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Wessex Water SuDS Adoption Requirements

Wessex Water SuDS Guidance for adoption under the Sewerage Sector Guidance 2020

FEBRUARY 2021 PUBLICATION

Calm
ENGINEERING

60 Dovers Park, BATHFORD, BA1 7UD calmengineering@outlook.com

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Matthew Wheeldon	Director of Assets and Compliance
Nigel Martin	Head of Developer Services
Gillian Sanders	Planning Liaison Manager
Mike Gale	Development Engineering Manager
Vicky Farwig	Flood Risk Co-ordinator
David Martin	Sewerage Planning Manager
Nick Routh	Head of Estates
Andy Nicholson	Asset Data Manager
Kirsty Scarlett	Head of Community Engagement
Nathan Fionda	Principal Network Modeller
Julian Schlosser	Commercial Management & Capital Delivery Manager
Caroline Murray	SuDS Implementation Project Manager

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This January 2021 edition follows consultation with the Lead Local Flood Authorities (LLFA) within the Wessex Area through workshops and written feedback/review. Paul Schaffer (CIRIA) also kindly gave permission for use of figures and tables from the **C753: The SuDS Manual** within this edition and Simon Bunn from the Somerset Drainage Boards Consortium provided valuable feedback.

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1. Introduction

In current planning policy in England, all **'Major development'** requires sustainable drainage systems (SuDS) for surface water. Schedule 3 of the Flood and Water Management Act 2010, which was not enacted in England, required all new development of more than one building and/or where the construction area is 100m² or more, to provide sustainable drainage systems (SuDS) for surface water.

On 25th October 2019, the **Sewerage Sector Guidance** was published. It was implemented on 1st April 2020. This enables Wessex Water to adopt SuDS features as part of a surface water sewer network for **all developments** of more than one building and/or where the construction area is 100m² or more. SuDS schemes will be required to have full S104 technical approval and full planning approval before construction work begins. All drainage design requirements for the site (discharge rates, attenuation, climate change etc.) must be agreed, in consultation with the Local Planning Authority/ LLFA, prior to the submission of a formal S104 application.

Wessex Water will remain a consultee in the town and country planning approval process and will work in collaboration with the Local Planning Authority, LLFA and other relevant Flood Risk Management and Drainage Authorities when reviewing sites that might be put forward for adoption. This relies on early consultation with Wessex Water, together with the Local Planning Authority and LLFA, to ensure that design parameters can be set prior to any site layout or masterplan design being developed. This ensures that surface water drainage is considered at the earliest opportunity to maximise the potential for well-designed SuDS schemes.

The **Sewerage Sector Guidance** and adoption agreements for surface water drainage currently apply only to new developments and are not retrospective with the following exceptions:

- where a validated planning application has been received but not determined by the 1st April 2020;
- where the planning permission was granted before the 1st April 2020 but subject to condition, and an application for approval of the condition is made after 1st April 2020; or
- where the planning permission was granted before the 1st April 2020 with drainage matters reserved, and an application for approval of reserved matters is made after 1st April 2020.

2. Purpose of this Guide

This Guide is for use by any organisations involved in the planning, design, construction and operation of Sustainable Drainage Systems (SuDS) intended for adoption by Wessex Water under an Agreement made in accordance with Section 104 of the Water Industry Act 1991. This only applies to the adoption of assets predominantly used for drainage from buildings or paved areas belonging to buildings (refer to **3.3: Key Requirements** and *Figure 4*).

The **Sewerage Sector Guidance** gives guidance, for the first time, on the design and construction of SuDS that may be considered for adoption by Water Companies. The **Wessex Water SuDS Adoption Requirements** seeks to provide a framework and a set of standards for developers who may wish to pursue adoption agreements with Wessex Water under the new Sewerage Sector Guidance (SSG). It is not meant as a replacement to the SSG and does not negate the need to follow local LPA/ LLFA standards and guidance.

Developers will need to demonstrate compliance with these standards when submitting planning applications. For major developments, where a drainage strategy document may be required as part of a local validation requirement, this must demonstrate how these standards have been met in the site design.

The LLFAs within the Wessex Area, (refer to the map in *Figure 1*) have their own guidance on sustainable drainage and these must be considered in any development proposal put forward for planning. The LLFAs, Internal Drainage Boards and Highway Authorities may have specific requirements with regards to design criteria for discharge rates, attenuation requirements, routes of discharge etc. It is the responsibility of developers to incorporate these requirements within any scheme presented to Wessex Water for Adoption (**SSG C3.11**) and prove that these requirements have been agreed with the relevant authority.

Early pre-application engagement will be necessary to ensure that drainage is considered at the earliest opportunity in the design layout. This will maximise the opportunity for a more integrated multi-functional approach to SuDS (**SSG C5.1**). Historically, drainage proposals have been vague at the outset of the planning approvals process and (largely due to pressures and complexities of site layout) are often not defined by developers until too late in the process. The consequence is that the use of SuDS is often not possible due to the fixing of site details for other reasons – layout of houses, roads etc.

SuDS need to be co-designed with the other surface features of a site. In addition, it means that reliable estimates of maintenance costs and any commuted sums cannot be determined early in the design and planning process due to the lack of detail about the SuDS. As a result, Wessex Water will only accept applications that have been through this initial pre-application phase (refer to Stage 1).

Wessex Water has developed a set of **GUIDING PRINCIPLES** which draw out the key principles of the **CIRIA SuDS Manual**, upon which the **SSG – Part C** is based. Developers will need to demonstrate how these have been incorporated into the design or provide a strong rationale for any departure from these principles.

This guidance does not currently cover the replacement of traditional drainage systems with SuDS solutions at existing development sites (SuDS retrofit). However, the design of retrofit components must follow the same principles and standards.

This Guidance is a 'working draft' and will be developed and adjusted with feedback from users of the guide. Wessex Water welcome all feedback to inform this process. There is a comment form provided in **Appendix A**, which you can send to planning.liaison@wessexwater.co.uk (bookmarked as '**SSG SuDS Adoption Feedback**').

3. Introduction to SuDS

SuDS mimic nature and typically manage rainfall close to where it falls. SuDS can be designed to transport (convey) surface water, slow runoff down (attenuate) before it enters watercourses, provide areas to store water in natural contours and allow water to soak (infiltrate) into the ground or evaporate from surface water and/or from vegetation (known as evapotranspiration) refer *Figure 2*.

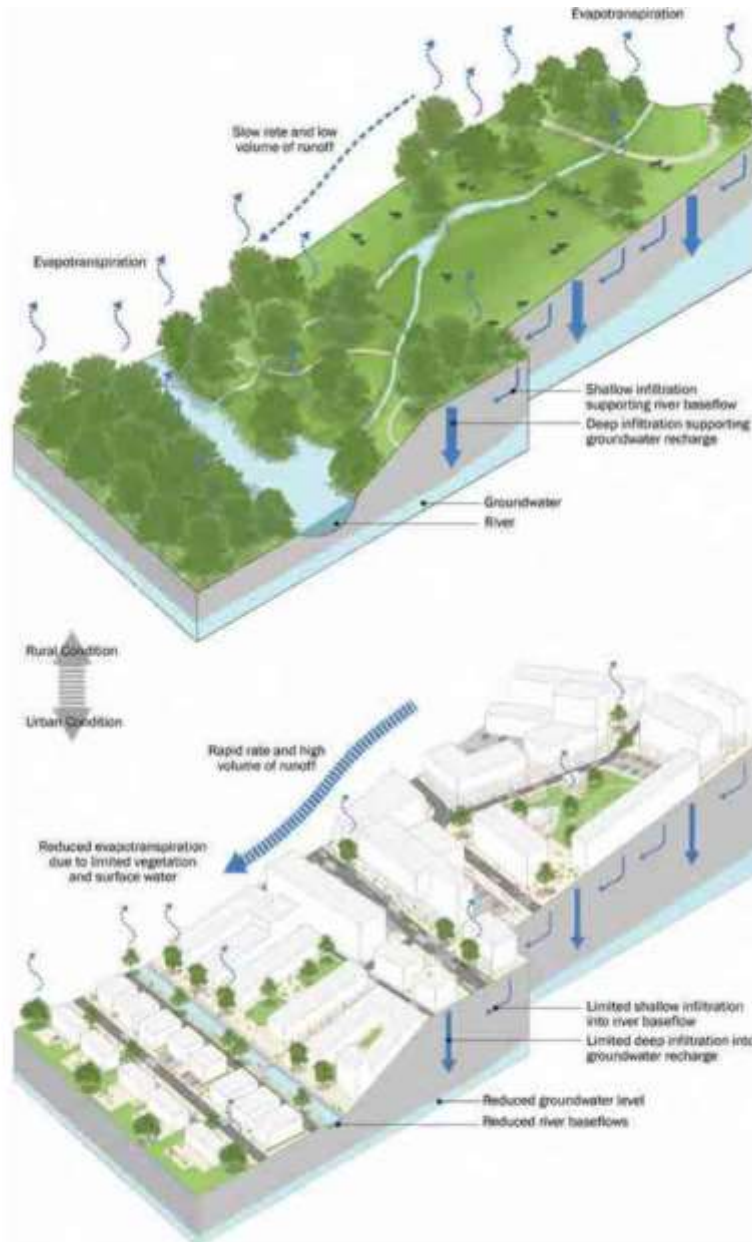


Figure 2: Impacts of Urbanisation on a Catchment (C753:1.2)

The SuDS philosophy is to replicate, as closely as possible, the natural drainage from a site before development. SuDS is designed within the opportunities and constraints of a site to deliver the most benefits for water quantity, quality, amenity and biodiversity.

These '4 pillars' of a sustainable drainage system must be given equal weight through the design process to achieve the maximum possible benefits (refer *Figure 3*).

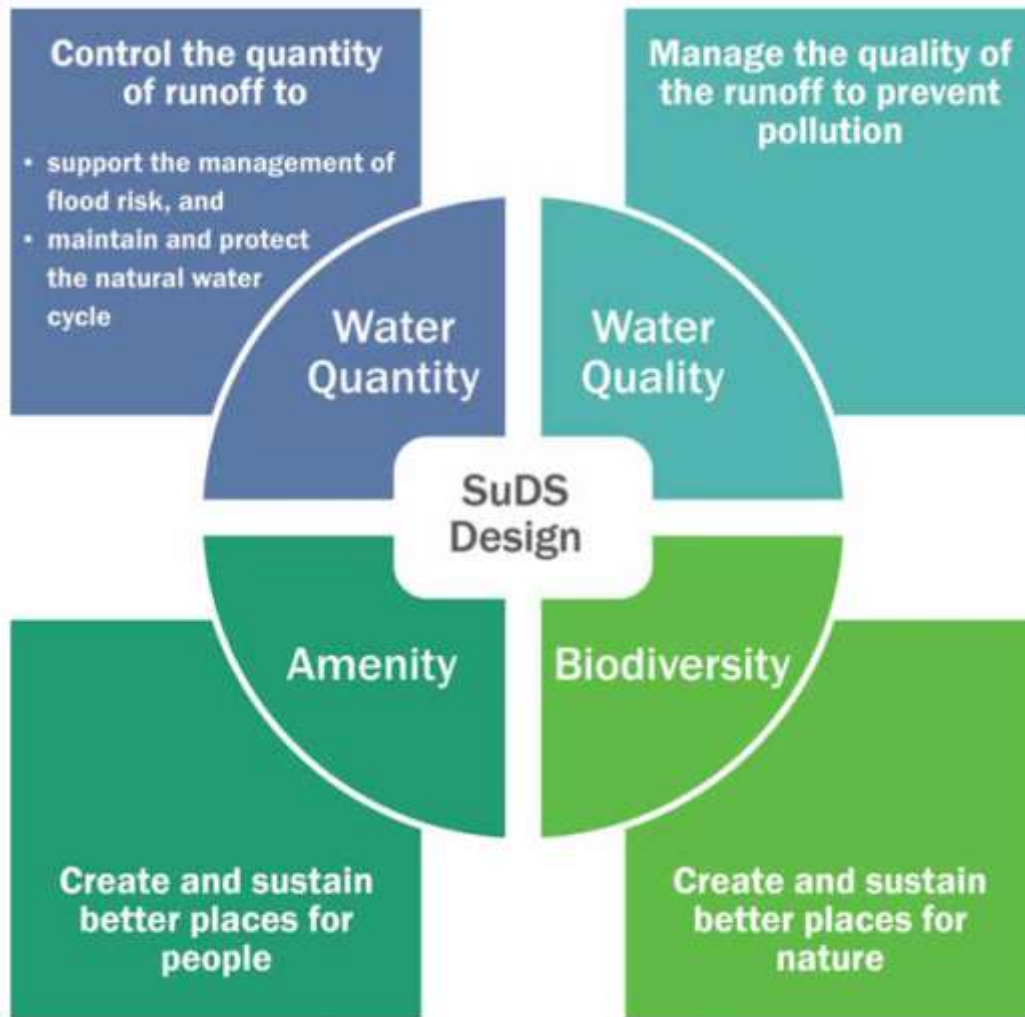


Figure 3: The 4 Pillars of SuDS design (C753:2.1)

Surface water is a valuable resource and this must be reflected in the way it is managed. It must be considered from the beginning of the development process and throughout, influencing the design and layout of public open space, transport networks, housing and streetscapes etc.

Sustainable drainage includes a variety of components, each having different approaches to managing flows, volumes, water quality and providing amenity and biodiversity benefits.

SuDS are not just traditional soakaways, ponds or wetlands, but are a suite of components working in different ways. The [susdrain](http://www.susdrain.org) website provides an overview of the wide variety of SuDS components for review. When selecting SuDS components, the site opportunities and constraints need to be fully considered, it is the schemes that provide a combination of approaches that provide the best results and this is what Wessex Water will be looking for in the adoption of SuDS Schemes.

Wessex Water will not accept schemes that do not follow the requirements set out within this document and the associated checklists. These require careful consideration of all of the above components of a balanced and well-designed SuDS scheme.

3.1 Key Reference Documents and Guidance

The documents and guidance listed below should be used in conjunction with this guidance to plan, design and construct SuDS:

• The National Planning Policy Framework (NPPF)
• Non-Statutory Technical Standards for Sustainable Drainage & the supporting Practice Guidance
• Planning Practice Guidance
• Sewerage Sector Guidance (SSG) – Appendix B, C, D, E, F and I
• Local Plans, Policies, Strategies and Guidance
• Building Regulations 2010 Part H
• BS EN 16933-2 Drain and sewer systems outside buildings.
• BRE Digest 365 Soakaway Design
• Building for Life 12 (Design Council)
CIRIA Industry Best Practice Guidance
CIRIA Report C635 Designing for exceedance in urban design – good practice
CIRIA Report C723 Water sensitive urban design in the UK
CIRIA Report C753 SuDS Manual
CIRIA Report C737 Structural and Geotechnical Design of Modular Geocellular Drainage Systems
CIRIA Report C698 Site handbook for the construction of SUDS
CIRIA Report C768 Guidance on the construction of SuDS
CIRIA Report C574 Engineering in Chalk
CIRIA Report C625 Model Agreements for long term maintenance

3.2 Roles and Responsibilities (refer to C1 of SSG)

The local planning authority (LPA) has a role in approving the design of any surface water system. In this role they are required to consult with others, including **Lead Local Flood Authority** (LLFA) and in some circumstances the **Environment Agency** (EA) and any **Internal Drainage Board** (IDB).

The LLFA is the statutory consultee for **MAJOR** developments with surface water drainage. Local arrangements may exist between the LPA and the LLFA with regard to providing advice/comments on **MINOR** development.

The Environment Agency is the statutory consultee (as stated in the **Development Management Procedure Order 2015**) for:

Development involving the carrying out of works or operations in the bed of, or within 20 metres of the top of a bank of, a main river which has been notified to the local planning authority by the Environment Agency as a main river for the purposes of this provision Development, other than minor development, which is to be carried out on land:

(i) in an area within Flood Zone 2 or Flood Zone 3; or

(ii) in an area within Flood Zone 1 which has critical drainage problems and which has been notified to the local planning authority by the Environment Agency

LLFA's will also consult with the Environment Agency with regards to the risks to groundwater and any potential contamination from proposed infiltration techniques (i.e., Source Protection Zones etc.).

If discharging to a drainage system maintained/operated by others (IDBs, highway authority, LLFA, Canals and River Trust, other landowners) and/or crossing third party land to discharge to a drainage system off-site, Wessex Water will need to see **written evidence** of consultation and the acceptability of any discharge to their system. Additionally, Wessex Water will need to see an indication of the proposed ownership of assets across the site, whether the developer is to retain ownership or have parts of the system adopted under a S104 agreement.

Where any local authority requirements conflict with this guidance or Part C of the SSG, this must be brought to the attention of Wessex Water at the earliest opportunity (SSG C3.11). We therefore advise that developers **engage early** with the local authority, the LLFA and Wessex Water to agree a basis for the drainage strategy and maintenance plan prior to making any planning or S104 application.

A copy of the planning approval for the site must subsequently be provided to Wessex Water when available. In addition, any **Land Drainage Consents** and/or EA **Flood Defence Permits** that may be required as part of the proposed drainage strategy must be provided to Wessex Water prior to entering an Adoption Agreement (Stage 3 of the process).

Wessex Water have developed infiltration reduction plans for areas at risk of groundwater infiltration into sewers and drains. We have produced maps which show infiltration consultation areas. Higher risk areas require consultation for all types of development and lower risk areas require consultation for developments of 10 or more properties. The maps can be viewed via our Drainage and Wastewater Management Plans portal [here](#).

3.3 Key Requirements for Adoption of SuDS under SSG (refer to C3 of SSG)

ADOPTABLE	UNADOPTABLE
<p>A component is potentially adoptable as a sewer (or lateral drain) if all the following apply:</p> <ol style="list-style-type: none"> 1. It is predominantly constructed for the drainage of buildings and yards appurtenant to buildings; 2. It services more than one building and associated yards; 3. It has a channel (a depression between banks or ridges with a definite boundary); 4. It conveys and returns flows to a sewer or to a surface water body or to groundwater; 5. It has an effective point of discharge which must have lawful authority to discharge into a watercourse or other water body or onto or into land. <p>N.B: The system may allow for some infiltration and still be a sewer</p> <p>As with conventional piped systems, the right to discharge must be secured by the developer and transferred to the water company on adoption.</p> <p>The term 'predominantly' is defined as 75%. i.e. if 75% of more of the areas draining to the system are from buildings</p>	<p>The following components are excluded:</p> <ol style="list-style-type: none"> 1. Watercourses as defined in law (these include rivers, streams and can include some ditches); 2. Components built predominantly for the drainage of surface water from highways or for the drainage of land; 3. Components built to manage groundwater; 4. Components which are part of the structure of a building or yard (e.g. green roof, permeable driveway or guttering and rainwater pipes attached to the building); 5. Components which form part of a private curtilage (i.e. individual soakaways); 6. Components which are an integral part of the structure of a highway (e.g. a permeable street or the channel formed by the kerb of a conventional road or a channel formed by a depression in the centre of a street). <p>The term 'predominantly' is defined as 75%. i.e. if 75% or more of the areas draining to the system are from highways or land, watercourses and groundwater then this is unadoptable.</p>

Figure 4: Requirements for Adoption of SuDS (Refer to SSG A6 for definitions of terms)

Wessex Water is not obliged to accept runoff from newly constructed streets into the public sewer system. Where a developer wishes to connect drainage from streets to a surface water sewer, they must discuss this with Wessex Water as soon as possible as consent will be required in advance (refer **SSG A8**).

Wessex Water have no duty to accept land drainage runoff flows from natural watercourses or groundwater to the public sewer system, and this is not normally permitted (**SSG A9, C4.4** and **C6.1.4**). Interception storage must be provided to prevent runoff from the first 5mm of rainfall from polluting the surface water system.

3.4 Adoptable SuDS Features

The table below shows the list of components that can be adopted, the key design criteria expected for each feature and the limits of adoption, in terms of the extent. These should be read in conjunction with the corresponding Checklists (as referenced in the table).

DESIGN CRITERIA – ALL INFILTRATION SYSTEMS		REFERENCE
INFILTRATION SYSTEMS*	<ul style="list-style-type: none"> All systems must have effective upstream pre-treatment to remove sediment and silt. Preferably multiple pre-treatment. >1m between base of infiltration system and maximum likely groundwater level, taking account of seasonal variations. The bottom should be flat to a maximum level difference of 10mm in 3m. Infiltration systems should not be used to discharge any untreated drainage from construction sites. Minimum Infiltration rates: 1 x 10⁻⁵ m/s 	<p>SSG C7.9</p> <p>C753:</p> <ul style="list-style-type: none"> Chapter 25 (Hydraulic Design) Chapter 31 (Construction) Section 13.11.1 Checklist B.18 <p>Checklist WW2.0**</p>

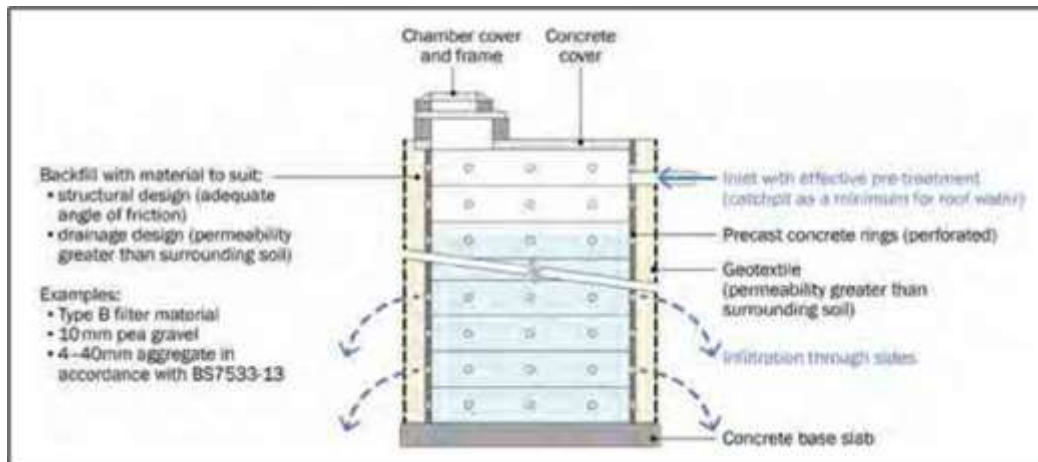


Figure 5: Soakaway details incl. a pre-treatment system (C753: 13.1)

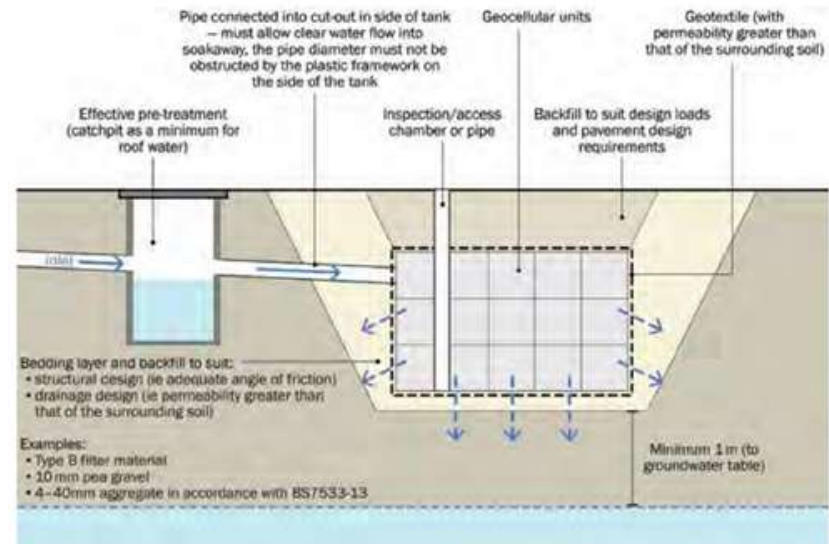
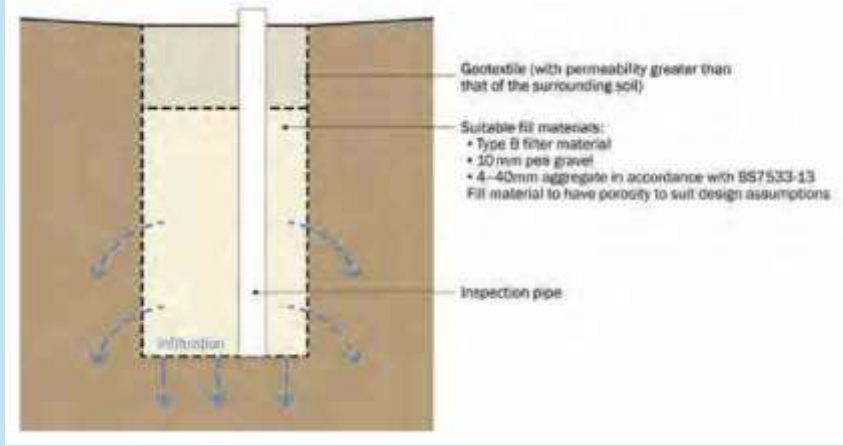


Figure 6: Soakaway details- Concrete ring soakaway (C753:13.2)

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
FEATURE - INFILTRATION SYSTEMS*	<p>Soakaways*</p> <p>Access provision to include consideration of access for removal and replacement of any fill material</p> <p>Use of a suitable geotextile to surround</p> <p>Access provision for inspection as well as for removal and replacement of fill material</p> <p>Should be sited a minimum of 5 m away from any structure or boundary. In chalk, or any other fill material prone to instability, this shall be increased to 10m.</p> <p>Where infiltration is proposed within 5m of foundations of any buildings or other structures, details of the foundation designs shall be provided as part of this submission of information (SSG C7.1.2.2)</p> <p>Should be sized to contain at least the 1 in 10 year rainfall event and ensure that, unless as area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site during the 1 in 100 year event.</p> <p>Should discharge from full to half volume within 24 hours in readiness for subsequent storm inflow</p> <p>Must NOT be constructed in areas at risk of any type of flooding (river, surface water, groundwater, sewer, reservoirs or canals).</p>	<ul style="list-style-type: none"> • MUST be fed by an upstream sewer or lateral drain that is also proposed for adoption. • Whole structures up to external face • External rubble fill/membrane 	<p>SSG C7.10</p> <p>C753:</p> <ul style="list-style-type: none"> • Chapter 13 • Fig 13.1 and 13.2 <p>Chapter 21 (Geocellular) Section 30.5</p> <p>BRE Digest 365</p> <p>The Building Regulations (Part H)</p> <p>C574: Engineering in Chalk</p>

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
FEATURE - INFILTRATION SYSTEMS*	<p>Infiltration trenches*</p> <p>Usually filled with permeable granular material</p> <p>These should be designed with a perforated pipe along whole length</p> <p>Mainly infiltrate to ground but with a high-level pipe to act as an overflow</p> <p>Adequate access chambers shall be provided to enable inspection and maintenance</p> <p>Complete copy of basins Design Checklist</p>	<ul style="list-style-type: none"> • Whole structure up to external face • External rubble fill/ membrane 	<p>SSG C7.11</p> <p>C753:</p> <ul style="list-style-type: none"> • Chapter 13 • Fig 13.3 • Checklist B.19 <p>Checklist WW2.3**</p>
		 <p style="text-align: center;">Figure 7: Infiltration Trench (from C753: 13.3)</p>	
	<p>Infiltration basins*</p> <p>Flat bottomed shallow depression to allow pollutants to settle out (maximum level difference of 10mm in 3m)</p> <p>Side Slopes <1 in 3 slope</p> <p>Infiltration Basins should be provided with:</p> <ul style="list-style-type: none"> • an Inlet flow spreader (preferably using a widening grass channel inlet). • Level base with slight fall of 1/100 to 1/200 to ensure even water distribution. • A risk assessment on the frequency and rate of flooding to a range of inundation depths should be undertaken (public safety) • Ensure adequate safe access for maintenance 		<p>SSG C7.12</p> <p>C753:</p> <ul style="list-style-type: none"> • Chapter 13 • Fig 13.4 and 13.5 • Chapter 36 • Section 13.11.2 • Checklist B.18 <p>Checklist WW2.0** and WW2.7**</p>

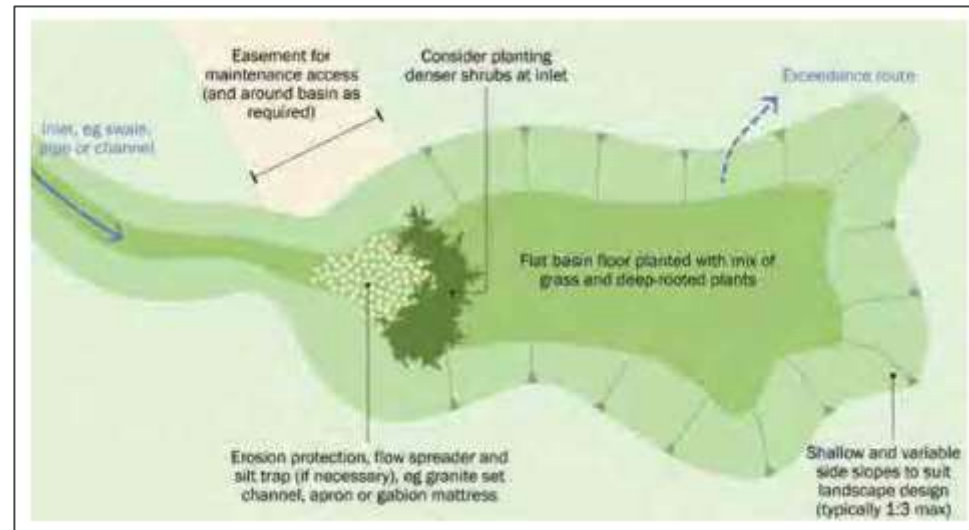


Figure 8: Plan view of an Infiltration basin (from C753:13.4)

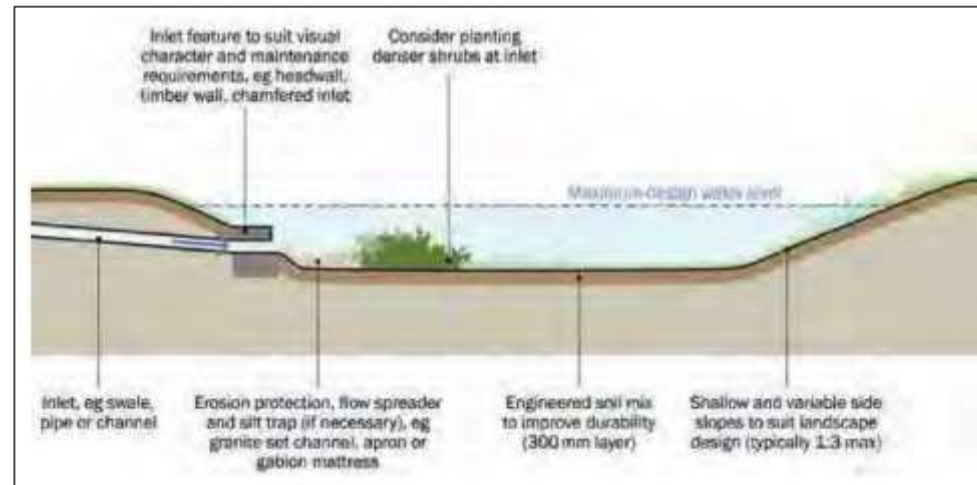


Figure 9: Elevation of an infiltration basin (C735:13.5)

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
FEATURE- PROPRIETARY TREATMENT SYSTEMS	<p>These should only be used as a last resort, when all other SuDS features have been ruled out for provision of water quality improvements.</p> <p>Complete copy of proprietary treatment systems Design Checklist</p>	<p>Not usually adopted.</p> <p>Should be part of the private drainage system or street drainage system.</p>	<p>SSG C7.4</p> <p>C753</p> <ul style="list-style-type: none"> • Chapter 14 • Figure 14.1 • Chapter 26 • Table 26.2 • Checklist B.7 <p>Checklist WW2.1**</p>
FEATURE- FILTER DRAINS	<p>Linear trench filled with permeable material.</p> <p>Filter drains have a low-level pipe to convey all flows</p> <p>Adequate access chambers shall be provided to enable inspection and maintenance</p> <p>1 to 2m depth</p> <p>Effective upstream pre-treatment required</p> <p>Complete copy of Filter Drain Design Checklist</p>	<ul style="list-style-type: none"> • Whole structure up to external face • External rubble fill/ membrane 	<p>SSG C7.13</p> <p>C753:</p> <ul style="list-style-type: none"> • Chapter 16 • Figure 16.2 • Checklist B.11 <p>Checklist WW2.1**</p>

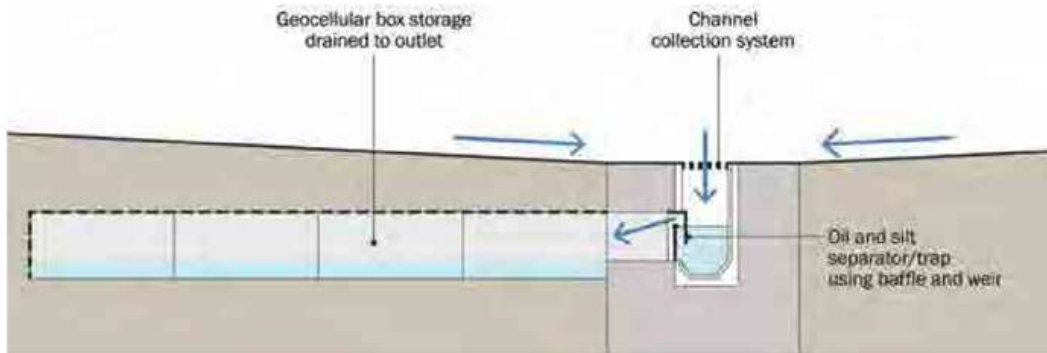


Figure 10: Schematic of a commonly used treatment channel (C753: 14.1)

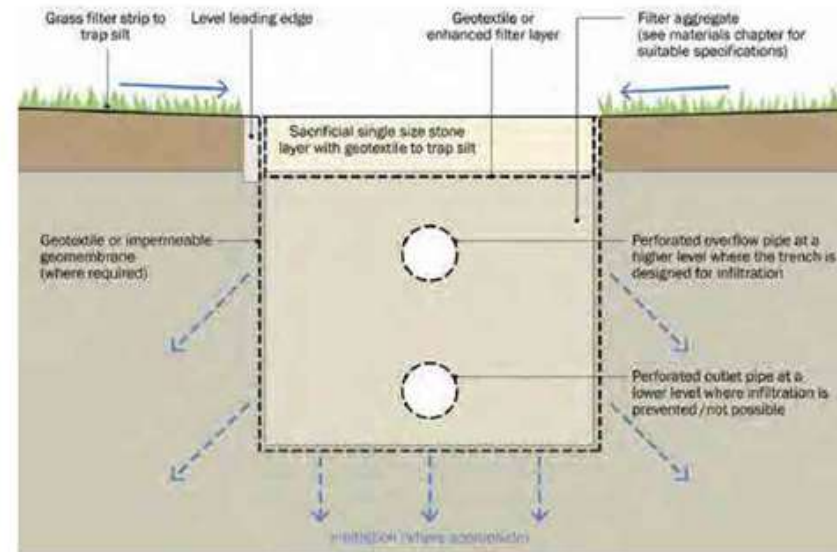
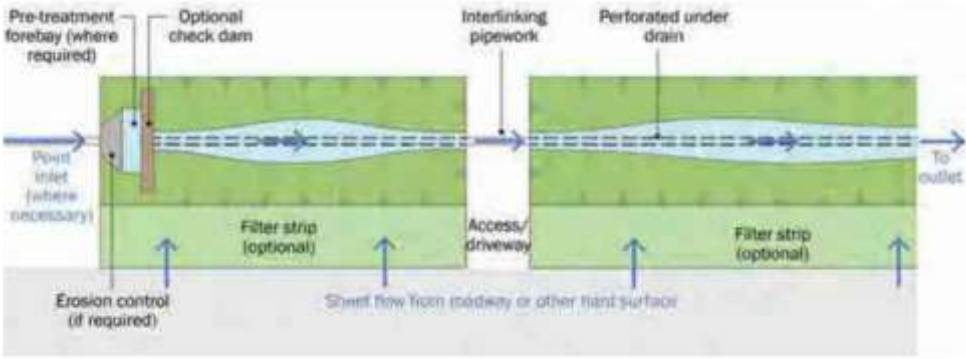


Figure 11: Filter Drain Schematic (C735: 16.2)

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
FEATURE- SWALES	<p>Vegetated channel for conveyance, attenuation and sometimes infiltration</p> <p>Swales should be located in verges or other public open space or on the boundary between the street and a private garden. Otherwise, adequate access should be provided for maintenance equipment.</p> <ul style="list-style-type: none"> • Slopes: 1 in 3 or shallower • Swale gradient: 1 in 40 max • Maximum depth: 450mm • Minimum base width: 0.5m • Overedge flow/ shallow inlets <p>Water level must not rise more than 150-300mm during a 1 in 30 or greater event and for more frequent events, should not exceed the height of the grass/ vegetation.</p> <p>Limit velocities during extreme events to 1 to 2 m/s to prevent erosion and/or consider erosion protection measures.</p> <p>Complete copy of Swales Design Checklist</p>	<ul style="list-style-type: none"> • Sides and base of channel • Any vegetation that is part of the function of the swale (i.e., filter strips) • Under-drainage including: <ul style="list-style-type: none"> ○ Storage ○ Liners ○ Check dams ○ Flow Control Device ○ Erosion Control Measure 	<p>SSG C7.3</p> <p>C753:</p> <ul style="list-style-type: none"> • Chapter 17 • Figure 17.1, 17.2, 17.3 & 17.5 • Checklist B.13 <p>Checklist WW2.4**</p>
<div style="text-align: center;">  <p>Figure 12: Typical Plan View of a Swale (C753:17.5)</p> </div>			

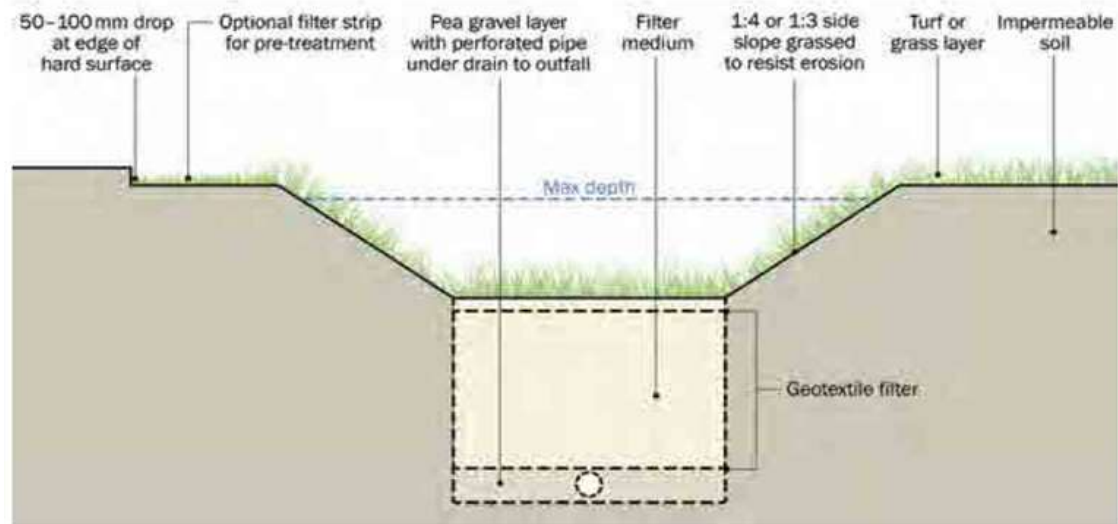


Figure 13: Typical Dry Swale (C753:17.2)

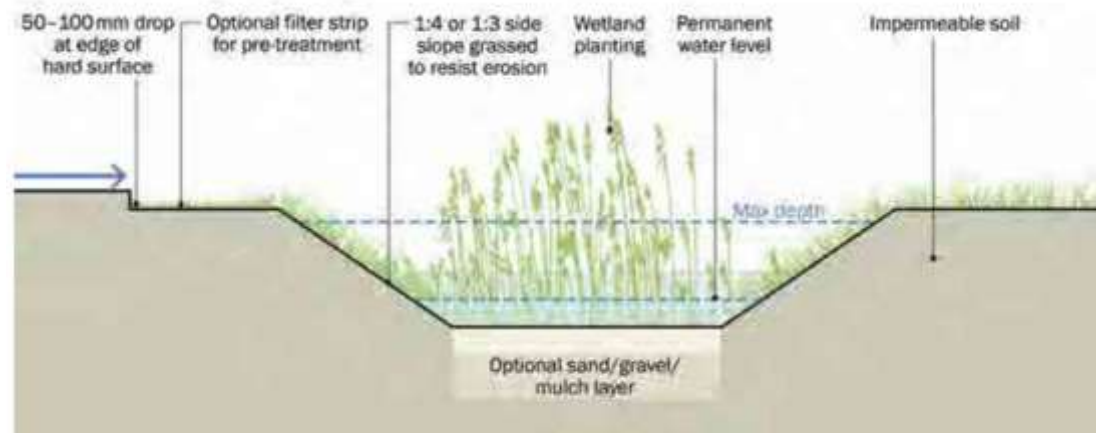
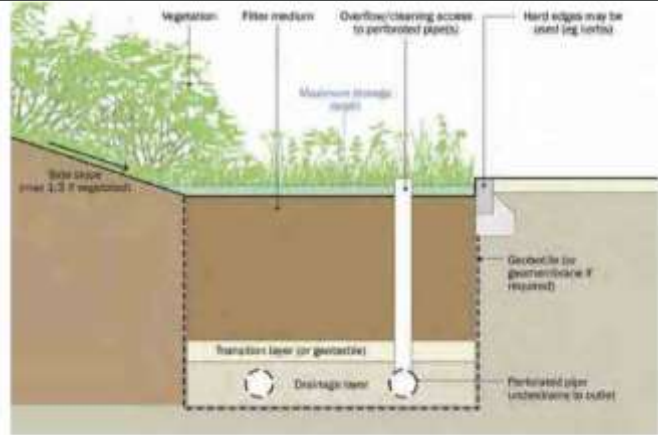


Figure 14: Typical Wet Swale (C753:17.3)

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">BIORETENTION SYSTEMS</p>	<p>Shallow planted depression that allows runoff to pond temporarily on the surface, before filtering through vegetation and underlying soil prior to collection or infiltration</p> <p>These should be designed to drain down within 24 hours for all design events</p> <p>Shall include an effective point of discharge – either infiltration to ground or overflow to another component.</p> <p>Complete copy of Bioretention Systems Design Checklist</p>	<ul style="list-style-type: none"> • Whole area used for temporary ponding. • Inlet structure • Outlet structure • Engineering soil structures • Any vegetation that is part of the function of the system. 	<p>SSG C7.5 C753</p> <ul style="list-style-type: none"> • Chapter 18 • Figure 18.1 • Checklist B.15 <p>Checklist WW2.5**</p>
	 <p style="text-align: center;"><i>Figure 15: Components of a bioretention system (C753:18.1)</i></p>	<ul style="list-style-type: none"> • Inlet Structure • Outlet Structure • Flow Control Device • Under-drainage including: <ul style="list-style-type: none"> ○ Storage ○ Impermeable Liners ○ Check dam ○ Erosion Control Measure 	<p>SSG C7.8</p> <p><i>CIRIA Report C737 ('Structural and Geotechnical Design of Modular Geocellular Drainage Systems')</i></p> <p>C753</p> <ul style="list-style-type: none"> • Chapter 21 • Checklist B.17 <p>Checklist WW2.6**</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">TANKS*</p>	<p>Underground structure for temporary storage of surface water for infiltration, controlled release or reuse.</p> <p>Access provision for inspection and cleaning shall be provided</p> <p>The design shall include a means for sediment capture and removal (including during cleaning operations)</p> <p>Adequate ventilation shall be provided to limit pressure build up in the system during filling</p> <p>The design of flow attenuation facilities should, wherever practicable, include the following criteria:</p> <ol style="list-style-type: none"> gravity tank sewers or tanks formed from oversized pipes should be designed as online storage; where parallel pipes are used for attenuation, a minimum of one pipe should act as online storage, the remainder as offline; the design of attenuation facilities should seek to prevent a build-up of silt and other debris (e.g., by use of other features upstream/ trash screens etc.). <p>Complete copy of attenuation storage tanks Design Checklist</p>		

	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCE
DETENTION BASINS	<p>Depression in the ground that is usually dry and designed to store surface water prior to infiltration (Infiltration basin – refer earlier in this table) and/or provide attenuation (Detention basin)</p> <ul style="list-style-type: none"> • Max Water Level: >500mm below lowest floor level of adjacent properties • Freeboard above Max design storage level: 300 to 600mm • Slopes: 1 in 3 or shallower • Length to Width ratio of 2:1 • Water Level must not rise more than 1000mm during a 1 in 30 year or greater event and should drain down within 48 hours. • Provide effective pre-treatment <p>Complete copy of basins Design Checklist</p>	<ul style="list-style-type: none"> • Inlet Structure • Outlet Structure • Flow Control Device • Entire area of basin up to the top of bank level • Under-drainage including: <ul style="list-style-type: none"> ○ Storage ○ Impermeable Liners ○ Check dam ○ Erosion Control Measure • Any vegetation that is part of the function of the system. 	<p>SSG C7.7</p> <p>C753</p> <ul style="list-style-type: none"> • Chapter 22 • Figure 17.13 & 22.2 • Checklist B.18 <p>Checklist WW2.7**</p>

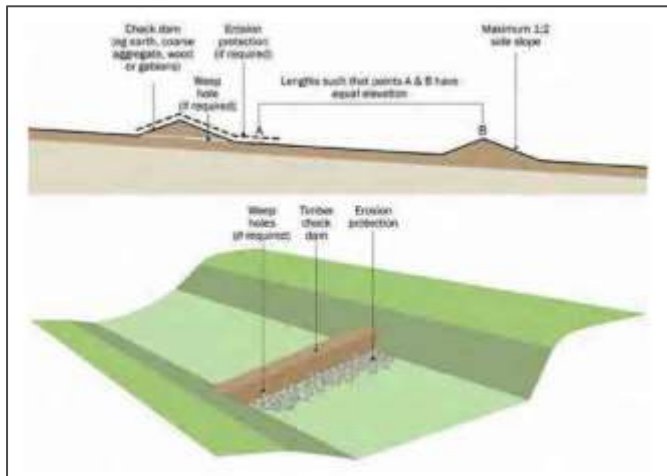
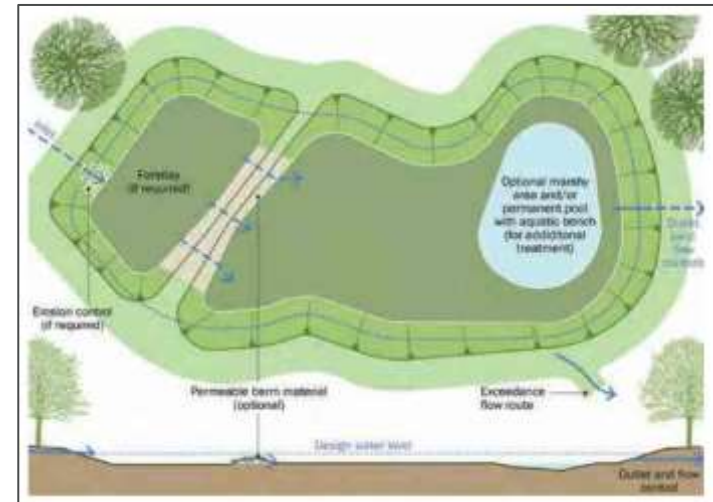
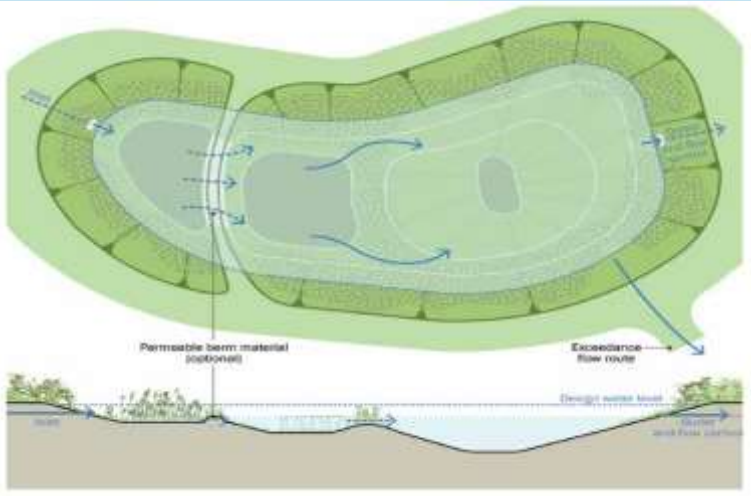


Figure 17: Typical Check dam details (C753 17.13)

Figure 16 (RIGHT): Plan and elevation of a vegetated detention basin (C753: 22.2)



DESIGN CRITERIA		LIMITS OF ADOPTION	REFERENCES
PONDS AND WETLANDS	<p>A Pond is designed to temporarily store surface water above a defined permanent pool level.</p> <ul style="list-style-type: none"> Max Water level: >500mm below lowest floor level of adjacent properties Freeboard above Max design storage level: 300 to 600mm Maximum Depth in permanent pool: 1.2m Minimum Depth in open water: 1.2m Slopes: 1 in 3 or shallower Provide effective pre-treatment measures Provide a sediment forebay Provide shallow benching Length to width ratio of between 3:1 and 5:1 	<ul style="list-style-type: none"> Inlet Structure Outlet Structure Flow Control Device Entire area of pond up to the top of bank level Under-drainage including: <ul style="list-style-type: none"> Storage Impermeable Liners Check dam Erosion Control Measure Any vegetation that is part of the function of the system. 	<p>SSG C7.6</p> <p>C753</p> <ul style="list-style-type: none"> Chapter 23 Figure 23.4, 23.5 & 23.6 Figure 23.13, 23.14 & 23.15 Checklist B.21 <p>Checklist WW2.8**</p>
	<p>A wetland is a type of pond with a high proportion of shallow zones that promote growth of bottom-rooted plants</p> <p>Depth of temporary storage shall be limited to minimise risk of plant damage and must not rise more than 500mm during a 1 in 30 year or greater event.</p> <ul style="list-style-type: none"> Length to width ratio of 3:1 Must contain a combination of shallow and deep areas. Maximum depth: 2m Slopes: 1 in 3 or shallower <p>Ensure continuous baseflow throughout wetland</p> <p>Complete copy of ponds and wetlands Design Checklist</p>	 <p>Figure 18: Plan and view profile of pond details (C753:23.4)</p>	

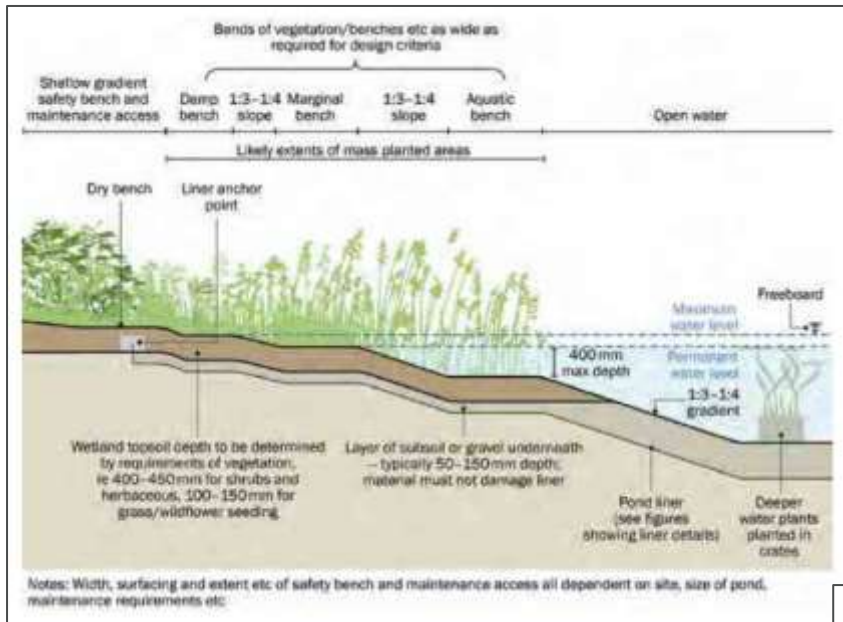


Figure 19: Typical planted pond edge details (C753:23.5)

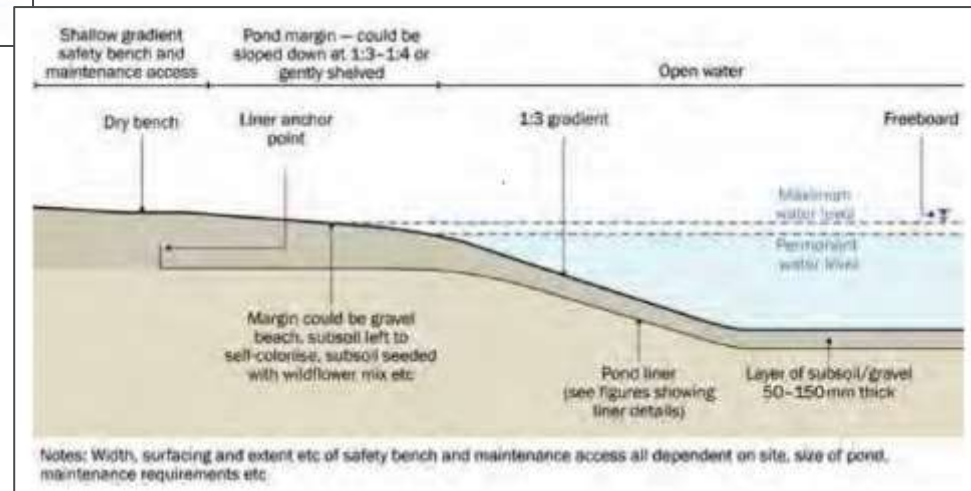


Figure 20: Typical non-planted pond edge details (C753: 23.6)

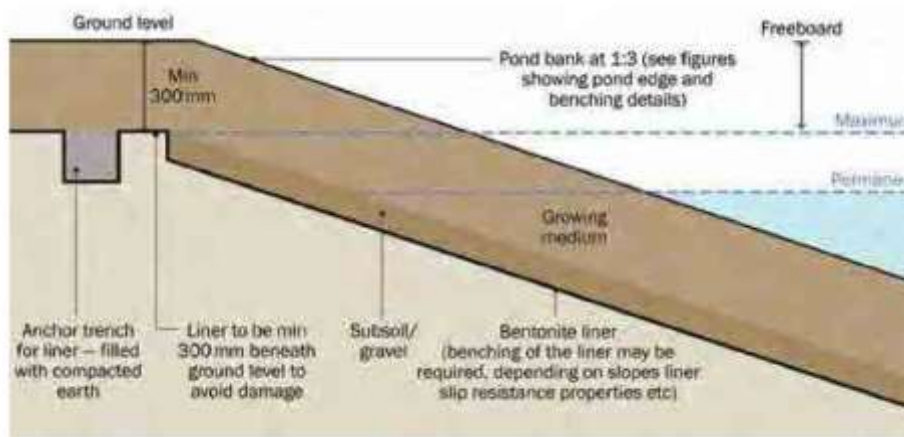


Figure 21: Details for a typical geosynthetic liner (C753: 23.13)

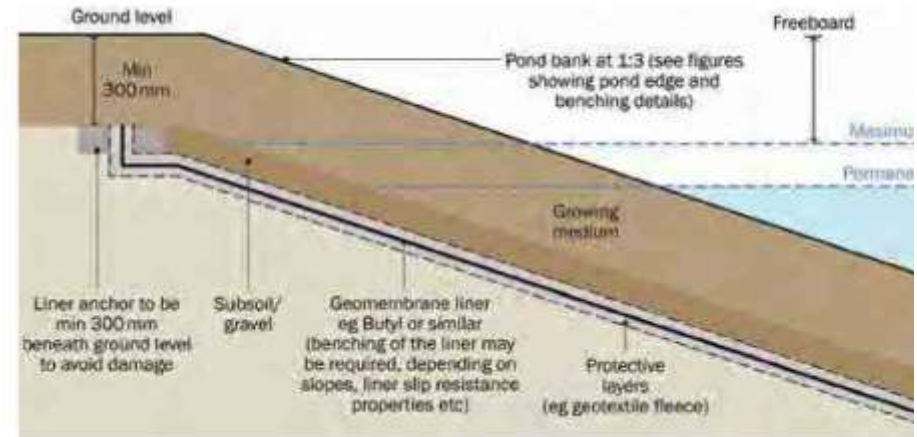


Figure 22: Details for a typical geomembrane liner (C753 23.14)

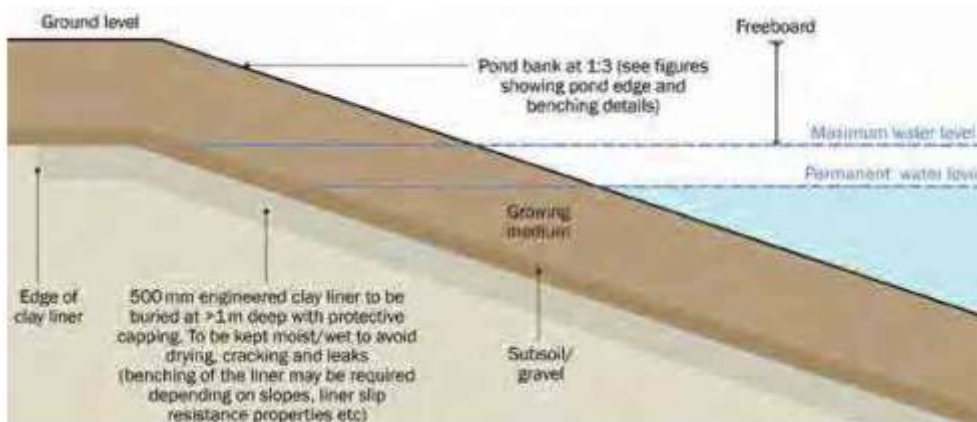


Figure 23: Details for a typical clay liner (C753: 23.15)

DESIGN CRITERIA		LIMITS OF ADOPTION	REFERENCES
RILLS	<p>Rills should be located in verges or other public open space or on the boundary between the street and a private garden.</p> <ul style="list-style-type: none"> • Max Water Depth: 300mm • Max Flow velocity: 1m/s <p>Rills that are part of the structure of the street will NOT be adoptable under a S104 but may be adoptable under S106.</p>	<p>Sides and base of channel</p> <p>Check dam</p> <p>Flow Control Device</p>	<p>SSG C7.4</p>
OUTFALL STRUCTURES	<p>Non-return valves may be required for discharge to watercourses.</p> <p>>350mm diameter: fitted with hinged, lockable safety grille (SSG: Figures C.3) - with the exception of a fully submerged outfall.</p> <p>Grille width: Outside diameter of pipe PLUS 270mm</p> <p>Appropriate safe access must be provided for cleaning, maintenance and inspection (i.e., angled grille and suitable platforms for access)</p> <p>Outfall should be angled to the direction of flow to reduce risk of bank erosion (SSG: Figures C.1 and C.2)</p> <p>A self-cleansing velocity of 1m/s is required for all pipework.</p> <p>Non-Return Valves should be fitted where outfalls are submerged.</p> <p>Information on Land Drainage Consents/ EA Flood Defense Permits, as may be required, must be provided (refer to Adoption Process).</p>	<p>Whole structure</p>	<p>SSG C7.14</p> <ul style="list-style-type: none"> • Figures C.1 to C.3 <p>C753:</p> <ul style="list-style-type: none"> • Chapter 28 <p>C786: Culvert, Screen & Outfall Manual</p>

Figure C 1
Typical detail of outfall to watercourse
Suitable for outfall pipes of less than 350 mm

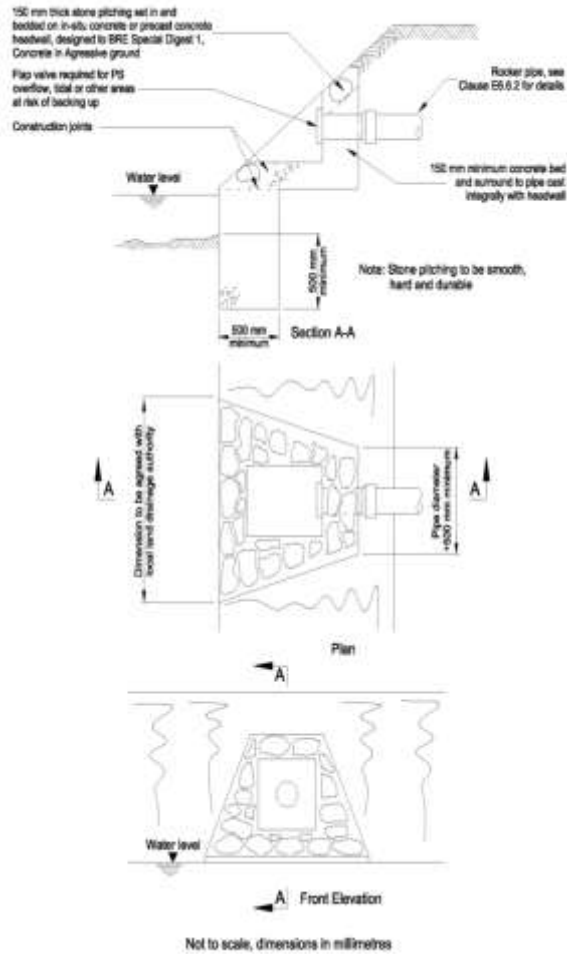


Figure C 2
Typical detail of angled outfall to watercourse
Suitable for outfall pipes of less than 350 mm

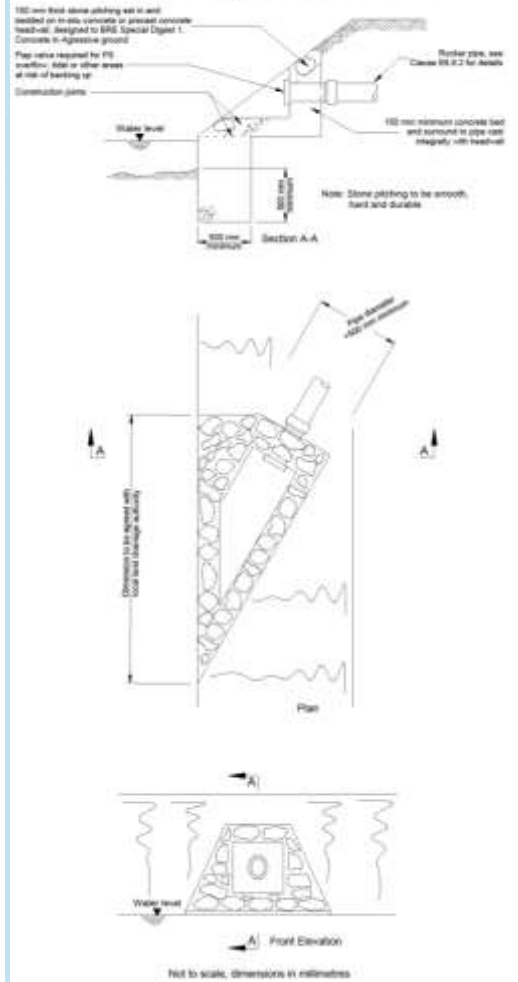
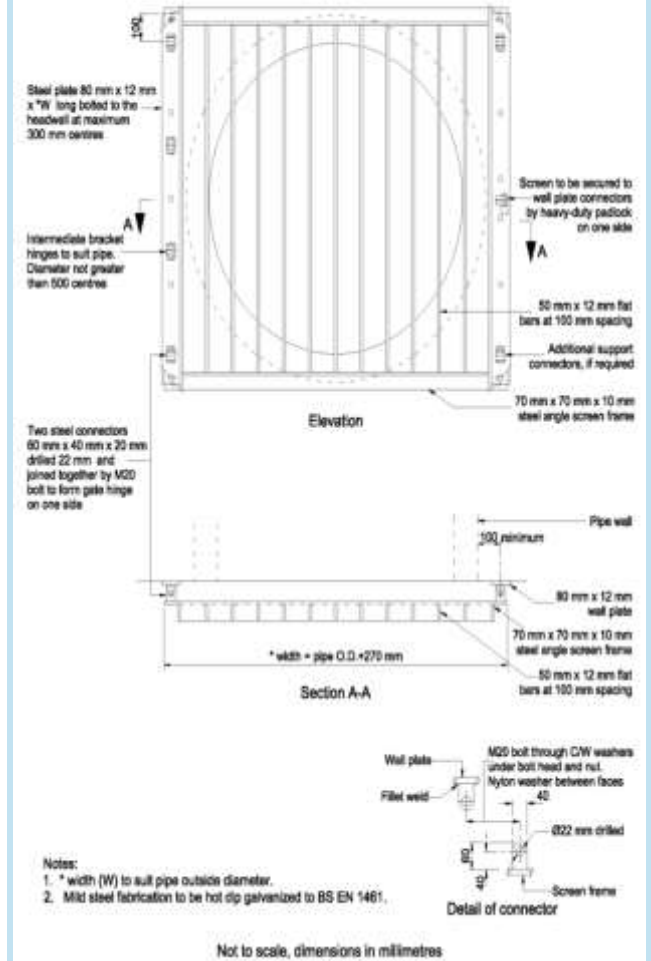


Figure C 3
Typical outfall safety grille
For outfalls 350 mm diameter or greater



	DESIGN CRITERIA	LIMITS OF ADOPTION	REFERENCES
FLOW CONTROL DEVICES	<p>Access provision upstream and downstream to allow maintenance</p> <p>Free discharge (no downstream surcharge), where practicable. If not possible then attenuation calculations showing both free discharge and surcharge conditions should be provided.</p> <p>All controls should be installed and operating before off-site discharge is made</p> <p>Min Opening for Static Controls:</p> <ul style="list-style-type: none"> • >100mm (where debris can enter the system) • >50mm (where debris cannot enter the system) <p>Variable Controls:</p> <ul style="list-style-type: none"> • <50mm provided they have self-cleansing mechanism. <p>Surface Operated Penstock/ valve</p> <p>A bypass must be included.</p>	Whole structure	<p>SSG C7.15</p> <p>C753</p> <ul style="list-style-type: none"> • Chapter 28
LANDSCAPING & VEGETATION	<p>Used to enhance appearance, provide wildlife habitat, provide appropriate public amenity opportunities, stabilise side slopes and prevent erosion.</p> <p>Ensure adherence to any local authority requirements.</p> <p>A management plan setting out management objectives of the landscaping and vegetation, and an initial management programme for at least the first FIVE years should be provided.</p>		<p>SSG C7.4 and C11</p> <p>C753</p> <ul style="list-style-type: none"> • Chapter 6 (designing for Biodiversity) • Chapter 29 <p>BS8300:1:2018: Design of an accessible and inclusive built environment. Part 1: External environment (Code of Practice)</p>

*SuDS features such as soakaways, tanks and cellular systems must have an accessible pollution control measure upstream.

**Wessex Water adapted Checklists are being drafted and will replace the C753 Checklists in the next edition of the Wessex Water SuDS Adoption Requirements. Developers should use the referenced C753 Components Checklists in the meantime.

The following would be **excluded** from adoption:

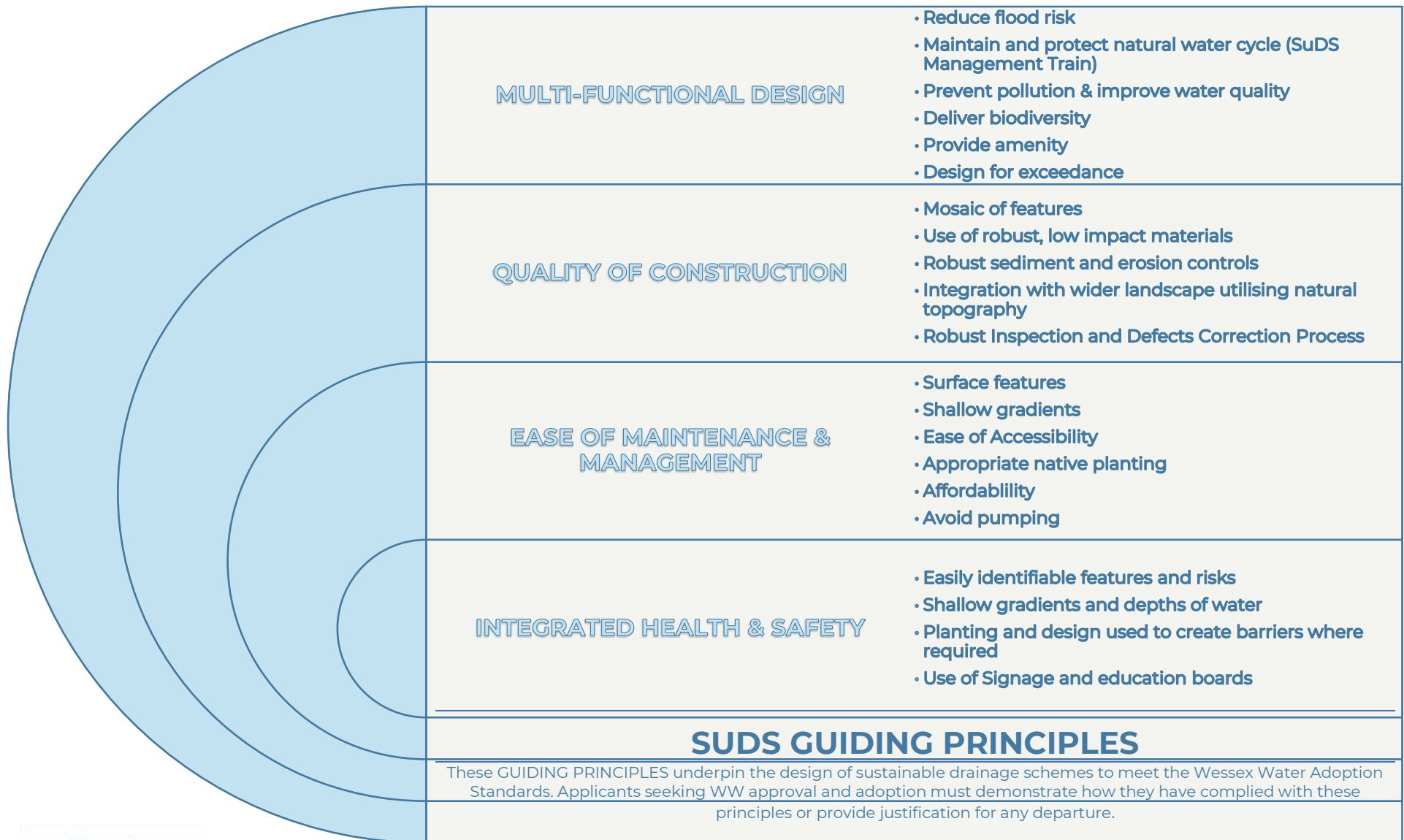
- Pervious pavements
- Green roofs
- Filter Strips
- Rainwater harvesting
- Water butts
- Property level infiltration systems (single curtilage)

These components may form part of the drainage design as part of a holistic approach to drainage, provided they are **UPSTREAM** of the adoptable components **OR** form an exceedance flood route (**SSG C3.7**). Exceedance flow routes are defined by events that are in excess of the design event for the system (usually a **1 in 100 year + CC event**) or where a failure of the system results in exceedance overflow.

Any SuDS components and/or flow routes that fall within the curtilage of a private property will be the responsibility of the landowner/property owner to maintain. Information must be provided to them on how these components function to reduce the risk of unintentional damage. These components would only be considered for adoption if it were in the best interests of any Wessex Water assets that fall within the adoptable standards. For example, where a feature might flow into a WW asset and not adopting the additional feature may detrimentally impact on the WW asset (maintenance and management).

Exceedance flood routes must be retained within the curtilage of the site until such time as it is able to re-enter the drainage system. Flood flow must not discharge unattenuated into any existing or proposed adoptable sewer or highway drainage off site. Where the design of the system requires that flows from rainfall events in excess of the capacity of the gully system/ inlets are conveyed or stored, an alternative inlet system with higher capacity must be designed.

Any parts not adopted need to be constructed as designed and details provided to WW of the arrangements for future operation and maintenance. The developer must provide details of these arrangements in their S104 Application (**SSG C3.8**). Location of assets must take account of the needs for access by all parties. Where the operation and maintenance of a component managed by another body could adversely impact on the water company's system, an agreement must be in place to protect the water company's system.



3.5 Multi- Functional Design

The above **GUIDING PRINCIPLES** underpin the design of sustainable drainage schemes to meet the Wessex Water Adoption Standards. Applicants seeking WW approval and adoption must demonstrate how they have complied with these principles or provide justification for any departure.

The extent and way in which each criterion can be delivered will depend on site characteristics, development context and local objectives. The water quantity and water quality are likely to be the main drivers in determining the design philosophy for a site. Although maximising delivery of amenity and biodiversity criteria will often deliver on a range of other required planning outcomes and objectives for the site. For example, using runoff as a resource will support both water quantity and amenity design objectives.

In order to maximise opportunities and the associated benefits, the requirements set out in this document should be considered at an early stage and fully integrated into the surface water management and urban design process. In so doing, it is then possible to ensure that the scheme is truly multi-functional and delivers the highest return for the developer and for the community, providing improved resilience and maximising efficiencies for maintenance and operation of the system through adoption.

3.6 Climate Change and Betterment Policy

Wessex Water has set the following criteria for discharge rates and volumes for any proposed SuDS schemes being put forward for adoption. This is generally in accordance with national standards and in keeping with the general policies set by the local planning authorities in the Wessex Area.

To minimise the impact of any new development, surface water discharge must not exceed the current runoff rate from the pre-developed condition. Where runoff rates exceed the pre-development rate, attenuation of runoff through the SuDS scheme shall be incorporated with hydraulic controls used to restrict discharge. A range of storm durations must be used to demonstrate that the system performs appropriately during the design storms (**1 in 30 year for no flooding and 1 in 100 year for no internal flooding**). The 1 in 100 plus climate change storm event must never exceed the pre-development 1 in 100 year storm event.

Feature	Greenfield	Brownfield
Peak flow control	<p>For greenfield developments, the peak runoff rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event shall never exceed the peak greenfield runoff rate for the same event.</p> <p>In addition, further betterment may be required in accordance with local LLFA</p>	<p>For developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close to the greenfield runoff rate from the development for the same rainfall event.</p> <p>Where it is proven not to be possible for reasons of specific site constraints, then</p>

Feature	Greenfield	Brownfield
	betterment policy, which must be adhered to.	the discharge rate must not exceed the rate of discharge from the development prior to redevelopment for that event, with a minimum reduction in accordance with local LLFA betterment policies. When calculating the discharge rate from a brownfield site the capacity of the existing drainage system must be accounted for and only positively drained areas are to be included in the calculation.
Volume control	For greenfield development, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event shall never exceed the greenfield runoff volume for the same event.	For developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close to the greenfield runoff volume for the same event, but must never exceed the runoff volume from the development site prior to redevelopment for that event.

Climate Change (CC) allowances shall be in accordance with National Planning Policy Framework and the most recently published Climate Change policies from the Environment Agency. This must be approved through the planning process and evidence provided to Wessex Water as to the agreements set with the planning authority/ LLFA. As a minimum we would expect between **20%** (central) and **40%** (upper end) allowance to be provided for residential developments (the maximum allowance for developments with a design life beyond 2070), together with consideration of urban creep in accordance with the table below or as agreed with the local LLFA/ LPA.

Residential development density	Change allowance
Dwellings per ha	% of impermeable area
25 or less	10
30	8
35	6
45	4
50 or more	2
Flats/ Apartments	0

Where it is proven impracticable to constrain the volume of runoff to any drain, sewer or surface water body in accordance with the above, the runoff volume must be discharged at a rate that does not adversely affect flood risk. This must be accompanied by **robust justification** and **evidence of consultation** and **agreement** with the LLFA and the relevant local planning authority, land drainage authority or riparian owner (where applicable).

3.7 Water Quality

SuDS offered up for adoption must be designed to intercept runoff (and the associated pollutants) for the first 5 mm of rainfall. When runoff does occur, treatment within SuDS components is essential for frequent rainfall events (for example up a 1:1 year return period event) where urban contaminants are being mobilised and washed off urban surfaces.

For rainfall events greater than approximately the 1:1 year event, environmental risks will be reduced and so SuDS treatment processes will be less crucial, although a treatment train is expected as part of the multi-functional design principle.

It is important that the SuDS design seeks to minimise the risk of remobilisation and washout of any pollutants that have been captured by the system during events larger than those for which the treatment system has been designed. Similarly, the system should be designed to minimise erosion both during construction and after full implementation of the scheme.

Reference should be made to **C753 Tables 26.1, 26.2 and 26.3** for selection of suitable features (*Figures 24, 25 and 26* below). Identification of any contamination risks to groundwater will also need to be assessed. This is covered by the Checklists provided in **Appendix B** of this document.

TABLE 26.1 Approaches to water quality risk management			
Design method	Hazard characterisation	Risk reduction	
		For surface water	For groundwater
Simple index approach	Simple pollution hazard indices based on land use (eg Table 26.2 or equivalent)	Simple SuDS hazard mitigation indices (eg Table 26.3 or equivalent)	Simple SuDS hazard mitigation indices (eg Table 26.4 or equivalent)
Risk screening ¹	Factors characterising traffic density and extent of infiltration likely to occur (eg Table 26.5 or equivalent)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (eg Table 26.5 or equivalent)
Detailed risk assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in event mean discharge concentrations and total annual load reductions delivered by the system	

Figure 24: Approaches to water quality risk management (C753: 26.1)

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways ¹	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways ¹	High	0.8 ²	0.8 ²	0.9 ²

Notes

- 1 Motorways and trunk roads should follow the guidance and risk assessment process set out in Highways Agency (2009).
- 2 These should only be used if considered appropriate as part of a detailed risk assessment – required for all these land use types (Table 4.3). When dealing with high hazard sites, the environmental regulator should first be consulted for pre-permitting advice. This will help determine the most appropriate approach to the development of a design solution.

Where a site land use falls outside the defined categories, the indices should be adapted (and agreed with the drainage approving body) or else the more detailed risk assessment method should be adopted.

Where nutrient or bacteria and pathogen removal is important for a particular receiving water, equivalent indices should be developed for these pollutants (if acceptable to the drainage approving body) or the risk assessment method adopted.

Figure 25: Pollution hazard indices for different land use classifications (C753: 26.2)

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters			
Type of SuDS component	Mitigation indices ¹		
	TSS	Metals	Hydrocarbons
Filter strip	0.4	0.4	0.5
Filter drain	0.4 ²	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond ⁴	0.7 ³	0.7	0.5
Wetland	0.8 ³	0.8	0.8
Proprietary treatment systems ^{5,6}	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

Notes

- 1 SuDS components only deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters.
- 2 Filter drains can remove coarse sediments, but their use for this purpose will have significant implications with respect to maintenance requirements, and this should be taken into account in the design and Maintenance Plan.
- 3 Ponds and wetlands can remove coarse sediments, but their use for this purpose will have significant implications with respect to the maintenance requirements and amenity value of the system. Sediment should normally be removed upstream, unless they are specifically designed to retain sediment in a separate part of the component, where it cannot easily migrate to the main body of water.
- 4 Where a wetland is not specifically designed to provide significantly enhanced treatment, it should be considered as having the same mitigation indices as a pond.

Figure 26: Indicative SuDS mitigation indices for discharges to surface waters (C753: 26.3)

3.8 Biodiversity and Amenity

The design of the landscape element of SuDS is a critical part of its delivery, both in functional and aesthetic terms. To achieve optimal amenity and biodiversity within a development these areas must be fully integrated within the drainage system. Existing site habitats should be characterised so that consideration can be given to which species of flora and fauna might be able to exploit new habitat potentially created by the SuDS scheme. Understanding existing habitat areas and how these are connected, or could be connected, will help to determine the extent to which the new SuDS might be able to enhance local ecological networks and corridors.

For example, the production of a planting and management plan for an unsympathetically engineered balancing pond at the end of a piped system does not fulfil the ethos of integrated SuDS or the above **GUIDING PRINCIPLES**. Designing integrated SuDS throughout the site should include:

- assessment of the value of existing trees or habitats for retention, and their protection (including a review of any local biodiversity strategies/ policies);
- consideration of landscape/townscape character, both of the site itself and its broader setting;

- understanding the requirements of the users in terms of access, circulation and their intended use of the site;
- appropriate responses to the site constraints and opportunities, including slopes and gradients, soils and aspect, and how levels relate to the buildings and the intended use of the open areas;
- review of a range of potential solutions and the way that hard and soft solutions can be effectively integrated to meet the site's requirements;
- review of the existing drainage routes and flow pathways to ensure water resources are retained where they need to be to maintain existing biodiversity; and
- consideration of public accessibility and ease of operation and maintenance.

3.9 Ease of Maintenance and Management

A management plan setting out the management objectives of the scheme and an initial programme must be submitted with the S104 Application to demonstrate that the systems can be economically maintained and that appropriate access for maintenance has been provided. This will enable applicants to demonstrate how the SuDS scheme will perform safely, reliably and effectively over the design life of the development, taking into account the need for reasonable levels of maintenance. Additionally, long- and medium-term strategies must be outlined as part of any submission (**C11.1**).

The applicant must also provide information in a format which can be easily understood to advise the owners, occupiers and/or operators/maintainers of the completed development site on:

- the role of the drainage system in draining the site and protecting the environment;
- what they should expect to observe when the system functions as designed during different rainfall conditions, in particular any areas that are intended to be used for temporary storage of surface runoff in addition to any other use;
- any operation and maintenance requirements for the system; and
- matters which, if they occur, must be brought to the attention of the adopting authorities.

As part of the approval for the construction of a sustainable drainage system, Wessex Water require a legal agreement to be entered, to ensure all works function for the duration of the SuDS design life and for the lifetime of the development in accordance with S104 approval, including any conditions. By way of example, the legal agreement will need to cover (where applicable):

- the transfer of land,
- easements,
- access.

When an application is submitted, a Model Agreement (**refer SSG Appendix E**) will be set out as a formal means of setting out any detailed arrangements concerning the

maintenance of the sustainable drainage system for the lifetime of the development and the means of funding for the SuDS scheme for its design life (including any commuted sum or maintenance funding).

Soft SuDS components will require regular, occasional and remedial maintenance so a simple 'establishment' maintenance plan for the first 5 years must be provided as part of the overall Maintenance Plan (refer [Figure 27](#)). Planting wetland and biodiverse grasslands will require an over-arching management plan that defines how it is expected that the vegetation will develop over time, and what it seeks to achieve. This must be defined through a simple vision statement, supported by appropriate management 'aims and objectives' ([SSG C11.2](#)).

The management plan must require the quality and condition of the SuDS to be **reviewed every 5 years** and a new maintenance plan devised for the forthcoming 5-year period ([SSG C11.3](#)).

The management plan must be in accordance with [Chapter 32 \(C753: The SuDS Manual\)](#). It must detail:

- a) regular maintenance activities;
- b) occasional maintenance activities; and
- c) remedial maintenance activities.

The management plan must detail the type of maintenance activities required, the frequency of those activities, the estimated duration, plant and equipment requirements and estimated costs. The management plan must also show how appropriately sized maintenance plant can be routed to avoid over-compaction of areas that are required to allow infiltration.

TABLE 32.1 Typical key SuDS components operation and maintenance activities (for full specifications, see Chapters 11–23)

Operation and maintenance activity	SuDS component												
	Pond	Wetland	Detention basin	Infiltration basin	Soakaway	Infiltration trench	Filter drain	Modular storage	Pervious pavement	Swale/bioretention/trees	Filter strip	Green roofs	Proprietary treatment systems
Regular maintenance													
Inspection	■	■	■	■	■	■	■	■	■	■	■	■	■
Litter and debris removal	■	■	■	■	□	■	■	□	■	■	■		□
Grass cutting	■	■	■	■	□	■	■	□	□	■	■		
Weed and invasive plant control	□	□	□	□		□	□		□		□	■	
Shrub management (including pruning)	□	□	□	□					□	□	□		
Shoreline vegetation management	■	■	□										
Aquatic vegetation management	■	■	□										
Occasional maintenance													
Sediment management ¹	■	■	■	■	■	■	■	■	■	■	■		■
Vegetation replacement	□	□	□	□						□	□	■	
Vacuum sweeping and brushing									■				
Remedial maintenance													
Structure rehabilitation /repair	□	□	□	□	□	□	□	□	□	□	□	□	
Infiltration surface reconditioning				□	□	□	□		□	□	□		

Key

- will be required
- may be required

Notes

1 Sediment should be collected and managed in pre-treatment systems, upstream of the main device.

Figure 27: Typical key SuDS components operation and maintenance activities (C753: 32.1)

3.10 Access and Easements

The SuDS design must allow **free, safe, and easy access** (including easements where required) for all personnel, vehicles and machinery required to undertake maintenance of the SuDS. Particular care must be taken to ensure that the design enables easy access to components which are at greater risk of becoming clogged or blocked, such as soakaways and small outflows. This can most easily be achieved by managing water close to the surface.

Wessex Water will only enter into **land transfer agreements by exception** and only if it is in the best interests of Wessex Water to ensure the longevity of the SuDS features being adopted. Therefore, most SuDS schemes will require easements to ensure rights of access to maintain and manage the SuDS scheme being adopted. Plans will need to be submitted that indicate all the proposed access routes for maintenance and operation of the system. These routes will need to ensure that access routes are suitable for the machinery required to undertake maintenance and that appropriate surfacing is provided where necessary.

1. A **3m wide** vehicular access road to within 5m of a maintainable asset/ component shall be provided to enable suitable access for maintenance.
2. A turning area for up to a **18,000-litre** tanker shall be provided where required to carry out maintenance (usually required for pumping stations).



3. A **minimum 2m wide** area shall be provided for access/ maintenance around each feature.

Wessex Water will not adopt SuDS which fall within the boundaries or curtilage of a private property, these are considered to be solely the responsibility of the property owner/ landowner to maintain. This must be made clear to residents within documentation forming part of the property purchase.

All existing flow routes and proposed exceedance flow routes (**up to a 1 in 200-year event**) must be identified and these routes must be protected and maintained as part of the SuDS scheme. A minimum **2m wide exclusion zone** shall be provided either side of these routes, prohibiting any building/ fencing/ landscaping within these areas – particularly where they pass through private land. This must be made clear to residents within documentation forming part of the property purchase. These routes will be monitored through regular inspections as part of the maintenance plan.

3.11 Integrated Health and Safety

The health and safety risks associated with any open water must be assessed and managed in accordance with **Chapter 36 (C753: The SuDS Manual)**. Where the proposed drainage system incorporates any surface components, the design must be carried out in accordance with **Chapter 36** and a copy of the principal designer's risk assessment must be submitted to Wessex Water, and form part of the Health and Safety File (refer **Appendix I of the SSG**).

The SuDS Manual states that children should not be able to gain access to spillways, and all vertical drops exceeding 1.2m (e.g., headwalls above pipe inlets/outfalls) should be fenced. Wherever possible, vertical drops must be avoided or graded to shallow slopes. **Wessex Water will not accept above ground assets with a vertical drop exceeding 1.2m**. Any public access to a SuDS asset must meet the guiding principles and standards detailed within **BS8300:1:2018**.

Wessex Water will generally require SUDS features (particularly ponds) to be small and shallow (**no more than 1.2m deep**) with gentle side slopes (**1 in 3 or shallower**) which must also minimise health and safety risks. However, all proposals must accord with the requirements of **The Construction (Design and Management) Regulations 2015**. This requires hazards to be removed by design wherever possible rather than providing mitigation to manage risk. For example, a pond designed to the principles of this guide (shallow, gentle slopes, wet benches) minimises the hazard and is better than a large deep pond, with steep side slopes that requires a fence to make it safe. Child safety must be considered in pond and wetland design. This is best dealt with by measures mentioned in the guide such as shallow slopes, minimising water bodies of any depth and the use of peripheral planting.

Larger fences cause their own safety problems (ease of access for rescue is hindered and they attract older children to climb over them) and are not recommended. However, where very young children up to the age of five years are likely to be present, and could potentially be unsupervised, a low toddler proof fence may be considered, that is sufficiently low to allow adults to get over it quickly.

Written evidence will be required to demonstrate that all necessary health and safety risk assessments of the proposals have been undertaken by the developer and their advisors. Such risk assessments must consider all work phases, including construction, long term maintenance work and risks to the public during operation. These must form part of a **Health and Safety File** and be submitted during Stage 2 of the Adoption Process. The safety and welfare of everyone who will use or operate the system is of paramount importance.

Education Boards and signs shall be provided for the site with a map indicating what features are present on the site, what their function is and who is responsible for each asset identified. This shall also highlight any health and safety risks to the public (although we would expect any risks to be designed out).

- Site name

- An indication of frequency of inundation (for features that are designed to be filled intermittently – basins/ swales)
- Emergency Instruction: Dial 999 in an emergency
- Main hazard and prohibition symbols and supplementary text
- Details of site supervision services and contact details (to include a number to call if there is a problem with the assets)
- Location and postcode (for giving to emergency services)

The location of adoptable drainage components within the system must take account of the needs for access for maintenance. Where maintenance could require the use of a tanker, the access must be suitable for a tanker with a capacity equal to the capacity of the component, up to a maximum of **18,000 litres**. The access must include appropriate turning facilities, where necessary. Where, in accordance with the maintenance plan, access is anticipated to be required for tankers or other maintenance vehicles, an access road with an appropriate surface and rights of way must be provided (**SSG C5.4 to C5.6**).

Surface water systems must not create a raised reservoir (**Flood and Water Management Act 2010**) with a capacity in excess of **25,000 m³**. Where raised storage features are proposed, we would expect full consideration of breach scenarios to be assessed (including volume, velocity and flow routes).

4. ADOPTION PROCESS

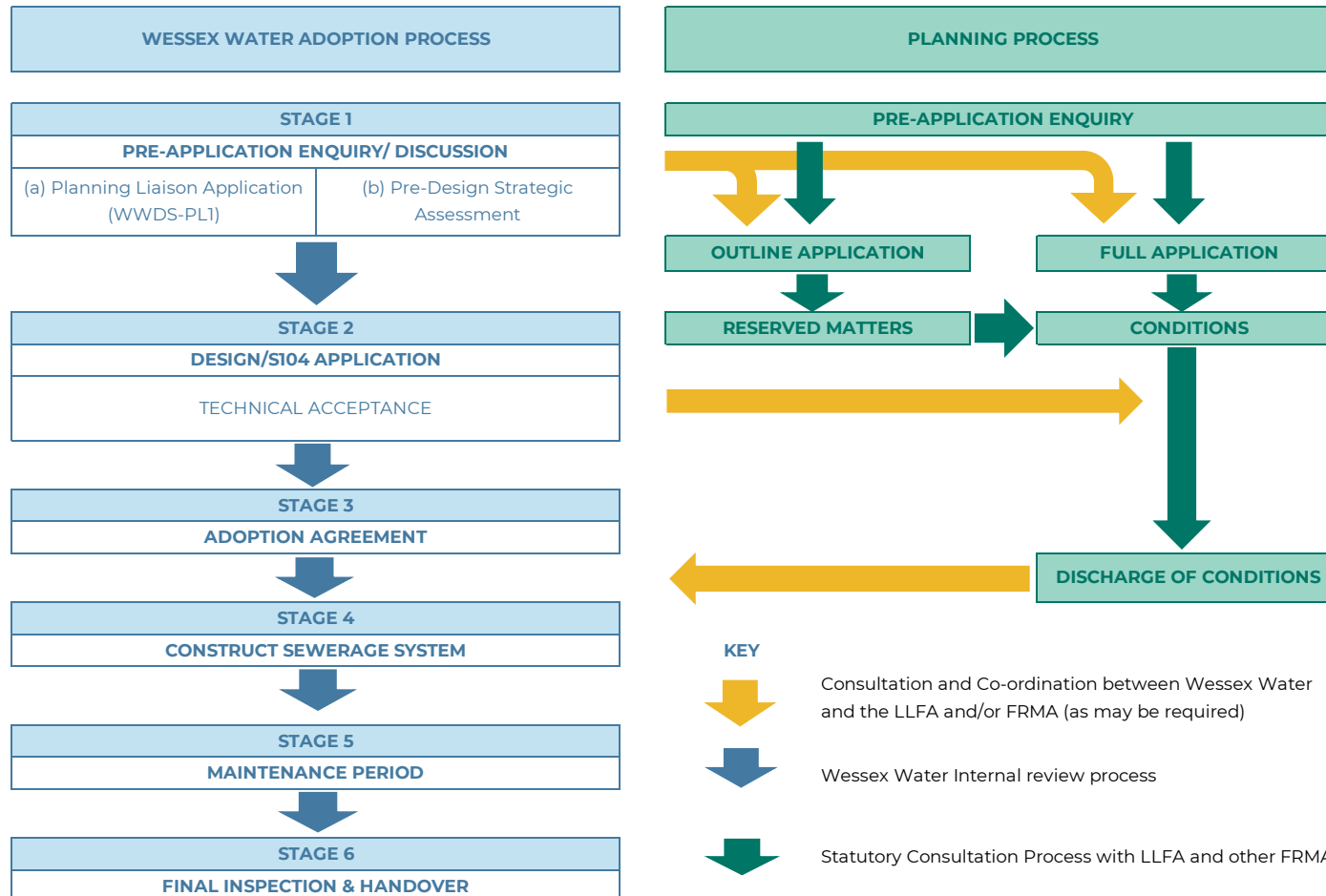


Figure 28: Schematic Diagram of the Co-ordination between the Adoption and Planning Processes

Co-ordination with the Planning Process

Wessex Water acknowledges the duties and responsibilities of the Lead Local Flood Authority and the Local Planning Authority to determine planning applications and approve measures for the disposal of surface water. Consultation with Wessex Water usually forms part of this process where disposal of surface water is into the public sewer system.

As is denoted by *Figure 28* above, the adoption process is coincident with the planning consultation process and there will be a requirement to **co-ordinate** between the LLFA (or local FRMA) and Wessex Water to avoid duplication. As such, this process has been reviewed and discussed with the LLFA's within the Wessex Region to try to synergise the two processes and simplify the key responsibilities for each element. This is reflected in the key documents list below:

Pre-app	Outline	Full	Reserved matters	Discharge of conditions	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Document to be submitted.
✓	✓	✓			✓	✓					Flood Risk Assessment / Drainage Strategy
✓	✓	✓			✓						Hierarchy of Discharge
					✓						Confirmation of Planning and Consents Status
✓	✓	✓			✓	✓	✓	✓			Location Plan Drawing
	✓				✓						Preliminary Layout Drawings
					✓	✓	✓	✓			Adoption Suitability Plan

Pre-app	Outline	Full	Reserved matters	Discharge of conditions	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Document to be submitted.
	✓				✓						Preliminary "Outline" Hydraulic Calculations
	✓				✓						Preliminary Landscape Proposals
	✓				✓	✓	✓	✓			Topographical Survey
	✓				✓						Ground Investigation Report (desk top study)
	✓	✓			✓						Confirmation of Planning and Consents Status (<i>in principle/ consent to discharge</i>)
		✓		✓	✓*	✓					Outline Maintenance and Management Plan
						✓					Programme of Works
		✓	✓			✓	✓	✓			Engineering Layout Drawings
		✓	✓	✓		✓					Detailed Hydraulic Calculations
						✓	✓	✓			Longitudinal Sections Drawings
						✓	✓	✓			Manhole Schedule
						✓	✓	✓			Flow Control System (manufacturers details)

Pre-app	Outline	Full	Reserved matters	Discharge of conditions	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Document to be submitted.
						✓	✓	✓			Pumping Station Details
						✓	✓	✓			Component Details
		✓	✓	✓		✓					Geotechnical Factual and Interpretive Reports (<i>including infiltration results</i>)
		✓	✓	✓		✓					Evidence of measures to prevent pollution of the receiving groundwater and/or surface waters
		✓	✓	✓	✓*	✓	✓	✓			Exceedance Flow Routes
		✓	✓	✓		✓	✓	✓			Detailed Landscaping Plan
					✓	✓	✓	✓	✓	✓	Completed Checklists (refer to Information Tables below)
		✓	✓	✓		✓					Consents and Discharge Agreements (<i>temporary and permanent</i>)
		✓	✓	✓		✓	✓			✓	Detailed Maintenance and Management Plan
		✓	✓	✓		✓	✓	✓			Detailed Construction Plan
						✓		✓	✓	✓	Health and Safety File (<i>including F10 Notice</i>)
							✓				Details of all parties to the Agreement

Pre-app	Outline	Full	Reserved matters	Discharge of conditions	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Document to be submitted.
								✓	✓		S104 signed Agreement
								✓			Pre-start Inspection Form
									✓		As Built Drawings
									✓		Details (<i>materials, manufacturers details, sizing etc</i>)
									✓		Confirmation of Completion of Works
									✓	✓	Confirmation of Variations
									✓		Pre-Maintenance Application Form
						✓	✓	✓	✓	✓	Contact Details
										✓	Final Inspection Form

*Stage 1b only: Strategic/ Complex Sites

Where SuDS schemes are being offered up for adoption by Wessex Water, we would refer the applicant to the adoption procedures, as set out in this guidance. The applicant will need to ensure that the SuDS scheme submitted for planning approval also meets the requirements for adoption (as detailed in the tables below). Each Adoption Stage requires a greater level of detail than the previous stage.

Stage 1 of the process should ideally be undertaken (in consultation with the LLFA/LPA) prior to any formal planning application being submitted. This will allow the principles of the surface water drainage strategy for the site to be discussed and agreed between the parties prior to planning and prior to determining the layout and density of the site. This will enable better and more cost-effective solutions to be realised for surface water management of a site, working with natural processes and drainage routes and **NOT** resorting to an end pipe solution. This will also prevent unnecessary abortive work on the part of the applicant.

The **Drainage Strategy Report** submitted at **Stage 2** of the adoption process must ensure:

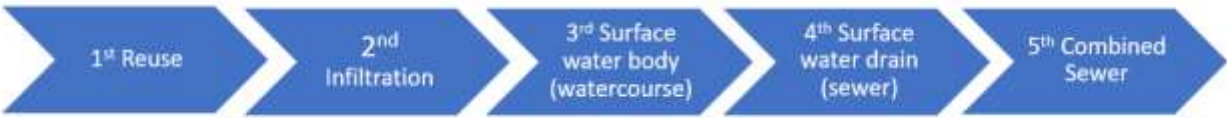
- The relevant stakeholders (LPA/LLFA/ IDB etc.) have been consulted and agree to the principle of the SuDS strategy.
- A mechanism for managing exceedance flows safely has been provided.
- The flood risk within the development site and the impacts off site during the lifetime of the development have been assessed.
- The management of drainage during construction and its impact on the proposed SuDS has been considered.
- A maintenance strategy for the lifetime of the development has been provided.

STAGE 1: Pre-Application Enquiry

To ensure viable and sustainable drainage systems for new developments, pre-application discussions with Wessex Water must take place before formally submitting a S104 application (Stage 2) **OR** planning application. This enables drainage to be accommodated into the site layout, minimising the overall cost of SuDS, ensuring that natural flow pathways and drainage features drive the design process. At this stage it will be vital to **consult all relevant stakeholders** to take account of any site-specific constraints. Each development is unique and pre-application discussions that look at individual sites and their surroundings will help ensure that when a planning application is made, and any subsequent S104 application, the appropriate level of information is provided.

The table below is expanded from *Table 1.1 – Pre-planning information list* and *Table 1.2 – Pre-design strategic assessment information list* (SSG, Appendix D – Minimum Information). Provision of the information below will constitute compliance with the SSG.

Ref	Information and documents to be submitted to support application	References/ Details
1.1	Flood Risk Assessment/ Drainage Strategy	<p>Details to include:</p> <ul style="list-style-type: none"> • Evidence of existing drainage connections and flow routes, including overland flow routes and any required off-site works. • Estimated rates of discharge and attenuation volumes. • Estimation of impermeable areas proposed (including number of units proposed) • Details of proposed components/ special assets (flow controls/ storage facilities/ conveyance routes etc) • Details of any local planning requirements/ constraints with regards to determining discharge rates and volumes (SSG C6.2.1) • Presence of sensitive receptors • Future maintenance and adoption of drainage <p>NB: In addition to the above, as part of any formal planning submission, the LLFA will require an assessment of the flood risk posed from all sources of flooding. This must be assessed and agreed with the LLFA before Wessex Water would move to Stage 2 of the adoption process.</p>

Ref	Information and documents to be submitted to support application	References/ Details
1.2	<p>Hierarchy of discharge (SSG C3.12 AND C3.13)</p>	<p>Evidence of how the surface water hierarchy has been applied to the site and whether this has been agreed with the LPA and LLFA:</p>  <ol style="list-style-type: none"> 1. Surface water runoff is collected for use; 2. Discharge into the ground via infiltration; 3. Discharge to a watercourse or other surface water body; 4. Discharge to a surface water sewer, highway drain or other drainage system, discharging to a watercourse or other surface water body; 5. Discharge to a combined sewer (as shown on the public sewer map).
1.3	<p>Confirmation of planning and consents status</p>	<p>To include which authority planning is sought, date of submission (where applicable) and any third-party consents required for discharge.</p> <p>The developer must be able to show progress in discussions with the relevant bodies and before formally making the S104 Application (Stage 2) they must be able to show evidence that any conditions will not affect the design of the system (SSG A7).</p>
1.4	<p>Location plan drawing</p>	<p>Ensure a clearly defined site boundary</p>
1.5	<p>Preliminary layout drawings (proposed & existing)</p>	<p>Details to include existing drainage connections and features, preferred drainage outfall route, proposed development and drainage layout/ features, points of access, nominal size of attenuation features.</p>

Ref	Information and documents to be submitted to support application	References/ Details
		The source, pathway, receptor model must be used in the production and refinement of the suds Concept Plan with runoff destinations chosen in accordance with the discharge hierarchy.
1.6	Adoption suitability plan	It will be necessary to provide proposed areas draining to the surface water system, indicating the proportion of the total area which drains from buildings and areas appurtenant to buildings (refer to 'Limits of Adoption').
1.7	Preliminary outline hydraulic calculations	Predicted run-off rates and attenuation estimates (refer to Climate Change and Betterment Policy)
1.8	Preliminary landscape proposals	<p>The source, pathway, receptor model must be used in the production and refinement of the suds Concept Plan with runoff destinations chosen in accordance with the discharge hierarchy.</p> <p>A full understanding of the hydraulic performance of the drainage strategy as a whole, including the features linking different SuDS features, taking into account climate change and possible future changes in impermeable area.</p> <p>Placing pollution control measures before SuDS features is vital to a good drainage design, as is the accessibility of these and all control structures on the system.</p>
1.9	Topographical survey	Drawing indicating existing contours and any proposals to change levels or flow routes as a result of the scheme proposed
1.10	Ground investigation report (desk top study)	To indicate suitability of infiltration techniques and provide a rationale for use of SuDS as part of drainage strategy. Lack of space shall not be accepted as a reason for exclusion of a particular suds feature.
1.11	Exceedance flow routes	A plan indicating key flow routes both on and off site, together with existing flow routes through the site

Ref	Information and documents to be submitted to support application	References/ Details
	(for large complex sites only – Stage 1b)	Refer to CIRIA Report C635 ‘Designing for Exceedance in Urban Drainage – Good Practice’ .
1.12	Outline Maintenance and Management Plan (for large complex sites only – Stage 1b)	Confirmation of the principles or ownership, accessibility, operational requirements of components. Maintenance must be taken into account during the design especially access arrangements, safety of operatives and maintenance frequency. All parts of the drainage system must be designed to be accessible at all times and location in private property must be avoided, wherever possible. A maintenance plan must be submitted with the drainage application.
1.13	Completed Checklists	Stage 1: Pre-Application Enquiry Checklist (Appendix B)

STAGE 1b: Pre-Design Strategic Assessment

A Strategic Assessment may be required for a large or complex sites. These sites can usually be defined under the following criteria:

Multiple phases Multiple landowners/developers Multiple points of connection Pumped discharges Storage components

The intention of the Pre-Design Strategic Assessment is to deal with the intricate site-specific details for anything that is proposed for adoption before a formal S104 application is requested. Provision of this information at an early stage will permit Wessex Water to determine whether the details proposed will meet the requirements for adoption and allow Wessex Water to provide early advice without the need to apply for a S104. There are two additional requirements for submission for sites that fall under a Strategic Assessment (as denoted in the table above), the remainder is coincident with the less complex site applications.

STAGE 2: Detailed Design/ S104 Application

As part of the adoption process sufficient information is required to ensure the adequacy of the drainage design to ensure compliance with the **Design and Construction Guide** and to facilitate updates to the public sewer records, ensure existing hydraulic sewer models can be updated to include post development drainage design flows and that future maintenance requirements are incorporated into a Company's asset management systems.

This stage forms the basis of the **S104 Adoption Agreement** and must be undertaken concurrently with the planning process to ensure that all planning policies and site-specific constraints have been incorporated into the design. Provided that Stage 1 of the adoption process has been undertaken prior to design then any site-specific criteria should have been agreed at the start of the process, negating any abortive design work. **Any details discussed at Stage 1 must be accommodated within the design.**

Wessex Water can only adopt some types of SuDS components and early consultation with the Wessex Water is recommended. Where SuDS components are used that are not adoptable by Wessex Water, we would strongly encourage the adoption of those components by other bodies that will ensure that they are maintained in perpetuity. The designer must also consider the interaction of the components and any cross-linked maintenance requirements.

Technical Acceptance: Wessex Water will provide written confirmation that the full system proposed for adoption has met the requirements for the system to form part of a S104 Agreement for the whole of the specified site.

Conditional Acceptance: Wessex Water will **NOT** allow Conditional Acceptance of any SuDS schemes proposed for adoption.

The table below is expanded from *Table 2.1 – S104 Initial assessment information list AND Table 2.2 S104 - Application details and information (SSG, Appendix D – Minimum Information)*. Provision of the information below will constitute compliance with the SSG.

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.1	Programme Of Works	Construction start date and programme of works – to include proposed inspection dates for installation of drainage components.
2.2	Flood Risk Assessment/ Drainage Statement*	<p>Details to include:</p> <ul style="list-style-type: none"> • Layout Plan showing discharge points and rates • Evidence of existing drainage connections and flow routes, including overland flow routes and any required off-site works. • Estimated rates of discharge and attenuation volumes. • Estimation of impermeable areas proposed (including number of units proposed) • Presence of sensitive receptors • Compliance with the Guiding Principles <ul style="list-style-type: none"> ○ Hydraulic design parameters and assumptions ○ Water quality design criteria and assumptions ○ Amenity/ Environmental Criteria and assumptions ○ Health and Safety Criteria and assumptions • Confirmation of principles of ownership, accessibility, operational requirements of components, future maintenance and adoption of drainage
2.3	Location Plan Drawing	<p>Ensure a clearly defined site boundary, benchmark details and ownership boundaries.</p> <p>To include asset locations, connectivity and SuDS boundary extents (preferably in CAD/ GIS formats)</p> <p>Minimum 1:2500 scale, OS Map reference</p>

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.4	Adoption Suitability Plan	It will be necessary to provide proposed areas draining to the surface water system, indicating the proportion of the total area which drains from buildings and areas appurtenant to buildings (refer to ' Limits of Adoption '). Plans must clearly indicate which lengths and areas of the system are up for adoption.
2.5	Topographical Survey	Drawing indicating existing contours and any proposals to change levels or flow routes as a result of the scheme proposed
2.6	Ground Investigation Report Or Site Investigation	<p>Surveys to provide information on ground levels, ground conditions, ground water levels and contamination must be undertaken at this stage, if they have not been carried out during the earlier stages.</p> <p>Where infiltration is proposed, infiltration tests in accordance with BRE365 must be carried out at the location and to the same depth of the proposed infiltration system. Groundwater must be monitored to take account of seasonal variations and these must be included in the design to ensure storage of structures is not lost to groundwater. Flotation of underground systems must be taken into consideration where there is high groundwater.</p> <p>A completed copy of the infiltration potential checklist (C753 B.6 or WW2.0) shall be submitted to support the S104 application (SSG C6.3.6).</p> <p>A rationale for the specific use of SuDS features as part of the drainage strategy shall be provided. Lack of space shall not be accepted as a reason for exclusion of a particular SuDS feature.</p> <p>Refer to Chapter 25 of the CIRIA Report C753 'The SuDS Manual'</p>

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.7	Engineering Layout Drawings	<p>Details to include existing drainage connections and features, preferred drainage outfall route, proposed drainage layout/ SuDS features and principles of ownership. All new SuDS drainage features must indicate location, extent, type, size and direction of flow.</p> <p>Where infiltration is proposed within 5m of foundations of any buildings or other structures, details of the foundation designs shall be provided as part of this submission of information (SSG C7.1.2.2). Refer Chapter 25 of CIRIA Report C753 'The SuDS Manual' and 'Using SuDS close to buildings' on the susdrain website.</p> <p>Min 1:500 scale/ North Point/ Site Contours.</p> <p>Key plan required for multiple sheets (SuDS feature extents to be provided in CAD or GIS format).</p> <p>Show presence of any sensitive receptors (i.e. Source Protection Zone, coal mining details, flood areas, flood exceedance paths on and off site – refer below)</p>
2.8	Exceedance Flow Routes (REF: SSG A5.2, C6.1.3 AND C6.1.7)	<p>During extreme weather, if the capacity of the drainage infrastructure becomes overloaded, water will flow across the surface of the site. The design must work with the contours of the land to manage exceedance flows safely.</p> <p>Refer to CIRIA Report C635 'Designing for Exceedance in Urban Drainage – Good Practice'.</p> <p>A plan must be provided indicating key flow routes through the site. An impermeability of 100% for the whole site area (including soft landscaped areas) must be used in all cases when determining exceedance flows (SSG C6.1.3).</p> <p>Overland flow routes must not operate more frequently than a 1 in 30 year return period event (SSG C6.1.7)</p>

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.9	Longitudinal Sections	<p>Scale 1:100 vertical and 1:500 horizontal</p> <p>Show existing ground levels (and groundwater levels where applicable). The highest groundwater level must be at least 1m below the base of any proposed infiltration component (SSG C6.3.6)</p> <p>Show proposed cover and inlet levels, foundation details, materials and bedding</p>
2.10	Detailed Hydraulic Calculations (SSG C6.1)	<p>An appropriate flow simulation method (such as Micro drainage) must be used for hydraulic design. Where a component is designed to convey or store flows in excess of the 1 in 30 year return period event, it must be demonstrated that the upstream system has the capacity to allow the flows to reach the component (SSG C6.1.6 and C6.2.2).</p> <p>Calculations must include the predicted run-off rates and attenuation volumes (refer to Climate Change and Betterment Policy) and match the details on the drawings.</p> <p>The design of storage must take account of the frequency and extent of any surcharge in the downstream system, including flood levels at any discharge point into a watercourse, lake or pond. These can vary seasonally and in response to rainfall and so this will need to be accounted for in the design (SSG C6.2.3) up to:</p> <ul style="list-style-type: none"> • a river flood level of 1 in 100 year or greater annual probability; and/or • a tidal flood level of 1 in 200 year or greater annual probability.
2.11	Manhole Schedule	<p>For all existing and proposed manholes, where required. This must also include any proposed headwalls into and out of SuDS features and any above ground conveyance systems.</p> <p>Show type, dimensions, invert levels, upstream and downstream features/pipes, extents of adoption (where applicable for SuDS features)</p>

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.12	Flow Control System	Full set of manufacturers details, pollution control measures, access
2.13	Pumping Station Details	Pumping must be avoided and robust justification provided for its use. If proposed, full set of manufacturers details must be provided including cover level, invert level, head of rising main and flow rates.
2.14	Component Details	<p>Full set of manufacturers details and submission of checklist from C753 (SuDS Manual) for the specific SuDS features proposed (refer to feature table in section 3.4 above).</p> <p>Details must include location, type, size, materials, geotechnical/ hydrogeology characteristics, flow control, pollution control, construction details, access requirements and key inspection points.</p> <p>An effective means of sediment control must be provided upstream of any attenuation component, infiltration component or outfall. This must include provision of appropriate access to and into the component for removal of accumulated sediment (SSG C7.1.1.3 and C7.1.1.4).</p> <p>Components must be designed in accordance with the local authority requirements (usually up to the 1 in 100 year rainfall event plus climate change) (SSG C6.3.2)</p> <p>Refer to Chapter 3 and 24 of the CIRIA Report C753 'The SuDS Manual'.</p> <p>Where tanks are proposed, a full set of manufacturers details must be provided together with a robust assessment of the structural loads on each component and, where necessary, exclusion zones clearly defined.</p>
2.15	Detailed Landscaping Plan	To include details of all planting and any enhancements/ mitigation proposed as part of the scheme. It must be demonstrated that SuDS have been designed to integrate with the green infrastructure serving the development, providing multi-functional spaces and that the LLFA have reviewed and approved the plans proposed (urban design and ecology).

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.16	Detailed Construction Plan	<p>It is essential to consider the construction sequence together with the construction method. This allows measures of pollution control during construction to be taken into account during the design stage (SSG A10.2). The developer will need to demonstrate how sediment and other debris will be managed throughout construction and during maintenance prior to adoption.</p> <p>On a multi-phased development, a programme for installation of each stage of the drainage system shall be provided. This must include provision for the establishment of planting to reduce erosion risk to open conveyance systems and minimize sediment loading from Construction activities.</p> <p>A Construction Method Statement, in accordance with Part E of CIRIA Report C768 ‘Guidance on the Construction of SuDS’ must be submitted for approval.</p> <p>This is also a requirement for Land Drainage Consent/ EA Flood Defense Permit and so co-ordination between Wessex Water and the LLFA/EA must be undertaken where required.</p>
2.17	Consents / In Principle Agreements (SSG A7)	<p>Confirmation of permission to discharge surface water and highway drainage, including local planning approval.</p> <p>Evidence of 3rd party agreement for discharge, land entry and/or installation of components.</p> <p>Ownership details for all aspects of the site comprising landownership and division of responsibilities for maintenance and management of the site (particularly where 3rd parties may be responsible for amenity spaces in proximity to SuDS features).</p>
	Health & Safety File (SSG A5.4 TO A5.5/ SSG APPENDIX I)	<p>This must demonstrate the principal designer has taken account of all health and safety aspects over the whole life of the development, including construction risks and future maintenance.</p> <p>Principal designer's risk assessments must be included within the submission.</p>

Ref	Information and Documents to Be Submitted to Support Application	References/ Details
2.18	<p>Detailed Maintenance and Management Plan</p> <p>(SSG A5.5 AND A5.6)</p>	<p>To include an assessment of whole life costing for the drainage scheme, principles of ownership and management, accessibility and operational requirements for components of the scheme.</p> <p>A maintenance plan must include the following items</p> <ul style="list-style-type: none"> • The type of maintenance activities that are anticipated and the frequencies of those activities. • The estimated duration of those activities; • Any large plant and equipment required to undertake those activities economically; • The estimated costs to complete those activities; • A site plan showing maintenance areas, access routes and the locations where maintenance activities are anticipated; • A statement describing any secondary function (e.g., recreation area) above or within the SuDS component and details describing how this function is to be managed and by whom. <p>The management plan must require a review every 5 years to reflect the dynamic nature of soft SuDS (SSG C11.3)</p> <p>Reference to Chapter 32 of CIRIA Report C753 'The SuDS Manual'.</p>
2.19	<p>Completed Checklists</p>	<p>Stage 2: Design/S104 Application Checklist (Appendix B)</p> <p>Health & Safety Risk Assessment Checklist (Appendix B)</p> <p>SuDS Component Checklists WW2.0 to WW2.11* (refer to Section 3.4: Adoptable Features)</p> <p>Ownership Details (as required by SSG Appendix D)</p>

*Currenting being drafted and not available for use. Developers should use the SuDS Manual Checklists, as denoted in the 'Adoptable Features Table' (Section 3.4)

STAGE 3: S104 Adoption Agreement

Standard agreements can be generated by the developer instead of Wessex Water, but the developer must inform Wessex Water that they will be doing this. In this instance, Wessex Water will be required to check the details contained within the agreement to ensure that they are compliant with the standard agreements. At this stage, the documents submitted as part of the agreement must have been approved through **Stage 2** of the process and received Technical Acceptance. Once the agreement is signed then no further alterations will be permitted to these documents. Therefore, notification and submission of details must be provided to the LLFA to ensure full compliance with planning prior to full sign off.

The table below is expanded from *Table 3.1 – S104 Agreement details and information (SSG, Appendix D – Minimum Information)*. Provision of the information below will constitute compliance with the SSG. If all of the items listed below are supplied, the Agreement can be created and sent out for signing by all parties. If incorrect or insufficient details are supplied, full details will be requested.

Ref	Information and Documents to be submitted to support Application	References/ Details
3.1	Technical Acceptance	Technical Acceptance of the whole sewerage system will be required to progress to a formal agreement. The Technical Acceptance will request the details to be incorporated within the standard S104 Agreement as set out in this table.
3.2	Layout Drawings	Full set of correctly coloured layout details that were technically accepted. To include adoption extents of discrete SuDS features.
3.3	Design Details	Full set of design details that were technically accepted Longitudinal sections, cross sections, manufacturers details, manhole schedule, component details, landscaping etc.

Ref	Information and Documents to be submitted to support Application	References/ Details
3.4	Detailed Construction Plan	<p>It is essential to consider the construction sequence together with the construction method. This allows measures of pollution control during construction to be taken into account during the design stage. This will ensure that SuDS will be constructed and function as designed.</p> <p>On a multi-phased development, a programme for installation of each stage of the drainage system shall be provided. This must include any temporary measures required to safeguard the site and the proposed system.</p> <p>The approved Construction Method Statement must be submitted as part of the agreement (SSG C9.2)</p>
3.5	Details of all Parties to the Agreement (SSG A7)	<p>Copies of landownership and responsibilities and all parties who will be subject to this agreement.</p> <p>Copies of all the necessary statutory consents and other permissions to enable the development to proceed including:</p> <ul style="list-style-type: none"> • Land Drainage Consent; • Flood Defense Permit.
3.6	Detailed Maintenance and Management Plan	To include all details that have been Technically Accepted.
3.7	Details of bond type	Cash or Surety
3.8	Charges	To be informed by the above maintenance and management plan.

Ref	Information and Documents to be submitted to support Application	References/ Details
		Charges will also include costs associated with processing S104 applications, currently priced on application. Wessex Water are still to determine standardised charge rates for SuDS features. These will be published separately on the Wessex Water Website.
3.9	Mediation Details	If not provided at Stage 2 of the process. Wessex Water can provide details of suitable mediators where required.
3.10	Completed Checklists	Stage 3: Adoption Agreement Checklist (Appendix B) Construction Checklists: Pre-Construction (C768: Guidance on Construction of SuDS): Table A1.1

An early start request can be made once full Technical Acceptance has been provided. The developer will need to ensure that the relevant inspection and administration fees have been paid. It should be noted that no Conditional Acceptance will be permitted on schemes containing SuDS features that are up for adoption.

STAGE 4: Construct Sewerage System

Construction of the SuDS components must be in accordance with the **CIRIA Report C768 ‘Guidance on the Construction of SuDS’** and following the approved method statements as approved as part of the S104 Technical Acceptance. The developer must use the checklist in Part F of the above document as part of their construction records and supply copies to Wessex Water.

The table below is expanded from *Table 4.1 – Construct sewerage system – request pre-start inspection (SSG, Appendix D – Minimum Information)*. Provision of the information below will constitute compliance with the SSG.

Ref	Information and Documents to be submitted to support Application	References/ Details
4.1	S104 Agreement	Signed Agreement OR Technical Acceptance with an Early Start request form signed.
4.2	Drawings	Full set of Technically Accepted drawings for development. To include adoption extents of discrete SuDS features.
4.3	Design Details	Full set of Design details that were technically accepted Longitudinal sections, cross sections, manufacturers details, manhole schedule, component details, landscaping etc.
4.4	Detailed Construction Plan	To include a detailed schedule of activity to enable discussion on the appropriate points for inspection throughout the Construction Programme including any method statements. It is essential to consider the construction sequence together with the construction method. This allows measures of pollution control during construction to be taken into account during the design stage. This will ensure that SuDS will be constructed and function as designed.

Ref	Information and Documents to be submitted to support Application	References/ Details
4.5	Pre- Start Inspection Form	A pre-start inspection must be carried out before any works on the prospectively adoptable system commences (tying in with the construction programme). Allow 14 days to enable a Pre-Start Inspection to be arranged.
4.6	Health and Safety File (SSG A5.4 to A5.5/ SSG Appendix I)	Designers Risk Assessment must be included Provide a copy of the F10 notice . Maintenance and Management Plan – including details of access for maintenance.
4.7	Charges	Administration, Assessment and Inspection charges must be provided at this stage
4.8	Contact Details	If not provided at Stage 2 of the process, these must be confirmed.
4.9	Completed Checklists	Stage 4: Construction Checklist (Appendix B) WW Inspection Checklists: Pre-Construction (C768: Guidance on Construction of SuDS): Tables A1.2, A1.3, A1.6, A1.7 and Specific SuDS Features Tables as may be required (A1.8, A1.11, A1.12, A1.14, A1.15, A1.16, A1.17, A1.23, A1.24, A1.25, A1.26)

Wessex Water will require verification that any SUDS they are to adopt have been constructed in accordance with the agreed design and specification. Verification will take the form of developer supplied documentation and Wessex Water inspection during construction.

Work shall not start on site until Wessex Water has formally approved the adoption design plans and specification in writing. Once in place, Wessex Water must be given at least two weeks' notice of the start of construction of the development and must be provided with a programme of works. Wessex Water must be notified of any significant changes to the programme.

The SUDS construction must be carried out to the satisfaction of the Development Engineer, who shall be provided with free access at all reasonable times to any part of the SUDS works or other works that may affect the operation of the SUDS.

During construction, the developer may be required to prove the thickness and type of any material or layer, if it has been covered prior to inspection. Any work that cannot be inspected because the appropriate notice has not been received will result in the work being re-opened for inspection and reinstated at no expense to Wessex Water.

A pre-excavation inspection will be required to ensure construction run-off is being adequately dealt with and will not clog constructed SUDS features or pollute downstream features.

The developer's consultant must also inspect the construction and materials used. The consultant must prepare a site inspection plan and verification report. This will be site specific but as a minimum it will be expected to include the following:

1. Photographs of excavations, confirmation of soil conditions, confirmation of levels, profiles and general earthworks.
2. Photographs and full manufacturer's details (if appropriate) of inlets, outlets and any control structures associated with any feature to be adopted.
3. Confirmation of topsoil sources with appropriate certificates.
4. Full planting list and confirmation of plant sources, planting method statement and initial maintenance regime.
5. Confirmation of subsoil and topsoil depths.
6. Confirmation of gravel fill specification and sources, installation method statement of filter drains.
7. Confirmation of source and test certificates for membrane liners if used. Membranes shall have welded joints and shall be inspected and the joints tested after installation. Records of the tests shall be provided.
8. Photographs of the feature before and after planting.
9. Full as constructed drawings and a topographical survey of the 'as constructed' feature.
10. Confirmation of initial maintenance regimes.

STAGE 5: Maintenance Period

The maintenance period for a SuDS scheme will only be able to be progressed once planting has been established and each feature is fully functioning as designed. This is likely to be at least one growing season and could stretch beyond 12 months depending on the specification and maturity of plants specified. The purpose of the pre-maintenance inspection is to identify any remedial works that are needed to ensure that the system is operating as intended, to check that the As-Built drawings adequately reflect what has been constructed and to check that the access provision is sufficient in accordance with Wessex Water Guidance. Any outstanding details identified during this inspection will need to be rectified/ finished and a further inspection carried out upon completion.

After confirmation that the remedial works have been completed and the As-Built drawings reflect what has been constructed on site, the Provisional Certificate will be issued to confirm that the system is on a maintenance period. Any scheduled defects must be completed and confirmed to Wessex Water **6 MONTHS** before vesting is required.

Wessex Water will require a maintenance period of one year. During this period, the provision for a review of the performance of the SUDS features to allow minor adjustments and refinements based on observed performance must be provided. Any adjustments made will be at the developer's expense. At the end of the maintenance period there will be a final inspection. Any accumulated silt will have to be removed at this time and any areas of erosion or other defects repaired.

Wessex Water reserves the right to decline the adoption of any system that is not designed in accordance with the essential adoption requirements and where construction is not verified, as detailed in Stage 4 above.

The table below is expanded from *Table 5.1 – Sewerage system constructed – request maintenance inspection (SSG, Appendix D – Minimum Information)*. Provision of the information below will constitute compliance with the SSG.

	Information and Documents to be submitted to support Application	References/ Details
5.1	S104 Agreement	Confirmed as in place.
5.2	As Built Drawings	<p>Full set of As-Built drawings and details. These must be cross-checked with the design drawings and any variations not previously agreed must be highlighted (SSG C9.5)</p> <p>To include adoption extents of discrete SuDS features, including access routes, easements and maintenance strips.</p>
5.3	Details	<p>Manufacturers details for anything that needs to be operated or maintained. This includes details of materials installed, sizing, foundations and bedding.</p> <p>Include confirmation of any access requirements if not already provided within the As-Built Drawings (noted above).</p>
5.4	Confirmation of Completion	<p>Confirmation of completion of works.</p> <p>Confirmation of inspections carried out and completed during construction. Include a copy of any inspection reports where necessary.</p> <p>CCTV of construction system (where applicable).</p> <p>Confirm number of properties occupied and that the agreed discharge rates have been achieved.</p> <p>Supply copies of the checklists in Part F of the CIRIA Report C768 for throughout the construction phase (SSG C9.4)</p> <p>Any diversion works must be completed in full to request progression of the system.</p>

	Information and Documents to be submitted to support Application	References/ Details
5.5	Confirmation of Variations	Details of any major or minor variations and confirmation of agreement/ sign off
5.6	Pre- Maintenance Application Form	Request a full or part pre-maintenance inspection when all works are ready to be progressed. Any necessary cleaning must be carried out on the system prior to inspection.
5.7	Health and Safety File (SSG A5.4 to A5.5/ Appendix I)	Designers Risk Assessment must be included Provide a copy of the F10 notice . Maintenance and Management Plan – including details of access for maintenance.
5.8	Charges	Administration, Assessment and Inspection charges must be provided at this stage.
5.9	Contact Details	These should have been provided at Stage 2 or 4 of the process, these must be confirmed. To request an inspection, you will need to provide: <ul style="list-style-type: none"> • Contact name and number. • Company Details • Confirmation of person meeting on site. • Details if the inspection required. • Preferred Date and Time
5.10	Completed Checklists	Stage 5: Maintenance Checklist (Appendix B)

STAGE 6: Final Inspection and Handover

The final inspection is used to give acceptance for vesting the site and includes checking the system is working properly, ensuring there are no operational issues and that all on-site access requirements have been provided. Final Inspection and Handover cannot progress until the system has been working effectively and causing no major operational issues. If any defects or issues have arisen, then confirmation of any remedial works required will be provided by Wessex Water following the **Final Inspection**. These works must be completed and a set of revised **As-Built drawings** provided (as required) to Wessex Water before a **Final Certificate** will be issued.

	Information and Documents to be submitted to support Application	References/ Details
6.1	Final Inspection Form	Any necessary cleaning must be carried out on the system prior to inspection.
6.2	Confirmation of Variations	Details of any operational issues that have arisen during the maintenance period. Detail any variations that may be required to rectify any issues.
6.3	Health and Safety File (SSG A5.4 to A5.5/ SSG Appendix I)	Designers Risk Assessment must be included Provide a copy of the F10 notice . Maintenance and Management Plan – including details of access for maintenance.
6.4	Contact Details	These should have been provided at Stage 2 or 4 of the process, these must be confirmed. To request an inspection, you will need to provide: <ul style="list-style-type: none"> • Contact name and number. • Company Details • Confirmation of person meeting on site. • Details if the inspection required. • Preferred Date and Time
6.5	Completed Checklists	Stage 6: Adoption Handover (Appendix B)

Appendix A: Comments Form

WW SuDS Adoption Requirements Feedback Form

Date:	<i>(please complete)</i>
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Commentator:	Name: <i>(please complete)</i>	Organisation: <i>(please complete)</i>
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Please answer these questions yes or no and provide further comment in the proceeding table where necessary.

1. Do you believe there are any omissions?	
2. Is the level of information, right? (Too much, or too little info)	
3. Are the key messages right?	
4. Is the process easy to follow?	

Provision of comments on the Guidance Report

Page	Reference	Comment/ proposed change by the Commentator	Wessex Water responses to comments
	Please note what section, table or figure you are commenting on		

Appendix B: Checklists

These checklists are designed for use by Wessex Water in determining the suitability of a proposed surface water drainage system intended for adoption under an agreement made in accordance with Section 104 of the Water Industry Act 1991. This is to ensure full compliance with the Sewerage Sector Guidance published by the sewerage undertakers pursuant to the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code).

Any developer applying for Adoption of SuDS features is required to submit completed copies of the relevant checklists (SSG C3.16) In all cases this must include **C753: Tables B.3, B.4, B.5 and B.22**. It must also include **C753: Tables B.6 to B.21** for each of the SuDS components used within the scheme.

The above checklists are in the process of being adapted to fit within the stages of the adoption process and to align with the business objectives of Wessex Water. These Wessex Water Checklists will eventually **REPLACE** the SuDS Manual checklists. The adapted checklists completed and included within this edition of the Wessex Water SuDS Adoption Requirements include:

C753 checklist Table Reference	WW Adapted Checklist
B.1 and B.2	STAGE 1 – Pre-Application Enquiry
B.3 and B.4	STAGE 2 -
B.5	Health and Safety Risk Assessment
N/A	STAGE 3 – Adoption Agreement
B.22	STAGE 4 - Construction
B.25	STAGE 5 - Maintenance
B.26	STAGE 6- Adoption Handover

The developer is deemed to have met the SuDS Adoption requirements by completing the checklists herein together with the checklists relating to the SuDS components used and the relevant documentation, as detailed Section 4 of this report. The developer may decide how much of the system is offered for adoption under the section 104 agreement, provided that the adopted system is a continuous network to an effective discharge point.

The following Checklists are in word format and will be available as a separate editable version for download from the Wessex Water Developer Services website. We have also developed a spreadsheet version of these checklists which will be made available in advance of any web-based solution being developed. This will be available upon request from April 2021.

Wessex Water are in the process of reviewing alternative web-based solutions to expedite the process and enable ease of use between all parties but this will not be available until later in 2021. Any feedback from users of these checklists shall be used to inform the future development of this process (refer to [Appendix A](#)). Wessex Water are committed to encouraging the adoption of SuDS and, to that end, wish to make this process as effective and efficient as possible.

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Health and Safety	Has a principal designer been appointed in accordance with the Construction (Design and Management) Regulations 2015?	A5.4				
Water Quality	Is this a Water Quality Sensitive Area? If so, improvements to water quality MUST be provided as part of the SuDS scheme.					
Consultation	Have these proposals been reviewed and discussed with the Lead Local Flood Authority and/or Local Planning Authority?	A4.2				
Consents	Have details of the land and infrastructure ownership for all drainage routes and points of discharge been provided (including sewerage assets)?	A11.1	Checklist B.1			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Consents	Has the developer identified the location and interconnection of any existing drainage assets on site?	A11.1				
Consents	Have all statutory consultee responsibilities and requirements been identified, including timescales for any likely required approvals/consents?		Checklist B.1			
Consents	Do the proposals place buildings over or near existing public sewers or lateral drains?	A11.2				A separate application under Section 185 of the Water Industry Act 1991 will be required if diversion is necessary.
Components	Does each component proposed come within the meaning of a "sewer" (see A6.19) or "lateral drain" (see A6.11) in accordance with the Water Industry Act 1991?	C3.1 A6.19 A6.11				Refer to Wessex Water SuDS Adoption Requirements - Limits of Adoption
Discharge	Does the design meet the following discharge hierarchy (with acceptable justification for moving between levels)	A4.2 C3.12 C3.13	3.2.3			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Discharge	Is surface water used as a resource, where appropriate? (collected for use)					
Discharge	Has the suitability of infiltration techniques been explored? Infiltration tests should be carried out at this stage wherever possible but if not, these should be completed prior to Stage 2 of the Adoption Process		25.3			
Discharge	If discharge to a third-party asset is proposed, has the design criteria and appropriate connection point been discussed and agreed with the third party? Is this therefore a viable discharge route?	A4.3 A7.1	Checklist B.1			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Design Criteria	<p>Has runoff and flooding from all sources (both on and off site) been considered and taken into account in the design?</p> <p>Does the layout of the whole development take account of the potential risk of flooding to surrounding areas and the effect of any overland flows from adjacent sites?</p> <p>Does the design work with the contours of the land to manage exceedance flows safely?</p>	A5.2	3.3.3			Refer back to LLFA/ LPA where already consulted
Design Criteria	Does the proposal seek to connect drainage from streets into the surface water sewer? Has the developer confirmed the area of highway being drained to the public sewer?	A8				Check Limits of Adoption (must predominantly discharge from buildings)
Design Criteria	Does the hydraulic design take account of the requirements of the local authority in terms of design criteria, including design rainfall rates, design flood	C6.1.1	Checklist B.1			Consult with LLFA/ LPA where required.

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
	protection frequencies and allowances, for climate change and urban creep?					
Design Criteria	Are any natural hydrological features on the site adequately protected by the design? Does the design utilise the natural topography? The natural drainage characteristics within, and hydrologically linked to, the site should be clearly identified and the drainage proposals should demonstrate integration with and not compromise the function of the natural drainage systems.		3.2.4			
Components	Has a mosaic of features been proposed as part of the scheme including interception, treatment, conveyance, peak flow and volume control, storage and exceedance routes?		Checklist B.1			
Design Criteria	Are all SuDS components outside any areas of significant flood risk? If not, justification and evidence that the risks to		3.2.5			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
	system performance are acceptable should be provided					
Discharge	Does the design include suitable inlet/outlet controls and/or conveyance system to manage design flows?					
Discharge	Have infiltration rates, hydraulic gradients and any downstream constraints been evaluated to ensure that the components will drain down within a suitable timescale?		3.2.5			
Design Criteria	Are flows up to the agreed standard of service event (including allowances for urban creep and climate change) fully conveyed within the drainage systems?		3.2.6 3.2.7			
Design Criteria	Does the design demonstrate adequate control of the 1-year, critical duration site event?		3.2.3 3.3.2			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Design Criteria	Does the design demonstrate adequate control of the 100-year, critical duration site event (including urban creep and climate change allowances)?		3.2.3 3.2.7			
Design Criteria	Is pumping a requirement for the operation of the system? If yes, have all other possible alternatives been considered appropriately?		3.2.5			
Discharge	Has the design taken account of the likely frequency and duration of any temporary high-water levels in a groundwater body, watercourse or other surface water body? (>1m below ground level)	A4.4	13.2			
Exceedance	Are flows up to the agreed exceedance standard of service event (including allowances for urban creep and climate change) contained or stored on site within safe exceedance storage areas and flow paths? Are these areas and flow		3.2.6 3.2.7 3.3.3 24.12			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
	paths protected from future development?					
Exceedance	Have overland flow routes for events above the design standard been provided? Do these routes ensure no risk to property of land within or adjacent to the site?		24.12			
Easements	Have the requirements for Wessex Water easements for surface water discharges to watercourse, bodies of water, sewers within third party land and sewers which may form part of another feature been provided as part of the design?	A7.3				Refer to Wessex Water SuDS Adoption Requirements for information on Easements
Water quality	Does the scheme design demonstrate on-site retention of approximately the first 5 mm of runoff from impermeable surfaces for most events? How is Interception to be delivered (e.g., infiltration, green roofs, permeable		3.3.1 24.8 4.3.1			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
	pavements, vegetated surfaces, bespoke design – provide details)?					
Water quality	Does the design include an appropriate treatment strategy to ensure that: <ul style="list-style-type: none"> • sediment is trapped and retained on site in accessible and maintainable areas? • suitable SuDS components have been provided in series before discharge that provide acceptable treatment, taking account of proposed site land use and the status of all receiving water bodies? 		4.2.2 4.3.2 26.6.3			
Erosion	Where required, does the design include suitable flow spreading and/or appropriate energy dissipation to prevent erosion?					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Water quality	Does the design incorporate suitable planting for water treatment?					
Water quality	Are there any requirements of any environmentally sensitive potential receiving water bodies for the runoff. Have these been identified?		Checklist B.1			
Water quality	Has consideration been given to the potential implications of climate change on the capability of the SuDS components to provide the required treatment?		4.2.3			
Amenity	Is public space used and integrated with the drainage system in an appropriate and beneficial way? Has the LLFA/LPA determined that the multi-functional use of the SuDS proposed meets policy requirements for planning?		5.2.2			Where adoptable SuDS features are within wider amenity spaces, engage with Ops Team with regards to the Water Rangers Programme and Future Community Engagement

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 1: Pre-Application Enquiry		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	C753 Ref	Y	N	Summary of Details
Health and Safety	Are the proposed components safe for any proposed amenity use?		5.2.4 Chptr 36			
Biodiversity	Does the design support local (and wider where possible) habitat connectivity?		6.2.3			
Maintenance	Does the drainage strategy include considerations of future maintenance of all components (including those not being adopted by Wessex Water)?	A4.5				
Maintenance	Has due consideration been given to the maintainability of the proposed SuDS, including accessibility and health and safety.	C3.14 C5.3				
Construction	Has appropriate consideration been given to the constructability of the proposed SuDS (including the requirements for phasing and protection components).					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Consultation	Has the developer engaged early with the local authority (this includes LPA/ LLFA/ Internal Drainage Board where applicable) and the sewerage company to agree a drainage strategy and maintenance plan prior to making any planning or S104 Application?	A4.1				If No - defer back to Stage 1 of process and/or review Stage 1 checklist to ensure full compliance.
Consultation	Have these proposals been reviewed and accepted by the Lead Local Flood Authority and/or Local Planning Authority? Has this been submitted for planning?	A4.2				If planning has been granted, have any specific conditions been applied
Consents	Is there likely to be an impact on neighbouring land?	C6.3.7				
Consents	Where any works are to be carried out in proximity to existing sewers or lateral drains, have appropriate protection methods and mitigation plans to protect the assets been provided?	A11.5				These details should be provided within the Health and Safety File

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Design Criteria	Are all natural hydrological features on the site adequately protected by the design?		3.2.4			
Discharge	Has the infiltration potential of the soil and subsoil been confirmed by geotechnical tests, taking account of the seasonal variation in groundwater conditions?	C6.3.6	25.3			
Discharge	Where infiltration is proposed within 5m of foundations of any buildings or other structures, have details of the design of the foundations of the building or structure been submitted?	C7.1.2.2				
Discharge	If discharge to a third party asset is proposed, has evidence been provided that the design criteria have been agreed with the third party and that an appropriate connection detail has been agreed?	A4.3 A7.1				

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Discharge	Have the requirements for Wessex Water easements for surface water discharges to watercourse, bodies of water, sewers within third party land and sewers which may form part of another feature been provided as part of the design?	A7.3				Refer to Wessex Water SuDS Policy Document
Discharge	Have infiltration rates, ground water levels, hydraulic gradients and any downstream constraints been evaluated to ensure that the components will drain down within a suitable timescale?		3.2.5			
Design Criteria	Has the design taken account of the likely frequency and duration of any temporary high-water levels in a groundwater body, watercourse or other surface water body? (>1m below ground level)	A4.4	13.2			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Design Criteria	Are flows up to the agreed standard of service event (including allowances for urban creep and climate change) fully conveyed within the drainage systems?		3.2.6 3.2.7			Refer to Design Criteria Logic Tree for how to agree the design standard
Design Criteria	Does the design demonstrate adequate control of the 1 year, critical duration site event?		3.2.3 3.3.2			Any changes from Stage 1 check
Design Criteria	Does the design demonstrate adequate control of the 100 year, critical duration site event (including urban creep and climate change allowances)?		3.2.3 3.2.7			Any changes from Stage 1 check
Design Criteria	Does the design demonstrate adequate control of the 100 year, 6 hour runoff volume from the site?		3.2.3 3.3.1			Any changes from Stage 1 check
Materials	Do all proposed materials comply with the requirements of Part E of the Sewerage Sector guidance?	C8.1				Refer to Part E of SSG

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
SuDS	<p>Have the four pillars of SuDS design been properly considered and utilised, with the production of resilient surface water systems that integrate all four?</p> <p>Has a mosaic of features been proposed as part of the scheme?</p>	C3.3				
SuDS	<p>Are all SuDS components outside any areas of significant flood risk? If not, provide justification and evidence that the risks to system performance are acceptable</p>		3.2.5			
Discharge	<p>Does the developer propose to connect drainage from streets into the surface water sewer? Does this comply with the Limits of Adoption Guidance? Has the developer confirmed the area of highway being drained to the public sewer?</p>	A8				

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Storage	<p>Where a component is designed to convey or store surface water to control surface water discharges from the site, has the designer demonstrated that:</p> <p>a) the upstream system (including the inlets) has sufficient capacity to deliver the design flows to the component, either in its entirety or in combination with overland flow pathways;</p> <p>b) an overland flow pathway is provided that will safely manage any exceedance flows.</p>	C6.1.6 C6.2.2				
Exceedance	<p>Has an appropriate flow simulation method that can simulate flooding from the drainage system been used for hydraulic design?</p> <p>A simple calculation method is likely to be acceptable in the case of small developments.</p>	C6.1.5				Micro- drainage or similar

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Exceedance	As an impermeability of 100% for the whole site area (including soft landscaped areas) been used in determining exceedance flows?					
Exceedance	Have the flow paths and potential effects of flooding been considered in the design? Are flows up to the agreed exceedance standard of service event (including allowances for urban creep and climate change) contained or stored on site within safe exceedance storage areas and flow paths? Are these areas and flow paths protected from future development?	C6.5.3	3.2.6 3.2.7 3.3.3 24.12			
Exceedance	Where an overland flow route is used, is it designed to operate more frequently than in a 1 in 30 year return period design rainfall event?	C6.1.7				

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Exceedance	Are the surface water drainage system components (including overland flow routes) located so as to minimise the risk of damage to buildings or other critical infrastructure in the event of sewer flooding (due to extreme events/ blockage/ pumping station failure/ surcharging)?	C6.5.1	24.12			
Exceedance	Has the frequency and extent of any surcharge in the downstream system, including flood levels at any discharge point into a watercourse, lake or pond been adequately considered in the design?	C6.2.3				
erosion	Where required, does the design include suitable flow spreading and/or appropriate energy dissipation to prevent erosion?					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Components	Does the proposed system include pervious pavements, green roofs and/or filter strips? Are these components upstream of the adoptable components or do they form an exceedance flood route?	C3.7				
Components	Have any flows through pervious pavements (where they discharge into the system) assumed an impermeability of 100%? OR Has it been demonstrated that the proposed management arrangements will limit the rate of runoff to a lower level?	C6.1.3				
Water quality	Does the scheme design demonstrate on-site retention of approximately the first 5 mm of runoff from impermeable surfaces for most events?		3.3.1 and 24.8 4.3.1			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
	How is Interception to be delivered?					
Water Quality	Has consideration been given to the potential implications of climate change on the capability of the SuDS components to provide the required treatment?		4.2.3			
Water Quality	Has an effective means of sediment control been provided within the drainage system and particularly upstream of any attenuation component (e.g., pond, wetland, basin or tank), infiltration component, filtration component or outfall? Does the design ensure that <ul style="list-style-type: none"> • sediment is trapped and retained on site in accessible and maintainable areas? 	C7.1.1.1	4.2.2 4.3.2 26.6.3			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
	<ul style="list-style-type: none"> suitable SuDS components have been provided in series before discharge that provide acceptable treatment. 					
Biodiversity Criteria	Will the drainage system support and protect natural local habitats and species (native planting)? Has this been reviewed and approved by the LPA as part of the planning process?		6.2.1			
Biodiversity Criteria	Have native plants been used? If ornamental species are proposed, has a rationale for their use been provided (including measures to prevent migration to natural water bodies)?					
Biodiversity Criteria	Is the proposed planting appropriate to the location, visually, relative to gradient, water depths etc and with respect to access and maintenance?					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Biodiversity Criteria	Will plantings be established or rely on natural colonisation? How will this be managed to minimise risk of erosion (where this may be a risk)?					
Amenity	Is public space used and integrated with the drainage system in an appropriate and beneficial way? Has this been reviewed and accepted by the LPA?		5.2.2			
Amenity	Is the structure and function of the drainage system clear and obvious to the local community?		5.2.6			
Amenity	Do the design proposals include sufficient provision for community engagement and awareness raising? Have adequate signage been proposed as part of the scheme? Refer to SuDS Policy Guidance Document		5.2.7			Where adoptable SuDS features are within wider amenity spaces, engage with Ops Team with regards to the Water Rangers Programme and Future Community Engagement

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Amenity	<p>Components that are designed to be filled with water intermittently (e.g., basins or swales) should be designed so that the water is apparent at least a few times a year to ensure that the public are aware of their function.</p> <p>Have details been submitted to indicate this has been allowed for?</p>	C6.3.3				
Health and Safety	Has a principal designer been appointed in accordance with the Construction (Design and Management) Regulations 2015?	A5.4				
Health and Safety	Are the proposed components safe to construct, maintain and operate? Are the proposed components safe for any proposed amenity use? Has a copy of the principal designer's risk assessment been submitted for each proposed component?	C3.15	5.2.4 Chapter 36 Checklist B.3			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Maintenance	Are the design features sufficiently durable to ensure structural integrity over the system design life, with reasonable maintenance requirements?		Chapter 32			
Maintenance	Are the operating and maintenance requirements of the drainage system adequately defined? Are there specific features that are likely to pose maintenance difficulties? If yes, have adequate mitigation measures been proposed?		Chapter 32			
Maintenance	Has an acceptable Maintenance Plan been submitted and approved? Does the management and maintenance plan include the items as set out in the Wessex Water SuDS Adoption Requirements Information Tables	A5.5 A5.6 C11	Chapter 32			Refer to Wessex SuDS Adoption Requirements for typical Maintenance Plan Requirements

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Maintenance	Does the management plan set out the management objectives of the landscaping and vegetation, and an initial management programme for at least the first five years?	C7.14.2 C11	Chapter 32			
Maintenance	Has the cost of future maintenance activities identified in the maintenance plan as well as the initial capital costs been provided?	C3.10	Chapter 35			
Maintenance	Are the features proposed easily accessible? Have shallow gradients been incorporated?					
Maintenance	Has the developer provided details for the long term maintenance and management of unadoptable components of the system?	C3.8				Where the operation and maintenance of a component managed by another body could adversely impact on the sewerage company's system, an agreement should be in place to protect the sewerage company's system.

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
Maintenance	Does the operations and maintenance plan describe procedures for sediment removal?	C7.1.1.4				
Maintenance	Has an effective means of access been provided to and into the sediment management components for removal of accumulated sediment? This should include provision of appropriate vehicular access to facilitate removal.	C7.1.1.4				
Construction	Has a build programme been provided with anticipated dates for each phase?					
Construction	Has an acceptable construction plan and associated method statements been submitted for approval? The construction method statement should be prepared in accordance with Part E of CIRIA Report C768 'Guidance on the Construction of SuDS'	C9.2	Chapter 31			Wessex Water require suitable temporary construction measures to be put in place to continue to drain the site whilst minimising the impact on the SuDS scheme. Part of the Construction plan should also ensure remediation of any features before final construction completion and planting. Reference should be made to Part D (Chapter 13) of the Guidance on the Construction of SuDS (C768)

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application			
Acceptable:							
Minor changes required:							
Major changes required/redesign:							
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details	
Construction	<p>Have robust sediment and erosion controls been incorporated within the design and the construction plan?</p> <p>Has a plan been submitted to demonstrate how sediment and other debris will be managed to avoid any sediment or debris being discharged into the proposed drainage system, any public sewer or a surface water body? The developer should comply with this plan at all times during construction and during any maintenance carried out prior to adoption.</p>	A10.2				<p>Adequate protection and maintenance should be provided for partially or fully completed components to minimise over-compaction, damage, silt, sediments and pollution while the rest of the site is under construction.</p> <p>Refer to Table 31.1 in the SuDS Manual 2015 to maximum allowable velocities based on soil type</p>	
Construction	If construction is phased, is there a phasing plan for each element to ensure that surface water is managed and sediment/erosion risks are minimised?						
Construction	Are there any identifiable construction risks? If so, have any acceptable risk management measures been proposed?						

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 2: Design/ S104 Application		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
<p>This Design Checklists is to be used when assessing the design of a proposed SuDS scheme for approval. It amalgamates the criteria and standards set out in the SuDS Manual (checklist B.4) and the Sewerage Sector Guidance. This checklist will need to be supported by:</p> <ul style="list-style-type: none"> • a scheme health and safety checklist (B.5); • a detailed infiltration assessment (B.6) where these form part of the scheme; • detailed design checklists for each proposed components (B.7 to B.21); • a construction method statement; and • a maintenance plan. 						

<h1>Health & Safety Risk Assessment</h1>		Site / System Overview		
		Site ID		
		Asset ID(s)		
		System location(s) and coordinates		
		SuDs Component(s)		
		Date of assessment		
		Date of next assessment		
Note: Please consider details pertaining to all SuDs components being submitted.				
Section	Submission Requirements	Details	Comments	
1. Establish Context	General description of component and its operation			
Section	Submission Requirements	Are Hazards Present? (Y/N)	Comments	
2. Identify Potential Hazards	Drowning or falling through ice in winter	If YES complete Section 3		
	Slips, trips and falls	If YES complete Section 4		
	Entry into pipes or confined spaces (note this is for inadvertent public access; follow relevant legislation and guidance for worker access)	If YES complete Section 5		
	Water quality – health risk	If YES complete Section 6		
3. Drowning or falling through ice in winter	Consider factors that might affect: <ul style="list-style-type: none"> • the likelihood of people entering the water/accessing the ice • the potential consequence of entering the water/accessing the ice 	Summary of influence of factor on likelihood of entry/access, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of entry or access, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	

Environmental Factors	Proximity to populated areas: schools, inns, retail/tourism, picnic areas, play areas, car park, roads, especially attractive features likely to be visited Features allowing or encouraging access (e.g., paths)		
	Physical accessibility of proposed drainage feature: consider intended use and inadvertent access (including of small children)		
	Visibility and natural surveillance of proposed drainage features		
Behavioural Factors	Category and volume of expected users: swimmers, anglers, walkers, drivers, specialist water users, General public, dog walkers, teenagers, accompanied/unaccompanied children		
	Nature of development (housing, commercial, industrial etc)		
	Any known existing risks (e.g., records of accidents) posed by water/drainage features at or close to the site?		
Design Factors - Water's Edge	Type and nature of water-edge planting		
	Definition of water edge and nature of ground (e.g., soft/hard)		
	Natural obstacles, barriers/fencing		
	Height of edge above water		
	Gradient and extent of slopes above, at and below water level		
3. Drowning or falling through ice in winter	Consider factors that might affect: <ul style="list-style-type: none"> • the likelihood of people entering the water/accessing the ice • the potential consequence of entering the water/accessing the ice 	Summary of influence of factor on likelihood of entry/access, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of entry or access, including justification. (consider for children < 5 years, children ≥ 5 years, adults)

Design Factors - Water Body	Water depth profile		
	Water surface area		
	Clarity		
	Underwater obstacles or traps		
	Potential currents, velocities		
	Potential increase in depth of water and rate of rise		
	Potential for ice formation and significant depth of water below in winter		
Public Education	Signage		
	Community engagement strategies		
	Local education strategies (e.g., schools)		
Overall assessment of likelihood of entry/access and consequences	Children < 5 years	Children > 5 years	Adults
Likelihood			

Consequences			
Summary of Section 3 risk assessment for drowning or falling through ice	Children < 5 years	Children > 5 years	Adults
Likelihood of entry to water			
Likely consequences of entry to water			
Overall level of risk posed by the design			
Further mitigation measures required			
Action Date			
Final Level of Risk <i>(For definition of levels see SuDs Manual, Chapter 36, Table 36.2)</i>			
Section 4: Slips / Trips / Falls	Factors that might affect likelihood of people slipping / tripping / falling	Summary of influence of factor on likelihood of slip / trip / fall, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of slip / trip / fall, including justification. (consider for children < 5 years, children ≥ 5 years, adults)
Design Factors - Inlets and Outlets or Channels	Headwall or channel location		
	Headwall height or channel depth and width		

	Slope of headwall or channel profile		
	Channels – profile and risk of freezing water		
Section 4: Slips / Trips / Falls	Factors that might affect likelihood of people slipping / tripping / falling	Summary of influence of factor on likelihood of slip / trip / fall, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of slip / trip / fall, including justification. (consider for children < 5 years, children ≥ 5 years, adults)
Design Factors - Surfaces	Level changes		
	Surfacing materials		
Summary of Section 4 risk assessment for slips / trips / falls	Children < 5 years	Children > 5 years	Adults
Likelihood of slips / trips / falls / other injury			
Likely consequence of slips / trips / falls / other injury			
Overall level of risk posed by the design			
Further mitigation measures required			
Action Date			
Final Level of Risk <i>(For definition of levels see SuDs Manual, Chapter 36, Table 36.2)</i>			

5. Entry into pipes or confined spaces (Note: This risk assessment covers inadvertent access by the public. Where specific access is required by workers the requirements of relevant health and safety legislation and guidance should be followed.)	Factors that might affect likelihood of people entering pipes or confined spaces	Summary of influence of factor on likelihood of entry into pipes or confined spaces, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of entering pipe or confined space, including justification (consider for children < 5 years, children ≥ 5 years, adults)
Design Factors - Inlets and Outlets	Pipe diameter		
	Are grills provided?		
Design Factors - Chambers	Depth of chamber		
	Is access possible?		
Summary of Section 5 risk assessment for entry into pipes/confined spaces	Children < 5 years	Children > 5 years	Adults
Likelihood of entry into pipes/ confined spaces			
Likely consequence of entry into pipes/ confined spaces			
Overall level of risk posed by the design			

Further mitigation measures required			
Summary of Section 5 risk assessment for entry into pipes/confined spaces	Children < 5 years	Children > 5 years	Adults
Action Date			
Final Level of Risk <i>(For definition of levels see SuDs Manual, Chapter 36, Table 36.2)</i>			
Section 6. Health Issues	Factors that might affect likelihood of people suffering from ill health due to SuDS water quality	Summary of influence of factor on likelihood of poor health, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of resulting ill health, including justification. (consider for children < 5 years, children ≥ 5 years, adults)
Pollution Treatment Strategy	Level of contamination of publicly accessible water		
	Likely contamination from rat urine		
	Likely contamination from dog or bird fouling		
	Likelihood of toxic algal blooms		
	Likelihood of vectors (organism which carries disease-		
	causing microorganisms from one host to another)		

	Public accessibility to any sediment accumulation zones		
Public Education and Risk Management	Signs		
Section 6. Health Issues	Factors that might affect likelihood of people suffering from ill health due to SuDS water quality	Summary of influence of factor on likelihood of poor health, including justification. (consider for children < 5 years, children ≥ 5 years, adults)	Summary of influence of factor on consequence of resulting ill health, including justification. (consider for children < 5 years, children ≥ 5 years, adults)
Public Education and Risk Management	Community engagement strategies		
	Local education strategies (e.g., schools)		
	Litter management and control		
	Dog fouling management and control		
Summary of section 6 risk assessment for health issues	Children < 5 years	Children > 5 years	Adults
Likelihood of ill health			
Likely consequence of ill health			
Overall level of risk posed by the design			
Further mitigation measures required			

Action Date			
Final Level of Risk <i>(For definition of levels see SuDs Manual, Chapter 36, Table 36.2)</i>			

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 3: Adoption Agreement		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details Wessex Water Comments / Remedial Actions
Agreement Details	Have a sufficient number of drawings been provided?					
Agreement Details	Have the drawings been coloured and detailed correctly?					
Agreement Details	Have full details of all parties to the agreement been provided					
Agreement Details	Have the applicable charges been determined?					
Agreement Details	Have the relevant bond amounts been determined?					
Agreement Details	Has Health and Safety File been submitted? Does it fully comply with requirements?	A5.5 A5.7 Appendix I				
Agreement Details	Has a detailed Construction Programme been provided, including any phasing details and water quality management? A plan should be submitted that demonstrates how sediment and other debris will be managed to avoid any sediment or debris being discharged into the proposed drainage system, any public sewer or a surface water body.	A10.2	31.2			Reference to the CIRIA Guidance C768 - Guidance on the construction of SuDS (Part C)

Agreement Details	Has a schedule of construction inspections and hold points been compiled and submitted as part of the Construction Programme? A notice period of 2 weeks should be provided to Wessex Water ahead of any proposed inspection point.					Wessex Water will need to programme in these inspections and budget accordingly.
Agreement Details	Have details of the maintenance and management regime and responsibilities been provided?	A5.5 C3.8				Where the operation and maintenance of a component managed by another body could adversely impact on the sewerage company's system, an agreement should be in place to protect the sewerage company's system.
Agreement*	Are the details contained within the Agreement correct? Do the plans and details correctly show the system to be adopted as technically acceptable? Have any changes been made?					
Agreement*	Has the Agreement been signed by all parties?					
Agreement*	Has a cash bond payment been provided or surety incorporated within the agreement?					
Agreement*	Has the payment of any applicable charges been provided?					

***Any changes to needed to the engrossed agreements will incur additional charges. Full details of the changes will need to be provided to be progresses as part of a Novation or Variation to the Agreement**

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	<h2 style="text-align: center;">STAGE 4: Construction</h2> <h3 style="text-align: center;">Chapter 31: CIRIA SuDS Manual 2015</h3>			
Acceptable:							
Minor changes required:							
Major changes required/redesign:							
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details Wessex Water Comments / Remedial Actions	
General	Appropriate erosion and sediment control strategy implemented (including protection of any infiltration or permeable surfaces, permeable sub-base and stabilisation following earthworks)?	10.2	Chapter 31			Reference to the CIRIA Guidance C768 - Construction of SuDS (Chapter 13)	
General	Location, layout and plan area as per approved drawings?						
General	Critical root zones of nominated trees protected?						
General	Any identified ecological features adequately protected?						
	The works should be protected, where necessary, from loads imposed by construction plant during construction to avoid the over compaction of soils that could increase runoff from permeable areas and adversely affect the infiltration qualities of sub-soil layers	C9.3					
	The developer should use the checklist in Part F of CIRIA Report C768 'Guidance on the Construction of SuDS' as part of their construction records and supply copies to the sewerage company	C9.4					

Earthworks	Levels and gradients as per approved drawings?					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Earthworks	Side slopes and benches as per approved drawings?					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Earthworks	Provision of subsoil drainage as per approved drawings?					
Earthworks	Topsoil depths as per approved drawings?					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Earthworks	Formation levels as per approved drawings					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Earthworks	Formation level soils as per design assumptions (e.g., CBR value)?					
Earthworks	Side slopes of temporary excavations for tanks as per approved drawings?					
Earthworks	Utilities access covers and street furniture details acceptable? (e.g., correct detailing of block paving around covers, not impeding flow in swales etc)					
Hydraulic Properties	Water levels as per approved drawings?					
Hydraulic Properties	Flow controls as per approved design?					
Structural Components	Check dams/weirs/overflows as per design?					
Structural Components	Service or other crossings as per design?					
Structural Components	Pipe connections as per design?					

Structural Components	Inlets – as per design, appropriate installation (including concrete and reinforcement works, erosion protection, level spreaders, buffer strips, kerbing and drops)					
Structural Components	Outlets – as per design, appropriate installation (including concrete and reinforcement works, erosion protection)					
Structural Components	Any required geotextile/geomembrane test certificates provided and in accordance with approved drawings and/or specification?					
Materials	Topsoil meets approved specification (tested and ameliorated if required, certificates verifying source and content)?					
Materials	Planting implemented as per approved drawings and landscape schedules?					
Materials	Geocellular storage units as per approved design drawings and specification?					
Materials	Permeable sub-base as per approved drawings and specification?					
Materials	Root zone materials, filter sand etc as per approved drawing and specification?					
Materials	Perforated pipes as per approved drawings and specification?					
Materials	Materials should comply with the requirements of Part E of the Sewerage Sector Guidance					
Final Inspection	The developer should carry out a survey of the completed drainage system and produce as-constructed drawings. These should be cross-checked with the design drawings and any variations not previously agreed should be highlighted	C9.5				

Final Inspection	Inspection and testing of the drainage system should comply with the requirements of Part E with the recommendations of CIRIA Report C768 'Guidance on the Construction of SuDS'	C10.1				
Final Inspection	Infiltration rates for any finished components should be retested post-construction to ensure compaction has not impacted the assumed design infiltration rates					
Final Inspection	Confirm inlet and outlet levels					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Final Inspection	Confirm structural components					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Final Inspection	Confirm slopes					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Final Inspection	Confirm correct planting/turfing established					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Final Inspection	Confirm no uneven settling of soil, channelling, unwanted ponding or erosion of bed or side slopes					Reference to the CIRIA Guidance C768 - Guidance on the Construction of SuDS (Chapter 19) - Standard tolerances
Final Inspection	Confirm no evidence of construction sediment or unexpectedly rapid build-up of sediment					
Final Inspection	Confirm that agreed access for maintenance is clear					
Final Inspection	Photographs					
Final Inspection	Test certificates					
Final Inspection	Other (details)					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 5: Maintenance		
Acceptable:						
Minor changes required:						
Major changes required/redesign:						
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details
General Inspection	Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?					
General Inspection	Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?					
General Inspection	Have any health and safety risks been identified to either the public or maintenance operatives?					
General Inspection	Is there any deterioration in the surface of permeable or porous surfaces (e.g., rutting, spreading of blocks or signs of ponding water)?					
Silt / Sediment Accumulation	<p>Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and within proprietary devices)?</p> <p>If yes, state depth (mm) and extent. Is removal required?</p> <p>If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator)</p>					

Silt / Sediment Accumulation	Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (e.g., under drained swale or infiltration basin)?					
Silt / Sediment Accumulation	Does permeable or porous surfacing require sweeping to remove silt?					
System Blockages	Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?					
System Blockages	Is there any evidence of any other clogging or blockage of outlets or drainage paths?					
Vegetation	Is the vegetation condition satisfactory (density, weed growth, coverage etc)? (Check against approved planting regime.)					
Vegetation	Does any part of the system require weeding, pruning or mowing? (Check against maintenance frequency stated in approved design.)					
Vegetation	Is there any evidence of invasive species becoming established? If yes, state action required					
Infrastructure	Are any check dams or weirs in good condition?					
Infrastructure	Is there evidence of any accidental damage to the system (e.g., wheel ruts)?					
Infrastructure	Is there any evidence of cross connections or other unauthorised inflows?					
Infrastructure	Is there any evidence of tampering with the flow controls?					

Infrastructure	Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects? (Specify.)					
Other Observations	Information appended (e.g., photos)					
Suitability of Current Regime	Continue as current Increase maintenance Decrease maintenance					
Next Inspection	Proposed date for next inspection					

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 6: Adoption Handover					
				Acceptable:					
				Minor changes required:					
				Major changes required/redesign:					
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details	Wessex Water Comments / Remedial Actions		
General	Design approval checks satisfactory?								
General	Construction inspection checks satisfactory?								
Asset Information	As-constructed plans and survey submitted?								
Asset Information	As-constructed drainage calculations/models submitted if necessary (e.g., outside specified tolerances)?								
Asset Information	Proprietary product information submitted, where applicable?								
Asset Information	Asset listed on asset register or database?								
Maintenance Information	Full Maintenance Plan submitted?								
Maintenance Information	Inspection and maintenance records indicate stated maintenance undertaken during 12 month maintenance period?								

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 6: Adoption Handover			
Acceptable:							
Minor changes required:							
Major changes required/redesign:							
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details	Wessex Water Comments / Remedial Actions
Handover Inspection	Confirm that inlets and outlets are clear.						
Handover Inspection	Confirm that correct planting in accordance with approved design is fully established.						
Handover Inspection	Confirm that no uneven settling of soil, channelling, unwanted ponding or erosion of bed or side slopes. If yes, give reason for defect (design or construction).						
Handover Inspection	Confirm that no evidence of construction sediment or unexpectedly rapid build-up of sediment.						
Handover Inspection	Confirm that agreed maintenance access is clear.						
Handover Inspection	Confirm that permeable/porous surfaces are draining effectively and that there is no unacceptable settlement.						
Handover Inspection	Confirm that any permanent water levels are in accordance with the approved design.						

System design acceptability	Summary details including any changes required (WW USE ONLY)	Acceptable (Y/N)	Date changes made	STAGE 6: Adoption Handover			
Acceptable:							
Minor changes required:							
Major changes required/redesign:							
Classification	Submission Requirements	SSG Ref	SuDS Man Ref	Y	N	Summary of Details	Wessex Water Comments / Remedial Actions
Suitability for Adoption	<p>Good condition – acceptable</p> <p>Minor defects – acceptable subject to minor works (indicate, with reasons, whether cost should fall to developer or adopting body)</p> <p>Major defects – Not acceptable without substantial repair works (indicate, with reasons, whether cost should fall to developer or adopting body)</p>						

Wessex Water
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