORTH / SOUTH ELEVATIONS	1:200	5
A-302	EAST / WEST ELEVATIONS	1:200	5
A-310	PRIVACY SCREENS	AS SHOWN	5
A-401	SECTIONS I	1:200	5
A-402	SECTIONS II	1:200	5
A-501	SCHEDULE OF MATERIALS & FINISHES	NTS	NOT ISSUED
A-701	PERSPECTIVES I	NTS	5
A-702	PERSPEVTIVES II	NTS	5
A-703	PERSPECTIVES III	NTS	NOT ISSUED
A-704	PERSPECTIVES IV	NTS	NOT ISSUED
A-801	SHADOW DIAGRAMS	NTS	5
A-820	MASSING COMPARISON DIAGRAM	NTS	5
A-850	GFA CALCULATIONS	1:500	5
A-851	SITE DIAGRAMS	1:500	NOT ISSUED
A-852	CROSS VENTILATION DIAGRAMS	1:500	5
A-853	SOLAR ACCESS DIAGRAMS	1:500	5

APPENDIX B – LANDSCAPE AREAS

BASIX for Multi Dwellings - Landscape Checklist				
WATER - Central systems and common areas				
Common area landscape Please fill out mandatory fields marked in a *			Notes for assessor	
Number of Unit-Buildings	<input type="text" value="1"/>			
Building Name(s)	<input type="text" value="Building A-F"/>			
Common area of lawn (m²) *	<input type="text" value="85"/>			
Common area of garden (excluding lawn) (m²) *	<input type="text" value="935"/>			
Common area of indigenous species (m²) *	<input type="text" value="860"/>			
WATER - dwellings				
Private area landscape For each dwelling, gather the following information:			Notes for assessor	
How many units have private garden & lawn. Please list these separately below				
<input type="text" value="5"/>				
Unit No.	Total area of Private garden (m²)	Total area of Private lawn (m²)		Area of indigenous species (m²)
C201	96	45		40
F102	23.4	16.2		7.2
F103	27.5	17.9		5.3
F104	29.2	19.4		6.1
F105	37.9	15.7		17.7

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 678913M_05

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 06/10/2017 published by the Department. This document is available at www.basix.nsw.gov.au

This certificate is a revision of certificate number 678913M lodged with the consent authority or certifier on 20 November 2015 with application 2015/154.

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

Secretary

Date of issue: Thursday, 01 November 2018

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



**STRATHFIELD COUNCIL
RECEIVED**

**DA2016/017/02
22 November 2018**

Project summary

Project name	27-35 Punchbowl Road, Belfield_05
Street address	27-35 Punchbowl Road Belfield 2191
Local Government Area	Strathfield Municipal Council
Plan type and plan number	deposited 592982
Lot no.	10
Section no.	-
No. of residential flat buildings	6
No. of units in residential flat buildings	122
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 32	Target 30

Certificate Prepared by

Name / Company Name: ESD Synergy Pty Ltd

ABN (if applicable): 17165174685

Description of project

Project address

Project name	27-35 Punchbowl Road, Belfield_05
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Plan type and plan number	deposited 592982
Lot no.	10
Section no.	-

Project type

No. of residential flat buildings	6
No. of units in residential flat buildings	122
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m²)	5413
Roof area (m²)	2953
Non-residential floor area (m²)	616.0
Residential car spaces	209
Non-residential car spaces	26

Common area landscape

Common area lawn (m²)	85.0
Common area garden (m²)	935.0
Area of indigenous or low water use species (m²)	860.0

Assessor details

Assessor number	20754
Certificate number	1012309652
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 32	Target 30

Description of project

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

Residential flat buildings - Building A, 15 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)
A401	2	75.2	0.0	0.0	0.0
A502	2	75.2	0.0	0.0	0.0
A603	2	82.0	0.0	0.0	0.0
A801	2	75.2	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)
A402	2	75.2	0.0	0.0	0.0
A503	2	82.0	0.0	0.0	0.0
A701	2	75.2	0.0	0.0	0.0
A802	2	75.2	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)
A403	2	82.0	0.0	0.0	0.0
A601	2	75.2	0.0	0.0	0.0
A702	2	85.2	0.0	0.0	0.0
A803	2	82.0	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)
A501	2	75.2	0.0	0.0	0.0
A602	2	75.2	0.0	0.0	0.0
A703	2	82.0	0.0	0.0	0.0

Residential flat buildings - Building B, 15 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)
B401	2	81.3	0.0	0.0	0.0
B502	2	79.6	0.0	0.0	0.0
B603	2	91.4	0.0	0.0	0.0
B801	2	81.3	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)
B402	2	79.6	0.0	0.0	0.0
B503	2	91.4	0.0	0.0	0.0
B701	2	81.3	0.0	0.0	0.0
B802	2	79.6	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)
B403	2	91.4	0.0	0.0	0.0
B601	2	81.3	0.0	0.0	0.0
B702	2	79.6	0.0	0.0	0.0
B803	2	91.4	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)
B501	2	81.3	0.0	0.0	0.0
B602	2	79.6	0.0	0.0	0.0
B703	2	91.4	0.0	0.0	0.0

Residential flat buildings - Building C, 13 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)
C201	2	78.5	0.0	141.0	40.0
C401	1	61.0	0.0	0.0	0.0
C502	2	75.5	0.0	0.0	0.0
C603	2	81.2	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)
C301	1	61.0	0.0	0.0	0.0
C402	2	75.5	0.0	0.0	0.0
C503	2	81.2	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)
C302	2	75.5	0.0	0.0	0.0
C403	2	81.2	0.0	0.0	0.0
C601	1	61.0	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)
C303	2	81.2	0.0	0.0	0.0
C501	1	61.0	0.0	0.0	0.0
C602	2	75.5	0.0	0.0	0.0

Residential flat buildings - Building D, 35 dwellings, 7 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)
D301	2	78.2	0.0	0.0	0.0
D401	2	84.5	0.0	0.0	0.0
D405	1	58.1	0.0	0.0	0.0
D502	2	84.0	0.0	0.0	0.0
D506	2	89.4	0.0	0.0	0.0
D603	2	86.7	0.0	0.0	0.0
D701	2	84.5	0.0	0.0	0.0
D705	3	102.0	0.0	0.0	0.0
D803	3	117.9	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)
D302	2	78.9	0.0	0.0	0.0
D402	2	78.9	0.0	0.0	0.0
D406	2	89.4	0.0	0.0	0.0
D503	1	66.3	0.0	0.0	0.0
D507	3	103.9	0.0	0.0	0.0
D604	2	77.1	0.0	0.0	0.0
D702	2	79.5	0.0	0.0	0.0
D706	3	103.9	0.0	0.0	0.0
D804	3	98.1	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)
D303	2	78.9	0.0	0.0	0.0
D403	1	61.0	0.0	0.0	0.0
D407	3	103.9	0.0	0.0	0.0
D504	1	51.4	0.0	0.0	0.0
D601	2	84.5	0.0	0.0	0.0
D605	3	102.0	0.0	0.0	0.0
D703	2	86.7	0.0	0.0	0.0
D801	1	56.3	0.0	0.0	0.0
D805	3	98.1	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)
D304	2	85.3	0.0	0.0	0.0
D404	1	51.4	0.0	0.0	0.0
D501	2	84.5	0.0	0.0	0.0
D505	1	58.1	0.0	0.0	0.0
D602	2	79.5	0.0	0.0	0.0
D606	3	103.9	0.0	0.0	0.0
D704	2	77.1	0.0	0.0	0.0
D802	3	105.0	0.0	0.0	0.0

Residential flat buildings - Building E, 20 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)
E101	2	84.4	0.0	0.0	0.0
E201	2	83.5	0.0	0.0	0.0
E301	2	83.5	0.0	0.0	0.0
E401	2	83.5	0.0	0.0	0.0
E501	2	83.5	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)
E102	1	59.3	0.0	0.0	0.0
E202	2	82.2	0.0	0.0	0.0
E302	2	82.2	0.0	0.0	0.0
E402	2	82.2	0.0	0.0	0.0
E502	3	91.1	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)
E103	1	56.5	0.0	0.0	0.0
E203	2	80.6	0.0	0.0	0.0
E303	2	80.6	0.0	0.0	0.0
E403	2	80.6	0.0	0.0	0.0
E503	3	95.0	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)
E104	2	82.7	0.0	0.0	0.0
E204	2	82.7	0.0	0.0	0.0
E304	2	82.7	0.0	0.0	0.0
E404	2	82.0	0.0	0.0	0.0
E504	2	82.7	0.0	0.0	0.0

Residential flat buildings - Building F, 24 dwellings, 4 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
F101	2	82.2	0.0	0.0	0.0
F105	3	105.3	0.0	53.6	17.7
F203	1	64.6	0.0	0.0	0.0
F301	2	82.8	0.0	0.0	0.0
F305	3	105.3	0.0	0.0	0.0
F403	1	64.6	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)
F102	3	107.9	0.0	39.6	7.2
F106	1	50.2	0.0	0.0	0.0
F204	1	57.2	0.0	0.0	0.0
F302	3	107.9	0.0	0.0	0.0
F306	2	83.0	0.0	0.0	0.0
F404	1	57.2	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)
F103	1	64.6	0.0	45.4	5.3
F201	2	82.8	0.0	0.0	0.0
F205	3	105.3	0.0	0.0	0.0
F303	1	64.6	0.0	0.0	0.0
F401	2	82.8	0.0	0.0	0.0
F405	3	105.3	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)
F104	1	57.2	0.0	48.6	6.1
F202	3	107.9	0.0	0.0	0.0
F206	2	83.0	0.0	0.0	0.0
F304	1	57.2	0.0	0.0	0.0
F402	3	107.9	0.0	0.0	0.0
F406	2	83.0	0.0	0.0	0.0

Description of project

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

Common areas of unit building - Building A

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

Common areas of unit building - Building B

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

Common areas of unit building - Building C

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

Common areas of unit building - Building D

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

Common areas of unit building - Building E

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

Common areas of unit building - Building F

Common area	Floor area (m²)
Lift car (No. 6)	-

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Car park area (No. 1)	10090.0
Other internal common area (No. 1)	50.0

Common area	Floor area (m²)
Garbage room (No. 1)	170.0
Ground floor lobby type (No. 1)	325.0

Common area	Floor area (m²)
Plant or service room (No. 1)	100.0
Hallway/lobby type (No. 1)	515.0

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 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

4. Commitments for Residential flat buildings - Building D

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

5. Commitments for Residential flat buildings - Building E

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

6. Commitments for Residential flat buildings - Building F

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

7. Commitments for multi-dwelling houses

8. Commitments for single dwelling houses

9. 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	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
All dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(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.		✓	

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
A401	42.0	12.3
A402	22.6	20.6
A403	33.0	14.2
A501	41.7	10.1
A502	21.2	14.7
A503	38.0	9.4
A601	45.7	9.7
A602	21.7	14.5
A603	37.1	11.4
A701	61.7	10.2
A702	22.0	11.9
A703	38.4	9.4
A801	55.8	10.6
A802	62.8	54.6
All other dwellings	57.3	9.4

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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. 1)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 8

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	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
All dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(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.		✓	

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
B401	43.8	15.8
B402	18.6	14.7
B403	54.5	22.9
B501	47.9	12.8
B502	21.5	11.2
B503	58.7	18.9
B601	48.6	12.5
B602	21.8	11.2
B603	59.4	18.4
B701	48.7	12.3
B702	16.8	11.5
B703	58.2	17.7
B801	52.9	10.8
B802	32.8	11.5
All other dwellings	58.1	14.9

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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. 2)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 8

3. 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
All dwellings	3 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
C301, C401, C501, C601	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
C201	57.0	14.4
C301	28.7	17.5
C302	44.0	12.8
C303	38.3	18.9
C401	36.2	18.4
C402	48.9	12.3
C403	35.5	18.1
C501	38.5	13.2
C502	51.4	10.2
C503	39.0	14.5
C601	58.4	14.5

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
C602	58.4	40.0
All other dwellings	57.4	14.3

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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. 3)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 9

4. Commitments for Residential flat buildings - Building D

(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	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
D703, D704	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
D403, D404, D405	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
D503, D504, D505, D801	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
D407, D507, D605, D606, D705, D706, D802, D803, D804, D805	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

	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	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(d) The applicant must show on the plans accompanying the development application for the proposed development, all matters which the Thermal Comfort Protocol requires to be shown on those plans. Those plans must bear a stamp of endorsement from the Accredited Assessor, to certify that this is the case.	✓		
(e) The applicant must show on the plans accompanying the application for a construction certificate (or complying development certificate, if applicable), all thermal performance specifications set out in the Assessor Certificate, and all aspects of the proposed development which were used to calculate those specifications.		✓	
(f) The applicant must construct the development in accordance with all thermal performance specifications set out in the Assessor Certificate, and in accordance with those aspects of the development application or application for a complying development certificate which were used to calculate those specifications.		✓	✓
(g) Where there is an in-slab heating or cooling system, the applicant must: (aa) Install insulation with an R-value of not less than 1.0 around the vertical edges of the perimeter of the slab; or (bb) On a suspended floor, install insulation with an R-value of not less than 1.0 underneath the slab and around the vertical edges of the perimeter of the slab.	✓	✓	✓
(h) The applicant must construct the floors and walls of the development in accordance with the specifications listed in the table below.	✓	✓	✓

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
D301	60.8	18.4
D302	43.4	20.4
D303	32.2	12.9
D304	50.4	14.5
D401	26.1	10.7
D402	25.5	21.2
D403	14.3	13.6
D404	32.5	15.8
D405	32.2	13.0
D406	29.6	14.1
D407	53.4	11.6
D501	28.7	9.1
D502	38.1	16.2
D503	15.3	10.7
D504	26.1	13.0
D505	35.6	11.2
D506	32.7	10.8
D507	34.6	10.6
D601	28.9	9.4
D602	43.7	19.0
D603	42.4	23.7
D604	29.7	9.4
D605	36.6	11.5
D606	34.2	11.1
D701	42.4	10.0
D702	53.5	19.9
D703	43.0	22.7

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
D704	29.9	9.3
D705	49.0	12.5
D706	50.7	12.6
D801	63.6	38.7
D802	49.2	32.2
D803	49.7	19.1
D804	34.6	20.4
All other dwellings	51.6	23.1

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 10

5. Commitments for Residential flat buildings - Building E

(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	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
E102, E103	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
E502, E503	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort

(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.

Show on DA plans	Show on CC/CDC plans & specs	Certifier check

(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)
E101	61.4	22.7
E102	65.4	12.1
E103	52.2	11.7
E104	43.0	12.9
E201	25.8	17.9
E204	17.5	17.1
E301	22.5	18.4
E304	19.9	17.8

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
E401	24.9	15.8
E402	32.9	16.4
E403	21.4	15.5
E404	22.5	15.7
E501	57.3	38.0
E502	31.7	23.9
E503	37.3	29.1
E504	40.3	14.0
E202, E302	36.2	13.4
All other dwellings	19.0	18.3

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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. 5)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 5)	gearless traction with V V V F motor	Number of levels (including basement): 8

6. Commitments for Residential flat buildings - Building F

(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	no	-	4 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	gas instantaneous 6 star	individual fan, ducted to façade or roof	interlocked to light	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer 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
F101, F201, F206, F301, F306, F401, F406	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	2 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
F102, F105, F202, F205, F302, F305, F402, F405	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
All dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3.5 star	-	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			
(b) The Assessor Certificate must have been issued by an Accredited Assessor in accordance with the Thermal Comfort Protocol.			
(c) The details of the proposed development on the Assessor Certificate must be consistent with the details shown in this BASIX Certificate, including the details shown in the "Thermal Loads" table below.			
(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)
F101	51.4	14.0
F102	25.3	11.4
F103	22.9	13.8
F104	42.3	11.3
F105	32.1	9.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
F106	50.5	16.9
F206	39.5	13.6
F306	20.4	14.9
F401	49.2	14.5
F402	29.3	16.2
F403	55.9	40.1
F404	64.2	38.7
F405	31.2	11.6
F406	20.4	26.1
F201, F301	28.2	15.8
F202, F302	12.9	16.5
F203, F303	11.2	15.6
F204, F304	17.9	12.6
All other dwellings	11.2	10.7

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	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. 6)	-	-	fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 6)	gearless traction with V V V F motor	Number of levels (including basement): 7

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	no common facility	4 star	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	95800.0	To collect run-off from at least: - 2953.0 square metres of roof area of buildings in the development - 4092.0 square metres of impervious area in the development - 1320.0 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 1020.0 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

	Common area 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 area (No. 1)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	time clock and motion sensors	Yes
Garbage room (No. 1)	ventilation exhaust only	-	fluorescent	manual on / manual off	Yes
Plant or service room (No. 1)	ventilation supply only	none ie. continuous	fluorescent	manual on / manual off	Yes

	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
Other internal common area (No. 1)	no mechanical ventilation	-	fluorescent	manual on / manual off	Yes
Ground floor lobby type (No. 1)	no mechanical ventilation	-	compact fluorescent	time clock and motion sensors	Yes
Hallway/lobby type (No. 1)	ventilation supply only	time clock or BMS controlled	compact fluorescent	time clock and motion sensors	Yes

Central energy systems	Type	Specification
Other	Building management system installed?: yes	-

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).