

March 2015 – Issue Version 1

# West of England Sustainable Drainage Developer Guide

## Section 2 Annex Bristol Local Sustainable Drainage Design Guidance Note



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West of England Guide – **Section 1**

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# Introduction

**This practice note offers advice on the implementation of policies BCS13 and BCS16 of the Bristol Development Framework Core Strategy relating to sustainable drainage and complements the West of England SuDS Developer.**

Guidance is provided on the information and approach that should be undertaken to arrive at a successful application for new development which should include Sustainable Drainage Systems (SuDS).

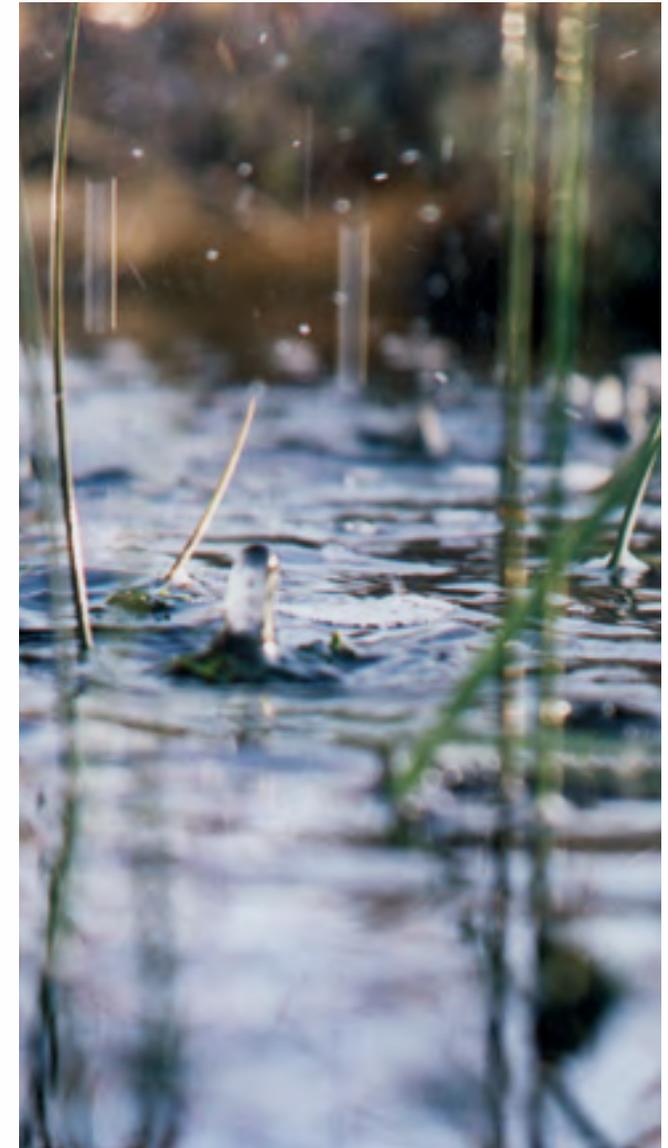
**The key message to be drawn from this interim note is that consideration of SuDS should take place at the start of the design process to ensure drainage systems are effectively delivered.**

Land and property owners and developers undertaking this approach could reduce their financial exposure and the risks of having construction work delayed.

This note shapes understanding of how the planning process should be used to support the delivery of SuDS in the intervening period.

Flooding and drainage issues are an important factor in the success of planning applications for new developments. More information is available on our website at [www.bristol.gov.uk/page/environment/flood-risk-drainage-and-development](http://www.bristol.gov.uk/page/environment/flood-risk-drainage-and-development)

Feedback on this planning guidance note is welcomed through:  
**[development.drainage@bristol.gov.uk](mailto:development.drainage@bristol.gov.uk)**



# Background

## 1.1 Sustainable Drainage Systems (SuDS)

Bristol has been served by piped sewerage systems conveying both waste and surface water from the urban area for centuries.

These conveyance systems concentrate runoff, causing pollution and (or) flooding if their limited capacity is exceeded during storm events. Pressures on the system are wide ranging and include urban growth, the reduction in the extent of permeable surfaces, tighter environmental regulation and the impacts of climate change.

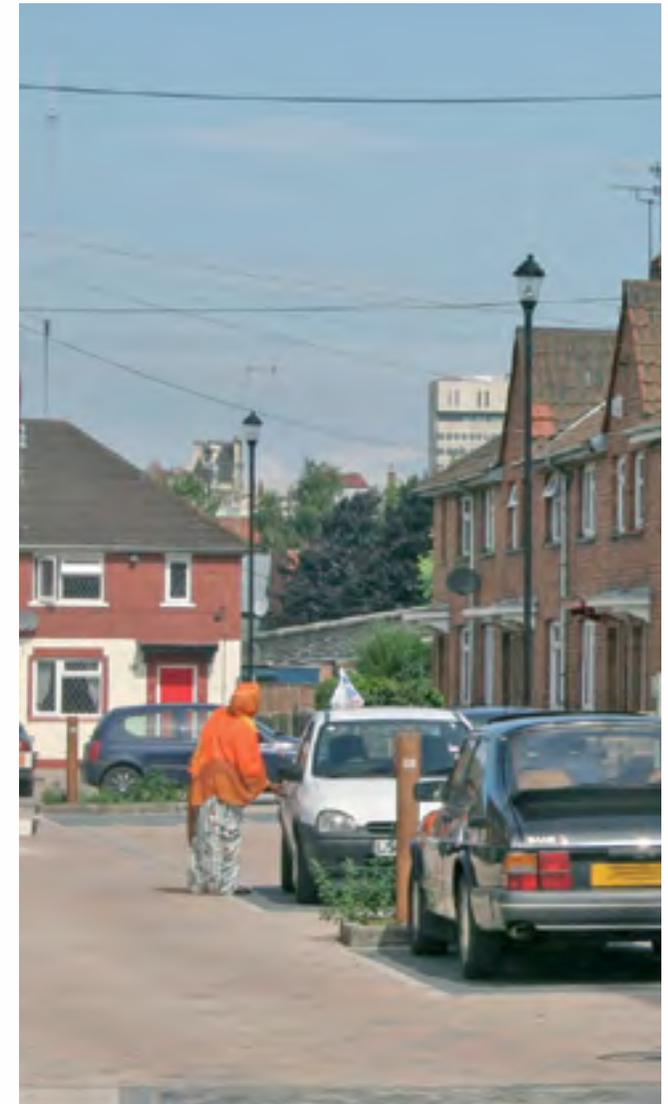
With more than 29,000 properties at risk of surface water flooding and a vision of prosperity and resilience, Bristol City Council (BCC) expects the use of green infrastructure and SuDS to reduce the impact of new development on flooding, in addition to delivering amenity and environment benefits.

SuDS manage runoff at source and follow a hierarchy of discharge to deal with excess runoff. SuDS reduce the impact of new development on flooding, in addition to delivering amenity and environmental benefits.

They balance these objectives by:

- managing surface runoff close to its source.
- managing potential pollution and flooding at its source for the lifetime of the development.
- protecting water resources from pollution (point and diffuse).

Surface water is disposed of by a combination of infiltration, evaporation and gradual release into watercourses or drainage systems. Typical SuDS components include both landscaped features such as green roofs, filter strips, swales, infiltration basins, detention basins, wet ponds and constructed wetlands as well as engineering features such as filter drains, infiltration devices, pervious surfaces (e.g. permeable pavement) and soakaways.



**Permeable paving in The Dings**

## 1.2 National Planning Policy Framework

The Department of Communities and Local Government (DCLG) published the National Planning Policy Framework (NPPF) in March 2012.

Paragraph 100 of the NPPF states how that account should be taken of flooding in the assessment of planning applications:

“Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.”

To ensure development is sustainable, the flood risk posed to and from a new development must be appropriately assessed and managed with allowance for climate change.

Paragraph 103 prioritises the use of of sustainable drainage systems for areas at risk of flooding.

“When determining planning applications, LPAs should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and
- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.”

In December 2014, the Government announced that from 6th April 2015 they will strengthen existing planning policy by making SuDS a material consideration in planning for major development.

We expect local planning policies and decisions on planning applications relating to major development - 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) - to ensure that sustainable drainage systems for the management of run-off are put in place, unless demonstrated to be inappropriate.

Under these arrangements, in considering planning applications, local planning authorities should consult the relevant lead local flood authority on the management of surface water; satisfy themselves that the proposed minimum standards of operation are appropriate and ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development. The sustainable drainage system should be designed to ensure that the maintenance and operation requirements are economically proportionate”.

Minor development with drainage implications would continue to be subject to existing planning policy.

A site-specific flood risk assessment assesses the flood risk to and from a development site. Footnote 20 in the NPPF states one is required for proposals of 1 hectare or greater in Flood Zone 1; all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the Environment Agency); and where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding.

The FRA should, amongst other things, help demonstrate that priority is being given to sustainable drainage systems in areas at risk of flooding.

In Bristol, surface water high risk areas (areas identified as being at high risk to surface water flooding by the Surface Water Management Plan are available on our mapping portal: <http://maps.bristol.gov.uk/pinpoint/?service=localinfo&layer=Surface+water+high+risk+areas>

## 1.3 West of England SuDS Guidance

Guidance sets out standards for the West of England for the design of SuDS. The guidance provides information on the planning, design and delivery of attractive, high quality and well-integrated SuDS solutions and the multiple benefits to the environment and community.

The guide is structured around the non-statutory Technical Standards for Sustainable Drainage Systems in conjunction with the National Planning Policy Framework and Planning Practice Guidance.

The guidance includes a chapter focused on the drivers, constraints, opportunities and requirements specific to Bristol.

### Proof of Concept

The guidance recommends establishing a 'proof of concept' for drainage at an early pre-application stage. Development proposals progressed without undertaking this early pre application consultation stage risk the possibility that the proposed layout would not be capable of being drained in a sustainable way.

Section 1 outlines that the pre-application 'proof of concept' stage should involve the preparation of:

- A location plan
- A proof of concept plan (similar to a constraints plan) identifying existing natural flow paths, proposed blue corridors, discharge restrictions, infiltration and contamination potential, maintenance restrictions and access issues; and
- An initial concept masterplan could be prepared including the surface water drainage framework

The 'proof of concept' stage could de-risk sites and pre-empt or reduce the chance of issues that could later arise and conflict with the ability of development proposals to incorporate SuDS.

An example Proof of Concept is included in Section 1.

### Sustainable Drainage Strategy (surface water)

A Sustainable Drainage Strategy (surface water) is a Local List Planning Application Requirement. It should include the detailed design, management and maintenance of surface water management systems including Sustainable Drainage Systems (SuDS). Section 1 provides a checklist.

## 1.4 Bristol Local Plan SuDS Policies

We advocate the use of green infrastructure and SuDS to reduce the drainage impact of new developments on flooding, build our resilience, whilst delivering amenity and environmental benefits.

The following policy requirements are identified within the Bristol Local Plan<sup>1</sup>:

Planning Policy BCS13 Climate Change sets out that development should adapt to climate change through measures to conserve water supplies and minimise the risk and impact of flooding.

Planning Policy BCS16 Flood Risk and Water Management identifies that development in Bristol will follow a sequential approach to flood risk management giving priority to development sites with the lowest risk of flooding.

BCS16 highlights that developments in areas at risk of flooding are expected to be resilient to flooding and incorporate sensitively designed mitigation to ensure that development remains safe over its lifetime.

Planning Policy BCS16 states:

*“All development will be expected to*

*incorporate water management measures to reduce surface water run-off and ensure that it does not increase flood risk elsewhere. This should include the use of SuDS.”*

Planning Policy BCS23 Pollution states:

*“Development should be sited and designed to avoid adversely impacting upon:*

- *Environmental amenity, biodiversity of the surrounding area by reason of fumes, dust, noise, vibration, smell, light or other forms of air, land, water pollution, or creating exposure to contaminated land.*
- *The quality of underground or surface water bodies.”*

Planning Policy BCS23 states:

*“Water quality and associated habitat of surface watercourses should be preserved or enhanced.”*

The policies of the Site Allocations & Development Management document (adopted in July 2014) are also relevant. DM15 and DM16 set out the requirements for provision of new public open spaces; including a requirement that the spaces are provided to be as multifunctional as practicable. Paragraph 2.16.8 of DM16 is explicit in its support for open space which is also designed to have a SuDS

function.

Policy DM27 Layout and Form sets out that the layout of streets, open spaces, development blocks, buildings and landscape should contribute to the creation of sustainable places. The policy identifies that land should be used effectively and take account of local climate conditions.

Specifically Policy DM27 states:

*“Proposals should not prejudice the existing and future development potential of adjoining sites or the potential for the area to achieve a coherent, interconnected and integrated built form.”*

In addition Policy DM27 states that:

*“Development will be expected to: Incorporate existing and new green infrastructure to reinforce the character of streets and spaces.”*

Policy DM28 Public Realm highlights that development should create or contribute to a safe, attractive, high quality, inclusive and legible public realm.

<sup>1</sup> [www.bristol.gov.uk/page/planning-and-building-regulations/bristol-local-plan](http://www.bristol.gov.uk/page/planning-and-building-regulations/bristol-local-plan)

Policy DM28 states that:

*“Development will be expected to:*

*Where they are proposed or required by other policies, integrate sustainable drainage systems, natural and historic features and any planting into the design of the public realm.”*

Policy DM29 Design of New Buildings sets out that new buildings should be designed to a high standard of quality, responding appropriately to their importance and reflecting their function and role in relation to the public realm.

Policy DM29 states that:

*“Proposals for new buildings will be expected to:*

*Incorporate opportunities for green infrastructure such as green roofs, green walls and green decks that may be accessed and used where appropriate.”*

SuDS are considered in the evidence base for the Local Plan; in the Strategic Flood Risk Assessment (SFRA), the Surface Water Management Plan, and the emerging Local Flood Risk Management Strategy.

The SFRA aids the site selection process identifying information on the capacity for the use of SuDS in Bristol. The SFRA

is a living document that is updated when new information becomes available, the updates can reflect changes in flood modelling or information from site specific flood risk assessments. The evidence supporting the Strategic Flood Risk Assessment is used by the planning authority to inform their judgement both on the appropriateness of the proposed development and on the suitability of the proposed drainage system.

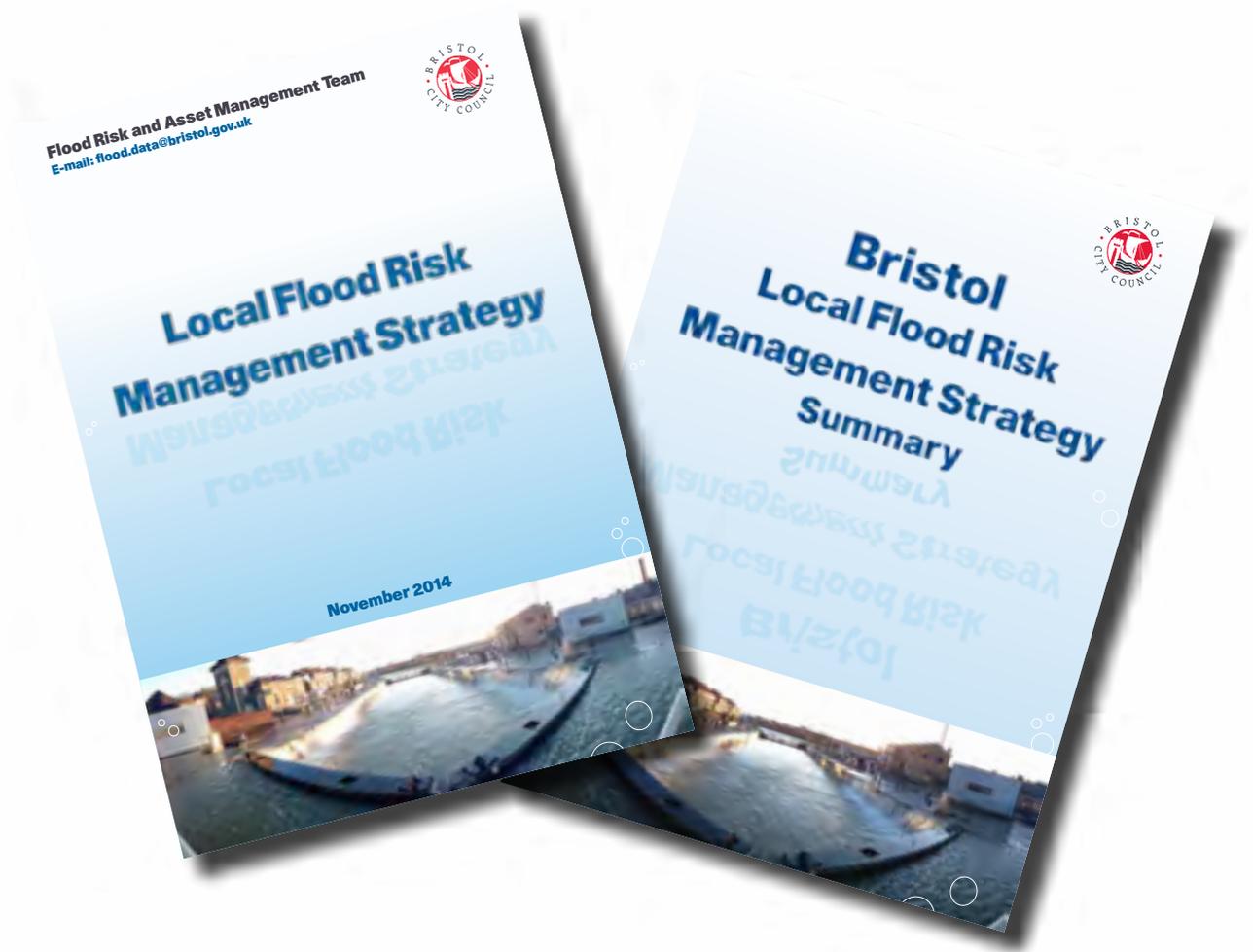
## 1.5 Local Flood Risk Management Strategy

Bristol's Local Flood Risk Management Strategy<sup>2</sup> sets out the vision and strategy for managing the risk of flooding now and in the future. The strategy aims to engage with local communities and communicate ways in which they can work with the City Council to reduce flooding in Bristol. The strategy was adopted in November 2014.

*This planning note aligns with the strategy's objective to 'Promote sustainable development that seeks to reduce flood risk and includes a consideration for climate change'. Applicable measures in the strategy that apply include:*

- *'Inform planning policy to ensure flood risk to new and existing developments is effectively identified and future land use is appropriately considered'*
- *'Ensure all new developments are drained sustainably'.*

*The strategy specifically identified actions to 'implement an interim approach including production of local SuDS guidance, requirements and associated Planning Guidance Note.'*



<sup>2</sup> [www.bristol.gov.uk/page/environment/local-flood-risk-strategy-investigations-and-assessment](http://www.bristol.gov.uk/page/environment/local-flood-risk-strategy-investigations-and-assessment)

# SuDS Design & Planning Process

**Surface water drainage is a material consideration when determining planning applications.** In the Bristol City Council administrative area applicants should be in accordance with planning policy BCS16 and demonstrate how SuDS have been incorporated into developments proposals.

Whether or not there is need to incorporate SuDS solutions into a planning application will vary and be dependent on the type and scale of development being proposed. Developers should consider the context of their emerging proposal and whether or not it would influence the drainage regime of the site and its surroundings.

If works to the land you are seeking to develop will affect the ability of the land to absorb rainwater and have a material effect on the drainage regime of the site and its immediate surroundings then it is likely that early consideration should be given to a SuDS solution. We would recommend early contact with the planning authority to establish whether a SuDS solution needs to be considered for the works proposed.

Types of work that may change the drainage regime of the site could include:

Type of work	Possible change to drainage regime
Building operations (e.g. construction, demolition & re-development)	Development involving building operations could change the topography or surface water drainage regime of an area.
Temporary use operations	Planning applications for temporary use could have significant yet temporary drainage impacts for the lifetime of the permission.
Engineering operations (e.g. groundworks)	Engineering works that could lead to alterations to the surface water drainage regime of an area.
Storage operations	Open storage that could lead to alterations to the surface water drainage regime of an area.
Change of use operations	Change of use development or refurbishment of existing buildings may have no surface water drainage implications and therefore there will be no need address SuDS matters as part of the planning application. However, some change of use applications could potentially result in alterations to the surface drainage regime of a site.

## 2.1 Pre-application Engagement

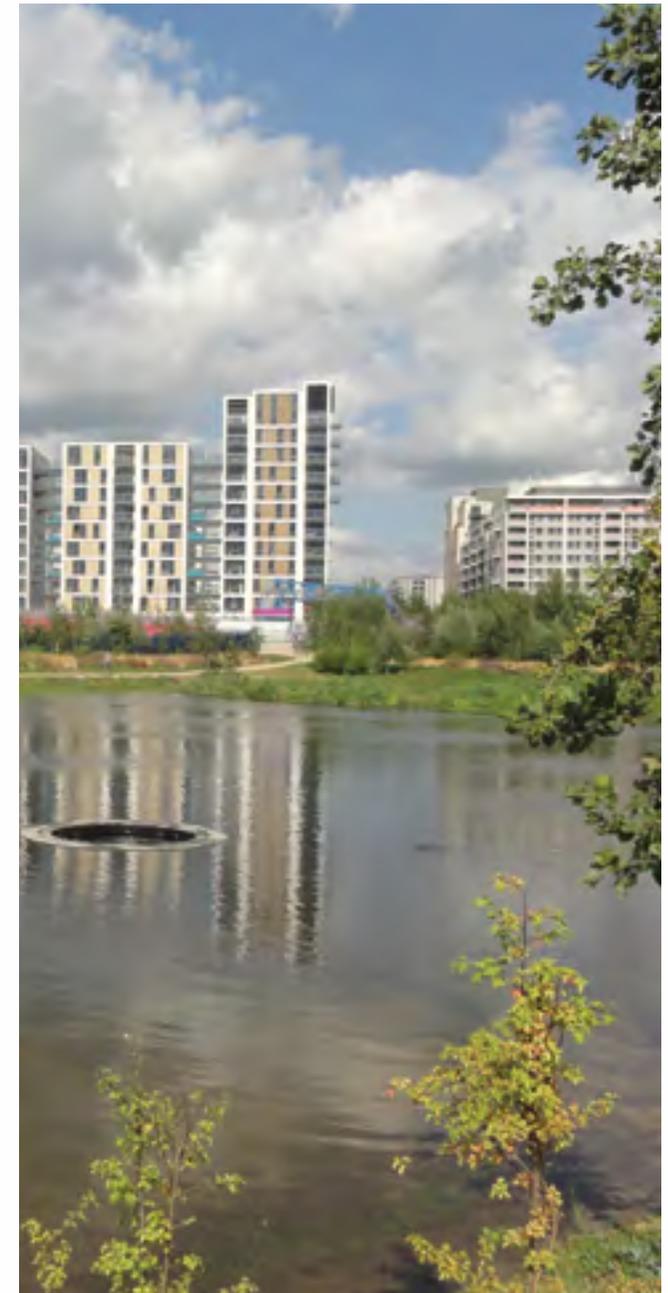
Drainage related issues, such as discharge routes or maintenance regimes should be considered from the earliest stage and directly integrated into the overall site layout and design.

Developers are recommended to undertake pre-application consultation with the LPA for the purposes of identifying what supporting information would be appropriate to their emerging development proposals.

Drainage solutions should be designed in the context of specific site conditions and the nature of the proposed development. Therefore, initial identification and consideration of site specific information such as the hydrology of the site, land and soil condition is important.

Pre-application discussions between the LPA, developers and others such as statutory consultees are strongly recommended as they are expected to minimise delay in the planning approval process and ensure that developers fully understand what is expected of them. Such discussions can occur before land purchase.

In alignment with the draft West of England SuDS Guidance developers should provide a ‘proof of concept’ demonstrating how principles for SuDS will be incorporated into design proposals and that discharges could take place when the schemes reaches the detailed design stages.



## 2.2 Outline Planning Applications

Outline planning applications are generally used to find out whether or not a detailed scheme would be likely to obtain approval from the planning authority, before substantial costs are incurred. This type of application allows for fewer details to be submitted and for full details such as the drainage design to be agreed following a reserved matters application at a later stage.

Drainage systems designed as an item in a reserved matters application will have to comply with the layout, landscaping, scale and access arrangements fixed at the outline stage. These self-imposed constraints could result in major challenges to the design and delivery of a cost-effective SuDS solution.

An outline planning application should give a level of consideration to SuDS and describe how they have been incorporated into proposals at the concept design stage to align with best practice for SuDS. The information and level of consideration for SuDS should be proportional to the scale and complexity of the proposed development and informed by pre-application discussions on the scheme. Consideration is needed on how the SuDS are intended to be maintained for the lifetime of the development.

A Sustainable Drainage Strategy (surface water) is a Local List Planning Application Requirement. It is required for all major development in Bristol. Section 1 provides a checklist.

BCC's Climate Change & Sustainability Practice Note (2012)<sup>3</sup> sets out advice on the implementation of policies relating to climate change and planning application submission requirements in line with the Core Strategy.

All planning applications for new residential, mixed use, commercial, retail, community or leisure uses to Bristol City Council must be accompanied by a Sustainability Statement for validation with a number of exceptions<sup>4</sup>. The Climate Change & Sustainability practice note identifies key principles that apply to all sustainability statements and states that “failure to convincingly address each of these issues will result in a refusal of planning permission”.

The following key principal applies to Sustainability Statements and the water management matters of policy BCS16:

- *“Sustainability Statements should set out what possible measures have been explored, which measures have been adopted and integrated into the design and, where relevant, why it was not feasible to incorporate certain measures into the proposed development.”*

<sup>3</sup> Bristol City Council, Climate Change and Sustainability Practice Note, (December 2014)

<sup>4</sup> See our local list of planning application requirements [www.bristol.gov.uk/page/planning-and-building-regulations/planning-applications-requirements](http://www.bristol.gov.uk/page/planning-and-building-regulations/planning-applications-requirements)

## 2.3 Full Planning Applications

For full planning and reserved matters applications detailed design of proposed SuDS should be provided in support of the proposed development.

At the detailed design stage, further site investigations should be conducted providing additional information of site specific ground conditions. The findings of investigations should be used in conjunction with the Sustainable Drainage Strategy (surface water) to develop the detailed design.

A properly-functioning SuDS should be low-tech and involve a defined minimum level of maintenance to which the SuDS must be maintained. The responsibilities for its ownership and future maintenance should be identified during the detailed design stage and presented as part of the planning application submission.



## 2.4 Planning Obligations Conditions & Maintenance of SuDS

SuDS need to be inspected and maintained to ensure efficient operation and prevent failures. Many SuDS features are to be maintained through landscape maintenance techniques. BCC may use planning conditions or legal agreements to secure implementation and maintenance of SuDS to ensure they remain effective for the lifetime of the development.

SuDS are unlikely to be handed over for maintenance before parties are confident that the scheme is constructed and performs as designed. An example of the wording for planning conditions BCC may choose to adapt and impose on an application has been extracted from BCC Conditions & Reasons and Advices document<sup>5</sup> and shown in the table below. In some instances bespoke conditions may be required.

<b>B. Pre commencement conditions – includes cases where details need to be submitted and approved before work starts and where the details to be submitted and approved relate to a specific element of work</b>	
B24a	<b>Sustainable Drainage System (SuDS)</b>
Text	The development hereby approved shall not commence until a Sustainable Drainage Strategy and associated detailed design, management and maintenance plan of surface water drainage for the site using SuDS methods has been submitted to and approved in writing by the Local Planning Authority. The approved drainage system shall be implemented in accordance with the approved Sustainable Drainage Strategy prior to the use of the building commencing and maintained thereafter for the lifetime of the development.
Reason	To prevent the increased risk of flooding by ensuring the provision of a satisfactory means of surface water disposal and that the principles of sustainable drainage are incorporated into this proposal and maintained for the lifetime of the proposal.
<b>C. Pre occupation – works to be done and/or documents to be submitted and approved before occupation/commencement of the use</b>	
C15a	<b>Completion and Maintenance of Sustainable Urban Drainage – Shown on Approved Plans</b>
Text	No building or use hereby permitted shall be occupied or the use commenced until the sustainable urban drainage scheme for this site has been completed in accordance with the submitted details. The sustainable urban drainage scheme shall be managed and maintained thereafter in accordance with the agreed management and maintenance plan.
Reason	To prevent the increased risk of flooding by ensuring the provision of a satisfactory means of surface water disposal and that the principles of sustainable drainage are incorporated into this proposal and maintained for the lifetime of the proposal.

<sup>5</sup> Conditions & Reasons and Advices, Bristol City Council Development Management, November 2014  
[www.bristol.gov.uk/page/planning-and-building-regulations/planning-decision-notice](http://www.bristol.gov.uk/page/planning-and-building-regulations/planning-decision-notice)



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