



## Glenstone Group

8 Linksvie Ave, Leonay

## BASIX Assessment Report

ESD Synergy Pty Ltd  
Contact No: +61 497 979 868  
+61 413 591 688  
Email: [info@esdsynergy.com](mailto:info@esdsynergy.com)  
Web: [www.esdsynergy.com](http://www.esdsynergy.com)

<b>Attention</b>	Tahlia Garland
<b>Client</b>	Glenstone Group C/O – IDG Architects
<b>Author</b>	Adriana Segovia
<b>Reviewer</b>	Henky Mantophani
<b>Date</b>	12/06/2020
<b>Revision</b>	01
<b>Subject</b>	8 Linksvie Ave, Leonay – BASIX Assessment Report

## 1. SITE APPRECIATION

The proposed development is located at 8 Linksvie Ave, Leonay and consists of:

- 5 new residential dwellings

## 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. 1046653M\_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>• 30m<sup>2</sup></li> <li>• Please refer to Appendix B for further details</li> </ul>
<u>Rainwater collection</u>	<ul style="list-style-type: none"> <li>• 10,000L rainwater tank</li> <li>• Minimum roof collection area - 650m<sup>2</sup></li> <li>• Rainwater to be used for:               <ul style="list-style-type: none"> <li>• Common areas and private landscape irrigation</li> <li>• Laundry</li> </ul> </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>• 6-star (Water Rating) kitchen taps</li> <li>• 6-star (Water Rating) bathroom taps</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: See Table 3</b>
		Medium colour: 0.475<Absorptance< 0.7
	Weatherboard	<b>Insulation: See Table 3</b>
		Light colour: Absorptance< 0.3
	Fibre Cement	<b>Insulation: See Table 3</b>
		Light colour: Absorptance< 0.3
Internal walls	Plasterboard	
Party walls	Brick	<b>Insulation: None</b>
		Common corridors
Windows	<b><u>Type 1</u></b> <b><u>(Typical Single glazed clear glass with aluminium frame)</u></b>	Total Window System Properties <b><u>U-value 6.7 &amp; SHGC 0.70 for sliding doors, sliding &amp; fixed windows</u></b>
		<b>And</b> Total Window System Properties <b><u>U-value 6.7 &amp; SHGC 0.57 for bifold doors, awning &amp; casement windows</u></b>
	<b><u>Type 2</u></b> <b><u>Performance glazing</u></b>	Total Window System Properties <b><u>U-value 5.4 &amp; SHGC 0.58 for sliding doors, sliding &amp; fixed windows</u></b>
		<b>And</b> Total Window System Properties <b><u>U-value 5.4 &amp; SHGC 0.49 for bifold doors, awning &amp; casement windows</u></b>

Element	Material	Detail
	<b>Type 3 Performance glazing</b>	Total Window System Properties <b>U-value 4.9 &amp; SHGC 0.33 for sliding doors, sliding &amp; fixed windows</b>  And Total Window System Properties <b>U-value 4.9 &amp; SHGC 0.33 for bifold doors, awning &amp; casement windows</b>
	Window Operability	<b>As per plans &amp; elevations</b>
Roof	Metal	<b>Insulation: See Table 3</b> Medium colour: 0.3<absorptance<0.85
Ceilings	Plasterboard	<b>Insulation: See Table 3</b>
Floors	Concrete	<b>Insulation: See Table 3</b> Tiles: Wet areas only Carpet: Bedrooms only Timber: Elsewhere
Recessed downlights assessed		No
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 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. 1046653M\_02 & NatHERS Universal Certificate No. 0004916790 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	R2.5 Bulk External Wall Insulation with vapour barrier except to the garage, R1.5 Bulk Internal Wall Insulation to walls adjacent to garage only, R3.0 Bulk Ceiling Insulation except to the garage & raked ceiling, R1.5 Bulk Ceiling Insulation to raked ceiling only, R1.3 Anticon Roof Insulation except to the garage, Type 2 windows, North Bed 1 window to have at least 30% ventilation opening, North Ensuite window to have at least 90% ventilation opening (i.e. awning), South Bath window to have at least 90% ventilation opening (i.e. awning)	40.4	48.7	5.9	Pass
2	R1.0 Bulk Floor Insulation to elevated areas only, R2.5 Bulk External Wall Insulation with vapour barrier except to the garage, R1.5 Bulk Internal Wall Insulation to walls adjacent to garage only, R3.0 Bulk Ceiling Insulation except to the garage & raked ceiling, R1.5 Bulk Ceiling Insulation to raked ceiling only, R1.3 Anticon Roof Insulation except to the garage, Type 3 windows, North Kitchen to have at least 90%	53.7	56.0	5.1	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>
	ventilation opening (i.e. awning), East Living area window to have at least 45% ventilation opening, East Bed 1 window to have at least 45% ventilation opening, East Bed 2 window to have at least 10% ventilation opening, South Bath window to have at least 90% ventilation opening (i.e. awning), South Bed 2 Ensuite window to have at least 90% ventilation opening (i.e. awning)				
3	R1.0 Bulk Floor Insulation to elevated areas only, R2.5 Bulk External Wall Insulation with vapour barrier except to the garage, R1.5 Bulk Internal Wall Insulation to walls adjacent to garage only, R3.0 Bulk Ceiling Insulation except to the garage & raked ceiling, R1.5 Bulk Ceiling Insulation to raked ceiling only, R1.3 Anticon Roof Insulation except to the garage, Type 2 windows, East Bed 1 window to have at least 45% ventilation opening, East Bed 1 Ensuite window to have at least 90% ventilation opening (i.e. awning), North Dining window to have at least 45% ventilation opening	40.2	53.6	5.8	Pass
4	R2.5 Bulk External Wall Insulation with vapour barrier except to the garage, R1.5 Bulk Internal Wall Insulation to walls adjacent to garage only, R3.0 Bulk Ceiling Insulation except to the garage & raked ceiling, R1.5 Bulk Ceiling Insulation to raked ceiling only, R1.3 Anticon Roof Insulation except to the garage, Type 2 windows, South Dining window to have at least 30% ventilation opening, South Bed 1 Ensuite window to have at least 90% ventilation opening (i.e. awning), North Bed 2 window to have at least 30% ventilation opening	50.1	43.3	5.8	Pass
5	R2.5 Bulk External Wall Insulation with vapour barrier except to the garage, R1.5 Bulk Internal Wall Insulation to walls adjacent to garage only, R3.0 Bulk Ceiling Insulation except to the garage & raked ceiling, R1.5 Bulk Ceiling Insulation to raked ceiling, R1.3 Anticon Roof Insulation except to the garage, Type 2 windows to all windows except to North Kitchen window, Type 3 windows to North Kitchen window, West Lounge window to have at least 60% ventilation opening, South Bed 1 Ensuite window to have at least 90% ventilation opening (i.e. awning)	50.0	53.7	5.4	Pass

## 4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target of 50% as long as the energy commitments detailed in Table 4 are installed.

**Table 4: BASIX Energy Commitments**

<b>Component</b>		<b>Commitment</b>
<b>Private Dwellings</b>	<u>Alternative Energy</u>	<ul style="list-style-type: none"> <li>Units 3 &amp; 4 to have 1.1 kW photovoltaic systems</li> </ul>
	<u>Hot Water System</u>	<ul style="list-style-type: none"> <li>Individual Instantaneous Gas Hot Water System with 6 Stars Rating</li> </ul>
	<u>Ventilation</u>	<ul style="list-style-type: none"> <li>Kitchen, Bathroom &amp; 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 2-star (average zone), 1-phase air-conditioning</li> <li>Cooling: Living &amp; Beds to have individual 2-star (average zone), 1-phase air-conditioning</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>
	<u>Other</u>	<ul style="list-style-type: none"> <li>Gas cook top and electric oven</li> <li>Install a private outdoor clothes drying line</li> </ul>

## 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. 1046653M\_02 provided.

<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.

## APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by IDG Architects received on 5<sup>th</sup> June 2020.

drawing No.	drawing name	revision	drawing No.	drawing name	revision	drawing No.	drawing name	revision	drawing No.	drawing name	revision	drawing No.	drawing name	revision
0001	cover page	AB	0006	SEPP Barriers Compliance	AB	1101	level 1 plan	AB	3000	sections 1	AB	9600	finishes schedule	AB
0002	location plan	AB	0100	site plan	AC	1102	roof plan	AB	3001	sections 2	AB	9601	finishes schedule 2	AB
0003	site analysis - environmental	AB	0101	erosion & sediment control	AB	2000	north & south elevation	AB	9100	shadow diagrams	AB	9602	finishes schedule 3	AB
0004	site analysis - context	AA	0200	demolition plan	AB	2001	east & west elevation	AB	9200	driveway section	AB	9901	notification plan	AA
0005	BASIX commitments	AB	1100	ground floor plan	AC	2002	internal site elevations	AB	9301	threshold sections	AB			

## APPENDIX B – Landscaping Areas

**BASIX for Multi Dwellings - Landscape Checklist**

**WATER - Central systems and common areas**

**Common area landscape**  
 Please fill out mandatory fields marked in a \*

Number of Unit-Buildings

Building Name(s)

Common area of lawn (m<sup>2</sup>) \*

Common area of garden (excluding lawn) (m<sup>2</sup>) \*

Common area of indigenous species (m<sup>2</sup>) \*

---

**WATER - dwellings**

**Private area landscape**

For each dwelling, gather the following information:

How many units have private garden & lawn. Please list these separately below

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	16	27	-
2	100	42	-
3	86	88	-
4	37	31	-
5	56	69	-
			-