



**H.Corp National Pty Ltd**

71 Park Ave Kingswood

**BASIX Assessment Report**

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<b>Date</b>	27/02/2017
<b>Revision</b>	00
<b>Subject</b>	71 Park Ave Kingswood – BASIX Assessment Report

## 1. SITE APPRECIATION

The proposed development is located at 71 Park Ave Kingswood and consists of:

- Basement carparking
- 50 apartments

## 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. 798179M.

**Table 1: BASIX Water Commitments**

<b>Common Areas and Central Systems</b>	
<u>Area of Indigenous or low water species</u>	<ul style="list-style-type: none"> <li>• Please refer to Appendix B</li> </ul>
<u>Rainwater collection</u>	<ul style="list-style-type: none"> <li>• Minimum 5,000L rainwater tank</li> <li>• Roof collection area – minimum 100 m<sup>2</sup></li> <li>• Rainwater to be used for common &amp; private landscape irrigation</li> </ul>
<u>Fixtures for Common Areas</u>	<ul style="list-style-type: none"> <li>• 4-star (Water Rating) toilets</li> <li>• 5-star (Water Rating) taps</li> </ul>
<u>Fire sprinkler system</u>	<ul style="list-style-type: none"> <li>• Fire sprinkler test water to be contained in a closed system</li> </ul>
<b>Private Dwellings</b>	
<u>Fixtures for apartments</u>	<ul style="list-style-type: none"> <li>• 3-star (Water Rating) showerheads with a flow rate &gt; 6.0L/min &amp; ≤ 7.5L/min</li> <li>• 4-star (Water Rating) toilets</li> <li>• 5-star (Water Rating) kitchen taps</li> <li>• 5-star (Water Rating) bathroom taps</li> <li>• 4-star (Water Rating) dishwashers</li> </ul>

### 3. BASIX THERMAL COMFORT SECTION

The thermal performance of the development has been evaluated using BERS Pro 2<sup>nd</sup> 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 as these assumptions are based on the nominated preferred construction materials indicated by the architect.

**Note: Table 2 must be read in conjunction with Table 3. Table 3 outlines additional thermal enhancements / treatments to meet the mandatory thermal load targets to achieve compliance.**

**Table 2: Base Case Assumptions on Construction and Fabric**

<i>Element</i>	<i>Material</i>	<i>Detail</i>
External walls	Hebel Power Panel	<b>Insulation: None</b>
		Light colour
Internal walls	Plasterboard	
Party walls	Hebel Power Panel	To neighbour, corridors
	Hebel Power Panel	To lift core, firestairs and services
Windows	6mm Single glazed, clear with Aluminium frame <b>for sliding doors, sliding &amp; fixed windows</b>	Total Window System Properties <b>U-value 6.7 &amp; SHGC 0.70</b>
	6mm Single glazed, clear with Aluminium frame <b>for awning windows</b>	Total Window System Properties <b>U-value 6.7 &amp; SHGC 0.57</b>
	Window Operability	Balcony windows: <b>30% &amp; 45% (i.e. sliding)</b> Bedroom windows: <b>10%</b> (BCA D2.24) All other non-balcony windows: <b>0% (i.e. fixed) &amp; 90% (i.e. awning)</b>
	Shading device	Balcony windows: <b>As per plans and elevations</b> Non-balcony windows: <b>As per plans and elevations</b>
Roof	Concrete	<b>Insulation: None</b>
		Light colour
Ceilings	Plasterboard	<b>Insulation: See Table 3</b>
Floors	Concrete	<b>Insulation: See Table 3</b>
		Tiles: Wet areas only
		Carpet: Living/Dining and Bedrooms
Common corridors naturally ventilated		<b>NO</b>
Recessed downlights assessed		<b>NO</b>

### 3.2 BERS PRO RESULTS (THERMAL COMFORT)

The simulated heating and cooling loads per dwelling are summarized in Table 3 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. Please refer to BASIX Certificate No. 798179M, ABSA Certificate No. 1010867099 & NatHERS Universal Certificate No. 0001273910 for details.

**Table 3: BERS Pro Thermal Loads**

Unit No.	Additional Treatments Required	Heating Load (MJ/m <sup>2</sup> .yr)	Cooling Load (MJ/m <sup>2</sup> .yr)	Stars	Pass/Fail
1	R0.5 Bulk Floor Insulation adjacent to carpark only, R1.5 Bulk External Wall Insulation	80.5	32.0	4.9	Pass
2	R0.5 Bulk Floor Insulation adjacent to carpark only, R1.5 Bulk External Wall Insulation	65.9	36.2	5.4	Pass
3	R0.5 Bulk Floor Insulation adjacent to carpark only, R1.5 Bulk External Wall Insulation	77.3	36.2	4.9	Pass
4	R0.5 Bulk Floor Insulation adjacent to carpark only, R1.5 Bulk External Wall Insulation, R1.0 Bulk Ceiling Insulation to exposed areas only	77.8	22.9	5.4	Pass
5	R1.5 Bulk External Wall Insulation	28.7	30.8	7.3	Pass
6	R1.5 Bulk External Wall Insulation	27.4	34.3	7.2	Pass
7	R1.5 Bulk External Wall Insulation	11.2	35.1	7.9	Pass
8	R1.5 Bulk External Wall Insulation	28.7	46.8	6.6	Pass
9	R1.5 Bulk External Wall Insulation	34.8	37.4	6.8	Pass
10	R1.5 Bulk External Wall Insulation	59.3	34.5	5.8	Pass
11	R1.5 Bulk External Wall Insulation	42.3	34.2	6.5	Pass
12	R1.5 Bulk External Wall Insulation	40.4	28.2	6.9	Pass
13	R0.5 Bulk Floor Insulation adjacent to carpark only, R1.5 Bulk External Wall Insulation	70.2	37.0	5.2	Pass
14	R1.5 Bulk External Wall Insulation	73.9	33.8	5.2	Pass
15	R1.5 Bulk External Wall Insulation	32.1	41.0	6.7	Pass
16	R1.5 Bulk External Wall Insulation	23.2	25.0	7.9	Pass
17	R1.5 Bulk External Wall Insulation	29.3	30.3	7.3	Pass
18	R1.5 Bulk External Wall Insulation	29.9	28.2	7.4	Pass
19	R1.5 Bulk External Wall Insulation	23.7	33.8	7.4	Pass
20	R1.5 Bulk External Wall Insulation	35.2	30.9	6.9	Pass
21	R1.5 Bulk External Wall Insulation	47.0	33.6	6.4	Pass
22	R1.5 Bulk External Wall Insulation	35.8	34.5	6.9	Pass
23	R1.5 Bulk External Wall Insulation	13.2	31.9	7.9	Pass
24	#REF!	62.5	32.5	5.7	Pass
25	R0.5 Bulk Floor Insulation adjacent to elevated areas only, R1.5 Bulk External Wall Insulation	26.4	28.6	7.5	Pass
26	R1.5 Bulk External Wall Insulation	34.1	38.0	6.8	Pass
27	R1.5 Bulk External Wall Insulation	23.4	24.9	7.9	Pass
28	R1.5 Bulk External Wall Insulation	31.5	27.9	7.4	Pass
29	R1.5 Bulk External Wall Insulation	32.3	25.9	7.4	Pass
30	R1.5 Bulk External Wall Insulation	27.6	43.4	6.8	Pass
31	R1.5 Bulk External Wall Insulation	23.8	41.2	7.1	Pass
32	R1.5 Bulk External Wall Insulation	33.5	33.4	6.9	Pass
33	R1.5 Bulk External Wall Insulation	50.0	30.5	6.4	Pass
34	R1.5 Bulk External Wall Insulation	38.3	31.9	6.9	Pass
35	R1.5 Bulk External Wall Insulation	15.2	29.0	7.9	Pass
36	R1.5 Bulk External Wall Insulation	37.5	32.1	6.9	Pass

<b>Unit No.</b>	<b>Additional Treatments Required</b>	<b>Heating Load (MJ/m<sup>2</sup>.yr)</b>	<b>Cooling Load (MJ/m<sup>2</sup>.yr)</b>	<b>Stars</b>	<b>Pass/Fail</b>
37	R1.5 Bulk External Wall Insulation	36.0	36.2	6.8	Pass
38	R1.5 Bulk External Wall Insulation	25.4	22.5	7.9	Pass
39	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	53.5	30.4	6.2	Pass
40	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	60.9	57.9	4.8	Pass
41	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	36.8	27.5	7.1	Pass
42	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	46.6	48.0	5.7	Pass
43	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	54.8	34.8	5.9	Pass
44	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	64.5	37.4	5.4	Pass
45	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	54.8	37.8	5.8	Pass
46	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	38.6	28.7	6.9	Pass
47	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	52.3	44.6	5.6	Pass
48	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	78.2	32.4	5.1	Pass
49	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	50.5	46.7	5.6	Pass
50	R1.5 Bulk External Wall Insulation, R2.0 Bulk Ceiling Insulation	48.1	24.9	6.7	Pass

#### 4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target of 40% as long as the energy commitments detailed in Table 4 are installed.

**Table 4: BASIX Energy Commitments**

<i>Component</i>		<i>Commitment</i>
<b>Common Areas and Central Systems</b>	<u>Hot Water System</u>	<ul style="list-style-type: none"> <li>No Central HWS</li> </ul>
	<u>Lifts</u>	<ul style="list-style-type: none"> <li>All lifts to use Gearless traction with VVVF motor servicing all levels</li> </ul>
	<u>Alternative Energy Supply</u>	<ul style="list-style-type: none"> <li>Not Required</li> </ul>
	<u>Ventilation</u>	<ul style="list-style-type: none"> <li>Car park: Ventilation (supply + exhaust) with a CO monoxide monitor &amp; VSD fan</li> <li>Garbage Rooms: Ventilation (exhaust only)</li> <li>Hallways &amp; lobbies: Ventilation (supply + exhaust), controlled by time clock or BMS</li> </ul>
	<u>Lighting</u>	<ul style="list-style-type: none"> <li>Car park: Fluorescent lighting with time clocks and motion sensors</li> <li>Lift Cars: LED lighting, connected to lift call button</li> <li>Garbage Rooms: Fluorescent lighting with motion sensors</li> <li>All Hallways &amp; lobbies: Compact Fluorescent lighting with motion sensors + time clock</li> </ul>
<b>Private Dwellings</b>	<u>Hot Water System</u>	<ul style="list-style-type: none"> <li>Individual <b>5 Stars Gas Instantaneous</b> HWS</li> </ul>
	<u>Ventilation</u>	<ul style="list-style-type: none"> <li>Kitchen Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch</li> <li>Bathroom Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch</li> <li>Laundry Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch</li> </ul>
	<u>Heating &amp; Cooling</u>	<ul style="list-style-type: none"> <li>Heating: Living &amp; Beds to have individual 1-phase air-conditioning with 1.5 Stars Rating (New Rating)</li> <li>Cooling: Living &amp; Beds to have individual 1 phase air-conditioning with 1.5 Stars Rating (New Rating)</li> </ul>
	<u>Lighting</u>	<ul style="list-style-type: none"> <li>At least 80% of light fittings (including the main light fitting) in all hallways, laundries, bathrooms, kitchen areas and all bedrooms to use Fluorescent or LED lights with dedicated fittings<sup>1</sup></li> </ul>
	<u>Others</u>	<ul style="list-style-type: none"> <li>Gas cook top and electric oven in all units</li> </ul>

<sup>1</sup> Definition of dedicated fittings is a light fitting that is only capable of accepting fluorescent or LED (Light Emitting Diode) lamps. It will not accept incandescent, halogen or any other non-fluorescent or non-LED lamps.

## 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. 798179M provided.

## APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by Stephen Bowers Architects received on 24<sup>th</sup> February 2017.

DRAWING REGISTER	
SHEET NUMBER	SHEET TITLE

### INTRODUCTORY

DA-000	DRAWING LIST
DA-001	SITE ANALYSIS
DA-002	SURVEY PLAN
DA-003	STREETSCAPE
DA-004	PHOTOMONTAGE

### FLOOR PLANS

DA-009	SITE PLAN
DA-010	BASEMENT 2 PLAN
DA-011	BASEMENT 1 PLAN
DA-012	GROUND FLOOR PLAN
DA-013	LEVEL 1 PLAN
DA-014	LEVEL 2 PLAN
DA-015	LEVEL 3 PLAN
DA-016	LEVEL 4 PLAN
DA-017	LEVEL 5 PLAN

### ELEVATIONS, SECTIONS & DETAILS

DA-021	SOUTH ELEVATION
DA-022	EAST ELEVATION
DA-023	WEST ELEVATION
DA-024	NORTH ELEVATION
DA-031	SECTION A - A
DA-032	SECTION B - B
DA-041	ACCESS DRIVEWAY PROFILES
DA-051	MATERIALS & FINISHES - SOUTH ELEVATION
DA-052	MATERIALS & FINISHES - EAST ELEVATION
DA-053	MATERIALS & FINISHES - WEST ELEVATION
DA-054	MATERIALS & FINISHES - NORTH ELEVATION

## APPENDIX B – LANDSCAPING AREAS

BASIX for Multi Dwellings - Landscape Checklist																																																																															
WATER - Central systems and common areas			Notes for assessor																																																																												
<b>Common area landscape</b> Please fill out mandatory fields marked in a *																																																																															
Number of Unit-Buildings	1																																																																														
Building Name(s)	"Building 1"																																																																														
Common area of lawn (m <sup>2</sup> ) *	36.4m2																																																																														
Common area of garden (excluding lawn) (m <sup>2</sup> ) *	215m2																																																																														
Common area of indigenous species (m <sup>2</sup> ) *	55m2																																																																														
WATER - dwellings			Notes for assessor																																																																												
<b>Private area landscape</b> For each dwelling, gather the following information:  How many units have private garden & lawn. Please list these separately below																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; height: 20px;"></td> </tr> </table>																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Unit No.</th> <th style="width: 25%;">Total area of Private garden (m<sup>2</sup>)</th> <th style="width: 25%;">Total area of Private lawn (m<sup>2</sup>)</th> <th style="width: 35%;">Area of indigenous species (m<sup>2</sup>)</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">3</td><td style="text-align: center;">8.4m2</td><td style="text-align: center;">0</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">8.5m2</td><td style="text-align: center;">0</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">45.8m2</td><td style="text-align: center;">60m2</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">7</td><td style="text-align: center;">17.5m2</td><td style="text-align: center;">25.3m2</td><td style="text-align: center;">0</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">24.6m2</td><td style="text-align: center;">47.9m2</td><td style="text-align: center;">0</td></tr> <tr><td colspan="4" style="text-align: center;">CHILD CARE CENTRE</td></tr> <tr><td style="text-align: center;">40</td><td style="text-align: center;">8.2m2</td><td style="text-align: center;">0</td><td style="text-align: center;">0</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Unit No.	Total area of Private garden (m <sup>2</sup> )		Total area of Private lawn (m <sup>2</sup> )	Area of indigenous species (m <sup>2</sup> )	3	8.4m2	0	0	4	8.5m2	0	0	6	45.8m2	60m2	0	7	17.5m2	25.3m2	0	8	24.6m2	47.9m2	0	CHILD CARE CENTRE				40	8.2m2	0	0																																														
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