

MERITON APARTMENTS

DA Application for:

EPPING PARK, STAGE 3 Buildings 11, 12, 13-14, 15-16, 17

To be built at:

Mobbs Lane, Epping 2121

BASIX Assessment

Issue No.	Description	Author	Date
No. 01	Assessment and certification	TC	23/08/12



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 Pty. Ltd. Level 11/528 Kent Street Sydney NSW 2000 Contact : Phone : (02) 9287 2888 Fax : (02) 9287 2777	Efficient Living 13/13 Lagoon St, Narrabeen NSW, 2101 Email: tracey@efficientliving.com.au Phone : (02) 9970 6181 Fax : (02) 9944 0293

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INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at Stage 3 Mobbs Lane, Epping Park.

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 3, Mobbs Lane Epping

All units in Mobbs Lane, Epping Park Stage 3 have reached the targets as set for new dwellings in NSW. The inclusions as outlined in the table below have been incorporated in each unit to allow them to reach their environmental sustainability targets.

Construction general	
Glazing	Doors / windows: Single glazed, grey tint: U-value: 6.6 SHGC: 0.58 Low-E glazing upgrades required to: U513 building 12, UG20 & U507 Building 15-16 U-value: 4.66 SHGC: 0.44 - grey tint colour match required.
Roof / ceiling insulation	Roof: Light coloured, concrete slab roof Plasterboard ceiling – R2.0 insulation to top floor units and those units with exposed balcony over.
Wall / floor insulation	External Wall: Pre-cast concrete, no insulation unless listed below: R1.0 wall insulation to: UG12, U204, U220 Building 13-14 UL24, UG20, UG27, U421, U507, U517 Building 15-16 UG10, U302, U309 Building 17 & U513 Building 12 Internal walls within units: Plasterboard on studs - no insulation Inter-tenancy walls: Hebel - no insulation Floor: Concrete – no insulation unless noted otherwise on the ABSA 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: At least 70% of all occupants are expected to provide clothes washing machines with a water efficiency of 2 stars or greater.
Central rainwater storage	Tank size: 50 000L Collect run-off from: 100% of all roof areas Connected to: Irrigation of landscaping and 5 car washing bays
Pool & Spa	Pool to have a capacity no greater than 148kL Spa to have a capacity no greater than 8kL and must have 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 Dishwashers: 3 star Clothes dryers: 2 star Well ventilated fridge space Clothes washers: At least 70% of 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, with dedicated fittings, to be provided to all bedrooms, bathrooms and laundries.
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
Indoor clothes drying lines	Building 17 requires in door clothes drying lines to all units.
Artificial lighting (within common areas)	Indoor pool/spa: compact fluorescent – time clocks Gym: compact fluorescent – time clocks Car park area: fluorescent – zoned switching with motion sensor Lifts: compact fluorescent – connected to lift call button Garbage rooms: fluorescent – motion sensors All plant areas: fluorescent – manual on / manual off Hallways: compact fluorescent – zoned switching with motion sensors
Ventilation systems (within common areas)	Indoor pool/spa: ventilation (supply + exhaust) – time clock or BMS controlled Gym: air conditioning system – time clock or BMS controlled Car park area: ventilation (supply + exhaust) - carbon monoxide monitor + VSD fan Garbage rooms: ventilation exhaust only – no efficiency measure required Plant rooms: ventilation supply only – interlocked to light Change rooms: ventilation (supply + exhaust) – time clock or BMS controlled Hallways: ventilation supply only – time clock or BMS controlled
Pool & Spa	Pool and spa heating systems: Electric heat pump Both pool and spa pumps to be controlled by a timer
Photovoltaic cells	5 peak kW's of photovoltaic cells are required to building 17.

Assessor Certificate

Multiple Dwellings

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

Issued in accordance with
BASIX Thermal Comfort Simulation Method



Assessor					
Name:	Tracey Cools	Company:	Efficient Living Pty Ltd	ABSA #:	20101
Address:	13/13 Lagoon St, NARRABEEN NSW 2101				
Phone:	02 9970 6181	Fax:	02 9944 0293	Email:	tracey@efficientliving.com.au
Declaration of interest:	None				

Client					
Name:	Tracey Davey	Company:	Meriton Apartments		
Address:	Level 11, 528 Kent St, SYDNEY NSW 2000				
Phone:	02 9287 2888	Fax:	02 9287 2568	Email:	davidw@meriton.com.au

Project					
Address:	Buildings 11, 12, 13, 14, 15, 16 & 17 – Epping Park, Mobbs Lane, Epping, NSW 2121				
Applicant:	Meriton Apartments Pty. Ltd.		LGA:	Parramatta City Council	

Assessment							
Date:	23/08/12	File ref:	6497	Software:	BERS Pro 4.2	Version:	V110811

Documentation					
<i>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:</i>					

Affix assessor stamp

Thermal Performance Spec:
Attached, Affixed to drawings Page#: Cover Sheet – A0000

Drawings: (Title, Ref.#, Revision, Issue date, etc)
BLD 11-A1002 to A1008, A1020, A1030, A1031, A1060.
BLD 12-A2000, A2002 to A2008, A2020, A2030, A2031, A2040, A2050, A2061. BLD 13-14-A3000, A3001 to A3009, A3020, A3030, A3031, A3040, A3050, A3070. BLD 15-16-A4000, A4002 to A4009, A4020, A4030, A4031, A4040, A4050, A4061, BLD 17-A5000, A5002 to A5007, A5020, A5030, A5031, A5040, A5050, A5061

Building Specifications: (Title, Ref.#, Revision, Issue date, etc)
Mobbs Lane – Project No. 211.006 – Aug 2012 – Rev 1



ABSA Assessor Certificate	Assessor #	20101	Certificate #	72562635	Issued:	23/08/12
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Thermal performance specifications						Page 1 of 8	
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 11							
G01	72562635	80	0	55	12	N/A	4.5
G02	32870601	79	2	65	13	N/A	4.0
G03	97370054	56	3	54	15	N/A	4.5
G04	57904826	77	0	29	14	N/A	6.5
G05	77472941	78	0	30	35	N/A	5.0
G06	91554815	79	3	39	19	N/A	5.5
G07	24101379	80	3	54	18	N/A	4.5
G08	17109669	79	0	57	13	N/A	4.5
101	18206530	80	0	49	15	N/A	5.0
102	51821618	79	2	63	16	N/A	4.0
103	78409740	56	3	51	19	N/A	4.5
104	80940270	83	0	18	13	N/A	7.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 72562635		Issued: 23/08/12	
Thermal performance specifications						Page 2 of 8	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
105	70857893	83	0	26	17	N/A	6.5
106	36597206	79	3	38	25	N/A	5.0
107	86181962	80	3	51	24	N/A	4.0
108	27593723	79	0	54	17	N/A	4.5
201	18206530	80	0	49	15	N/A	5.0
202	51821618	79	2	63	16	N/A	4.0
203	78409740	56	3	51	19	N/A	4.5
204	62749830	83	0	16	16	N/A	7.5
205	36117123	83	0	20	27	N/A	6.0
206	36597206	79	3	38	25	N/A	5.0
207	86181962	80	3	51	24	N/A	4.0
208	27593723	79	0	54	17	N/A	4.5
301	18206530	80	0	49	15	N/A	5.0
302	51821618	79	2	63	16	N/A	4.0
303	78409740	56	3	51	19	N/A	4.5
304	80940270	83	0	18	13	N/A	7.5
305	36117123	83	0	20	27	N/A	6.0
306	36597206	79	3	38	25	N/A	5.0
307	86181962	80	3	51	24	N/A	4.0
308	27593723	79	0	54	17	N/A	4.5
401	18206530	80	0	49	15	N/A	5.0
402	98848660	79	2	66	16	N/A	4.0
403	78409740	56	3	51	19	N/A	4.5
404	80940270	83	0	18	13	N/A	7.5
405	70857893	83	0	26	17	N/A	6.5
406	36597206	79	3	38	25	N/A	5.0
407	86181962	80	3	51	24	N/A	4.0
408	27593723	79	0	54	17	N/A	4.5
501	41197355	93	0	65	19	N/A	4.0
502	90556201	109	0	50	17	N/A	4.5
503	92896769	83	0	29	15	N/A	6.5
504	91411334	83	0	39	19	N/A	5.0
505	54495468	79	3	50	26	N/A	4.0
506	16189461	80	3	65	24	N/A	3.5
507	80374848	79	0	66	22	N/A	3.5
Building 12							
G01	43630409	81	0	58	31	N/A	3.5
G02	17336248	76	7	44	13	N/A	5.5
G03	62276895	81	6	30	15	N/A	6.5
G04	98500941	79	0	30	14	N/A	6.5
G05	11890399	76	0	27	14	N/A	6.5
G06	36645199	87	0	25	9	N/A	7.0
G07	58832534	83	0	60	26	N/A	4.0
G09	70085621	79	0	59	20	N/A	4.0
G10	60890015	58	0	60	25	N/A	4.0
G11	30214148	70	0	29	14	N/A	6.5
G12	92611502	80	0	25	14	N/A	7.0
G13	74514208	86	0	29	14	N/A	6.5

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Thermal performance specifications							Page 3 of 8
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	79330833	82	7	49	19	N/A	4.5
G15	37805192	81	0	66	22	N/A	3.5
101	82749991	81	0	41	46	N/A	4.0
102	24531914	76	7	35	19	N/A	5.5
103	16189893	81	6	21	21	N/A	6.5
104	80232678	79	0	18	29	N/A	6.0
105	54379516	83	0	16	38	N/A	5.5
106	90584934	88	0	11	23	N/A	7.0
107	71251390	83	0	52	36	N/A	3.5
109	40939741	79	0	54	22	N/A	4.0
110	17208693	58	0	47	32	N/A	4.0
111	16455480	79	0	20	21	N/A	6.5
112	69600041	80	0	15	29	N/A	6.5
113	35448194	80	6	22	24	N/A	6.0
114	46318117	82	7	44	25	N/A	4.5
115	43972129	81	0	62	23	N/A	4.0
201	82749991	81	0	41	46	N/A	4.0
202	24531914	76	7	35	19	N/A	5.5
203	16189893	81	6	21	21	N/A	6.5
204	80232678	79	0	18	29	N/A	6.0
205	33228059	83	0	18	34	N/A	5.5
206	90584934	88	0	11	23	N/A	7.0
207	71251390	83	0	52	36	N/A	3.5
209	72957325	79	0	50	22	N/A	4.5
210	17208693	58	0	47	32	N/A	4.0
211	16455480	79	0	20	21	N/A	6.5
212	69600041	80	0	15	29	N/A	6.5
213	35448194	80	6	22	24	N/A	6.0
214	46318117	82	7	44	25	N/A	4.5
215	43972129	81	0	62	23	N/A	4.0
301	82749991	81	0	41	46	N/A	4.0
302	24531914	76	7	35	19	N/A	5.5
303	16189893	81	6	21	21	N/A	6.5
304	80232678	79	0	18	29	N/A	6.0
305	33228059	83	0	18	34	N/A	5.5
306	90584934	88	0	11	23	N/A	7.0
307	71251390	83	0	52	36	N/A	3.5
309	40939741	79	0	54	22	N/A	4.0
310	17208693	58	0	47	32	N/A	4.0
311	16455480	79	0	20	21	N/A	6.5
312	69600041	80	0	15	29	N/A	6.5
313	35448194	80	6	22	24	N/A	6.0
314	46318117	82	7	44	25	N/A	4.5
315	43972129	81	0	62	23	N/A	4.0
401	82749991	81	0	41	46	N/A	4.0
402	24531914	76	7	35	19	N/A	5.5

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Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
403	16189893	81	6	21	21	N/A	6.5
404	80232678	79	0	18	29	N/A	6.0
405	33228059	83	0	18	34	N/A	5.5
406	90584934	88	0	11	23	N/A	7.0
407	71251390	83	0	52	36	N/A	3.5
409	40939741	79	0	54	22	N/A	4.0
410	17208693	58	0	47	32	N/A	4.0
411	16455480	79	0	20	21	N/A	6.5
412	69600041	80	0	15	29	N/A	6.5
413	85245686	80	6	23	24	N/A	6.0
414	72532178	82	7	48	26	N/A	4.5
415	43972129	81	0	62	23	N/A	4.0
501	59937024	81	0	60	43	N/A	3.5
502	34905196	76	7	45	20	N/A	5.0
503	11116733	81	6	32	21	N/A	5.5
504	41838298	79	0	31	23	N/A	5.5
505	43007497	83	0	29	28	N/A	5.5
506	21795069	88	0	21	25	N/A	6.0
507	42349713	83	0	65	37	N/A	3.5
509	75513107	79	0	64	23	N/A	4.0
510	23521936	58	0	58	30	N/A	4.0
511	78214691	79	0	32	17	N/A	6.0
512	26446757	80	0	26	22	N/A	6.0
513	42673450	101	7	62	18	N/A	4.0
514	89732668	81	0	62	27	N/A	3.5
Building 13-14							
G01	32686151	87	0	57	13	N/A	4.5
G02	53726597	90	0	62	26	N/A	4.0
G04	86855123	87	0	51	17	N/A	4.5
G05	88587697	90	0	52	33	N/A	4.0
G06	22006535	80	0	22	23	N/A	6
G07	45387980	78	0	18	17	N/A	7.0
G08	62102724	109	0	36	14	N/A	6.0
G09	90185454	80	0	45	22	N/A	4.5
G10	34171397	80	0	54	17	N/A	4.5
G12	75707868	90	0	54	14	N/A	4.5
G13	20932831	88	0	59	11	N/A	4.5
G15	86436777	80	0	45	17	N/A	5
G16	78795159	80	0	45	12	N/A	5.5
G17	80675237	101	0	38	11	N/A	6.0
G18	27506742	78	0	16	17	N/A	7.0
G19	35526648	80	0	20	16	N/A	7
G20	23009717	90	0	65	20	N/A	4
G21	33559808	87	0	50	19	N/A	4.5
104	49912618	86	0	66	30	N/A	3.5
105	16681751	90	0	66	43	N/A	3.0

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Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
106	50003165	80	0	18	21	N/A	7
107	84790303	80	0	12	17	N/A	7.5
108	47120565	109	0	29	14	N/A	6.5
109	27904090	80	0	38	22	N/A	5
110	52767309	80	0	42	16	N/A	5
115	67278035	80	0	40	15	N/A	5.5
116	41352956	80	0	40	14	N/A	5.5
117	77889022	101	0	33	10	N/A	6.5
118	16832736	79	0	11	16	N/A	7.5
119	93663068	80	0	18	14	N/A	7
120	75253447	90	0	61	23	N/A	4
121	27305415	87	0	49	21	N/A	4.5
204	34513727	109	0	43	39	N/A	4.0
205	50003165	80	0	18	21	N/A	7
206	84790303	80	0	12	17	N/A	7.5
207	47120565	109	0	29	14	N/A	6.5
208	27904090	80	0	38	22	N/A	5
209	52767309	80	0	42	16	N/A	5
215	67278035	80	0	40	15	N/A	5.5
216	41352956	80	0	40	14	N/A	5.5
217	77889022	101	0	33	10	N/A	6.5
218	16832736	79	0	11	16	N/A	7.5
219	93663068	80	0	18	14	N/A	7
220	29135351	100	9	46	25	N/A	4.5
304	50003165	80	0	18	21	N/A	7
305	84790303	80	0	12	17	N/A	7.5
306	47120565	109	0	29	14	N/A	6.5
307	27904090	80	0	38	22	N/A	5
308	52767309	80	0	42	16	N/A	5
315	67278035	80	0	40	15	N/A	5.5
316	41352956	80	0	40	14	N/A	5.5
317	77889022	101	0	33	10	N/A	6.5
318	16832736	79	0	11	16	N/A	7.5
319	93663068	80	0	18	14	N/A	7
404	50003165	80	0	18	21	N/A	7
405	84790303	80	0	12	17	N/A	7.5
406	47120565	109	0	29	14	N/A	6.5
407	27904090	80	0	38	22	N/A	5
408	52767309	80	0	42	16	N/A	5
415	67278035	80	0	40	15	N/A	5.5
416	41352956	80	0	40	14	N/A	5.5
417	77889022	101	0	33	10	N/A	6.5
418	16832736	79	0	11	16	N/A	7.5
419	93663068	80	0	18	14	N/A	7
504	84020925	116	0	56	19	N/A	4.0
505	74497950	80	0	51	22	N/A	4.5

ABSA Assessor Certificate		Assessor # 20101		Certificate # 72562635		Issued: 23/08/12	
Thermal performance specifications							Page 6 of 8
Unit number(s)	Certificate number	Floor area (M²)		Predict. loads (MJ/M²/y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
506	74497950	80	0	51	22	N/A	4.5
515	47081902	80	0	54	16	N/A	4.5
516	47081902	80	0	54	16	N/A	4.5
Building 15-16							
LG01	80148624	87	0	65	12	N/A	4.0
LG02	90851440	87	0	51	35	N/A	4.0
LG23	46956421	87	0	50	30	N/A	4.0
LG24	14169859	87	0	55	13	N/A	4.5
G04	81707056	87	0	65	25	N/A	3.5
G05	49179920	87	0	61	43	N/A	3.5
G07	45914204	81	0	66	21	N/A	4
G08	43145843	76	7	59	14	N/A	4.5
G09	14343764	81	6	45	12	N/A	5.5
G10	84110038	56	0	24	27	N/A	5.5
G11	73801330	83	0	26	17	N/A	6.5
G12	30935284	88	0	22	15	N/A	7
G13	53172113	83	0	65	20	N/A	4
G15	20767418	79	0	66	23	N/A	3.5
G16	28419483	62	0	49	19	N/A	4.5
G17	16037675	98	0	34	24	N/A	5.0
G18	54951475	104	0	38	33	N/A	4.5
G19	37046141	86	7	35	21	N/A	5.5
G20	95447848	75	0	58	23	N/A	3.5
G26	88351993	87	0	46	53	N/A	3.5
G27	57263137	87	0	51	24	N/A	4.0
107	48447439	81	0	50	21	N/A	4.5
108	69952704	76	7	51	15	N/A	4.5
109	50817119	81	6	31	15	N/A	6.0
110	68425659	79	0	14	18	N/A	7.0
111	38707275	83	0	14	18	N/A	7.0
112	84792349	88	0	13	16	N/A	7.5
113	48173115	83	0	57	22	N/A	4
115	51572265	79	0	56	23	N/A	4.0
116	14750127	62	0	34	18	N/A	5.5
117	36616551	79	0	29	24	N/A	5.5
118	26207118	80	0	25	31	N/A	5.5
119	85866740	80	6	25	26	N/A	5.5
120	12258099	82	7	32	22	N/A	5.5
121	76040718	81	0	61	28	N/A	3.5
207	48447439	81	0	50	21	N/A	4.5
208	69952704	76	7	51	15	N/A	4.5
209	50817119	81	6	31	15	N/A	6.0
210	68425659	79	0	14	18	N/A	7.0
211	38707275	83	0	14	18	N/A	7.0
212	84792349	88	0	13	16	N/A	7.5
213	48173115	83	0	57	22	N/A	4

ABSA Assessor Certificate		Assessor #	20101	Certificate #	72562635	Issued: 23/08/12	
Thermal performance specifications						Page 7 of 8	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
215	51572265	79	0	56	23	N/A	4.0
216	14750127	62	0	34	18	N/A	5.5
217	36616551	79	0	29	24	N/A	5.5
218	26207118	80	0	25	31	N/A	5.5
219	85866740	80	6	25	26	N/A	5.5
220	12258099	82	7	32	22	N/A	5.5
221	76040718	81	0	61	28	N/A	3.5
307	48447439	81	0	50	21	N/A	4.5
308	69952704	76	7	51	15	N/A	4.5
309	50817119	81	6	31	15	N/A	6.0
310	68425659	79	0	14	18	N/A	7.0
311	38707275	83	0	14	18	N/A	7.0
312	84792349	88	0	13	16	N/A	7.5
313	48173115	83	0	57	22	N/A	4
315	51572265	79	0	56	23	N/A	4.0
316	14750127	62	0	34	18	N/A	5.5
317	36616551	79	0	29	24	N/A	5.5
318	26207118	80	0	25	31	N/A	5.5
319	85866740	80	6	25	26	N/A	5.5
320	12258099	82	7	32	22	N/A	5.5
321	76040718	81	0	61	28	N/A	3.5
407	13954034	82	0	66	25	N/A	3.5
408	18316433	76	7	65	17	N/A	4
409	50817119	81	6	31	15	N/A	6.0
410	68425659	79	0	14	18	N/A	7.0
411	38707275	83	0	14	18	N/A	7.0
412	84792349	88	0	13	16	N/A	7.5
413	10650870	83	0	66	22	N/A	3.5
415	21001453	79	0	65	26	N/A	3.5
416	53870968	62	0	51	21	N/A	4.5
417	36616551	79	0	29	24	N/A	5.5
418	26207118	80	0	25	31	N/A	5.5
419	85866740	80	6	25	26	N/A	5.5
420	18075736	82	7	40	22	N/A	5.0
421	24677302	81	0	63	31	N/A	3.5
507	42530815	88	0	62	23	N/A	4
508	51087658	79	0	23	19	N/A	6.5
509	66770956	83	0	22	20	N/A	6.5
510	55709688	104	8	57	17	N/A	4.5
515	74277871	92	0	53	23	N/A	4
516	55668078	80	0	38	32	N/A	4.5
517	98441145	83	7	54	27	N/A	4.0

ABSA Assessor Certificate		Assessor #		20101	Certificate #	72562635	Issued: 23/08/12
Thermal performance specifications							Page 8 of 8
Unit number(s)	Certificate number	Floor area (M²)		Predict. loads (MJ/M²/y)		Concessions	Star Rating
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
Building 17							
G01	35000137	80	0	23	15	N/A	7.0
G02	88511077	84	0	56	17	N/A	4.5
G03	86966408	72	0	58	22	N/A	4.0
G04	23794498	76	7	62	16	N/A	4.0
G05	59229259	80	6	31	15	N/A	6.0
G06	61274819	91	0	32	20	N/A	5.5
G08	85037258	78	0	33	22	N/A	5.5
G09	78606752	66	0	38	21	N/A	5.0
G10	75741538	66	0	47	22	N/A	4.0
G11	46286591	79	0	45	16	N/A	5.0
G12	53211261	78	0	49	16	N/A	5.0
G13	11644241	86	0	36	17	N/A	5.5
101	39066255	80	0	13	16	N/A	7.5
102	64387670	84	0	42	20	N/A	5.0
103	22262274	81	0	48	22	N/A	4.5
104	83741898	76	7	46	20	N/A	4.5
105	79235008	80	6	22	17	N/A	6.5
106	96054808	91	0	24	24	N/A	6.0
108	81067649	78	0	28	24	N/A	5.5
109	51677957	66	0	29	23	N/A	5.5
110	16792923	66	0	56	26	N/A	4.0
111	17900297	79	0	31	16	N/A	6.0
112	40661065	84	0	42	18	N/A	5.0
113	59148682	86	0	28	19	N/A	6.0
201	39066255	80	0	13	16	N/A	7.5
202	37232648	84	0	54	23	N/A	4.0
203	23714694	81	0	55	26	N/A	4.0
204	23869778	76	7	58	23	N/A	4.0
205	80948103	80	6	23	19	N/A	6.5
206	96054808	91	0	24	24	N/A	6.0
208	81067649	78	0	28	24	N/A	5.5
209	51677957	66	0	29	23	N/A	5.5
210	62830977	66	0	65	29	N/A	3.5
211	94763347	79	0	47	21	N/A	4.5
212	12540445	84	0	50	23	N/A	4.5
213	59148682	86	0	28	19	N/A	6.0
301	63606851	80	0	22	21	N/A	6.5
302	64083955	63	0	60	40	N/A	3.5
303	86809937	91	0	31	29	N/A	5.0
308	34986840	78	0	34	29	N/A	5.0
309	52437306	66	0	44	22	N/A	5.0
310	73515506	86	0	33	24	N/A	5.5

Assessor # 20101

Certificate # 72562635

Issued: 23/08/12

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	6.6	0.58	varies	Unless noted below
Generic		Low-e glazing, grey tint	Aluminium	4.66	0.44	varies	U513 building 12, UG20 & U507 Building 15-16

Skylights	Product ID	Glass	Frame	U value	SHGC	Area M ²	Detail
Clerestory		Single Grey tint	Aluminium	6.6	0.58	varies	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	Default- Not specified	Unless noted below
Precast Concrete		R1.0	Default- Not specified	UL24, G20, UG27, U421, U507, U517 in BLD 15-16 UG10, U302, U309 in BLD 17 U513 in BLD 12

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

Floors	Construction	Insulation	Covering	Detail
Concrete		None	Carpet	To living areas & bedrooms
			Tile	To all wet areas & kitchen

Ceilings	Construction	Insulation	Detail
Plasterboard		none	Where neighbouring units are above
		R 2.0	Where balcony and roof top are above

Roof	Construction	Insulation	Colour – solar abs.	Detail
Concrete slab		None	Medium - SA<0.475-0.7	As per plans

Window cover	Internal (curtains)	External (awnings, shutters, etc)
Not specified		Sun shade hoods – As per plans

Fixed shading	Eaves (width - inc. gutters, h't above windows)	Verandahs, Pergolas (type, description)
Varying	As per plans	Covered Balconies – As per plans Shading Structures – As per plans

Overshadowing	Overshadowing structures	Overshadowing trees
N/A		N/A

Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	varies as per building
Terrain category:	Suburban
Roof ventilation:	None
Cross ventilation:	Standard
Subfloor:	Enclosed car park or unit below
Living area open to entry:	Yes
Doors separate living areas:	No
Stair open to heated areas:	No
Seals to windows and doors:	Yes
Exhaust fans without dampers:	No
Ventilated skylights:	No
Open fire, unflued gas heat:	No
Vented downlights:	No
Wall and ceiling vents:	No

ABSA Assessor stamp



BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 443074M

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: Thursday, 23 August 2012

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



Project summary		
Project name	EPPING PARK STAGE 3, BUILDING 11	
Street address	61 Mobbs Lane EPPING 2121	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 129023	
Lot no.	2	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	47	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	✔ 40	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 21	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	EPPING PARK STAGE 3, BUILDING 11
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	47
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	7952
Roof area (m ²)	894
Non-residential floor area (m ²)	0
Residential car spaces	65
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	371
Common area garden (m ²)	380
Area of indigenous or low water use species (m ²)	0

Assessor details

Assessor number	20101
Certificate number	72562635
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 21	Target 20

Description of project

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

Residential flat buildings - Building 11, 47 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	80.0	0.0	0	0
105	2	83.0	0.0	0	0
201	2	80.0	0.0	0	0
205	2	83.0	0.0	0	0
301	2	80.0	0.0	0	0
305	2	83.0	0.0	0	0
401	2	80.0	0.0	0	0
405	2	83.0	0.0	0	0
501	3	93.0	0.0	0	0
505	2	79.0	3.0	0	0
G02	2	79.0	2.0	0	0
G06	2	79.0	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)
102	2	79.0	2.0	0	0
106	2	79.0	3.0	0	0
202	2	79.0	2.0	0	0
206	2	79.0	3.0	0	0
302	2	79.0	2.0	0	0
306	2	79.0	3.0	0	0
402	2	79.0	2.0	0	0
406	2	79.0	3.0	0	0
502	3	109.0	0.0	0	0
506	2	80.0	3.0	0	0
G03	1	56.0	3.0	0	0
G07	2	80.0	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)
103	1	56.0	3.0	0	0
107	2	80.0	3.0	0	0
203	1	56.0	3.0	0	0
207	2	80.0	3.0	0	0
303	1	56.0	3.0	0	0
307	2	80.0	3.0	0	0
403	1	56.0	3.0	0	0
407	2	80.0	3.0	0	0
503	2	83.0	0.0	0	0
507	2	79.0	0.0	0	0
G04	2	77.0	0.0	0	0
G08	2	79.0	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	2	79.0	0.0	0	0
204	2	83.0	0.0	0	0
208	2	79.0	0.0	0	0
304	2	83.0	0.0	0	0
308	2	79.0	0.0	0	0
404	2	83.0	0.0	0	0
408	2	79.0	0.0	0	0
504	2	83.0	0.0	0	0
G01	2	80.0	0.0	0	0
G05	2	78.0	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 11

Common area	Floor area (m ²)	Common area	Floor area (m ²)
Lift car (No. 1)	-	Hallways	424

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)
Indoor pool, spa & sauna (% of total)	65	Gym (% of total)	16	Car park (% of total)	1547
Garbage rooms (% of total)	98	Plant rooms (% of total)	21	Change Rooms (% of total)	11

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building 11

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building 11

(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, 102, 103, 104, 105, 106, 107, 108, 201, 202, 203, 204, 205, 206	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
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, G01, G02, G03, G04, G05, G06, G07, G08	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
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.		✓	✓
(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 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
501, 502	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)	3	0	no	yes	yes	no	0	no
103, 203, 303, 403, 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 (dedicated)	yes (dedicated)	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
101, 102, 104, 105, 106, 107, 108, 201, 202, 204, 205, 206, 207, 208, 301, 302, 304, 305, 306, 307, 308, 401, 402, 404, 405, 406, 407, 408, 503, 504, 505, 506, 507, G01, G02, G04, G05, G06, 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)	2 (dedicated)	0	no	yes (dedicated)	yes (dedicated)	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
G08												

	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
101, 102, 103, 104, 105, 106, 107, 108, 201, 202, 203, 204, 205, 206	-	-	-	-	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
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, G01, G02, G03, G04, G05, G06, G07, G08	-	-	-	-	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.	✓	✓	✓

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
204	16	16
501	65	19
502	50	17
503	29	15
505	50	26

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
506	65	24
507	66	22
G01	55	12
G02	65	13
G03	54	15
G04	29	14
G05	30	35
G07	54	18
G08	57	13
105, 405	26	17
205, 305	20	27
504, G06	39	19
104, 304, 404	18	13
101, 201, 301, 401	49	15
102, 202, 302, 402	63	16
103, 203, 303, 403	51	19
106, 206, 306, 406	38	25
107, 207, 307, 407	51	24
All other dwellings	54	17

(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)	3 star	3 star	3 star

(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
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	3 star	3 star	3 star

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 894 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 751 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Pool (No. 1)	Volume: 37 kLs	Location: Indoor pool, spa & sauna (% of total) Pool shaded: no	-

Central systems	Size	Configuration	Connection (to allow for...)
Spa (No. 1)	Volume: 2 kLs	Location: Indoor pool, spa & sauna (% of total) Spa shaded: no 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 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 & sauna (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	No
Gym (% of total)	air conditioning system	time clock or BMS controlled	compact fluorescent	time clocks	No
Car park (% of total)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms (% of total)	ventilation exhaust only	-	fluorescent	motion sensors	No
Plant rooms (% of total)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Change Rooms (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	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: electric heat pump	Pump controlled by timer: yes
Spa (No. 1)	Heating system: electric heat pump	Pump controlled by timer: yes

Notes

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

Legend

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

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 443079M

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: Thursday, 23 August 2012

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



Planning &
Infrastructure

Project summary		
Project name	EPPING PARK STAGE 3, BUILDING 12	
Street address	61 Mobbs Lane EPPING 2121	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 129023	
Lot no.	2	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	83	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 25	Target 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	EPPING PARK STAGE 3, BUILDING 12
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	83
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	7952
Roof area (m ²)	1419
Non-residential floor area (m ²)	0
Residential car spaces	115
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	571
Common area garden (m ²)	1180
Area of indigenous or low water use species (m ²)	0

Assessor details

Assessor number	20101
Certificate number	72562635
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 25	Target 20

Description of project

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

Residential flat buildings - Building 12, 83 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	81.0	0.0	0	0
105	2	83.0	0.0	0	0
110	1	58.0	0.0	0	0
114	2	82.0	7.0	0	0
203	2	81.0	6.0	0	0
207	2	83.0	0.0	0	0
212	2	80.0	0.0	0	0
301	2	81.0	0.0	0	0
305	2	83.0	0.0	0	0
310	1	58.0	0.0	0	0
314	2	82.0	7.0	0	0
403	2	81.0	6.0	0	0
407	2	83.0	0.0	0	0
412	2	80.0	0.0	0	0
501	2	81.0	0.0	0	0
505	2	83.0	0.0	0	0
510	1	58.0	0.0	0	0
514	2	80.0	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	2	76.0	7.0	0	0
106	2	88.0	0.0	0	0
111	2	79.0	0.0	0	0
115	2	81.0	0.0	0	0
204	2	79.0	0.0	0	0
209	2	79.0	0.0	0	0
213	2	80.0	6.0	0	0
302	2	76.0	7.0	0	0
306	2	88.0	0.0	0	0
311	2	79.0	0.0	0	0
315	2	81.0	0.0	0	0
404	2	79.0	0.0	0	0
409	2	79.0	0.0	0	0
413	2	80.0	6.0	0	0
502	2	76.0	7.0	0	0
506	2	88.0	0.0	0	0
511	2	79.0	0.0	0	0
G01	2	80.0	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	81.0	6.0	0	0
107	2	83.0	0.0	0	0
112	2	80.0	0.0	0	0
201	2	81.0	0.0	0	0
205	2	83.0	0.0	0	0
210	1	58.0	0.0	0	0
214	2	82.0	7.0	0	0
303	2	81.0	6.0	0	0
307	2	83.0	0.0	0	0
312	2	80.0	0.0	0	0
401	2	81.0	0.0	0	0
405	2	83.0	0.0	0	0
410	1	58.0	0.0	0	0
414	2	82.0	7.0	0	0
503	2	81.0	6.0	0	0
507	2	83.0	0.0	0	0
512	2	80.0	0.0	0	0
G02	2	76.0	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)
104	2	79.0	0.0	0	0
109	2	79.0	0.0	0	0
113	2	80.0	6.0	0	0
202	2	76.0	7.0	0	0
206	2	88.0	0.0	0	0
211	2	79.0	0.0	0	0
215	2	81.0	0.0	0	0
304	2	79.0	0.0	0	0
309	2	79.0	0.0	0	0
313	2	80.0	6.0	0	0
402	2	76.0	7.0	0	0
406	2	88.0	0.0	0	0
411	2	79.0	0.0	0	0
415	2	81.0	0.0	0	0
504	2	79.0	0.0	0	0
509	2	79.0	0.0	0	0
513	3	101.0	7.0	0	0
G03	2	81.0	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)
G04	2	79.0	0.0	0	0
G09	2	79.0	0.0	0	0
G13	2	86.0	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)
G05	2	76.0	0.0	0	0
G10	1	58.0	0.0	0	0
G14	2	82.0	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)
G06	2	87.0	0.0	0	0
G11	2	70.0	0.0	0	0
G15	2	81.0	0.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G07	2	83.0	0.0	0	0
G12	2	80.0	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 12

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

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

Common area	Floor area (m ²)
Hallways	418

Common areas of the development (non-building specific)

Common area	Floor area (m ²)
Indoor pool, spa & sauna (% of total)	65
Garbage rooms (% of total)	118.84

Common area	Floor area (m ²)
Gym (% of total)	16
Plant rooms (% of total)	21

Common area	Floor area (m ²)
Car park (% of total)	3547
Change Rooms (% of total)	11

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building 12

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building 12

(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, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 201, 202, 203, 204, 205, 206, 207, 209, 210, 211, 212	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
213, 214, 215, 301, 302, 303, 304, 305, 306, 307, 309, 310, 311, 312, 313, 314, 315, 401, 402, 403, 404, 405, 406, 407, 409, 410, 411, 412, 413, 414, 415, 501, 502, 503, 504, 505, 506, 507, 509, 510,	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
511, 512, 513, 514, G01, G02, G03, G04, G05, G06, G07, G09, G10, G11, G12, G13, G14, G15														

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

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must install each hot water system specified for the dwelling in the table below, so that the dwelling's hot water is supplied by that system. If the table specifies a central hot water system for the dwelling, then the applicant must connect that central system to the dwelling, so that the dwelling's hot water is supplied by that central system.	✓	✓	✓
(c) The applicant must install, in each bathroom, kitchen and laundry of the dwelling, the ventilation system specified for that room in the table below. Each such ventilation system must have the operation control specified for it in the table.		✓	✓

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	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
110, 210, 310, 410, 510, G10	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 (dedicated)	yes (dedicated)	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
101, 102, 103, 104, 105, 106, 107, 109, 111, 112, 113, 114, 115, 201, 202, 203, 204, 205, 206, 207, 209, 211, 212, 213, 214, 215, 301, 302, 303, 304, 305, 306, 307, 309, 311, 312, 313, 314, 315,	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 (dedicated)	yes (dedicated)	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
401, 402, 403, 404, 405, 406, 407, 409, 411, 412, 413, 414, 415, 501, 502, 503, 504, 505, 506, 507, 509, 511, 512, 513, 514, G01, G02, G03, G04, G05, G06, G07, G09, G11, G12, G13, G14, G15												

	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
101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 201, 202, 203, 204, 205, 206, 207, 209, 210, 211, 212	-	-	-	-	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
213, 214, 215, 301, 302, 303, 304, 305, 306, 307, 309, 310, 311, 312, 313, 314, 315, 401, 402, 403, 404, 405, 406, 407, 409, 410, 411, 412, 413, 414, 415, 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
509, 510, 511, 512, 513, 514, G01, G02, G03, G04, G05, G06, G07, G09, G10, G11, G12, G13, G14, G15												

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

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

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
105	16	38
209	50	22
413	23	24
414	48	26
501	60	43
502	45	20
503	32	21
504	32	23
505	29	28
506	21	25
507	65	37
509	64	23
510	58	30

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
511	32	17
512	26	22
513	62	18
514	50	40
G01	58	31
G02	44	13
G03	30	15
G04	30	14
G05	27	14
G06	25	9
G07	60	26
G09	59	20
G10	60	25
G12	25	14
G14	49	19
G15	66	22
G11, G13	29	14
109, 309, 409	54	22
113, 213, 313	22	24
114, 214, 314	44	25
205, 305, 405	18	34
101, 201, 301, 401	41	46
102, 202, 302, 402	35	19
103, 203, 303, 403	21	21
104, 204, 304, 404	18	29
106, 206, 306, 406	11	23
107, 207, 307, 407	52	36

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
110, 210, 310, 410	47	32
111, 211, 311, 411	20	21
112, 212, 312, 412	15	29
All other dwellings	62	23

(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
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 894 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 1751 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Pool (No. 1)	Volume: 37 kLs	Location: Indoor pool, spa & sauna (% of total) Pool shaded: no	-

Central systems	Size	Configuration	Connection (to allow for...)
Spa (No. 1)	Volume: 2 kLs	Location: Indoor pool, spa & sauna (% of total) Spa shaded: no 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 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 & sauna (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	No
Gym (% of total)	air conditioning system	time clock or BMS controlled	compact fluorescent	time clocks	No
Car park (% of total)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms (% of total)	ventilation exhaust only	-	fluorescent	motion sensors	No
Plant rooms (% of total)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Change Rooms (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	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: electric heat pump	Pump controlled by timer: yes
Spa (No. 1)	Heating system: electric heat pump	Pump controlled by timer: yes

Notes

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

Legend

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

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 443091M

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: Thursday, 23 August 2012

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



Planning &
Infrastructure

Project summary		
Project name	EPPING PARK STAGE 3, BUILDINGS 13 & 14	
Street address	61 Mobbs Lane EPPING 2121	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 129023	
Lot no.	2	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	69	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 23	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	EPPING PARK STAGE 3, BUILDINGS 13 & 14
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	69
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	7952
Roof area (m ²)	741
Non-residential floor area (m ²)	0
Residential car spaces	98
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	671
Common area garden (m ²)	1580
Area of indigenous or low water use species (m ²)	400

Assessor details

Assessor number	20101
Certificate number	72562635
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 23	Target 20

Description of project

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

Residential flat buildings - BuildingS 13 & 14, 69 dwellings, 7 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
104	2	86.0	0.0	0	0
108	3	109.0	0.0	0	0
116	2	80.0	0.0	0	0
120	2	90.0	0.0	0	0
206	2	80.0	0.0	0	0
215	2	80.0	0.0	0	0
219	2	80.0	0.0	0	0
306	3	109.0	0.0	0	0
316	2	80.0	0.0	0	0
404	2	80.0	0.0	0	0
408	2	80.0	0.0	0	0
418	2	79.0	0.0	0	0
506	2	80.0	0.0	0	0
G02	2	90.0	0.0	0	0
G07	2	78.0	0.0	0	0
G12	2	90.0	0.0	0	0
G17	3	101.0	0.0	0	0
G21	2	87.0	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)
105	2	90.0	0.0	0	0
109	2	80.0	0.0	0	0
117	3	101.0	0.0	0	0
121	2	87.0	0.0	0	0
207	3	109.0	0.0	0	0
216	2	80.0	0.0	0	0
220	3	100.0	0.0	0	0
307	2	80.0	0.0	0	0
317	3	101.0	0.0	0	0
405	2	80.0	0.0	0	0
415	2	80.0	0.0	0	0
419	2	80.0	0.0	0	0
515	2	80.0	0.0	0	0
G04	2	87.0	0.0	0	0
G08	3	109.0	0.0	0	0
G13	2	88.0	0.0	0	0
G18	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)
106	2	80.0	0.0	0	0
110	2	80.0	0.0	0	0
118	2	79.0	0.0	0	0
204	3	109.0	0.0	0	0
208	2	80.0	0.0	0	0
217	3	101.0	0.0	0	0
304	2	80.0	0.0	0	0
308	2	80.0	0.0	0	0
318	2	79.0	0.0	0	0
406	3	109.0	0.0	0	0
416	2	80.0	0.0	0	0
504	3	116.0	0.0	0	0
516	2	80.0	0.0	0	0
G05	2	90.0	0.0	0	0
G09	2	80.0	0.0	0	0
G15	2	80.0	0.0	0	0
G19	2	80.0	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)
107	2	80.0	0.0	0	0
115	2	80.0	0.0	0	0
119	2	80.0	0.0	0	0
205	2	80.0	0.0	0	0
209	2	80.0	0.0	0	0
218	2	79.0	0.0	0	0
305	2	80.0	0.0	0	0
315	2	80.0	0.0	0	0
319	2	80.0	0.0	0	0
407	2	80.0	0.0	0	0
417	3	101.0	0.0	0	0
505	2	80.0	0.0	0	0
G01	2	87.0	0.0	0	0
G06	2	80.0	0.0	0	0
G10	2	80.0	0.0	0	0
G16	2	80.0	0.0	0	0
G20	2	90.0	0.0	0	0

Description of project

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

Common areas of unit building - BuildingS 13 & 14

Common area	Floor area (m ²)	Common area	Floor area (m ²)	Common area	Floor area (m ²)
Lift car (No. 1)	-	Lift car (No. 2)	-	Hallways	766

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)
Indoor pool, spa & sauna (% of total)	65	Gym (% of total)	16	Car park (% of total)	3547
Garbage rooms (% of total)	160	Plant rooms (% of total)	50	Change Rooms (% of total)	11

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - BuildingS 13 & 14

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - BuildingS 13 & 14

(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
104, 105, 106, 107, 108, 109, 110, 115, 116, 117, 118, 119, 120, 121, 204, 205, 206, 207, 208, 209, 215	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
216, 217, 218, 219, 220, 304, 305, 306, 307, 308, 315, 316, 317, 318, 319, 404, 405, 406, 407, 408, 415, 416, 417, 418, 419, 504, 505, 506, 515, 516, G01, G02, G04, G05, G06, G07, G08, G09, G10, G12,	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
G13, G15, G16, G17, G18, G19, G20, G21														

	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.		✓	✓

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan, ducted to façade or roof	manual 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
318, 407	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 (dedicated)	yes (dedicated)	no	0	no
108, 117, 204, 207, 217, 220, 306, 317, 406, 417, 504, G08, G17	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 (dedicated)	yes (dedicated)	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
104, 105, 106, 107, 109, 110, 115, 116, 118, 119, 120, 121, 205, 206, 208, 209, 215, 216, 218, 219, 304, 305, 307, 308, 315, 316, 319, 404, 405, 408, 415, 416, 418, 419, 505, 506, 515, 516, 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 (dedicated)	yes (dedicated)	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
G02, G04, G05, G06, G07, G09, G10, G12, G13, G15, G16, G18, G19, G20, G21												

	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
104, 105, 106, 107, 108, 109, 110, 115, 116, 117, 118, 119, 120, 121, 204, 205, 206, 207, 208, 209, 215	-	-	-	-	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
216, 217, 218, 219, 220, 304, 305, 306, 307, 308, 315, 316, 317, 318, 319, 404, 405, 406, 407, 408, 415, 416, 417, 418, 419, 504, 505, 506, 515, 516, G01, G02, G04, G05, G06, G07, G08, G09,	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	2.5 star	2 star	no	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
G10, G12, G13, G15, G16, G17, G18, G19, G20, G21												

(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:	✓	✓	✓

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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)
104	66	30
105	66	43
120	61	23
121	49	21
204	43	39
220	46	25
504	56	19
G01	57	13
G02	62	26
G04	51	17
G05	52	33
G06	22	23
G07	18	17
G08	36	14
G09	45	22
G10	54	17
G12	54	14
G13	59	11
G15	45	17

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
G16	45	12
G17	38	11
G18	16	17
G19	20	16
G20	65	20
G21	50	19
505, 506	51	22
515, 516	54	16
106, 205, 304, 404	18	21
107, 206, 305, 405	12	17
108, 207, 306, 406	29	14
109, 208, 307, 407	38	22
110, 209, 308, 408	42	16
115, 215, 315, 415	40	15
116, 216, 316, 416	40	14
117, 217, 317, 417	33	10
118, 218, 318, 418	11	16
All other dwellings	18	14

(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
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 741 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 2251 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Pool (No. 1)	Volume: 37 kLs	Location: Indoor pool, spa & sauna (% of total) Pool shaded: no	-

Central systems	Size	Configuration	Connection (to allow for...)
Spa (No. 1)	Volume: 2 kLs	Location: Indoor pool, spa & sauna (% of total) Spa shaded: no 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 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 & sauna (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	No
Gym (% of total)	air conditioning system	time clock or BMS controlled	compact fluorescent	time clocks	No
Car park (% of total)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms (% of total)	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant rooms (% of total)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Change Rooms (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	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: electric heat pump	Pump controlled by timer: yes
Spa (No. 1)	Heating system: electric heat pump	Pump controlled by timer: yes

Notes

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

Legend

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

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 443095M

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: Thursday, 23 August 2012

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



Project summary

Project name	EPPING PARK STAGE 3, BUILDINGS 15 & 16
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-
No. of residential flat buildings	1
No. of units in residential flat buildings	84
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 23	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	EPPING PARK STAGE 3, BUILDINGS 15 & 16
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	84
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	7952
Roof area (m ²)	887
Non-residential floor area (m ²)	0
Residential car spaces	117
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	671
Common area garden (m ²)	1580
Area of indigenous or low water use species (m ²)	400

Assessor details

Assessor number	20101
Certificate number	72562635
Climate zone	56

Project score

Water	✓ 40	Target 40
Thermal Comfort	✓ Pass	Target Pass
Energy	✓ 23	Target 20

Description of project

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

Residential flat buildings - Buildings 15 & 16, 84 dwellings, 7 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
107	2	81.0	0.0	0	0
111	2	83.0	0.0	0	0
116	1	62.0	0.0	0	0
120	2	82.0	7.0	0	0
209	2	81.0	6.0	0	0
213	2	83.0	0.0	0	0
218	2	80.0	0.0	0	0
307	2	81.0	0.0	0	0
311	2	83.0	0.0	0	0
316	1	62.0	0.0	0	0
320	2	82.0	7.0	0	0
409	2	81.0	6.0	0	0
413	2	83.0	0.0	0	0
418	2	80.0	0.0	0	0
507	2	88.0	0.0	0	0
515	3	92.0	0.0	0	0
G05	2	87.0	0.0	0	0
G10	1	56.0	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)
108	2	76.0	7.0	0	0
112	2	88.0	0.0	0	0
117	2	79.0	0.0	0	0
121	2	81.0	0.0	0	0
210	2	79.0	0.0	0	0
215	2	79.0	0.0	0	0
219	2	80.0	6.0	0	0
308	2	76.0	7.0	0	0
312	2	88.0	0.0	0	0
317	2	79.0	0.0	0	0
321	2	81.0	0.0	0	0
410	2	79.0	0.0	0	0
415	2	79.0	0.0	0	0
419	2	80.0	6.0	0	0
508	2	79.0	0.0	0	0
516	2	80.0	0.0	0	0
G07	2	81.0	0.0	0	0
G11	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)
109	2	81.0	6.0	0	0
113	2	83.0	0.0	0	0
118	2	80.0	0.0	0	0
207	2	81.0	0.0	0	0
211	2	83.0	0.0	0	0
216	1	62.0	0.0	0	0
220	2	82.0	7.0	0	0
309	2	81.0	6.0	0	0
313	2	83.0	0.0	0	0
318	2	80.0	0.0	0	0
407	2	82.0	0.0	0	0
411	2	83.0	0.0	0	0
416	1	62.0	0.0	0	0
420	2	82.0	7.0	0	0
509	2	83.0	0.0	0	0
517	2	83.0	7.0	0	0
G08	2	76.0	7.0	0	0
G12	2	88.0	0.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
110	2	79.0	0.0	0	0
115	2	79.0	0.0	0	0
119	2	80.0	6.0	0	0
208	2	76.0	7.0	0	0
212	2	88.0	0.0	0	0
217	2	79.0	0.0	0	0
221	2	81.0	0.0	0	0
310	2	79.0	0.0	0	0
315	2	79.0	0.0	0	0
319	2	80.0	6.0	0	0
408	2	76.0	7.0	0	0
412	2	88.0	0.0	0	0
417	2	79.0	0.0	0	0
421	2	81.0	0.0	0	0
510	3	104.0	8.0	0	0
G04	2	87.0	0.0	0	0
G09	2	81.0	6.0	0	0
G13	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)
G15	2	79.0	0.0	0	0
G19	2	86.0	7.0	0	0
LG01	2	87.0	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)
G16	1	62.0	0.0	0	0
G20	2	75.0	0.0	0	0
LG02	2	87.0	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)
G17	3	89.0	0.0	0	0
G26	2	87.0	0.0	0	0
LG23	2	87.0	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)
G18	3	104.0	0.0	0	0
G27	2	87.0	0.0	0	0
LG24	2	87.0	0.0	0	0

Description of project

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

Common areas of unit building - Buildings 15 & 16

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

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

Common area	Floor area (m ²)
Hallways	410

Common areas of the development (non-building specific)

Common area	Floor area (m ²)
Indoor pool, spa & sauna (% of total)	65
Garbage rooms (% of total)	118

Common area	Floor area (m ²)
Gym (% of total)	16
Plant rooms (% of total)	50

Common area	Floor area (m ²)
Car park (% of total)	5547
Change Rooms (% of total)	11

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Buildings 15 & 16

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Buildings 15 & 16

(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
107, 108, 109, 110, 111, 112, 113, 115, 116, 117, 118, 119, 120, 121, 207, 208, 209, 210, 211, 212, 213, 215, 216, 217, 218	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
219, 220, 221, 307, 308, 309, 310, 311, 312, 313, 315, 316, 317, 318, 319, 320, 321, 407, 408, 409, 410, 411, 412, 413, 415, 416, 417, 418, 419, 420, 421, 507, 508, 509, 510, 515, 516, 517, G04, G05,	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
G07, G08, G09, G10, G11, G12, G13, G15, G16, G17, G18, G19, G20, G26, G27, LG01, LG02, LG23, LG24														

	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.	✓	✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(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 (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
510, G18	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)	3 (dedicated)	0	no	yes (dedicated)	yes (dedicated)	no	1	no
515, G17	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)	3 (dedicated)	0	no	yes (dedicated)	yes (dedicated)	no	0	no
116, 216, 316, 416, G10, G16	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 (dedicated)	yes (dedicated)	no	0	no
517, G05, G26, G27, LG01, LG02, LG23, LG24	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 (dedicated)	yes (dedicated)	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
108, 109, 119, 120, 208, 209, 219, 220, 308, 309, 319, 320, 408, 409, 419, 420, G08, G09, G19	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 (dedicated)	yes (dedicated)	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
107, 110, 111, 112, 113, 115, 117, 118, 121, 207, 210, 211, 212, 213, 215, 217, 218, 221, 307, 310, 311, 312, 313, 315, 317, 318, 321, 407, 410, 411, 412, 413, 415, 417, 418, 421, 507, 508, 509,	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 (dedicated)	yes (dedicated)	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
516, G04, G07, G11, G12, G13, G15, G20												

	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
107, 108, 109, 110, 111, 112, 113, 115, 116, 117, 118, 119, 120, 121, 207, 208, 209, 210, 211, 212, 213, 215, 216, 217, 218	-	-	-	-	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
219, 220, 221, 307, 308, 309, 310, 311, 312, 313, 315, 316, 317, 318, 319, 320, 321, 407, 408, 409, 410, 411, 412, 413, 415, 416, 417, 418, 419, 420, 421, 507, 508, 509, 510, 515, 516, 517,	-	-	-	-	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
G04, G05, G07, G08, G09, G10, G11, G12, G13, G15, G16, G17, G18, G19, G20, G26, G27, LG01, LG02, LG23, LG24												

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

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

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
407	66	25
408	65	17
413	66	22
415	65	26
416	51	21
420	40	22
421	63	31
507	62	23
508	23	19
509	22	20
510	57	17

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
515	53	23
516	38	32
517	54	27
G04	65	25
G05	61	43
G07	66	21
G08	59	14
G09	45	12
G10	24	27
G11	26	17
G12	22	15
G13	65	20
G15	66	23
G16	49	19
G17	34	24
G18	38	33
G19	35	21
G20	58	23
G26	46	53
G27	51	24
LG01	65	12
LG02	51	35
LG23	50	30
LG24	55	13
107, 207, 307	50	21
108, 208, 308	51	15
113, 213, 313	57	22

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
115, 215, 315	56	23
116, 216, 316	34	18
120, 220, 320	32	22
121, 221, 321	61	28
109, 209, 309, 409	31	15
112, 212, 312, 412	13	16
117, 217, 317, 417	29	24
118, 218, 318, 418	25	31
119, 219, 319, 419	25	26
All other dwellings	14	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
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 887 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 2251 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site
Pool (No. 1)	Volume: 37 kLs	Location: Indoor pool, spa & sauna (% of total) Pool shaded: no	-

Central systems	Size	Configuration	Connection (to allow for...)
Spa (No. 1)	Volume: 2 kLs	Location: Indoor pool, spa & sauna (% of total) Spa shaded: no 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
Indoor pool, spa & sauna (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	No
Gym (% of total)	air conditioning system	time clock or BMS controlled	compact fluorescent	time clocks	No
Car park (% of total)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Garbage rooms (% of total)	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant rooms (% of total)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Change Rooms (% of total)	ventilation (supply + exhaust)	time clock or BMS controlled	compact fluorescent	time clocks	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: 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).

BASIX[®]Certificate

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

Multi Dwelling

Certificate number: 443089M

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: Thursday, 23 August 2012

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



Project summary		
Project name	EPPING PARK STAGE 3, BUILDING 17	
Street address	61 Mobbs Lane EPPING 2121	
Local Government Area	Parramatta City Council	
Plan type and plan number	deposited 129023	
Lot no.	2	
Section no.	-	
No. of residential flat buildings	1	
No. of units in residential flat buildings	42	
No. of multi-dwelling houses	0	
No. of single dwelling houses	0	
Project score		
Water	✔ 40	Target 40
Thermal Comfort	✔ Pass	Target Pass
Energy	✔ 30	Target 30

Certificate Prepared by

Name / Company Name: Efficient Living Pty Ltd

ABN (if applicable): 82 116 346 082

Description of project

Project address

Project name	EPPING PARK STAGE 3, BUILDING 17
Street address	61 Mobbs Lane EPPING 2121
Local Government Area	Parramatta City Council
Plan type and plan number	deposited 129023
Lot no.	2
Section no.	-

Project type

No. of residential flat buildings	1
No. of units in residential flat buildings	42
No. of multi-dwelling houses	0
No. of single dwelling houses	0

Site details

Site area (m ²)	7952
Roof area (m ²)	713
Non-residential floor area (m ²)	0
Residential car spaces	56
Non-residential car spaces	0

Common area landscape

Common area lawn (m ²)	138
Common area garden (m ²)	868
Area of indigenous or low water use species (m ²)	0

Assessor details

Assessor number	20101
Certificate number	72562635
Climate zone	56

Project score

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

Description of project

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

Residential flat buildings - Building 17, 42 dwellings, 5 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
101	2	80.0	0.0	0	0
105	2	80.0	6.0	0	0
110	1	66.0	0.0	0	0
201	2	80.0	0.0	0	0
205	2	80.0	6.0	0	0
210	1	66.0	0.0	0	0
301	2	80.0	0.0	0	0
309	1	66.0	0.0	0	0
G03	2	72.0	0.0	0	0
G08	2	78.0	0.0	0	0
G12	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)
102	2	84.0	0.0	0	0
106	2	91.0	0.0	0	0
111	2	79.0	0.0	0	0
202	2	84.0	0.0	0	0
206	2	91.0	0.0	0	0
211	2	79.0	0.0	0	0
302	1	63.0	0.0	0	0
310	2	86.0	0.0	0	0
G04	2	76.0	7.0	0	0
G09	1	66.0	0.0	0	0
G13	2	86.0	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	81.0	0.0	0	0
108	2	78.0	0.0	0	0
112	2	84.0	0.0	0	0
203	2	81.0	0.0	0	0
208	2	78.0	0.0	0	0
212	2	84.0	0.0	0	0
303	2	91.0	0.0	0	0
G01	2	80.0	0.0	0	0
G05	2	80.0	6.0	0	0
G10	1	66.0	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	76.0	7.0	0	0
109	1	66.0	0.0	0	0
113	2	86.0	0.0	0	0
204	2	76.0	7.0	0	0
209	1	66.0	0.0	0	0
213	2	86.0	0.0	0	0
308	2	78.0	0.0	0	0
G02	2	84.0	0.0	0	0
G06	2	91.0	0.0	0	0
G11	2	79.0	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 17

Common area	Floor area (m ²)
Car park	2127.45
Garbage rooms	97.63

Common area	Floor area (m ²)
Lift car (No. 1)	-
Plant rooms	63.7

Common area	Floor area (m ²)
Lift car (No. 2)	-
Hallways	244.83

Schedule of BASIX commitments

1. Commitments for Residential flat buildings - Building 17

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for multi-dwelling houses

3. Commitments for single dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for Residential flat buildings - Building 17

(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
310, G01, G02, G03, G04, G05, G06, G08, G09, G10, G11, G12, G13	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
101, 102, 103, 104, 105, 106, 108, 109, 110, 111, 112, 113, 201, 202, 203, 204, 205, 206, 208, 209, 210, 211, 212, 213, 301, 302, 303, 308, 309	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.		✓	✓
(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

	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
302	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 (dedicated)	yes (dedicated)	no	0	yes
309	(zoned)	(zoned)	(zoned)	(zoned)	1 (dedicated)	0	no	yes (dedicated)	yes (dedicated)	no	0	no
104, 105, 204, 205, G04, G05	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 (dedicated)	yes (dedicated)	no	1	no
109, 110, 209, 210, G09, G10	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 (dedicated)	yes (dedicated)	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
101, 102, 103, 106, 108, 111, 112, 113, 201, 202, 203, 206, 208, 211, 212, 213, 301, 303, 308, 310, G01, G02, G03, G06, G08, G11, G12, G13	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 (dedicated)	yes (dedicated)	no	0	no

	Individual pool		Individual spa		Appliances & other efficiency measures							
Dwelling no.	Pool heating system	Timer	Spa heating system	Timer	Kitchen cooktop/oven	Refrigerator	Well ventilated fridge space	Dishwasher	Clothes washer	Clothes dryer	Indoor or sheltered clothes drying line	Private outdoor or unsheltered clothes drying line
310, G01, G02, G03, G04, G05, G06, G08, G09, G10, G11, G12, G13	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	-	2 star	yes	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
101, 102, 103, 104, 105, 106, 108, 109, 110, 111, 112, 113, 201, 202, 203, 204, 205, 206, 208, 209, 210, 211, 212, 213, 301, 302, 303, 308, 309	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	2.5 star	2 star	yes	no

(iii) Thermal Comfort	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must attach the certificate referred to under "Assessor details" on the front page of this BASIX certificate (the "Assessor Certificate") to the development application and construction certificate application for the proposed development (or, if the applicant is applying for a complying development certificate for the proposed development, to that application). The applicant must also attach the Assessor Certificate to the application for a final occupation certificate for the proposed development.			

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

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
102	42	20
103	48	22
104	46	20
105	22	17
110	56	26
111	31	16
112	42	18
202	54	23

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
203	55	26
204	58	23
205	23	19
210	65	29
211	47	21
212	50	23
301	22	21
302	60	40
303	31	29
308	34	29
309	44	22
310	33	24
G01	23	15
G02	56	17
G03	58	22
G04	62	16
G05	31	15
G06	32	20
G08	33	22
G09	38	21
G10	47	22
G11	45	16
G12	49	16
G13	36	17
101, 201	13	16
106, 206	24	24
108, 208	28	24

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
109, 209	29	23
All other dwellings	28	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
Car park	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Lift car (No. 1)	-	-	light-emitting diode	connected to lift call button	No
Lift car (No. 2)	-	-	light-emitting diode	connected to lift call button	No
Garbage rooms	ventilation exhaust only	-	fluorescent	motion sensors	No
Plant rooms	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Hallways	ventilation supply only	time clock or BMS controlled	compact fluorescent	zoned switching with motion sensor	No

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

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

(b) Common areas and central systems/facilities

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

Common area	Showerheads rating	Toilets rating	Taps rating	Clothes washers rating
All common areas	3 star (> 7.5 but ≤ 9 L/min)	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	10000	To collect run-off from at least: - 713 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 1006 square metres of common landscaped area on the site - car washing in 1 car washing bays on the site

(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.	✓	✓	✓

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired boiler	Piping insulation (ringmain & supply risers): (a) Piping external to building: R1.0 (~38 mm); (b) Piping internal to building: R1.0 (~38 mm)
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 5 peak kW

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).