

MERITON APARTMENTS

DA Application for:

Residential Development

To be built at:
100 Bennelong Road
Olympic Park, NSW 2127

BASIX Assessment

Issue No.	Description	Author	Date
01	BASIX assessment & certification [DRAFT]	MF/HE/PV	07/05/14
02	Update to thermal comfort and BASIX certification	TMC/DA	18/06/14



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 BASIX code of practice and is backed by professional indemnity insurance. This report takes into account our client's instructions and preferred building inclusions.

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BASIX CERTIFICATES



INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at Bennelong Road, Olympic Park, NSW 2127.

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 Turner Architects. For further details, refer to the individual BASIX certificates and Efficient Living Inclusions Summary 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 – Bennelong Road

All units in all buildings 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: Aluminium framed single glazed - Grey tint only to all units; U-Value: 6.83 (equal to or lower than) SHGC: 0.54 (+ or – 10%) Aluminium framed single glazed low-e - Grey tint, to selected units as per assessor certificate U-Value: 4.68 (equal to or lower than) SHGC: 0.39 (+ or – 10%) Double glazed skylights Note: Minimum 20% sash opening to bedroom windows that do not open onto a balcony 900mm of spandrel to windows in buildings B & C that do not open onto a balcony as framed construction behind glass with R1.5 bulk insulation as per elevations
Roof / ceiling insulation	Roof: Concrete slab roof, light colour (SA < 0.475) Ceiling: Plasterboard R3.0 insulation to units with balcony above & roof over
Wall / floor insulation	External Wall: 150mm pre-cast concrete – medium colour default R1.5 insulation to all units Internal walls within units: Plasterboard on studs - no insulation Inter-tenancy walls: 75mm Hebel – acoustic insulation (R1.7) to walls between neighbours & hallways Floors: Concrete – carpet to bedrooms, studies, living areas & tiles to wet areas R0.6 bulk insulation to open subfloor of units as per assessor certificate

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 Bathroom taps: 4 star
Fixtures (within common areas)	Showerheads: 3 star (>7.5 but <=9 L/min) Toilets: 4 star Bathroom taps: 4 star
Appliances (within units)	Dishwashers: 3 star Clothes washers: Provided to at least 70% (239 units) of units within the development The above percentages indicate that all occupants are expected to provide clothes washing machines with a water efficiency of 2 stars or greater.
Central rainwater storage	Tank size: 40 000L Collect run-off from a minimum roof area of 1,000m ² across the development Connected to: Irrigation of landscaping
Fire sprinkler system	To be contained in a closed system
Pool & Spa	Indoor pool to have a capacity no greater than 180kL Indoor spa to have a capacity no greater than 8kL and a cover
BASIX Energy inclusions – Score Pass 20 / 20	
Central hot water system	Central gas-fired boiler with R1.0 (~38mm) insulation to ringmain and supply risers
Lift motors	All lifts to have gearless traction with VVVF motor.
Appliances & other efficiency measures (within units)	Gas cooktop & electric oven – all buildings Dishwashers: 3 star – all buildings Clothes dryers: 2 star – all buildings Well ventilated fridge space – all buildings Clothes washers: Provided to at least 70% (239 units) of units within the development The above percentages indicate that all occupants are expected to provide clothes washing machines with an energy efficiency of 2.5 stars or greater.
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 rating] All 2 bedroom units: 2.0 star – Cooling and 2.5 star – Heating (zoned) [new rating] All 3 bedroom units: 2.0 star – Cooling and 3.0 star – Heating (zoned) [new rating]
Artificial lighting (within units)	Fluorescent lighting to be provided to all bedrooms, bathrooms and laundries with dedicated fittings to the bedrooms lights.

Ventilation systems (within units)	Bathroom ventilation: Individual fan, ducted to roof or façade – manual on/manual off Laundry ventilation: Individual fan, ducted to roof or façade – manual on/manual off Kitchen ventilation: Individual fan, not ducted roof – manual switch on/off
Artificial lighting (within common areas)	Indoor Pool/Spa: compact fluorescent – manual on / manual off Gym: compact fluorescent – manual on / manual off Sauna: fluorescent – manual on / manual off Common shower & toilets: fluorescent – manual on / manual off Car park area: fluorescent – zoned switching with motion sensor Lift: LED – connected to lift call button Switch room: fluorescent – manual on / manual off Garbage room: fluorescent – motion sensors Plant or service room: fluorescent – manual on / manual off Rooftop plant rooms: fluorescent – manual on / manual off Ground floor lobbies: compact fluorescent – zoned switching with motion sensors Hallways: compact fluorescent – zoned switching with motion sensors Hallway Building B, L1, Core B2: compact fluorescent – zoned switching with motion sensors
Ventilation systems (within common areas)	Indoor Pool/Spa: ventilation exhaust only – time clock or BMS controlled Gym: air conditioning system – time clock or BMS controlled Sauna: ventilation exhaust only – time clock or BMS controlled Common shower & toilets: ventilation exhaust only – interlocked to light Car park area: ventilation (supply + exhaust) – carbon monoxide + VSD fan Switch room: ventilation supply only – interlocked to light Garbage room: ventilation exhaust only – no efficiency measure Plant or service room: ventilation supply only – interlocked to light Rooftop plant rooms: ventilation supply only – interlocked to light Ground floor lobbies: ventilation supply only – time clock or BMS controlled Hallways: no mechanical ventilation – naturally ventilated Hallway Building B, L1, Core B2: ventilation supply only – time clock or BMS controlled
Pool & Spa	Pool and spa heating systems: gas – Building C Both pool and spa pumps to be controlled by a timer Sauna: gas heating – controlled by BMS



Thermal Comfort Results

100 Bennelong Road,

Olympic Park, NSW 2127

Issued in accordance with **BASIX** Thermal Comfort Simulation Method



Certificate # 14731472

Issued: 18/06/14

Accreditation #

VIC/BDAV/12/1473

Thermal performance specifications

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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)				
Building A									
G01	2	83	0	59	29	3.5	1	Yes	None
G02	1	50	0	53	20	4.5	0	No	None
G03	1	50	0	57	19	4.0	0	No	None
G04	2	84	0	43	38	4.0	0	No	None
G05	1	55	0	53	24	4.0	0	No	None
G06	1	55	0	60	21	4.0	0	No	Low-e glazing to living/kitchen only
G07	2	91	9	66	13	4.0	1	No	Low-e glazing to living/kitchen only
101	2	83	6	66	27	3.5	1	Yes	None
102	1	50	0	45	51	4.5	0	No	None
103	1	50	0	52	21	4.5	0	No	None
104	2	84	0	35	43	4.0	0	No	None
105	1	55	0	45	30	4.0	0	No	None
106	1	55	0	53	30	4.0	0	No	None
107	2	85	0	54	17	4.5	0	No	None
108	2	89	0	60	25	4.0	0	Yes	None
201	2	83	0	56	33	3.5	1	Yes	None
202	1	50	0	45	51	4.5	0	No	None
203	1	50	0	48	23	4.5	0	No	None
204	2	84	0	35	43	4.0	0	No	None
205	1	53	0	48	30	4.0	0	No	None
206	2	85	0	34	45	4.0	0	No	None
207	2	85	0	54	17	4.5	0	No	None
208	2	89	0	50	33	4.0	0	Yes	None
301	2	83	0	65	19	4.0	1	Yes	None
302	1	50	0	56	13	4.5	0	No	None
303	1	50	0	59	13	4.5	0	No	None
304	2	84	0	55	33	4.0	0	No	None
305	1	53	0	38	21	5.0	0	No	None
306	2	85	0	39	36	4.0	0	No	None
307	2	85	0	63	10	4.5	0	No	None



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		Con.	Uncon.	Heat	Cool (Sens & Lat)				
308	2	89	0	55	21	4.0	0	Yes	None
401	2	83	0	66	18	4.0	1	Yes	None
402	1	50	0	57	13	4.5	0	No	None
403	1	50	0	60	13	4.5	0	No	None
404	2	84	0	55	32	4.0	0	No	None
405	1	53	0	38	21	5.0	0	No	None
406	2	85	0	39	36	4.0	0	No	None
407	2	85	0	63	10	4.5	0	No	None
408	2	89	0	52	20	4.5	0	Yes	None
501	2	83	0	66	18	4.0	1	Yes	None
502	1	50	0	58	13	4.5	0	No	None
503	1	50	0	60	13	4.5	0	No	None
504	2	84	0	55	29	4.0	0	No	None
505	1	53	0	38	22	5.0	0	No	None
506	2	85	0	39	36	4.0	0	No	None
507	2	85	0	63	10	4.5	0	No	None
508	2	89	0	60	22	4.0	0	No	None
601	2	83	0	66	17	4.0	1	Yes	None
602	1	50	0	58	12	4.5	0	No	None
603	1	50	0	63	13	4.0	0	No	None
604	2	84	0	57	29	4.0	0	No	None
605	1	56	0	42	24	5.0	0	No	None
606	2	85	0	30	49	4.0	0	No	None
607	2	85	0	65	11	4.0	0	No	None
701	3	113	0	65	13	4.0	1	No	Low-e glazing to living/kitchen only
702	1	52	0	64	11	4.0	0	No	None
703	2	92	0	66	18	4.0	0	No	None
704	1	51	0	52	28	4.0	0	No	None
706	2	85	0	30	49	4.0	0	No	None
707	2	85	0	66	10	4.0	0	No	None



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801	3	113	0	65	13	4.0	1	No	Low-e glazing to living/kitchen only
802	1	52	0	64	11	4.5	0	No	None
803	2	92	0	60	17	4.0	0	No	None
804	1	51	0	52	28	4.0	0	No	None
806	2	85	0	40	42	4.0	0	No	None
807	2	85	0	62	10	4.5	0	No	Low-e glazing to living/kitchen only
901	3	113	0	64	11	4.0	1	No	Low-e glazing throughout
902	1	52	0	64	13	4.0	0	No	Low-e glazing to living/kitchen only
903	2	92	0	66	18	4.0	0	No	Low-e glazing to living/kitchen only
904	1	51	0	60	31	3.5	0	No	None
906	2	85	0	47	39	4.0	0	No	None
907	2	85	0	65	13	4.0	0	No	Low-e glazing throughout



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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades	
		Con.	Uncon.	Heat	Cool (Sens & Lat)					
Building B										
G09	1	54	0	66	25	3.5	0	No	Low-e glazing to living/kitchen only	
G10	2	89	0	48	20	4.5	0	No	None	
G11	1	58	0	51	14	5.0	0	No	None	
109	2	75	0	66	18	4.0	0	No	R0.6 insulation to subfloor	
110	2	89	0	29	25	5.5	0	No	None	
111	2	74	0	37	23	5.0	0	No	None	
113	2	76	0	50	28	4.0	0	No	None	
114	2	97	0	28	20	6.0	0	No	None	
115	2	53	0	61	40	3.5	0	No	Low-e glazing to living/kitchen only	
117	2	82	0	59	24	24	0	No	None	
118	2	90	0	34	23	5.5	0	No	None	
119	2	90	0	29	27	5.5	0	No	None	
120	2	90	0	30	27	5.5	0	No	None	
125	1	57	0	66	13	4.0	0	No	R 0.6 insulation to subfloor and Low-e glazing to living area	
209	1	53	0	52	52	3.5	0	No	None	
210	2	90	0	26	23	6.0	0	No	None	
211	1	53	0	60	26	4.0	0	No	None	
212	1	59	0	61	31	3.5	0	No	Low-e glazing to living/kitchen only	
213	2	76	0	49	30	4.0	0	No	None	
214	2	97	0	19	21	6.5	0	No	None	
215	1	53	0	56	42	3.5	0	No	None	
217	2	82	0	48	26	4.5	0	No	None	
218	2	90	0	24	25	6.0	0	No	None	
219	2	90	0	16	38	5.5	0	No	None	
220	2	90	0	29	29	5.5	0	No	None	
222	2	84	0	50	40	4.0	0	Yes	None	
223	1	58	0	45	17	5.0	0	No	None	
224	2	76	0	65	22	4.0	0	No	None	



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		Con.	Uncon.	Heat	Cool (Sens & Lat)				
225	1	58	0	35	34	4.5	0	No	None
309	1	53	0	60	25	4.0	0	No	None
310	2	90	0	31	13	6.5	0	No	None
311	1	53	0	59	29	4.0	0	No	None
312	1	59	0	63	25	3.5	0	No	None
313	2	76	0	53	25	4.0	0	No	None
314	2	97	0	24	13	7.0	0	No	None
315	1	53	0	65	23	3.5	0	No	None
317	2	82	0	56	15	4.5	0	No	None
318	2	90	0	30	13	6.5	0	No	None
319	2	90	0	31	20	6.0	0	No	None
320	2	90	0	32	20	5.5	0	No	None
322	2	84	0	48	25	4.5	0	Yes	None
323	1	58	0	47	13	5.0	0	No	None
324	2	76	0	66	15	4.0	0	No	None
325	1	57	0	65	11	4.0	0	No	None
409	1	53	0	61	25	4.0	0	No	None
410	2	90	0	29	14	6.5	0	No	None
411	1	53	0	54	30	4.0	0	No	None
412	1	59	0	59	26	4.0	0	No	None
413	1	76	0	49	26	4.0	0	No	None
414	1	97	0	22	13	7.0	0	No	None
415	2	53	0	60	19	4.0	0	No	Low-e glazing to living/kitchen only
417	2	82	0	57	14	4.5	0	No	None
418	2	90	0	28	14	6.5	0	No	None
419	2	90	0	28	21	6.0	0	No	None
420	2	90	0	29	21	6.0	0	No	None
422	2	84	0	48	25	4.5	0	Yes	None
423	1	58	0	48	12	5.0	0	No	None
424	2	76	0	61	14	4.5	0	No	Low-e glazing to living/kitchen only
425	1	57	0	66	11	4.0	0	No	None



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		Con.	Uncon.	Heat	Cool (Sens & Lat)				
509	1	53	0	62	24	4.0	0	No	None
510	2	90	0	29	14	6.5	0	No	None
511	1	53	0	52	31	4.0	0	No	None
512	1	59	0	57	27	4.0	0	No	None
513	1	76	0	47	27	4.5	0	No	None
514	2	97	0	22	13	7.0	0	No	None
515	1	53	0	61	19	4.0	0	No	Low-e glazing to living/kitchen only
517	2	82	0	57	14	4.5	0	No	None
518	2	90	0	28	14	6.5	0	No	None
519	2	90	0	26	21	6.0	0	No	None
520	2	90	0	28	21	6.0	0	No	None
522	2	84	0	47	25	4.5	0	Yes	None
523	1	58	0	49	12	5.0	0	No	None
524	2	76	0	62	13	4.5	0	No	Low-e glazing to living/kitchen only
525	1	57	0	67	11	4.0	0	No	None
609	1	53	0	63	24	4.0	0	No	None
610	2	90	0	31	14	6.0	0	No	None
611	1	53	0	49	31	4.0	0	No	None
612	1	59	0	48	24	4.5	0	No	None
613	2	76	0	45	27	4.5	0	No	None
614	2	97	0	20	14	7.0	0	No	None
615	1	53	0	61	19	4.0	0	No	Low-e glazing to living/kitchen only
617	2	82	0	58	14	4.5	0	No	None
618	2	90	0	26	14	6.5	0	No	None
619	2	90	0	24	21	6.0	0	No	None
620	2	90	0	26	21	6.0	0	No	None
622	2	84	0	48	24	4.5	0	Yes	None
623	1	58	0	51	11	5.0	0	No	None
624	2	76	0	63	13	4.0	0	No	Low-e glazing to living/kitchen only
625	1	57	0	66	11	4.0	0	No	None



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		Con.	Uncon.	Heat	Cool (Sens & Lat)					
709	1	53	0	64	23	4.0	0	No	Low-e glazing to living/kitchen only	
710	2	90	0	40	16	5.5	0	No	None	
711	2	76	0	54	24	4.0	0	No	None	
712	2	81	0	61	28	3.5	0	No	None	
714	2	97	0	31	16	6.0	0	No	None	
715	1	53	0	59	18	4.0	0	No	Low-e glazing throughout	
717	2	82	0	63	16	4.0	0	No	None	
718	2	90	0	36	17	5.5	0	No	None	
719	2	87	0	58	28	4.0	0	No	None	
720	2	87	0	61	29	3.5	0	No	None	
722	2	80	0	66	19	4.0	0	Yes	Low-e glazing throughout	
724	2	80	0	65	22	4.0	0	Yes	Low-e glazing throughout	
725	1	57	0	64	12	4.0	0	No	Low-e glazing to living/kitchen only	



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		Con.	Uncon.	Heat	Cool (Sens & Lat)				
Building C									
G28	2	84	0	49	41	3.5	0	No	None
G29	1	56	0	66	14	4.0	0	No	Low-e glazing to living/kitchen only
G30	1	51	0	59	27	4.0	0	No	None
G31	1	51	0	66	26	3.5	0	No	Low-e glazing throughout
G34	2	84	0	63	44	3.0	0	No	None
G35	2	78	0	60	13	4.5	0	No	None
G36	1	53	0	45	24	4.5	0	No	None
G37	2	81	0	66	12	4.0	0	No	None
G39	2	85	0	65	14	4.0	0	No	Low-e glazing throughout
G47	2	85	0	65	13	4.0	0	No	None
G49	3	93	0	47	22	4.5	0	Yes	None
G50	2	77	0	42	15	5.5	0	No	None
G51	2	85	0	49	19	4.5	0	No	None
G52	2	62	0	56	23	4.0	0	No	None
G53	2	76	0	41	42	4.0	0	No	None
G54	2	76	0	44	40	4.0	0	No	None
G55	1	50	0	43	17	5.0	0	No	None
G56	1	50	0	43	17	5.0	0	No	None
G57	1	50	0	44	16	5.0	0	No	None
G58	2	88	0	55	46	3.5	1	Yes	None
127	1	55	0	66	20	4.0	0	No	None
128	1	50	0	57	31	3.5	0	No	None
129	1	63	0	37	21	5.5	0	No	None
130	2	87	0	66	33	3.5	0	Yes	Low-e glazing to living/kitchen only
132	2	78	0	44	18	5.0	0	No	None
133	3	95	0	54	18	4.5	0	No	None
134	2	84	0	57	40	3.5	0	Yes	None
136	3	98	0	65	27	3.5	0	No	None
137	2	89	0	35	28	5.0	0	No	None



Thermal Comfort Results

100 Bennelong Road,

Olympic Park, NSW 2127

Issued in accordance with **BASIX** Thermal Comfort Simulation Method



Certificate # 14731472

Issued: 18/06/14

Accreditation #

VIC/BDAV/12/1473

Thermal performance specifications

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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)				
139	1	55	0	63	27	3.5	0	No	None
140	2	89	0	32	16	6.0	0	No	None
141	1	58	0	36	31	4.5	0	No	None
142	1	53	0	42	46	4.0	0	No	None
143	1	51	0	45	39	4.0	0	No	None
144	2	97	0	44	24	4.5	0	No	None
145	1	55	0	60	39	3.5	0	No	None
147	2	84	0	49	14	5.0	0	No	None
148	1	51	0	62	24	4.0	0	No	None
150	3	93	0	38	25	5.0	0	Yes	None
151	2	77	0	33	17	6.0	0	No	None
152	2	88	0	21	17	7.0	0	No	None
153	2	85	0	57	14	4.5	0	No	None
154	2	87	0	29	13	6.5	0	No	None
155	1	50	0	34	19	5.5	0	No	None
156	1	50	0	34	19	5.5	0	No	None
157	1	50	0	34	18	5.5	0	No	None
158	2	88	0	48	48	3.5	1	Yes	None
227	1	55	0	63	19	4.0	0	No	None
228	1	50	0	57	31	3.5	0	No	None
229	1	50	0	66	29	3.5	0	No	None
230	1	50	0	66	44	3.0	0	No	Low-e glazing to north window in living/kitchen area
231	1	63	0	56	23	4.0	0	No	Low-e glazing to living/kitchen only
232	2	78	0	53	27	4.0	0	No	None
233	3	95	0	57	18	4.5	0	No	None
234	2	84	0	53	43	3.5	0	Yes	None
235	1	55	0	58	37	3.5	0	No	None
236	2	77	0	50	21	4.5	0	No	None
237	2	89	0	31	29	5.0	0	No	None



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Thermal performance specifications

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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)				
239	1	55	0	63	28	3.5	0	No	None
240	2	89	0	21	18	7.0	0	No	None
241	1	58	0	26	37	5.0	0	No	None
242	1	53	0	25	38	5.0	0	No	None
243	2	76	0	29	48	4.0	0	No	None
244	2	97	0	20	24	6.5	0	No	None
245	1	55	0	63	43	3.0	0	No	None
247	2	84	0	38	14	5.5	0	No	None
248	2	78	0	53	22	4.5	0	No	None
250	3	93	0	38	26	5.0	0	Yes	None
251	2	77	0	33	17	6.0	0	No	None
252	2	88	0	15	18	7.0	0	No	None
253	1	85	0	44	16	5.0	0	No	None
254	2	87	0	22	13	7.0	0	No	None
255	1	50	0	34	19	5.5	0	No	None
256	1	50	0	34	19	5.5	0	No	None
257	1	50	0	34	18	5.5	0	No	None
258	2	88	0	50	47	3.5	1	Yes	None
327	2	77	0	45	26	4.5	0	Yes	None
328	2	76	0	55	22	4.0	0	Yes	None
329	2	84	0	62	27	3.5	0	Yes	None
330	1	55	0	66	21	4.0	0	No	None
331	2	77	0	56	15	4.5	0	No	None
332	2	89	0	36	19	5.5	0	No	None
339	1	55	0	62	16	4.0	0	No	Low-e glazing to living/kitchen west façade only
340	2	89	0	27	12	7.0	0	No	None
341	1	58	0	33	23	5.5	0	No	None
342	1	53	0	32	23	5.5	0	No	None
343	2	76	0	36	31	4.5	0	No	None
344	2	97	0	25	15	6.5	0	No	None



Thermal Comfort Results

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Thermal performance specifications

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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)				
345	1	55	0	66	19	4.0	0	No	Low-e glazing to living/kitchen west façade only
347	2	84	0	42	11	5.5	0	No	None
348	2	78	0	48	15	5.0	0	No	None
350	3	93	0	44	17	5.0	0	Yes	None
351	2	77	0	40	11	6.0	0	No	None
352	2	88	0	28	11	7.0	0	No	None
353	2	85	0	60	15	4.0	0	No	None
354	2	88	0	39	13	5.5	0	No	None
355	1	50	0	50	17	4.5	0	No	None
356	1	50	0	50	17	4.5	0	No	None
357	1	50	0	46	22	4.5	0	No	None
427	2	77	0	45	26	4.5	0	Yes	None
428	2	76	0	55	22	4.0	0	Yes	None
429	2	84	0	62	28	3.5	0	Yes	None
430	1	55	0	65	22	4.0	0	No	None
431	1	77	0	55	16	4.5	0	No	None
432	2	89	0	36	19	5.5	0	No	None
439	1	55	0	62	17	4.0	0	No	Low-e glazing to living and kitchen windows facing west
440	2	89	0	27	13	6.5	0	No	None
441	1	58	0	31	22	5.5	0	No	None
442	1	53	0	33	22	5.5	0	No	None
443	2	76	0	38	30	4.5	0	No	None
444	2	97	0	25	11	7.0	0	No	None
445	1	55	0	64	20	4.0	0	No	Low-e glazing to living and kitchen windows facing west
447	2	84	0	42	11	5.5	0	No	None
448	2	78	0	47	19	5.0	0	No	None
449	3	93	0	45	17	5.0	0	Yes	None
450	1	50	0	41	13	5.5	0	No	None
451	1	50	0	64	25	3.5	0	No	Low-e glazing to north living



Thermal Comfort Results

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Certificate # 14731472					Issued: 18/06/14		Accreditation #		VIC/BDAV/12/1473	
Thermal performance specifications									Page 12 of 13	
Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades	
		Con.	Uncon.	Heat	Cool (Sens & Lat)					
527	2	77	0	45	26	4.5	0	Yes	None	
528	2	76	0	55	22	4.0	0	Yes	None	
529	2	84	0	60	28	4.0	0	Yes	None	
530	1	55	0	64	22	4.0	0	No	None	
531	2	77	0	53	22	4.5	0	No	None	
532	2	89	0	36	19	5.5	0	No	None	
539	1	55	0	61	18	4.0	0	No	Low-e glazing to living and kitchen windows facing west	
540	2	89	0	27	13	6.5	0	No	None	
541	1	58	0	31	22	5.5	0	No	None	
542	1	53	0	33	22	5.5	0	No	None	
543	2	76	0	38	30	4.5	0	No	None	
544	1	97	0	25	11	7.0	0	No	None	
545	2	55	0	63	20	4.0	0	No	Low-e glazing to living and kitchen windows facing west	
547	2	84	0	42	10	5.5	0	No	None	
548	2	78	0	45	20	5.0	0	No	None	
550	3	93	0	44	18	5.0	0	Yes	None	
551	1	50	0	42	13	5.5	0	No	None	
552	1	50	0	64	25	3.5	0	No	Low-e glazing to north living	
627	2	77	0	45	26	4.5	0	Yes	None	
628	2	76	0	55	22	4.0	0	Yes	None	
629	2	84	0	60	28	4.0	0	Yes	None	
630	1	55	0	64	22	4.0	0	No	None	
631	2	77	0	51	28	4.0	0	No	None	
632	2	89	0	36	19	5.5	0	No	None	
639	1	55	0	60	19	4.0	0	No	None	
640	2	89	0	27	13	6.5	0	No	None	
641	1	58	0	31	22	5.5	0	No	None	
642	1	53	0	33	22	5.5	0	No	None	
643	2	76	0	38	30	4.5	0	No	None	
644	2	97	0	25	11	7.0	0	No	None	



Thermal Comfort Results

100 Bennelong Road,

Olympic Park, NSW 2127

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Thermal performance specifications

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Unit number	Number of Bedrooms	Floor area (M ²)		Predict. Loads (MJ/M ² /y)		Star Rating	Window in Bathroom	Window in Kitchen	Thermal Comfort Upgrades
		Con.	Uncon.	Heat	Cool (Sens & Lat)				
645	2	55	0	62	19	4.0	0	No	Low-e glazing to living/kitchen west façade only
647	2	84	0	43	10	5.5	0	No	None
648	2	78	0	45	21	4.5	0	No	None
650	3	93	0	46	19	5.0	0	Yes	None
651	1	50	0	44	13	5.5	0	No	None
652	1	50	0	61	30	3.5	0	No	Low-e glazing to living/kitchen north façade only
727	2	77	0	49	23	4.5	0	Yes	None
728	2	81	0	65	16	4.0	0	Yes	Low-e glazing throughout
729	2	80	0	66	32	3.5	0	Yes	Low-e glazing throughout
730	1	62	0	65	22	4.0	0	No	Low-e to living/kitchen and bedroom only
732	2	89	0	42	18	5.0	0	No	None
739	1	55	0	61	15	4.0	0	No	Low-e glazing throughout
740	2	89	0	34	15	6.0	0	No	None
741	1	58	0	35	23	5.0	0	No	None
742	1	53	0	41	24	5.0	0	No	None
743	2	76	0	46	32	4.0	0	No	None
744	2	97	0	31	14	6.0	0	No	None
745	1	55	0	63	17	4.0	0	No	Low-e glazing throughout
747	3	105	0	56	16	4.5	0	No	None
750	3	103	0	65	19	4.0	0	Yes	Low-e glazing to living/kitchen only
751	3	104	0	61	22	4.0	0	Yes	None



NatHERS Certificate

New Dwelling



4.5 Stars

Simulation Software

Software Name BERS Pro 4.2
Software Version Release 110811/A
Engine Version CHENATH V2.13

Simulation Details

Project Name A6-40 unit 202 Level 2 Building A _1
Date 17/06/2014
Location HOMEBUSH BAY PC 2127
Climate file climat56.TXT
Adjusted Star Rating 4.5 Stars
Conditioned Area 50.13 m²
Unconditioned Area 0.00 m²
Adjusted Cooling 21.2 MJ/m²
Adjusted Heating 45.3 MJ/m²
Adjusted Total 66.6 MJ/m²

Dwelling Address

DP Number
Unit Number
Lot Number
House Number 100
Street Name Bennelong Road
Development Name
Suburb Olympic Park NSW 2127

Client Details

Name Meriton Group
Phone 02 9287 2590 Fax 02 9287 2790
Email
Postal Address
Street Details Level 11, Meriton Tower, 528 Kent Street, Sydney NSW 2000

Assessor Details

Name Tracey Cools
Phone 02 9970 6181 Fax 02 9970 6181
Email admin@efficientliving.com.au
Postal Address
Street Details 13/13 Lagoon Street, Narrabeen NSW 2101

		Energy Rating		Certificate Number 14731472
☐	single-dwelling rating			4.5 stars
☒	multi-unit development (attach listing of ratings) If selected, data specified is the average across the entire development	heating	48	MJ/m ²
		cooling	22	MJ/m ²
Recessed downlights confirmation:		☐ Rated with	☒ Rated without	
Assessor Name/Number		Tracey Cools VIC/BDAV/12/1473		
Assessor Signature				Date 18/06/14

Signed by the Assessor..........Date.....**18/06/14**.....

*Tilted roof windows with blinds cannot be modelled using this version of BERSPro.
All windows are modelled with Holland Blinds for regulatory purposes.*

Building Element Details

Project A6-40 unit 202 Level 2 Building A Run 1
HOMEBUSH BAY PC 2127 Lat -33.90 Long 151.10 Climate File climat56.TXT

Summary

Conditioned Area	50.1 m²
Unconditioned Area	0.0 m²
Total Floor Area	50.1 m²
Total Glazed Area	27.3 m²
Total External Solid door Area	1.9 m²
Glass to Floor Area	54.4 %
Gross External Wall Area	89.6 m²
Net External Wall Area	60.4 m²

Window

27.3 m²	BGC-05-013a	Affinity Windows	Uval 6.83	SHGC 0.54
	Glass	5mm Grey		
	Frame	Aluminium 4-Lite Sliding Window - Single Glazed		

External Wall

0.2 m²	Tilt up concrete, lined	Bulk Insulation R 1.5
41.3 m²	PowerPanel to neighbour	Bulk Insulation R 1.7
18.9 m²	PowerPanel	Bulk Insulation R 1.7

Internal Wall

27.6 m²	Cavity Panel 70mm gap	No Insulation
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External Floor

12.5 m²	Concrete Slab, Unit Below	Carpet 10mm	No Insulation
5.4 m²	Concrete Slab, Unit Below	Ceramic Tiles 8mm	No Insulation
32.2 m²	Concrete Slab, Unit Below	80/20 Carpet 10mm/Ceramic	No Insulation

External Ceiling

50.1 m²	Plasterboard	No Insulation Apartment above
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Roof (Horizontal area)

50.1 m²	Concrete	No Insulation, Only an Air Gap	0° slope	Skillion roof
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**Energy Rating**

Certificate Number **14731472**

☐ single-dwelling rating

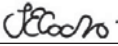
☒ multi-unit development (attach listing of ratings)
If selected, data specified is the average across the entire development

heating **48** MJ/m²

cooling **22** MJ/m²

Recessed downlights confirmation: ☐ Rated with ☒ Rated without

Assessor Name/Number **Tracey Cools VIC/BDAV/12/1473**

Assessor Signature  Date **18/06/14**

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 543691M

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 29/06/2009 published by Planning & Infrastructure. This document is available at www.basix.nsw.gov.au

Director-General

Date of issue: Wednesday, 18 June 2014

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



Project summary		
Project name	100 Bennelong Road	
Street address	100 Bennelong Road Sydney Olympic Park 2127	
Local Government Area	Auburn Council	
Plan type and plan number	deposited 855929	
Lot no.	84	
Section no.	-	
No. of residential flat buildings	3	
No. of units in residential flat buildings	342	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	 40	Target 40
Thermal Comfort	 Pass	Target Pass
Energy	 20	Target 20

Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82 116 346 082

Description of project

Project address

Project name	100 Bennelong Road
Street address	100 Bennelong Road Sydney Olympic Park 2127
Local Government Area	Auburn Council
Plan type and plan number	deposited 855929
Lot no.	84
Section no.	-

Project type

No. of residential flat buildings	3
No. of units in residential flat buildings	342
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	15040
Roof area (m ²)	5265
Non-residential floor area (m ²)	585
Residential car spaces	473
Non-residential car spaces	29

Common area landscape

Common area lawn (m ²)	625
Common area garden (m ²)	2845
Area of indigenous or low water use species (m ²)	0

Assessor details

Assessor number	BDAV/12/1473
Certificate number	14731472
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

Residential flat buildings - Building A, 72 dwellings, 10 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)
101	2	83.0	6.0	0	0
105	1	55.0	0.0	0	0
201	2	83.0	0.0	0	0
205	1	53.0	0.0	0	0
301	2	83.0	0.0	0	0
305	1	53.0	0.0	0	0
401	2	83.0	0.0	0	0
405	1	53.0	0.0	0	0
501	2	83.0	0.0	0	0
505	1	53.0	0.0	0	0
601	2	83.0	0.0	0	0
605	1	56.0	0.0	0	0
702	1	52.0	0.0	0	0
707	2	85.0	0.0	0	0
804	1	51.0	0.0	0	0
902	1	52.0	0.0	0	0
907	2	85.0	0.0	0	0
G04	2	84.0	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)
102	1	50.0	0.0	0	0
106	1	55.0	0.0	0	0
202	1	50.0	0.0	0	0
206	2	85.0	0.0	0	0
302	1	50.0	0.0	0	0
306	2	85.0	0.0	0	0
402	1	50.0	0.0	0	0
406	2	85.0	0.0	0	0
502	1	50.0	0.0	0	0
506	2	85.0	0.0	0	0
602	1	50.0	0.0	0	0
606	2	85.0	0.0	0	0
703	2	92.0	0.0	0	0
801	3	113.0	0.0	0	0
806	2	85.0	0.0	0	0
903	2	92.0	0.0	0	0
G01	2	83.0	0.0	0	0
G05	1	55.0	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)
103	1	50.0	0.0	0	0
107	2	85.0	0.0	0	0
203	1	50.0	0.0	0	0
207	2	85.0	0.0	0	0
303	1	50.0	0.0	0	0
307	2	85.0	0.0	0	0
403	1	50.0	0.0	0	0
407	2	85.0	0.0	0	0
503	1	50.0	0.0	0	0
507	2	85.0	0.0	0	0
603	1	50.0	0.0	0	0
607	2	85.0	0.0	0	0
704	1	51.0	0.0	0	0
802	1	52.0	0.0	0	0
807	2	85.0	0.0	0	0
904	1	51.0	0.0	0	0
G02	1	50.0	0.0	0	0
G06	1	55.0	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)
104	2	84.0	0.0	0	0
108	2	89.0	0.0	0	0
204	2	84.0	0.0	0	0
208	2	89.0	0.0	0	0
304	2	84.0	0.0	0	0
308	2	89.0	0.0	0	0
404	2	84.0	0.0	0	0
408	2	89.0	0.0	0	0
504	2	84.0	0.0	0	0
508	2	89.0	0.0	0	0
604	2	84.0	0.0	0	0
701	3	113.0	0.0	0	0
706	2	85.0	0.0	0	0
803	2	92.0	0.0	0	0
901	3	113.0	0.0	0	0
906	2	85.0	0.0	0	0
G03	1	50.0	0.0	0	0
G07	2	91.0	9.0	0	0

Residential flat buildings - Building B, 102 dwellings, 8 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)
109	2	75.0	0.0	0	0
114	2	97.0	0.0	0	0
119	2	90.0	0.0	0	0
210	2	90.0	0.0	0	0
214	2	97.0	0.0	0	0
219	2	90.0	0.0	0	0
224	2	76.0	0.0	0	0
311	1	53.0	0.0	0	0
315	1	53.0	0.0	0	0
320	2	90.0	0.0	0	0
325	1	57.0	0.0	0	0
412	1	59.0	0.0	0	0
417	2	82.0	0.0	0	0
422	2	84.0	0.0	0	0
509	1	53.0	0.0	0	0
513	2	76.0	0.0	0	0
518	2	90.0	0.0	0	0
523	1	58.0	0.0	0	0
610	2	90.0	0.0	0	0
614	2	97.0	0.0	0	0
619	2	90.0	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)
110	2	89.0	0.0	0	0
115	1	53.0	0.0	0	0
120	2	90.0	0.0	0	0
211	1	53.0	0.0	0	0
215	1	53.0	0.0	0	0
220	2	90.0	0.0	0	0
225	1	58.0	0.0	0	0
312	1	59.0	0.0	0	0
317	2	82.0	0.0	0	0
322	2	84.0	0.0	0	0
409	1	53.0	0.0	0	0
413	2	76.0	0.0	0	0
418	2	90.0	0.0	0	0
423	1	58.0	0.0	0	0
510	2	90.0	0.0	0	0
514	2	97.0	0.0	0	0
519	2	90.0	0.0	0	0
524	2	76.0	0.0	0	0
611	1	53.0	0.0	0	0
615	1	53.0	0.0	0	0
620	2	90.0	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)
111	2	74.0	0.0	0	0
117	2	82.0	0.0	0	0
125	1	57.0	0.0	0	0
212	1	59.0	0.0	0	0
217	2	82.0	0.0	0	0
222	2	84.0	0.0	0	0
309	1	53.0	0.0	0	0
313	2	76.0	0.0	0	0
318	2	90.0	0.0	0	0
323	1	58.0	0.0	0	0
410	2	90.0	0.0	0	0
414	2	97.0	0.0	0	0
419	2	90.0	0.0	0	0
424	2	76.0	0.0	0	0
511	1	53.0	0.0	0	0
515	1	53.0	0.0	0	0
520	2	90.0	0.0	0	0
525	1	57.0	0.0	0	0
612	1	59.0	0.0	0	0
617	2	82.0	0.0	0	0
622	2	84.0	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)
113	2	76.0	0.0	0	0
118	2	90.0	0.0	0	0
209	1	53.0	0.0	0	0
213	2	76.0	0.0	0	0
218	2	90.0	0.0	0	0
223	2	58.0	0.0	0	0
310	2	90.0	0.0	0	0
314	2	97.0	0.0	0	0
319	2	90.0	0.0	0	0
324	2	76.0	0.0	0	0
411	1	53.0	0.0	0	0
415	1	53.0	0.0	0	0
420	2	90.0	0.0	0	0
425	1	57.0	0.0	0	0
512	1	59.0	0.0	0	0
517	2	82.0	0.0	0	0
522	2	84.0	0.0	0	0
609	1	53.0	0.0	0	0
613	2	76.0	0.0	0	0
618	2	90.0	0.0	0	0
623	1	58.0	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)
624	2	76.0	0.0	0	0
711	2	76.0	0.0	0	0
717	2	82.0	0.0	0	0
722	2	80.0	0.0	0	0
G10	2	89.0	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)
625	1	57.0	0.0	0	0
712	2	81.0	0.0	0	0
718	2	90.0	0.0	0	0
724	2	80.0	0.0	0	0
G11	1	58.0	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)
709	1	53.0	0.0	0	0
714	2	97.0	0.0	0	0
719	2	87.0	0.0	0	0
725	1	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)
710	2	90.0	0.0	0	0
715	1	53.0	0.0	0	0
720	2	87.0	0.0	0	0
G09	1	54.0	0.0	0	0

Residential flat buildings - Building C, 168 dwellings, 8 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)
127	1	55.0	0.0	0	0
132	2	78.0	0.0	0	0
137	2	89.0	0.0	0	0
142	1	53.0	0.0	0	0
147	2	84.0	0.0	0	0
152	2	88.0	0.0	0	0
156	1	50.0	0.0	0	0
228	1	50.0	0.0	0	0
232	2	78.0	0.0	0	0
236	2	77.0	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)
128	1	50.0	0.0	0	0
133	3	95.0	0.0	0	0
139	1	55.0	0.0	0	0
143	1	51.0	0.0	0	0
148	1	51.0	0.0	0	0
153	2	85.0	0.0	0	0
157	1	50.0	0.0	0	0
229	1	50.0	0.0	0	0
233	3	95.0	0.0	0	0
237	2	89.0	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)
129	2	63.0	0.0	0	0
134	2	84.0	0.0	0	0
140	2	89.0	0.0	0	0
144	2	97.0	0.0	0	0
150	3	93.0	0.0	0	0
154	2	87.0	0.0	0	0
158	2	88.0	0.0	0	0
230	1	50.0	0.0	0	0
234	2	84.0	0.0	0	0
239	1	55.0	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)
130	2	87.0	0.0	0	0
136	3	98.0	0.0	0	0
141	1	58.0	0.0	0	0
145	1	55.0	0.0	0	0
151	2	77.0	0.0	0	0
155	1	50.0	0.0	0	0
227	1	55.0	0.0	0	0
231	1	63.0	0.0	0	0
235	1	55.0	0.0	0	0
240	2	89.0	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)
241	1	58.0	0.0	0	0
245	1	55.0	0.0	0	0
251	2	77.0	0.0	0	0
255	1	50.0	0.0	0	0
327	2	77.0	0.0	0	0
331	2	77.0	0.0	0	0
341	1	58.0	0.0	0	0
345	1	55.0	0.0	0	0
351	2	78.0	0.0	0	0
355	1	50.0	0.0	0	0
428	2	76.0	0.0	0	0
432	2	89.0	0.0	0	0
442	1	53.0	0.0	0	0
447	2	84.0	0.0	0	0
451	1	50.0	0.0	0	0
530	1	55.0	0.0	0	0
540	2	89.0	0.0	0	0
544	2	97.0	0.0	0	0
550	3	93.0	0.0	0	0
628	2	76.0	0.0	0	0
632	2	89.0	0.0	0	0
642	1	53.0	0.0	0	0
647	2	84.0	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)
242	1	53.0	0.0	0	0
247	2	84.0	0.0	0	0
252	2	88.0	0.0	0	0
256	1	50.0	0.0	0	0
328	2	76.0	0.0	0	0
332	2	89.0	0.0	0	0
342	1	53.0	0.0	0	0
347	2	84.0	0.0	0	0
352	2	88.0	0.0	0	0
356	1	50.0	0.0	0	0
429	2	84.0	0.0	0	0
439	1	55.0	0.0	0	0
443	2	76.0	0.0	0	0
448	2	78.0	0.0	0	0
527	2	77.0	0.0	0	0
531	2	77.0	0.0	0	0
541	1	58.0	0.0	0	0
545	1	55.0	0.0	0	0
551	1	50.0	0.0	0	0
629	2	84.0	0.0	0	0
639	1	55.0	0.0	0	0
643	2	76.0	0.0	0	0
648	2	78.0	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)
243	2	76.0	0.0	0	0
248	2	78.0	0.0	0	0
253	1	85.0	0.0	0	0
257	1	50.0	0.0	0	0
329	2	84.0	0.0	0	0
339	1	55.0	0.0	0	0
343	2	76.0	0.0	0	0
348	2	78.0	0.0	0	0
353	2	85.0	0.0	0	0
357	1	50.0	0.0	0	0
430	1	55.0	0.0	0	0
440	2	89.0	0.0	0	0
444	2	97.0	0.0	0	0
449	3	93.0	0.0	0	0
528	2	76.0	0.0	0	0
532	2	89.0	0.0	0	0
542	1	53.0	0.0	0	0
547	2	84.0	0.0	0	0
552	1	50.0	0.0	0	0
630	1	55.0	0.0	0	0
640	2	89.0	0.0	0	0
644	2	97.0	0.0	0	0
650	3	93.0	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)
244	2	97.0	0.0	0	0
250	3	93.0	0.0	0	0
254	2	87.0	0.0	0	0
258	2	88.0	0.0	0	0
330	1	55.0	0.0	0	0
340	2	89.0	0.0	0	0
344	2	97.0	0.0	0	0
350	3	93.0	0.0	0	0
354	2	88.0	0.0	0	0
427	2	77.0	0.0	0	0
431	1	77.0	0.0	0	0
441	1	58.0	0.0	0	0
445	1	55.0	0.0	0	0
450	1	50.0	0.0	0	0
529	2	84.0	0.0	0	0
539	1	55.0	0.0	0	0
543	2	76.0	0.0	0	0
548	2	78.0	0.0	0	0
627	2	77.0	0.0	0	0
631	2	77.0	0.0	0	0
641	1	58.0	0.0	0	0
645	1	55.0	0.0	0	0
651	1	50.0	3.0	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)
652	1	50.0	0.0	0	0
730	1	62.0	0.0	0	0
741	1	58.0	0.0	0	0
745	1	55.0	0.0	0	0
G28	2	84.0	0.0	0	0
G34	2	84.0	0.0	0	0
G39	2	85.0	0.0	0	0
G51	2	85.0	0.0	0	0
G55	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)
727	2	77.0	0.0	0	0
731	2	89.0	0.0	0	0
742	1	53.0	0.0	0	0
747	3	105.0	0.0	0	0
G29	1	56.0	0.0	0	0
G35	2	78.0	0.0	0	0
G47	2	85.0	0.0	0	0
G52	2	62.0	0.0	0	0
G56	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)
728	2	81.0	0.0	0	0
739	1	55.0	0.0	0	0
743	2	76.0	0.0	0	0
750	3	103.0	0.0	0	0
G30	1	51.0	0.0	0	0
G36	1	53.0	0.0	0	0
G49	3	93.0	0.0	0	0
G53	2	76.0	0.0	0	0
G57	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)
729	2	80.0	0.0	0	0
740	2	89.0	0.0	0	0
744	2	97.0	0.0	0	0
751	3	104.0	0.0	0	0
G31	1	51.0	0.0	0	0
G37	2	81.0	0.0	0	0
G50	2	77.0	0.0	0	0
G54	2	76.0	0.0	0	0
G58	2	88.0	0.0	0	0

Description of project

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

Common areas of unit building - Building A

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

Common area	Floor area (m ²)
Building A - Ground floor & lift lobbies	92

Common area	Floor area (m ²)
Building A - Hallways	492

Common areas of unit building - Building B

Common area	Floor area (m ²)
Lift car (No. 2)	-
Building B - Hallways	739

Common area	Floor area (m ²)
Lift car (No. 3)	-
Hallway Building B, L1, Core B2	41

Common area	Floor area (m ²)
Building B - Ground floor & lift lobbies	136

Common areas of unit building - Building C

Common area	Floor area (m ²)
Lift car (No. 4)	-
Lift car (No. 7)	-
Building C - Hallways	1113

Common area	Floor area (m ²)
Lift car (No. 5)	-
Common shower and toilets	8

Common area	Floor area (m ²)
Lift car (No. 6)	-
Building C - Ground floor & lift lobbies	491

Common areas of the development (non-building specific)

Common area	Floor area (m ²)
Indoor pool & spa area	233
Garbage rooms	573

Common area	Floor area (m ²)
Gym	109
Plant rooms	210

Common area	Floor area (m ²)
Car park area	18467
Rooftop plant room	231

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building A

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for Residential flat buildings - Building B

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

3. Commitments for Residential flat buildings - Building C

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

4. Commitments for multi-dwelling houses

5. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building A

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install:			
(aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and		✓	✓
(bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
101	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	-	3 star	-	-	-	-	-	-	-
104, 105, 201, 204, 301, 302, 303, 304, 306, 307, 402, 404, 405, 408, 501, 502, 508, 602, 604, 606, 607, 701, 704, 804, 806, 901, 902, 903, 904, 906, 907, G01, G07	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
102, 103, 106, 107, 108, 202, 203, 205, 206, 207, 208, 305, 308, 401, 403, 406, 407, 503, 504, 505, 506, 507, 601, 603, 605, 702, 703, 706, 707, 801, 802, 803, 807, G02, G03, G04, G05, G06	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	2 star	3 star	-	-	-	-	-	-	-

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

(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 switch on/off	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/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
901	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	no	yes	yes	no	1	no
904	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	0	no	yes	yes	no	0	no
G04	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	no	yes	yes	no	1	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
701, 801	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	no	yes	yes	no	1	no
101, 201, G01	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	no	yes	yes	no	1	yes
702, 802, 902	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)	1 (dedicated)	0	no	yes	yes	no	1	no
703, 803, 903	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)	2 (dedicated)	0	no	yes	yes	no	0	no
704, 804, G07	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	no	yes	yes	no	0	no
301, 401, 501, 601	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	no	yes	yes	no	2	yes
104, 204, 304, 404, 906, 907	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	no	yes	yes	no	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
102, 103, 105, 106, 202, 203, 205, 302, 303, 305, 402, 403, 405, 502, 503, 505, 602, 603, 605, G02, G03	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	no	yes	yes	no	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
107, 108, 206, 207, 208, 306, 307, 308, 406, 407, 408, 504, 506, 507, 508, 604, 606, 607, 706, 707, 806, 807, G05, G06	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	no	yes	yes	no	0	no

Dwelling no.	Individual pool		Individual spa		Appliances & other efficiency measures							
	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
101	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	-	2 star	no	no

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
102, 103, 104, 105, 106, 107, 108, 201, 202, 203, 204, 205, 206, 207, 208, 301, 302, 303, 304, 305, 306, 307, 308, 401, 402, 403, 404, 405, 406, 407, 408, 501, 502, 503, 504, 505, 506, 507,	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	2.5 star	2 star	no	no

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
508, 601, 602, 603, 604, 605, 606, 607, 701, 702, 703, 704, 706, 707, 801, 802, 803, 804, 806, 807, 901, 902, 903, 904, 906, 907, G01, G02, G03, G04, G05, G06, G07												

(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)
101	66	27
103	52	21
105	45	30
106	53	30
108	60	25

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
201	56	33
203	48	23
205	48	30
206	34	45
208	50	33
301	65	19
302	56	13
303	59	13
304	55	33
308	55	21
402	57	13
404	55	32
408	52	20
502	58	13
504	55	29
505	38	22
508	60	22
601	66	17
602	58	12
603	63	13
604	57	29
605	42	24
607	65	11
707	66	10
803	60	17
806	40	42
807	62	10

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
902	64	13
904	60	31
906	47	39
G01	59	29
G02	53	20
G03	57	19
G04	43	38
G05	53	24
G06	60	21
G07	66	13
102, 202	45	51
104, 204	35	43
107, 207	54	17
305, 405	38	21
403, 503	60	13
606, 706	30	49
704, 804	52	28
306, 406, 506	39	36
307, 407, 507	63	10
701, 801, 907	65	13
702, 802, 901	64	11
All other dwellings	66	18

(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)	-	-	light-emitting diode	connected to lift call button	No
Building A - Ground floor & lift lobbies	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No
Building A - Hallways	no mechanical ventilation	-	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): 13

2. Commitments for Residential flat buildings - Building B

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓ ✓	✓ ✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
325, 415, 424, 517, 520, 714, 718, 719, 720, 722, 724, 725, G10, G11	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
109, 110, 111, 113, 114, 115, 117, 118, 119, 120, 125, 209, 210, 211, 212, 213, 214, 215, 217, 218, 219, 220, 222, 223, 224, 225, 309, 310, 311, 312, 313, 314, 315, 317, 318, 319, 320, 322, 323, 324,	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
409, 410, 411, 412, 413, 414, 417, 418, 419, 420, 422, 423, 425, 509, 510, 511, 512, 513, 514, 515, 518, 519, 522, 523, 524, 525, 609, 610, 611, 612, 613, 614, 615, 617, 618, 619, 620, 622, 623, 624,														

	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
625, 709, 710, 711, 712, 715, 717, G09														

	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.		✓	✓
(d) The applicant must install the cooling and heating system/s specified for the dwelling under the "Living areas" and "Bedroom areas" headings of the "Cooling" and "Heating" columns in the table below, in/for at least 1 living/bedroom area of the dwelling. If no cooling or heating system is specified in the table for "Living areas" or "Bedroom areas", then no systems may be installed in any such areas. If the term "zoned" is specified beside an air conditioning system, then the system must provide for day/night zoning between living areas and bedrooms.		✓	✓
(e) This commitment applies to each room or area of the dwelling which is referred to in a heading to the "Artificial lighting" column of the table below (but only to the extent specified for that room or area). The applicant must ensure that the "primary type of artificial lighting" for each such room in the dwelling is fluorescent lighting or light emitting diode (LED) lighting. If the term "dedicated" is specified for a particular room or area, then the light fittings in that room or area must only be capable of being used for fluorescent lighting or light emitting diode (LED) lighting.		✓	✓

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual switch on/off	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
222, 322, 422, 522, 622	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	no	yes	yes	no	0	yes
224, 324, 424, 524, 624	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	no	yes	yes	no	1	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
125, 209, 211, 212, 215, 225, 309, 312, 315, 323, 325, 409, 411, 412, 413, 414, 423, 425, 509, 511, 512, 513, 515, 523, 525, 609, 611, 612, 615, 623, 625, 709, 715, 725, G09, G11	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	no	yes	yes	no	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
109, 110, 111, 113, 114, 115, 117, 118, 119, 120, 210, 213, 214, 217, 218, 219, 220, 223, 310, 311, 313, 314, 317, 318, 319, 320, 410, 415, 417, 418, 419, 420, 510, 514, 517, 518, 519, 520, 610,	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	no	yes	yes	no	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
613, 614, 617, 618, 619, 620, 710, 711, 712, 714, 717, 718, 719, 720, 722, 724, G10												

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	no	no

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
109	66	18
110	29	25
111	37	23
113	50	28
114	28	20

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
115	61	40
117	59	24
118	34	23
119	29	27
120	30	27
125	66	13
209	52	52
210	26	23
211	60	26
212	61	31
213	49	30
214	19	21
215	56	42
217	48	26
218	24	25
219	16	38
220	29	29
222	50	40
223	45	17
225	35	34
309	60	25
310	31	13
311	59	29
312	63	25
313	53	25
314	24	13
315	65	23

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
317	56	15
318	30	13
319	31	20
320	32	20
323	47	13
324	66	15
325	65	11
409	61	25
411	54	30
412	59	26
413	49	26
415	60	19
420	29	21
423	48	12
424	61	14
509	62	24
511	52	31
512	55	27
513	47	27
522	47	25
523	49	12
524	62	13
609	63	24
610	31	14
611	49	31
613	45	27
614	20	14

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
617	58	14
618	26	14
619	24	21
623	51	11
624	63	13
709	64	23
710	40	16
711	54	24
712	61	28
714	31	16
715	59	18
717	63	16
718	36	17
719	58	28
720	61	29
722	66	19
725	64	12
G09	66	25
G10	48	20
G11	51	14
224, 724	65	22
322, 422	48	25
410, 510	29	14
414, 514	22	13
417, 517	57	14
418, 518	28	14
419, 520	28	21

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
515, 615	61	19
519, 620	26	21
612, 622	48	24
All other dwellings	66	11

(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	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No. 3)	-	-	light-emitting diode	connected to lift call button	No
Building B - Ground floor & lift lobbies	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No
Building B - Hallways	no mechanical ventilation	-	compact fluorescent	zoned switching with motion sensor	No
Hallway Building B, L1, Core B2	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

Central energy systems	Type	Specification
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 10

3. Commitments for Residential flat buildings - Building C

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling.		✓ ✓	✓ ✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

	Fixtures					Appliances		Individual pool				Individual spa		
Dwelling no.	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star (> 7.5 but <= 9 L/min)	4 star	4 star	4 star	no	2 star	3 star	-	-	-	-	-	-	-

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

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual switch on/off	individual fan, not ducted	manual switch on/off	individual fan, ducted to façade or roof	manual switch on/off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
751	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	no	yes	yes	no	1	yes
G57	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	no	yes	yes	no	0	no
158, 258	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	no	yes	yes	no	1	yes
130, 140, G58	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	no	yes	yes	no	0	yes
133, 136, 233	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	no	yes	yes	no	0	no
150, 250, 350, 550	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	no	yes	yes	no	0	yes
229, 230, 355, 450	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	no	yes	yes	no	0	yes

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
449, 650, 747, 750, G49	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	no	yes	yes	no	0	no
129, 134, 234, 327, 328, 329, 427, 428, 429, 527, 528, 529, 627, 628, 629, 727, 728, 729	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	no	yes	yes	no	0	yes

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
354, 432, 440, 443, 444, 447, 448, 531, 532, 540, 543, 545, 547, 548, 631, 640, 643, 644, 645, 647, 648, 731, 740, 743, 744	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	no	yes	yes	no	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
132, 137, 144, 147, 151, 152, 153, 154, 232, 236, 237, 240, 243, 244, 247, 248, 251, 252, 254, 331, 332, 340, 343, 344, 347, 348, 351, 352, 353, G28, G34, G35, G37, G39, G47, G50, G51, G52, G53,	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	no	yes	yes	no	0	no

	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
G54												

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
127, 128, 139, 141, 142, 143, 145, 148, 155, 156, 157, 227, 228, 231, 235, 239, 241, 242, 245, 253, 255, 256, 257, 330, 339, 341, 342, 345, 356, 357, 430, 431, 439, 441, 442, 445, 451, 530, 539,	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	no	yes	yes	no	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
541, 542, 544, 551, 552, 630, 632, 639, 641, 642, 651, 652, 730, 739, 741, 742, 745, G29, G30, G31, G36, G55, G56												

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	2.5 star	2 star	no	no

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

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
127	66	20
129	37	21
130	66	33
133	54	18
134	57	40

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
136	65	27
137	35	28
139	63	27
140	32	16
142	42	46
143	45	39
144	44	24
145	60	39
147	49	14
148	62	24
150	38	25
152	21	17
153	57	14
154	29	13
158	48	48
227	63	19
229	66	29
230	66	44
232	53	27
233	57	18
234	53	43
235	58	37
236	50	21
237	31	29
239	63	28
240	21	18
241	26	37

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
242	25	38
243	29	48
244	20	24
245	63	43
247	38	14
250	38	26
252	15	18
254	22	13
258	50	47
329	62	27
330	66	21
331	56	15
339	62	16
340	27	12
341	33	23
342	32	23
344	25	15
345	66	19
348	48	15
350	44	17
351	40	11
352	28	11
353	60	15
354	39	13
357	46	22
429	62	28
431	55	16

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
439	62	17
445	64	20
448	47	19
449	45	17
450	41	13
539	61	18
545	63	20
547	42	10
548	45	20
551	42	13
631	51	28
639	60	19
645	62	19
647	43	10
648	45	21
650	46	19
651	44	13
652	61	30
727	49	23
728	65	16
729	66	32
731	42	18
739	61	15
740	34	15
741	35	23
742	41	24
743	46	32

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
744	31	14
745	63	17
747	56	16
750	65	19
751	61	22
G28	49	41
G29	66	14
G30	59	27
G31	66	26
G34	63	44
G35	60	13
G36	45	24
G37	66	12
G39	65	14
G47	65	13
G49	47	22
G50	42	15
G51	49	19
G53	41	42
G54	44	40
G58	55	46
128, 228	57	31
132, 550	44	18
141, 343	36	31
151, 251	33	17
157, 257	34	18
231, G52	56	23

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
248, 531	53	22
253, G57	44	16
347, 447	42	11
355, 356	50	17
430, 730	65	22
451, 552	64	25
529, 629	60	28
530, 630	64	22
G55, G56	43	17
440, 540, 640	27	13
441, 541, 641	31	22
442, 542, 642	33	22
443, 543, 643	38	30
444, 544, 644	25	11
155, 156, 255, 256	34	19
327, 427, 527, 627	45	26
328, 428, 528, 628	55	22
All other dwellings	36	19

(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. 4)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No. 5)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No. 6)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No. 7)	-	-	light-emitting diode	connected to lift call button	No
Common shower and toilets	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Building C - Ground floor & lift lobbies	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No
Building C - Hallways	no mechanical ventilation	-	compact fluorescent	zoned switching with motion sensor	No

Central energy systems	Type	Specification
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 10
Lift (No. 5)	gearless traction with V V V F motor	Number of levels (including basement): 10
Lift (No. 6)	gearless traction with V V V F motor	Number of levels (including basement): 10
Lift (No. 7)	gearless traction with V V V F motor	Number of levels (including basement): 5
Sauna (No. 1)	Heating source: gas	Efficiency measure: controlled by BMS

6. 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)	40000	To collect run-off from at least: - 1000 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 3470 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 180 kLs	Location: Indoor pool & spa area Pool shaded: no	-
Spa (No. 1)	Volume: 8 kLs	Location: Indoor pool & spa area Spa shaded: no Spa cover: yes	-
Fire sprinkler system (No. 1)	-	So that fire sprinkler test water is contained within the fire sprinkler system for re-use, rather than disposed.	-

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

	Common area ventilation system		Common area lighting		
Common area	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Indoor pool & spa area	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car park area	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms	ventilation exhaust only	-	fluorescent	motion sensors	No
Plant rooms	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Rooftop plant room	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): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Pool (No. 1)	Heating source: gas	Pump controlled by timer: yes
Spa (No. 1)	Heating system: gas	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).