



Stormwater Management Source Control

This **two day** course covers the principles of water-sensitive urban design (WSUD) relating to 'source control' of stormwater. A sound understanding of (urban) engineering hydrology is assumed.

Target Audience ➤ For designers of development projects such as residential subdivisions, public buildings and commercial/industrial complexes, or those who have responsibility for approving details of such projects submitted to Councils.

➤ Course Outline

Introduction

Legacy of past practices; detention and retention; application of WSUD (stormwater) principles; devices and systems: the 'vision' of WSUD and its limitations; review of above-ground and below-ground installations.

WSUD Implementation Issues

Infiltration (surface) practices; hydraulic conductivity measurement; runoff hydrographs; role of 'continuous simulation'; 'emptying time'; the modified design storm method; the five climate zones; runoff coefficients; some dos and don'ts; field examples of WSUD.

Introduction to Flood Control Systems

Four 'source control' categories; Category 1 (flood control): 'yield-maximum', 'regime-in-balance' and 'yield-minimum' strategies; critical storm duration; strategic planning for municipal agencies based on the four (urban) networks.

Design of Flood Control Systems

Procedures for design of:

1. infiltration/treatment surfaces including porous and permeable paving;
2. 'leaky' (in-ground) devices;
3. infiltration or 'dry' ponds;
4. devices with aquifer access or provision for 'slow-drainage'; design of more complex (retention practice) flood control systems; retention practice in high groundwater environments; some practical solutions to difficult implementation issues.

Pollution Control Systems

Urban stormwater quality parameters and data; region-based (five climate zones) design of 'high quality' pollution control systems incorporating WSUD principles; design of 'first flush' systems.

Stormwater Harvesting (Rainwater Tank) Systems

Stormwater harvesting issues; yield and demand; 'continuous simulation' model for domestic/industrial roof runoff harvesting; region-based (five climate zones) model for sizing rainwater storages; rainwater tanks as an aid to flood control.

Conclusion & Quo Vadis?

Open discussion – questions and feedback; implementation issues – barriers and advances; action required to implement strategic directions and policy matters.

➤ Course Objectives

At the end of the course participants will be able to:

- Understand the past, present and future issues of WSUD applications
- Better deal with WSUD implementation issues
- Understand the current issues in flood control systems, pollution control systems and stormwater harvesting
- Apply new knowledge and skills to the design of Stormwater Management controls and systems
- Interpret strategic directions and policy matters relating to Stormwater Management (Source Control)
- Appreciate the key challenges facing Stormwater Management (Source Control) into the future

“ Most beneficial for anyone who would like to know more on WSUD. ”

Civil Engineer, Gold Coast City Council