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Evaluating performance and effectiveness of water sensitive urban design

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ABSTRACT

Water Sensitive Urban Design (WSUD) is something of a catch-all term for environmentally sustainable water resource management in urban areas. Water sensitive urban design offers an alternative to the traditional conveyance approach to stormwater management. It seeks to minimise the extent of impervious surfaces and mitigate changes to the natural water balance, through on-site reuse of water as well as through temporary storage. By integrating major and minor flow paths in the landscape and adopting a range of water sensitive design techniques, the size of the structural stormwater system required can be significantly reduced. WSUD techniques include detention and retention basins to lower peak flows, grassed swales and vegetation to facilitate water infiltration and pollutant filtration. WSUD has been adopted widely in Australia and is being implemented in varied local government areas. The major challenge to the success of WSUD is however its measure of effectiveness over the life cycle given that it demands high maintenance. The aim of this paper is to provide a snapshot of effectiveness of WSUD implemented in Kogarah Municipal Council using two case studies and presents results on improvement in water quality through both site specific and water quality monitoring of the bays.

Keywords: Water sensitive urban design; Urban stormwater quality; Catchment runoff

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