

JEA Holdings (Australia) Pty Ltd

90 Cartwright Ave, Miller

BASIX Assessment Report

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Subject	90 Cartwright Ave, Miller – BASIX Assessment Report

1. SITE APPRECIATION

The proposed development is located at 90 Cartwright Ave, Miller and consists of:

- Basement car parking
- Two retail spaces
- 145 apartments over 2 buildings

2. BASIX WATER SECTION

The proposed development will meet the mandatory BASIX water target of 40% as long as the water commitments detailed in Table 1 are installed. For details of the requirements necessary to achieve this target, please refer to the BASIX Certificate No. 598226M AND 597888M.

Table 1: BASIX Water Commitments

Common Areas and Central Systems	
<u>Area of Indigenous or low water species</u>	• No Commitments
<u>Rainwater collection</u>	• Minimum 10,000L rainwater tank • Roof collection area – minimum 200 m² • Rainwater collected to be used for all landscape irrigation only
<u>Fixtures for Common Areas</u>	• 4-star (Water Rating) toilets • 4-star (Water Rating) bathroom taps
<u>Fire Sprinkler</u>	• Test Water must be diverted to a closed system
Private Dwellings	
<u>Fixtures for apartments</u>	• 3-star (Water Rating) showerheads with a flow rate > 6.0L/min & ≤ 7.5L/min • 4-star (Water Rating) toilets • 4-star (Water Rating) kitchen taps • 4-star (Water Rating) bathroom taps • 4-star (Water Rating) dishwashers

3. BASIX THERMAL COMFORT SECTION

The thermal performance of the development has been evaluated using BERS Pro 2nd Generation software. The BERS Pro computer simulation of residential developments forms part of the Nationwide House Energy Rating Scheme, and is used to assess the potential of a residential development to have low heating and cooling energy requirements once operational.

3.1 MODELLING ASSUMPTIONS

The “base-case” building fabric and glazing and associated thermal performance specifications are described in Table 2 below: Note these assumptions are based on the nominated preferred construction materials indicated by the architect

Table 2: Base Case Assumptions on Construction and Fabric

<i>Element</i>	<i>Material</i>	<i>Detail</i>
External walls	Power panel	Insulation: See Table 3 and 4 Medium colour: 0.7<absorptance< 0.475
Internal walls	Plasterboard	
Party walls	Power panel	Adjacent to neighbours, corridors, services, lift and Fire Stairs
Windows	Single glazed, clear with Aluminium frame	Holland Blinds to all glazing except to bathrooms (BASIX Modelling Protocol, Developer is not obligated to install any curtains/blinds at OC Stage)
	Total Window System Properties:	U-value 6.57 & SHGC 0.74
Roof	Concrete	Insulation: See Table 3 and 4
		Medium colour: 0.7<absorptance< 0.475
Ceilings	Plasterboard	Insulation: See Table 3 and 4
Floors	Concrete	Tiles: Wet areas only
		Carpet: Everywhere else

3.2 BERS PRO RESULTS (THERMAL COMFORT)

The simulated heating and cooling loads per dwelling are summarized in Table 3 and 4 below. Where the dwellings have failed to meet the thermal load targets additional thermal enhancements / treatments are provided. This is typically in the form of bulk insulation. These additional thermal treatments are required to pass the BASIX Thermal performance requirements.

Table 3: BERS Pro Thermal Loads – Block A

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
01	R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	84.6	78.1	3.5	Pass
02	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	65.9	27.3	5.5	Pass
03	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	72.0	19.9	5.5	Pass
04	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	35.7	38.9	6.5	Pass
05	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	82.9	29.4	5.0	Pass
06	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	81.1	27.5	5.0	Pass
07	R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R1.0 Floor Insulation	84.5	46.5	4.0	Pass
08	R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	78.7	48.1	4.5	Pass
09	R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	84.2	31.6	4.5	Pass
10	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	74.7	78.7	3.5	Pass
11	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	28.0	31.8	7.0	Pass
12	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	28.5	21.0	7.5	Pass
13	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	36.3	62.2	5.5	Pass
14	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	49.7	30.8	6.0	Pass
15	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	47.5	29.8	6.0	Pass
16	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	70.9	41.8	4.5	Pass
17	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	55.9	60.4	4.5	Pass
18	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	67.1	36.0	5.0	Pass
19	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	75.2	77.6	3.5	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
20	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	28.4	31.4	7.0	Pass
21	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	28.8	21.2	7.5	Pass
22	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	36.7	61.8	5.5	Pass
23	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	50.2	30.8	6.0	Pass
24	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	47.9	29.6	6.0	Pass
25	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	71.5	41.5	4.5	Pass
26	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	56.4	59.5	4.5	Pass
27	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	67.5	35.6	5.0	Pass
28	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	75.8	75.2	3.5	Pass
29	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	28.8	31.3	7.0	Pass
30	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	29.1	21.0	7.5	Pass
31	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	37.1	60.1	5.5	Pass
32	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	50.5	30.3	6.0	Pass
33	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	48.2	29.4	6.0	Pass
34	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	72.0	41.6	4.5	Pass
35	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	56.8	59.1	4.5	Pass
36	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	67.9	35.6	5.0	Pass
37	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	76.3	74.3	3.5	Pass
38	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	29.1	31.3	7.0	Pass
39	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	29.3	21.0	7.5	Pass
40	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	37.4	60.3	5.5	Pass
41	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	50.8	30.4	6.0	Pass
42	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	48.5	29.4	6.0	Pass
43	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	72.3	41.6	4.5	Pass
44	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	57.2	58.7	4.5	Pass
45	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	68.3	35.1	5.0	Pass
46	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	76.8	73.6	3.5	Pass
47	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	29.4	31.2	7.0	Pass

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
48	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	29.5	20.9	7.5	Pass
49	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	37.6	59.8	5.5	Pass
50	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	51.1	30.6	6.0	Pass
51	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	48.8	29.6	6.0	Pass
52	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	85.4	54.2	4.0	Pass
53	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	67.7	66.5	4.0	Pass
54	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	68.6	34.9	5.0	Pass
55	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	86.9	80.8	3.5	Pass
56	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	39.3	41.6	6.0	Pass
57	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	42.7	31.0	6.5	Pass
58	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	51.2	63.7	4.5	Pass
59	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	56.2	44.3	5.0	Pass
60	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	59.8	46.0	5.0	Pass
61	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	78.4	48.5	4.5	Pass

Table 4: BERS Pro Thermal Loads – Block B

Unit No.	Represented Units	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
62		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	87.7	58.1	4.0	Pass
63		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	81.5	53.9	4.0	Pass
64		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	83.9	22.1	5.0	Pass
65	66	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	79.9	27.9	5.0	Pass

Unit No.	Represented Units	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
67		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	47.6	61.7	5.0	Pass
68		R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R1.0 Floor Insulation	84.6	62.4	3.5	Pass
69		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	63.0	57.6	4.5	Pass
70		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	37.7	50.8	5.5	Pass
71		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	32.0	22.0	7.5	Pass
72	73	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	32.4	30.2	7.0	Pass
74		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	36.1	59.2	5.5	Pass
75		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	68.3	59.8	4.0	Pass
76		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	63.5	57.2	4.5	Pass
77		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	38.0	49.7	5.5	Pass
78		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	32.3	22.1	7.5	Pass
79	80	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	32.8	29.9	7.0	Pass
81		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	36.5	59.0	5.5	Pass
82		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	68.8	59.3	4.0	Pass
83		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	64.0	57.4	4.5	Pass
84		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	38.4	49.3	5.5	Pass
85		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	32.7	21.7	7.5	Pass
86	87	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	33.1	29.2	7.0	Pass
88		R1.0 Bulk Insulation to all external wall areas	37.0	58.8	5.5	Pass

Unit No.	Represented Units	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
		& wall areas adjacent to common corridors, lift core, services & fire stairs				
89		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	69.4	57.8	4.0	Pass
90		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	64.4	56.6	4.5	Pass
91		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	38.7	49.1	5.5	Pass
92		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	33.0	21.8	7.5	Pass
93	94	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	33.3	28.9	7.0	Pass
95		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	37.2	58.4	5.5	Pass
96		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	69.9	57.5	4.0	Pass
97		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	77.0	62.9	4.0	Pass
98		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	55.4	56.9	4.5	Pass
99		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	48.8	29.2	6.0	Pass
100	101	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	39.7	38.6	6.0	Pass
102		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	56.6	65.9	4.5	Pass
103		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	86.5	64.3	3.5	Pass
104		R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	83.4	27.2	5.0	Pass
105		R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	87.5	51.4	4.0	Pass
106		R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors,	82.7	60.5	4.0	Pass

Unit No.	Represented Units	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
		lift core, services & fire stairs, R1.0 Floor Insulation				
107	108	R1.5 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	87.2	36.1	4.5	Pass
109		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	83.3	45.2	4.0	Pass
110		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R0.5 Floor Insulation	76.9	29.8	5.0	Pass
111		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	52.0	32.4	6.0	Pass
112		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	50.5	46.5	5.5	Pass
113		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	55.1	50.9	5.0	Pass
114	115	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	38.9	29.7	6.5	Pass
116		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	31.0	40.9	6.5	Pass
117		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	57.1	28.1	6.0	Pass
118		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	52.4	32.0	6.0	Pass
119		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	50.8	45.6	5.5	Pass
120		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	55.6	50.6	5.0	Pass
121	122	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	39.4	29.4	6.5	Pass
123		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	31.3	40.7	6.5	Pass
124		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	57.5	27.7	6.0	Pass
125		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	52.8	31.7	6.0	Pass
126		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	51.2	44.4	5.5	Pass
127		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors,	56.0	50.4	5.0	Pass

Unit No.	Represented Units	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
		lift core, services & fire stairs				
128	129	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	39.6	29.2	6.5	Pass
130		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	31.6	40.1	6.5	Pass
131		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	57.8	27.9	6.0	Pass
132		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	53.1	31.5	6.0	Pass
133		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	51.5	44.0	5.5	Pass
134		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	56.3	50.2	5.0	Pass
135	136	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	39.8	28.8	6.5	Pass
137		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	31.8	40.1	6.5	Pass
138		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs	58.1	27.5	6.0	Pass
139		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	60.1	45.7	5.0	Pass
140		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	62.7	59.8	4.5	Pass
141		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	68.6	67.0	4.0	Pass
142	143	R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	58.4	44.1	5.0	Pass
144		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	51.8	60.9	4.5	Pass
145		R1.0 Bulk Insulation to all external wall areas & wall areas adjacent to common corridors, lift core, services & fire stairs, R2.5 Ceiling Insulation	68.6	37.9	5.0	Pass

4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target as long as the energy commitments detailed in Table 5 are installed.

Table 5: BASIX Energy Commitments

Component		Commitment
Common Areas and Central Systems	<u>Hot Water System</u>	No Central HWS
	<u>Lifts</u>	All lifts to use Gearless traction with VVVF motor servicing all levels
	<u>Ventilation</u>	- Car park: Ventilation (supply & exhaust) with a CO monoxide monitor & VSD fan - Garbage Rooms: Ventilation (exhaust only), continuous - All Hallways & lobbies: No mechanical ventilation
	<u>Lighting</u>	- Car park: Fluorescent lighting with time clocks and motion sensors - Lift Cars: Fluorescent lighting - Garbage Rooms: Fluorescent lighting with motion sensors - All Hallways & lobbies: Compact Fluorescent lighting with motion sensors + time clock
Private Dwellings	<u>Hot Water System</u>	Individual Gas Instantaneous HWS with 5 Stars Rating
	<u>Ventilation</u>	- Kitchen Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch - Bathroom & Laundry Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch
	<u>Heating & Cooling</u>	- Heating: Living & Beds to have individual 1-phase air-conditioning with 2 Stars (New Rating) - Cooling: Living & Beds to have individual 1 phase air-conditioning with 2 Stars (New Rating)
	<u>Lighting</u>	No commitments required
	<u>Other</u>	- All apartments must install Gas cook top and electric oven - All apartments must install minimum 4-star (energy rating) dishwashers - All apartments must install minimum 2-star (energy rating) dryers

5. CONCLUSION

The proposed development has been assessed to optimise its thermal performance (passive and fabric design) using the Nationwide House Energy Rating scheme (NatHERS) and also been assessed in terms of its ability to conserve water and minimise energy consumption through BASIX Tool.

With the commitment recommendations contained within this report the proposed development is able to meet BASIX requirements and is BASIX compliant.

For further details, please refer to the BASIX Certificate No. 598226M AND 597888M provided.

APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by Architex received on 15th December 2014.

DRAWING LIST	cover sheet		DA00
	site analysis	1:500	DA01
	site plan	1:500	DA02
	basement level 2	1:200	DA03
	basement level 1	1:200	DA04
	level 1	1:200	DA05
	level 2	1:200	DA06
	typical levels 3 to 6	1:200	DA07
	level 7	1:200	DA08
	level 8	1:200	DA09
	roof level	1:200	DA10
	site elevations	1:200	DA11
	site elevations	1:200	DA12
	site sections	1:200	DA13