



Efficient Living Pty Ltd
ABN: 82 116 346 082
ACN: 116 346 082

13 / 13 lagoon St,
NARRABEEN NSW 2101

MERITON APARTMENTS

DA Application for:

Riverfront Apartments

To be built at:

330 Church St, PARRAMATTA

BASIX Assessment

Date of Issue: 18th May, 2011



4.0 STAR
THERMAL COMFORT RATING

This report has been prepared by Efficient Living Pty Ltd on behalf of our client Meriton Apartments. Efficient Living prepares all reports in accordance with the ASBA code of practice and is backed by professional indemnity insurance. This report takes into account our client's instructions and preferred building inclusions.

PREPARED FOR :	PREPARED BY :
Meriton Apartments Level 11/528 Kent St SYDNEY NSW 2000 Contact : Phone : (02) 9287 2888 Fax : (02) 9287 2768	Efficient Living 13/13 Lagoon St NARRABEEN NSW 2101 Contact: Phone : (02) 9944 0332 Fax : (02) 9944 0332

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INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 330 Church St, PARRAMATTA.

Heating and cooling loads for the development have been determined using BERS thermal simulation software. The report is based on the architectural drawings provided by Meriton. For further details, refer to the individual BASIX certificates and ABSA reports respectively.

ANALYSIS

The BASIX assessment is divided into three sections, each independently measuring the efficiency of the development. These are Water, Thermal Comfort and Energy.

BASIX requires a minimum target of 40% for the Water section. A BERS pass or fail is required for the thermal comfort section and a minimum required target of 20% 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 toilets, the dish washer and clothes washing machine.

The size of the rain tank and number of connections has a huge impact on your water score as does the area of gardens and lawns and 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 is measured using BERS thermal performance assessment tools. This equates an expected level of energy consumption to heat and cool each dwelling per annum expressed in MJ (mega joules) per square meter of floor area.

Each unit has individual heating and cooling caps and a weighted average heating and cooling load for the whole development. The weighted average caps are a lot harder to achieve than the individual unit caps.

ENERGY

The proposed development has achieved the energy target of 20% 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 and the cook top, oven, and clothes drying facilities.

BASIX Inclusions – Riverfront Apartments

All units in buildings A to F have reached the targets as set for new dwellings in NSW.
The inclusions as outlined in the table below have been incorporated in each unit to allow them to reach their environmental sustainability targets.

Construction general	
Glazing	Doors / windows: Single glazed tinted U-value: 6.6 SHGC: 0.58
Roof / ceiling insulation	Roof: Concrete slab roof to apartments. Concrete slab roof with green roof Roof insulation: None Ceiling: Plasterboard Ceiling insulation: None throughout, except as per thermal comfort upgrades below.
Wall / floor insulation	External walls: Precast concrete - plasterboard lined. External wall insulation: None throughout, except as per thermal comfort upgrades below. Internal walls within units: Plasterboard on studs - no insulation Inter-tenancy walls: Hebal – no insulation Floors: Concrete Floor insulation: None throughout, except as per thermal comfort upgrades below.
Thermal Comfort upgrades (units)	Ceiling insulation: R2.0 insulation to units 15-03, 16-05, 34-01, 34-02, 34-09, 34-10, 34-11, 34-23, 22-12, 22-13, 22-14, 22-15, 22-16, 22-17, 22-18, 22-19. External wall insulation: R1.0 insulation to units 2-03 to 15-03, 1-16 to 22-16, 1-18 to 22-18 and to external walls & spandrel panels of units 17-23 to 34-23, 3-02 to 34-02. Floor insulation: R1.0 insulation to units 3-02, 3-06, 3-07, 3-08, 3-12, 3-13, 3-14 and terraces.
BASIX Water inclusions – Score 40 / 40	
Fixtures (within units)	Showerheads: 3 star (>7.5 but ≤9 L/min) Toilets: 4 star Kitchen taps: 4 star Bath taps: 4 star
Fixtures (within common areas)	Showerheads: 3 star (>7.5 but ≤9 L/min) Toilets: 4 star Bath taps: 4 star
Appliances (within units)	Dishwashers: 3 star Clothes washers: At least 60% of all occupants are expected to provide clothes washing machines with a water efficiency of 2 stars or greater.
Central rainwater storage	Tank size: 20,000L Collect run-off from: Main un-trafficable roof areas of towers Connected to: - Irrigation of landscaping
Pool / Spa / Sauna	Indoor pool Volume: 120 kL
BASIX Thermal Comfort – Score Pass/Pass	
Average star rating	4.0 stars
BASIX Energy inclusions – Score 20 / 20	
Central hot water system	Central gas-fired boiler with R0.6 (~25mm) insulation to ringmain and supply risers.

Pool / Spa heating systems	Pool – electric heat pump heating - pump controlled by a timer
Lift motor	All lifts to have gearless traction with VVVF motor.
Appliances & other efficiency measures (within units)	Gas cooktop & electric oven Dishwashers: 3 star Clothes dryers: 2 star Well ventilated fridge spaces Indoor or sheltered clothes drying lines
Heating & cooling (within units)	All units to have individual single phase reverse cycle air conditioning: All 1 bedroom units: 2.0 star – Cooling and 2.5 star - Heating (zoned) [new] All 2 bedroom units: 2.0 star – Cooling and 2.5 star - Heating (zoned) [new] All 3 bedroom units: 2.0 star – Cooling and 3.0 star - Heating (zoned) [new]
Artificial lighting (within units)	Within units fluorescent lighting to be provided to bedrooms, laundries and bathrooms only.
Ventilation systems (within units)	Bathroom ventilation: Individual fan, ducted to roof or façade – manual on/timer off Laundry ventilation: Individual fan, ducted to roof or façade – manual on/timer off Kitchen ventilation: Individual fan, not ducted roof– manual switch on/off
Artificial lighting (within common areas)	Lifts: compact fluorescent – manual on / off Pool area: compact fluorescent – manual on / off Gym: compact fluorescent – manual on / off Carpark: fluorescent – zoned switching with motion sensor Switch / Elect: fluorescent – manual on / off Garbage rooms: fluorescent – manual on / off Plant or service rooms: fluorescent – manual on / off Store / Maintenance rooms: fluorescent – manual on / off Ground floor lobbies: compact fluorescent – none Hallways: compact fluorescent – zoned switching
Ventilation systems (within common areas)	Pool area: Ventilation exhaust only – time clock or BMS controlled Gym: air conditioned – time clock or BMS controlled Carpark: ventilation (supply + exhaust) – carbon monoxide monitor + VSD fan Switch / Elect: ventilation supply only – interlocked to light Garbage rooms: ventilation exhaust only – with no efficiency measures Community / Manager rooms: air conditioned – time clock or BMS controlled Plant or service rooms: ventilation exhaust only – interlocked to light Store / Maintenance rooms: ventilation exhaust only – interlocked to light Hallways / lobbies: ventilation supply only – time clock or BMS controlled
Alternative energy	A 70kW photovoltaic system is required for the development

Assessor Certificate

Multiple Dwellings

Certificate Version 6.1. Prior versions not valid after 1 March 2006

Issued in accordance with
BASIX Thermal Comfort Simulation Method.



Assessor			
Name:	Tracey Cools	Company:	Efficient Living Pty Ltd
ABSA #:	20101		
Address:	13/13 Lagoon St, NARRABEEN NSW 2101		
Phone:	02 9944 0332	Fax:	02 9944 0332
Email:	tracey@efficientliving.com.au		
Declaration of interest:	None		
Client			
Name:	Tom Hutchison	Company:	Meriton Apartments
Address:	Level 11, 528 Kent St, SYDNEY NSW 2000		
Phone:	02 9287 2888	Fax:	02 9287 2568
Email:	tomh@meriton.com.au		
Project			
Address:	Riverfront Apartments – 330 Church St, PARRAMATTA NSW		
Applicant:	Meriton Apartments	LGA:	Parramatta City Council
Assessment			
Date:	18/05/11	File ref:	-
Software:	BERS Pro 4.1		Version:
010510			
Documentation			

All details, upon which this assessment has been based, are included in the project documentation that has been stamped and signed by the Assessor issuing this certificate, as identified below:

Thermal Performance Spec: Attached,
Affixed to drawings Page#: A000 - Cover

Drawings: (Title, Ref.#, Revision, Issue date, etc)

A_000, A_001, A_096, A_097, A_098, A_099, A_100, A_101, A_102, A_103, A_104, A_150, A_151, A_152, A_153, A_154, A_155, A_156, A_157, A_158, A_159, A_160, A_161, A_201, A_202, A_300, A_301, A_350, A_351, A_352, A_353

Building Specifications: (Title, Ref.#, Revision, Issue date, etc)

Plans issued 11.05.11 Elevations issued 13.05.11

Affix assessor stamp



ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued:	18/05/11
Thermal performance specifications						Page 1 of 10	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
Terraces							
1-26A	63718608	88	11	61	19	N/A	4.0
1-26B	28225552	88	11	49	19	N/A	4.5
1-26C	28225552	88	11	49	19	N/A	4.5
1-26D	28225552	88	11	49	19	N/A	4.5
1-26E	28225552	88	11	49	19	N/A	4.5
1-26F	28225552	88	11	49	19	N/A	4.5
1-26G	28225552	88	11	49	19	N/A	4.5
1-26H	43725317	88	11	49	20	N/A	4.5
1-26J	23308922	88	11	57	22	N/A	4.0
East Tower							
1-15	88854707	61	0	23	32	N/A	5.5
1-16	36722790	63	0	51	44	N/A	3.5
1-17	77377400	61	0	20	15	N/A	7.0
1-18	75436334	50	0	57	39	N/A	3.5
1-19	38760646	57	0	39	41	N/A	4.0

ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued: 18/05/11	
Thermal performance specifications						Page 2 of 10	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
2-15	88854707	61	0	23	32	N/A	5.5
2-16	36722790	63	0	51	44	N/A	3.5
2-17	77377400	61	0	20	15	N/A	7.0
2-18	75436334	50	0	57	39	N/A	3.5
2-19	38760646	57	0	39	41	N/A	4.0
3-12	83265730	88	0	64	34	N/A	3.5
3-13	32234351	82	0	20	16	N/A	7.0
3-14	17343934	99	0	63	55	N/A	3.0
3-15	88854707	61	0	23	32	N/A	5.5
3-16	36722790	63	0	51	44	N/A	3.5
3-17	77377400	61	0	20	15	N/A	7.0
3-18	75436334	50	0	57	39	N/A	3.5
3-19	38760646	57	0	39	41	N/A	4.0
4-12	44289738	88	0	59	36	N/A	3.5
4-13	44726364	82	0	18	17	N/A	7.0
4-14	45566089	99	0	57	55	N/A	3.0
4-15	88854707	61	0	23	32	N/A	5.5
4-16	36722790	63	0	51	44	N/A	3.5
4-17	77377400	61	0	20	15	N/A	7.0
4-18	75436334	50	0	57	39	N/A	3.5
4-19	38760646	57	0	39	41	N/A	4.0
5-12	44289738	88	0	59	36	N/A	3.5
5-13	44726364	82	0	18	17	N/A	7.0
5-14	45566089	99	0	57	55	N/A	3.0
5-15	88854707	61	0	23	32	N/A	5.5
5-16	36722790	63	0	51	44	N/A	3.5
5-17	77377400	61	0	20	15	N/A	7.0
5-18	75436334	50	0	57	39	N/A	3.5
5-19	38760646	57	0	39	41	N/A	4.0
6-12	44289738	88	0	59	36	N/A	3.5
6-13	44726364	82	0	18	17	N/A	7.0
6-14	45566089	99	0	57	55	N/A	3.0
6-15	88854707	61	0	23	32	N/A	5.5
6-16	36722790	63	0	51	44	N/A	3.5
6-17	77377400	61	0	20	15	N/A	7.0
6-18	75436334	50	0	57	39	N/A	3.5
6-19	38760646	57	0	39	41	N/A	4.0
7-12	44289738	88	0	59	36	N/A	3.5
7-13	44726364	82	0	18	17	N/A	7.0
7-14	45566089	99	0	57	55	N/A	3.0
7-15	88854707	61	0	23	32	N/A	5.5
7-16	36722790	63	0	51	44	N/A	3.5
7-17	77377400	61	0	20	15	N/A	7.0
7-18	75436334	50	0	57	39	N/A	3.5
7-19	38760646	57	0	39	41	N/A	4.0
8-12	44289738	88	0	59	36	N/A	3.5

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Thermal performance specifications							Page 3 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
8-13	44726364	82	0	18	17	N/A	7.0
8-14	45566089	99	0	57	55	N/A	3.0
8-15	88854707	61	0	23	32	N/A	5.5
8-16	36722790	63	0	51	44	N/A	3.5
8-17	77377400	61	0	20	15	N/A	7.0
8-18	75436334	50	0	57	39	N/A	3.5
8-19	38760646	57	0	39	41	N/A	4.0
9-12	44289738	88	0	59	36	N/A	3.5
9-13	44726364	82	0	18	17	N/A	7.0
9-14	45566089	99	0	57	55	N/A	3.0
9-15	88854707	61	0	23	32	N/A	5.5
9-16	36722790	63	0	51	44	N/A	3.5
9-17	77377400	61	0	20	15	N/A	7.0
9-18	75436334	50	0	57	39	N/A	3.5
9-19	38760646	57	0	39	41	N/A	4.0
10-12	44289738	88	0	59	36	N/A	3.5
10-13	44726364	82	0	18	17	N/A	7.0
10-14	45566089	99	0	57	55	N/A	3.0
10-15	88854707	61	0	23	32	N/A	5.5
10-16	36722790	63	0	51	44	N/A	3.5
10-17	77377400	61	0	20	15	N/A	7.0
10-18	75436334	50	0	57	39	N/A	3.5
10-19	38760646	57	0	39	41	N/A	4.0
11-12	44289738	88	0	59	36	N/A	3.5
11-13	44726364	82	0	18	17	N/A	7.0
11-14	45566089	99	0	57	55	N/A	3.0
11-15	88854707	61	0	23	32	N/A	5.5
11-16	36722790	63	0	51	44	N/A	3.5
11-17	77377400	61	0	20	15	N/A	7.0
11-18	75436334	50	0	57	39	N/A	3.5
11-19	38760646	57	0	39	41	N/A	4.0
12-12	44289738	88	0	59	36	N/A	3.5
12-13	44726364	82	0	18	17	N/A	7.0
12-14	45566089	99	0	57	55	N/A	3.0
12-15	88854707	61	0	23	32	N/A	5.5
12-16	36722790	63	0	51	44	N/A	3.5
12-17	77377400	61	0	20	15	N/A	7.0
12-18	75436334	50	0	57	39	N/A	3.5
12-19	38760646	57	0	39	41	N/A	4.0
13-12	44289738	88	0	59	36	N/A	3.5
13-13	44726364	82	0	18	17	N/A	7.0
13-14	45566089	99	0	57	55	N/A	3.0
13-15	88854707	61	0	23	32	N/A	5.5
13-16	36722790	63	0	51	44	N/A	3.5
13-17	77377400	61	0	20	15	N/A	7.0
13-18	75436334	50	0	57	39	N/A	3.5

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Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
13-19	38760646	57	0	39	41	N/A	4.0
14-12	44289738	88	0	59	36	N/A	3.5
14-13	44726364	82	0	18	17	N/A	7.0
14-14	45566089	99	0	57	55	N/A	3.0
14-15	88854707	61	0	23	32	N/A	5.5
14-16	36722790	63	0	51	44	N/A	3.5
14-17	77377400	61	0	20	15	N/A	7.0
14-18	75436334	50	0	57	39	N/A	3.5
14-19	38760646	57	0	39	41	N/A	4.0
15-12	44289738	88	0	59	36	N/A	3.5
15-13	44726364	82	0	18	17	N/A	7.0
15-14	45566089	99	0	57	55	N/A	3.0
15-15	88854707	61	0	23	32	N/A	5.5
15-16	36722790	63	0	51	44	N/A	3.5
15-17	77377400	61	0	20	15	N/A	7.0
15-18	75436334	50	0	57	39	N/A	3.5
15-19	38760646	57	0	39	41	N/A	4.0
16-12	44289738	88	0	59	36	N/A	3.5
16-13	44726364	82	0	18	17	N/A	7.0
16-14	45566089	99	0	57	55	N/A	3.0
16-15	88854707	61	0	23	32	N/A	5.5
16-16	36722790	63	0	51	44	N/A	3.5
16-17	77377400	61	0	20	15	N/A	7.0
16-18	75436334	50	0	57	39	N/A	3.5
16-19	38760646	57	0	39	41	N/A	4.0
17-12	44289738	88	0	59	36	N/A	3.5
17-13	44726364	82	0	18	17	N/A	7.0
17-14	45566089	99	0	57	55	N/A	3.0
17-15	88854707	61	0	23	32	N/A	5.5
17-16	36722790	63	0	51	44	N/A	3.5
17-17	77377400	61	0	20	15	N/A	7.0
17-18	75436334	50	0	57	39	N/A	3.5
17-19	38760646	57	0	39	41	N/A	4.0
18-12	44289738	88	0	59	36	N/A	3.5
18-13	44726364	82	0	18	17	N/A	7.0
18-14	45566089	99	0	57	55	N/A	3.0
18-15	88854707	61	0	23	32	N/A	5.5
18-16	36722790	63	0	51	44	N/A	3.5
18-17	77377400	61	0	20	15	N/A	7.0
18-18	75436334	50	0	57	39	N/A	3.5
18-19	38760646	57	0	39	41	N/A	4.0
19-12	44289738	88	0	59	36	N/A	3.5
19-13	44726364	82	0	18	17	N/A	7.0
19-14	45566089	99	0	57	55	N/A	3.0
19-15	88854707	61	0	23	32	N/A	5.5
19-16	36722790	63	0	51	44	N/A	3.5

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Thermal performance specifications							Page 5 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
19-17	77377400	61	0	20	15	N/A	7.0
19-18	75436334	50	0	57	39	N/A	3.5
19-19	38760646	57	0	39	41	N/A	4.0
20-12	44289738	88	0	59	36	N/A	3.5
20-13	44726364	82	0	18	17	N/A	7.0
20-14	45566089	99	0	57	55	N/A	3.0
20-15	88854707	61	0	23	32	N/A	5.5
20-16	36722790	63	0	51	44	N/A	3.5
20-17	77377400	61	0	20	15	N/A	7.0
20-18	75436334	50	0	57	39	N/A	3.5
20-19	38760646	57	0	39	41	N/A	4.0
21-12	44289738	88	0	59	36	N/A	3.5
21-13	44726364	82	0	18	17	N/A	7.0
21-14	45566089	99	0	57	55	N/A	3.0
21-15	88854707	61	0	23	32	N/A	5.5
21-16	36722790	63	0	51	44	N/A	3.5
21-17	77377400	61	0	20	15	N/A	7.0
21-18	75436334	50	0	57	39	N/A	3.5
21-19	38760646	57	0	39	41	N/A	4.0
22-12	49257681	88	0	66	41	N/A	3.0
22-13	93666684	82	0	31	24	N/A	5.5
22-14	52637256	99	0	66	53	N/A	3.0
22-15	22147256	61	0	34	39	N/A	4.5
22-16	45420544	63	0	64	50	N/A	3.0
22-17	55521663	61	0	33	21	N/A	5.5
22-18	55179948	50	0	66	48	N/A	3.0
22-19	49257681	57	0	52	47	N/A	3.5
West Tower							
2-01	19948891	81	0	44	48	N/A	3.5
2-03	31364475	84	8	47	25	N/A	4.5
2-04	21987934	80	4	42	17	N/A	5.0
2-05	62671701	81	0	27	20	N/A	6.0
3-01	19948891	81	0	44	48	N/A	3.5
3-02	69343426	80	7	55	48	N/A	3.5
3-03	31364475	84	8	47	25	N/A	4.5
3-04	21987934	80	4	42	17	N/A	5.0
3-05	62671701	81	0	27	20	N/A	6.0
3-06	88296156	50	0	29	28	N/A	5.5
3-07	88296156	50	0	29	28	N/A	5.5
3-08	60819331	81	6	47	59	N/A	3.0
4-01	19948891	81	0	44	48	N/A	3.5
4-02	43654013	80	7	50	48	N/A	3.5
4-03	31364475	84	8	47	25	N/A	4.5
4-04	21987934	80	4	42	17	N/A	5.0
4-05	62671701	81	0	27	20	N/A	6.0
4-06	72834319	50	0	23	29	N/A	5.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued: 18/05/11	
Thermal performance specifications							Page 6 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
4-07	72834319	50	0	23	29	N/A	5.5
4-08	49113964	81	6	45	59	N/A	3.5
5-01	19948891	81	0	44	48	N/A	3.5
5-02	43654013	80	7	50	48	N/A	3.5
5-03	31364475	84	8	47	25	N/A	4.5
5-04	21987934	80	4	42	17	N/A	5.0
5-05	62671701	81	0	27	20	N/A	6.0
5-06	72834319	50	0	23	29	N/A	5.5
5-07	72834319	50	0	23	29	N/A	5.5
5-08	49113964	81	6	45	59	N/A	3.5
6-01	19948891	81	0	44	48	N/A	3.5
6-02	43654013	80	7	50	48	N/A	3.5
6-03	31364475	84	8	47	25	N/A	4.5
6-04	21987934	80	4	42	17	N/A	5.0
6-05	62671701	81	0	27	20	N/A	6.0
6-06	72834319	50	0	23	29	N/A	5.5
6-07	72834319	50	0	23	29	N/A	5.5
6-08	49113964	81	6	45	59	N/A	3.5
7-01	19948891	81	0	44	48	N/A	3.5
7-02	43654013	80	7	50	48	N/A	3.5
7-03	31364475	84	8	47	25	N/A	4.5
7-04	21987934	80	4	42	17	N/A	5.0
7-05	62671701	81	0	27	20	N/A	6.0
7-06	72834319	50	0	23	29	N/A	5.5
7-07	72834319	50	0	23	29	N/A	5.5
7-08	49113964	81	6	45	59	N/A	3.5
8-01	19948891	81	0	44	48	N/A	3.5
8-02	43654013	80	7	50	48	N/A	3.5
8-03	31364475	84	8	47	25	N/A	4.5
8-04	21987934	80	4	42	17	N/A	5.0
8-05	62671701	81	0	27	20	N/A	6.0
8-06	72834319	50	0	23	29	N/A	5.5
8-07	72834319	50	0	23	29	N/A	5.5
8-08	49113964	81	6	45	59	N/A	3.5
9-01	19948891	81	0	44	48	N/A	3.5
9-02	43654013	80	7	50	48	N/A	3.5
9-03	31364475	84	8	47	25	N/A	4.5
9-04	21987934	80	4	42	17	N/A	5.0
9-05	62671701	81	0	27	20	N/A	6.0
9-06	72834319	50	0	23	29	N/A	5.5
9-07	72834319	50	0	23	29	N/A	5.5
9-08	49113964	81	6	45	59	N/A	3.5
10-01	19948891	81	0	44	48	N/A	3.5
10-02	43654013	80	7	50	48	N/A	3.5
10-03	31364475	84	8	47	25	N/A	4.5
10-04	21987934	80	4	42	17	N/A	5.0

ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued: 18/05/11	
Thermal performance specifications							Page 7 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
10-05	62671701	81	0	27	20	N/A	6.0
10-06	72834319	50	0	23	29	N/A	5.5
10-07	72834319	50	0	23	29	N/A	5.5
10-08	49113964	81	6	45	59	N/A	3.5
11-01	19948891	81	0	44	48	N/A	3.5
11-02	43654013	80	7	50	48	N/A	3.5
11-03	31364475	84	8	47	25	N/A	4.5
11-04	21987934	80	4	42	17	N/A	5.0
11-05	62671701	81	0	27	20	N/A	6.0
11-06	72834319	50	0	23	29	N/A	5.5
11-07	72834319	50	0	23	29	N/A	5.5
11-08	49113964	81	6	45	59	N/A	3.5
12-01	19948891	81	0	44	48	N/A	3.5
12-02	43654013	80	7	50	48	N/A	3.5
12-03	31364475	84	8	47	25	N/A	4.5
12-04	21987934	80	4	42	17	N/A	5.0
12-05	62671701	81	0	27	20	N/A	6.0
12-06	72834319	50	0	23	29	N/A	5.5
12-07	72834319	50	0	23	29	N/A	5.5
12-08	49113964	81	6	45	59	N/A	3.5
13-01	19948891	81	0	44	48	N/A	3.5
13-02	43654013	80	7	50	48	N/A	3.5
13-03	31364475	84	8	47	25	N/A	4.5
13-04	21987934	80	4	42	17	N/A	5.0
13-05	62671701	81	0	27	20	N/A	6.0
13-06	72834319	50	0	23	29	N/A	5.5
13-07	72834319	50	0	23	29	N/A	5.5
13-08	49113964	81	6	45	59	N/A	3.5
14-01	19948891	81	0	44	48	N/A	3.5
14-02	43654013	80	7	50	48	N/A	3.5
14-03	31364475	84	8	47	25	N/A	4.5
14-04	21987934	80	4	42	17	N/A	5.0
14-05	62671701	81	0	27	20	N/A	6.0
14-06	72834319	50	0	23	29	N/A	5.5
14-07	72834319	50	0	23	29	N/A	5.5
14-08	49113964	81	6	45	59	N/A	3.5
15-01	19948891	81	0	44	48	N/A	3.5
15-02	43654013	80	7	50	48	N/A	3.5
15-03	88016681	84	8	60	29	N/A	3.5
15-04	21987934	80	4	42	17	N/A	5.0
15-05	62671701	81	0	27	20	N/A	6.0
15-06	72834319	50	0	23	29	N/A	5.5
15-07	72834319	50	0	23	29	N/A	5.5
15-08	49113964	81	6	45	59	N/A	3.5
16-01	19948891	81	0	44	48	N/A	3.5
16-02	43654013	80	7	50	48	N/A	3.5

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Thermal performance specifications							Page 8 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
16-04	81845185	79	4	48	19	N/A	4.5
16-05	61703422	81	0	28	20	N/A	6.0
16-06	72834319	50	0	23	29	N/A	5.5
16-07	72834319	50	0	23	29	N/A	5.5
17-01	19948891	81	0	44	48	N/A	3.5
17-02	43654013	80	7	50	48	N/A	3.5
17-09	75833438	88	0	34	36	N/A	4.5
17-10	38410669	84	0	27	42	N/A	4.5
17-11	14577744	105	7	39	59	N/A	3.5
17-23	43835773	79	7	51	46	N/A	3.5
18-01	19948891	81	0	44	48	N/A	3.5
18-02	43654013	80	7	50	48	N/A	3.5
18-09	75833438	88	0	34	36	N/A	4.5
18-10	38410669	84	0	27	42	N/A	4.5
18-11	14577744	105	7	39	59	N/A	3.5
18-23	43835773	79	7	51	46	N/A	3.5
19-01	19948891	81	0	44	48	N/A	3.5
19-02	43654013	80	7	50	48	N/A	3.5
19-09	75833438	88	0	34	36	N/A	4.5
19-10	38410669	84	0	27	42	N/A	4.5
19-11	14577744	105	7	39	59	N/A	3.5
19-23	43835773	79	7	51	46	N/A	3.5
20-01	19948891	81	0	44	48	N/A	3.5
20-02	43654013	80	7	50	48	N/A	3.5
20-09	75833438	88	0	34	36	N/A	4.5
20-10	38410669	84	0	27	42	N/A	4.5
20-11	14577744	105	7	39	59	N/A	3.5
20-23	43835773	79	7	51	46	N/A	3.5
21-01	19948891	81	0	44	48	N/A	3.5
21-02	43654013	80	7	50	48	N/A	3.5
21-09	75833438	88	0	34	36	N/A	4.5
21-10	38410669	84	0	27	42	N/A	4.5
21-11	14577744	105	7	39	59	N/A	3.5
21-23	43835773	79	7	51	46	N/A	3.5
22-01	19948891	81	0	44	48	N/A	3.5
22-02	43654013	80	7	50	48	N/A	3.5
22-09	75833438	88	0	34	36	N/A	4.5
22-10	38410669	84	0	27	42	N/A	4.5
22-11	14577744	105	7	39	59	N/A	3.5
22-23	43835773	79	7	51	46	N/A	3.5
23-01	19948891	81	0	44	48	N/A	3.5
23-02	43654013	80	7	50	48	N/A	3.5
23-09	75833438	88	0	34	36	N/A	4.5
23-10	38410669	84	0	27	42	N/A	4.5
23-11	14577744	105	7	39	59	N/A	3.5
23-23	43835773	79	7	51	46	N/A	3.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued: 18/05/11	
Thermal performance specifications							Page 9 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
24-01	19948891	81	0	44	48	N/A	3.5
24-02	43654013	80	7	50	48	N/A	3.5
24-09	75833438	88	0	34	36	N/A	4.5
24-10	38410669	84	0	27	42	N/A	4.5
24-11	14577744	105	7	39	59	N/A	3.5
24-23	43835773	79	7	51	46	N/A	3.5
25-01	19948891	81	0	44	48	N/A	3.5
25-02	43654013	80	7	50	48	N/A	3.5
25-09	75833438	88	0	34	36	N/A	4.5
25-10	38410669	84	0	27	42	N/A	4.5
25-11	14577744	105	7	39	59	N/A	3.5
25-23	43835773	79	7	51	46	N/A	3.5
26-01	19948891	81	0	44	48	N/A	3.5
26-02	43654013	80	7	50	48	N/A	3.5
26-09	75833438	88	0	34	36	N/A	4.5
26-10	38410669	84	0	27	42	N/A	4.5
26-11	14577744	105	7	39	59	N/A	3.5
26-23	43835773	79	7	51	46	N/A	3.5
27-01	19948891	81	0	44	48	N/A	3.5
27-02	43654013	80	7	50	48	N/A	3.5
27-09	75833438	88	0	34	36	N/A	4.5
27-10	38410669	84	0	27	42	N/A	4.5
27-11	14577744	105	7	39	59	N/A	3.5
27-23	43835773	79	7	51	46	N/A	3.5
28-01	19948891	81	0	44	48	N/A	3.5
28-02	43654013	80	7	50	48	N/A	3.5
28-09	75833438	88	0	34	36	N/A	4.5
28-10	38410669	84	0	27	42	N/A	4.5
28-11	14577744	105	7	39	59	N/A	3.5
28-23	43835773	79	7	51	46	N/A	3.5
29-01	19948891	81	0	44	48	N/A	3.5
29-02	43654013	80	7	50	48	N/A	3.5
29-09	75833438	88	0	34	36	N/A	4.5
29-10	38410669	84	0	27	42	N/A	4.5
29-11	14577744	105	7	39	59	N/A	3.5
29-23	43835773	79	7	51	46	N/A	3.5
30-01	19948891	81	0	44	48	N/A	3.5
30-02	43654013	80	7	50	48	N/A	3.5
30-09	75833438	88	0	34	36	N/A	4.5
30-10	38410669	84	0	27	42	N/A	4.5
30-11	14577744	105	7	39	59	N/A	3.5
30-23	43835773	79	7	51	46	N/A	3.5
31-01	19948891	81	0	44	48	N/A	3.5
31-02	43654013	80	7	50	48	N/A	3.5
31-09	75833438	88	0	34	36	N/A	4.5
31-10	38410669	84	0	27	42	N/A	4.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 63718608		Issued: 18/05/11	
Thermal performance specifications							Page 10 of 10
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
31-11	14577744	105	7	39	59	N/A	3.5
31-23	43835773	79	7	51	46	N/A	3.5
32-01	19948891	81	0	44	48	N/A	3.5
32-02	43654013	80	7	50	48	N/A	3.5
32-09	75833438	88	0	34	36	N/A	4.5
32-10	38410669	84	0	27	42	N/A	4.5
32-11	14577744	105	7	39	59	N/A	3.5
32-23	43835773	79	7	51	46	N/A	3.5
33-01	19948891	81	0	44	48	N/A	3.5
33-02	43654013	80	7	50	48	N/A	3.5
33-09	75833438	88	0	34	36	N/A	4.5
33-10	38410669	84	0	27	42	N/A	4.5
33-11	14577744	105	7	39	59	N/A	3.5
33-23	43835773	79	7	51	46	N/A	3.5
34-01	95677764	81	8	58	56	N/A	3.0
34-02	79073242	80	7	61	57	N/A	3.0
34-09	38633282	88	0	49	44	N/A	3.5
34-10	55121873	84	0	38	49	N/A	4.0
34-11	54415442	105	6	53	58	N/A	3.0
34-23	99728647	79	7	64	53	N/A	3.0

Thermal Performance Specifications

These are the Specifications upon which the Certified Assessment is based. If details included in these Specifications vary from other drawings or written specifications, these Specifications shall take precedence. If only one specification option is detailed for a building element, that specification must apply to all instances of that element for the project. If alternate specifications are detailed for a building element, the location and extent of alternate specifications must be detailed below and / or clearly indicated on referenced documents

Windows	Product ID	Glass	Frame	U value	SHGC	Area M ²	Detail
Generic		Single tinted	Aluminium	6.60	0.58		As per plans

Skylights	Product ID	Glass	Frame	U value	SHGC	Area M ²	Detail
None							

Any U and SHGC values specified on Certificates Issued after 1 May 2007 are according to NFRC 100. All values prior to this date are ANAC. Alternate products may be used if their U value is lower, and the SHGC value is less than 10% higher or lower.

External walls	Construction	Insulation	Colour – solar abs.	Detail
Precast Concrete		None	Not specified	As per plans
Precast Concrete		R1.0	Not specified	To units 2-03 to 15-03, 1-16 to 22-16, 1-18 to 22-18
Precast Concrete		R1.0	Not specified	To external walls & spandrel panels of units 17-23 to 34-23, 3-02 to 34-02

Internal walls	Construction	Insulation	Detail
Hebal		None	To Inter-tenancy walls
Plasterboard on studs		None	All walls with-in units

Floors	Construction	Insulation	Covering	Detail
Concrete slab		None	Carpet to bedrooms & Tiles to wet areas &	living areas as per plans some living areas as per plans (hatched)
Concrete slab		R1.0	As above & details	To units 3-02, 3-06, 3-07, 3-08, 3-12, 3-13, 3-14

Ceilings	Construction	Insulation	Detail
Plasterboard		none	Where neighbouring units or bedrooms are above
Plasterboard		R2.0	To units 15-03, 16-05, 34-01, 34-02, 34-09, 34-10, 34-11, 34-23, 22-12, 22-13, 22-14, 22-15, 22-16, 22-17, 22-18, 22-19.

Roof	Construction	Insulation	Colour – solar abs.	Detail
Concrete slab		None	Light	As per plans
Concrete with green roof		None	N/A – As green roof above	To terrace units on podium

Window cover	Internal (curtains)	External (awnings, shutters, etc)
Not specified		Adjustable aluminium sliding screens – As per elevations Fixed horizontal shading projections – As per elevations Fixed vertical shading blades – As per elevations

Fixed shading	Eaves (width - inc. gutters, h't above windows)	Verandahs, Pergolas (type, description)
Varying	eaves widths and offsets, as per plans	100% Shaded Balconies – As per plans

Overshadowing	Overshadowing structures	Overshadowing trees
N/A		N/A

Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	353 degrees
Terrain category:	Suburban
Roof ventilation:	None
Cross ventilation:	Standard
Subfloor:	Level 3 some units - Open
Living area open to entry:	Yes – Conditioned Corridor
Doors separate living areas:	No
Stair open to heated areas:	Yes
Seals to windows and doors:	Yes
Exhaust fans without dampers:	No
Ventilated skylights:	No
Open fire, unflued gas heat:	No
Vented downlights:	No
Wall and ceiling vents:	No

ABSA Assessor stamp



BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 374161M

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 <none> published by the Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Wednesday, 18 May 2011



Project summary		
Project name	Riverfront Apartments - West Tower	
Street address	330 Church Street Parramatta 2150	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 788637	
Lot no.	2 & 3	
Section no.	-	
No. of unit buildings	1	
No. of units in unit buildings	222	
No. of attached dwelling houses	0	
No. of separate dwelling houses	0	
Project score		
Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 20	Target 20

Certificate Prepared by (please complete before submitting to Council or PCA)

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82 116 346 082

Description of project

Project address

Project name	Riverfront Apartments - West Tower
Street address	330 Church Street Parramatta 2150
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 788637
Lot no.	2 & 3
Section no.	-

Project type

No. of unit buildings	1
No. of units in unit buildings	222
No. of attached dwelling houses	0
No. of separate dwelling houses	0

Site details

Site area (m ²)	6763
Roof area (m ²)	1602
Non-residential floor area (m ²)	2120
Residential car spaces	235
Non-residential car spaces	69

Common area landscape

Common area lawn (m ²)	163
Common area garden (m ²)	830
Area of indigenous or low water use species (m ²)	535

Assessor details

Assessor number	20101
Certificate number	63718608
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 20	Target 20

Description of project

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

Unit building - West Tower, 222 dwellings, 34 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)
02-01	2	81.0	0.0	0	0
03-01	2	81.0	0.0	0	0
03-05	2	81.0	0.0	0	0
04-01	2	81.0	0.0	0	0
04-05	2	81.0	0.0	0	0
05-01	2	81.0	0.0	0	0
05-05	2	81.0	0.0	0	0
06-01	2	81.0	0.0	0	0
06-05	2	81.0	0.0	0	0
07-01	2	81.0	0.0	0	0
07-05	2	81.0	0.0	0	0
08-01	2	81.0	0.0	0	0
08-05	2	81.0	0.0	0	0
09-01	2	81.0	0.0	0	0
09-05	2	81.0	0.0	0	0
10-01	2	81.0	0.0	0	0
10-05	2	81.0	0.0	0	0
11-01	2	81.0	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)
02-03	2	84.0	8.0	0	0
03-02	2	80.0	7.0	0	0
03-06	1	50.0	0.0	0	0
04-02	2	80.0	7.0	0	0
04-06	1	50.0	0.0	0	0
05-02	2	80.0	7.0	0	0
05-06	1	50.0	0.0	0	0
06-02	2	80.0	7.0	0	0
06-06	1	50.0	0.0	0	0
07-02	2	80.0	7.0	0	0
07-06	2	50.0	0.0	0	0
08-02	2	80.0	7.0	0	0
08-06	1	50.0	0.0	0	0
09-02	2	80.0	7.0	0	0
09-06	1	50.0	0.0	0	0
10-02	2	80.0	7.0	0	0
10-06	1	50.0	0.0	0	0
11-02	2	80.0	7.0	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)
02-04	2	80.0	4.0	0	0
03-03	2	84.0	8.0	0	0
03-07	1	50.0	0.0	0	0
04-03	2	84.0	8.0	0	0
04-07	1	50.0	0.0	0	0
05-03	2	84.0	8.0	0	0
05-07	1	50.0	0.0	0	0
06-03	2	84.0	8.0	0	0
06-07	1	50.0	0.0	0	0
07-03	2	84.0	8.0	0	0
07-07	2	50.0	0.0	0	0
08-03	2	84.0	8.0	0	0
08-07	1	50.0	0.0	0	0
09-03	2	84.0	8.0	0	0
09-07	1	50.0	0.0	0	0
10-03	2	84.0	8.0	0	0
10-07	1	50.0	0.0	0	0
11-03	2	84.0	8.0	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)
02-05	2	81.0	0.0	0	0
03-04	2	80.0	4.0	0	0
03-08	2	81.0	6.0	0	0
04-04	2	80.0	4.0	0	0
04-08	2	81.0	6.0	0	0
05-04	2	80.0	4.0	0	0
05-08	2	81.0	6.0	0	0
06-04	2	80.0	4.0	0	0
06-08	2	81.0	6.0	0	0
07-04	2	80.0	4.0	0	0
07-08	2	81.0	6.0	0	0
08-04	2	80.0	4.0	0	0
08-08	2	81.0	6.0	0	0
09-04	2	80.0	4.0	0	0
09-08	2	81.0	6.0	0	0
10-04	2	80.0	4.0	0	0
10-08	2	81.0	6.0	0	0
11-04	2	80.0	4.0	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)
11-05	2	81.0	0.0	0	0
12-01	2	81.0	0.0	0	0
12-05	2	81.0	0.0	0	0
13-01	2	81.0	0.0	0	0
13-05	2	81.0	0.0	0	0
14-01	2	81.0	0.0	0	0
14-05	2	81.0	0.0	0	0
15-01	2	81.0	0.0	0	0
15-05	2	81.0	0.0	0	0
16-01	2	81.0	0.0	0	0
16-06	1	50.0	0.0	0	0
17-09	2	88.0	0.0	0	0
18-01	2	81.0	0.0	0	0
18-11	3	105.0	7.0	0	0
19-09	2	88.0	0.0	0	0
20-01	2	81.0	0.0	0	0
20-11	3	105.0	7.0	0	0
21-09	2	88.0	0.0	0	0
22-01	2	81.0	0.0	0	0
22-11	3	105.0	7.0	0	0
23-09	2	88.0	0.0	0	0
24-01	2	81.0	0.0	0	0
24-11	3	105.0	7.0	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)
11-06	1	50.0	0.0	0	0
12-02	2	80.0	7.0	0	0
12-06	1	50.0	0.0	0	0
13-02	2	80.0	7.0	0	0
13-06	1	50.0	0.0	0	0
14-02	2	80.0	7.0	0	0
14-06	1	50.0	0.0	0	0
15-02	2	80.0	7.0	0	0
15-06	1	50.0	0.0	0	0
16-02	2	80.0	7.0	0	0
16-07	1	50.0	0.0	0	0
17-10	2	84.0	0.0	0	0
18-02	2	80.0	7.0	0	0
18-23	2	79.0	7.0	0	0
19-10	2	84.0	0.0	0	0
20-02	2	80.0	7.0	0	0
20-23	2	79.0	7.0	0	0
21-10	2	84.0	0.0	0	0
22-02	2	80.0	7.0	0	0
22-23	2	79.0	7.0	0	0
23-10	2	84.0	0.0	0	0
24-02	2	80.0	7.0	0	0
24-23	2	79.0	7.0	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)
11-07	1	50.0	0.0	0	0
12-03	2	84.0	8.0	0	0
12-07	1	50.0	0.0	0	0
13-03	2	84.0	8.0	0	0
13-07	1	50.0	0.0	0	0
14-03	2	84.0	8.0	0	0
14-07	1	50.0	0.0	0	0
15-03	2	84.0	8.0	0	0
15-07	1	50.0	0.0	0	0
16-04	2	79.0	4.0	0	0
17-01	3	81.0	0.0	0	0
17-11	3	105.0	7.0	0	0
18-09	2	88.0	0.0	0	0
19-01	2	81.0	0.0	0	0
19-11	3	105.0	7.0	0	0
20-09	2	88.0	0.0	0	0
21-01	2	81.0	0.0	0	0
21-11	3	105.0	7.0	0	0
22-09	2	88.0	0.0	0	0
23-01	2	81.0	0.0	0	0
23-11	3	105.0	7.0	0	0
24-09	2	88.0	0.0	0	0
25-01	2	81.0	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)
11-08	2	81.0	6.0	0	0
12-04	2	80.0	4.0	0	0
12-08	2	81.0	6.0	0	0
13-04	2	80.0	4.0	0	0
13-08	2	81.0	6.0	0	0
14-04	2	80.0	4.0	0	0
14-08	2	81.0	6.0	0	0
15-04	2	80.0	4.0	0	0
15-08	2	81.0	6.0	0	0
16-05	2	81.0	0.0	0	0
17-02	2	80.0	7.0	0	0
17-23	2	79.0	7.0	0	0
18-10	2	84.0	0.0	0	0
19-02	2	80.0	7.0	0	0
19-23	2	79.0	7.0	0	0
20-10	2	84.0	0.0	0	0
21-02	2	80.0	7.0	0	0
21-23	2	79.0	7.0	0	0
22-10	2	84.0	0.0	0	0
23-02	2	80.0	7.0	0	0
23-23	2	79.0	7.0	0	0
24-10	2	84.0	0.0	0	0
25-02	2	80.0	7.0	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)
25-09	2	88.0	0.0	0	0
26-01	2	81.0	0.0	0	0
26-11	3	105.0	7.0	0	0
27-09	2	88.0	0.0	0	0
28-01	2	81.0	0.0	0	0
28-11	3	105.0	7.0	0	0
29-09	2	88.0	0.0	0	0
30-01	2	81.0	0.0	0	0
30-11	3	105.0	7.0	0	0
31-09	2	88.0	0.0	0	0
32-01	2	81.0	0.0	0	0
32-11	3	105.0	7.0	0	0
33-09	2	88.0	0.0	0	0
34-01	2	81.0	8.0	0	0
34-11	3	105.0	6.0	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)
25-10	2	84.0	0.0	0	0
26-02	2	80.0	7.0	0	0
26-23	2	79.0	7.0	0	0
27-10	2	84.0	0.0	0	0
28-02	2	80.0	7.0	0	0
28-23	2	79.0	7.0	0	0
29-10	2	84.0	0.0	0	0
30-02	2	80.0	7.0	0	0
30-23	2	79.0	7.0	0	0
31-10	2	84.0	0.0	0	0
32-02	2	80.0	7.0	0	0
32-23	2	79.0	7.0	0	0
33-10	2	84.0	0.0	0	0
34-02	2	80.0	7.0	0	0
34-23	2	79.0	7.0	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)
25-11	3	105.0	7.0	0	0
26-09	2	88.0	0.0	0	0
27-01	2	81.0	0.0	0	0
27-11	3	105.0	7.0	0	0
28-09	2	88.0	0.0	0	0
29-01	2	81.0	0.0	0	0
29-11	3	105.0	7.0	0	0
30-09	2	88.0	0.0	0	0
31-01	2	81.0	0.0	0	0
31-11	3	105.0	7.0	0	0
32-09	2	88.0	0.0	0	0
33-01	2	81.0	0.0	0	0
33-11	3	105.0	7.0	0	0
34-09	2	88.0	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)
25-23	2	79.0	7.0	0	0
26-10	2	84.0	0.0	0	0
27-02	2	80.0	7.0	0	0
27-23	2	79.0	7.0	0	0
28-10	2	84.0	0.0	0	0
29-02	2	80.0	7.0	0	0
29-23	2	79.0	7.0	0	0
30-10	2	84.0	0.0	0	0
31-02	2	80.0	7.0	0	0
31-23	2	79.0	7.0	0	0
32-10	2	84.0	0.0	0	0
33-02	2	80.0	7.0	0	0
33-23	2	79.0	7.0	0	0
34-10	2	84.0	0.0	0	0

Description of project

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

Common areas of unit building - West Tower

Common area	Floor area (m²)
Lift car (No. 1)	-
Lift car (No. 4)	-
West Tower Lobby	116

Common area	Floor area (m²)
Lift car (No. 2)	-
Services	42
Hallways	2058

Common area	Floor area (m²)
Lift car (No. 3)	-
Mail	140

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Pool (% of total area)	112
Garbage rooms	171
Podium lobby	170

Common area	Floor area (m²)
Gym (% of total area)	93
Plant	65

Common area	Floor area (m²)
Car park area (% of total area)	9514
Storage (% of total area)	398

Schedule of BASIX commitments

1. Commitments for unit building - West Tower

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for attached dwelling houses

3. Commitments for separate dwelling houses

4. 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 unit building - West Tower

(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
18-01, 18-02, 18-09, 18-10, 18-11, 18-23, 19-01, 19-02, 19-09, 19-10, 19-11, 19-23, 20-01, 20-02, 20-09, 20-10, 20-11, 20-23, 21-01, 21-02, 21-09, 21-10, 21-11, 21-23, 22-01, 22-02, 22-09, 22-10, 22-11, 22-23, 23-01, 23-02, 23-09, 23-10, 23-11, 23-23, 24-01, 24-02, 24-09, 24-10,	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	-	3 star	-	-	-	-	-	-	-

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
24-11, 24-23, 25-01, 25-02, 25-09, 25-10, 25-11, 25-23, 26-01, 26-02, 26-09, 26-10, 26-11, 26-23, 27-01, 27-02, 27-09, 27-10, 27-11, 27-23, 28-01, 28-02, 28-09, 28-10, 28-11, 28-23, 29-01, 29-02, 29-09, 29-10, 29-11, 29-23, 30-01, 30-02, 30-09, 30-10, 30-11, 30-23, 31-01, 31-02,														

	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
31-09, 31-10, 31-11, 31-23, 32-01, 32-02, 32-09, 32-10, 32-11, 32-23, 33-01, 33-02, 33-09, 33-10, 33-11, 33-23, 34-01, 34-02, 34-09, 34-10, 34-11, 34-23														

	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
02-01, 02-03, 02-04, 02-05, 03-01, 03-02, 03-03, 03-04, 03-05, 03-06, 03-07, 03-08, 04-01, 04-02, 04-03, 04-04, 04-05, 04-06, 04-07, 04-08, 05-01, 05-02, 05-03, 05-04, 05-05, 05-06, 05-07, 05-08, 06-01, 06-02, 06-03, 06-04, 06-05, 06-06, 06-07, 06-08, 07-01, 07-02, 07-03, 07-04,	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	2 star	3 star	-	-	-	-	-	-	-

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
07-05, 07-06, 07-07, 07-08, 08-01, 08-02, 08-03, 08-04, 08-05, 08-06, 08-07, 08-08, 09-01, 09-02, 09-03, 09-04, 09-05, 09-06, 09-07, 09-08, 10-01, 10-02, 10-03, 10-04, 10-05, 10-06, 10-07, 10-08, 11-01, 11-02, 11-03, 11-04, 11-05, 11-06, 11-07, 11-08, 12-01, 12-02, 12-03, 12-04,														

	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
12-05, 12-06, 12-07, 12-08, 13-01, 13-02, 13-03, 13-04, 13-05, 13-06, 13-07, 13-08, 14-01, 14-02, 14-03, 14-04, 14-05, 14-06, 14-07, 14-08, 15-01, 15-02, 15-03, 15-04, 15-05, 15-06, 15-07, 15-08, 16-01, 16-02, 16-04, 16-05, 16-06, 16-07, 17-01, 17-02, 17-09, 17-10, 17-11, 17-23														

Dwelling no.	Alternative water source							
	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up

(ii) Energy					Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.							
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.					✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.						✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.						✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.						✓	✓
(f) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Natural lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that each such room or area is fitted with a window and/or skylight.					✓	✓	✓
(g) This commitment applies if the applicant installs a water heating system for the dwelling's pool or spa. The applicant must:							
(aa) install the system specified for the pool in the "Individual Pool" column of the table below (or alternatively must not install any system for the pool). If specified, the applicant must install a timer, to control the pool's pump; and						✓	
(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						✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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	manual on / timer off	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer off

	Cooling		Heating		Artificial lighting						Natural lighting	
Dwelling no.	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
17-01, 17-11, 18-11, 19-11, 20-11, 21-11, 22-11, 23-11, 24-11, 25-11, 26-11, 27-11, 28-11, 29-11, 30-11, 31-11, 32-11, 33-11, 34-11	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	3 (dedicated)	0	yes (dedicated)	no	no	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
03-06, 03-07, 04-06, 04-07, 05-06, 05-07, 06-06, 06-07, 08-06, 08-07, 09-06, 09-07, 10-06, 10-07, 11-06, 11-07, 12-06, 12-07, 13-06, 13-07, 14-06, 14-07, 15-06, 15-07, 16-06, 16-07	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1 (dedicated)	0	yes (dedicated)	no	no	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
02-01, 02-03, 02-04, 02-05, 03-01, 03-02, 03-03, 03-04, 03-05, 03-08, 04-01, 04-02, 04-03, 04-04, 04-05, 04-08, 05-01, 05-02, 05-03, 05-04, 05-05, 05-08, 06-01, 06-02, 06-03, 06-04, 06-05, 06-08, 07-01, 07-02, 07-03, 07-04, 07-05, 07-06, 07-07, 07-08, 08-01, 08-02, 08-03,	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	2 (dedicated)	0	yes (dedicated)	no	no	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
08-04, 08-05, 08-08, 09-01, 09-02, 09-03, 09-04, 09-05, 09-08, 10-01, 10-02, 10-03, 10-04, 10-05, 10-08, 11-01, 11-02, 11-03, 11-04, 11-05, 11-08, 12-01, 12-02, 12-03, 12-04, 12-05, 12-08, 13-01, 13-02, 13-03, 13-04, 13-05, 13-08, 14-01, 14-02, 14-03, 14-04, 14-05, 14-08,												

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
15-01, 15-02, 15-03, 15-04, 15-05, 15-08, 16-01, 16-02, 16-04, 16-05, 17-02, 17-09, 17-10, 17-23, 18-01, 18-02, 18-09, 18-10, 18-23, 19-01, 19-02, 19-09, 19-10, 19-23, 20-01, 20-02, 20-09, 20-10, 20-23, 21-01, 21-02, 21-09, 21-10, 21-23, 22-01, 22-02, 22-09, 22-10, 22-23,												

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
23-01, 23-02, 23-09, 23-10, 23-23, 24-01, 24-02, 24-09, 24-10, 24-23, 25-01, 25-02, 25-09, 25-10, 25-23, 26-01, 26-02, 26-09, 26-10, 26-23, 27-01, 27-02, 27-09, 27-10, 27-23, 28-01, 28-02, 28-09, 28-10, 28-23, 29-01, 29-02, 29-09, 29-10, 29-23, 30-01, 30-02, 30-09, 30-10,												

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
30-23, 31-01, 31-02, 31-09, 31-10, 31-23, 32-01, 32-02, 32-09, 32-10, 32-23, 33-01, 33-02, 33-09, 33-10, 33-23, 34-01, 34-02, 34-09, 34-10, 34-23												

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	yes	no

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
03-02	55	48
03-08	47	59
15-03	60	29
16-04	48	19
16-05	28	20

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
34-01	58	56
34-02	61	57
34-09	49	44
34-10	38	49
34-11	53	58
34-23	64	53
03-06, 03-07	29	28
04-08, 05-08, 06-08, 07-08, 08-08, 09-08, 10-08, 11-08, 12-08, 13-08, 14-08, 15-08	45	59
02-03, 03-03, 04-03, 05-03, 06-03, 07-03, 08-03, 09-03, 10-03, 11-03, 12-03, 13-03, 14-03	47	25
02-04, 03-04, 04-04, 05-04, 06-04, 07-04, 08-04, 09-04, 10-04, 11-04, 12-04, 13-04, 14-04, 15-04	42	17
02-05, 03-05, 04-05, 05-05, 06-05, 07-05, 08-05, 09-05, 10-05, 11-05, 12-05, 13-05, 14-05, 15-05	27	20
17-09, 18-09, 19-09, 20-09, 21-09, 22-09, 23-09, 24-09, 25-09, 26-09, 27-09, 28-09, 29-09, 30-09, 31-09, 32-09, 33-09	34	36
17-10, 18-10, 19-10, 20-10, 21-10, 22-10, 23-10, 24-10, 25-10, 26-10, 27-10, 28-10, 29-10, 30-10, 31-10, 32-10, 33-10	27	42
17-11, 18-11, 19-11, 20-11, 21-11, 22-11, 23-11, 24-11, 25-11, 26-11, 27-11, 28-11, 29-11, 30-11, 31-11, 32-11, 33-11	39	59

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
17-23, 18-23, 19-23, 20-23, 21-23, 22-23, 23-23, 24-23, 25-23, 26-23, 27-23, 28-23, 29-23, 30-23, 31-23, 32-23, 33-23	51	46
04-06, 04-07, 05-06, 05-07, 06-06, 06-07, 07-06, 07-07, 08-06, 08-07, 09-06, 09-07, 10-06, 10-07, 11-06, 11-07, 12-06, 12-07, 13-06, 13-07, 14-06, 14-07, 15-06, 15-07, 16-06, 16-07	23	29
04-02, 05-02, 06-02, 07-02, 08-02, 09-02, 10-02, 11-02, 12-02, 13-02, 14-02, 15-02, 16-02, 17-02, 18-02, 19-02, 20-02, 21-02, 22-02, 23-02, 24-02, 25-02, 26-02, 27-02, 28-02, 29-02, 30-02, 31-02, 32-02, 33-02	50	48
All other dwellings	44	48

(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	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Lift car (No. 1)		-	compact fluorescent	connected to lift call button	No
Lift car (No. 2)		-	compact fluorescent	connected to lift call button	No
Lift car (No. 3)		-	compact fluorescent	connected to lift call button	No
Lift car (No. 4)		-	compact fluorescent	connected to lift call button	No
Services	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Mail	ventilation supply only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
West Tower Lobby	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 34
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 34
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 34
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 34

4. 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	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 767 square metres of roof area of buildings in the development - 0 square metres of impervious area in the development - 0 square metres of garden/lawn area in the development - 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 830 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Pool (No. 1)	Volume: 60 kLs	Location: Pool (% of total area)	-

(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
Pool (% of total area)	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym (% of total area)	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car park area (% of total area)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Storage (% of total area)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Podium lobby	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 54 peak kW
Pool (No. 1)	Heating source: electric heat pump	Pump controlled by timer: yes

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✓" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 374064M

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 <none> published by the Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Wednesday, 18 May 2011



Project summary		
Project name	Riverfront Apartments - East Tower (& Terraces)	
Street address	330 Church Street Parramatta 2150	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 788637	
Lot no.	2 & 3	
Section no.	-	
No. of unit buildings	1	
No. of units in unit buildings	179	
No. of attached dwelling houses	0	
No. of separate dwelling houses	0	
Project score		
Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 20	Target 20

Certificate Prepared by (please complete before submitting to Council or PCA)

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82 116 346 082

Description of project

Project address

Project name	Riverfront Apartments - East Tower (& Terraces)
Street address	330 Church Street Parramatta 2150
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 788637
Lot no.	2 & 3
Section no.	-

Project type

No. of unit buildings	1
No. of units in unit buildings	179
No. of attached dwelling houses	0
No. of separate dwelling houses	0

Site details

Site area (m²)	6763
Roof area (m²)	1602
Non-residential floor area (m²)	2120
Residential car spaces	235
Non-residential car spaces	69

Common area landscape

Common area lawn (m²)	162
Common area garden (m²)	829
Area of indigenous or low water use species (m²)	535

Assessor details

Assessor number	20101
Certificate number	63718608
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 20	Target 20

Description of project

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

Unit building - East tower, 179 dwellings, 22 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)
1-15	2	61.0	0.0	0	0
1-19	2	57.0	0.0	0	0
2-18	1	50.0	0.0	0	0
3-14	3	99.0	0.0	0	0
3-18	1	50.0	0.0	0	0
4-14	2	99.0	0.0	0	0
4-18	1	50.0	0.0	0	0
5-14	3	99.0	0.0	0	0
5-18	1	50.0	0.0	0	0
6-14	3	99.0	0.0	0	0
6-18	1	50.0	0.0	0	0
7-14	3	99.0	0.0	0	0
7-18	1	50.0	0.0	0	0
8-14	3	99.0	0.0	0	0
8-18	1	50.0	0.0	0	0
9-14	3	99.0	0.0	0	0
9-18	1	50.0	0.0	0	0
1-26C	2	88.0	11.0	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)
1-16	2	63.0	0.0	0	0
2-15	2	61.0	0.0	0	0
2-19	2	57.0	0.0	0	0
3-15	2	61.0	0.0	0	0
3-19	2	57.0	0.0	0	0
4-15	2	61.0	0.0	0	0
4-19	2	57.0	0.0	0	0
5-15	2	61.0	0.0	0	0
5-19	2	57.0	0.0	0	0
6-15	2	61.0	0.0	0	0
6-19	2	57.0	0.0	0	0
7-15	2	61.0	0.0	0	0
7-19	2	57.0	0.0	0	0
8-15	2	61.0	0.0	0	0
8-19	2	57.0	0.0	0	0
9-15	2	61.0	0.0	0	0
9-19	2	57.0	0.0	0	0
1-26D	2	88.0	11.0	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)
1-17	2	61.0	0.0	0	0
2-16	2	63.0	0.0	0	0
3-12	2	88.0	0.0	0	0
3-16	2	63.0	0.0	0	0
4-12	2	88.0	0.0	0	0
4-16	2	63.0	0.0	0	0
5-12	2	88.0	0.0	0	0
5-16	2	63.0	0.0	0	0
6-12	2	88.0	0.0	0	0
6-16	2	63.0	0.0	0	0
7-12	2	88.0	0.0	0	0
7-16	2	63.0	0.0	0	0
8-12	2	88.0	0.0	0	0
8-16	2	63.0	0.0	0	0
9-12	2	88.0	0.0	0	0
9-16	2	63.0	0.0	0	0
1-26A	2	88.0	11.0	0	0
1-26E	2	88.0	11.0	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)
1-18	1	50.0	0.0	0	0
2-17	2	61.0	0.0	0	0
3-13	2	82.0	0.0	0	0
3-17	2	61.0	0.0	0	0
4-13	3	82.0	0.0	0	0
4-17	2	61.0	0.0	0	0
5-13	2	82.0	0.0	0	0
5-17	2	61.0	0.0	0	0
6-13	2	82.0	0.0	0	0
6-17	2	61.0	0.0	0	0
7-13	2	82.0	0.0	0	0
7-17	2	61.0	0.0	0	0
8-13	2	82.0	0.0	0	0
8-17	2	61.0	0.0	0	0
9-13	2	82.0	0.0	0	0
9-17	2	61.0	0.0	0	0
1-26B	2	88.0	11.0	0	0
1-26F	2	88.0	11.0	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)
1-26G	2	88.0	11.0	0	0
10-13	2	82.0	0.0	0	0
10-17	2	61.0	0.0	0	0
11-13	2	82.0	0.0	0	0
11-17	2	61.0	0.0	0	0
12-13	2	82.0	0.0	0	0
12-17	2	61.0	0.0	0	0
13-13	2	82.0	0.0	0	0
13-17	2	61.0	0.0	0	0
14-13	2	82.0	0.0	0	0
14-17	2	61.0	0.0	0	0
15-13	2	82.0	0.0	0	0
15-17	2	61.0	0.0	0	0
16-13	2	82.0	0.0	0	0
16-17	2	61.0	0.0	0	0
17-13	2	82.0	0.0	0	0
17-17	2	61.0	0.0	0	0
18-13	2	82.0	0.0	0	0
18-17	2	61.0	0.0	0	0
19-13	2	82.0	0.0	0	0
19-17	2	61.0	0.0	0	0
20-13	2	82.0	0.0	0	0
20-17	2	61.0	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)
1-26H	2	88.0	11.0	0	0
10-14	3	99.0	0.0	0	0
10-18	1	50.0	0.0	0	0
11-14	3	99.0	0.0	0	0
11-18	1	50.0	0.0	0	0
12-14	3	99.0	0.0	0	0
12-18	1	50.0	0.0	0	0
13-14	3	99.0	0.0	0	0
13-18	1	50.0	0.0	0	0
14-14	3	99.0	0.0	0	0
14-18	1	50.0	0.0	0	0
15-14	3	99.0	0.0	0	0
15-18	1	50.0	0.0	0	0
16-14	3	99.0	0.0	0	0
16-18	1	50.0	0.0	0	0
17-14	3	99.0	0.0	0	0
17-18	1	50.0	0.0	0	0
18-14	3	99.0	0.0	0	0
18-18	1	50.0	0.0	0	0
19-14	3	99.0	0.0	0	0
19-18	1	50.0	0.0	0	0
20-14	3	99.0	0.0	0	0
20-18	1	50.0	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)
1-26J	2	88.0	11.0	0	0
10-15	2	61.0	0.0	0	0
10-19	2	57.0	0.0	0	0
11-15	2	61.0	0.0	0	0
11-19	2	57.0	0.0	0	0
12-15	2	61.0	0.0	0	0
12-19	2	57.0	0.0	0	0
13-15	2	61.0	0.0	0	0
13-19	2	57.0	0.0	0	0
14-15	2	61.0	0.0	0	0
14-19	2	57.0	0.0	0	0
15-15	2	61.0	0.0	0	0
15-19	2	57.0	0.0	0	0
16-15	2	61.0	0.0	0	0
16-19	2	57.0	0.0	0	0
17-15	2	61.0	0.0	0	0
17-19	2	57.0	0.0	0	0
18-15	2	61.0	0.0	0	0
18-19	2	57.0	0.0	0	0
19-15	2	61.0	0.0	0	0
19-19	2	57.0	0.0	0	0
20-15	2	61.0	0.0	0	0
20-19	2	57.0	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)
10-12	2	88.0	0.0	0	0
10-16	2	63.0	0.0	0	0
11-12	2	88.0	0.0	0	0
11-16	2	63.0	0.0	0	0
12-12	2	88.0	0.0	0	0
12-16	2	63.0	0.0	0	0
13-12	2	88.0	0.0	0	0
13-16	2	63.0	0.0	0	0
14-12	2	88.0	0.0	0	0
14-16	2	63.0	0.0	0	0
15-12	2	88.0	0.0	0	0
15-16	2	63.0	0.0	0	0
16-12	2	88.0	0.0	0	0
16-16	2	63.0	0.0	0	0
17-12	2	88.0	0.0	0	0
17-16	2	63.0	0.0	0	0
18-12	2	88.0	0.0	0	0
18-16	2	63.0	0.0	0	0
19-12	2	88.0	0.0	0	0
19-16	2	63.0	0.0	0	0
20-12	2	88.0	0.0	0	0
20-16	2	63.0	0.0	0	0
21-12	2	88.0	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)
21-13	2	82.0	0.0	0	0
21-17	2	61.0	0.0	0	0
22-13	2	82.0	0.0	0	0
22-17	2	61.0	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)
21-14	3	99.0	0.0	0	0
21-18	1	50.0	0.0	0	0
22-14	3	99.0	0.0	0	0
22-18	1	50.0	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)
21-15	2	61.0	0.0	0	0
21-19	2	57.0	0.0	0	0
22-15	2	61.0	0.0	0	0
22-19	2	57.0	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)
21-16	2	63.0	0.0	0	0
22-12	2	88.0	0.0	0	0
22-16	2	63.0	0.0	0	0

Description of project

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

Common areas of unit building - East tower

Common area	Floor area (m²)
Lift car (No. 1)	-
Lift car (No. 4)	-
East Tower Lobby	101

Common area	Floor area (m²)
Lift car (No. 2)	-
Services	224
Podium Lobby	285

Common area	Floor area (m²)
Lift car (No. 3)	-
Mail	89
Hallways	1828

Common areas of the development (non-building specific)

Common area	Floor area (m²)
Pool (% of total area)	112
Switch room	21
Storage (% of total area)	398

Common area	Floor area (m²)
Gym (% of total area)	92
Garbage rooms	136

Common area	Floor area (m²)
Car park area (% of total area)	9514
Plant	62

Schedule of BASIX commitments

1. Commitments for unit building - East tower

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for attached dwelling houses

3. Commitments for separate dwelling houses

4. 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 unit building - East tower

(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
12-16, 12-17, 12-18, 12-19, 13-12, 13-13, 13-14, 13-15, 13-16, 13-17, 13-18, 13-19, 14-12, 14-13, 14-14, 14-15, 14-16, 14-17, 14-18, 14-19, 15-12, 15-13, 15-14, 15-15, 15-16, 15-17, 15-18, 15-19, 16-12, 16-13, 16-14, 16-15, 16-16, 16-17, 16-18, 16-19, 17-12, 17-13, 17-14, 17-15,	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	-	3 star	-	-	-	-	-	-	-

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
17-16, 17-17, 17-18, 17-19, 18-12, 18-13, 18-14, 18-15, 18-16, 18-17, 18-18, 18-19, 19-12, 19-13, 19-14, 19-15, 19-16, 19-17, 19-18, 19-19, 20-12, 20-13, 20-14, 20-15, 20-16, 20-17, 20-18, 20-19, 21-12, 21-13, 21-14, 21-15, 21-16, 21-17, 21-18, 21-19, 22-12, 22-13, 22-14, 22-15,														

	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
22-16, 22-17, 22-18, 22-19														

	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
1-15, 1-16, 1-17, 1-18, 1-19, 2-15, 2-16, 2-17, 2-18, 2-19, 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-18, 3-19, 4-12, 4-13, 4-14, 4-15, 4-16, 4-17, 4-18, 4-19, 5-12, 5-13, 5-14, 5-15, 5-16, 5-17, 5-18, 5-19, 6-12, 6-13, 6-14, 6-15, 6-16, 6-17,	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	2 star	3 star	-	-	-	-	-	-	-

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
6-18, 6-19, 7-12, 7-13, 7-14, 7-15, 7-16, 7-17, 7-18, 7-19, 8-12, 8-13, 8-14, 8-15, 8-16, 8-17, 8-18, 8-19, 9-12, 9-13, 9-14, 9-15, 9-16, 9-17, 9-18, 9-19, 1-26A, 1-26B, 1-26C, 1-26D, 1-26E, 1-26F, 1-26G, 1-26H, 1-26J, 10-12, 10-13, 10-14, 10-15, 10-16,														

	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
10-17, 10-18, 10-19, 11-12, 11-13, 11-14, 11-15, 11-16, 11-17, 11-18, 11-19, 12-12, 12-13, 12-14, 12-15														

	Alternative water source							
Dwelling no.	Alternative water supply systems	Size	Configuration	Landscape connection	Toilet connection (s)	Laundry connection	Pool top-up	Spa top-up

(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	manual on / timer off	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
3-14, 4-13, 5-14, 6-14, 7-14, 8-14, 9-14, 10-14, 11-14, 12-14, 13-14, 14-14, 15-14, 16-14, 17-14, 18-14, 19-14, 20-14, 21-14, 22-14	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	1-phase airconditioning 3 Star (new rating) (zoned)	3 (dedicated)	0	yes (dedicated)	no	no	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
1-18, 2-18, 3-18, 4-18, 5-18, 6-18, 7-18, 8-18, 9-18, 10-18, 11-18, 12-18, 13-18, 14-18, 15-18, 16-18, 17-18, 18-18, 19-18, 20-18, 21-18, 22-18	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1 (dedicated)	0	yes (dedicated)	no	no	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
1-15, 1-16, 1-17, 1-19, 2-15, 2-16, 2-17, 2-19, 3-12, 3-13, 3-15, 3-16, 3-17, 3-19, 4-12, 4-14, 4-15, 4-16, 4-17, 4-19, 5-12, 5-13, 5-15, 5-16, 5-17, 5-19, 6-12, 6-13, 6-15, 6-16, 6-17, 6-19, 7-12, 7-13, 7-15, 7-16, 7-17, 7-19, 8-12,	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	1-phase airconditioning 2.5 Star (new rating) (zoned)	2 (dedicated)	0	yes (dedicated)	no	no	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
8-13, 8-15, 8-16, 8-17, 8-19, 9-12, 9-13, 9-15, 9-16, 9-17, 9-19, 1-26A, 1-26B, 1-26C, 1-26D, 1-26E, 1-26F, 1-26G, 1-26H, 1-26J, 10-12, 10-13, 10-15, 10-16, 10-17, 10-19, 11-12, 11-13, 11-15, 11-16, 11-17, 11-19, 12-12, 12-13, 12-15, 12-16, 12-17, 12-19, 13-12,												

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
13-13, 13-15, 13-16, 13-17, 13-19, 14-12, 14-13, 14-15, 14-16, 14-17, 14-19, 15-12, 15-13, 15-15, 15-16, 15-17, 15-19, 16-12, 16-13, 16-15, 16-16, 16-17, 16-19, 17-12, 17-13, 17-15, 17-16, 17-17, 17-19, 18-12, 18-13, 18-15, 18-16, 18-17, 18-19, 19-12, 19-13, 19-15, 19-16,												

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
19-17, 19-19, 20-12, 20-13, 20-15, 20-16, 20-17, 20-19, 21-12, 21-13, 21-15, 21-16, 21-17, 21-19, 22-12, 22-13, 22-15, 22-16, 22-17, 22-19												

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	yes	no

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
3-12	64	34
3-13	20	16
3-14	63	55
1-26A	61	19
1-26H	49	20

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
1-26J	57	22
22-12	66	41
22-13	31	24
22-14	66	53
22-15	34	39
22-16	64	50
22-17	33	21
22-18	66	48
22-19	52	47
1-26B, 1-26C, 1-26D, 1-26E, 1-26F, 1-26G	49	19
4-12, 5-12, 6-12, 7-12, 8-12, 9-12, 10-12, 11-12, 12-12, 13-12, 14-12, 15-12, 16-12, 17-12, 18-12, 19-12, 20-12, 21-12	59	36
4-13, 5-13, 6-13, 7-13, 8-13, 9-13, 10-13, 11-13, 12-13, 13-13, 14-13, 15-13, 16-13, 17-13, 18-13, 19-13, 20-13, 21-13	18	17
4-14, 5-14, 6-14, 7-14, 8-14, 9-14, 10-14, 11-14, 12-14, 13-14, 14-14, 15-14, 16-14, 17-14, 18-14, 19-14, 20-14, 21-14	57	55
1-15, 2-15, 3-15, 4-15, 5-15, 6-15, 7-15, 8-15, 9-15, 10-15, 11-15, 12-15, 13-15, 14-15, 15-15, 16-15, 17-15, 18-15, 19-15, 20-15, 21-15	23	32
1-16, 2-16, 3-16, 4-16, 5-16, 6-16, 7-16, 8-16, 9-16, 10-16, 11-16, 12-16, 13-16, 14-16, 15-16, 16-16, 17-16, 18-16, 19-16, 20-16, 21-16	51	44

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
1-17, 2-17, 3-17, 4-17, 5-17, 6-17, 7-17, 8-17, 9-17, 10-17, 11-17, 12-17, 13-17, 14-17, 15-17, 16-17, 17-17, 18-17, 19-17, 20-17, 21-17	20	15
1-18, 2-18, 3-18, 4-18, 5-18, 6-18, 7-18, 8-18, 9-18, 10-18, 11-18, 12-18, 13-18, 14-18, 15-18, 16-18, 17-18, 18-18, 19-18, 20-18, 21-18	57	39
All other dwellings	39	41

(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	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Lift car (No. 1)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 2)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 3)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 4)	-	-	compact fluorescent	connected to lift call button	No
Services	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Mail	ventilation supply only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
East Tower Lobby	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Podium Lobby	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 22
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 22
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 22
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 22

4. 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	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 835 square metres of roof area of buildings in the development - 0 square metres of impervious area in the development - 0 square metres of garden/lawn area in the development - 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 829 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site
Pool (No. 1)	Volume: 60 kLs	Location: Pool (% of total area)	-

(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
Pool (% of total area)	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym (% of total area)	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car park area (% of total area)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Switch room	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Garbage rooms	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Storage (% of total area)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 16 peak kW
Pool (No. 1)	Heating source: electric heat pump	Solar collector area (minimum, in square metres): Pump controlled by timer: yes

Notes

1. In these commitments, "applicant" means the person carrying out the development.
2. The applicant must identify each dwelling, building and common area listed in this certificate, on the plans accompanying any development application, and on the plans and specifications accompanying the application for a construction certificate / complying development certificate, for the proposed development, using the same identifying letter or reference as is given to that dwelling, building or common area in this certificate.
3. This note applies if the proposed development involves the erection of a building for both residential and non-residential purposes (or the change of use of a building for both residential and non-residential purposes). Commitments in this certificate which are specified to apply to a "common area" of a building or the development, apply only to that part of the building or development to be used for residential purposes.
4. If this certificate lists a central system as a commitment for a dwelling or building, and that system will also service any other dwelling or building within the development, then that system need only be installed once (even if it is separately listed as a commitment for that other dwelling or building).
5. If a star or other rating is specified in a commitment, this is a minimum rating.
6. All alternative water systems to be installed under these commitments (if any), must be installed in accordance with the requirements of all applicable regulatory authorities. NOTE: NSW Health does not recommend that stormwater, recycled water or private dam water be used to irrigate edible plants which are consumed raw, or that rainwater be used for human consumption in areas with potable water supply.

Legend

1. Commitments identified with a "✓" in the "Show on DA plans" column must be shown on the plans accompanying the development application for the proposed development (if a development application is to be lodged for the proposed development).
2. Commitments identified with a "✓" in the "Show on CC/CDC plans and specs" column must be shown in the plans and specifications accompanying the application for a construction certificate / complying development certificate for the proposed development.
3. Commitments identified with a "✓" in the "Certifier check" column must be certified by a certifying authority as having been fulfilled. (Note: a certifying authority must not issue an occupation certificate (either interim or final) for a building listed in this certificate, or for any part of such a building, unless it is satisfied that each of the commitments whose fulfilment it is required to monitor in relation to the building or part, has been fulfilled).