

Lead Local Flood Authority SuDS Policy Statement

Meeting Sustainable Drainage System Standards in Hertfordshire

**Addendum to the Local Flood Risk Management Strategy for
Hertfordshire**

March 2015

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This SuDS policy document was originally produced in November 2012 by Robert Bray, Anthony McCloy and Ruth Newton in partnership for Hertfordshire County Council. It was approved and adopted by Hertfordshire County Council in February 2013. In March 2015 it was updated to reflect changes to the planning system and was adopted by Hertfordshire County Council as an addendum to the Hertfordshire Local Flood Risk Management Strategy at its cabinet Meeting on Monday 23rd March 2015.

1. Introduction

The Flood and Water Management Act 2010 established Hertfordshire County Council as a Lead Local Flood Authority covering the area of Hertfordshire. In February 2013 the first Local Flood Risk Management Strategy for Hertfordshire was published and this included a specific policy relating to the approval and delivery of Sustainable Drainage Systems (SuDS) in Hertfordshire. This document sets out the approach the Lead Local Flood Authority would recommend for the development and delivery of SuDS in the county and establishes the context and requirements which it will take into account when providing comments on planning applications as a statutory consultee to the Local Planning Authorities in Hertfordshire.

1.1 Background

From 6th April 2015, changes to the planning system will secure the delivery of SuDS for the management of surface water in all new major developments.¹ Planning policy will be strengthened so that, in determining planning applications, local planning authorities can give greater weight to the provision, operation and maintenance of SuDS for the lifetime of development.² It should be noted that the requirement for all new development in areas at risk of flooding to prioritise the use of SuDS will continue to apply.³

Under the new arrangements, Lead Local Flood Authorities will become a 'statutory consultee' and local planning authorities will be expected to consult with them on surface water management for all Major development.

Surface water drainage systems must be designed to comply with the National Planning Policy Framework (NPPF) and make reference to the National Planning Practice Guidance (NPPG) and the non-statutory National Standards for SuDS and Guidance published by Defra and DCLG.

1.2 Role of this Guidance

This document sets out how Hertfordshire County Council, in its role as the Lead Local Flood Authority (LLFA) for Hertfordshire,⁴ and as a statutory consultee of the planning process, will evaluate drainage schemes. In accordance with national policy and local guidance it provides an interpretation of how schemes are expected to demonstrate their compliance with the National Planning Policy Framework with reference to the NPPG and non-statutory National Standards for SuDS and guidance in a Hertfordshire context, setting out a number of policies which schemes should meet. The guidance is aimed at a range of audiences, in particular developers, and those involved in the decision making process.

As well as ensuring that all schemes comply with the NPPF and supporting guidance, which focus on the quantity elements of SuDS, the LLFA will aim to secure

¹ Developments of 10 dwellings or more; or equivalent non-residential or mixed development (as set out in Article 2 (1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010)

² Unless demonstrated to be inappropriate

³ National Planning Policy Framework

⁴ The Flood and Water Management Act 2010 identifies Hertfordshire County Council as a Lead Local Flood Authority with the responsibility to coordinate the management of flood risk across Hertfordshire

SuDS schemes which demonstrate best practice and maximise water quality, amenity, biodiversity and other benefits to the local area. Fundamental to this approach is that the four components of the SuDS philosophy, as set out in the CIRIA SuDS Manual, quantity, quality, amenity and biodiversity, cannot be separated and should be considered in a holistic way to achieve 'best value' from the SuDS design process.

The LLFA will aim to secure best practice SuDS in line with this philosophy through its consultation with the Local Planning Authorities, while still ensuring SuDS are affordable and practical.

In order to achieve this, this document sets out SuDS policies which relate to local planning policy and wider best practice, as well as those which relate directly to the NPPG and non-statutory National Standards for SuDS. In addition readers of this document can refer to more detailed guidance on SuDS design and implementation on the Hertfordshire Building Futures web site.

This policy statement is supported by references to the following sources of further information:

- The non -statutory National Standards –published by DCLG and DEFRA.
- CIRIA SuDS manual – provides industry-accepted national best practice.
- Building Futures website – provides more detailed technical and planning-related information and acts as jointly-owned guidance for Hertfordshire's planning authorities.
- Strategic Flood Risk Assessments covering Hertfordshire
- HCC Guidance for SuDS in Hertfordshire

SuDS Policy 1

Proposals for SuDS must comply with this guidance, and in other respects with national policy and guidance or industry best practice, such as the SuDS manual.

1.3 SuDS Design, the Planning Process and consultation with the LLFA

The evolution of the SuDS design should run in parallel with the planning process. The LPA will consult with the LLFA at key points throughout the process, including the pre-application and full application stages, and for the satisfaction of conditions where relevant. Further details on the stages of the design process are included within Section 2.

Other statutory consultees involved in the decision making process may also be involved at pre-application stage on larger or more complex schemes.

Although not part of the LLFA's responsibility, for the sake of completeness, it should be noted that developers will additionally need to seek formal consent for any discharge of residual water from a SuDS system where that outfall is controlled by either the Environment Agency or the relevant Internal Drainage Board. For example, a headwall outfall may need land drainage consent from the Internal

Drainage Board or Local Authority where it discharges into an ordinary watercourse (the applicant should check this requirement with the LLFA) and will need consent from the Environment Agency where it discharges into a main river. Applicants should also ensure that they check for and comply with any local Land Drainage Byelaws set by either the Environment Agency or the local authority that relate to works near, on or over watercourses. Local authorities may also have additional requirements, e.g. in connection with Building Control.

2. The design, submission and evaluation process

2.1 Introduction to the design process

Unlike the traditional approach to conventional pipe and gully drainage, which is often applied to sites at a relatively late stage in the design process, it is essential that the consideration of SuDS takes place at the start of the design process, and that the site design is adjusted accordingly. This should ensure the most cost effective, well designed SuDS which deliver the required level of multi-functionality.

The design objective is to ensure runoff flows in a controlled and predictable way through development with appropriate SuDS techniques located along a 'management train'. In order to comply with local planning policy and best practice requirements, the SuDS schemes will also need to offer other functionality, particularly water quality, amenity and biodiversity benefits. Details of these wider benefits will be confirmed during the first design stage.

2.2 A three stage design process

The LLFA will evaluate drainage schemes based on the three stage approach to SuDS design, as recommended in the CIRIA SUDS Manual C697 2007 (Section 2, p13). This approach aims to ensure that the design is developing in the right way and avoids unnecessary design costs for the developer.

The three stages are:

1. Conceptual Drainage Design
2. Outline Drainage Proposals
3. Detailed Drainage Design

The Conceptual Drainage Design will generally tie in with the pre-application stage of the planning process. Detailed Drainage Design will normally be required for the full application although in some cases Outline Proposals may be sufficient, with Detailed Design covered via a condition.

The following sections summarise the key recommendations for each of the three design stages. The level of detail expected at each stage will be proportionate to the scale of the proposed scheme. Further details on the background to the requirements and terminology used can be found on the Building Futures website.

2.2.1 Conceptual drainage design

It is recommended that the drainage design concept should be submitted as part of pre-application discussions.

SuDS Policy 2

During any pre-submission discussion those seeking planning approval must:

- a) Demonstrate an understanding of the drainage characteristics: within and outside the development envelope; during flooding; and downstream of the site.
- b) Provide an outline assessment of existing geology, ground conditions, contaminant status and permeability through desk-based research and site visit observations. Soakage tests, conforming to industry standards should be carried out at this stage wherever possible.
- c) Provide a flow route analysis for existing conditions and modified surface flow pathways as a result of proposed development.
- d) Prepare a Conceptual Drainage Plan to show the above together with:
 - the proposed 'management train'
 - location and type of source control
 - site controls with storage locations
 - conveyance routes
 - the destination of runoff
 - suggested mitigation proposals for known flood risk issues, or proposed betterment
- e) Provide a Preliminary SuDS Design Statement describing the SuDS proposals in general terms together with the SuDS Design Criteria agreed for the site and initial thoughts on how the site will be maintained.

2.2.2 Outline drainage proposals

Outline Drainage Proposals should be submitted alongside the detailed design within the full application.

SuDS Policy 3

At the Outline Drainage Design stage those seeking planning approval must submit spatial and technical information to cover all aspects which may or may not have been considered at the pre-submission stage, and furthermore to demonstrate:

- a) the SuDS 'management train' in detail
- b) 'source control' measures including how they will be managed at adoption
- c) the use of sub-catchments
- d) 'treatment stages in each sub-catchment
- e) conveyance techniques including low flow, overflow and exceedance arrangements

- f) the storage hierarchy both spatially and for different return periods.
- g) how flows and volumes are controlled
- h) the final site runoff arrangements
- i) results of soakage tests
- j) an initial health and safety assessment which assesses risks and proposes how these will be managed to an acceptable level
- k) how any contaminants will be dealt with

This should be accompanied by the following:

- a) A SuDS design statement describing the SuDS proposals in detail terms together with how they meet the SuDS design criteria identified for the site at the concept stage.
- b) A climate change statement.
- c) The key operation and maintenance principles.

2.2.3 Detailed Drainage Design

At the final design stage, those seeking approval must provide all details necessary to demonstrate that the SuDS will operate and be maintained for the lifetime of the development. The Detail Design information will normally comprise those elements listed in requirement 4 below.

This stage will normally be required as part of the planning application, but in some cases, for example on very large schemes, details may be subject to planning conditions for approval later in the development process.

SuDS Policy 4

At the detailed drainage design stage those seeking planning approval must submit spatial and technical information to cover all aspects which may or may not have been considered at the pre-submission and outline stages, and in addition cover the following:

- a) Levels data and/or drawings to show that runoff will flow in predictable pathways through the site.
- b) Construction details and location plans that demonstrate practical, robust and simple structures for the collection, conveyance, cleaning and storage of runoff.
- c) Details for inlets and outlets and flow control chambers to demonstrate how flows and volumes are to be managed. Relevant details to include cover levels, inverts, soffit, base and crest; shown on plan, cross and long-section with relevant calculation or hydraulic model references as appropriate.
- d) Cross and longitudinal profiles and planting details of all swales, basins, wetland and pond features together with SuDS sympathetic landscape proposals for the whole development.
- e) All level data provided as metres above ordnance datum (mAOD).
- f) Specification notes for all SuDS installation.
- g) An operation and maintenance Plan for the site (see *Policy 19*)

- h) A final SuDS design statement, modified where necessary to include additional information or minor amendments.
- i) A final health and safety assessment which assesses risks and proposes how these will be managed to an acceptable level.

2.2.4 Other design matters

SuDS Policy 5

Where enabled by planning policy and guidance at each of the above stages a complementary level of survey, analysis, design and construction and management information will be required from those seeking planning approval to demonstrate that the required design objectives referred to in *SuDS Policy 13* have been met.

3. Design criteria – Non-statutory National Standards for SuDS and guidance

3.1 Part 1: SuDS principles

National guidance promotes the use of non-statutory National Standards for SuDS and these set out a number of principles with which developments comply with as a minimum. The LLFAs recommendations in relation to these principles are set out below.

These recommendations link to the design process; specifically the production of Concept, Outline and Detailed drainage designs described in Section 2. They also refer to a SuDS design statement, produced iteratively, and a climate change statement which are described in further detail on the Building Futures website.

3.1.1 Source Control

SuDS Policy 6

Proposals for SuDS must demonstrate that ‘source control measures’ have been used to intercept runoff as close as possible to where runoff falls as rain, for water quality objectives as much as for attenuation.

The source control features must be illustrated on Outline and Detailed drainage plans indicating both the type and extent of technique being used.

The source control features must also be described in detail in each iteration of the SuDS design statement with clear requirements for ongoing maintenance into the future.

3.1.2 Surface runoff managed on the surface

SuDS Policy 7

Proposals must demonstrate that the SuDS are designed at or near the surface to provide an easily maintained, visible and cost effective solution for the lifetime of the development.

SuDS features that collect; clean and store runoff should be shown graphically on the Concept, Outline and Detailed drainage plans indicating both the type and extent of technique being used together with the linking conveyance arrangements. The level of drawing detail required should reflect the design stage.

The use of SuDS features at or near the surface should be described in the SuDS design statement with clear requirements for ongoing maintenance into the future. The level of detail required should be proportionate to the design stage.

Underground treatment will only be acceptable where it can be proved that alternate surface based treatment methods are not appropriate or not feasible.

3.1.3 Integrating public space with SuDS

SuDS Policy 8

Proposals must demonstrate that SuDS have been integrated into public space to provide:

- a) A practical and cost effective SuDS solution.
- b) Surface conveyance to an appropriate outfall destination.
- c) Surface storage of clean water in a visually attractive SuDS scheme that provides benefits for wildlife.

The integration of SuDS into public space should be shown graphically on the Concept, Outline and Detailed drainage plans indicating both the type and extent of technique being used together with the linking conveyance arrangements.

The integration of SuDS into public open space should be described in the SuDS design statement with clear requirements for ongoing maintenance into the future. The level of detail required will be proportionate to the design stage.

3.1.4 Cost-effective operation and maintenance over the development design life

SuDS Policy 9

Proposals must demonstrate that the SuDS have been designed at or near the surface using techniques that can be simply managed using established landscape management practices or a straightforward process. All inlet, outlet and control

structures must be shown to be protected from blockage and located near the surface, to allow for easy management during routine maintenance visits.

3.1.5 Climate change

SuDS Policy 10

Proposals for SuDS must be accompanied by a climate change statement which explains how the SuDS system will accommodate and adapt to anticipated climate change and reasonably foreseeable changes in context and SuDS efficiency, including the effects of drought on structures, soils and vegetation integral to the SuDS.

Further guidance on the requirements around climate change is provided on the Building Futures website.

3.1.6 Affordability

It is suggested that, where the following criteria are met, SuDS systems should be no more expensive than an equivalent conventional drainage system meeting the same design criteria (achieving comparable storage volumes and treatment stages):

- Early consideration of SuDS at the site planning stage
- Source control being integrated into the design
- SuDS being at or near the surface

It is therefore expected that SuDS techniques will be the normal means by which surface water is drained from all future developments that require a major planning application. Genuinely exceptional circumstances where this is not possible will be assessed on a case by case basis.

SuDS Policy 11

All SuDS design should comply with the above criteria to ensure cost effective SuDS. Hertfordshire County Council will only consider alternatives to SuDS as an acceptable solution in exceptional cases.

3.1.7 Additional design criteria

In addition to the National Planning Policy Guidance and non- statutory Standards, more detailed local design guidance is set out on the Building Futures website, covering the areas set out in *SuDS Policy 13* below.

What wider benefits are appropriate will depend on the site and its particular context in terms of local plans, strategies and policies, and physical environment factors. These are likely to be similar to those that are required to be addressed as part of

the development management process. Other benefits may also be sought where appropriate to the scheme and its wider context.

SuDS Policy 12

In accordance with relevant local plan policies and guidance, proposals for SuDS must maximise wider benefits as appropriate, including for:

- a) Biodiversity
- b) Visual amenity, landscape character/urban design and legibility
- c) Recreation potential
- d) Rainwater harvesting
- e) Safer environments
- f) Highway-friendliness
- g) Natural security
- h) Land remediation
- i) The integrity and value of important historic features
- j) Landuse economy
- k) Affordability
- l) Integration with other water management
- m) Ease of management

3.2 Part 2: Non statutory SuDS Standards and guidance

3.2.1 Runoff destination

The non- statutory National Standards and guidance specify a preference hierarchy for runoff destinations, and set out conditions under which a less preferred route may be allowable. Further detail on the requirement is set out below and other quantity requirements, including a template for submission of quantity information is provided on the Building Futures website.

SuDS Policy 13

Proposals for SuDS must result in discharge into the ground, to a surface water body or, where these can be demonstrated to be impractical, to the storm sewer or combined sewer where no storm sewer is available.

The destination of runoff (drainage route) for proposed SuDS must be justified in accordance with the SuDS standard requirement for runoff destination using a methodology acceptable to Hertfordshire County Council and the Local Planning Authority.

3.2.2 Peak flow rate and volume

The introduction of impermeable areas as a result of development will lead to an increase in frequency, rate and volume of runoff. Significant changes to Greenfield runoff characteristics as a result of development will not be acceptable.

It is accepted that that frequency, rate and volume of run-off from previously developed land will be higher than on equivalent sized Greenfield sites, however the redevelopment process will normally provide opportunities for redesign of site drainage to restore Greenfield runoff characteristics.

The Building Futures website contains further guidance on the choice of methods for calculating peak flow and volume. It also provides an approach for meeting peak flow rate and volume requirements on previously developed land, in particular by requiring betterment of existing runoff conditions where Greenfield runoff cannot be achieved.

SuDS Policy 14

Proposals for SuDS must demonstrate how the frequency, rate and volume of runoff from the development will be managed to achieve a greenfield rate.

On previously developed land, a greenfield runoff rate should aim to be achieved, except in exceptional cases. Where Greenfield runoff rates cannot be achieved, a betterment rate may be deemed acceptable.

Flow rate and storage volume calculations should be presented in a manner that is acceptable to the LLFA.

3.2.3 Water Quality

Water quality is provided by a 'management train' that aims to:

- prevent pollution and control spillage;
- incorporate 'source control' features as close as possible to where rain falls;
- provide site control measures within the development to provide treatment and storage; and
- incorporate regional controls outside the development, usually in Public Open space, where appropriate

The treatment and removal of pollutants is provided through the provision of a 'treatment train', which provides a number of treatment stages in series. The determination of the number of treatment stages required is based on a risk based assessment of the possible level of pollution to the site (based on proposed site use) and the sensitivity of the receptor.

SuDS Policy 15

Proposals for SuDS must demonstrate that sufficient treatment stages are provided in line with the intended site use and sensitivity of the receptor. Where the required number of treatment stages cannot be provided acceptable justification for derogations sought on the basis of the 'sensitivity' of receptors or not being 'reasonably practicable' must be provided.

3.2.4. Function (Section D)

The non-statutory National Standards refer to the provision of a plan 'which identifies the measures [required] to maintain the designed function' of the SuDS. The LLFAs expectations regarding operation and maintenance are covered by *Policy 18* in section 4.2.

3.3 Design and flood risk

SuDS Policy 16

The design of the SuDS must demonstrate:

- a) The management of water falling directly on the development site by SuDS.
- b) The management of existing and predicted overland flows entering the site from adjacent areas.
- c) The management of runoff produced by impermeable areas on site to prevent increase in flood risk downstream (unless an area is designated for flood management in the Local Flood Risk Management Strategy).

Flooding must not occur:

- a) On any part of the site for a 1 in 30 year rainfall event.
- b) During a 1 in 100 year rainfall event in any part of:
 - a building (including a basement)
 - utility plant susceptible to water (e.g.: pumping station or electrical sub-station)
 - on neighbouring sites during a 1 in 100 year rainfall event

Flows that exceed design criteria must be managed in flood conveyance routes (exceedance routes) that minimise risks to people and property both on and off the site.

Consideration must be given to increase in rainfall intensity due to climate change; increased runoff due to urban creep; and potential for blockage at any of the control structures. These considerations must be factored into the calculations for the 1 in 30 and 1 in 100 year design calculations.

4. Construction, adoption and maintenance

The Local Planning Authority (not the LLFA) will need to be satisfied that the SuDS minimum standards of operation are appropriate and that there are arrangements for their maintenance for the lifetime of the development, this may be achieved through the use of planning conditions and/or planning obligations.

4.1 Construction and adoption

It is important to ensure that all SuDS features are constructed as designed so that they perform as intended are easy to maintain, and have a long design life.

SuDS Policy 17

Construction and design should be based on actual site levels, ensuring that the construction of any other infrastructure and services does not compromise the final construction of the SuDS. SuDS should be provided above ground where possible in line with the SuDS hierarchy. Where it is necessary to provide underground drainage measures, more regular and extensive inspection and maintenance will be required.

The LPA will need to be satisfied that arrangements are in place for the long term maintenance of SuDS. Where SuDS are to be adopted, the LLFA advises that the adoption is subject to the rectification of any defects identified at final completion, full establishment of seeding and planting and a functionality period of 8 weeks, subject to a period of heavy rainfall during this time to demonstrate that the SuDS are fit for purpose and meet all the design requirements.

4.2 Maintenance

SuDS should be easily maintained over the lifetime of the development. They should therefore be designed with maintenance in mind.

The main difference between conventional drainage where gullies, pipes, manholes and oil interceptors are maintained by dedicated drainage management techniques and SuDS, is that this new approach integrates with the landscape at or near the surface and is maintained as part of everyday site care.

All development requires some periodic maintenance including operations such as litter collection and grass cutting. In some cases this will need to be co-ordinated with grounds maintenance being carried out by public bodies or other contractors and should therefore follow a similar frequency or output based specification. Additional maintenance such as dredging and silt removal may also be required periodically.

Maintenance will therefore be a key issue throughout the planning process and information will need to be provided to demonstrate that SuDS are designed with easy and affordable maintenance in mind, as set out below. Further guidance, including examples of simple checklists for the Operation and Maintenance Plan are included on the Building Futures website.

SuDS Policy 18

Proposals for SuDS must include an operation and maintenance document, setting out the following:

- a) A description of the SuDS scheme, how it works and a general explanation of how it should be managed in the future.
- b) The management plan should include a SuDS plan identifying the SuDS techniques used, together with inlets, outlets and control structures.
- c) Inspection and maintenance tasks should be identified and checked to ensure they can be undertaken by standard landscape contractors.
- d) A specification for maintenance actions, based on agreed standards and including frequency or performance criteria needed to achieve the desired outcome should be included.

The Operation and Maintenance Plan should be concise with a maximum 2 page checklist for day-to-day site checks.

5. Further information

For further information on the above requirements and for related matters not covered in this document, including the definition of any terms, please see the SuDS module on Hertfordshire's Building Futures website:

www.hertslink.org/buildingfutures/