

MINOR DEVELOPMENT – SURFACE WATER DRAINAGE

Surface Water Drainage – Developer / Applicant Advisory

This document is concerned with the rain and snow falling on roofs, driveways and impermeable surfaces that form part of a development. By ensuring a sustainable approach to surface water management we aim to ensure that flood risk is not increased either on site or elsewhere. The philosophy of sustainable drainage is about maximising the benefits and minimising the negative impacts of surface water run-off from developed areas.

It is important to make sure that the most sustainable method of surface water drainage is implemented in line with the National Planning Policy Framework and Building Regulations. The surface water drainage hierarchy should be followed with all available options being considered and the most sustainable techniques used wherever appropriate.

The National Planning Policy Framework Paragraph 080 and Building Regulations Approved Document H advise that the aim should be to discharge surface run-off as high up the hierarchy of drainage options as reasonably practicable:

- Into the ground (infiltration)
- To a surface water body;
- To a surface water sewer, highway drain, or another drainage system;
- To a combined sewer.

The National Planning Policy Framework can be viewed at the following link:
<http://planningguidance.communities.gov.uk/>

Building regulations Approved Document H, Drainage and Waste Disposal can be found at the following link:
<https://www.gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h>

Minor Development should strive to meet the National Technical Standards for Major Development to meet the principles of the National Planning Policy for sustainable surface water management. Brownfield re-development sites should aim to discharge as close to greenfield run-off rates as possible.

It should be noted that it is the developer's responsibility to ensure adequate drainage so as not to adversely affect surrounding land, property or the highway.

Under no circumstances should the surface water be connected into the foul drainage system unless specific approval is obtained from the sewerage undertaker.

Where an existing drainage system is to be utilised, it is the developer's responsibility to ensure adequate capacity, integrity and serviceability of the system. Developers should avoid building over existing infrastructure.

Rainwater Re-use and Water Conservation

We encourage the use of rainwater and grey water harvesting systems to support rain water re-use and water conservation and recommend that water butts are installed on rear downpipes as a minimum.

SuDS - Sustainable Drainage Systems

Sustainable Drainage Systems (SuDS) take account of water quantity (flooding), water quality (pollution) biodiversity (wildlife and plants) and amenity (communities) as a collective approach to managing surface water from development. Surface water is a valuable resource and this should be reflected in the way in which it is managed. SuDS typically mimic nature and manage rainfall close to where it falls.

The new SuDS Manual (C753) can be viewed at the CIRIA web-site:
http://www.ciria.org/Memberships/The_SuDS_Manual_C753_Chapters.aspx

Further information is available from the Susdrain web-site at the following link: <http://www.susdrain.org/>

Infiltration SuDs have the potential to provide a pathway for pollutants and should not be constructed in contaminated ground.

Soakaways / Infiltration Devices

Where new soakaways / infiltration devices are proposed, percolation tests should be conducted by a suitable qualified person and to the required British Standard – BRE365. The percolation test should be carried out to demonstrate the effectiveness of infiltration particularly taking into consideration any seasonal variations. If infiltration drainage is not suitable, consideration should be given to an alternative sustainable option such as rainwater harvesting or attenuation systems. Further information about infiltration drainage can be found at the following link:

<http://www.susdrain.org/delivering-suds/using-suds/suds-components/infiltration/infiltration.html>

Soakaways or infiltration devices should be designed so that run-off from roofs and hard surfaced areas is completely contained below the surface for the 1 in 30 year storm event as a minimum. Flows exceeding the design standard of the drainage system and up to the 1 in 100 year climate change event should be contained on site with no flooding of buildings.

The Environment Agency advise that the maximum acceptable depth for infiltration devices is 2.0m below ground level with a minimum of 1.2m clearance between the base of the infiltration device and peak seasonal groundwater levels.

Discharge to a Watercourse / Ditch / Pond

Where it is demonstrated that infiltration drainage is not appropriate for the site the drainage hierarchy should be followed. Any proposal to discharge to a watercourse should consider the impact of additional flows on the receiving watercourse and must not increase flood risk elsewhere. You must ensure that the impact of the development does not exacerbate flood risk at any other point in the catchment of the receiving watercourse (either upstream or downstream). It is likely that you will be required to provide storm water storage in order to attenuate flows prior to discharge to a watercourse.

If the watercourse (ditch, culvert) is not within your ownership you will require a right to discharge from the riparian owner in addition to any planning permission granted.

If you propose to discharge surface water to a pond you should consider whether there is sufficient available capacity within the pond as well as the impact of any additional flow to any downstream receiving system.

Surface Water Sewer

If you wish to discharge roof water to the surface water sewer you must demonstrate that all other sustainable drainage options have been considered and that the drainage hierarchy advised above has been followed. Any proposal to discharge to the surface water sewer should be agreed with Anglian Water who may require you to attenuate flows.

Any aspects of the surface water drainage systems in shared ownership should be identified and incorporated into property transfer documents to ensure that future management responsibilities are fully understood.

Groundwater

To ensure that groundwater does not influence the surface water drainage system, the following design criteria should be adhered to in accordance with the guidance found in Document C753, SuDS Manual.

- Where infiltration drainage is utilised there should be in excess of 1.0m minimum height difference between the base of a soakaway / infiltration basin and the groundwater: and / or
- Where attenuation drainage is utilised and extends to depths where groundwater may be present the attenuation storage structures should be lined to prevent ingress. Measures should be utilised to prevent floatation or structural design risks to tanks or impermeable liners.

Climate Change

Design standards and exceedance flows should take account of the Environment Agency's updated guidance on climate change allowances for peak rainfall intensity demonstrating that the 20% and 40% climate change scenarios have been tested to ensure no flooding of buildings.

<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Car Parking

Only clean water from roofs can be directly discharged to any soakaway or watercourse. Systems for the discharge of surface water from associated hard standing, roads and impermeable vehicle parking areas should incorporate appropriate pollution prevention measures and / or a suitable number of SuDs treatment train components appropriate to the environmental sensitivity of the receiving waters.