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Section 75w BASIX Compliance Report

1006897, 6 – 16 Atchison Street, St Leonards

Prepared for:

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The success and realisation of the proposed initiatives will be dependent upon the commitment of the design team, the development of the initiatives through the life of the design and also the implementation into the operation of the building. Without this undertaking the proposed targets may not be achieved.		

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Executive Summary

The following report assesses the proposed development at 6 – 16 Atchison Street, St Leonards according to two sustainability tools which regulate residential property in NSW, namely;

- **BASIX** a planning tool which calculates energy and water efficiency and sets minimum thermal performance requirements, and
- **NatHERS** which calculates the thermal performance of each dwelling based on predicted space heating and cooling loads.

The table below identifies the BASIX Water, Energy and Thermal Comfort scores achieved for the development through the sustainability strategies outlined in the following sections of this report.

Environmental Impact Category	NSW BASIX Target	6 – 16 Atchison Street BASIX Score
Water Savings	40%	40%
Energy Savings	20%	21%
Thermal Comfort (NatHERS)	Pass	Pass

1 Introduction

6 – 16 Atchison Street is required by NSW regulation to achieve BASIX targets for energy, water and thermal comfort. The following BASIX targets apply for this development:

Environmental Impact Category	NSW BASIX Target
Water Savings	40%
Energy Savings	20%
Thermal Comfort (NatHERS)	Pass

Energy and water targets represent a percentage saving compared to a NSW average benchmark. Thermal comfort targets are a pass/fail measure and are assessed by NatHERS thermal comfort modelling of performance against heating and cooling load limits set by climate zone.

2 BASIX

2.1 BASIX Reduced Water Use

The strategy to achieve the BASIX water target of 40% reduction in potable water consumption is outlined in the table below;

BASIX Base Case	Water Conservation Strategies
Fixtures¹ and appliances	Efficient fixtures including; • 3-Star showerheads (> 6 but <= 7.5 L/min); • 5-Star kitchen and wash-hand basin mixers ; • 5-Star dual-flush toilets; and • 4-Star Dishwasher;
Central Systems	100,000L rainwater tank for landscape irrigation and car washing bays. • rainwater captured from roof only
BASIX Water Savings Required	40%
6 – 16 Atchison Street Water Savings Achieved	40%
Pass?	✓

¹ Water Efficiency Labelling - To help to reduce urban water consumption on a national scale, the Australian Government, in collaboration with State and Territory governments, has introduced a Water Efficiency Labelling and Standards (WELS) Scheme, which applies national mandatory water efficiency labelling and minimum performance standards to household water-using products. This system replaces the existing AAA water rating system for appliances but is not a like for like comparison. Fixtures in the water conservation table are approximately equivalent to a 3A rating. The star rating of the appliances can be referenced on the following web site- www.waterrating.gov.au

2.2 BASIX Reduced Energy Use

The strategy to achieve the BASIX energy target of 20% reduction in energy consumption is outlined in the following table;

BASIX Base Case	Energy Conservation Strategies
Common Areas	Mechanical ventilation to residential hallways; Fluorescent/LED lighting to car parks, plant rooms, hallways and lift cars ; and Lifts – Gearless traction with VVAC motor.
Appliances	Gas cook top and electric oven; 4-Star dishwasher; 2.5-Star refrigerator; and 2-Star clothes dryer.
Domestic Hot Water	Gas boiler DHW system; R0.3insulation to internal and external piping.
Air-conditioning and ventilation	Central heat rejection system; individual water cooled A/C COP 3.5 – 4.5; gas fired boiler heating; and kitchen, bathroom and laundry exhausts have individual system ducted to facade.
Lighting	Primarily LED or Fluorescent lighting to lounge, bedroom, kitchen, Laundry and Hallways.
BASIX Energy Savings Required	20%
6 – 16 Atchison Street Energy Savings Achieved	21%
Pass?	✓

2.3 BASIX & NatHERS Thermal Comfort

The comfort levels in the dwellings have been assessed using Accurate, second generation software approved by the National House Energy Rating Scheme (NatHERS), which predicts annual heating and cooling loads.

In order to satisfy BASIX heating and cooling load requirements, the following constructions (or equivalent) must be used;

Building Element	Construction	Insulation
Construction & shading	As per plans (60% free area for external shading screens)	-
External Wall	150mm concrete, cavity + insulation, plasterboard internal finish	R2
Internal Walls	Party walls: 90mm concrete block with plasterboard finish; and Apartment walls: Plasterboard on studs	-
Exposed roof areas	200mm concrete, cavity + insulation, plasterboard internal finish	R2.5
Floor	100mm concrete, carpet/ceramic tiles	-
Ceiling	100mm concrete, plasterboard	
Window	Aluminium frame, performance laminate glass	U-Value 4.92 SHGC 0.49
BASIX Average thermal load	Heating 51.0MJ/m ² Cooling 45.0MJ/m ²	
6 – 16 Atchison Street Average thermal load	Heating 19.6MJ/m ² Cooling 34.6MJ/m ²	
Pass?	✓	