



The Next Evolution of Stormwater Harvesting

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The concept of harvesting and storing urban stormwater runoff for the purposes of offsetting potable water demand has been implemented for some years now. It is no longer a new concept although many councils are yet to implement such a system and it is certainly not in mainstream design by most engineering consultants. These systems require a significant amount of investment to implement with an expected return in providing a sustainable source of water.

The term multi-objective is being used more often with respect to stormwater harvesting mostly related to flood mitigation. These objectives are conflicting as stormwater harvesting requires the storage to be as full as possible whilst flood mitigation requires as much airspace as possible. Some large scale systems with open storages with the ability to achieve detention volume above the normal operating levels is a cost effective way of achieving this however this is not normally practical in constrained urban systems where storage is underground.

The Lincoln Squares projects meets this challenge head-on through innovation to reduce the flooding experienced down Elizabeth Street in Melbourne. A main 2ML underground storage supplies 3 header tanks for irrigation of the high-profile inner city parklands. This storage can be purged to create airspace if flood conditions are expected to maximise the detention capability.

Investigations were undertaken to develop protocols for the purging prior to the storm event and then during the storm event to maximise detention but also to ensure the tank is full after the storm event so that the irrigation yield is not compromised.

The process has to be fully automated as the storm events have a relatively low time of concentration leaving little opportunity for human intervention. Therefore technology was developed to forecast storm events and activate the various protocols for managing the flooding.