

CABE Proposed Residential Development

To be built at 65 Mulgoa Road, Penrith NSW 2750

Issue	File Ref	Description	Author	Date
A	22-3107R	NatHERS and BASIX Assessment	MF/AA	19/05/2022
B		NatHERS and BASIX Assessment - update	MF/PM	13/04/2023

This report has been prepared by Efficient Living Pty Ltd on behalf of our client CABE. Efficient Living prepares all reports in accordance with the BASIX Thermal Comfort Protocol and is backed by professional indemnity insurance. This report takes into account our Client's instructions and preferred building inclusions.



Report Contact:	Mariana Foganhole	License Holder:	Haylea Cools
Email:	mariana@efficientliving.com.au	Accreditation Number:	HERA10213

Prepared For:

CABE
Jack Ding
jackd@cabe.com.au

Atlas Norwest Suite 502, Level 5 2 - 8 Brookhollow Avenue
Baulkham Hills NSW 2153 Australia
(02) 8818 3600

Introduction

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 65 Mulgoa Road, Penrith NSW 2750.

Heating and cooling loads for the development have been determined using Hero v2.0 thermal comfort simulation software. The report is based on the architectural drawings provided by CABE. For further details refer to the individual BASIX Certificate(s) and Efficient Living's inclusions summary respectively.

This report is based on the following plans prepared by Turner Studio:

Series	Drawing No.	Drawing Name
GENERAL		
	DA-001-001	Title Sheet
	DA-001-002	Site Plan
GA Plans		
	DA-110-006	Basement 02
	DA-110-007	Basement 01
	DA-110-008	Ground Level
	DA-110-010	Level 01
	DA-110-020	Level 02
	DA-110-030	Level 03
	DA-110-040	Level 04
	DA-110-050	Level 05
	DA-110-060	Level 06
	DA-110-070	Level 07
	DA-110-080	Level 08
	DA-110-090	Level 09
	DA-110-100	Level 10
	DA-110-110	Level 11
	DA-110-120	Level 12
	DA-110-130	Level 13
	DA-110-140	Roof Level
Site Elevations		
	DA-210-101	North and South Elevations
	DA-210-201	East and West Elevations
Building Elevations		
	DA-250-001	Building H Elevations
	DA-250-005	Building J Elevations
	DA-250-010	Building K Elevations
	DA-250-015	Building L East/South Elevations
	DA-250-016	Building L West/North Elevations
GA Sections		
	DA-310-101	Section AA BB
	DA-310-101	Section CC DD EE

Analysis

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

BASIX requires a minimum target of 40% for the water section, a pass or fail for the thermal comfort section, and a minimum required target of 25% for the energy section.

Water

The proposed Development has achieved the BASIX Water Target of 40%.

The water usage of the Development is calculated based on the number and efficiency of permanent fixtures and appliances such as taps, showerheads and toilet, the dish washer and clothes washing machine.

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

Thermal Comfort

Thermal Comfort targets are set by the Department of Planning in the form of heating and cooling caps. The buildings thermal physics are measured using Hero v2.0 Thermal Comfort Simulation Software. This calculates the expected level of energy required to heat and cool each dwelling per annum, expressed in megajoules per square metre of floor area (MJ/m²).

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

Energy

The proposed Development has achieved the Energy target of 25% to pass this section.

The energy usage of the Development is calculated based on the efficiency of fixed appliances that will be used. This includes the air-conditioning system, hot water system, lighting, exhaust fans, cook top, oven, and clothes drying facilities.

Inclusions Summary

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

Thermal Comfort Scores

Average heating loads are 32% below allowable BASIX targets

Average cooling loads are 42% below allowable BASIX targets

Glazing Doors/Windows

Glazed windows and doors:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 4.80 (equal to or lower than) SHGC: 0.51 (±10%)

Group B – sliding doors/windows + fixed glazing + louvre windows

U-value: 4.80 (equal to or lower than) SHGC: 0.59 ($\pm 10\%$)

Glazing upgrade 1 - Upgrade applied as per thermal comfort upgrades table:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 4.90 (equal to or lower than) SHGC: 0.33 ($\pm 10\%$)

Group B – sliding doors/windows + fixed glazing + louvre windows

U-value: 4.90 (equal to or lower than) SHGC: 0.33 ($\pm 10\%$)

Glazing upgrade 2 - Upgrade applied as per thermal comfort upgrades table:

Group A – awning + bifold + casement windows + hinged glazed doors

U-value: 3.60 (equal to or lower than) SHGC: 0.47 ($\pm 10\%$)

Group B – sliding doors/windows + fixed glazing + louvre windows

U-value: 3.60 (equal to or lower than) SHGC: 0.54 ($\pm 10\%$)

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

Note: BASIX Thermal Comfort Protocol Table 3 SHGC value of the unit should be within $\pm 10\%$ of the value specified for the default window selection on the certificate.

Skylight

Double glazing, timber or aluminium frame.

U value 4.22 SHGC 0.72

Roof and ceiling

Concrete roof, no insulation

Plasterboard ceiling with R3.0 insulation (insulation only value) where balconies are above

Plasterboard ceiling with R3.0 insulation (insulation only value) to soffit of concrete where roof is over

Plasterboard ceiling with R4.0 insulation (insulation only value) to soffit of concrete where roof is over **as per Thermal Comfort Results assessor sheet**

Plasterboard ceiling, no insulation where neighbouring units are above

External Colour: Medium ($0.475 < SA < 0.75$)

Ceiling Penetrations

Sealed LED downlights at a maximum of one every 5m². Once lighting plan has been developed NatHERS certificate can be updated to improve specification.

External Wall

Brick veneer walls with R2.0 insulation (insulation only value)

180mm Tilt up concrete wall with R2.0 insulation (insulation only value)

External Colour

Medium ($0.475 < SA < 0.7$)

Inter-tenancy walls

75mm Hebel Power Panel to walls adjacent to neighbours, with a minimum R1.2 insulation (insulation only value)

75mm Hebel Power Panel to walls adjacent to natural ventilated hallways with a minimum R1.2 insulation (insulation only value)

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

Walls within dwellings

Plasterboard on studs – no insulation

Floors

150mm Concrete with a minimum R2.0 insulation (insulation only value) required to units with Garage below

Concrete with a minimum R2.0 insulation (insulation only value) required where part open subfloor is below

Concrete with a minimum R2.5 insulation (insulation only value) required where part open subfloor is below **as per Thermal Comfort Results assessor sheet**

Concrete between levels, no insulation required

Floor coverings

Carpet to bedrooms, tiles to wet areas and timber elsewhere

External Shading

Eaves and exterior screens as shown on elevations

BASIX water inclusions

Score 40/40

Fixtures within units

Showerheads: 4.0 mid flow ($>6L$ but $\leq 7.5L/min$)

Toilets: 4.0 star

Kitchen taps: 5.0 star

Bathroom vanity taps: 5.0 star

Appliances within units

Dishwashers: 4.5 stars

Central rainwater storage

Tank size: 10,000L

Collecting from 2,000m² roof area

Connected to outdoor tap for irrigation of landscaping common and car washing bays

Fire sprinkler test water

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

Common area swimming pools and spas

360kL pool

BASIX Energy Inclusions

Score 25/25

Hot water system

Central gas-fired boiler with R0.6 (~38mm) insulation to ring main and supply risers

Lift motors

All lifts to have gearless traction with VVVF motor

Appliances and other efficiency measures within units

Gas cooktop & electric oven

Dishwashers: 3.0 star

Clothes dryers: 2.0 star

Well ventilated fridge space

Heating and cooling within units

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

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

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

Artificial lighting within units

All light fittings within each room are to have sealed LED fixtures installed

Ventilation within units

Bathroom: individual fan, ducted to roof or façade – interlocked to light

Laundry: individual fan, ducted to roof or façade – interlocked to light

Kitchen range hood: Individual fan, ducted to roof or façade – interlocked to light

Ventilation to common areas

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

Garbage rooms – Exhaust air, running continuously

Gym / Lounge / Common room – AC, time clock or BMS

Plant / services / storage – Supply only, interlocked to light

WC – Exhaust only, interlocked to light

Ground floor lobbies – Naturally ventilated

Hallways (without windows) – Supply only, time clock or BMS controlled

Breezeways – Naturally ventilated

Artificial lighting to common areas

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

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

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

Gym / Lounge / Common room – Light emitting diodes (LEDs) with manual on / manual off switch

Plant / services / storage – Light emitting diodes (LEDs) with manual on / manual off switch

WC – Light emitting diodes (LEDs) with manual on / manual off switch

Ground floor lobbies – Light emitting diodes (LEDs) with motion sensors

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

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

Alternative Energy

50kW Solar PV system

Common area swimming pool

Resort pool not heated

Pumps will be controlled to a timer

Private Spas

Solar gas boosted heating system

Spa cover

Common area sauna

Electric infrared, manual on / timer off

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01						Accreditation # HERA10213	
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M²)		Predict. loads (MJ/M²/y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
Building H							
H.G01	3	146.9	0.0	25.3	32.2	7.4	
H.G02	2	117.2	0.0	16.1	47.6	7.1	
H.G03	1	54.3	0.0	10.3	43.5	7.6	
H.G04	2	81.3	0.0	26.7	41.6	6.9	
H.G05	2	80.8	0.0	50.7	25.2	6.6	
H.G06	3	119.4	0.0	22.8	45.1	6.9	
H.G07	3	119.1	0.0	15.9	35.0	7.7	
H.G08	3	155.7	0.0	26.1	49.6	6.6	
H.G09	2	128.8	0.0	56.0	18.6	6.6	
H.101	1	58.2	0.0	38.1	30.0	6.9	
H.102	3	117.2	0.0	12.5	33.8	7.9	
H.103	1	54.3	0.0	17.3	22.9	8.2	
H.104	2	82.0	0.0	22.8	21.8	7.9	
H.105	3	121.6	0.0	54.3	13.5	6.9	
H.106	2	82.5	0.0	58.6	17.5	6.5	
H.107	2	87.3	0.0	45.0	21.4	6.9	
H.108	1	53.2	0.0	54.5	19.3	6.6	
H.109	2	86.3	0.0	41.5	33.2	6.6	
H.110	1	55.8	4.5	60.9	22.4	6.2	
H.201	2	94.2	0.0	49.5	40.7	5.9	
H.202	2	81.5	0.0	23.0	40.7	7.1	Glazing upgrade 1 to bedroom 2 facing west
H.203	3	117.2	0.0	12.8	31.4	7.9	
H.204	1	54.3	0.0	26.5	27.4	7.5	
H.205	2	82.0	0.0	23.7	20.9	7.9	
H.206	3	121.6	0.0	30.2	14.3	7.9	
H.207	2	82.5	0.0	36.0	18.2	7.5	
H.208	2	87.3	0.0	41.5	22.9	7.1	
H.209	1	65.2	0.0	43.1	21.8	7	
H.210	1	61.7	0.0	41.9	27.6	6.8	
H.211	2	84.0	0.0	42.9	27.7	6.8	
H.212	2	86.7	0.0	37.6	25.4	7.1	
H.213	1	53.2	0.0	32.1	21.1	7.6	
H.214	2	86.3	0.0	32.5	37.8	6.8	
H.215	1	55.8	4.5	39.9	24.4	7.1	
H.301	2	94.2	0.0	51.5	37.9	5.9	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
H.302	2	81.5	0.0	23.7	40.3	7.1	
H.303	3	117.2	0.0	16.5	25.9	8.1	
H.304	1	54.3	0.0	19.2	21.2	8.2	
H.305	2	82.0	0.0	24.9	19.0	8	
H.306	3	121.6	0.0	32.5	13.4	7.9	
H.307	2	82.5	0.0	38.1	18.5	7.4	
H.308	2	87.3	0.0	53.4	19.0	6.7	
H.309	1	65.2	0.0	46.7	21.2	6.9	
H.310	1	61.7	0.0	46.3	27.4	6.7	
H.311	2	84.0	0.0	48.0	28.8	6.5	
H.312	2	86.7	0.0	38.5	24.5	7.1	
H.313	1	53.2	0.0	32.6	20.1	7.6	
H.314	2	86.3	0.0	34.9	39.4	6.6	
H.315	1	55.8	4.5	42.7	21.9	7.1	
H.401	2	94.2	0.0	61.0	56.7	4.8	Glazing upgrade 2 to living/kitchen; R4.0 to ceiling with roof above
H.402	2	81.5	0.0	46.4	55.5	5.4	Glazing upgrade 1 to bedroom 2 and living room facing west
H.403	3	117.2	0.0	31.4	43.1	6.6	
H.404	1	54.3	0.0	27.3	36.6	7.1	
H.405	2	82.0	0.0	30.2	42.0	6.7	
H.406	3	121.6	0.0	49.1	23.9	6.7	
H.407	2	82.5	0.0	50.2	50.6	5.4	
H.408	3	142.2	0.0	41.4	45.9	5.9	
H.409	3	145.2	0.0	44.6	34.8	6.4	
H.410	3	149.6	0.0	55.3	37.7	5.8	
H.411	3	157.8	0.0	62.3	42.3	5.3	Glazing upgrade 2 to living kitchen; R4.0 to ceiling with roof above
H.412	2	90.2	0.0	53.1	37.1	5.9	
H.413	1	53.2	0.0	40.5	28.9	6.8	
H.414	2	86.3	0.0	43.7	57.3	5.4	
H.415	1	55.8	4.5	58.7	38.6	5.6	
Building J							
J.101	1	68.3	0.0	44.7	41.0	6.1	
J.102	2	83.3	0.0	18.8	36.6	7.4	
J.103	2	85.5	0.0	9.6	44.4	7.5	
J.104	2	85.8	0.0	48.6	31.4	6.4	
J.105	2	82.8	0.0	31.1	38.3	6.8	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
J.106	1	59.9	0.0	34.2	26.6	7.2	
J.107	3	116.3	0.0	31.0	47.0	6.4	
J.108	1	69.1	0.0	29.3	43.8	6.7	
J.109	3	113.7	0.0	44.5	18.5	7.1	
J.110	1	58.8	0.0	57.6	29.3	6.0	
J.111	2	87.4	0.0	22.6	31.4	7.5	
J.112	2	94.2	0.0	21.7	26.2	7.8	
J.113	2	89.4	0.0	30.1	28.4	7.3	
J.114	1	52.9	0.0	20.5	37.4	7.4	
J.115	1	53.5	0.0	32.4	34.9	6.9	
J.201	1	68.3	0.0	48.7	55.4	5.3	
J.202	2	83.3	0.0	22.5	57.0	6.4	
J.203	3	119.8	0.0	18.0	59.8	6.4	
J.204	1	63.3	0.0	28.0	40.8	6.9	
J.205	2	82.8	0.0	27.6	41.4	6.9	
J.206	1	59.9	0.0	23.1	30.8	7.5	
J.207	3	116.3	0.0	40.2	56.5	5.6	Glazing upgrade 1 to living and bedrooms
J.208	1	69.1	0.0	39.8	47.2	6.0	
J.209	3	113.7	0.0	36.6	21.5	7.4	
J.210	1	68.5	0.0	29.8	57.0	6.0	Glazing upgrade 1 to living room
J.211	2	87.4	0.0	28.2	29.8	7.4	
J.212	2	95.2	0.0	26.4	34.9	7.2	
J.213	2	89.4	0.0	35.4	39.3	6.6	
J.214	1	52.9	0.0	31.5	39.4	6.8	
J.215	1	53.5	0.0	45.8	40.5	6.0	
J.301	2	98.7	0.0	46.6	36.0	6.2	
J.302	2	83.3	0.0	19.0	38.3	7.4	
J.303	3	121.7	0.0	18.6	28.3	7.9	
J.304	1	63.1	0.0	28.8	18.5	7.9	
J.305	2	82.8	0.0	36.9	18.4	7.4	
J.306	1	59.9	0.0	28.1	17.7	7.9	
J.307	3	115.8	0.0	30.4	37.1	6.9	
J.308	1	56.7	0.0	26.6	29.5	7.4	
J.309	3	113.7	0.0	33.2	14.3	7.8	
J.310	1	68.6	0.0	45.8	26.2	6.7	
J.311	2	87.4	0.0	27.6	17.7	7.9	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
J.312	2	95.5	0.0	28.1	20.8	7.8	
J.313	2	89.4	0.0	34.8	23.0	7.4	
J.314	1	52.9	0.0	40.3	19.0	7.3	
J.315	2	87.4	0.0	48.3	25.8	6.6	
J.401	2	98.7	0.0	49.6	43.3	5.8	
J.402	2	83.3	0.0	25.1	52.3	6.4	
J.403	3	121.7	0.0	20.9	23.8	7.9	
J.404	1	63.1	0.0	24.9	17.6	8.1	
J.405	2	82.8	0.0	34.5	18.6	7.6	
J.406	1	59.9	0.0	24.7	17.3	8.1	
J.407	3	115.8	0.0	30.2	37.3	6.9	
J.408	1	56.7	0.0	26.4	27.9	7.5	
J.409	3	113.7	0.0	29.3	14.6	8.0	
J.410	1	68.6	0.0	41.1	26.5	6.9	
J.411	2	87.4	0.0	27.1	17.5	7.9	
J.412	2	95.5	0.0	27.5	20.8	7.8	
J.413	2	89.4	0.0	34.4	22.2	7.4	
J.414	1	52.9	0.0	40.3	18.4	7.3	
J.415	2	87.4	0.0	42.4	25.5	6.9	
J.501	3	130.9	0.0	59.6	30.4	5.9	
J.502	3	142.0	0.0	37.3	55.8	5.7	
J.503	3	121.7	0.0	37.4	37.9	6.6	
J.504	1	63.1	0.0	42.2	28.2	6.8	
J.505	2	82.8	0.0	49.2	32.6	6.3	
J.506	1	59.9	0.0	41.9	30.4	6.7	
J.507	3	115.8	0.0	51.7	55.9	5.2	
J.508	1	56.7	0.0	27.8	30.1	7.4	
J.509	3	113.7	0.0	39.9	22.0	7.2	
J.510	1	68.6	0.0	42.4	28.7	6.8	
J.511	2	87.4	0.0	27.1	17.5	7.9	
J.512	2	95.5	0.0	27.2	21.1	7.8	
J.513	2	89.4	0.0	34.5	21.9	7.4	
J.514	1	52.9	0.0	40.6	18.5	7.3	
J.515	2	87.4	0.0	42.7	25.5	6.9	
J.601	2	84.5	0.0	54.2	35.9	5.9	
J.602	2	81.4	0.0	34.9	20.6	7.4	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
J.603	2	87.4	0.0	23.5	22.3	7.9	
J.604	2	95.5	0.0	29.6	30.5	7.3	
J.605	2	89.4	0.0	39.2	32.9	6.7	
J.606	1	52.9	0.0	42.2	27.1	6.8	
J.607	2	87.4	0.0	50.0	29.4	6.4	
J.701	2	94.2	0.0	40.7	32.2	6.7	
J.702	3	128.9	0.0	54.3	32.2	6.0	
J.703	1	67.8	0.0	38.1	34.4	6.7	
J.704	2	87.4	0.0	22.5	20.6	8.0	
J.705	2	95.5	0.0	28.3	20.9	7.8	
J.706	2	89.4	0.0	35.6	22.6	7.4	
J.707	1	52.9	0.0	31.0	27.2	7.4	
J.708	1	53.8	0.0	44.0	22.1	6.9	
J.801	2	94.2	0.0	38.8	31.2	6.8	
J.802	3	129.0	0.0	41.8	30.3	6.7	
J.803	1	67.8	0.0	38.4	30.8	6.9	
J.804	2	87.4	0.0	26.9	17.0	8.0	
J.805	2	95.5	0.0	28.0	20.7	7.8	
J.806	2	89.4	0.0	35.2	21.7	7.4	
J.807	1	52.9	0.0	30.7	27.1	7.4	
J.808	1	53.8	0.0	44.3	22.1	6.9	
J.901	2	94.2	0.0	39.0	31.7	6.8	
J.902	3	129.0	0.0	41.2	32.3	6.7	
J.903	1	67.8	0.0	38.5	30.7	6.9	
J.904	2	87.4	0.0	21.6	21.1	8.1	
J.905	2	95.5	0.0	28.2	20.4	7.8	
J.906	2	89.4	0.0	35.4	21.9	7.4	
J.907	1	52.9	0.0	30.9	27.1	7.4	
J.908	1	53.8	0.0	44.4	22.3	6.9	
J.1001	2	94.2	0.0	58.3	48.2	5.2	
J.1002	3	129.0	0.0	62.9	47.6	5.1	Ceiling insulation R4.0 where roof above
J.1003	1	67.8	0.0	52.3	46.3	5.5	
J.1004	2	87.4	0.0	34.8	34.2	6.9	
J.1005	2	95.5	0.0	45.2	34.3	6.4	
J.1006	2	89.4	0.0	55.1	37.7	5.8	
J.1007	1	52.9	0.0	50.1	45.4	5.6	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
J.1008	1	53.8	0.0	62.0	35.5	5.6	
Building K							
K.G01	1	72.0	0.0	36.2	20.7	7.4	
K.G02	3	117.2	0.0	25.6	39.0	7.1	
K.G03	1	54.3	0.0	22.3	41.2	7.1	
K.G04	2	82.0	0.0	40.6	33.2	6.6	
K.G05	2	79.0	0.0	50.9	26.4	6.4	
K.G06	3	123.3	0.0	27.9	28.4	7.4	
K.G07	3	122.7	0.0	26.8	25.0	7.6	
K.G08	3	160.3	0.0	41.9	39.2	6.3	
K.101	1	59.8	0.0	44.0	27.0	6.8	
K.102	2	80.8	0.0	38.3	26.5	7.1	
K.103	3	117.2	0.0	27.8	27.4	7.4	
K.104	1	54.3	0.0	29.4	28.0	7.4	
K.105	2	82.0	0.0	26.7	21.5	7.8	
K.106	3	121.4	0.0	49.8	17.7	6.9	
K.107	2	82.5	0.0	50.9	26.5	6.4	
K.108	1	62.7	0.0	55.5	23.1	6.4	
K.109	2	87.3	0.0	51.5	24.3	6.6	
K.110	2	87.0	0.0	36.2	23.0	7.3	
K.111	1	59.0	0.0	43.9	44.7	5.9	
K.112	2	86.3	0.0	44.9	35.6	6.3	
K.201	2	93.3	0.0	49.6	46.0	5.6	
K.202	2	80.6	0.0	27.0	25.5	7.6	
K.203	3	117.2	0.0	22.7	28.2	7.7	
K.204	1	54.3	0.0	27.2	28.5	7.4	
K.205	2	82.0	0.0	27.2	21.3	7.8	
K.206	3	121.4	0.0	35.5	17.4	7.6	
K.207	2	82.5	0.0	42.7	21.8	7.1	
K.208	1	62.7	0.0	50.9	19.1	6.8	
K.209	2	87.3	0.0	46.4	19.0	7.0	
K.210	1	65.2	0.0	49.9	22.9	6.7	
K.211	1	61.7	0.0	37.5	24.9	7.2	
K.212	2	84.0	0.0	47.8	27.5	6.6	
K.213	2	86.8	0.0	39.1	24.8	7.1	
K.214	1	58.1	0.0	35.5	39.9	6.6	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
K.215	2	86.3	0.0	30.6	33.5	7.1	
K.301	2	93.3	0.0	55.7	36.1	5.8	
K.302	2	80.6	0.0	39.7	20.6	7.3	
K.303	3	117.2	0.0	23.7	26.3	7.7	
K.304	1	54.3	0.0	31.6	26.1	7.4	
K.305	2	82.0	0.0	25.3	20.1	7.9	
K.306	3	121.4	0.0	38.3	18.2	7.4	
K.307	2	82.5	0.0	44.0	22.4	6.9	
K.308	1	62.7	0.0	48.9	21.5	6.8	
K.309	2	87.3	0.0	47.2	22.7	6.8	
K.310	1	65.2	0.0	50.6	21.4	6.7	
K.311	1	61.7	0.0	46.3	28.1	6.6	
K.312	2	84.0	0.0	50.4	25.5	6.5	
K.313	2	86.7	0.0	39.7	21.3	7.2	
K.314	1	58.1	0.0	25.1	44.4	6.8	
K.315	2	86.3	0.0	39.7	30.2	6.8	
K.401	3	93.3	0.0	62.2	38.0	5.4	R4.0 ceiling insulation where roof above
K.402	3	80.6	0.0	41.4	28.4	6.8	
K.403	3	117.2	0.0	33.7	38.4	6.7	
K.404	1	54.3	0.0	35.2	36.3	6.7	
K.405	2	82.0	0.0	27.0	34.5	7.2	
K.406	2	121.4	0.0	39.6	19.9	7.3	
K.407	3	82.5	0.0	45.4	25.9	6.8	
K.409	3	62.7	0.0	45.8	24.3	6.8	
K.410	2	87.3	0.0	46.3	22.5	6.9	
K.411	3	65.2	0.0	54.7	23.6	6.4	
K.412	3	61.7	0.0	51.9	30.0	6.3	
K.413	3	84.0	0.0	50.5	28.5	6.4	
K.414	2	86.9	0.0	47.1	25.9	6.7	
K.415	3	58.1	0.0	39.8	40.9	6.3	
K.416	3	86.3	0.0	35.9	40.7	6.5	
K.501	4	192.7	0.0	41.0	55.9	5.6	
K.502	4	202.3	0.0	39.1	58.7	5.6	
K.503	2	117.3	0.0	55.1	35.4	5.9	
K.504	3	202.6	0.0	39.5	33.9	6.7	
K.505	3	163.2	0.0	58.3	63.1	4.7	Window upgrade 1 to living room west facing sliding door

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M²)		Predict. loads (MJ/M²/y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
Building L							
L.101	1	67.1	0.0	50.8	47.7	5.5	
L.102	2	83.3	0.0	29.8	50.1	6.4	
L.103	3	117.6	0.0	47.8	41.4	5.9	
L.104	1	54.3	0.0	50.4	36.0	6.0	
L.105	2	82.1	0.0	40.8	39.6	6.3	
L.106	1	59.9	0.0	54.0	26.8	6.3	
L.107	3	115.9	0.0	31.4	56.9	5.9	
L.108	1	62.1	0.0	39.1	57.3	5.6	
L.109	3	114.4	0.0	53.8	21.4	6.6	
L.110	1	68.9	0.0	57.2	46.8	5.3	Glazing upgrade 2
L.111	2	86.6	0.0	31.2	32.8	7.1	
L.112	2	94.7	0.0	42.4	45.4	5.9	
L.113	2	90.9	0.0	54.6	29.3	6.2	
L.114	1	49.9	0.0	25.2	39.2	7.1	
L.115	2	86.2	0.0	29.5	43.1	6.7	
L.201	1	67.1	0.0	61.6	53.4	4.9	
L.202	2	83.3	0.0	32.4	60.0	5.8	Glazing upgrade 1
L.203	3	117.6	0.0	35.9	38.5	6.6	Glazing upgrade 1
L.204	1	54.3	0.0	37.5	37.3	6.6	
L.205	2	82.8	0.0	49.6	28.3	6.4	
L.206	1	59.9	0.0	34.7	30.6	7.0	
L.207	3	115.8	0.0	42.7	57.6	5.4	Glazing upgrade 1
L.208	1	62.1	0.0	40.2	57.0	5.6	Glazing upgrade 1
L.209	3	114.4	0.0	27.1	25.1	7.6	
L.210	1	69.2	0.0	39.5	56.9	5.6	
L.211	2	86.6	0.0	31.5	27.8	7.3	
L.212	2	95.3	0.0	35.8	49.6	6.1	
L.213	2	90.9	0.0	42.9	37.6	6.3	
L.214	1	49.9	0.0	33.2	45.5	6.4	
L.215	2	86.2	0.0	39.9	42.2	6.2	
L.301	2	98.7	0.0	42.7	48.5	5.8	
L.302	2	83.3	0.0	24.0	60.2	6.1	
L.303	3	117.7	0.0	16.5	47.4	7.1	
L.304	1	54.3	0.0	26.4	27.0	7.6	
L.305	2	82.8	0.0	32.2	22.9	7.4	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
L.306	1	59.9	0.0	17.4	22.7	8.2	
L.307	3	115.8	0.0	29.7	42.7	6.7	
L.308	1	56.7	0.0	11.4	34.3	7.9	
L.309	3	113.7	0.0	29.0	17.9	7.9	
L.310	1	68.6	0.0	33.6	37.0	6.8	
L.311	2	84.6	0.0	28.5	20.6	7.8	
L.312	2	95.5	0.0	27.3	31.8	7.3	
L.313	2	89.8	0.0	35.6	29.0	7.1	
L.314	1	52.9	0.0	35.5	26.1	7.2	
L.315	2	86.1	0.0	34.1	32.4	6.9	
L.401	2	98.7	0.0	48.8	53.0	5.4	
L.402	2	83.3	0.0	22.8	62.0	6.1	
L.403	3	117.7	0.0	12.0	49.9	7.2	
L.404	1	54.3	0.0	24.6	26.8	7.7	
L.405	2	82.8	0.0	29.8	23.4	7.6	
L.406	1	59.9	0.0	13.6	23.0	8.4	
L.407	3	115.8	0.0	29.6	42.1	6.7	
L.408	1	56.7	0.0	11.9	33.8	7.9	
L.409	3	113.7	0.0	25.1	17.8	8.1	
L.410	1	68.6	0.0	28.5	34.5	7.1	
L.411	2	84.4	0.0	28.9	20.1	7.8	
L.412	2	95.5	0.0	27.3	31.3	7.3	
L.413	2	89.8	0.0	35.5	28.6	7.1	
L.414	1	52.9	0.0	36.2	26.1	7.2	
L.415	2	86.1	0.0	33.9	31.6	7.0	
L.501	1	64.2	0.0	54.6	44.3	5.5	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.502	2	83.3	0.0	32.8	57.2	5.9	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.503	3	117.7	0.0	22.8	54.0	6.5	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.504	1	54.3	0.0	36.7	39.8	6.5	R4.0 ceiling insulation
L.505	2	82.8	0.0	44.7	38.6	6.2	
L.506	1	59.9	0.0	29.0	35.5	7.1	
L.507	3	115.8	0.0	53.9	60.1	4.9	
L.508	1	56.7	0.0	13.1	35.0	7.8	
L.509	3	113.7	0.0	28.5	19.6	7.8	
L.510	1	68.6	0.0	29.8	37.6	6.9	
L.511	2	83.6	0.0	28.7	19.9	7.8	

Issued in accordance with BASIX Thermal Comfort Simulation Method

Certificate # HR-O61NJK-01							Accreditation # HERA10213
Thermal performance specifications							
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)		
L.512	2	95.5	0.0	27.6	31.4	7.3	
L.513	2	89.8	0.0	35.7	28.9	7.1	
L.514	1	52.9	0.0	36.5	25.6	7.2	
L.515	2	86.1	0.0	36.6	34.1	6.8	
L.601	2	83.2	0.0	30.2	19.8	7.7	
L.602	2	95.5	0.0	28.5	32.7	7.2	
L.603	2	89.8	0.0	36.5	29.3	7.0	
L.604	1	52.8	0.0	39.3	27.7	6.9	
L.605	1	58.9	0.0	40.4	53.1	5.7	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.701	4	253.2	0.0	39.7	39.3	6.4	
L.702	2	208.6	0.0	52.0	27.1	6.4	
L.703	2	150.8	0.0	31.1	24.8	7.4	
L.801	4	253.2	0.0	50.3	34.2	6.1	
L.802	2	208.6	0.0	50.8	28.4	6.4	
L.803	2	150.8	0.0	31.3	24.7	7.4	
L.901	4	253.2	0.0	52.9	33.2	6.0	
L.902	2	208.6	0.0	54.0	26.2	6.3	
L.903	2	150.8	0.0	32.8	24.2	7.4	
L.1001	4	253.2	0.0	53.2	32.6	6.1	
L.1002	2	208.6	0.0	52.7	27.4	6.3	
L.1003	2	150.8	0.0	33.0	24.0	7.4	
L.1101	4	253.2	0.0	53.4	32.5	6.1	
L.1102	2	208.6	0.0	54.4	26.3	6.3	
L.1103	2	150.8	0.0	33.2	23.9	7.4	
L.1201	4	253.2	0.0	53.6	32.5	6.0	
L.1202	2	208.6	0.0	54.6	26.3	6.3	
L.1203	2	150.8	0.0	33.2	23.9	7.4	
L.1301	4	253.2	0.0	61.7	42.2	5.3	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.1302	3	208.6	0.0	61.8	35.3	5.6	glazing upgrade 2, Ceiling insulation upgrade R4.0
L.1303	4	150.8	0.0	48.4	37.6	6.1	

Nationwide House Energy Rating Scheme — Class 2 Summary

NatHERS Certificate No. #HR-O61NJK-01

Generated on 06 Apr 2023 using Hero 3.0.1

Property

Address Mulgoa Road, Penrith, NSW, 2750

Lot/DP 59/1256085

NatHERS climate zone 28 - Richmond

Accredited assessor



Haylea Edwards

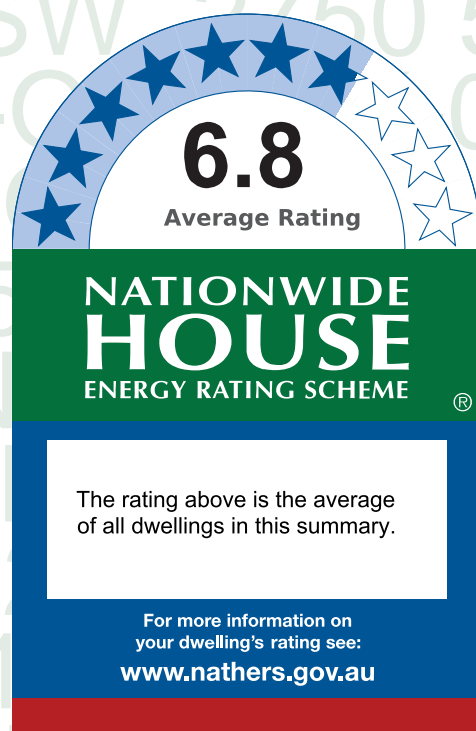
Efficient Living Pty Ltd

haylea@efficientliving.com.au

+61 9970 6181

Accreditation No. 10213

Assessor Accrediting Organisation HERA



Verification

To verify this certificate, scan the QR code or visit <http://www.hero-software.com.au/pdf/HR-O61NJK-01>. When using either link, ensure you are visiting <http://www.hero-software.com.au>

Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-6KNBQK-01	L. 105	40.8	39.6	80.4	6.3
HR-ODAZIW-01	L.106	54.0	26.8	80.9	6.3
HR-1D8K94-01	H.101	38.1	30.0	68.1	6.9
HR-0SH0S0-01	H.102	12.5	33.8	46.3	7.9

National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-3GX27E-01	H.103	17.3	22.9	40.2	8.2
HR-Q6YS3F-01	H.104	22.8	21.8	44.6	7.9
HR-08O7ZK-01	H.105	54.3	13.5	67.9	6.9
HR-Y0AEE6-01	H.106	58.6	17.5	76.1	6.5
HR-GF0RK0-01	H.107	45.0	21.4	66.5	6.9
HR-FZX7XR-01	H.108	54.5	19.3	73.7	6.6
HR-M9ACIJ-01	H.109	41.5	33.2	74.7	6.6
HR-B4T8OV-01	H.110	60.9	22.4	83.3	6.2
HR-DMIKKA-01	H.201	49.5	40.7	90.3	5.9
HR-T3ALF2-01	H.202	23.0	40.7	63.6	7.1
HR-5HLMFQ-01	H.203	12.8	31.4	44.2	7.9
HR-S537LX-01	H.204	26.5	27.4	53.9	7.5
HR-9QKPAH-01	H.205	23.7	20.9	44.7	7.9
HR-YFGMH9-01	H.206	30.2	14.3	44.5	7.9
HR-9EPODT-01	H.207	36.0	18.2	54.2	7.5
HR-WB74JS-01	H.208	41.5	22.9	64.4	7.1
HR-HWKZWS-01	H.209	43.1	21.8	64.9	7.0
HR-YY19HO-01	H.210	41.9	27.6	69.5	6.8
HR-CN7T2V-01	H.211	42.9	27.7	70.6	6.8
HR-5N9N5S-01	H.212	37.6	25.4	63.0	7.1
HR-73LCY1-01	H.213	32.1	21.1	53.2	7.6
HR-86G6ON-01	H.214	32.5	37.8	70.3	6.8
HR-LT4NRO-01	H.215	39.9	24.4	64.3	7.1
HR-K9PXIZ-01	H.301	51.5	37.9	89.5	5.9
HR-VIB3WV-01	H.302	23.7	40.3	64.0	7.1
HR-4B7DI1-01	H.303	16.5	25.9	42.5	8.1
HR-0QH99B-01	H.304	19.2	21.2	40.5	8.2
HR-QW55Q5-01	H.305	24.9	19.0	43.9	8.0
HR-4NR6SA-01	H.306	32.5	13.4	45.9	7.9



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-YCJ2Z4-01	H.307	38.1	18.5	56.7	7.4
HR-9APXRG-01	H.308	53.4	19.0	72.4	6.7
HR-B7347I-01	H.309	46.7	21.2	67.9	6.9
HR-V6MM7A-01	H.310	46.3	27.4	73.7	6.7
HR-VMNCMQ-01	H.311	48.0	28.8	76.7	6.5
HR-LJHFSN-01	H.312	38.5	24.5	63.1	7.1
HR-DLQSKN-01	H.313	32.6	20.1	52.7	7.6
HR-558ARF-01	H.314	34.9	39.4	74.3	6.6
HR-0U10PM-01	H.315	42.7	21.9	64.6	7.1
HR-SRPJU5-01	H.401	61.0	56.7	117.6	4.8
HR-OAJRLH-01	H.402	46.4	55.5	102.0	5.4
HR-CWR1DG-01	H.403	31.4	43.1	74.5	6.6
HR-KCN2N5-01	H.404	27.3	36.6	63.9	7.1
HR-PIKG9R-01	H.405	30.2	42.0	72.2	6.7
HR-IW3PO7-01	H.406	49.1	23.9	73.0	6.7
HR-G4I4I7-01	H.407	50.2	50.6	100.9	5.4
HR-JHZJO3-01	H.408	41.4	45.9	87.3	5.9
HR-Y6C4K8-01	H.409	44.6	34.8	79.4	6.4
HR-7NMXEQ-01	H.410	55.3	37.7	93.0	5.8
HR-9Z22HP-01	H.411	62.3	42.3	104.6	5.3
HR-I004TF-01	H.412	53.1	37.1	90.2	5.9
HR-QFPKBV-01	H.413	40.5	28.9	69.4	6.8
HR-CZ2U6X-01	H.414	43.7	57.3	101.0	5.4
HR-ONUPKL-01	H.415	58.7	38.6	97.3	5.6
HR-93DYZA-01	H.G01	25.3	32.2	57.5	7.4
HR-PA8NIR-01	H.G02	16.1	47.6	63.7	7.1
HR-9XH7NE-01	H.G03	10.3	43.5	53.8	7.6
HR-K63Y4I-01	H.G04	26.7	41.6	68.3	6.9
HR-PCY8A5-01	H.G05	50.7	25.2	75.8	6.6



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-N0TUL1-01	H. G06	22.8	45.1	67.9	6.9
HR-BZ6ET3-01	H. G07	15.9	35.0	50.9	7.7
HR-0CW5W6-01	H.G08	26.1	49.6	75.7	6.6
HR-TJDHIH-01	H.G09	56.0	18.6	74.6	6.6
HR-ZZ3OKF-01	J.1001	58.3	48.2	106.5	5.2
HR-TMFGP2-01	J.1002	62.9	47.6	110.5	5.1
HR-IHP0F2-01	J.1003	52.3	46.3	98.6	5.5
HR-G77LVZ-01	J.1004	34.8	34.2	69.0	6.9
HR-CS74Y7-01	J.1005	45.2	34.3	79.5	6.4
HR-A824Z5-01	J.1006	55.1	37.7	92.9	5.8
HR-NZ6IR0-01	J.1007	50.1	45.4	95.5	5.6
HR-95PVNO-01	J.1008	62.0	35.5	97.4	5.6
HR-U530I4-01	J.101	44.7	41.0	85.7	6.1
HR-ANCIK0-01	J.102	18.8	36.6	55.4	7.4
HR-25CPE1-01	J.103	9.6	44.4	54.0	7.5
HR-1IV8UP-01	J.104	48.6	31.4	80.0	6.4
HR-3JHN2N-01	J.105	31.1	38.3	69.4	6.8
HR-E0JYIA-01	J.106	34.2	26.6	60.8	7.2
HR-KYWCXZ-01	J.107	31.0	47.0	77.9	6.4
HR-KRU52N-01	J.108	29.3	43.8	73.1	6.7
HR-KHW59Y-01	J.109	44.5	18.5	63.0	7.1
HR-U67ANC-01	J.110	57.6	29.3	86.9	6.0
HR-R2H38U-01	J.111	22.6	31.4	54.0	7.5
HR-PBAZ98-01	J.112	21.7	26.2	47.9	7.8
HR-6SSLGX-01	J.113	30.1	28.4	58.4	7.3
HR-3SZPP8-01	J.114	20.5	37.4	57.9	7.4
HR-791RWJ-01	J.115	32.4	34.9	67.3	6.9
HR-JRLDEE-01	J.201	48.7	55.4	104.1	5.3
HR-Y2U9I5-01	J.202	22.5	57.0	79.4	6.4



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-FDRZA1-01	J.203	18.0	59.8	77.8	6.4
HR-BWH54T-01	J.204	28.0	40.8	68.8	6.9
HR-JN1BQB-01	J.205	27.6	41.4	69.1	6.9
HR-YQJ316-01	J.206	23.1	30.8	54.0	7.5
HR-DLOVLS-01	J.207	40.2	56.5	96.7	5.6
HR-GAHTQK-01	J.208	39.8	47.2	87.0	6.0
HR-KY4CQG-01	J.209	36.6	21.5	58.1	7.4
HR-KGUEU9-01	J.210	29.8	57.0	86.8	6.0
HR-6RG243-01	J.211	28.2	29.8	57.9	7.4
HR-07QO5H-01	J.212	26.4	34.9	61.3	7.2
HR-333XS5-01	J.213	35.4	39.3	74.7	6.6
HR-MVOUQ4-01	J.214	31.5	39.4	70.9	6.8
HR-I0GE5G-01	J.215	45.8	40.5	86.4	6.0
HR-TP2CDI-01	J.301	46.6	36.0	82.6	6.2
HR-AE3582-01	J.302	19.0	38.3	57.3	7.4
HR-98CPGV-01	J.303	18.6	28.3	46.9	7.9
HR-DX4Y2R-01	J.304	28.8	18.5	47.3	7.9
HR-S39C98-01	J.305	36.9	18.4	55.3	7.4
HR-TY3BL8-01	J.306	28.1	17.7	45.8	7.9
HR-JGNT37-01	J.307	30.4	37.1	67.5	6.9
HR-EOZ85Z-01	J.308	26.6	29.5	56.1	7.4
HR-S3YBE2-01	J.309	33.2	14.3	47.5	7.8
HR-BFZZAF-01	J.310	45.8	26.2	72.0	6.7
HR-DROTCS-01	J.311	27.6	17.7	45.4	7.9
HR-9UX029-01	J.312	28.1	20.8	48.9	7.8
HR-EKCO92-01	J.313	34.8	23.0	57.8	7.4
HR-6LPKSQ-01	J.314	40.3	19.0	59.3	7.3
HR-4NE2VF-01	J.315	48.3	25.8	74.0	6.6
HR-DL3MQG-01	J.401	49.6	43.3	92.9	5.8



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-QNTHQR-01	J.402	25.1	52.3	77.4	6.4
HR-0OGTZL-01	J.403	20.9	23.8	44.7	7.9
HR-Q7BTKX-01	J.404	24.9	17.6	42.6	8.1
HR-GZ0THD-01	J.405	34.5	18.6	53.2	7.6
HR-QIAM6C-01	J.406	24.7	17.3	42.0	8.1
HR-AZ5JTP-01	J.407	30.2	37.3	67.4	6.9
HR-Q4IAKB-01	J.408	26.4	27.9	54.2	7.5
HR-LHDCMF-01	J.409	29.3	14.6	43.8	8.0
HR-TBDK9O-01	J.410	41.1	26.5	67.5	6.9
HR-VY7KZE-01	J.411	27.1	17.5	44.6	7.9
HR-KICURI-01	J.412	27.5	20.8	48.3	7.8
HR-H8AVP5-01	J.413	34.4	22.2	56.6	7.4
HR-MQTCOV-01	J.414	40.3	18.4	58.7	7.3
HR-8EYGVY-01	J.415	42.4	25.5	67.9	6.9
HR-KAIUE4-01	J.501	59.6	30.4	90.1	5.9
HR-9RUMBB-01	J.502	37.3	55.8	93.1	5.7
HR-2NLHLI-01	J.503	37.4	37.9	75.3	6.6
HR-9G591F-01	J.504	42.2	28.2	70.4	6.8
HR-OGVPLA-01	J.505	49.2	32.6	81.8	6.3
HR-SCBF99-01	J.506	41.9	30.4	72.3	6.7
HR-RN2O0N-01	J.507	51.7	55.9	107.6	5.2
HR-YGPJJ2-01	J.508	27.8	30.1	57.9	7.4
HR-BJ4ZMM-01	J.509	39.9	22.0	61.9	7.2
HR-QEORHC-01	J.510	42.4	28.7	71.1	6.8
HR-V8CCQ8-01	J.511	27.1	17.5	44.6	7.9
HR-4T0WA6-01	J.512	27.2	21.1	48.2	7.8
HR-4G9ESD-01	J.513	34.5	21.9	56.4	7.4
HR-E66B8B-01	J.514	40.6	18.5	59.1	7.3
HR-VPWFQ6-01	J.515	42.7	25.5	68.2	6.9



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-EXHWPG-01	J.601	54.2	35.9	90.2	5.9
HR-L3YP6S-01	J.602	34.9	20.6	55.5	7.4
HR-D0T8LV-01	J.603	23.5	22.3	45.7	7.9
HR-ZTZO9H-01	J.604	29.6	30.5	60.1	7.3
HR-TIMYOL-01	J.605	39.2	32.9	72.1	6.7
HR-MU7ZL1-01	J.606	42.2	27.1	69.3	6.8
HR-ETPGOF-01	J.607	50.0	29.4	79.4	6.4
HR-385JZZ-01	J.701	40.7	32.2	72.9	6.7
HR-8A8IPC-01	J.702	54.3	32.2	86.5	6.0
HR-D8JHDZ-01	J.703	38.1	34.4	72.5	6.7
HR-SF6N45-01	J.704	22.5	20.6	43.1	8.0
HR-G4FKV8-01	J.705	28.3	20.9	49.2	7.8
HR-56ECZU-01	J.706	35.6	22.6	58.2	7.4
HR-3CTNO9-01	J.707	31.0	27.2	58.2	7.4
HR-SWNX6B-01	J.708	44.0	22.1	66.1	6.9
HR-GR6F6I-01	J.801	38.8	31.2	70.0	6.8
HR-KA3NT0-01	J.802	41.8	30.3	72.1	6.7
HR-MEE4HN-01	J.803	38.4	30.8	69.1	6.9
HR-FCJJUT-01	J.804	26.9	17.0	43.9	8.0
HR-UCQEZ1-01	J.805	28.0	20.7	48.7	7.8
HR-XXSQN0-01	J.806	35.2	21.7	56.9	7.4
HR-MZPRVQ-01	J.807	30.7	27.1	57.8	7.4
HR-3ZP905-01	J.808	44.3	22.1	66.4	6.9
HR-IGUDUW-01	J.901	39.0	31.7	70.7	6.8
HR-8X01OR-01	J.902	41.2	32.3	73.5	6.7
HR-Q7BBAY-01	J.903	38.5	30.7	69.2	6.9
HR-EMJNBX-01	J.904	21.6	21.1	42.7	8.1
HR-9ZDNGQ-01	J.905	28.2	20.4	48.6	7.8
HR-PAKFAQ-01	J.906	35.4	21.9	57.3	7.4



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-ITUQOW-01	J.907	30.9	27.1	58.0	7.4
HR-7XZ63E-01	J.908	44.4	22.3	66.8	6.9
HR-AXIXBD-01	K.101	44.0	27.0	70.9	6.8
HR-JHW9CS-01	K.102	38.3	26.5	64.8	7.1
HR-37ITXQ-01	K.103	27.8	27.4	55.3	7.4
HR-YB9Z2V-01	K.104	29.4	28.0	57.5	7.4
HR-3JZ41K-01	K.105	26.7	21.5	48.1	7.8
HR-KYA5D6-01	K.106	49.8	17.7	67.6	6.9
HR-XC3LFZ-01	K.107	50.9	26.5	77.4	6.4
HR-SN0RNU-01	K.108	55.5	23.1	78.6	6.4
HR-8Y9QFR-01	K.109	51.5	24.3	75.8	6.6
HR-QUF3AA-01	K.110	36.2	23.0	59.3	7.3
HR-GYX5AF-01	K.111	43.9	44.7	88.6	5.9
HR-KX8674-01	K.112	44.9	35.6	80.4	6.3
HR-7KY4QX-01	K.201	49.6	46.0	95.6	5.6
HR-8NFH4T-01	K.202	27.0	25.5	52.5	7.6
HR-C6TUQ6-01	K.203	22.7	28.2	50.9	7.7
HR-E02QUU-01	K.204	27.2	28.5	55.7	7.4
HR-IYP8FQ-01	K.205	27.2	21.3	48.6	7.8
HR-ZT4RUW-01	K.206	35.5	17.4	52.9	7.6
HR-ADJV5A-01	K.207	42.7	21.8	64.5	7.1
HR-7IT7O9-01	K.208	50.9	19.1	70.0	6.8
HR-81QO25-01	K.209	46.4	19.0	65.4	7.0
HR-9NHXU3-01	K.210	49.9	22.9	72.8	6.7
HR-41PL7Z-01	K.211	37.5	24.9	62.4	7.2
HR-AQZBR3-01	K.212	47.8	27.5	75.3	6.6
HR-KUS66N-01	K.213	39.1	24.8	64.0	7.1
HR-AY5V60-01	K.214	35.5	39.9	75.4	6.6
HR-58EVRY-01	K.215	30.6	33.5	64.1	7.1



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-8A38OM-01	K.301	55.7	36.1	91.8	5.8
HR-G8QA70-01	K.302	39.7	20.6	60.3	7.3
HR-6ML849-01	K.303	23.7	26.3	50.0	7.7
HR-VA520J-01	K.304	31.6	26.1	57.7	7.4
HR-ZVLZTI-01	K.305	25.3	20.1	45.5	7.9
HR-XP8543-01	K.306	38.3	18.2	56.4	7.4
HR-UHH2Y0-01	K.307	44.0	22.4	66.4	6.9
HR-WSREW3-01	K.308	48.9	21.5	70.5	6.8
HR-BA3AB6-01	K.309	47.2	22.7	69.9	6.8
HR-QM7YQC-01	K.310	50.6	21.4	72.0	6.7
HR-P05BFL-01	K.311	46.3	28.1	74.4	6.6
HR-D885U3-01	K.312	50.4	25.5	75.9	6.5
HR-XST8M8-01	K.313	39.7	21.3	61.0	7.2
HR-VU4B84-01	K.314	25.1	44.4	69.5	6.8
HR-0VOLSP-01	K.315	39.7	30.2	69.8	6.8
HR-5J5YGC-01	K.401	62.2	38.0	100.2	5.4
HR-N56L8M-01	K.402	41.4	28.4	69.7	6.8
HR-LH0DDV-01	K.403	33.7	38.4	72.1	6.7
HR-M3O1NF-01	K.404	35.2	36.3	71.6	6.7
HR-KUTO2C-01	K.405	27.0	34.5	61.5	7.2
HR-BW7K8Z-01	K.406	39.6	19.9	59.4	7.3
HR-RPP0QL-01	K.407	45.4	25.9	71.2	6.8
HR-YZ2908-01	K.408	45.8	24.3	70.2	6.8
HR-RLN0UL-01	K.409	46.3	22.5	68.8	6.9
HR-6U101L-01	K.410	54.7	23.6	78.2	6.4
HR-V3FWQ7-01	K.411	51.9	30.0	81.9	6.3
HR-NQ4TKV-01	K.412	50.5	28.5	78.9	6.4
HR-0UIT99-01	K.413	47.1	25.9	73.0	6.7
HR-WP1AVE-01	K.414	39.8	40.9	80.7	6.3



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-NDD7N6-01	K.415	35.9	40.7	76.5	6.5
HR-UEKT8L-01	K.501	41.0	55.9	96.9	5.6
HR-HL2IVE-01	K.502	39.1	58.7	97.8	5.6
HR-3KNAAJ-01	K.503	55.1	35.4	90.6	5.9
HR-PDPQHT-01	K.504	39.5	33.9	73.4	6.7
HR-XF0BGT-01	K.505	58.3	63.1	121.4	4.7
HR-J7GYLU-01	K.G01	36.2	20.3	56.5	7.4
HR-TND9VI-01	K.G02	25.6	39.0	64.6	7.1
HR-TLG8IB-01	K.G03	22.3	41.2	63.5	7.1
HR-QLUPHM-01	K.G04	40.6	33.2	73.8	6.6
HR-6YY4SL-01	K.G05	50.9	26.4	77.3	6.4
HR-PZHSPC-01	K.G06	27.9	28.4	56.3	7.4
HR-0F64UR-01	K.G07	26.8	25.0	51.8	7.6
HR-GSV7OD-01	K.G08	41.9	39.2	81.1	6.3
HR-YGMIGN-01	L.1001	53.2	32.6	85.8	6.1
HR-SUUUXY-01	L.1002	52.7	27.4	80.1	6.3
HR-F8ERNO-01	L.1003	33.0	24.0	57.0	7.4
HR-2767AG-01	L.101	50.8	47.7	98.4	5.5
HR-EQ12C9-01	L.102	29.8	50.1	79.9	6.4
HR-50CG9B-01	L.103	47.8	41.4	89.3	5.9
HR-XAGLVH-01	L.104	50.4	36.0	86.4	6.0
HR-NVBXGM-01	L.107	31.4	56.9	88.3	5.9
HR-3C7MUC-01	L.108	39.1	57.3	96.5	5.6
HR-GLOZOP-01	L.109	53.8	21.4	75.2	6.6
HR-XQHGY1-01	L.110	57.2	46.8	104.1	5.3
HR-R93T18-01	L.1101	53.4	32.5	85.9	6.1
HR-GTEME5-01	L.1102	54.4	26.3	80.8	6.3
HR-C64SRB-01	L.1103	33.2	23.9	57.2	7.4
HR-3MW5ZM-01	L.111	31.2	32.8	64.0	7.1



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-FVJ5JO-01	L. 112	42.4	45.4	87.8	5.9
HR-2Z3SZU-01	L. 113	54.6	29.3	83.9	6.2
HR-PZUKF9-01	L. 114	25.2	39.2	64.4	7.1
HR-86UCXN-01	L. 115	29.5	43.1	72.6	6.7
HR-U0MG39-01	L.1201	53.6	32.5	86.1	6.0
HR-I83A7D-01	L.1202	54.6	26.3	80.8	6.3
HR-DRDWD5-01	L.1203	33.2	23.9	57.1	7.4
HR-7XDGUZ-01	L.1301	61.7	42.2	103.9	5.3
HR-EU6W59-01	L.1302	61.8	35.3	97.1	5.6
HR-G9AY6W-01	L.1303	48.4	37.6	85.9	6.1
HR-DCHO9W-01	L.201	61.6	53.4	115.0	4.9
HR-AECKVR-01	L.202	32.4	60.0	92.4	5.8
HR-H2ZCSV-01	L.203	35.9	38.5	74.4	6.6
HR-S9NS3Q-01	L.204	37.5	37.3	74.8	6.6
HR-4E9JNM-01	L.205	49.6	28.3	77.9	6.4
HR-L6A5YM-01	L.206	34.7	30.6	65.2	7.0
HR-0T0RO0-01	L.207	42.7	57.6	100.3	5.4
HR-1EI2ZE-01	L.208	40.2	57.0	97.2	5.6
HR-7H8APS-01	L.209	27.1	25.1	52.2	7.6
HR-IMJNFQ-01	L.210	39.5	56.9	96.4	5.6
HR-EI300W-01	L.211	31.5	27.8	59.2	7.3
HR-NY8D4Q-01	L.212	35.8	49.6	85.4	6.1
HR-ERYTLW-01	L.213	42.9	37.6	80.5	6.3
HR-2LGVEN-01	L.214	33.2	45.5	78.7	6.4
HR-8WNQG5-01	L.215	39.9	42.2	82.1	6.2
HR-6HWN26-01	L.301	42.7	48.5	91.1	5.8
HR-37KRCV-01	L.302	24.0	60.2	84.3	6.1
HR-FGUOQG-01	L.303	16.5	47.4	63.9	7.1
HR-RSDWKX-01	L.304	26.4	27.0	53.4	7.6



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-6ZSG98-01	L. 305	32.2	22.9	55.2	7.4
HR-88P6TS-01	L. 306	17.4	22.7	40.1	8.2
HR-2V7WYG-01	L. 307	29.7	42.7	72.4	6.7
HR-X5F3JE-01	L.308	11.4	34.3	45.7	7.9
HR-I7Y8I9-01	L.309	29.0	17.9	46.9	7.9
HR-DU7FTE-01	L. 310	33.6	37.0	70.6	6.8
HR-SAPE9J-01	L. 311	28.5	20.6	49.1	7.8
HR-3AL9B2-01	L. 312	27.3	31.8	59.1	7.3
HR-ZFY2EE-01	L. 313	35.6	29.0	64.6	7.1
HR-57BFXB-01	L. 314	35.5	26.1	61.6	7.2
HR-L7BA7J-01	L.315	34.1	32.4	66.5	6.9
HR-2X2DAN-01	L.401	48.8	53.0	101.8	5.4
HR-SBQ9JW-01	L.402	22.8	62.0	84.7	6.1
HR-IG3Y6T-01	L.403	12.0	49.9	61.9	7.2
HR-IU8O32-01	L.404	24.6	26.8	51.5	7.7
HR-O1UEW6-01	L.405	29.8	23.4	53.2	7.6
HR-QWQ20L-01	L.406	13.6	23.0	36.6	8.4
HR-CCG6GF-01	L.407	29.6	42.1	71.7	6.7
HR-BVM9OB-01	L.408	11.9	33.8	45.6	7.9
HR-H8Z8SL-01	L.409	25.1	17.8	42.9	8.1
HR-C0I8VO-01	L.410	28.5	34.5	63.0	7.1
HR-N5GHXF-01	L.411	28.9	20.1	49.0	7.8
HR-4D6ZS1-01	L.412	27.3	31.3	58.6	7.3
HR-9ZPCB4-01	L.413	35.5	28.6	64.1	7.1
HR-2JM5GI-01	L.414	36.2	26.1	62.2	7.2
HR-6KKM1Y-01	L.415	33.9	31.6	65.5	7.0
HR-FGHV18-01	L.501	54.6	44.3	98.9	5.5
HR-V22X7A-01	L.502	32.8	57.2	90.0	5.9
HR-ZD4XOV-01	L.503	22.8	54.0	76.9	6.5



Summary of all dwellings

Certificate number and link	Unit Number	Heating load (MJ/m ²)	Cooling load (MJ/m ²)	Total load (MJ/m ²)	Star rating
HR-DH87JQ-01	L.504	36.7	39.8	76.4	6.5
HR-RGEOXV-01	L.505	44.7	38.6	83.2	6.2
HR-52BKK8-01	L.506	29.0	35.5	64.6	7.1
HR-KHZ9QJ-01	L.507	53.9	60.1	114.0	4.9
HR-YIAUZV-01	L.508	13.1	35.0	48.1	7.8
HR-XYVA9U-01	L.509	28.5	19.6	48.1	7.8
HR-R5DA1D-01	L.510	29.8	37.6	67.4	6.9
HR-6RO3WX-01	L.511	28.7	19.9	48.6	7.8
HR-9V3QYY-01	L.512	27.6	31.4	59.0	7.3
HR-HYL0G4-01	L.513	35.7	28.9	64.5	7.1
HR-U4BSBL-01	L.514	36.5	25.6	62.1	7.2
HR-H9JNML-01	L.515	36.6	34.1	70.7	6.8
HR-2SLRUL-01	L.601	30.2	19.8	50.0	7.7
HR-BWK7KQ-01	L.602	28.5	32.7	61.3	7.2
HR-WEOT05-01	L.603	36.5	29.3	65.8	7.0
HR-U7CO06-01	L.604	39.3	27.7	67.1	6.9
HR-KZBUL2-01	L.605	40.4	53.1	93.6	5.7
HR-GOX1C0-01	L.701	39.7	39.3	79.0	6.4
HR-KAYV3P-01	L.702	52.0	27.1	79.1	6.4
HR-RU77UR-01	L.703	31.1	24.8	56.0	7.4
HR-HE8XFB-01	L.801	50.3	34.2	84.4	6.1
HR-ID5J14-01	L.802	50.8	28.4	79.2	6.4
HR-FA5D1E-01	L.803	31.3	24.7	56.0	7.4
HR-54P11F-01	L.901	52.9	33.2	86.1	6.0
HR-BD0L6F-01	L.902	54.0	26.2	80.2	6.3
HR-QGW41X-01	L.903	32.8	24.2	57.0	7.4
Average	349x (Total)	37.4	32.1	69.5	6.8

Explanatory Notes

About this report

This summary rating is the average rating of all NCC Class 2 dwellings in a development. The individual dwellings' ratings are a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate the energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances, or energy production of solar panels. For more details about an individual dwelling's assessment, refer to the individual dwelling's NatHERS Certificate (accessible via link).

Accredited Assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO). AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content, input and creation of the NatHERS Certificate is by the assessor. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 705398M_07

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

This certificate is a revision of certificate number 705398M_05 lodged with the consent authority or certifier on 17 August 2022 with application DA22/0545.

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, 13 April 2023

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



Planning,
Industry &
Environment

Project summary

Project name	ESQ 1818 - Building H, J, K & L_07
Street address	65 Mulgoa Road Penrith 2750
Local Government Area	Penrith City Council
Plan type and plan number	deposited 1256085
Lot no.	59/60
Section no.	-
No. of residential flat buildings	4
No. of units in residential flat buildings	349
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

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

Certificate Prepared by

Name / Company Name: Efficient Living

ABN (if applicable): 82116346082

Description of project

Project address

Project name	ESQ 1818 - Building H, J, K & L_07
Street address	65 Mulgoa Road Penrith 2750
Local Government Area	Penrith City Council
Plan type and plan number	deposited 1256085
Lot no.	59/60
Section no.	-

Project type

No. of residential flat buildings	4
No. of units in residential flat buildings	349
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	17330
Roof area (m ²)	5724
Non-residential floor area (m ²)	5220.0
Residential car spaces	526
Non-residential car spaces	78




Common area landscape

Common area lawn (m ²)	5616.0
Common area garden (m ²)	1550.0
Area of indigenous or low water use species (m ²)	0.0

Assessor details

Assessor number	DMN/17/1817
Certificate number	HR-5M54B1-01
Climate zone	28
Ceiling fan in at least one bedroom	No
Ceiling fan in at least one living room or other conditioned area	No

Project score

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

Description of project

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

Residential flat buildings - Building H, 64 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)
H.101 1	58.2	0.0	0.0	0.0	
H.106 2	82.5	0.0	0.0	0.0	
H.201 2	94.2	0.0	0.0	0.0	
H.206 3	121.6	0.0	0.0	0.0	
H.211 2	84.0	0.0	0.0	0.0	
H.301 2	94.2	0.0	0.0	0.0	
H.306 3	121.6	0.0	0.0	0.0	
H.311 2	84.0	0.0	0.0	0.0	
H.401 2	94.2	0.0	0.0	0.0	
H.406 3	121.6	0.0	0.0	0.0	
H.411 3	157.8	0.0	0.0	0.0	
H.G013	146.9	0.0	0.0	0.0	
H.G063	119.4	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)
H.102 3	117.2	0.0	0.0	0.0	
H.107 2	87.3	0.0	0.0	0.0	
H.202 2	81.5	0.0	0.0	0.0	
H.207 2	82.5	0.0	0.0	0.0	
H.212 2	86.7	0.0	0.0	0.0	
H.302 2	81.5	0.0	0.0	0.0	
H.307 2	82.5	0.0	0.0	0.0	
H.312 2	86.7	0.0	0.0	0.0	
H.402 2	81.5	0.0	0.0	0.0	
H.407 2	82.5	0.0	0.0	0.0	
H.412 2	90.2	0.0	0.0	0.0	
H.G022	117.2	0.0	0.0	0.0	
H.G073	119.1	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)
H.103 1	54.3	0.0	0.0	0.0	
H.108 1	53.2	0.0	0.0	0.0	
H.203 3	117.2	0.0	0.0	0.0	
H.208 2	87.3	0.0	0.0	0.0	
H.213 1	53.2	0.0	0.0	0.0	
H.303 3	117.2	0.0	0.0	0.0	
H.308 2	87.3	0.0	0.0	0.0	
H.313 1	53.2	0.0	0.0	0.0	
H.403 3	117.2	0.0	0.0	0.0	
H.408 3	142.2	0.0	0.0	0.0	
H.413 1	53.2	0.0	0.0	0.0	
H.G031	54.3	0.0	0.0	0.0	
H.G083	155.7	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)
H.104 2	82.0	0.0	0.0	0.0	
H.109 2	86.3	0.0	0.0	0.0	
H.204 1	54.3	0.0	0.0	0.0	
H.209 1	65.2	0.0	0.0	0.0	
H.214 2	86.3	0.0	0.0	0.0	
H.304 1	54.3	0.0	0.0	0.0	
H.309 1	65.2	0.0	0.0	0.0	
H.314 2	86.3	0.0	0.0	0.0	
H.404 1	54.3	0.0	0.0	0.0	
H.409 3	145.2	0.0	0.0	0.0	
H.414 2	86.3	0.0	0.0	0.0	
H.G042	81.3	0.0	0.0	0.0	
H.G092	128.8	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)
H.105 3	121.6	0.0	0.0	0.0	
H.110 1	55.8	4.5	0.0	0.0	
H.205 2	82.0	0.0	0.0	0.0	
H.210 1	61.7	0.0	0.0	0.0	
H.215 1	55.8	4.5	0.0	0.0	
H.305 2	82.0	0.0	0.0	0.0	
H.310 1	61.7	0.0	0.0	0.0	
H.315 1	55.8	4.5	0.0	0.0	
H.405 2	82.0	0.0	0.0	0.0	
H.410 3	149.6	0.0	0.0	0.0	
H.415 1	55.8	4.5	0.0	0.0	
H.G052	80.8	0.0	0.0	0.0	

Residential flat buildings - Building J, 114 dwellings, 11 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)
J.101	1	68.3	0.0	0.0	0.0
J.106	1	59.9	0.0	0.0	0.0
J.111	2	87.4	0.0	0.0	0.0
J.201	1	68.3	0.0	0.0	0.0
J.206	1	59.9	0.0	0.0	0.0
J.211	2	87.4	0.0	0.0	0.0
J.301	2	98.7	0.0	0.0	0.0
J.306	1	59.9	0.0	0.0	0.0
J.311	2	87.4	0.0	0.0	0.0
J.401	2	98.7	0.0	0.0	0.0
J.406	1	59.9	0.0	0.0	0.0
J.411	2	87.4	0.0	0.0	0.0
J.501	3	130.9	0.0	0.0	0.0
J.506	1	59.9	0.0	0.0	0.0
J.511	2	87.4	0.0	0.0	0.0
J.601	2	84.5	0.0	0.0	0.0
J.606	1	52.9	0.0	0.0	0.0
J.704	2	87.4	0.0	0.0	0.0
J.801	2	94.2	0.0	0.0	0.0
J.806	2	89.4	0.0	0.0	0.0
J.903	1	67.8	0.0	0.0	0.0
J.908	1	53.8	0.0	0.0	0.0
J.1005	2	95.5	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)
J.102	2	83.3	0.0	0.0	0.0
J.107	3	116.3	0.0	0.0	0.0
J.112	2	94.2	0.0	0.0	0.0
J.202	2	83.3	0.0	0.0	0.0
J.207	3	116.3	0.0	0.0	0.0
J.212	2	95.2	0.0	0.0	0.0
J.302	2	83.3	0.0	0.0	0.0
J.307	3	115.8	0.0	0.0	0.0
J.312	2	95.5	0.0	0.0	0.0
J.402	2	83.3	0.0	0.0	0.0
J.407	3	115.8	0.0	0.0	0.0
J.412	2	95.5	0.0	0.0	0.0
J.502	3	142.0	0.0	0.0	0.0
J.507	3	115.8	0.0	0.0	0.0
J.512	2	95.5	0.0	0.0	0.0
J.602	2	81.4	0.0	0.0	0.0
J.607	2	87.4	0.0	0.0	0.0
J.705	2	95.5	0.0	0.0	0.0
J.802	3	129.0	0.0	0.0	0.0
J.807	1	52.9	0.0	0.0	0.0
J.904	2	87.4	0.0	0.0	0.0
J.1001	2	94.2	0.0	0.0	0.0
J.1006	2	89.4	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)
J.103	2	85.5	0.0	0.0	0.0
J.108	1	69.1	0.0	0.0	0.0
J.113	2	89.4	0.0	0.0	0.0
J.203	3	119.8	0.0	0.0	0.0
J.208	1	69.1	0.0	0.0	0.0
J.213	2	89.4	0.0	0.0	0.0
J.303	3	121.7	0.0	0.0	0.0
J.308	1	56.7	0.0	0.0	0.0
J.313	2	89.4	0.0	0.0	0.0
J.403	3	121.7	0.0	0.0	0.0
J.408	1	56.7	0.0	0.0	0.0
J.413	2	89.4	0.0	0.0	0.0
J.503	3	121.7	0.0	0.0	0.0
J.508	1	56.7	0.0	0.0	0.0
J.513	2	89.4	0.0	0.0	0.0
J.603	2	87.4	0.0	0.0	0.0
J.701	2	94.2	0.0	0.0	0.0
J.706	2	89.4	0.0	0.0	0.0
J.803	1	67.8	0.0	0.0	0.0
J.808	1	53.8	0.0	0.0	0.0
J.905	2	95.5	0.0	0.0	0.0
J.1002	3	129.0	0.0	0.0	0.0
J.1007	1	52.9	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)
J.104	2	85.8	0.0	0.0	0.0
J.109	3	113.7	0.0	0.0	0.0
J.114	1	52.9	0.0	0.0	0.0
J.204	1	63.3	0.0	0.0	0.0
J.209	3	113.7	0.0	0.0	0.0
J.214	1	52.9	0.0	0.0	0.0
J.304	1	63.1	0.0	0.0	0.0
J.309	3	113.7	0.0	0.0	0.0
J.314	1	52.9	0.0	0.0	0.0
J.404	1	63.1	0.0	0.0	0.0
J.409	3	113.7	0.0	0.0	0.0
J.414	1	52.9	0.0	0.0	0.0
J.504	1	63.1	0.0	0.0	0.0
J.509	3	113.7	0.0	0.0	0.0
J.514	1	52.9	0.0	0.0	0.0
J.604	2	95.5	0.0	0.0	0.0
J.702	3	128.9	0.0	0.0	0.0
J.707	1	52.9	0.0	0.0	0.0
J.804	2	87.4	0.0	0.0	0.0
J.901	2	94.2	0.0	0.0	0.0
J.906	2	89.4	0.0	0.0	0.0
J.1003	1	67.8	0.0	0.0	0.0
J.1008	1	53.8	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)
J.105	2	82.8	0.0	0.0	0.0
J.110	1	58.8	0.0	0.0	0.0
J.115	1	53.5	0.0	0.0	0.0
J.205	2	82.8	0.0	0.0	0.0
J.210	1	68.5	0.0	0.0	0.0
J.215	1	53.5	0.0	0.0	0.0
J.305	2	82.8	0.0	0.0	0.0
J.310	1	68.6	0.0	0.0	0.0
J.315	2	87.4	0.0	0.0	0.0
J.405	2	82.8	0.0	0.0	0.0
J.410	1	68.6	0.0	0.0	0.0
J.415	2	87.4	0.0	0.0	0.0
J.505	2	82.8	0.0	0.0	0.0
J.510	1	68.6	0.0	0.0	0.0
J.515	2	87.4	0.0	0.0	0.0
J.605	2	89.4	0.0	0.0	0.0
J.703	1	67.8	0.0	0.0	0.0
J.708	1	53.8	0.0	0.0	0.0
J.805	2	95.5	0.0	0.0	0.0
J.902	3	129.0	0.0	0.0	0.0
J.907	1	52.9	0.0	0.0	0.0
J.1004	2	87.4	0.0	0.0	0.0

Residential flat buildings - Building K, 70 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)
K.101 1	59.8	0.0	0.0	0.0	0.0
K.106 3	121.4	0.0	0.0	0.0	0.0
K.111 1	59.0	0.0	0.0	0.0	0.0
K.204 1	54.3	0.0	0.0	0.0	0.0
K.209 2	87.3	0.0	0.0	0.0	0.0
K.214 1	58.1	0.0	0.0	0.0	0.0
K.304 1	54.3	0.0	0.0	0.0	0.0
K.309 2	87.3	0.0	0.0	0.0	0.0
K.314 1	58.1	0.0	0.0	0.0	0.0
K.404 1	54.3	0.0	0.0	0.0	0.0
K.410 2	87.3	0.0	0.0	0.0	0.0
K.415 3	58.1	0.0	0.0	0.0	0.0
K.504 3	202.6	0.0	0.0	0.0	0.0
K.G042	82.0	0.0	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)
K.102 2	80.8	0.0	0.0	0.0	0.0
K.107 2	82.5	0.0	0.0	0.0	0.0
K.112 2	86.3	0.0	0.0	0.0	0.0
K.205 2	82.0	0.0	0.0	0.0	0.0
K.210 1	65.2	0.0	0.0	0.0	0.0
K.215 2	86.3	0.0	0.0	0.0	0.0
K.305 2	82.0	0.0	0.0	0.0	0.0
K.310 1	65.2	0.0	0.0	0.0	0.0
K.315 2	86.3	0.0	0.0	0.0	0.0
K.405 2	82.0	0.0	0.0	0.0	0.0
K.411 3	65.2	0.0	0.0	0.0	0.0
K.416 3	86.3	0.0	0.0	0.0	0.0
K.505 3	163.2	0.0	0.0	0.0	0.0
K.G052	79.0	0.0	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)
K.103 3	117.2	0.0	0.0	0.0	0.0
K.108 1	62.7	0.0	0.0	0.0	0.0
K.201 2	93.3	0.0	0.0	0.0	0.0
K.206 3	121.4	0.0	0.0	0.0	0.0
K.211 1	61.7	0.0	0.0	0.0	0.0
K.301 2	93.3	0.0	0.0	0.0	0.0
K.306 3	121.4	0.0	0.0	0.0	0.0
K.311 1	61.7	0.0	0.0	0.0	0.0
K.401 3	93.3	0.0	0.0	0.0	0.0
K.406 2	121.4	0.0	0.0	0.0	0.0
K.412 3	61.7	0.0	0.0	0.0	0.0
K.501 4 or more bedrooms	192.7	0.0	0.0	0.0	0.0
K.G011	72.0	0.0	0.0	0.0	0.0
K.G063	123.3	0.0	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)
K.104 1	54.3	0.0	0.0	0.0	0.0
K.109 2	87.3	0.0	0.0	0.0	0.0
K.202 2	80.6	0.0	0.0	0.0	0.0
K.207 2	82.5	0.0	0.0	0.0	0.0
K.212 2	84.0	0.0	0.0	0.0	0.0
K.302 2	80.6	0.0	0.0	0.0	0.0
K.307 2	82.5	0.0	0.0	0.0	0.0
K.312 2	84.0	0.0	0.0	0.0	0.0
K.402 3	80.6	0.0	0.0	0.0	0.0
K.407 3	82.5	0.0	0.0	0.0	0.0
K.413 3	84.0	0.0	0.0	0.0	0.0
K.502 4 or more bedrooms	202.3	0.0	0.0	0.0	0.0
K.G023	117.2	0.0	0.0	0.0	0.0
K.G073	122.7	0.0	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)
K.105 2	82.0	0.0	0.0	0.0	0.0
K.110 2	87.0	0.0	0.0	0.0	0.0
K.203 3	117.2	0.0	0.0	0.0	0.0
K.208 1	62.7	0.0	0.0	0.0	0.0
K.213 2	86.8	0.0	0.0	0.0	0.0
K.303 3	117.2	0.0	0.0	0.0	0.0
K.308 1	62.7	0.0	0.0	0.0	0.0
K.313 2	86.7	0.0	0.0	0.0	0.0
K.403 3	117.2	0.0	0.0	0.0	0.0
K.409 3	62.7	0.0	0.0	0.0	0.0
K.414 2	86.9	0.0	0.0	0.0	0.0
K.503 2	117.3	0.0	0.0	0.0	0.0
K.G031	54.3	0.0	0.0	0.0	0.0
K.G083	160.3	0.0	0.0	0.0	0.0

Residential flat buildings - Building L, 101 dwellings, 14 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
L.101	1	67.1	0.0	0.0	0.0
L.106	1	59.9	0.0	0.0	0.0
L.111	2	86.6	0.0	0.0	0.0
L.201	1	67.1	0.0	0.0	0.0
L.206	1	59.9	0.0	0.0	0.0
L.211	2	86.6	0.0	0.0	0.0
L.301	2	98.7	0.0	0.0	0.0
L.306	1	59.9	0.0	0.0	0.0
L.311	2	84.6	0.0	0.0	0.0
L.401	2	98.7	0.0	0.0	0.0
L.406	1	59.9	0.0	0.0	0.0
L.411	2	84.4	0.0	0.0	0.0
L.501	1	64.2	0.0	0.0	0.0
L.506	1	59.9	0.0	0.0	0.0
L.511	2	83.6	0.0	0.0	0.0
L.601	2	83.2	0.0	0.0	0.0
L.701	4 or more bedrooms	253.2	0.0	0.0	0.0
L.803	2	150.8	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)
L.102	2	83.3	0.0	0.0	0.0
L.107	3	115.9	0.0	0.0	0.0
L.112	2	94.7	0.0	0.0	0.0
L.202	2	83.3	0.0	0.0	0.0
L.207	3	115.8	0.0	0.0	0.0
L.212	2	95.3	0.0	0.0	0.0
L.302	2	83.3	0.0	0.0	0.0
L.307	3	115.8	0.0	0.0	0.0
L.312	2	95.5	0.0	0.0	0.0
L.402	2	83.3	0.0	0.0	0.0
L.407	3	115.8	0.0	0.0	0.0
L.412	2	95.5	0.0	0.0	0.0
L.502	2	83.3	0.0	0.0	0.0
L.507	3	115.8	0.0	0.0	0.0
L.512	2	95.5	0.0	0.0	0.0
L.602	2	95.5	0.0	0.0	0.0
L.702	2	208.6	0.0	0.0	0.0
L.901	4 or more bedrooms	253.2	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)
L.103	3	117.6	0.0	0.0	0.0
L.108	1	62.1	0.0	0.0	0.0
L.113	2	90.9	0.0	0.0	0.0
L.203	3	117.6	0.0	0.0	0.0
L.208	1	62.1	0.0	0.0	0.0
L.213	2	90.9	0.0	0.0	0.0
L.303	3	117.7	0.0	0.0	0.0
L.308	1	56.7	0.0	0.0	0.0
L.313	2	89.8	0.0	0.0	0.0
L.403	3	117.7	0.0	0.0	0.0
L.408	1	56.7	0.0	0.0	0.0
L.413	2	89.8	0.0	0.0	0.0
L.503	3	117.7	0.0	0.0	0.0
L.508	1	56.7	0.0	0.0	0.0
L.513	2	89.8	0.0	0.0	0.0
L.603	2	89.8	0.0	0.0	0.0
L.703	2	150.8	0.0	0.0	0.0
L.902	2	208.6	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)
L.104	1	54.3	0.0	0.0	0.0
L.109	3	114.4	0.0	0.0	0.0
L.114	1	49.9	0.0	0.0	0.0
L.204	1	54.3	0.0	0.0	0.0
L.209	3	114.4	0.0	0.0	0.0
L.214	1	49.9	0.0	0.0	0.0
L.304	1	54.3	0.0	0.0	0.0
L.309	3	113.7	0.0	0.0	0.0
L.314	1	52.9	0.0	0.0	0.0
L.404	1	54.3	0.0	0.0	0.0
L.409	3	113.7	0.0	0.0	0.0
L.414	1	52.9	0.0	0.0	0.0
L.504	1	54.3	0.0	0.0	0.0
L.509	3	113.7	0.0	0.0	0.0
L.514	1	52.9	0.0	0.0	0.0
L.604	1	52.8	0.0	0.0	0.0
L.801	4 or more bedrooms	253.2	0.0	0.0	0.0
L.903	2	150.8	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)
L.105	2	82.1	0.0	0.0	0.0
L.110	1	68.9	0.0	0.0	0.0
L.115	2	86.2	0.0	0.0	0.0
L.205	2	82.8	0.0	0.0	0.0
L.210	1	69.2	0.0	0.0	0.0
L.215	2	86.2	0.0	0.0	0.0
L.305	2	82.8	0.0	0.0	0.0
L.310	1	68.6	0.0	0.0	0.0
L.315	2	86.1	0.0	0.0	0.0
L.405	2	82.8	0.0	0.0	0.0
L.410	1	68.6	0.0	0.0	0.0
L.415	2	86.1	0.0	0.0	0.0
L.505	2	82.8	0.0	0.0	0.0
L.510	1	68.6	0.0	0.0	0.0
L.515	2	86.1	0.0	0.0	0.0
L.605	1	58.9	0.0	0.0	0.0
L.802	2	208.6	0.0	0.0	0.0
L.1001	4 or more bedrooms	253.2	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
L.10022		208.6	0.0	0.0	0.0
L.12014	or more bedrooms	253.2	0.0	0.0	0.0
L.13034	or more bedrooms	150.8	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
L.10032		150.8	0.0	0.0	0.0
L.12022		208.6	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
L.11014	or more bedrooms	253.2	0.0	0.0	0.0
L.12032		150.8	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
L.11022		208.6	0.0	0.0	0.0
L.13014	or more bedrooms	253.2	0.0	0.0	0.0

Dwelling no.	No. of bedrooms	Conditioned floor area (m²)	Unconditioned floor area (m²)	Area of garden & lawn (m²)	Indigenous species (min area m²)
L.11032		150.8	0.0	0.0	0.0
L.13023		208.6	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 H

Common area	Floor area (m²)
Lift car (No.1)	-
Hallways - building H	286.0

Common area	Floor area (m²)
Lift car (No.2)	-
Breezeways - building H	406.0

Common area	Floor area (m²)
Ground floor lobby - building H	67.0

Common areas of unit building - Building J

Common area	Floor area (m²)
Lift car (No.3)	-
Ground floor lobby - building J	56.0

Common area	Floor area (m²)
Lift car (No.4)	-
Hallways - building J	434.0

Common area	Floor area (m²)
Lift car (No.5)	-
Breezeways - building J	518.0

Common areas of unit building - Building K

Common area	Floor area (m²)
Lift car (No.6)	-
Hallways - building K	347.0

Common area	Floor area (m²)
Lift car (No.7)	-
Breezeways - building K	382.0

Common area	Floor area (m²)
Ground floor lobby - building K	71.0

Common areas of unit building - Building L

Common area	Floor area (m²)
Lift car (No.8)	-
Ground floor lobby - building L	38.0

Common area	Floor area (m²)
Lift car (No.9)	-
Hallways - building L	507.0

Common area	Floor area (m²)
Lift car (No.10)	-
Breezeways - building L	670.0

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Gym (No. 1)	140.0
Plant rooms	590.0
Pool amenities	17.0

Common area	Floor area (m²)
Car park area	18634.0
Stage 4 Lounge	125.0

Common area	Floor area (m²)
Garbage room	350.0
Storage	87.0

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building H

(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 J

(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 K

(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 L

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

5. Commitments for multi-dwelling houses

6. Commitments for single dwelling houses

7. 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 H

(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	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4.5 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light

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
H.102, H.105, H.203, H.206, H.303, H.306, H.403, H.406, H.408, H.409, H.410, H.411, H.G01, H.G06, H.G07, H.G08	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
H.101, H.103, H.108, H.110, H.204, H.209, H.210, H.213, H.215, H.304, H.309, H.310, H.313, H.315, H.404, H.413, H.415, H.G03	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	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 star	-	2 star	-	-

(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)
H.101	38.1	30.0
H.102	12.5	33.8
H.103	17.3	22.9
H.104	22.8	21.8
H.105	54.3	13.5
H.106	58.6	17.5
H.107	45.0	21.4
H.108	54.5	19.3
H.109	41.5	33.2
H.110	60.9	22.4
H.201	49.5	40.7
H.202	23.0	40.7
H.203	12.8	31.4
H.204	26.5	27.4
H.205	23.7	20.9
H.206	30.2	14.3
H.207	36.0	18.2
H.208	41.5	22.9
H.209	43.1	21.8
H.210	41.9	27.6
H.211	42.9	27.7
H.212	37.6	25.4
H.213	32.1	21.1
H.214	32.5	37.8
H.215	39.9	24.4
H.301	51.5	37.9
H.302	23.7	40.3

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
H.303	16.5	25.9
H.304	19.2	21.2
H.305	24.9	19.0
H.306	32.5	13.4
H.307	38.1	18.5
H.308	53.4	19.0
H.309	46.7	21.2
H.310	46.3	27.4
H.311	48.0	28.8
H.312	38.5	24.5
H.313	32.6	20.1
H.314	34.9	39.4
H.315	42.7	21.9
H.401	61.0	56.7
H.402	46.4	55.5
H.403	31.4	43.1
H.404	27.3	36.6
H.405	30.2	42.0
H.406	49.1	23.9
H.407	50.2	50.6
H.408	41.4	45.9
H.409	44.6	34.8
H.410	55.3	37.7
H.411	62.3	42.3
H.412	53.1	37.1
H.413	40.5	28.9
H.414	43.7	57.3

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
H.415	58.7	38.6
H.G01	25.3	32.2
H.G02	16.1	47.6
H.G03	10.3	43.5
H.G04	26.7	41.6
H.G05	50.7	25.2
H.G06	22.8	45.1
H.G07	15.9	35.0
H.G09	56.0	18.6
All other dwellings	26.1	49.6

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but ≤ 7.5 L/min)	4 star	5 star	no common laundry facility

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

	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)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.2)	-	-	light-emitting diode	connected to lift call button	Yes
Ground floor lobby - building H	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Hallways - building H	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Breezeways - building H	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 6
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 6

2. Commitments for Residential flat buildings - Building J

(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	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4.5 star	-	-	-	-	-	-	-

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

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

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


	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light

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
J.107, J.109, J.203, J.207, J.209, J.303, J.307, J.309, J.403, J.407, J.409, J.501, J.502, J.503, J.507, J.509, J.702, J.802, J.902	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

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
J.101, J.106, J.108, J.110, J.114, J.115, J.201, J.204, J.206, J.208, J.210, J.214, J.215, J.304, J.306, J.308, J.310, J.314, J.404, J.406, J.408, J.410, J.414, J.504, J.506, J.508, J.510, J.514, J.606, J.703, J.707, J.708, J.803, J.807, J.808, J.903, J.907, J.908, J.1003,	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

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
J.1007, J.1008												
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	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 star	-	2 star	-	-

(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.			

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

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
J.101	44.7	41.0
J.102	18.8	36.6
J.103	9.6	44.4
J.104	48.6	31.4
J.105	31.1	38.3
J.106	34.2	26.6
J.107	31.0	47.0
J.108	29.3	43.8
J.109	44.5	18.5
J.110	57.6	29.3
J.111	22.6	31.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
J.112	21.7	26.2
J.113	30.1	28.4
J.114	20.5	37.4
J.115	32.4	34.9
J.201	48.7	55.4
J.202	22.5	57.0
J.203	18.0	59.8
J.204	28.0	40.8
J.205	27.6	41.4
J.206	23.1	30.8
J.207	40.2	56.5
J.208	39.8	47.2
J.209	36.6	21.5
J.210	29.8	57.0
J.211	28.2	29.8
J.212	26.4	34.9
J.213	35.4	39.3
J.214	31.5	39.4
J.215	45.8	40.5
J.301	46.6	36.0
J.302	19.0	38.3
J.303	18.6	28.3
J.304	28.8	18.5
J.305	36.9	18.4
J.306	28.1	17.7
J.307	30.4	37.1
J.308	26.6	29.5

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
J.309	33.2	14.3
J.310	45.8	26.2
J.311	27.6	17.7
J.312	28.1	20.8
J.313	34.8	23.0
J.314	40.3	19.0
J.315	48.3	25.8
J.401	49.6	43.3
J.402	25.1	52.3
J.403	20.9	23.8
J.404	24.9	17.6
J.405	34.5	18.6
J.406	24.7	17.3
J.407	30.2	37.3
J.408	26.4	27.9
J.409	29.3	14.6
J.410	41.1	26.5
J.412	27.5	20.8
J.413	34.4	22.2
J.414	40.3	18.4
J.415	42.4	25.5
J.501	59.6	30.4
J.502	37.3	55.8
J.503	37.4	37.9
J.504	42.2	28.2
J.505	49.2	32.6
J.506	41.9	30.4

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
J.507	51.7	55.9
J.508	27.8	30.1
J.509	39.9	22.0
J.510	42.4	28.7
J.512	27.2	21.1
J.513	34.5	21.9
J.514	40.6	18.5
J.515	42.7	25.5
J.601	54.2	35.9
J.602	34.9	20.6
J.603	23.5	22.3
J.604	29.6	30.5
J.605	39.2	32.9
J.606	42.2	27.1
J.607	50.0	29.4
J.701	40.7	32.2
J.702	54.3	32.2
J.703	38.1	34.4
J.704	22.5	20.6
J.705	28.3	20.9
J.706	35.6	22.6
J.707	31.0	27.2
J.708	44.0	22.1
J.801	38.8	31.2
J.802	41.8	30.3
J.803	38.4	30.8
J.804	26.9	17.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
J.805	28.0	20.7
J.806	35.2	21.7
J.807	30.7	27.1
J.808	44.3	22.1
J.901	39.0	31.7
J.902	41.2	32.3
J.903	38.5	30.7
J.904	21.6	21.1
J.905	28.2	20.4
J.906	35.4	21.9
J.907	30.9	27.1
J.908	44.4	22.3
J.1001	58.3	48.2
J.1002	62.9	47.6
J.1003	52.3	46.3
J.1004	34.8	34.2
J.1005	45.2	34.3
J.1006	55.1	37.7
J.1007	50.1	45.4
J.1008	62.0	35.5
All other dwellings	27.1	17.5

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

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

	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)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.4)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.5)	-	-	light-emitting diode	connected to lift call button	Yes
Ground floor lobby - building J	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Hallways - building J	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Breezeways - building J	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 6
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 7
Lift (No. 5)	gearless traction with V V V F motor	Number of levels (including basement): 7

3. Commitments for Residential flat buildings - Building K

(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	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4.5 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light

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
K.501, K.502	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	4 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
K.101, K.104, K.108, K.111, K.204, K.208, K.210, K.211, K.214, K.304, K.308, K.310, K.311, K.314, K.404, K.G01, K.G03	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

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
K.103, K.203, K.206, K.303, K.306, K.401, K.402, K.403, K.407, K.409, K.411, K.412, K.413, K.415, K.416, K.504, K.505, K.G02, K.G06, K.G07, K.G08	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	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 star	-	2 star	-	-

(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)
K.101	44.0	27.0
K.102	38.3	26.5
K.103	27.8	27.4
K.104	29.4	28.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
K.105	26.7	21.5
K.106	49.8	17.7
K.107	50.9	26.5
K.108	55.5	23.1
K.109	51.5	24.3
K.110	36.2	23.0
K.111	43.9	44.7
K.112	44.9	35.6
K.201	49.6	46.0
K.202	27.0	25.5
K.203	22.7	28.2
K.204	27.2	28.5
K.205	27.2	21.3
K.206	35.5	17.4
K.207	42.7	21.8
K.208	50.9	19.1
K.209	46.4	19.0
K.210	49.9	22.9
K.211	37.5	24.9
K.212	47.8	27.5
K.213	39.1	24.8
K.214	35.5	39.9
K.215	30.6	33.5
K.301	55.7	36.1
K.302	39.7	20.6
K.303	23.7	26.3
K.304	31.6	26.1

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
K.305	25.3	20.1
K.306	38.3	18.2
K.307	44.0	22.4
K.308	48.9	21.5
K.309	47.2	22.7
K.310	50.6	21.4
K.311	46.3	28.1
K.312	50.4	25.5
K.313	39.7	21.3
K.314	25.1	44.4
K.315	39.7	30.2
K.401	62.2	38.0
K.402	41.4	28.4
K.403	33.7	38.4
K.404	35.2	36.3
K.405	27.0	34.5
K.406	39.6	19.9
K.407	45.4	25.9
K.409	45.8	24.3
K.410	46.3	22.5
K.411	54.7	23.6
K.412	51.9	30.0
K.413	50.5	28.5
K.414	47.1	25.9
K.415	39.8	40.9
K.416	35.9	40.7
K.501	41.0	55.9

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
K.502	39.1	58.7
K.503	55.1	35.4
K.504	39.5	33.9
K.505	58.3	63.1
K.G01	36.2	20.7
K.G02	25.6	39.0
K.G03	22.3	41.2
K.G04	40.6	33.2
K.G05	50.9	26.4
K.G06	27.9	28.4
K.G07	26.8	25.0
All other dwellings	41.9	39.2

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

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

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Lift car (No.6)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.7)	-	-	light-emitting diode	connected to lift call button	Yes
Ground floor lobby - building K	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Hallways - building K	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Breezeways - building K	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Lift (No. 6)	gearless traction with V V V F motor	Number of levels (including basement): 12
Lift (No. 7)	gearless traction with V V V F motor	Number of levels (including basement): 12

4. Commitments for Residential flat buildings - Building L

(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
L.701, L.702, L.801, L.802, L.901, L.902, L.1001, L.1002, L.1101, L.1102, L.1201, L.1202	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4.5 star	-	-	-	-	2.0	yes	no
All other dwellings	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	5 star	no	-	4.5 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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.	✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must: (aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and (bb) install the system specified for the spa in the "Individual Spa" column of the table below (or alternatively must not install any system for the spa). If specified, the applicant must install a timer to control the spa's pump.		✓ ✓	
(h) The applicant must install in the dwelling: (aa) the kitchen cook-top and oven specified for that dwelling in the "Appliances & other efficiency measures" column of the table below; (bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and (cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓ ✓ ✓	✓
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light	individual fan, ducted to façade or roof	interlocked to light

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
L.701, L.801, L.901, L.1001, L.1101, L.1201, L.1301	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	4 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
L.103 , L.107 , L.109, L.203, L.207, L.209, L.303 , L.307 , L.309, L.403, L.407, L.409, L.503, L.507, L.509, L.1302	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	3 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

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
L.101 , L.104, L.106, L.108, L.110, L.114, L.201, L.204, L.206, L.208, L.210, L.214, L.304, L.306, L.308 , L.310 , L.314 , L.404, L.406, L.408, L.410, L.414, L.501, L.504, L.506, L.508, L.510, L.514, L.604, L.605	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1 (dedicated)	1 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
All other dwellings	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	1-phase airconditioning EER 3.0 - 3.5	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
L.701, L.702, L.801, L.802, L.901, L.902, L.1001, L.1002, L.1101, L.1102, L.1201, L.1202	-	-	solar (gas boosted)	yes	gas cooktop & electric oven	-	yes	3 star	-	2 star	-	-
All other dwellings	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	-	2 star	-	-

(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.	✓	✓	✓

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
L.102	29.8	50.1
L.104	50.4	36.0
L.106	54.0	26.8
L.108	39.1	57.3
L.109	53.8	21.4
L.110	57.2	46.8
L.111	31.2	32.8
L.112	42.4	45.4
L.113	54.6	29.3
L.114	25.2	39.2
L.115	29.5	43.1
L.201	61.6	53.4
L.202	32.4	60.0
L.203	35.9	38.5

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
L.204	37.5	37.3
L.205	49.6	28.3
L.206	34.7	30.6
L.207	42.7	57.6
L.208	40.2	57.0
L.209	27.1	25.1
L.210	39.5	56.9
L.211	31.5	27.8
L.212	35.8	49.6
L.213	42.9	37.6
L.214	33.2	45.5
L.215	39.9	42.2
L.302	24.0	60.2
L.304	26.4	27.0
L.306	17.4	22.7
L.309	29.0	17.9
L.311	28.5	20.6
L.401	48.8	53.0
L.402	22.8	62.0
L.403	12.0	49.9
L.404	24.6	26.8
L.405	29.8	23.4
L.406	13.6	23.0
L.407	29.6	42.1
L.408	11.9	33.8
L.409	25.1	17.8
L.410	28.5	34.5

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
L.411	28.9	20.1
L.412	27.3	31.3
L.413	35.5	28.6
L.414	36.2	26.1
L.415	33.9	31.6
L.501	54.6	44.3
L.502	32.8	57.2
L.503	22.8	54.0
L.504	36.7	39.8
L.505	44.7	38.6
L.506	29.0	35.5
L.507	53.9	60.1
L.508	13.1	35.0
L.509	28.5	19.6
L.510	29.8	37.6
L.511	28.7	19.9
L.512	27.6	31.4
L.513	35.7	28.9
L.514	36.5	25.6
L.515	36.6	34.1
L.601	30.2	19.8
L.602	28.5	32.7
L.603	36.5	29.3
L.604	39.3	27.7
L.605	40.4	53.1
L.701	39.7	39.3
L.702	52.0	27.1

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
L.703	31.1	24.8
L.801	50.3	34.2
L.802	50.8	28.4
L.803	31.3	24.7
L.901	52.9	33.2
L.902	54.0	26.2
L.903	32.8	24.2
L.1001	53.2	32.6
L.1002	52.7	27.4
L.1003	33.0	24.0
L.101	50.8	47.7
L.103	47.8	41.4
L.105	40.8	39.6
L.107	31.4	56.9
L.1101	53.4	32.5
L.1102	54.4	26.3
L.1201	53.6	32.5
L.1202	54.6	26.3
L.1301	61.7	42.2
L.1302	61.8	35.3
L.1303	48.4	37.6
L.301	42.7	48.5
L.303	16.5	47.4
L.305	32.2	22.9
L.307	29.7	42.7
L.308	11.4	34.3
L.310	33.6	37.0

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
L.312	27.3	31.8
L.313	35.6	29.0
L.314	35.5	26.1
L.315	34.1	32.4
All other dwellings	33.2	23.9

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

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

	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.8)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.9)	-	-	light-emitting diode	connected to lift call button	Yes
Lift car (No.10)	-	-	light-emitting diode	connected to lift call button	Yes
Ground floor lobby - building L	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Hallways - building L	ventilation supply only	time clock or BMS controlled	light-emitting diode	zoned switching with motion sensor	Yes
Breezeways - building L	no mechanical ventilation	-	light-emitting diode	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Lift (No. 8)	gearless traction with V V V F motor	Number of levels (including basement): 16
Lift (No. 9)	gearless traction with V V V F motor	Number of levels (including basement): 16
Lift (No. 10)	gearless traction with V V V F motor	Number of levels (including basement): 16

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	4 star (> 6 but <= 7.5 L/min)	4 star	5 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000.0	To collect run-off from at least: - 2000.0 square metres of roof area of buildings in the development - 0.0 square metres of impervious area in the development - 0.0 square metres of garden/lawn area in the development - 0.0 square metres of planter box area in the development (excluding, in each case, any area which drains to, or supplies, any other alternative water supply system).	- irrigation of 5616.0 square metres of common landscaped area on the site - car washing in 8 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 360.0 kLs	Location: Other Pool shaded: no	-
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-
Fire sprinkler system (No. 2)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Gym (No. 1)	air conditioning system	time clock or BMS controlled	light-emitting diode	time clocks	Yes
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	light-emitting diode	zoned switching with motion sensor	Yes
Garbage room	ventilation exhaust only	-	light-emitting diode	motion sensors	Yes
Plant rooms	ventilation supply only	interlocked to light	light-emitting diode	manual on / manual off	Yes
Stage 4 Lounge	air conditioning system	time clock or BMS controlled	light-emitting diode	manual on / manual off	Yes
Storage	ventilation supply only	time clock or BMS controlled	light-emitting diode	motion sensors	Yes
Pool amenities	ventilation exhaust only	time clock or BMS controlled	light-emitting diode	manual on / manual off	Yes

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 50.0 peak kW
Pool (No. 1)	Heating source: no heating	Pump controlled by timer: yes
Sauna (No. 1)	Heating source: electric infrared	Efficiency measure: manual on / timer off

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).