



Rainfall run-off management for urban developments

Project Summary SC030219/S

A recently updated user guide advises regulators, developers and local authorities on the requirements for stormwater drainage design for new developments. These requirements are based on the current Defra/Environment Agency position on stormwater management and discharge control for developments.

This guide presents an easy-to-use method for setting stormwater discharge limits from a site and explains how to determine the size of the storage elements needed to control and treat the stormwater run-off so as to meet these discharge limits. The storage estimates are based on meeting the current philosophy of controlling stormwater run-off from sites which requires discharges to comply with both flow rates and volume control. The guide allows the use of a simple manual calculation procedure based on look-up tables to obtain storage volume requirements. This avoids the need to refer other documents or to use software design packages.

This approach for sizing stormwater storage must only to be used at the planning stage to assist with estimating indicative volumes. Detailed design of drainage systems requires the use of suitable software to confirm or modify the storage proposals as well as addressing conveyance and the many other aspects of drainage design.

The revised guidance takes account of changes and practices since the document was first produced including climate change factors and the preparation of national SuDS standards. The analysis for assessing flow rate limits and storage volume requirements is based on information from the Institute of Hydrology. An additional method of calculation from the Flood Estimation Handbook is also included.

Supporting explanations and examples are provided to help engineers to apply the method. The illustrations are based on five UK cities with a range of different hydrological and soil characteristics. Comparisons between the method set out in this user guide and other modelling approaches show that, while the guide method is generally conservative, it is sufficiently accurate to provide a reasonable indication of the storage requirements.

This document will enable non-drainage experts, who do not have the appropriate industry standard tools, to obtain a quick assessment of the principal drainage requirements needed for a proposed development. A simplified free web-based tool, www.uksuds.com, is now available and is approved by the Environment Agency for use in planning applications.

Note that this user guide will be updated when further work as part of project SC090031, 'Flood Estimation in Small Catchments', is complete.

This summary relates to information from project SC030219, reported in detail in the following output(s):

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