



## Allen Group Developments Pty Ltd

33-35 Fairlight St Fairlight

## BASIX Assessment Report

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<b>Revision</b>	01 – Updated BASIX Certificate Number
<b>Subject</b>	33-35 Fairlight St Fairlight – BASIX Assessment Report

## 1. SITE APPRECIATION

The proposed development is located at 33-35 Fairlight St Fairlight and consists of:

- Basement car parking
- 6 units

## 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. 1260245M\_02.

**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>• <b>See Appendix B</b></li> </ul>
<u>Rainwater collection</u>	<ul style="list-style-type: none"> <li>• <b>Minimum total of 2,500L rainwater tank</b></li> <li>• Roof collection area – minimum total of 250m<sup>2</sup></li> <li>• Rainwater to be used for all common area + private landscaping irrigations only</li> </ul>
<u>Fixtures for Common Area</u>	<ul style="list-style-type: none"> <li>• No Common Area facilities</li> </ul>
<u>Fire Sprinkler Test Water</u>	<ul style="list-style-type: none"> <li>• No commitment is required for storing test water</li> </ul>
<b>Private Dwellings</b>	
<u>Fixtures for each unit</u>	<ul style="list-style-type: none"> <li>• 4-star (Water Rating) showerheads with a flow rate &gt; 4.5L/min &amp; ≤ 6.0L/min</li> <li>• 4-star (Water Rating) toilet</li> <li>• 4-star (Water Rating) kitchen tap</li> <li>• 4-star (Water Rating) bathroom tap</li> <li>• 4-star (Water Rating) dishwasher</li> <li>• 4-star (Water Rating) Washing Machines</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	Brick Veneer	<b>Insulation: R2.5 Bulk Insulation</b> Medium colour
Internal walls	Plasterboard on studs	
Party walls	Brick Veneer	<b>Adjacent to carparking areas.</b> <b>Insulation: R2.5 Bulk Insulation</b>
	Brick Veneer	To corridors, neighbour
	Brick Veneer	To lift core, fire stairs and services
Windows	<b>Type 1</b>	Total Window System Properties U-value 6.7 & SHGC 0.7.0 <b>for sliding doors, sliding &amp; fixed windows</b> <b>OR</b> Total Window System Properties U-value 6.7 & SHGC 0.57 <b>for awning windows &amp; Glass doors</b>
	<b>Type 2</b>	<b>Total Window System Properties U-value 4.9 &amp; SHGC 0.33</b>
	<b>Type 3</b>	<b>Total Window System Properties U-value 4.3 &amp; SHGC 0.53 for Fixed and Sliding doors OR SHGC 0.47 for Glass doors</b>
	<b>Type 4</b>	<b>Total Window System Properties U-value 2.6 &amp; SHGC 0.53 for Fixed and Sliding doors OR SHGC 0.50 for Glass doors</b>
	Window Operability	Bedroom windows: <b>10%</b> (BCA requirement) <b>As per plans &amp; elevations</b>
	Shading device	<b>As per plans &amp; elevations</b>
Skylight & Clerestory Windows	Double Glazed Clear, Fixed, No Shaft	<b>See Table 3</b>
Roof	Concrete & Metal Deck roof	<b>Insulation: None</b> Medium colour
Ceilings	Plasterboard	<b>Insulation: See Table 3</b>
Floors	Concrete	<b>Insulation: See Table 3</b>
		Wet areas only: Tiles
		Bedrooms: Carpet
		Living/Dining/Kitchen: Timber
Exhaust fans (kitchens, bathrooms, laundry)		<b>All assumed to be sealed</b>

### 3.2 BERS PRO RESULTS (THERMAL COMFORT)

The simulated heating and cooling loads per dwelling are summarised 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.

**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	R2.5 Bulk Ceiling Insulation, All Windows & Clerestory windows must use <b>Type 2</b> Windows, Skylight above Entry Door must have Total System U-value of 4.0 & SHGC 0.27	22.7	25.8	6.2	Pass
2	R2.5 Bulk Ceiling Insulation, All Clerestory windows must use <b>Type 2</b> Windows	29.7	29.4	5.4	Pass
3	R2.5 Bulk Ceiling Insulation to exposed areas only, R1.0 Bulk Floor Insulation to areas adjacent to carpark below, All Glazing must use <b>Type 2</b> Windows <b>except</b> Louvred Windows, B4 Glass door (W4/L2), B3 Glass Door (W9/L2) & B2 Ensuite window (W6/L2) can use Type 1	43.5	27.7	4.7	Pass
4	R2.5 Bulk Ceiling Insulation to exposed areas only, R1.0 Bulk Floor Insulation to areas adjacent to carpark below, All Glazing must use <b>Type 2</b> Windows <b>except</b> Louvred Windows, B3 Glass door (W20/L2), B4 Glass door (W2/L2) & B2 Ensuite window (W22/L2) can use Type 1	41.0	19.0	5.4	Pass
5	R2.5 Bulk Ceiling Insulation to exposed areas only, R1.0 Bulk Floor Insulation to Slab On Ground and areas adjacent to carpark below, All Glazing must use <b>Type 3</b> Windows <b>except</b> Louvred Windows can use Type 1	42.4	17.2	5.4	Pass
6	R2.5 Bulk Ceiling Insulation to exposed areas only, R1.0 Bulk Floor Insulation to Slab On Ground and areas adjacent to carpark below, All Glazing must use <b>Type 4</b> Windows	44.3	16.5	5.3	Pass

#### 4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target 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>• <b>Individual HWS below</b></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>• <b>Install Photovoltaic System with a minimum Rated Electrical Output of 3.5 kW (Peak)</b></li> </ul>
	<u>Others</u>	<ul style="list-style-type: none"> <li>• <b>None</b></li> </ul>
	<u>Ventilation</u>	<ul style="list-style-type: none"> <li>• Carpark: Ventilation (supply &amp; exhaust) with a CO monitor &amp; VSD fan</li> <li>• Switch Rooms: Ventilation (Supply only), thermostatically controlled</li> <li>• Garbage Rooms: Ventilation (exhaust only)</li> <li>• Hallways &amp; lobbies: No mechanical ventilation</li> </ul>
	<u>Lighting</u>	<ul style="list-style-type: none"> <li>• Carpark: Fluorescent lighting with time clocks &amp; motion sensors</li> <li>• Lift Cars: LED lighting, connected to Lift Call buttons</li> <li>• Switch Rooms: LED lighting with manual on/off switch</li> <li>• Garbage Rooms: LED lighting with Motion Sensor</li> <li>• Hallways &amp; lobbies: LED lighting with time clocks &amp; motion sensors</li> </ul>
<b>Private Dwellings</b>	<u>Hot Water System</u>	<ul style="list-style-type: none"> <li>• <b>Individual Gas Instantaneous HWS with 6 Stars rating</b></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>• <b>Heating:</b> Living &amp; Beds to have individual 1-phase air-conditioning with 2-star (average zone) rating</li> <li>• <b>Cooling:</b> Living &amp; Beds to have individual 1-phase air-conditioning with 2-star (average zone) 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, kitchens, bedrooms and living areas to use Fluorescent or LED lights with dedicated fittings <sup>1</sup></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.

<i>Component</i>	<i>Commitment</i>
<u>Other</u>	<ul style="list-style-type: none"> <li>• Install Gas cook top and electric oven in all units</li> <li>• Install 4.0-star (energy rating) Dishwasher in all units</li> <li>• Install 2.0-star (energy rating) Dryer in all units</li> </ul>

## 5. CONCLUSION

The proposed development has 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 will be able to meet BASIX requirements and is BASIX compliant.

For further details, please refer to the BASIX Certificate No. 1260245M\_02 provided.

## APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings received on 14 December 2021.

REVISION	ISSUED	DESCRIPTION	BY
PRELIM	Nov 2020	ISSUED FOR PRELODGEEMENT MEETING WITH COUNCIL	BG/OH
A	Oct 2021	DA SUBMISSION	BG/RB

## APPENDIX B – LANDSCAPING AREAS

BASIX for Multi Dwellings - Landscape Checklist																													
WATER - Central systems and common areas																													
<p><b>Common area landscape</b></p> <p style="text-align: center;">Please fill out mandatory fields marked in a *</p> <p>Number of Unit-Buildings <input style="width: 100px;" type="text"/></p> <p style="padding-left: 40px;">Building Name(s) <input style="width: 100px;" type="text" value="Building 1"/></p> <p style="padding-left: 40px;">Common area of lawn (m<sup>2</sup>) * <input style="width: 100px;" type="text" value="0"/></p> <p style="padding-left: 40px;">Common area of garden (excluding lawn) (m<sup>2</sup>) * <input style="width: 100px;" type="text" value="99"/></p> <p style="padding-left: 40px;">Common area of indigenous species (m<sup>2</sup>) * <input style="width: 100px;" type="text" value="20"/></p>	<p><b>Notes for assessor</b></p>     <p>No common areas</p>																												
WATER - dwellings																													
<p><b>Private area landscape</b></p> <p><b>For each dwelling, gather the following information:</b></p> <p>How many units have private garden &amp; lawn. Please list these separately below <input style="width: 100px;" type="text" value="6"/></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="text-align: left;">Unit No.</th> <th>Total area of Private garden (m<sup>2</sup>)</th> <th>Total area of Private lawn (m<sup>2</sup>)</th> <th>Area of indigenous species (m<sup>2</sup>)</th> </tr> </thead> <tbody> <tr><td>1</td><td>22</td><td>N/A</td><td>0</td></tr> <tr><td>2</td><td>21</td><td>N/A</td><td>0</td></tr> <tr><td>3</td><td>37</td><td>N/A</td><td>0</td></tr> <tr><td>4</td><td>29</td><td>N/A</td><td>0</td></tr> <tr><td>5</td><td>64</td><td>34</td><td>0</td></tr> <tr><td>6</td><td>61</td><td>34</td><td>0</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> )	1	22	N/A	0	2	21	N/A	0	3	37	N/A	0	4	29	N/A	0	5	64	34	0	6	61	34	0	<p><b>Notes for assessor</b></p>
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> )																										
1	22	N/A	0																										
2	21	N/A	0																										
3	37	N/A	0																										
4	29	N/A	0																										
5	64	34	0																										
6	61	34	0																										

Completed by: Paul Scrivener  
 Company : Paul Scrivener landscape  
 Date completed: 15 / 11 / 2021