



ZETLAND SQUARE

ENVIRONMENTAL ENERGY EFFICIENCY SAVING REPORT

**Stage 1 – 118-130 Epsom Road &
905 South Dowling Street, Zetland**

1. WATER EFFICIENCY

Basix Water Score 42/40

Initiatives

- ◆ A Reticulated water system tank is used for irrigation of landscaping and some toilet flushing.
- ◆ All dwellings have 4-star, water-efficient toilets. Compared to an old single-flush toilet with a flush volume of 12L, a 4-star toilet with an average flush volume of 3.5L, will save a typical family 50kL and over \$130 each year on their water bills.
- ◆ All dwellings have 5-star, water-efficient kitchen and bathroom taps which use less than 6.0 litres per minute or approximately 50% less water per minute than the high-flow options.
- ◆ All dwellings have 4-star, water-efficient showers which use less than 6.0 litres per minute or approximately 50% less water per minute than the high-flow available options.
- ◆ All dwellings have 4-star, water-efficient dishwashers.
- ◆ All dwellings are fitted with high quality water smart showers reducing water while still delivering an enjoyable shower.
- ◆ Fire sprinklers will recycle test-water and not waste water during routine testing.
- ◆ Spas and pools are water-wise, due to efficient heating, covers, pumps and indoor locations.
- ◆ Gardens are very water-efficient with close to 100% for locally indigenous or “1-drop” species proposed.
- ◆ Efficient irrigation such as drip irrigation, timers and moisture-sensors will save water.



Artist's impression

2. COMFORT AND LIFESTYLE

Initiatives

- ◆ The development has an average thermal comfort rating of 7.2 stars which will greatly improve indoor thermal-comfort and reduce the homeowner's reliance on air-conditioning.
- ◆ All external walls have been generously-insulated to reduce heat loss in cooler months and stop excessive heat gain in warmer months.
- ◆ External ceilings (under roofs and terraces) and floors above basements or open air are also well insulated, to maintain the indoor thermal comfort, for apartments.
- ◆ Covered balconies and shading devices will provide shading, glare-reduction and, importantly, they will also help to reduce the unwanted solar heat gain in the warmer months.
- ◆ All windows and glazed doors are performance glazing (double-glazed) and some upgraded (highest- specification) double glazing, in zones where it is most beneficial.
- ◆ Glazing systems are all fitted with weather seals to minimise unwanted infiltration and to maximise internal thermal comfort.
- ◆ Green-roofs and terraces will improve thermal performance, benefit sound insulation of dwellings, reduce heating and cooling requirements and purify the surrounding air.
- ◆ Paints and floor-coverings are proposed, with non-toxic, low VOC options.
- ◆ Wood-based products are proposed, with low formaldehyde (and VOCs), wherever possible.
- ◆ Water-based and low-emission paints where possible, for internal 'low-sheen' areas.
- ◆ Low-emission and (where practical) water-based paints for internal gloss & semi-gloss areas.
- ◆ Fitout materials and finishes will include some products with recycled content and/or certified as sustainable by GreenTag or GECA.
- ◆ Specification of sustainably sourced timber, where possible, using FSC or PEFC (for structure, skirtings, architraves, etc).
- ◆ Predominantly light-colour roofs, generous vegetation and passive cooling strategies will greatly reduce "urban heat-island effects". This can help to reduce surrounding temperatures in summer and also to reduce the energy bills for both strata and individual apartments.

3. ENERGY

Basix Energy Score

65/63

Initiatives

- ◆ The designs have embraced the use of very high-quality windows which allow them to achieve the new (and tough) energy efficient targets, while still maintaining large window-sizes, for optimal daylighting and views. The generously-sized performance-windows will also improve the architectural experience and give the apartments a sense of space and connection to the outdoors.
- ◆ All dwellings are fitted with energy-efficient, reverse-cycle air-conditioning systems. These are very efficient in winter and summer and thus reduce energy consumption. The very high NatHERS scores and good AC ratings mean that AC running costs will be much lower than conventional and older-style units.
- ◆ All common areas and car parks are fitted with sensors, efficient lighting and smart ventilation technologies. This greatly reduces energy consumption and strata costs.
- ◆ Energy-efficient LED lighting has also been selected throughout the building, greatly reducing energy-consumption from artificial lighting.
- ◆ The central heat pump for hot water will also serve to reduce energy bills and greenhouse gas emissions. Efficient instant gas is used for townhouses.
- ◆ 2-star dryers are used in dwellings. Efficient dishwashers are also incorporated (4-star WELS ratings to reduce water/energy).
- ◆ Bathroom, kitchen and laundry exhaust fans direct air directly to the external walls. This greatly reduces the overall energy and suction demands, compared to central systems.
- ◆ Very generous solar photovoltaic (PV) is connected to common power to reduce strata bills.
- ◆ The pool is heated by an electric heat pump hot water system, which can save significant costs compared to traditional pool gas-heating systems.
- ◆ An on-site dedicated manager is proposed to operate the Building Management Systems. This system uses data from energy meters (connected to a centralized monitoring system) and typically results in increased energy efficiency and reduced strata bills.
- ◆ Embedded Networks are available through Energy Monitoring Phone apps to all residents. This results in significant reduced electricity and hot water rates, smart meters, energy concessions and savings through close monitoring and an educational breakdown of costs.
- ◆ Bicycle parking is provided in generous numbers, to allow residents to have a low-energy, healthy and cost-effective transportation option.
- ◆ Sensible access to and bus transport as well as an extensive network of bike paths.

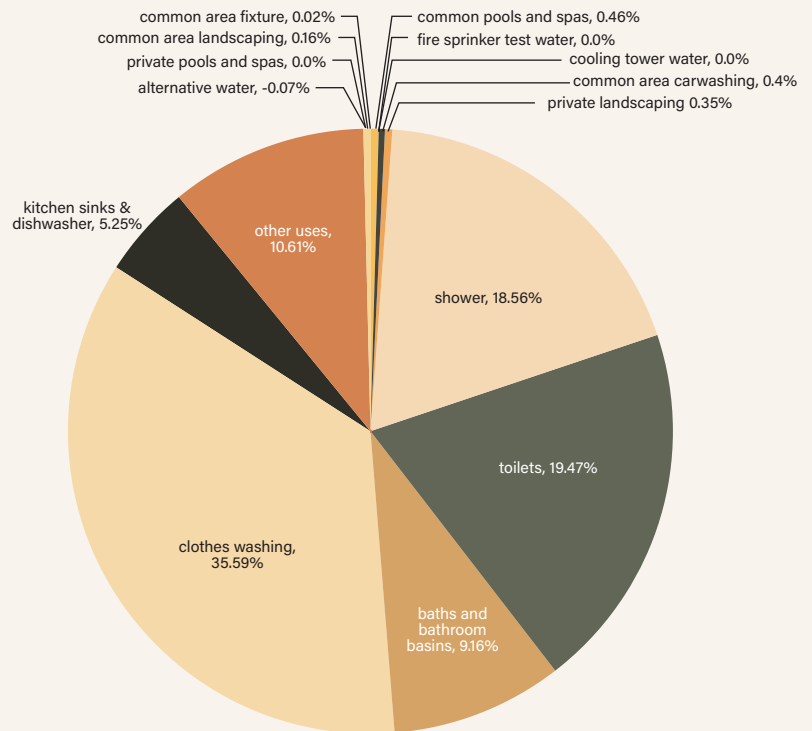
4. BASIX WATER SAVINGS

(Achieved with score of 42%, target is 40%)

Water Saving

- ◆ Total Complex water savings per annum is approximately 27,440,455 Litres.
- ◆ Total Complex water savings per annum is equivalent to around 11 Olympic swimming pools.

(note: 2,500,000L is the average capacity of Olympic swimming pool)



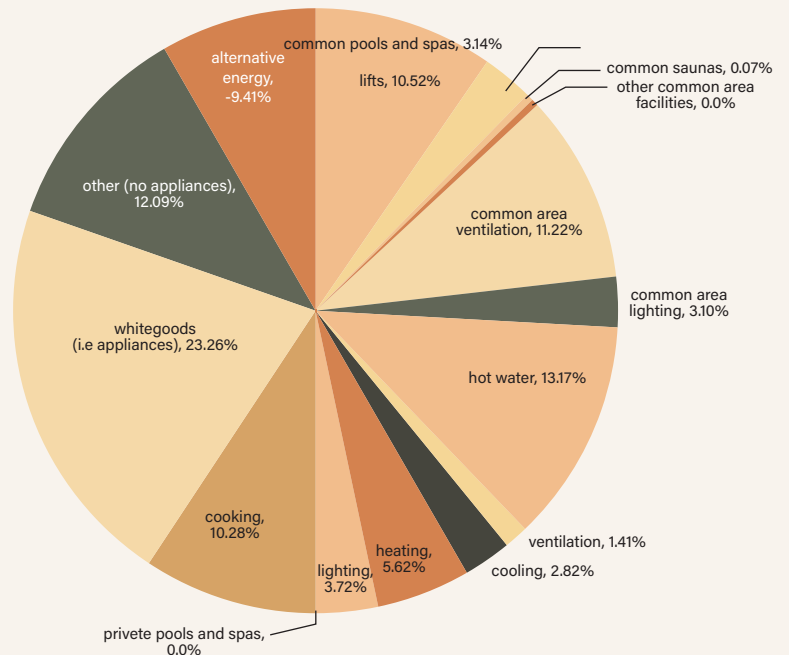
5. BASIX ENERGY SAVINGS

(Achieved with score of 65%, target is 63%)

Water Saving

- ◆ Total Complex CO2 savings per annum is approximately 1,620,880 kg.
- ◆ Total Complex CO2 savings per annum is equivalent to taking 675 cars off the road.

(note: 2400 Kg CO2 is the average emissions per annum, per light vehicle)



NOTES

The performance targets on this building will be the same as all other buildings in this area.

The above represent savings against pre-BASIX buildings.

See comment for the BASIX website:

'BASIX or Building Sustainability Index is a scheme introduced by the government of New South Wales, Australia on July 1, 2004, to regulate the energy efficiency of residential buildings. BASIX aims to reduce water consumption and greenhouse gas emissions by over 40% compared to pre-BASIX (2004) buildings.'