PVCD Trust

6-10 Bowral St Kensington

BASIX Assessment Report

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Revision	02 – Updated Scheme
Subject	6-10 Bowral St Kensington – BASIX Assessment Report

1. SITE APPRECIATION

The proposed development is located at 6-10 Bowral St Kensington and consists of:

- Basement carparking
- 39 new residential 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. 1287329M_03.

Table 1: BASIX Water Commitments

Common Areas and Central Systems	
Area of Indigenous or low water species	• **Please refer to Appendix B**
Rainwater collection	• Minimum 5,000L rainwater tank • Roof collection area – minimum 250m^2 • Rainwater to be used for Common areas landscaping irrigation only
Fixtures for Common Area facilities	• No Common Areas facilities
Fire Sprinkler	• **No commitment is required for Test water to be diverted to a closed system**
Outdoor Swimming Pools & Spa	• **Pool Size: Max 36.0 kL** • **Pools are not shaded** • **No Spa**
Private Dwellings	
Fixtures for apartments	• 4-star (Water Rating) showerheads with a flow rate > 4.5L/min & ≤ 6.0L/min • 4-star (Water Rating) toilets • 6-star (Water Rating) kitchen taps • 6-star (Water Rating) bathroom taps • 5-star (Water Rating) dishwashers • **4-star (Water Rating) Washing Machines to Units 801 & 802 only**

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	Tilt Up Concrete	**Insulation: R2.0 Bulk Insulation**
		Medium colour: 0.475 < Absorptance < 0.70
Internal walls	Plasterboard	
Party walls	Hebel, lined	Common corridors
	Hebel, lined	Neighbour
	Concrete	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 glass doors, awning windows**
	Type 2 Performance glazing	Total Window System Properties **U-value 4.8 & SHGC 0.59 for sliding doors, sliding & fixed windows** **And** Total Window System Properties **U-value 4.8 & SHGC 0.51 for glass doors, awning windows**
	Window Operability	**As per plans & elevations** Bedroom windows: **10%** (BCA D2.24)
	Shading device	Balcony windows: **As per plans & elevations** Non-balcony windows: **As per plans & elevations**
Skylight	**None**	
Roof	Concrete	**Insulation: None**
		Light colour: Absorptance< 0.475
Ceilings	Plasterboard	**Insulation: See Table 3**
Floors	Concrete	**Insulation: See Table 3**
		Timber: Living/Dining/Kitchen/Hallways Carpet: Bedrooms Tiles: Wet areas
Common corridors naturally ventilated		No
Recessed downlights assessed		No
Exhaust fans (kitchens, bathrooms, laundry)		**All assumed to be sealed**
Note: Only a ±10% SHGC tolerance to the value stated above & U-value must be better than the value stated above		

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.

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*
G01	R1.0 Bulk Floor Insulation, Type 1 Windows throughout	18.8	18.7	7.1	Pass
G02	R1.0 Bulk Floor Insulation, R1.5 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	45.3	13.4	5.4	Pass
101	Type 1 Windows throughout	12.9	21.9	7.3	Pass
102	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	11.2	24.7	7.2	Pass
103	Type 1 Windows throughout	24.2	12.9	7.1	Pass
104	Type 1 Windows throughout	5.8	22.2	7.8	Pass
105	Type 1 Windows throughout	23.5	18.3	6.8	Pass
201	R2.0 Bulk Floor Insulation, Type 1 Windows throughout	41.7	15.6	5.6	Pass
202	R1.5 Bulk Floor Insulation to exposed areas only, Type 1 Windows throughout	17.2	28.5	6.4	Pass
203	Type 1 Windows throughout	5.6	22.9	7.8	Pass
204	R1.0 Bulk Floor Insulation to exposed areas only, Type 1 Windows throughout	21.1	14.5	7.2	Pass
205	Type 1 Windows throughout	12.8	18.9	7.5	Pass
206	Type 1 Windows throughout	6.1	22.1	7.8	Pass
207	Type 1 Windows throughout	24.2	18.0	6.7	Pass
301	Type 1 Windows throughout	25.7	14.8	6.9	Pass
302	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	15.0	28.9	6.6	Pass
303	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	26.5	24.9	5.9	Pass
304	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	36.7	15.9	5.9	Pass
305	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	31.5	18.4	6.1	Pass
306	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	31.7	23.5	5.7	Pass
307	R1.0 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	43.1	17.7	5.3	Pass
401	Type 1 Windows throughout	26.3	14.6	6.8	Pass
402	Type 1 Windows throughout	12.2	10.8	8.2	Pass
403	Type 1 Windows throughout	21.0	13.7	7.3	Pass
404	Type 1 Windows throughout	18.9	15.2	7.3	Pass
405	Type 1 Windows throughout	13.4	28.4	6.8	Pass
406	Type 1 Windows throughout	24.6	18.3	6.7	Pass
501	Type 1 Windows throughout	39.7	15.7	5.7	Pass

Unit No.	*Additional Treatments Required*	*Heating Load ($MJ/m^2.yr$)*	*Cooling Load ($MJ/m^2.yr$)*	*Stars*	*Pass/Fail*
502	Type 1 Windows throughout	12.7	11.1	8.2	Pass
503	R2.5 Bulk Ceiling Insulation to exposed areas only, Type 1 Windows throughout	36.5	15.0	5.9	Pass
504	R2.5 Bulk Ceiling Insulation, Type 1 Windows throughout	34.8	16.7	5.9	Pass
505	R2.5 Bulk Ceiling Insulation, Type 1 Windows throughout	27.1	29.5	5.6	Pass
506	R2.5 Bulk Ceiling Insulation, Type 1 Windows throughout	39.1	20.8	5.4	Pass
601	Type 1 Windows throughout	44.3	16.1	5.4	Pass
602	Type 1 Windows throughout	22.6	14.7	7.1	Pass
701	Type 1 Windows throughout	44.9	15.8	5.3	Pass
702	Type 1 Windows throughout	23.0	14.5	7.1	Pass
801	R3.0 Bulk Ceiling Insulation, Type 2 Windows throughout	42.6	15.3	5.5	Pass
802	R2.5 Bulk Ceiling Insulation, Type 1 Windows throughout	35.7	14.1	6.1	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

Component		*Commitment*
Common Areas and Central Systems	Hot Water System	• Centralised Gas-fired boiler with internal piping insulation of R0.6 (~25mm)
	Lifts	• All lifts to use Gearless traction with VVVF motor servicing all levels
	Outdoor Swimming Pools & Spas	• **Pool heating: Gas pool Heating** • **Pool pumps must be controlled by timers**
	Alternative Energy Supply	• Not Required
	Others	• None
	Ventilation	• Car park: Ventilation (supply & exhaust) with a CO monitor & VSD fan • Switch Rooms: Ventilation (supply only), thermostatically controlled • Garbage Rooms: No mechanical ventilation • Plant Rooms: Ventilation (exhaust only), Thermostatically controlled • Ground floor Hallways & lobbies: No mechanical ventilation • Other levels' Hallways & lobbies: No mechanical ventilation
	Lighting	• Car park: Fluorescent lighting with time clocks and motion sensors • Lift Cars: LED lighting, connected to Lift Call button • Garbage Rooms: LED lighting with motion sensors • Plant & Switch Rooms: LED lighting with manual on/off switch • Community Room: LED lighting with manual on/off switch • Hallways & lobbies: LED lighting with time clocks and motion sensors
Private Dwellings	Hot Water System	• Central HWS above
	Ventilation	• Kitchen Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch • Bathroom & Laundry Exhaust: Individual fan, ducted to roof or façade, with manual on/off switch
	Heating & Cooling	• Heating: Living & Beds to have individual 1-phase air-conditioning with 2.0 Stars (Average Zone) Rating • Cooling: Living & Beds to have individual 1-phase air-conditioning with 2.0 Stars (Average Zone) Rating

Component		Commitment
	Lighting	• 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[1]
	Others	• Gas cook-top and electric oven in all units • Install a 4-star (energy rating) Dishwasher in all units • Install a 2-star (energy rating) Dryers in all units

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. 1287329M_03 provided.

APPENDIX A - ARCHITECTURAL DRAWINGS

The building sustainability performance assessment carried out in this report was based on the following architectural drawings supplied by PBD received on 15 Feb 2023.

DRAWING SCHEDULE

DA 000	COVER SHEET	DA120	REFLECTED CEILING PLANS - DESIGN INTENT - SHEET 1
DA 002	PROJECT SUMMARY		
DA 010	SITE PLAN	DA121	REFLECTED CEILING PLANS - DESIGN INTENT - SHEET 2
DA 011	SITE ANALYSIS		
DA 012	ANNOTATED SURVEY PLAN		
		DA 200	NORTH ELEVATION
DA 098	BASEMENT 2 PLAN	DA 201	WEST ELEVATION
DA 099	BASEMENT 1 PLAN	DA 202	SOUTH ELEVATION
DA 100	GROUND FLOOR PLAN	DA 203	EAST ELEVATION
DA 101	LEVEL 1 PLAN		
DA 102	LEVEL 2 - 3 PLAN	DA 300	SECTION A
DA 103	LEVEL 4 PLAN	DA 301	SECTION B
DA 104	LEVEL 5 PLAN	DA 302	SECTION C
DA 105	LEVEL 6 PLAN	DA 303	SECTION D
DA 106	LEVEL 7-8 PLAN		
DA 110	ROOF PLAN	DA 400	MATERIAL & FINISHES SCHEDULE
		DA 410	PHOTOMONTAGE
		DA 411	3D PERSPECTIVES

[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.

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 "

Notes for

Number of Unit-Buildings

Building Name(s)	"Building 1"
Common area of lawn (m²) "	0
Common area of garden (excluding lawn) (m²) "	94
Common area of indigenous species (m²) "	47

WATER - dwellings

Private area landscape

Notes for

For *each dwelling*, gather the following information:

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

30

Unit No.	Total area of Private garden (m²)	Total area of Private lawn (m²)	Area of indigenous species (m²)
G.01	7.2	0	3.6
G.02	53	17	26.5
1.01	4.6	0	2.3
1.02	3	0	1.5
1.03	3.8	0	1.9
1.04	4.2	0	1.2
1.05	3.6	0	1.8
2.01 / 3.01	2.6	0	1.3
2.03 / 3.03	4.6	0	2.3
2.04 / 3.04	4.6	0	2.3
2.05 / 3.05	5.8	0	2.9
2.06 / 3.06	4.2	0	2.1
2.07 / 3.07	3.6	0	1.8
4.01	2.8	0	1.4
4.02	19.2	0	9.6
4.03	15	0	7.5
4.04	8.6	0	4.3
4.05	19	0	9.5
4.06	12.8	0	6.4
5.01	2.8	0	1.4
5.02	4	0	2
5.03	1.6	0	0.8
5.04	2	0	1
5.06	1.8	0	0.9

Completed by:
Company : Site Image Landscape Architects
Date completed: 03 / 03 / 23

BASIX for Multi Dwellings - Landscape Checklist

WATER - Central systems and common areas

Common area landscape

Please fill out mandatory fields marked in a "

Notes for

Number of Unit-Buildings

Building Name(s)	"Building 1"
Common area of lawn (m²) "	0
Common area of garden (excluding lawn) (m²) "	130
Common area of indigenous species (m²) "	65

WATER - dwellings

Private area landscape

Notes for

For *each dwelling*, gather the following information:

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

3

Unit No.	Total area of Private garden (m²)	Total area of Private lawn (m²)	Area of indigenous species (m²)
6.01	20.2	0	10.1
7.01 / 8.01	7.2	0	3.6

Completed by:
Company : Site Image Landscape Architects
Date completed: 03 / 03 / 23