

Newquest Property Pty Ltd

1 Drew Place, Belrose

BASIX Assessment Report

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Subject	1 Drew Place, Belrose – BASIX Assessment Report

1. SITE APPRECIATION

The proposed development is located at 1 Drew Place, Belrose and consists of:

- 6 units with garages

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. 1120493M.

Table 1: BASIX Water Commitments

Common Areas and Central Systems	
<u>Area of Indigenous or low water species</u>	<ul style="list-style-type: none"> • Please refer to Appendix B
<u>Rainwater collection</u>	<ul style="list-style-type: none"> • Minimum 10,000L rainwater tank • Roof collection area – Minimum 440m² • Rainwater to be used for all Common areas and private landscape irrigation
<u>Fixtures for Common Areas</u>	<ul style="list-style-type: none"> • No Common area facilities
<u>Fire Sprinkler</u>	<ul style="list-style-type: none"> • No Fire Sprinkler
Private Dwellings	
<u>Fixtures for apartments</u>	<ul style="list-style-type: none"> • 3-star (Water Rating) showerheads with a flow rate > 4.5L/min & ≤ 6.0L/min • 4-star (Water Rating) toilets • 5-star (Water Rating) kitchen taps • 5-star (Water Rating) bathroom taps • 4.5-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 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

Element	Material	Detail
External walls	Cavity Brick	Insulation: 20mm Foilboard Total wall system R-value of R _t 2.0 Dark colour: Absorptance > 0.70
		Insulation: 40mm Insulation board Total wall system R-value of R _t 1.75 Dark colour: Absorptance > 0.70
	110 Dintel	Insulation: 40mm Insulation board Total wall system R-value of R _t 1.75 Dark colour: Absorptance > 0.70
		Dark colour: Absorptance > 0.70
Internal walls	Plasterboard	
Party walls	Concrete block	Insulation: None
		Neighbour
		Insulation: None
		Fire stairs & lifts
Windows	Type 1 (Typical Single glazed clear glass with aluminium frame)	Total Window System Properties U-value 6.7 & SHGC 0.70 for sliding doors, sliding & fixed windows And Total Window System Properties U-value 6.7 & SHGC 0.57 for bifold doors, awning & casement windows
	Type 2 Performance glazing	Total Window System Properties U-value 5.4 & SHGC 0.58 for sliding doors, sliding & fixed windows And Total Window System Properties U-value 5.4 & SHGC 0.49 for bifold doors, awning & casement windows
	Type 3 Performance glazing	Total Window System Properties U-value 4.9 & SHGC 0.33 for sliding doors, sliding & fixed windows And Total Window System Properties U-value 4.9 & SHGC 0.33 for bifold doors, awning & casement windows
	Window Operability	Balcony windows: 30% & 45% (i.e. sliding) Bedroom windows: 10% (BCA D2.24) All other non-balcony windows: 0% or 90% (i.e. fixed or casement)
	Shading device	Balcony windows: 60% opacity Non-balcony windows: 60% opacity
	Skylight	Type 1 U-value 7.3 & SHGC 0.79

Element	Material	Detail
	(Typical Single glazed clear glass with aluminium frame)	
	Type 2 Performance glazing	U-value 2.5 & SHGC 0.21
Roof	Tiles	Insulation: See Table 3
		Dark colour: Absorptance> 0.70
	Metal cladding	Insulation: See Table 3
		Dark colour: Absorptance> 0.70
Ceilings	Plasterboard	Insulation: See Table 3
Floors	Concrete	Insulation: See Table 3
		Tiles: Wet areas only
		Carpet: Elsewhere
Common corridors naturally ventilated		Yes
Recessed downlights assessed		No
Exhaust fans (kitchens, bathrooms, laundry)		All assumed to be sealed

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. 1120493M & NatHERS Universal Certificate No. 0005041910 for details.

Table 3: BERS Pro Thermal Loads

Unit No.	Additional Treatments Required	Heating Load (MJ/m ² .yr)	Cooling Load (MJ/m ² .yr)	Stars	Pass/Fail
1	Type 1 windows	32.7	16.5	6.2	Pass
2	Type 1 windows	22.5	16.7	6.9	Pass
3	Type 2 windows	24.3	28.6	5.9	Pass
4	R4.0 Bulk Ceiling Insulation, R1.3 Anticon Roof Insulation to metal roof only, Type 3 windows, South Living/Dining glass door to have a minimum 60% ventilation opening (i.e. stacker door), West study glass door to have a minimum 90% ventilation opening (i.e. casement door), Type 2 skylights, Medium wall colour	31.6	28.9	5.4	Pass
5	R4.0 Bulk Ceiling Insulation, R1.3 Anticon Roof Insulation to metal roof only, Type 3 windows, South Living/Dining glass door to have a minimum 60% ventilation opening (i.e. stacker door), West study glass door to have a minimum 90% ventilation opening (i.e. casement door), Type 2 skylights, Medium wall colour	22.8	28.7	5.9	Pass
6	R1.5 Bulk External Wall Insulation to Walls adjacent to roofspace. R4.0 Bulk Ceiling Insulation, Type 1 windows, Type 1 skylight	37.5	25.0	5.3	Pass

4. BASIX ENERGY SECTION

The proposed development will meet the mandatory BASIX Energy target of 25% as long as the energy commitments detailed in Table 4 are installed.

Table 4: BASIX Energy Commitments

Component		Commitment
Common Areas and Central Systems	<u>Hot Water System</u>	<ul style="list-style-type: none"> Individual HWS below
	<u>Lifts</u>	<ul style="list-style-type: none"> All lifts to use Gearless traction with VVVF motor servicing all levels
	<u>Others</u>	<ul style="list-style-type: none"> None
	<u>Alternative Energy Supply</u>	<ul style="list-style-type: none"> Install minimum 2 kW (Peak) Photovoltaic System
	<u>Ventilation</u>	<ul style="list-style-type: none"> Car park/Garages: No mechanical ventilation
	<u>Lighting</u>	<ul style="list-style-type: none"> Car park/Garages: LED lighting with time clocks and motion sensors Lift Cars: LED lighting, connected to Lift Call Button
Private Dwellings	<u>Hot Water System</u>	<ul style="list-style-type: none"> Individual Gas Instantaneous (6 Stars rating) HWS
	<u>Ventilation</u>	<ul style="list-style-type: none"> Kitchen Exhausts: Individual fan, ducted to roof or façade, with manual on/off switch Bathroom Exhausts: Individual fan, ducted to roof or façade, with manual on/off switch Laundry Exhausts: Individual fan, ducted to roof or façade, with manual on/off switch
	<u>Heating & Cooling</u>	<ul style="list-style-type: none"> Heating: Living & Bedrooms to use 1-phase AC with 2.0 Stars (Average Zone) Rating Cooling: Living & Bedrooms to use 1-phase AC with 2.0 Stars (Average Zone) Rating
	<u>Lighting</u>	<ul style="list-style-type: none"> 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 fittings¹
	<u>Other</u>	<ul style="list-style-type: none"> Gas cook top and electric oven Install a 4.0-star (energy rating) Dishwasher Install a 2.0-star (energy rating) Dryer Install Private outdoor unsheltered clothes drying line to Units 1, 2 & 3 only

¹ 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. 1120493M provided.

APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by Turner Hughes received on 23rd July 2020.

DA00-A COVERSHEET
DA01-G SITE PLAN
DA02-D ROOF PLAN
DA03-E GROUND FLOOR PLAN
DA04-F FIRST FLOOR PLAN
DA05-B SECTION A
DA06-B SECTION B
DA07-B SECTION C
DA08-B ELEVATION 01
DA09-B ELEVATION 02
DA10-B ELEVATION 03
DA11-E UNIT DETAILS - UNITS 1
DA12-E UNIT DETAILS - UNITS 2
DA13-E UNIT DETAILS - UNITS 3
DA14-E UNIT DETAILS - UNITS 4&5
DA15-E UNIT DETAILS - UNITS 6
DA16-A LOCATION PLAN
DA17-A SITE ANALYSIS
DA18-A SUN STUDY - JUNE 21 9AM
DA19-A SUN STUDY - JUNE 21 MIDDAY
DA20-A SUN STUDY - JUNE 21 3PM
DA21-A INTERNAL SOLAR ACCESS GROUND
DA22-A INTERNAL SOLAR ACCESS FIRST
DA23-A DEMOLITION/WASTE PLAN

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 <input type="text"/> Building Name(s) <input type="text" value="Building 1"/> Common area of lawn (m²) * <input type="text" value="0m2"/> Common area of garden (excluding lawn) (m²) * <input type="text" value="72.94m2"/> Common area of indigenous species (m²) * <input type="text" value="11.50m2"/>			Notes for assessor	
WATER - dwellings				
Private area landscape <u>For each dwelling, gather the following information:</u> How many units have private garden & lawn. Please list these separately below <input type="text" value="Units 1, 2 and 3"/>			Notes for assessor	
Unit No.	Total area of Private garden (m²)	Total area of Private lawn (m²)		Area of indigenous species (m²)
1	71.34m2	63.92m2		20.68m2
2	97.77m2	100.55m2		36.80m2
3	53.64m2	35.93m2		15.68m2