



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

2 Mactier St
NARRABEEN NSW 2101

MERITON APARTMENTS

DA Application for:

Buildings C & D
Lots 101 & 102 Walker St, RHODES

To be built at:

52 Walker St, RHODES

BASIX Assessment

Date of Issue: 31st May, 2010

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



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

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BASIX CERTIFICATES x 3 All BASIX reports are to be read in conjunction with each other. Common areas and central systems have been divided over the 3 reports.



INTRODUCTION

Efficient Living has investigated the estimated thermal comfort, water and energy usage of the proposed development to be built at 52 Walker St, RHODES.

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 weather 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 – Buildings C & D 52 Walker St

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

Glazing	Doors / windows: Single glazed: U: 6.600 SHGC: 0.53
Roof / ceiling insulation	Roof: Light coloured, concrete slab roof Plasterboard ceiling with R2.0 insulation + reflective foil (or R2.5 insulation only) to top floor units and those with exposed balcony over.
Wall / floor insulation	External Wall: Pre-cast concrete – no insulation Internal walls within units: Plasterboard on studs - no insulation Inter- tenancy walls: Hebal - no insulation Floors: Concrete - no insulation
Landscaped areas	Total lawn area: 924m ² Total garden area: 3048m ² Indigenous / Low water Garden: 0m ²
Tapware	All units and communal areas to have 3 star showers & 4 star tapware & toilets
Rain tank volume	12,000L rain tank capacity.
Harvested roof areas	Un-trafficable areas of the main roof from all buildings are to be plumbed into the rain tank
Rain tank connections	All private and communal area gardens and lawns. On site recycled water provided to all toilets and laundry taps.
Heating and Cooling	All units to have individual single phase reverse cycle air conditioning: All 1 bedroom units : 5.5 star – Cooling and 5.5star - Heating (zoned) All 2 bedroom units : 5.5 star – Cooling and 5.5 star - Heating (zoned) All 3 bedroom units : 5.5 star – Cooling and 6 star - Heating (zoned)
Ventilation with-in dwellings	Kitchen range hood to be recirculating with a manual on / off switch All bathrooms and laundries to have individual fans into central duct with a manual on / off switch
Lighting	Florescent lighting provided throughout both buildings communal areas and with-in the units. All light fittings to be dedicated.
Appliances	Gas cook top and electric oven Well vented fridge spaces Clothes dryers with 2.0 star energy efficiency Dish washers with 3.0 star water efficiency and 3.0 star energy efficiency Indoor or sheltered clothes drying lines provided to all units
Pool	159kL indoor pool provided Pool pump to be controlled by a timer Pool to electric heat pump heating
Sauna	Gas heating system

Common area Ventilation	<p>All car parks to have supply and exhaust air with carbon monoxide monitors and VSD speed fans.</p> <p>Gym, office, community rooms and entry foyers to have air-conditioning operated with a time clock.</p> <p>The garbage rooms to have exhaust fans running constantly.</p> <p>Plant, switch and pump rooms to have exhaust fans interlocked to lights.</p> <p>Unit entries and hallways to have natural ventilation only.</p>
Heating and Cooling	<p>All units to have individual single phase reverse cycle air conditioning:</p> <p>All 1 bedroom units : 5.5 star – Cooling and 5.5star - Heating (zoned)</p> <p>All 2 bedroom units : 5.5 star – Cooling and 5.5 star - Heating (zoned)</p> <p>All 3 bedroom units : 5.5 star – Cooling and 6 star - Heating (zoned)</p>
Common area lighting	<p>All car park area lighting to have zoned switching and motion sensors.</p> <p>All lift lighting systems are to be connected to a call switch button.</p> <p>Entry lobbies and hallways to have zoned switching.</p> <p>Lighting to all other areas to have manual on / off switches.</p>
Lift motor	<p>All lifts to have gearless traction with VVVF motor.</p>
Alternative power	<p>A total of 22 peak KW photovoltaic system is required over the two buildings.</p>

Assessor Certificate

Multiple Dwellings

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

Issued in accordance with
BASIX Thermal Comfort Simulation Method.



Assessor			
Name:	Tracey Cools	Company: Efficient Living	ABSA #: 20101
Address:	2 Mactier St, NARRABEEN NSW 2101		
Phone:	9944 0332	Fax: 9944 0293	Email: tracey@efficientliving.com.au
Declaration of interest:	None		

Client			
Name:	Tom Hutchinson	Company: Meriton Apartments Pty Ltd	
Address:	Level 11, 528 Kent Street Sydney 2000		
Phone:	9287 2691	Fax: 9287 2777	Email: tomh@meriton.com.au

Project			
Address:	Building C, Lots 101 & 102 - 52 Walker St, RHODES NSW 2138		
Applicant:	Meriton Apartments Pty Ltd	LGA:	Canada Bay City Council

Assessment			
Date:	03/05/10	Software:	BERS Pro
		Version:	V4.1

Documentation

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

Affix assessor stamp

Thermal Performance Spec: Attached,
Affixed to drawings Page#: DA-00 Cover Sheet

Drawings: DA-00, DA-01 to DA-05, DA-10 to DA-13, DA-20 to DA-24, DA-30 to DA-56, DA-60 to DA-71, DA-80 to DA-83, DA-90 to DA-93, DA-101 to DA-113,

Building Specifications: As at 19/04/10



ABSA Assessor Certificate **Assessor # 20101** **Certificate # 36722799** **Issued: 12/05/10**

Thermal performance specifications						Page 1 of 6	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
BUILDING C							
G27	33477135	90	0	37	43	No	No
G28	93131308	85	0	37	27	No	No
G29	64811328	88	0	34	26	No	No
G30	89054173	65	0	30	17	No	No
127	49734963	55	0	22	16	No	No
128	59379389	56	3	40	37	No	No
129	31833516	89	0	27	32	No	No
130	44188123	54	0	34	17	No	No
131	60307554	54	0	18	22	No	No
132	65127877	52	0	19	15	No	No
133	61748728	53	0	30	18	No	No
134	43495638	44	0	7	27	No	No
135	97212261	63	0	54	40	No	No
136	68003906	63	7	65	38	No	No
137	25195315	90	0	31	25	No	No
138	79434558	64	0	19	32	No	No
227	36722799	51	0	16	13	No	No

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
228	59379389	56	3	40	37	No	No
229	31833516	89	0	27	32	No	No
230	44188123	54	0	34	17	No	No
231	60307554	54	0	18	22	No	No
232	65127877	52	0	19	15	No	No
233	61748728	53	0	30	18	No	No
234	17325820	65	0	17	19	No	No
235	97212261	63	0	54	40	No	No
236	68003906	63	7	65	38	No	No
237	25195315	90	0	31	25	No	No
238	79434558	90	0	24	23	No	No
327	36722799	51	0	16	13	No	No
328	59379389	56	3	40	37	No	No
329	31833516	89	0	27	32	No	No
330	44188123	54	0	34	17	No	No
331	60307554	54	0	18	22	No	No
332	65127877	52	0	19	15	No	No
333	61748728	53	0	30	18	No	No
334	17325820	65	0	17	19	No	No
335	97212261	63	0	54	40	No	No
336	68003906	63	7	65	38	No	No
337	25195315	90	0	31	25	No	No
338	79434558	90	0	24	23	No	No
427	36722799	51	0	16	13	No	No
428	59379389	56	3	40	37	No	No
429	31833516	89	0	27	32	No	No
430	44188123	54	0	34	17	No	No
431	60307554	54	0	18	22	No	No
432	65127877	52	0	19	15	No	No
433	61748728	53	0	30	18	No	No
434	17325820	65	0	17	19	No	No
435	97212261	63	0	54	40	No	No
436	68003906	63	7	65	38	No	No
437	25195315	90	0	31	25	No	No
438	79434558	90	0	24	23	No	No
527	36722799	51	0	16	13	No	No
528	59379389	56	3	40	37	No	No
529	68137437	89	0	35	37	No	No
530	37166967	54	0	37	28	No	No
531	50468104	86	0	22	32	No	No
532	72259262	89	0	24	23	No	No
533	97610876	94	0	23	23	No	No
534	74193112	112	0	60	58	No	No
535	25195315	90	0	31	25	No	No
536	79434558	90	0	24	23	No	No
627	35942930	73	0	18	21	No	No

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
628	25733323	96	0	43	42	No	No
629	50468104	86	0	22	32	No	No
630	17744822	89	0	24	23	No	No
631	97610876	94	0	23	23	No	No
632	74193112	112	0	60	58	No	No
633	25195315	90	0	31	25	No	No
634	79434558	90	0	24	23	No	No
727	35942930	73	0	18	21	No	No
728	25733323	96	0	43	42	No	No
729	50468104	86	0	22	32	No	No
730	17744822	89	0	24	23	No	No
731	97610876	94	0	23	23	No	No
732	74193112	112	0	60	58	No	No
733	25195315	90	0	31	25	No	No
734	79434558	90	0	24	23	No	No
827	35942930	73	0	18	21	No	No
828	25733323	96	0	43	42	No	No
829	50468104	86	0	22	32	No	No
830	17744822	89	0	24	23	No	No
831	97610876	94	0	23	23	No	No
832	74193112	112	0	60	58	No	No
833	25195315	90	0	31	25	No	No
834	79434558	90	0	24	23	No	No
927	35942930	73	0	18	21	No	No
928	25733323	96	0	43	42	No	No
929	50468104	86	0	22	32	No	No
930	17744822	89	0	24	23	No	No
931	97610876	94	0	23	23	No	No
932	74193112	112	0	60	58	No	No
933	25195315	90	0	31	25	No	No
934	79434558	90	0	24	23	No	No
1027	35942930	73	0	18	21	No	No
1028	25733323	96	0	43	42	No	No
1029	50468104	86	0	22	32	No	No
1030	17744822	89	0	24	23	No	No
1031	97610876	94	0	23	23	No	No
1032	74193112	112	0	60	58	No	No
1033	25195315	90	0	31	25	No	No
1034	79434558	90	0	24	23	No	No
1127	35942930	73	0	18	21	No	No
1128	25733323	96	0	43	42	No	No
1129	50468104	86	0	22	32	No	No
1130	17744822	89	0	24	23	No	No
1131	97610876	94	0	23	23	No	No
1132	74193112	112	0	60	58	No	No
1133	25195315	90	0	31	25	No	No

Thermal performance specifications						Page 4 of 6	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
1134	79434558	90	0	24	23	No	No
1227	35942930	73	0	18	21	No	No
1228	25733323	96	0	43	42	No	No
1229	50468104	86	0	22	32	No	No
1230	17744822	89	0	24	23	No	No
1231	97610876	94	0	23	23	No	No
1232	74193112	112	0	60	58	No	No
1233	25195315	90	0	31	25	No	No
1234	79434558	90	0	24	23	No	No
1327	35942930	73	0	18	21	No	No
1328	25733323	96	0	43	42	No	No
1329	50468104	86	0	22	32	No	No
1330	17744822	89	0	24	23	No	No
1331	97610876	94	0	23	23	No	No
1332	74193112	112	0	60	58	No	No
1333	25195315	90	0	31	25	No	No
1334	79434558	90	0	24	23	No	No
1427	35942930	73	0	18	21	No	No
1428	25733323	96	0	43	42	No	No
1429	50468104	86	0	22	32	No	No
1430	17744822	89	0	24	23	No	No
1431	97610876	94	0	23	23	No	No
1432	74193112	112	0	60	58	No	No
1433	25195315	90	0	31	25	No	No
1434	79434558	90	0	24	23	No	No
1527	35942930	73	0	18	21	No	No
1528	25733323	96	0	43	42	No	No
1529	50468104	86	0	22	32	No	No
1530	17744822	89	0	24	23	No	No
1531	97610876	94	0	23	23	No	No
1532	74193112	112	0	60	58	No	No
1533	25195315	90	0	31	25	No	No
1534	79434558	90	0	24	23	No	No
1627	35942930	73	0	18	21	No	No
1628	25733323	96	0	43	42	No	No
1629	50468104	86	0	22	32	No	No
1630	17744822	89	0	24	23	No	No
1631	97610876	94	0	23	23	No	No
1632	74193112	112	0	60	58	No	No
1633	25195315	90	0	31	25	No	No
1634	79434558	90	0	24	23	No	No
1727	35942930	73	0	18	21	No	No
1728	25733323	96	0	43	42	No	No
1729	50468104	86	0	22	32	No	No
1730	17744822	89	0	24	23	No	No
1731	97610876	94	0	23	23	No	No

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
1732	74193112	112	0	60	58	No	No
1733	25195315	90	0	31	25	No	No
1734	79434558	90	0	24	23	No	No
1827	35942930	73	0	18	21	No	No
1828	25733323	96	0	43	42	No	No
1829	50468104	86	0	22	32	No	No
1830	17744822	89	0	24	23	No	No
1831	97610876	94	0	23	23	No	No
1832	74193112	112	0	60	58	No	No
1833	25195315	90	0	31	25	No	No
1834	79434558	90	0	24	23	No	No
1927	35942930	73	0	18	21	No	No
1928	25733323	96	0	43	42	No	No
1929	50468104	86	0	22	32	No	No
1930	17744822	89	0	24	23	No	No
1931	97610876	94	0	23	23	No	No
1932	74193112	112	0	60	58	No	No
1933	25195315	90	0	31	25	No	No
1934	79434558	90	0	24	23	No	No
2027	35942930	73	0	18	21	No	No
2028	25733323	96	0	43	42	No	No
2029	50468104	86	0	22	32	No	No
2030	17744822	89	0	24	23	No	No
2031	97610876	94	0	23	23	No	No
2032	74193112	112	0	60	58	No	No
2033	25195315	90	0	31	25	No	No
2034	79434558	90	0	24	23	No	No
2127	35942930	73	0	18	21	No	No
2128	25733323	96	0	43	42	No	No
2129	50468104	86	0	22	32	No	No
2130	17744822	89	0	24	23	No	No
2131	97610876	94	0	23	23	No	No
2132	74193112	112	0	60	58	No	No
2133	25195315	90	0	31	25	No	No
2134	79434558	90	0	24	23	No	No
2227	35942930	73	0	18	21	No	No
2228	25733323	96	0	43	42	No	No
2229	50468104	86	0	25	34	No	No
2230	17744822	89	0	26	23	No	No
2231	97610876	94	0	24	24	No	No
2232	74193112	112	0	58	24	No	No
2233	25195315	90	0	17	25	No	No
2234	85717733	90	0	28	25	No	No
2327	35942930	97	0	30	50	No	No
2328	25733323	96	0	43	42	No	No
2329	81842101	103	0	27	51	No	No
2330	61526151	129	0	49	33	No	No

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
2331	77836129	122	0	37	44	No	No
2427	49735313	97	0	42	59	No	No
2428	25644377	96	0	54	49	No	No
2429	78991634	103	0	37	59	No	No
2430	67858411	129	0	59	40	No	No
2431	77836129	122	0	50	51	No	No

Assessor # 20101

Certificate # 36722799

Issued: 12/05/10

Thermal Performance Specifications

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

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

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

Window and skylight U and SHGC values, if specified, are according to ANAC 2005. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above.

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

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

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

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

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

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

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

Overshadowing	Overshadowing structures	Overshadowing trees
N/A		N/A

Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	279
Terrain category:	Suburban
Roof ventilation:	None
Cross ventilation:	Standard
Subfloor:	None
Living area open to entry:	Yes – Conditioned Corridor
Doors separate living areas:	No
Stair open to heated areas:	Yes
Seals to windows and doors:	Yes
Exhaust fans without dampers:	No
Ventilated skylights:	No
Open fire, unflued gas heat:	No
Vented downlights:	No
Wall and ceiling vents:	No

ABSA Assessor stamp



Assessor Certificate

Multiple Dwellings

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

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BASIX Thermal Comfort Simulation Method.



Assessor			
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Phone:	9944 0332	Fax: 9944 0293	Email: tracey@efficientliving.com.au
Declaration of interest:	None		

Client			
Name:	Tom Hutchinson	Company: Meriton Apartments Pty Ltd	
Address:	Level 11, 528 Kent Street Sydney 2000		
Phone:	9287 2691	Fax: 9287 2777	Email: tomh@meriton.com.au

Project			
Address:	Building D, Lots 101 & 102 - 52 Walker St, RHODES NSW 2138		
Applicant:	Meriton Apartments Pty Ltd	LGA:	Canada Bay City Council

Assessment			
Date:	03/05/10	Software:	BERS Pro
		Version:	V4.1

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Thermal Performance Spec: Attached,
Affixed to drawings Page#: DA-00 Cover Sheet

Drawings: DA-00, DA-01 to DA-05, DA-10 to DA-13, DA-20 to DA-24, DA-30 to DA-56, DA-60 to DA-71, DA-80 to DA-83, DA-90 to DA-93, DA-101 to DA-113,

Building Specifications: As at 19/04/10



ABSA Assessor Certificate	Assessor # 20101	Certificate # 36722799	Issued: 12/05/10
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Thermal performance specifications						Page 1 of 3	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond.	Uncond.	Heat	Cool (Sens & Lat)		
BUILDING D							
G39	85522452	74	0	47	32	No	No
G40	81958875	38	0	20	20	No	No
G41	38738538	62	0	23	14	No	No
G42	22772308	51	0	33	30	No	No
G46	57477390	88	0	37	30	No	No
G47	13401363	54	0	25	33	No	No
G48	74904779	40	0	31	29	No	No
G49	76034202	46	0	65	38	No	No
G50	58483386	64	0	66	27	No	No
G51	32530053	40	0	38	29	No	No
G52	41829265	77	0	44	31	No	No
G53	64855378	52	0	40	13	No	No
139	71331137	56	0	29	10	No	No
140	34654762	60	0	60	14	No	No
141	55428674	62	0	13	10	No	No
142	72185387	38	0	14	13	No	No
143	53320861	57	0	30	12	No	No

Thermal performance specifications

Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
144	74631953	51	0	26	26	No	No
146	75585353	89	0	30	26	No	No
147	28711457	54	0	14	31	No	No
148	23548879	40	0	18	27	No	No
149	34541117	49	0	63	30	No	No
150	32501267	64	0	59	27	No	No
151	12178631	40	0	24	30	No	No
152	76590342	78	0	31	32	No	No
153	37178652	52	0	26	13	No	No
239	71331137	56	0	29	10	No	No
240	34654762	60	0	60	14	No	No
241	55428674	62	0	13	10	No	No
242	72185387	38	0	14	13	No	No
243	53320861	57	0	30	12	No	No
244	91578243	51	0	29	21	No	No
245	74631953	51	0	26	26	No	No
246	75585353	89	0	30	26	No	No
247	28711457	54	0	14	31	No	No
248	23548879	40	0	18	27	No	No
249	34541117	49	0	63	30	No	No
250	32501267	64	0	59	27	No	No
251	12178631	40	0	24	30	No	No
252	76590342	78	0	31	32	No	No
253	37178652	52	0	26	13	No	No
339	71331137	56	0	29	10	No	No
340	34654762	60	0	60	14	No	No
341	55428674	62	0	13	10	No	No
342	72185387	38	0	14	13	No	No
343	53320861	57	0	30	12	No	No
344	91578243	51	0	29	21	No	No
345	74631953	51	0	26	26	No	No
346	75585353	89	0	30	26	No	No
347	28711457	54	0	14	31	No	No
348	23548879	40	0	18	27	No	No
349	34541117	49	0	63	30	No	No
350	32501267	64	0	59	27	No	No
351	12178631	40	0	24	30	No	No
352	76590342	78	0	31	32	No	No
353	37178652	52	0	26	13	No	No
439	71331137	56	0	29	10	No	No
440	34654762	60	0	60	14	No	No
441	43822466	83	0	24	14	No	No
442	73156417	78	0	21	16	No	No
443	53320861	57	0	30	12	No	No
445	74631953	51	0	26	26	No	No
446	75585353	89	0	30	26	No	No

Thermal performance specifications						Page 3 of 3	
Unit number(s)	Certificate number	Floor area (M ²)		Predict. loads (MJ/M ² /y)		Concessions	Qualify for ventilation bonus
		Cond	Uncond.	Heat	Cool (Sens & Lat)		
447	28711457	54	0	14	31	No	No
448	23548879	40	0	18	27	No	No
449	34541117	49	0	63	30	No	No
450	32501267	64	0	59	27	No	No
451	12178631	40	0	24	30	No	No
452	76590342	78	0	31	32	No	No
453	37178652	52	0	26	13	No	No
539	77578934	56	0	39	14	No	No
540	93732873	60	0	69	19	No	No
541	83998441	83	0	36	19	No	No
542	87745922	78	0	32	21	No	No
543	56691535	53	0	21	17	No	No
545	63778897	51	0	36	30	No	No
546	79865211	88	0	40	29	No	No
547	24396319	54	0	23	27	No	No
548	71085873	40	0	28	31	No	No
549	69507254	48	0	73	30	No	No
550	32122905	64	0	66	29	No	No
551	52284748	40	0	37	31	No	No
552	46622412	78	0	48	30	No	No
553	79805588	52	0	37	16	No	No

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	Aluminium	6.60	0.53		As per plans

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

Window and skylight U and SHGC values, if specified, are according to ANAC 2005. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above.

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

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

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

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

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

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

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

Overshadowing	Overshadowing structures	Overshadowing trees
N/A		N/A

Orientation, Exposure, Ventilation and Infiltration

Orientation of nominal north:	279
Terrain category:	Suburban
Roof ventilation:	None
Cross ventilation:	Standard
Subfloor:	None
Living area open to entry:	Yes – Conditioned Corridor
Doors separate living areas:	No
Stair open to heated areas:	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

Certificate number: 308628M

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: Sunday, 30 May 2010



Score

- ✓ Water: 41 (Target 40)
- ✓ Thermal comfort: pass (Target pass)
- ✓ Energy: 20 (Target 20)

Description of project

Project address	
Project name	P1/3 Building C (G27-1032) - Lot 101 & 102 Rhodes
Street address	52 Walker Street RHODES 2138
Local Government Area	Canada Bay City Council
Plan type and plan number	deposited 1134195
Lot no.	101-2
Section no.	-
Project type	
No. of unit buildings	1
No. of units in unit buildings	100
No. of attached dwelling houses	0
No. of separate dwelling houses	0
Site details	
Site area (m ²)	15058
Roof area (m ²)	411
Non-residential floor area (m ²)	0
Residential car spaces	104
Non-residential car spaces	10
Common area landscape	
Common area lawn (m ²)	308
Common area garden (m ²)	1016
Area of indigenous or low water use species (m ²)	0
Assessor details	
Assessor number	20101
Certificate number	36722799
Climate zone	56

Description of project

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

Unit building - Building C (G27-1032), 100 dwellings, 11 storeys above ground

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
127	1	55.0	0.0	0	0
131	1	54.0	0.0	0	0
135	1	63.0	0.0	0	0
227	1	51.0	0.0	0	0
231	1	54.0	0.0	0	0
235	1	63.0	0.0	0	0
327	1	51.0	0.0	0	0
331	1	54.0	0.0	0	0
335	1	63.0	0.0	0	0
427	1	51.0	0.0	0	0
431	1	54.0	0.0	0	0
435	1	63.0	0.0	0	0
527	1	51.0	0.0	0	0
531	2	86.0	0.0	0	0
535	2	90.0	0.0	0	0
629	2	86.0	0.0	0	0
633	2	90.0	0.0	0	0
729	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)
128	1	56.0	3.0	0	0
132	1	52.0	0.0	0	0
136	1	63.0	7.0	0	0
228	1	56.0	3.0	0	0
232	1	52.0	0.0	0	0
236	1	63.0	7.0	0	0
328	1	56.0	3.0	0	0
332	1	52.0	0.0	0	0
336	1	63.0	7.0	0	0
428	1	56.0	3.0	0	0
432	1	52.0	0.0	0	0
436	1	63.0	7.0	0	0
528	1	56.0	3.0	0	0
532	2	89.0	0.0	0	0
536	2	90.0	0.0	0	0
630	2	89.0	0.0	0	0
634	2	90.0	0.0	0	0
730	2	89.0	0.0	0	0
Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
129	2	89.0	0.0	0	0
133	1	53.0	0.0	0	0
137	2	90.0	0.0	0	0
229	2	89.0	0.0	0	0
233	1	53.0	0.0	0	0
237	2	90.0	0.0	0	0
329	2	89.0	0.0	0	0
333	1	53.0	0.0	0	0
337	2	90.0	0.0	0	0
429	2	89.0	0.0	0	0
433	1	53.0	0.0	0	0
437	2	90.0	0.0	0	0
529	2	89.0	0.0	0	0
533	2	94.0	0.0	0	0
627	2	73.0	0.0	0	0
631	2	94.0	0.0	0	0
727	2	73.0	0.0	0	0
731	2	94.0	0.0	0	0
Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
130	2	54.0	0.0	0	0
134	1	44.0	0.0	0	0
138	1	64.0	0.0	0	0
230	2	54.0	0.0	0	0
234	1	65.0	0.0	0	0
238	2	90.0	0.0	0	0
330	2	54.0	0.0	0	0
334	1	65.0	0.0	0	0
338	2	90.0	0.0	0	0
430	2	54.0	0.0	0	0
434	1	65.0	0.0	0	0
438	2	90.0	0.0	0	0
530	2	54.0	0.0	0	0
534	3	112.0	0.0	0	0
628	2	96.0	0.0	0	0
632	3	112.0	0.0	0	0
728	2	96.0	0.0	0	0
732	3	112.0	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)
733	2	90.0	0.0	0	0
829	2	86.0	0.0	0	0
833	2	90.0	0.0	0	0
929	2	86.0	0.0	0	0
933	2	90.0	0.0	0	0
G29	2	88.0	0.0	0	0
1029	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)
734	2	90.0	0.0	0	0
830	2	89.0	0.0	0	0
834	2	90.0	0.0	0	0
930	2	89.0	0.0	0	0
934	2	90.0	0.0	0	0
G30	1	65.0	0.0	0	0
1030	2	89.0	0.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
827	2	73.0	0.0	0	0
831	2	94.0	0.0	0	0
927	2	73.0	0.0	0	0
931	2	94.0	0.0	0	0
G27	2	90.0	0.0	0	0
1027	2	73.0	0.0	0	0
1031	2	94.0	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)
828	2	96.0	0.0	0	0
832	3	112.0	0.0	0	0
928	2	96.0	0.0	0	0
932	3	112.0	0.0	0	0
G28	2	85.0	0.0	0	0
1028	2	96.0	0.0	0	0
1032	3	112.0	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 C (G27-1032)

Common area	Floor area (m ²)
Pool (1/3rd)	123
Lift car (No. 1)	-
Lift car (No. 4)	-
Plant Rooms (1/3rd)	51

Common area	Floor area (m ²)
Gym (1/3rd)	26
Lift car (No. 2)	-
Switch / Elect. (1/3rd)	77
Ground Floor Lobbies (1/3rd)	84

Common area	Floor area (m ²)
Car Parking (1/3th)	5627
Lift car (No. 3)	-
Garbage (1/3rd)	78
Hallways (1/3rd)	930

Schedule of BASIX commitments

1. Commitments for unit building - Building C (G27-1032)

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for attached dwelling houses

3. Commitments for separate dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for unit building - Building C (G27-1032)

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: <ul style="list-style-type: none"> (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling. 		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star	4 star	4 star	4 star	no	-	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
All dwellings	on-site recycled water system (no. 1)	See central systems	See central systems	-	yes	yes	-	-
None	-	-	-	-	-	-	-	-

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan into central duct + VSD	manual on / timer off	individual fan, not ducted	manual switch on/off	individual fan into central duct + VSD	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
136	(zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning (zoned)	(zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
336	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
534	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
632, 732	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
536, 634, 734	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
832, 932, 1032	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
236, 436, 834, 934	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
132, 232, 332, 432, 532	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
628, 728, 828, 928, 1028	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	yes
129, 130, 229, 230, 329, 330, 429, 430, 529, 530, G28	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
127, 128, 131, 133, 134, 135, 138, 227, 228, 231, 233, 234, 235, 327, 328, 331, 333, 334, 335, 427, 428, 431, 433, 434, 435, 528, G30	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
137, 237, 238, 337, 338, 437, 438, 527, 531, 533, 535, 627, 629, 630, 631, 633, 727, 729, 730, 731, 733, 827, 829, 830, 831, 833, 927, 929, 930, 931, 933, G27, G29, 1027, 1029, 1030, 1031	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

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

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
127, 128, 129, 130, 131, 132, 133, 134, 135, 137, 138, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 427, 428, 429,	-	-	-	-	gas cooktop & electric oven	-	yes	3 star	-	2 star	yes	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
430, 431, 432, 433, 434, 435, 436, 437, 438, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 627, 628, 629, 630, 631, 632, 633, 634, 727, 728, 729, 730, 731, 732, 733, 734, 827, 828, 829,												

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
830, 831, 832, 833, 834, 927, 928, 929, 930, 931, 932, 933, 934, G27, G28, G29, G30, 1027, 1028, 1029, 1030, 1031, 1032												

(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.	✓	✓	✓

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
127	22	16
134	7	27
138	19	32
529	35	37
530	37	28
G27	37	43
G28	37	27
G29	34	26
G30	30	17
234, 334, 434	17	19
129, 229, 329, 429	27	32

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
130, 230, 330, 430	34	17
131, 231, 331, 431	18	22
132, 232, 332, 432	19	15
133, 233, 333, 433	30	18
135, 235, 335, 435	54	40
136, 236, 336, 436	65	38
227, 327, 427, 527	16	13
128, 228, 328, 428, 528	40	37
627, 727, 827, 927, 1027	18	21
628, 728, 828, 928, 1028	43	42
531, 629, 729, 829, 929, 1029	22	32
533, 631, 731, 831, 931, 1031	23	23
534, 632, 732, 832, 932, 1032	60	58
137, 237, 337, 437, 535, 633, 733, 833, 933	31	25
All other dwellings	24	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	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 53 kLs	Location: Pool (1/3rd)	-

(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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Pool (1/3rd)	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car Parking (1/3th)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Lift car (No. 1)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 2)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 3)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 4)	-	-	compact fluorescent	connected to lift call button	No
Switch / Elect. (1/3rd)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Garbage (1/3rd)	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant Rooms (1/3rd)	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Ground Floor Lobbies (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Hallways (1/3rd)	ventilation supply only	none ie. continuous	compact fluorescent	zoned switching	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 11

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 11
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 11
Pool (No. 1)	Heating source: electric heat pump	Solar collector area (minimum, in square metres): Pump controlled by timer: yes

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	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	4000	To collect run-off from at least: - 411 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 1016 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Central on-site recycled/alternative water supply (No. 1)	To supply at least 2000 litres of recycled water per day to the development (over and above the system's committed capacity, if any)	-	- Irrigation of 0 square metres of common landscape area on the site - car washing in 0 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
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 12 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).

BASIX Certificate

Certificate number: 308607M

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: Sunday, 30 May 2010



Score

- ✓ Water: 41 (Target 40)
- ✓ Thermal comfort: pass (Target pass)
- ✓ Energy: 20 (Target 20)

Description of project

Project address	
Project name	P5/6 Building C (1033-2431) - Lot 101 & 102 Rhodes
Street address	52 Walker Street RHODES 2138
Local Government Area	Canada Bay City Council
Plan type and plan number	deposited 1134195
Lot no.	101-2
Section no.	-
Project type	
No. of unit buildings	1
No. of units in unit buildings	108
No. of attached dwelling houses	0
No. of separate dwelling houses	0
Site details	
Site area (m ²)	15058
Roof area (m ²)	411
Non-residential floor area (m ²)	0
Residential car spaces	104
Non-residential car spaces	10
Common area landscape	
Common area lawn (m ²)	308
Common area garden (m ²)	1016
Area of indigenous or low water use species (m ²)	0
Assessor details	
Assessor number	20101
Certificate number	36722799
Climate zone	56

Description of project

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

Unit building - Building C (1033-2431), 108 dwellings, 19 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)
1033	2	90.0	0.0	0	0
1129	2	86.0	0.0	0	0
1133	2	90.0	0.0	0	0
1229	2	86.0	0.0	0	0
1233	2	90.0	0.0	0	0
1329	2	86.0	0.0	0	0
1333	2	90.0	0.0	0	0
1429	2	86.0	0.0	0	0
1433	2	90.0	0.0	0	0
1529	2	86.0	0.0	0	0
1533	2	90.0	0.0	0	0
1629	2	86.0	0.0	0	0
1633	2	90.0	0.0	0	0
1729	2	86.0	0.0	0	0
1733	2	90.0	0.0	0	0
1829	2	86.0	0.0	0	0
1833	2	90.0	0.0	0	0
1929	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)
1034	2	90.0	0.0	0	0
1130	2	89.0	0.0	0	0
1134	2	90.0	0.0	0	0
1230	2	89.0	0.0	0	0
1234	2	90.0	0.0	0	0
1330	2	89.0	0.0	0	0
1334	2	90.0	0.0	0	0
1430	2	89.0	0.0	0	0
1434	2	90.0	0.0	0	0
1530	2	89.0	0.0	0	0
1534	2	90.0	0.0	0	0
1630	2	89.0	0.0	0	0
1634	2	90.0	0.0	0	0
1730	2	89.0	0.0	0	0
1734	2	90.0	0.0	0	0
1830	2	89.0	0.0	0	0
1834	2	90.0	0.0	0	0
1930	2	89.0	0.0	0	0
Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
1127	2	73.0	0.0	0	0
1131	2	94.0	0.0	0	0
1227	2	73.0	0.0	0	0
1231	2	94.0	0.0	0	0
1327	2	73.0	0.0	0	0
1331	2	94.0	0.0	0	0
1427	2	73.0	0.0	0	0
1431	2	94.0	0.0	0	0
1527	2	73.0	0.0	0	0
1531	2	94.0	0.0	0	0
1627	2	73.0	0.0	0	0
1631	2	94.0	0.0	0	0
1727	2	73.0	0.0	0	0
1731	2	94.0	0.0	0	0
1827	2	73.0	0.0	0	0
1831	2	94.0	0.0	0	0
1927	2	73.0	0.0	0	0
1931	2	94.0	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)
1128	2	96.0	0.0	0	0
1132	3	112.0	0.0	0	0
1228	2	96.0	0.0	0	0
1232	3	112.0	0.0	0	0
1328	2	96.0	0.0	0	0
1332	3	112.0	0.0	0	0
1428	2	96.0	0.0	0	0
1432	3	112.0	0.0	0	0
1528	2	96.0	0.0	0	0
1532	3	112.0	0.0	0	0
1628	2	96.0	0.0	0	0
1632	3	112.0	0.0	0	0
1728	2	96.0	0.0	0	0
1732	3	112.0	0.0	0	0
1828	2	96.0	0.0	0	0
1832	3	112.0	0.0	0	0
1928	2	96.0	0.0	0	0
1932	3	112.0	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)
1933	2	90.0	0.0	0	0
2029	2	86.0	0.0	0	0
2033	2	90.0	0.0	0	0
2129	2	86.0	0.0	0	0
2133	2	90.0	0.0	0	0
2229	2	86.0	0.0	0	0
2233	2	90.0	0.0	0	0
2329	3	103.0	0.0	0	0
2428	2	96.0	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)
1934	2	90.0	0.0	0	0
2030	2	89.0	0.0	0	0
2034	2	90.0	0.0	0	0
2130	2	89.0	0.0	0	0
2134	2	90.0	0.0	0	0
2230	2	89.0	0.0	0	0
2234	2	90.0	0.0	0	0
2330	3	129.0	0.0	0	0
2429	3	103.0	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)
2027	2	73.0	0.0	0	0
2031	2	94.0	0.0	0	0
2127	2	73.0	0.0	0	0
2131	2	94.0	0.0	0	0
2227	2	73.0	0.0	0	0
2231	2	94.0	0.0	0	0
2327	2	97.0	0.0	0	0
2331	3	122.0	0.0	0	0
2430	3	129.0	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)
2028	2	96.0	0.0	0	0
2032	3	112.0	0.0	0	0
2128	2	96.0	0.0	0	0
2132	3	112.0	0.0	0	0
2228	2	96.0	0.0	0	0
2232	3	112.0	0.0	0	0
2328	2	96.0	0.0	0	0
2427	2	97.0	0.0	0	0
2431	3	122.0	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 C (1033-2431)

Common area	Floor area (m ²)
Pool (1/3rd)	123
Lift car (No. 1)	-
Lift car (No. 4)	-
Plant Rooms (1/3rd)	51

Common area	Floor area (m ²)
Gym (1/3rd)	26
Lift car (No. 2)	-
Switch / Elect. (1/3rd)	77
Ground Floor Lobbies (1/3rd)	84

Common area	Floor area (m ²)
Car Parking (1/3rd)	5627
Lift car (No. 3)	-
Garbage (1/3rd)	78
Hallways (1/3rd)	930

Schedule of BASIX commitments

1. Commitments for unit building - Building C (1033-2431)

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for attached dwelling houses

3. Commitments for separate dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for unit building - Building C (1033-2431)

(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.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star	4 star	4 star	4 star	no	-	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
All dwellings	on-site recycled water system (no. 1)	See central systems	See central systems	no	yes	yes	no	no
None	-	-	-	-	-	-	-	-

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan into central duct + VSD	manual on / timer off	individual fan, not ducted	interlocked to light	individual fan into central duct + VSD	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
2232, 2329, 2330, 2331, 2429, 2430, 2431	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	3 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no
1132, 1232, 1332, 1432, 1532, 1632, 1732, 1832, 1932, 2032, 2132	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 6 Star (zoned)	1-phase airconditioning 6 Star (zoned)	0	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	no
1034, 1134, 1234, 1334, 1434, 1534, 1634, 1734, 1834, 1934, 2034, 2134	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	0	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	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
1128, 1228, 1328, 1428, 1528, 1628, 1728, 1828, 1928, 2028, 2128, 2228, 2328, 2428	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	1	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
1033, 1127, 1129, 1130, 1131, 1133, 1227, 1229, 1230, 1231, 1233, 1327, 1329, 1330, 1331, 1333, 1427, 1429, 1430, 1431, 1433, 1527, 1529, 1530, 1531, 1533, 1627, 1629, 1630, 1631, 1633, 1727, 1729, 1730, 1731, 1733, 1827, 1829, 1830,	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
1831, 1833, 1927, 1929, 1930, 1931, 1933, 2027, 2029, 2030, 2031, 2033, 2127, 2129, 2130, 2131, 2133, 2227, 2229, 2230, 2231, 2233, 2234, 2327, 2427												

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

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

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
2229	25	34
2230	26	23
2231	24	24
2232	58	24
2233	17	25

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
2234	28	25
2327	30	50
2329	27	51
2330	49	33
2331	37	44
2427	42	59
2428	54	49
2429	37	59
2430	59	40
2431	50	51
1129, 1229, 1329, 1429, 1529, 1629, 1729, 1829, 1929, 2029, 2129	22	32
1131, 1231, 1331, 1431, 1531, 1631, 1731, 1831, 1931, 2031, 2131	23	23
1132, 1232, 1332, 1432, 1532, 1632, 1732, 1832, 1932, 2032, 2132	60	58
1033, 1133, 1233, 1333, 1433, 1533, 1633, 1733, 1833, 1933, 2033, 2133	31	25
1127, 1227, 1327, 1427, 1527, 1627, 1727, 1827, 1927, 2027, 2127, 2227	18	21
1128, 1228, 1328, 1428, 1528, 1628, 1728, 1828, 1928, 2028, 2128, 2228, 2328	43	42
All other dwellings	24	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	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 53 kLs	Location: Pool (1/3rd)	-

(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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Pool (1/3rd)	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car Parking (1/3rd)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Lift car (No. 1)			compact fluorescent	connected to lift call button	No
Lift car (No. 2)			compact fluorescent	connected to lift call button	No
Lift car (No. 3)			compact fluorescent	connected to lift call button	No
Lift car (No. 4)			compact fluorescent	connected to lift call button	No
Switch / Elect. (1/3rd)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Garbage (1/3rd)	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant Rooms (1/3rd)	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Ground Floor Lobbies (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Hallways (1/3rd)	ventilation supply only	none ie. continuous	compact fluorescent	zoned switching	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	gas-fired storage (manifolded)	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 18
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 18

Central energy systems	Type	Specification
Lift (No. 3)	gearless traction with V V V F motor	Number of levels (including basement): 18
Lift (No. 4)	gearless traction with V V V F motor	Number of levels (including basement): 18
Pool (No. 1)	Heating source: electric heat pump	Solar collector area (minimum, in square metres): Pump controlled by timer: yes
Sauna (No. 1)	Heating source: gas	Efficiency measure: manual on / timer off

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	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	4000	To collect run-off from at least: - 411 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 1016 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Central on-site recycled/alternative water supply (No. 1)	To supply at least 2000 litres of recycled water per day to the development (over and above the system's committed capacity, if any)	-	- Irrigation of 0 square metres of common landscape area on the site - car washing in 0 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
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 8 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).

BASIX Certificate

Certificate number: 308563M

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: Sunday, 30 May 2010



Score

- ✓ Water: 43 (Target 40)
- ✓ Thermal comfort: pass (Target pass)
- ✓ Energy: 20 (Target 20)

Description of project

Project address	
Project name	P3/3 Building D - Lot 101 & 102 Rhodes
Street address	52 Walker Street RHODES 2138
Local Government Area	Canada Bay City Council
Plan type and plan number	deposited 1134195
Lot no.	101-2
Section no.	-
Project type	
No. of unit buildings	1
No. of units in unit buildings	84
No. of attached dwelling houses	0
No. of separate dwelling houses	0
Site details	
Site area (m ²)	15058
Roof area (m ²)	1118
Non-residential floor area (m ²)	0
Residential car spaces	104
Non-residential car spaces	10
Common area landscape	
Common area lawn (m ²)	308
Common area garden (m ²)	1016
Area of indigenous or low water use species (m ²)	0
Assessor details	
Assessor number	20101
Certificate number	36722799
Climate zone	56

Description of project

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

Unit building - Building D, 84 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)
139	1	56.0	0.0	0	0
143	1	57.0	0.0	0	0
148	1	40.0	0.0	0	0
152	2	78.0	0.0	0	0
241	1	62.0	0.0	0	0
245	1	51.0	0.0	0	0
249	1	49.0	0.0	0	0
253	1	52.0	0.0	0	0
342	1	38.0	0.0	0	0
346	2	89.0	0.0	0	0
350	1	64.0	0.0	0	0
439	1	56.0	0.0	0	0
443	1	57.0	0.0	0	0
448	1	40.0	0.0	0	0
452	2	78.0	0.0	0	0
541	2	83.0	0.0	0	0
546	2	88.0	0.0	0	0
550	1	64.0	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)
140	1	60.0	0.0	0	0
144	1	51.0	0.0	0	0
149	1	49.0	0.0	0	0
153	1	52.0	0.0	0	0
242	1	38.0	0.0	0	0
246	2	89.0	0.0	0	0
250	1	64.0	0.0	0	0
339	1	56.0	0.0	0	0
343	1	57.0	0.0	0	0
347	1	54.0	0.0	0	0
351	1	40.0	0.0	0	0
440	1	60.0	0.0	0	0
445	1	51.0	0.0	0	0
449	1	49.0	0.0	0	0
453	1	52.0	0.0	0	0
542	2	78.0	0.0	0	0
547	1	54.0	0.0	0	0
551	1	40.0	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)
141	1	62.0	0.0	0	0
146	2	89.0	0.0	0	0
150	1	64.0	0.0	0	0
239	1	56.0	0.0	0	0
243	1	57.0	0.0	0	0
247	1	54.0	0.0	0	0
251	1	40.0	0.0	0	0
340	1	60.0	0.0	0	0
344	1	51.0	0.0	0	0
348	1	40.0	0.0	0	0
352	2	78.0	0.0	0	0
441	2	83.0	0.0	0	0
446	2	89.0	0.0	0	0
450	1	64.0	0.0	0	0
539	1	56.0	0.0	0	0
543	1	53.0	0.0	0	0
548	1	40.0	0.0	0	0
552	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)
142	1	38.0	0.0	0	0
147	1	54.0	0.0	0	0
151	1	40.0	0.0	0	0
240	1	60.0	0.0	0	0
244	1	51.0	0.0	0	0
248	1	40.0	0.0	0	0
252	2	78.0	0.0	0	0
341	1	62.0	0.0	0	0
345	1	51.0	0.0	0	0
349	1	49.0	0.0	0	0
353	1	52.0	0.0	0	0
442	2	78.0	0.0	0	0
447	1	54.0	0.0	0	0
451	1	40.0	0.0	0	0
540	1	60.0	0.0	0	0
545	1	51.0	0.0	0	0
549	1	48.0	0.0	0	0
553	1	52.0	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)
G39	1	74.0	0.0	0	0
G46	2	88.0	0.0	0	0
G50	1	64.0	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)
G40	1	38.0	0.0	0	0
G47	1	54.0	0.0	0	0
G51	1	40.0	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)
G41	1	62.0	0.0	0	0
G48	1	40.0	0.0	0	0
G52	2	77.0	0.0	0	0

Dwelling no.	No. of bedrooms	Conditioned floor area (m ²)	Unconditioned floor area (m ²)	Area of garden & lawn (m ²)	Indigenous species (min area m ²)
G42	1	51.0	0.0	0	0
G49	1	46.0	0.0	0	0
G53	1	52.0	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 D

Common area	Floor area (m ²)
Pool (1/3rd)	123
Lift car (No. 1)	-
Garbage (1/3rd)	78
Hallways (1/3rd)	930

Common area	Floor area (m ²)
Gym (1/3rd)	39
Lift car (No. 2)	-
Plant Rooms (1/3rd)	51

Common area	Floor area (m ²)
Car Parking (1/3rd)	5627
Switch / Elect. (1/3rd)	77
Ground Floor Lobbies (1/3rd)	84

Schedule of BASIX commitments

1. Commitments for unit building - Building D

(a) Dwellings

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

(b) Common areas and central systems/facilities

- (i) Water
- (ii) Energy

2. Commitments for attached dwelling houses

3. Commitments for separate dwelling houses

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

- (i) Water
- (ii) Energy

Schedule of BASIX commitments

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

1. Commitments for unit building - Building D

(a) Dwellings

(i) Water	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(a) The applicant must comply with the commitments listed below in carrying out the development of a dwelling listed in a table below.			
(b) The applicant must plant indigenous or low water use species of vegetation throughout the area of land specified for the dwelling in the "Indigenous species" column of the table below, as private landscaping for that dwelling. (This area of indigenous vegetation is to be contained within the "Area of garden and lawn" for the dwelling specified in the "Description of Project" table).	✓	✓	
(c) If a rating is specified in the table below for a fixture or appliance to be installed in the dwelling, the applicant must ensure that each such fixture and appliance meets the rating specified for it.		✓	✓
(d) The applicant must install an on demand hot water recirculation system which regulates all hot water use throughout the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below.		✓	✓
(e) The applicant must install: <ul style="list-style-type: none"> (aa) a hot water diversion system to all showers, kitchen sinks and all basins in the dwelling, where indicated for a dwelling in the "HW recirculation or diversion" column of the table below; and (bb) a separate diversion tank (or tanks) connected to the hot water diversion systems of at least 100 litres. The applicant must connect the hot water diversion tank to all toilets in the dwelling. 		✓	✓
(e) The applicant must not install a private swimming pool or spa for the dwelling, with a volume exceeding that specified for it in the table below.	✓	✓	
(f) If specified in the table, that pool or spa (or both) must have a pool cover or shading (or both).		✓	
(g) The pool or spa must be located as specified in the table.	✓	✓	
(h) The applicant must install, for the dwelling, each alternative water supply system, with the specified size, listed for that dwelling in the table below. Each system must be configured to collect run-off from the areas specified (excluding any area which supplies any other alternative water supply system), and to divert overflow as specified. Each system must be connected as specified.	✓	✓	✓

Dwelling no.	Fixtures					Appliances		Individual pool				Individual spa		
	All shower-heads	All toilet flushing systems	All kitchen taps	All bathroom taps	HW recirculation or diversion	All clothes washers	All dish-washers	Volume (max volume)	Pool cover	Pool location	Pool shaded	Volume (max volume)	Spa cover	Spa shaded
All dwellings	3 star	4 star	4 star	4 star	no	-	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
All dwellings	on-site recycled water system (no. 1)	See central systems	See central systems	no	yes	yes	no	no
None	-	-	-	-	-	-	-	-

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

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

	Hot water	Bathroom ventilation system		Kitchen ventilation system		Laundry ventilation system	
Dwelling no.	Hot water system	Each bathroom	Operation control	Each kitchen	Operation control	Each laundry	Operation control
All dwellings	central hot water system 1	individual fan into central duct + VSD	manual switch on/off	individual fan, not ducted	manual switch on/off	individual fan into central duct + VSD	manual on / timer off

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
146	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes
G46	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes
G49, G50	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes
152, 252, 352, 441, 442, 446, 452, 541, 542, 552, G52	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	2 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
140, 144, 149, 150, 240, 244, 246, 249, 250, 340, 344, 346, 349, 350, 440, 445, 449, 450, 540, 545, 546, 549, 550	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	yes

Dwelling no.	Cooling		Heating		Artificial lighting					Natural lighting		
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
139, 141, 142, 143, 147, 148, 151, 153, 239, 241, 242, 243, 245, 247, 248, 251, 253, 339, 341, 342, 343, 345, 347, 348, 351, 353, 439, 443, 447, 448, 451, 453, 539, 543, 547, 548, 551, 553, G39,	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1-phase airconditioning 5.5 Star (zoned)	1 (dedicated)	2 (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	yes (dedicated)	0	no

Dwelling no.	Cooling		Heating		Artificial lighting						Natural lighting	
	living areas	bedroom areas	living areas	bedroom areas	No. of bedrooms &/or study	No. of living &/or dining rooms	Each kitchen	All bathrooms/toilets	Each laundry	All hallways	No. of bathrooms &/or toilets	Main kitchen
G40, G41, G42, G47, G48, G51, G53												

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

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

(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.	✓	✓	✓

Thermal loads		
Dwelling no.	Area adjusted heating load (in mJ/m²/yr)	Area adjusted cooling load (in mJ/m²/yr)
441	24	14
442	21	16
539	39	14
540	59	19
541	36	19
542	32	21
543	21	17
545	36	30
546	40	29
547	23	27
548	28	31
550	66	29
551	37	31

Dwelling no.	Thermal loads	
	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
553	37	16
G39	47	32
G40	20	20
G41	23	14
G42	33	30
G46	37	30
G47	25	33
G48	31	29
G49	65	38
G50	66	27
G51	38	29
G52	44	31
G53	40	13
244, 344	29	21
549, 552	48	30
141, 241, 341	13	10
142, 242, 342	14	13
139, 239, 339, 439	29	10
140, 240, 340, 440	60	14
143, 243, 343, 443	30	12
144, 245, 345, 445	26	26
146, 246, 346, 446	30	26
147, 247, 347, 447	14	31
148, 248, 348, 448	18	27
149, 249, 349, 449	63	30
150, 250, 350, 450	59	27
151, 251, 351, 451	24	30

	Thermal loads	
Dwelling no.	Area adjusted heating load (in mJ/m ² /yr)	Area adjusted cooling load (in mJ/m ² /yr)
152, 252, 352, 452	31	32
All other dwellings	26	13

(b) Common areas and central systems/facilities

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

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

Central systems	Size	Configuration	Connection (to allow for...)
Pool (No. 1)	Volume: 53 kLs	Location: Pool (1/3rd)	-

(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.		✓	✓

(ii) Energy	Show on DA plans	Show on CC/CDC plans & specs	Certifier check
(c) The applicant must install the systems and fixtures specified in the "Central energy systems" column of the table below. In each case, the system or fixture must be of the type, and meet the specifications, listed for it in the table.	✓	✓	✓

Common area	Common area ventilation system		Common area lighting		
	Ventilation system type	Ventilation efficiency measure	Primary type of artificial lighting	Lighting efficiency measure	Lighting control system/BMS
Pool (1/3rd)	ventilation exhaust only	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Gym (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	manual on / manual off	No
Car Parking (1/3rd)	ventilation (supply + exhaust)	carbon monoxide monitor + VSD fan	fluorescent	zoned switching with motion sensor	No
Lift car (No. 1)	-	-	compact fluorescent	connected to lift call button	No
Lift car (No. 2)	-	-	compact fluorescent	connected to lift call button	No
Switch / Elect. (1/3rd)	ventilation supply only	interlocked to light	fluorescent	manual on / manual off	No
Garbage (1/3rd)	ventilation exhaust only	-	fluorescent	manual on / manual off	No
Plant Rooms (1/3rd)	ventilation exhaust only	interlocked to light	fluorescent	manual on / manual off	No
Ground Floor Lobbies (1/3rd)	air conditioning system	time clock or BMS controlled	compact fluorescent	none	No
Hallways (1/3rd)	ventilation supply only	none ie. continuous	compact fluorescent	zoned switching	No

Central energy systems	Type	Specification
Central hot water system (No. 1)	electric heat pump - gas boosted	Piping insulation (ringmain & supply risers): (b) Piping internal to building: R0.6 (~25 mm)
Lift (No. 1)	gearless traction with V V V F motor	Number of levels (including basement): 9
Lift (No. 2)	gearless traction with V V V F motor	Number of levels (including basement): 9
Pool (No. 1)	Heating source: electric heat pump	Solar collector area (minimum, in square metres): Pump controlled by timer: yes

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	4 star	4 star	no common laundry facility

Central systems	Size	Configuration	Connection (to allow for...)
Central water tank - rainwater or stormwater (No. 1)	4000	To collect run-off from at least: - 1118 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 1016 square metres of common landscaped area on the site - car washing in 0 car washing bays on the site

Central systems	Size	Configuration	Connection (to allow for...)
Central on-site recycled/alternative water supply (No. 1)	To supply at least 2000 litres of recycled water per day to the development (over and above the system's committed capacity, if any)	-	- Irrigation of 0 square metres of common landscape area on the site - car washing in 0 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
Alternative energy supply	Photovoltaic system	Rated electrical output (min): 22 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).