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## BASIX Commitment Report for 1 Station Lane, Penrith, NSW

Prepared by

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## 1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Antoine J. Saouma Architect to provide NatHERS Certificate and BASIX Certificate for the site at 1 Station Lane, Penrith NSW (Lot B2, DP161921) which consists of a 17 units residential flat building with a total area of 662 m<sup>2</sup>.

This report summarises some key commitments for Water, Thermal and Energy sections of the BASIX Report, which are mandatory for the proposed development to comply with the BASIX requirements.

For further details of the BASIX requirement of the proposed development, please refer to its official BASIX Report (Certificate number: **945544M**), and NatHERS Thermal Group Performance Report for all dwellings (Certificate number for each dwelling can be obtained from Group Certificate number: **WM9PLX5BE6**).

## 2. Basix Water Section

The proposed development will meet the mandatory BASIX water 40% target as long as the key water commitments in the table below are applied.

Common Areas and Central System		
<b>Landscape</b>	Common area of lawn	223 m <sup>2</sup>
	Common area of garden	0 m <sup>2</sup>
	Area of indigenous or low water use species	0 m <sup>2</sup>
<b>Fixtures For Common Area</b>	Toilets	4 star
	Taps	
	Showerheads	Not proposed
	Clothes washers	
Individual Dwellings		
<b>Fixtures For Apartments</b>	Showerheads	4 star (> 4.5 but <= 6 L/min)
	Toilets	5 star
	Kitchen taps	4 star
	Bathroom taps	
	Dishwasher	Not proposed
	Clothes washer	
	Hot water recirculation or diversion system	
<b>Alternative Water Supply</b>		Not proposed

### 3. Basix Thermal Comfort Performance

The thermal performance of each unit in this development has been evaluated using FirstRate5: 5.2.8a (3.13) software. For the complete selection of construction and insulation materials of each dwelling, please refer to its corresponding NatHERS Certificate.

#### 3.1. Simulation Assumptions

Based on the construction materials that are nominated by the clients, the “base model” of the proposed development fabric and associated thermal performance specifications are summarised in Table 1 below:

Table 1 Base model on construction materials

Element	Nominated Materials	Details
<b>External Wall</b>	Brick Cavity	Insulation: See Table 2
		Colour: Medium
<b>Party Wall</b>	Brick Cavity	
<b>Internal Wall</b>	Single Brick	-
<b>Floor covering</b>	Tiles	
<b>Floor</b>	Suspended slab	Insulation: See Table 2
<b>Roof/Ceiling</b>	Suspended slab	Insulation: See Table 2
<b>Windows</b>	Alumimium	Single Glazed Clear

#### 3.2. Additional Insulation Requirement

The proposed development will meet the mandatory BASIX thermal loading requirements as long as the key commitments in the table below are applied.

Unit No.	Additional Treatments Required	Heating Load (MJ/m <sup>2</sup> .yr)	Cooling Load (MJ/m <sup>2</sup> .yr)	Stars	Pass/Fail
U1	External Wall - BC - R 2.0 Floor - R3.0 Slab above basement Window type - Single Glazed Alm Framed Clear	57.4	27.5	6.1	PASS
U2	External Wall - BC - R 2.0 Floor - R3.0 Slab above basement Window type - Single Glazed Alm Framed Clear	59.2	15.3	6.6	PASS
U3	External Wall - BC - R 2.0 Floor - R2.0 at exposed slab area Window type - Single Glazed Alm Framed Clear	56.5	18.8	6.6	PASS
U4	External Wall - BC - R 2.0 Floor - R2.0 at bedroom exposed slab area Window type - Single Glazed Alm Framed Clear	53.6	17.7	6.7	PASS
U5	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	14.3	18.1	8.6	PASS
U6	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	38.8	22.9	7.2	PASS
U7	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	49.5	18.6	6.9	PASS
U8	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	33.8	20.0	7.6	PASS
U9	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	40.4	22.6	7.1	PASS
U10	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	48.1	22.8	6.8	PASS
U11	External Wall - BC - R 2.0 Roof - Reflective foil Ceiling - R2.0 at exposed roof area Window type - Single Glazed Alm Framed Clear	42.7	22.5	7.0	PASS
U12	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	29.7	32.1	7.2	PASS
U13	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	34.4	45.0	6.4	PASS
U14	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	45.2	20.9	6.9	PASS
U15	External Wall - BC - R 2.0 Window type - Single Glazed Alm Framed Clear	51.1	17.6	6.9	PASS
U16	External Wall - BC - R 2.0 Roof - Reflective foil Ceiling - R2.0 Window type - Single Glazed Alm Framed Clear	51.5	27.1	6.4	PASS
U17	External Wall - BC - R 2.0 Roof - Reflective foil Ceiling - R2.5 Skylight - Single Glazed Clear (U= 7.3, SHGC = 0.79) Window type - Single Glazed Alm Framed Clear	62.3	24.9	5.9	PASS

## 4. BASIX Energy Section

The proposed development will meet the mandatory BASIX energy 50% target as long as the key energy commitments in the table below are applied.

Central Systems			
<b>Hot Water</b>	Central hot water system		Not proposed
<b>Air Conditioning</b>	Central cooling system		Not proposed
	Central heating system		
<b>Alternative Energy Supply</b>	Cogeneration system		
	Photovoltaic system		
<b>Lifts</b>	System type		Hydraulic
<b>Pool and Spa</b>	Pool heating system		Not proposed
	Pump controlled by timer		
<b>Others</b>	Building Management System (BMS)		
	Active power factor correction (PFC)		
	Common area clothes drying line		
	Common area electric/gas clothes dryer		
	Common area clothes washer		
Common areas			
<b>Ventilation</b>	Car park area	Ventilation supply + exhaust	Carbon monoxide monitor +VSD fan
	Garbage room	Exhaust only	n/a
	Plant or service room	Natural ventilation	n/a
	Hallway/lobby	Natural ventilation	n/a
<b>Lighting</b>	Car park area	Compact Fluorescent	Time clock and motion sensor
	Lift	Light-emiting Diode	Connected to lift call botton
	Garbage room	Compact Fluorescent	Manual on/off
	Plant or service room		
	Hallway/lobby	Compact Fluorescent	Time clock and motion sensor
Individual Dwellings			
<b>Hot water system</b>	Gas instantaneous		4 star
<b>Ventilation</b>	Bathroom exhaust	Individual fan	Ducted to façade or roof
	Kitchen exhaust		
	Laundry exhaust	Natural ventilated	
<b>Air Conditioning</b>	Cooling system	No airconditioning	n/a
	Heating system		
<b>Lighting</b>	Naturally lit by either window or skylight	Bathroom/toilet	No
		Kitchen	Yes
	Primarily lit by either fluorescent or LED	Bedroom/study	Yes
		Living/dinning	
		Kitchen	No
		Bathrooms/toilets	
		Laundry	
Hallways			
<b>Apliances</b>	Cooktop/oven	Gas cooktop & electric oven	
	Refrigerator	Well ventilated fridge space	

	Dishwasher	Not specified	
	Clothes dryer	4 star	
Others	Clothes drying line	Indoor	No
		Private outdoor	No

## 5. Conclusion

The proposed development has been assessed to optimise the thermal performance of each dwelling under the Nationwide House Energy Rating Scheme (NatHERS) and has been assessed to meet the requirements of water and energy consumption using BASIX online Tool.

With the installation of commitment contained within this report, the proposed development is able to comply with BASIX requirement.

For further details of the BASIX requirement of the proposed development, please refer to its official BASIX Report (Certificate number: **945544M**), and NatHERS Thermal Performance Report for each of its individual dwelling (Certificate number for each dwelling can be obtained from Group Certificate number: **WM9PLX5BE6**).