

Manuals:

Sustainable Urban Drainage Systems Design Manual

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Deliverable 2.1.2.

**A design manual incorporating best practice
guidelines for stormwater management options
and treatment under extreme conditions**

Part A: Review of design guidelines for
stormwater management in selected countries

Part B: Review of BMPs in relation to their
potential to integrate with existing
infrastructure (i.e. retrofit/hybrid systems)

Part A: Review of design guidelines for stormwater management in selected countries

Provides a critical comparison of the design guidelines which have been established for stormwater management in countries which are participating in SWITCH

- UK
- Switzerland
- Brazil
- Germany



as well as in selected countries not directly involved in SWITCH but where design procedures have been established to different levels of sophistication

- Australia
- Malaysia



Identifies generic- and site- specific information, gaps and information/research needs.

This part of the manual is aimed at stakeholders involved in the planning, design, construction, operation and maintenance of BMPs/SUDS including:

- site and consulting engineers
- planners
- landscape designers
- developers
- architects
- environmental regulators
- sewerage undertakers and
- BMP/SUDS practitioners.



Important points

- The latest advice available on the design of BMPs/SUDS has been provided by supplementing existing manuals, where relevant, with recent conference publications
- Through the presentation of guidelines for different geographically located countries, consideration has been given to the design of BMPs/SUDS under a wide range of climatic conditions.
- A critique of the described design guidance manuals for the UK is presented in terms of criteria relating to hydraulic design, surface water runoff management and water quality design.
- The benefits and limitations of the different modelling approaches which can be used for predicting stormwater quality entering and, in some cases, leaving have been reviewed.



This part of the design manual enables relevant stakeholders to assess the approaches which are most relevant to their situation in the quest to obtain the optimal environmental and long-term economic benefits associated with adapting existing drainage systems to environmentally sustainable design criteria.



Part B: Review of BMPs in relation to their potential to integrate with existing infrastructure (i.e. retrofit/hybrid systems)

Provides an overview of the current state-of-knowledge in relation to the use of retrofit/hybrid systems and includes a range of examples of these systems to inform all stakeholders involved in planning sustainable urban drainage and stormwater management in future urban environments.



Content of Part B

- The initial section describes the suitability of different BMPs/SUDS for retrofitting urban drainage systems, the criteria for their selection including land-take and capital cost, and their maintenance requirements.
- The middle section describes a decision support framework that identifies BMP/SUDS options and provides hydraulically effective solutions that are cost-effective to implement.
- The final section identifies the issues concerning whether to retrofit subsurface flow stormwater treatment constructed wetlands into existing urban balancing ponds



Part B of the design manual is relevant to those authorities wishing to introduce sustainable urban drainage systems and to assess the feasibility of retrofitting existing systems.

The dissemination of the manual should be linked to the environmental and long-term economic benefits of adapting existing drainage systems to environmentally sustainable design criteria

