

Evermore Heights

Land use / development type	Scale
Residential development	Lot
Public open space	Precinct

Stormwater controls	Scale
Swales	Street & precinct
Biofilters	Street & lot
Pervious paving	Lot
Infiltration basins	Precinct
Retention of native vegetation	Structure plan area
Non-structural strategies – education	Structure plan area
Non-structural strategies – regulatory and enforcement program	Structure plan area

Efficient use of water	Scale
Water efficient fixtures and fittings	Lot
Waterwise landscaping	Precinct, street & lot

Water reuse	Scale
Rainwater storage and reuse	Lot
Community bores	Structure plan area

Site conditions	
Soils	Sand
Groundwater	2m < 5m
Slope	< 10 %

Local government	Location
City of Rockingham	Numbat Approach, Baldivis

Evermore Heights, co-developed by Satterley Property Group Pty Ltd and LandCorp, is a 374 lot estate with water sensitive urban design features from in-house to public open spaces.

Residents have access to a dual reticulation system which draws groundwater for irrigating public open spaces and residential gardens.

The weather station, which controls the irrigation times and duration, is located at a local primary school and doubles as an educational tool for the local school children.

Homes have been equipped with WELS rated appliances and waterwise landscaping has been promoted through incentive packages which encourage new purchasers to plant low water tolerant species. A particular incentive package included a free 3000L rainwater tank which plumbs non-potable water to the laundry (cold tap) and toilets. Design guidelines include the requirement for permeable paving where hard landscaping is required within gardens.

Raingardens are located within allotments and the road network and treat flows up to the 3 month average recurrence interval (ARI) event. Larger stormwater flows, up to the 10 year ARI, are directed into swales located within public open spaces. The swales have been lined with a nutrient absorbing filter media and vegetated with native water tolerant species to treat stormwater prior to infiltration. Large infiltration basins, located in public open spaces are designed to receive and infiltrate up to the 100 year ARI event.

Two areas of high quality vegetation were identified and retained as natural areas within the estate's public open space. Native species were planted as supporting understory in these areas. All public open spaces and streetscapes utilise waterwise landscaping.

Key Project Features

- 💧 A reticulated non-drinking water scheme irrigates residential lots and public opens spaces
- 💧 Weather station also used as an educational tool for local school children
- 💧 Rainwater harvesting and in-house use
- 💧 Waterwise landscaping in all private dwellings and public open spaces
- 💧 Raingardens constructed within residential lots and the local road network
- 💧 Nutrient absorbing filter media added to the soils of vegetated swales to aid treatment of stormwater during infiltration
- 💧 Infiltration basins designed to receive and infiltrate stormwater up to 100 year ARI event
- 💧 Retention of a number of mature trees and native bush areas



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Construction Costs¹

Dual reticulation	\$2,500 per lot
Rainwater tank (3000L)	\$3,000 each
Residential biofilter	\$500
Waterwise residential landscaping	\$7,000 per lot
Swale earthworks	\$15,000 - \$20,000 / swale
Weather station	\$25,000
Weather station computer and Software package	\$30,000

¹All costs are site specific estimates given for guidance purposes only

Issues

A number of challenges emerged during the development of Evermore Heights. Collaboration with agencies and other stakeholders was necessary to resolve challenges such as the establishment of a workable governance model, determining the real cost of schemes, understanding health and regulatory risks, service provision, security and reliability of sources longer term, and water efficiency at a community scale. Other challenges included understanding the marketing advantages that pioneering sustainability initiatives has within the community, and monitoring the impact of non-potable water supply with accuracy.

Outcomes

The developers of Evermore Heights targeted a 50% reduction in the average household consumption rate for Perth's scheme water. The development surpassed this with a 68% reduction in scheme water use. The dual reticulation scheme is estimated to reduce domestic use of potable water within Evermore

Heights by 56% alone. Over 150 homes had the free 3000L rainwater tank installed as a part of the new purchaser's incentive package.

The dual reticulation schemes at Evermore Heights and The Green at Brighton have been the catalyst for

the Water Corporation's development of new policy and governance arrangements regarding alternative non-drinking water supplies.



Image courtesy of Landscaping Australia



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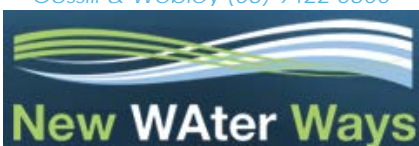
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