

*Case Study*

# WSUD Development

Project Manager: Kogarah Council

Urban renewal of Kogarah Town Square involves the construction of 220 residential apartments, 225 parking spaces, commercial retail space and a public library. The development is situated on the ridge between the densely urbanised catchments of the Cooks River and the Georges River which flow into Botany Bay. Both the rivers and the Bay are degraded. They are under pressure from increasing urban consolidation, traffic densities and industrial activities.

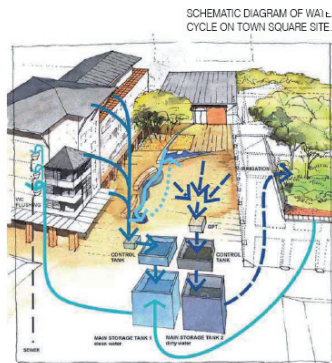
The project aims to reduce the impact of stormwater through conservation and efficiency by:

- Reducing the reliance on mains water
- Managing stormwater quantity and quality through capture, reuse and treatment

### Design of the system

Stormwater is rainwater that falls on paved surfaces. This water collects pollutants contaminated with litter, soil and other pollutants such as nutrients and bound contaminants.

Stormwater filtration will occur through a specially designed garden bed containing Enviro-media. In periods of high stormwater flow, surge tanks will regulate the water flow prior to discharge into the stormwater system. The size of the storage tank is about the volume of an Olympic swimming pool. Then, the water passes through a screen filter and is pumped under pressure and finally used for toilet flushing, car washing and in the water feature.



### Major Findings

Of the 7,500 kilolitres of rain that falls on the site annually, 85% is captured and used. About 60% is used to flush toilets, the remainder to irrigate the gardens in the courtyards, while 25% passes through the gardens and is purified and stripped of most of the nutrients. The reuse scheme separates the dirtiest water from the Town Square pavement and treats it separately from the relatively clean water from the roofs. The water reuse within the development represents a saving in the order of 17% of mains water.

The project has been supported by the Commonwealth's Urban Stormwater Initiative with \$629,000 in partnership with Kogarah Council, Sydney Water and the development company, High Trade Pty Ltd.



*Photo of the courtyard where filtration and reuse occurs.*