



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

2 Mactier St
NARRABEEN NSW 2101

MERITON APARTMENTS

DA Application for:

Stage 1(a)
Buildings 4 & 5

To be built at:

61 Mobbs Lane, EPPING

BASIX Assessment

Date of Issue: 28th June, 2010

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



PREPARED FOR :	PREPARED BY :
Meriton Apartments Level 11/528 Kent Street North Sydney NSW 2000 Contact : Phone : (02) 9287 2888 Fax : (02) 9287 2768	Efficient Living 2 Mactier St NARRABEEN NSW 2101 Email: tracey@efficientliving.com.au Phone : (02) 9944 0332 Fax : (02) 9944 0293

COVER SHEET
TABLE OF CONTENTS
ANALYSIS WATER USAGE THERMAL COMFORT ENERGY USAGE
INCLUSIONS
ABSA CERTIFICATES
BASIX CERTIFICATE



INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 61 Mobbs Lane, EPPING.

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

ANALYSIS

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

BASIX requires a minimum target of 40% for the Water section. A BERS pass or fail is required for the thermal comfort section and a minimum required target of 20% for the energy section.

WATER

The proposed development has achieved the BASIX Water target of 40%.

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

The size of the rain tank and number of connections has a huge impact on your water score as does the area of gardens and lawns and whether or not low-water plant species are incorporated.

THERMAL COMFORT

Thermal Comfort targets are set by the department of planning in the form of heating and cooling caps. The buildings thermal physics is measured using BERS thermal performance assessment tools. This equates an expected level of energy consumption to heat and cool each dwelling per annum expressed in MJ (mega joules) per square meter of floor area.

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

ENERGY

The proposed development has achieved the energy target of 20% to pass this section.

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

BASIX Inclusions – Stage 1(a) Buildings 4 & 5

All units in buildings 4 & 5 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.

Glazing	Doors / windows: Single glazed: U: 6.600 SHGC: 0.53
Skylights	Units with skylights to be double glazed clear.
Roof / ceiling insulation	Roof: Light coloured, concrete slab roof Plasterboard ceiling with R2.5 insulation to top floor units and those with exposed balcony / terrace over.
Wall / floor insulation	External Wall: Pre-cast concrete – no insulation Internal walls within units: Plasterboard on studs - no insulation Inter- tenancy walls: Hebal - no insulation Floors: Concrete - no insulation
Landscaped areas	Total lawn area: 675m ² Total garden area: 1074m ² Indigenous / Low water Garden: 322m ²
Tapware	All units and communal areas to have 3 star showers & 4 star tapware & toilets
Rain tank volume	20,000L rain tank capacity.
Harvested roof areas	Un-trafficable areas of the main roof from all buildings are to be plumbed into the rain tank.
Rain tank connections	All private and communal area gardens and lawns.
Heating and Cooling	All units to have individual single phase reverse cycle air conditioning: All 1 bedroom units : 5.5 star – Cooling and 5.5star - Heating (zoned) All 2 bedroom units : 5.5 star – Cooling and 5.5 star - Heating (zoned) All 3 bedroom units : 5.5 star – Cooling and 6 star - Heating (zoned)
Ventilation with-in dwellings	Kitchen range hood to be recirculating with a manual on / off switch All bathrooms and laundries to have individual fans ducted to roof or facade with a manual on / timer off switch.
Lighting	Florescent lighting provided throughout both buildings communal areas and with-in the units, except for bathrooms and ensuites. All light fittings to be dedicated.
Appliances	Gas cook top and electric oven Well vented fridge spaces Clothes dryers with 2.0 star energy efficiency Dish washers with 3.0 star water efficiency and 3.0 star energy efficiency Indoor or sheltered clothes drying lines provided to all units At least 70% of all occupants are expected to provide clothes washing machines with a water efficiency of 2 stars or greater.
Pool & Spa	168kL indoor pool volume 8.4kL spa volume Pool & spa pump to be controlled by a timer Pool & spa to have electric heat pump heating
Sauna	Gas heating system



Common area Ventilation	<p>All car parks to have supply and exhaust air with carbon monoxide monitors and VSD speed fans.</p> <p>Gym, office, community rooms and reception areas to have air-conditioning operated with a time clock.</p> <p>The garbage rooms to have exhaust fans running constantly.</p> <p>Plant, switch and pump rooms to have exhaust fans interlocked to lights.</p> <p>Hallways have ventilation supply only.</p>
Common area lighting	<p>All car park area lighting to have zoned switching and motion sensors.</p> <p>All lift lighting systems are to be connected to a call switch button.</p> <p>Entry lobbies have continuously running lighting.</p> <p>Hallways to have zoned switching with motion sensors.</p> <p>Lighting to all other areas to have manual on / off switches.</p>
Lift motor	<p>All lifts to have gearless traction with VVVF motor.</p>

Assessor Certificate

Multiple Dwellings

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

Issued in accordance with
BASIX Thermal Comfort Simulation Method.



Assessor				
Name:	Tracey Cools	Company:	Efficient Living Pty Ltd	
Address:	2 Mactier St, NARRABEEN NSW 2101			
Phone:	02 9944 0332	Fax:	02 9944 0293	
Email:	tracey@efficientliving.com.au			
Declaration of interest:	None			
Client				
Name:	Tracy Davey	Company:	Meriton Apartments	
Address:	Level 11, 528 Kent St, SYDNEY NSW 2000			
Phone:	02 9287 2888	Fax:	02 9287 2568	
Email:	tracyd@meriton.com.au			
Project				
Address:	Stage 1(a) – 61 Mobbs Lane, Epping NSW 2121			
Applicant:	Meriton Apartments	LGA:	Hornsby Shire Council	
Assessment				
Date:	25/06/10	File ref:	209.002	
Software:	BERS Pro		Version:	4.1
Documentation				
All details, upon which this assessment has been based, are included in the project documentation that has been stamped and signed by the Assessor issuing this certificate, as identified below:			Affix assessor stamp	
Thermal Performance Spec:				
Attached, Affixed to drawings Page#: A4001 – Drawing List				
Drawings: (Title, Ref.#, Revision, Issue date, etc)				
A4000, A4001, A4003, A4004, A4005, A4100, A4101, A4102, A4103, A4104, A4105, A4106, A4200, A4201, A4202, A4251, A4252, A5101, A5102, A5103, A5104, A5105, A5106, A5200, A5202, A5251, A5252, A5260, A5301, A5302, A5303, A5304, A5900				
Building Specifications: (Title, Ref.#, Revision, Issue date, etc)				
Proj No 209.002 – Revision E 17.06.10				



ABSA Assessor Certificate Assessor # 20101 Certificate # 34399922 Issued: 28/06/10

Thermal performance specifications

Page 1 of 4

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
Building 4							
G01	34399922	83	0	44	19	N/A	5
G02	32439129	117	0	30	18	N/A	6
G03	88904042	83	0	28	23	N/A	5.5
G04	45411118	48	0	28	34	N/A	5
G05	31575565	103	6	36	19	N/A	5.5
G06	57286142	104	7	50	24	N/A	4.5
G07	94570698	51	0	37	19	N/A	5.5
G08	94570698	51	0	37	19	N/A	5.5
G09	51461307	113	0	48	25	N/A	4.5
G10	36788544	104	7	33	19	N/A	5.5
G11	58261736	57	0	20	33	N/A	5.5
G12	88904042	83	0	28	23	N/A	5.5
G13	32439129	117	0	30	18	N/A	6

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
G14	35356802	83	0	43	24	N/A	4.5
101	34671616	83	0	33	18	N/A	5.5
102	27128218	117	0	18	17	N/A	7
103	28293447	83	0	17	21	N/A	7
104	28293447	83	0	17	21	N/A	7
105	14314288	103	6	26	18	N/A	6.5
106	88645651	104	7	39	23	N/A	5
107	28453567	59	0	30	22	N/A	5.5
108	28453567	59	0	30	22	N/A	5.5
109	76066120	113	0	38	25	N/A	5
110	35348382	104	7	24	19	N/A	6.5
111	34211758	83	0	18	21	N/A	6.5
112	34211758	83	0	18	21	N/A	6.5
113	27128218	117	0	18	17	N/A	7
114	41540616	83	0	32	23	N/A	5.5
201	34671616	83	0	33	18	N/A	5.5
202	27128218	117	0	18	17	N/A	7
203	28293447	83	0	17	21	N/A	7
204	28293447	83	0	17	21	N/A	7
205	38104778	103	6	57	18	N/A	4.5
206	98387716	104	7	66	15	N/A	4
207	28453567	59	0	30	22	N/A	5.5
208	28453567	59	0	30	22	N/A	5.5
209	76066120	113	0	38	25	N/A	5
210	35348382	104	7	24	19	N/A	6.5
211	34211758	83	0	18	21	N/A	6.5
212	34211758	83	0	18	21	N/A	6.5
213	27128218	117	0	18	17	N/A	7
214	41540616	83	0	32	23	N/A	5.5
301	85866556	83	0	62	27	N/A	3.5
302	57205220	117	0	19	15	N/A	7
303	41292069	83	0	37	33	N/A	4.5
304	14462096	80	4	62	24	N/A	4
305	10733533	65	0	66	23	N/A	3.5
308	28453567	59	0	30	22	N/A	5.5
309	76066120	113	0	38	25	N/A	5
310	35348382	104	7	24	19	N/A	6.5
311	34211758	83	0	18	21	N/A	6.5
312	34211758	83	0	18	21	N/A	6.5
313	57205220	117	0	19	15	N/A	7
314	41540616	83	0	32	23	N/A	5.5
408	28453567	59	0	30	22	N/A	5.5
409	76066120	113	0	38	25	N/A	5

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
410	35348382	104	7	24	19	N/A	6.5
411	34211758	83	0	18	21	N/A	6.5
412	34211758	83	0	18	21	N/A	6.5
413	18837352	128	0	59	57	N/A	3
414	41540616	83	0	32	23	N/A	5.5
508	34681232	59	0	53	32	N/A	4
509	38265464	113	0	57	14	N/A	4.5
510	88329917	104	7	38	14	N/A	5.5
511	41292069	83	0	37	33	N/A	4.5
512	45572178	86	4	31	38	N/A	4.5
513	33584862	89	0	66	50	N/A	3
Building 5							
G15	94570698	51	0	37	19	N/A	5.5
G16	51461307	113	0	48	25	N/A	4.5
G17	36788544	104	7	33	19	N/A	5.5
G18	74141437	75	0	48	29	N/A	4
G19	88904042	83	0	28	23	N/A	5.5
G20	32439129	117	0	30	18	N/A	6
G21	55451312	66	0	41	23	N/A	5
G22	46435461	66	0	25	17	N/A	6.5
G23	32439129	117	0	30	18	N/A	6
G24	88904042	83	0	28	23	N/A	5.5
G25	74141437	75	0	48	29	N/A	4
G26	31575565	103	6	36	19	N/A	5.5
G27	57286142	104	7	50	24	N/A	4.5
G28	94570698	51	0	37	19	N/A	5.5
115	28453567	59	0	30	22	N/A	5.5
116	76066120	113	0	38	25	N/A	5
117	35348382	104	7	24	19	N/A	6.5
118	34211758	83	0	18	21	N/A	6.5
119	34211758	83	0	18	21	N/A	6.5
120	27128218	117	0	18	17	N/A	7
121	41540616	83	0	32	23	N/A	5.5
122	34671616	83	0	33	18	N/A	5.5
123	27128218	117	0	18	17	N/A	7
124	28293447	83	0	17	21	N/A	7
125	28293447	83	0	17	21	N/A	7
126	14314288	103	6	26	18	N/A	6.5
127	88645651	104	7	39	23	N/A	5
128	28453567	59	0	30	22	N/A	5.5
215	28453567	59	0	30	22	N/A	5.5
216	76066120	113	0	38	25	N/A	5
217	35348382	104	7	24	19	N/A	6.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 34399922		Issued: 28/06/10	
Thermal performance specifications							Page 4 of 4
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
218	34211758	83	0	18	21	N/A	6.5
219	34211758	83	0	18	21	N/A	6.5
220	27128218	117	0	18	17	N/A	7
221	41540616	83	0	32	23	N/A	5.5
222	34671616	83	0	33	18	N/A	5.5
223	27128218	117	0	18	17	N/A	7
224	28293447	83	0	17	21	N/A	7
225	28293447	83	0	17	21	N/A	7
226	38104778	103	6	57	18	N/A	4.5
227	98387716	104	7	66	15	N/A	4
228	28453567	59	0	30	22	N/A	5.5
315	28453567	59	0	30	22	N/A	5.5
316	76066120	113	0	38	25	N/A	5
317	35348382	104	7	24	19	N/A	6.5
318	34211758	83	0	18	21	N/A	6.5
319	34211758	83	0	18	21	N/A	6.5
320	57205220	117	0	19	15	N/A	7
321	41540616	83	0	32	23	N/A	5.5
322	85866556	83	0	62	27	N/A	3.5
323	57205220	117	0	19	15	N/A	7
324	41292069	83	0	37	33	N/A	4.5
325	14462096	80	4	62	24	N/A	4
326	10733533	65	0	66	23	N/A	3.5
415	28453567	59	0	30	22	N/A	5.5
416	76066120	113	0	38	25	N/A	5
417	35348382	104	7	24	19	N/A	6.5
418	34211758	83	0	18	21	N/A	6.5
419	34211758	83	0	18	21	N/A	6.5
420	18837352	128	0	59	57	N/A	3
421	41540616	83	0	32	23	N/A	5.5
515	34681232	59	0	53	32	N/A	4
516	38265464	113	0	57	14	N/A	4.5
517	88329917	104	7	38	14	N/A	5.5
518	41292069	83	0	37	33	N/A	4.5
519	45572178	86	4	31	38	N/A	4.5
520	33584862	89	0	66	50	N/A	3

Assessor # 20101

Certificate # 34399922

Issued: 28/06/10

Thermal Performance Specifications

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

Windows	Product ID	Glass	Frame	U value	SHGC	Area M ²	Detail
Generic		Single Grey tint	Aluminium	6.60	0.53		As per plans

Skylights	Product ID	Glass	Frame	U value	SHGC	Area M ²	Detail
Generic		Double glazed clear	Aluminium				As per plans

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

External walls	Construction	Insulation	Colour – solar abs.	Detail
Precast Concrete		None	Not specified	As per plans

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

Floors	Construction	Insulation	Covering	Detail
Concrete slab floors throughout		None	Carpet to bedrooms & living areas as per plans Tiles to wet areas & some living areas as per plans (hatched)	

Ceilings	Construction	Insulation	Detail
Plasterboard with concrete slab		none	Where neighbouring units or bedrooms are above
Plasterboard with concrete slab		R2.5	To top floor units & where balcony above

Roof	Construction	Insulation	Colour – solar abs.	Detail
Concrete slab		None	Light	As per plans

Window cover	Internal (curtains)	External (awnings, shutters, etc)
Not specified		Horizontal sunshades – As per plans Adjustable vertical sunshades – As per plans Fixed vertical shading on balconies – As per plans

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

Overshadowing	Overshadowing structures	Overshadowing trees
Buildings 4 & 5		N/A

Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	234 degrees
Terrain category:	Suburban
Roof ventilation:	None
Cross ventilation:	Standard
Subfloor:	None
Living area open to entry:	Yes – Conditioned Corridor
Doors separate living areas:	No
Stair open to heated areas:	Yes
Seals to windows and doors:	Yes
Exhaust fans without dampers:	No
Ventilated skylights:	No
Open fire, unflued gas heat:	No
Vented downlights:	No
Wall and ceiling vents:	No

ABSA Assessor stamp



BASIX Certificate

Certificate number: 318579M

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 the Department of Planning. This document is available at www.basix.nsw.gov.au

Director-General
Date of issue: Tuesday, 29 June 2010



Score

- ✓ Water: 40 (Target 40)
- ✓ Thermal comfort: pass (Target pass)
- ✓ Energy: 22 (Target 20)

Description of project

Project address	
Project name	Stage 1(a) - 61 Mobbs Lane, Epping
Street address	61 Mobbs Lane Epping 2121
Local Government Area	Hornsby Shire Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-
Project type	
No. of unit buildings	2
No. of units in unit buildings	134
No. of attached dwelling houses	0
No. of separate dwelling houses	0
Site details	
Site area (m ²)	7952
Roof area (m ²)	3474
Non-residential floor area (m ²)	0
Residential car spaces	203
Non-residential car spaces	0
Common area landscape	
Common area lawn (m ²)	675
Common area garden (m ²)	752
Area of indigenous or low water use species (m ²)	322
Assessor details	
Assessor number	20101
Certificate number	34399922
Climate zone	56

Description of project

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

Unit building - Building 4, 67 dwellings, 6 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
101	2	83.0	0.0	0	0
105	3	103.0	6.0	0	0
109	3	103.0	0.0	0	0
113	3	117.0	0.0	0	0
203	2	83.0	0.0	0	0
207	1	59.0	0.0	0	0
211	2	83.0	0.0	0	0
301	2	83.0	0.0	0	0
305	1	65.0	0.0	0	0
311	2	83.0	0.0	0	0
408	1	59.0	0.0	0	0
412	2	83.0	0.0	0	0
509	3	113.0	0.0	0	0
513	2	89.0	0.0	0	0
G04	1	48.0	0.0	0	0
G08	1	51.0	0.0	0	0
G12	2	83.0	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	3	117.0	0.0	0	0
106	3	104.0	7.0	0	0
110	3	104.0	7.0	0	0
114	2	83.0	0.0	0	0
204	2	83.0	0.0	0	0
208	1	59.0	0.0	0	0
212	2	83.0	0.0	0	0
302	3	117.0	0.0	0	0
308	1	59.0	0.0	0	0
312	2	83.0	0.0	0	0
409	3	113.0	0.0	0	0
413	3	128.0	0.0	0	0
510	3	104.0	7.0	0	0
G01	2	83.0	0.0	0	0
G05	3	103.0	6.0	0	0
G09	3	113.0	0.0	0	0
G13	3	117.0	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	2	83.0	0.0	0	0
107	1	59.0	0.0	0	0
111	2	83.0	0.0	0	0
201	2	83.0	0.0	0	0
205	3	103.0	6.0	0	0
209	3	113.0	0.0	0	0
213	3	117.0	0.0	0	0
303	2	83.0	0.0	0	0
309	3	113.0	0.0	0	0
313	3	117.0	0.0	0	0
410	3	104.0	7.0	0	0
414	2	83.0	0.0	0	0
511	2	83.0	0.0	0	0
G02	3	117.0	0.0	0	0
G06	3	104.0	7.0	0	0
G10	3	104.0	7.0	0	0
G14	2	83.0	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	83.0	0.0	0	0
108	1	59.0	0.0	0	0
112	2	83.0	0.0	0	0
202	3	117.0	0.0	0	0
206	3	104.0	7.0	0	0
210	3	104.0	7.0	0	0
214	2	83.0	0.0	0	0
304	2	80.0	4.0	0	0
310	3	104.0	7.0	0	0
314	2	83.0	0.0	0	0
411	2	83.0	0.0	0	0
508	1	59.0	0.0	0	0
512	2	86.0	0.0	0	0
G03	2	83.0	0.0	0	0
G07	1	51.0	0.0	0	0
G11	1	57.0	0.0	0	0

Unit building - Building 5, 67 dwellings, 6 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
115	1	59.0	0.0	0	0
119	2	83.0	0.0	0	0
123	3	117.0	0.0	0	0
127	3	104.0	7.0	0	0
217	3	104.0	7.0	0	0
221	2	83.0	0.0	0	0
225	2	83.0	0.0	0	0
315	1	59.0	0.0	0	0
319	2	83.0	0.0	0	0
323	3	117.0	0.0	0	0
415	1	59.0	0.0	0	0
419	2	83.0	0.0	0	0
516	3	113.0	0.0	0	0
520	2	89.0	0.0	0	0
G18	2	75.0	0.0	0	0
G22	1	66.0	0.0	0	0
G26	3	103.0	6.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
116	3	113.0	0.0	0	0
120	3	117.0	0.0	0	0
124	2	83.0	0.0	0	0
128	1	59.0	0.0	0	0
218	2	83.0	0.0	0	0
222	2	83.0	0.0	0	0
226	3	103.0	6.0	0	0
316	3	113.0	0.0	0	0
320	3	117.0	0.0	0	0
324	2	83.0	0.0	0	0
416	3	113.0	0.0	0	0
420	3	128.0	0.0	0	0
517	3	104.0	7.0	0	0
G15	1	51.0	0.0	0	0
G19	2	83.0	0.0	0	0
G23	3	117.0	0.0	0	0
G27	3	104.0	7.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
117	3	104.0	7.0	0	0
121	2	83.0	0.0	0	0
125	2	83.0	0.0	0	0
215	1	59.0	0.0	0	0
219	2	83.0	0.0	0	0
223	3	117.0	0.0	0	0
227	3	104.0	7.0	0	0
317	3	104.0	7.0	0	0
321	2	83.0	0.0	0	0
325	2	80.0	4.0	0	0
417	3	104.0	7.0	0	0
421	2	83.0	0.0	0	0
518	2	83.0	0.0	0	0
G16	3	113.0	0.0	0	0
G20	3	117.0	0.0	0	0
G24	2	83.0	0.0	0	0
G28	1	51.0	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)
118	2	83.0	0.0	0	0
122	2	83.0	0.0	0	0
126	3	103.0	6.0	0	0
216	3	113.0	0.0	0	0
220	3	117.0	0.0	0	0
224	2	83.0	0.0	0	0
228	1	59.0	0.0	0	0
318	2	83.0	0.0	0	0
322	2	83.0	0.0	0	0
326	1	65.0	0.0	0	0
418	2	83.0	0.0	0	0
515	1	59.0	0.0	0	0
519	2	86.0	4.0	0	0
G17	3	104.0	7.0	0	0
G21	1	66.0	0.0	0	0
G25	2	75.0	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 4

Common area	Floor area (m ²)	Common area	Floor area (m ²)	Common area	Floor area (m ²)
Lift car (No. 3)	-	Lift car (No. 4)	-	Reception / Lobby	82

Common areas of unit building - Building 5

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

Common areas of the development (non-building specific)

Common area	Floor area (m ²)	Common area	Floor area (m ²)	Common area	Floor area (m ²)
Pool	304	Gym	45	Carparking	8145
Switch / Elect.	110	Garbage	249	Plant	112
Ground Floor Lobbies	190	Hallways	704		

Schedule of BASIX commitments

1. Commitments for unit building - Building 4

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for unit building - Building 5

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

3. Commitments for attached dwelling houses

4. Commitments for separate dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for unit building - Building 4

(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: <ul style="list-style-type: none"> (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.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	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, 508, 509, 510, 511, 512, 513, G01, G02, G03, G04, G05, G06, G07, G08, G09, G10, G11, G12, G13, G14	3 star	4 star	4 star	4 star	no	2 star	3 star	-	-	-	-	-	-	-

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	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, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 301, 302, 303, 304, 305, 308, 309, 310, 311, 312, 313, 314, 408	3 star	4 star	4 star	4 star	no	-	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	-	-	-	no	no	no	no	no

(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;		✓	

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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".		✓	

Dwelling no.	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual on / timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
305	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	yes
304, 512, 513	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	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
107, 108, 207, 208, 308, 408, 508, G04, G07, G08, G11	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no
105, 106, 110, 205, 206, 210, 310, 410, 413, 510, G05, G06, G10	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	1	no
102, 109, 113, 202, 209, 213, 302, 309, 313, 409, 509, G02, G09, G13	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
101, 103, 104, 111, 112, 114, 201, 203, 204, 211, 212, 214, 301, 303, 311, 312, 314, 411, 412, 414, 511, G01, G03, G12, G14	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no

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

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

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
105	26	18
106	39	23
205	57	18
206	66	15
301	62	27

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
304	62	24
305	66	23
413	59	57
508	53	32
509	57	14
510	38	14
512	31	38
513	66	50
G01	44	19
G04	28	34
G05	36	19
G06	50	24
G09	48	25
G10	33	19
G11	20	33
G14	43	24
101, 201	33	18
302, 313	19	15
303, 511	37	33
G02, G13	30	18
G03, G12	28	23
G07, G08	37	19
102, 113, 202, 213	18	17
103, 104, 203, 204	17	21
109, 209, 309, 409	38	25
110, 210, 310, 410	24	19
114, 214, 314, 414	32	23

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
107, 108, 207, 208, 308, 408	30	22
All other dwellings	18	21

(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	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. 3)	-	-	compact fluorescent	connected to lift call button	Yes
Lift car (No. 4)	-	-	compact fluorescent	connected to lift call button	Yes
Reception / Lobby	air conditioning system	none ie. continuous	compact fluorescent	none	No

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 8
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 6

2. Commitments for unit building - Building 5

(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: <ul style="list-style-type: none"> (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.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	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	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	-	-	-	no	no	no	no	no

(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;		✓	

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(bb) each appliance for which a rating is specified for that dwelling in the "Appliances & other efficiency measures" column of the table, and ensure that the appliance has that minimum rating; and		✓	✓
(cc) any clothes drying line specified for the dwelling in the "Appliances & other efficiency measures" column of the table.		✓	
(i) If specified in the table, the applicant must carry out the development so that each refrigerator space in the dwelling is "well ventilated".		✓	

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual on / timer off	individual fan, ducted to façade or roof	manual switch on/off	individual fan, ducted to façade or roof	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
326	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	yes
420	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	1	yes
325, 519, 520	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	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
117, 126, 127, 217, 226, 227, 517, G17, G26, G27	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	1	no
115, 128, 215, 228, 315, 415, 515, G15, G21, G22, G28	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no
116, 120, 123, 216, 220, 223, 316, 317, 320, 323, 416, 417, 516, G16, G20, G23	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
118, 119, 121, 122, 124, 125, 218, 219, 221, 222, 224, 225, 318, 319, 321, 322, 324, 418, 419, 421, 518, G18, G19, G24, G25	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	no	yes (dedicated)	yes (dedicated)	0	no

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

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

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
126	26	18
127	39	23
226	57	18
227	66	15
322	62	27

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
325	62	24
326	66	23
420	59	57
515	53	32
516	57	14
517	38	14
519	31	38
520	66	50
G16	48	25
G17	33	19
G21	41	23
G22	25	17
G26	36	19
G27	50	24
122, 222	33	18
320, 323	19	15
324, 518	37	33
G15, G28	37	19
G18, G25	48	29
G19, G24	28	23
G20, G23	30	18
116, 216, 316, 416	38	25
117, 217, 317, 417	24	19
120, 123, 220, 223	18	17
121, 221, 321, 421	32	23
124, 125, 224, 225	17	21
115, 128, 215, 228, 315, 415	30	22

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
All other dwellings	18	21

(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	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. 1)	-	-	compact fluorescent	connected to lift call button	Yes
Lift car (No. 2)	-	-	compact fluorescent	connected to lift call button	Yes

Central energy systems	Type	Specification
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 7
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 5

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	20000	To collect run-off from at least: - 2756 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 1427 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Pool (No. 1)	Volume: 168 kLs	Location: Pool	-

Central systems	Size	Configuration	Connection (to allow for...)
Spa (No. 1)	Volume: 8.4 kLs	Location: Pool Spa cover: yes	-

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

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Pool	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	Yes
Gym	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	Yes
Carparking	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	Yes
Switch / Elect.	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	Yes
Garbage	ventilation exhaust only	-	fluorescent	manual on / manual off	Yes
Plant	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	Yes
Ground Floor Lobbies	ventilation supply only	time clock or BMS controlled	compact fluorescent	none	Yes
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	Yes

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Pool (No. 1)	Heating source: electric heat pump	Pump controlled by timer: yes
Spa (No. 1)	Heating system: electric heat pump	Pump controlled by timer: yes
Sauna (No. 1)	Heating source: gas	Efficiency measure: manual on / timer off

Notes

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

Legend

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