

# SUSTAINABLE DRAINAGE SYSTEMS

ADVICE FOR PLANNING APPLICANTS SEEKING PLANNING PERMISSION ON  
THE USE OF SUSTAINABLE DRAINAGE SYSTEMS IN NEW DEVELOPMENTS

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## Introduction

Northern Ireland Environment Agency (NIEA) recommends that Sustainable Drainage Systems (SuDS) are incorporated, where appropriate, into the drainage design of all new developments for the environmental management of rainfall / surface water drainage.

Temporary SuDS can also be used during the construction phase as pollution prevention measures for silt management and to prevent erosion. Where possible these should be retained or adapted as part of the final permanent site drainage solution.

Surface water should be dealt with as close as possible to where it falls as rain (source control) and the use of two or more SuDS components can be used for the optimal solution to:

- (i) manage rainfall to mimic natural drainage by:
  - reducing runoff rates;
  - reducing additional runoff volumes and frequencies; and
  - encouraging natural groundwater recharge.
- (ii) minimise impacts on quantity and quality of runoff by:
  - reducing pollution and protecting the quality of receiving waters;
  - preventing direct discharge of spillage; and
  - reducing the volume of surface waste runoff to sewers.
- (iii) maximise amenity and biodiversity opportunity by:
  - contributing to the amenity and aesthetic value of the development; and
  - providing habitat for wildlife and biodiversity.

The use of a number of SuDS components within a development such as swales and settlement ponds may enable the better management of ground water.

NIEA would support a proposal for drainage management at a site to:

- Provide permanent silt / pollutant removal within the drainage system for site protection for a 1-in-1 year rainfall event;
- Provide hydraulic drainage capacity for a 1-in-30 year rainfall event, with additional site protection up to a 1-in-100 rainfall event;
- Maintain runoff rates and volumes at pre-development rates;
- Manage hydraulic erosion on site; and
- Ensure that runoff discharged from the site does not cause water quality deterioration in the receiving waterbody when compared to existing baseline conditions.

Appropriate allowance for climate change up to 20% may need to be taken into consideration as part of the calculations on proposed discharge volumes and site attenuation storage volumes.

Construction of SuDS should comply with the design and construction standards as set out in the following publications from the Construction Industry Research and Information Association (CIRIA):

- CIRIA C753 (2015) The SuDS Manual;
- CIRIA C698 (2007) Site Handbook for the construction of SuDS;
- CIRIA C609 (2004) Sustainable drainage systems, hydraulic, structural and water quality advice;
- CIRIA C523 (2001) Sustainable Urban Drainage Systems; Best Practice Manual
- CIRIA C521 (2000) Sustainable Urban Drainage Systems; Design Manual for Scotland and Northern Ireland.

For further CIRIA information please use the following link:

<http://www.ciria.org/default.aspx>

Construction of SuDS should also follow the recommendations on planning, design, construction and maintenance of surface water management systems for new developments and redevelopment sites, as set out in the British Standards Institution Publication:

- BS 8582:2013 (2013) Code of practice for surface water management for development sites.

For further SuDS guidance and good practice please see the NetRegs link below:

[http://www.netregs.org.uk/library\\_of\\_topics/water/sustainable\\_urban\\_drain\\_system.aspx](http://www.netregs.org.uk/library_of_topics/water/sustainable_urban_drain_system.aspx)

## SuDS and contaminated land or brownfield sites

If a site is affected by contamination, SuDS must not mobilise contaminants or act as a preferential flow path to convey such contaminants. Any SuDS design should be adapted to ensure that this does not occur.

### **Mobilisation of contaminants**

SuDS which use infiltration will not be suitable where infiltration is through land containing contaminants which are likely to be mobilised into surface water or groundwater. This can be overcome by restricting infiltration to areas which are not affected by contamination, or constructing SuDS with an impermeable base layer to separate the surface water drainage system from the contaminated area. SuDS which do not use infiltration are still effective at treating and attenuating surface water.

### **Introduction of pathways**

As with a traditional drainage system, the introduction of SuDS may provide a pathway along which contaminants in aqueous or non-aqueous liquid phase can migrate and enter

groundwater or surface water. The likelihood of this should always be considered and the system located to a different area or redesigned as required.

## Selection of SuDS

SuDS selection should:

- Be considered at the design stage of development;
- Consider the level of contamination of drained surface water; and
- Consider the risk of the introduction of pathways.

## Discharge consent may be required

If it is not possible to adequately manage construction or operational phase site drainage using SuDS features, consent to discharge under the terms of the Water (Northern Ireland) Order 1999 may then be required.

An application form for consent to discharge site drainage under the Water (NI) Order 1999 can be obtained by contacting NIEA Water Management Unit at:

NIEA Water Management Unit  
17 Antrim Road,  
Tonagh,  
Lisburn.  
BT28 3AL

or by visiting our website:

<https://www.daera-ni.gov.uk/articles/regulating-water-discharges>

Please be advised that applications for discharge consent take a minimum of four months to determine.

## Final Comments

Effective mitigation measures must be in place to protect the water environment and surrounding water bodies from any discharge into them that may damage ecological status and to ensure that the Water Framework Directive (WFD) objectives for the water body are not compromised nor the WFD objectives in other downstream water bodies in the same and other catchments.

It is an offence under the Water (Northern Ireland) Order 1999 to discharge or deposit, whether knowingly or otherwise, any poisonous, noxious or polluting matter so that it enters a waterway or water in any underground strata. Conviction of such an offence may incur a fine of up to £20,000 and / or three months imprisonment.



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NIEA Planning Response Team  
Klondyke Building  
Cromac Avenue  
Malone Lower  
Belfast  
BT7 2JA  
T: (028) 9056 9604  
E: [PlanningResponse.Team@daera-ni.gov.uk](mailto:PlanningResponse.Team@daera-ni.gov.uk)  
W: <https://www.daera-ni.gov.uk/>