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(SUR1) Management of Surface Water Runoff

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Technical Guide November 2010 Criteria

- 2 available credits
- Credits worth 0.55% points each
- Mandatory Element: Yes

Aim: To design surface water drainage for housing developments which avoid, reduce and delay the discharge of rainfall run-off to watercourses and public sewers using SuDS techniques. This will protect receiving waters from pollution and minimise the risk of flooding and other environmental damage in watercourses.

Note: This section will be revised when the National Standards for Sustainable Drainage and associated regulations come into force.

Assessment Criteria:

Criteria	
Hydraulic Control Criteria The *SuDS Management Train* should be used as a guide to achieve the following: *1) Peak Rate of Run-off* If there is no increase in the man-made impermeable area as a result of the new development, then the peak rate of run-off criterion does not apply.	Non

* Supplementary guidance will be published by the Welsh Assembly Government to reflect planning policy and practice in Wales. The guidance which will not materially affect the aims and objectives of the Surface Water Run Off requirements of the Code, will be based on Technical Advice Note 15 (TAN 15) which supplements Planning Policy Wales, and surface management techniques currently in force in Wales.

Â¹ This can also be referred to as the 1 in 1, 1:1 or 100% probability of an event occurring in any year.

Â² This can also be referred to as the 1 in 100, 1:100 or 1% probability of an event occurring in any year.

Full SUR1 2010 Issue

Technical Guide May 2009 Criteria

- 2 available credits
- Credits worth 0.55% points each
- Mandatory Element: Yes

Aim: To design housing developments which avoid, reduce and delay the discharge of rainfall to public sewers and watercourses and reduce the risk of locolised flooding, pollution and other environmental damage.

Assessment Criteria: Mandatory Sur1 Elements must be achieved as stated in technical guide. Up to 2 Credits are available for further improving management of rainwater runoff.

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This can be achieved with the use of (SUDS) Sustainable Urban Drainage Systems.

Criteria	
	Credits
1) Peak Rate of Runoff Ensure that the peak rate of runoff into watercourses (see definition) is no greater for the developed site than it was for the pre-development site. This should comply with the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004) or for at least the 1 year and 100 year return period events. Calculation Criteria:	None

Full SUR1 2009 Issue

References for SUR1

Centre for ecology and hydrology. Flood estimation handbook. 5 Volumes. National Environmental Research Council. ISBN 0 94854094X. 1999

CIRIA SUDS information

CIRIA. Interim Code of Practice for Sustainable Drainage systems (SUDS). CIRIA, London. 2004

Environment Agency Flood information

Environment Agency website

Environment Agency website: Your environment > Environmental Facts and Figures > Climate > Flooding

Foresight Future Flooding website: Previous Projects > Flood and Coastal Defence > Index

Lancaster JW, Preene M, and Marshall. Development and flood risk â€“ guidance for the construction industry. CIRIA Report C624. CIRIA, London. 2004

Marshall DCW and Bayliss AC. Flood estimation for small catchments. IOH Report No.124. Institute of hydrology, Wallingford (1994). Currently out of print

NAFRA

The Met Office (including figures for UK rainfall)

PPS 25 (Planning Policy Statement 25), â€œDevelopment and flood riskâ€•, ODPM (2006)

BRE Digest 365 â€“ Soakaway design 1991 (BRE)

BS EN 752:2008 â€“ Drain and sewer systems outside buildings

The SUDS Manual â€“ 2007 (CIRIA C697) This replaces C522 and includes revised and rationalised elements of C523 and C609

Town and Country Planning Act 1990

Water Industry Act 1991

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SuDS (Sustainable Drainage Systems) - What are they?

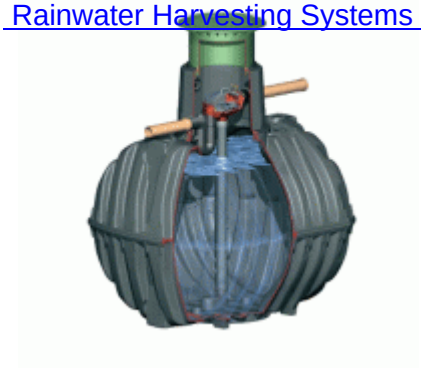
As defined in the SuDS manual, sustainable drainage systems are an approach to surface water management that combines a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques.

These systems infiltrate, store, convey and partially treat surface water runoff, which minimises environmental impact and maximises environmental opportunities. SuDS should aim to maximise the use of on-the-surface techniques for operational and maintenance reasons.

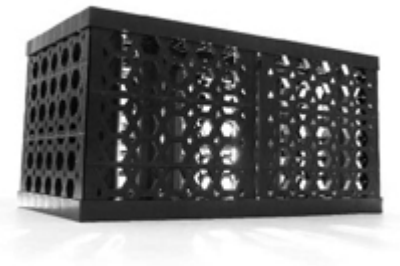
SUDS techniques:-

- Wet ponds
- Infiltration basins
- Detention basins
- Swales
- Reed beds
- Previous (porous or permeable) paving
- Soakaways
- Rainwater harvesting
- Filter Strips
- Filter drains and trenches with or without perforated pipes
- Green roofs
- Underground Attenuation storage

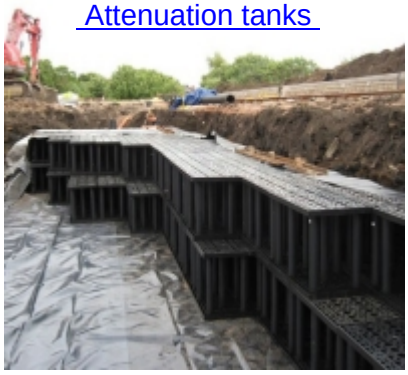
Rainwater Harvesting Systems



Soakaways / Infiltration

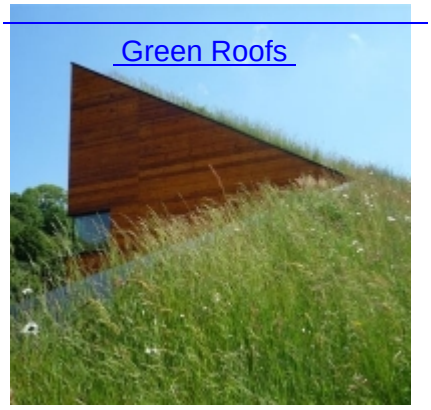


Attenuation tanks



Porous and permeable paving

Green Roofs



Wet Ponds

Detention basins	Swales	Reed Beds
Filter Strips	Filter Drains And Trenches With Or Without Perforated Pipes	

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