Sustainable Drainage Systems (SuDS)

Supplementary Planning Guidance

April 2025

Fermanagh & Omagh District Council
Comhairle Ceantair Fhear Manach agus na hÓmaí

1. Introduction

1.1 This Supplementary Planning Guidance (SPG) provides advice and design guidance, including examples to assist in the design of Sustainable Drainage Systems (SuDS) to manage surface water runoff as close to the source as possible (SuDS Train). SuDS should be integrated within developments ensuring good quality design is partnered with management of water quantity and quality. Policy FLD03 of the Fermanagh and Omagh Local Development Plan – Plan Strategy set out planning policy on the provision of SuDS. SuDS provide multiple benefits, such as improving water quality, reducing flood risk, increased resilience to climate change and public amenity and biodiversity benefits. This SPG is intended for use by developers, the public and by planning officers in the determination of planning applications.

1.2 SPG represents planning guidance which supports, clarifies and/or illustrates by example policies included within the Fermanagh and Omagh Local Development Plan – Plan Strategy. The information set out in this SPG should therefore be read in conjunction with the LDP, copies of which are available online or from the Planning Department. The SPG will act as a material consideration in the determination of planning applications.

1.3 This SPG in conjunction with the Solar Farms and Energy Efficiency SPGs forms part of the Council's efforts to support the achievement of net zero, build climate resilience and grow a sustainable economy to achieve a truly sustainable District.

1.4 The Pre-Application Discussion (PAD) stage is the appropriate time for developers/applicants to discuss queries relating to SuDS.

1.5 This SPG should be read in conjunction with the Council's other advice guides and protocols, including the Validation Checklist, Applicant/Agent Protocol – A Good Practice Guide and the Pre-Application Discussion advice and guidance.

1.6 In accordance with the Council's Validation Checklist all applications must be accompanied by a written statement explaining, what measures to capture, use, delay and absorb rainwater as close as possible to source, including details on future management and maintenance or a statement on why SuDS are 'not practical'.

1.7 The guidance and examples outlined below within this SPG, should assist planning agents with their written statements in relation to SuDS

2. What are SuDS?

2.1 As our population has increased, particularly in urban areas and soft permeable landscapes have been replaced with hard surfaces, surface water runoff is reaching traditional piped drainage faster and in larger quantities. With climate change creating wetter winters and increased storm events, drainage methods are becoming less effective, resulting in increased flood risk, pollution, damage to habitat and contamination of groundwater sources.

2.2 SuDS are a practical response to some of these issues and regional planning policy recognise them as being the preferred drainage solution. SuDS are a form of drainage that aims to control run-off as close to its source as possible using a sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques such as storm water networks. SuDS deal with excess water from a site aiding its return to the water system in a controlled manner, mimicking natural drainage processes to manage flood risk, and reduce discharge of dispersed pollutants.

2.3 There are a range of SuDS techniques and components available which provide different ways to manage flows, volumes, water quality and provide amenity and biodiversity benefits. These are outlined in section 4 below. The examples listed are not exhaustive, and some SuDS examples may not be relevant or appropriate for some schemes. Each application will be considered on its own merits, having regard to the specific factors associated with the proposal, the site and its surroundings. The SuDS provision for each application will be a matter of planning judgement.

2.4 The various types of SuDS can be differentiated into two categories.

- 'Hard' engineered SuDS which include oversized pipes, retention tanks, and Geocellular systems, which would be adopted by NI Water and

- 'Soft' SuDS such as green roofs, swales, filter drains and wetlands, which would be controlled and maintained by the owner or a management company. The use of 'Soft' SuDS are encouraged as they deliver on the 4 pillars of SuDS Design outlined in Figure 1 below.

2.5 However, it is also recognised that a combination of both hard and soft SuDS components may provide the best results for an individual site, dependent on the existing characteristics of the site and any constraints. Due to the range of options available it should be possible to implement the use of SuDS on the large majority, if not all, new development.

2.6 SuDS should be considered at the outset of project design and appropriately sited within the development site. The level of SuDS required will be dependent on the hard surface area and the rate of surface water run-off, as well as the environmental risk.

2.7 The use of a variety of above-ground SuDS components that manage rainfall close to source in general provides the greatest environmental benefits and can be more cost effective than traditional piped systems.

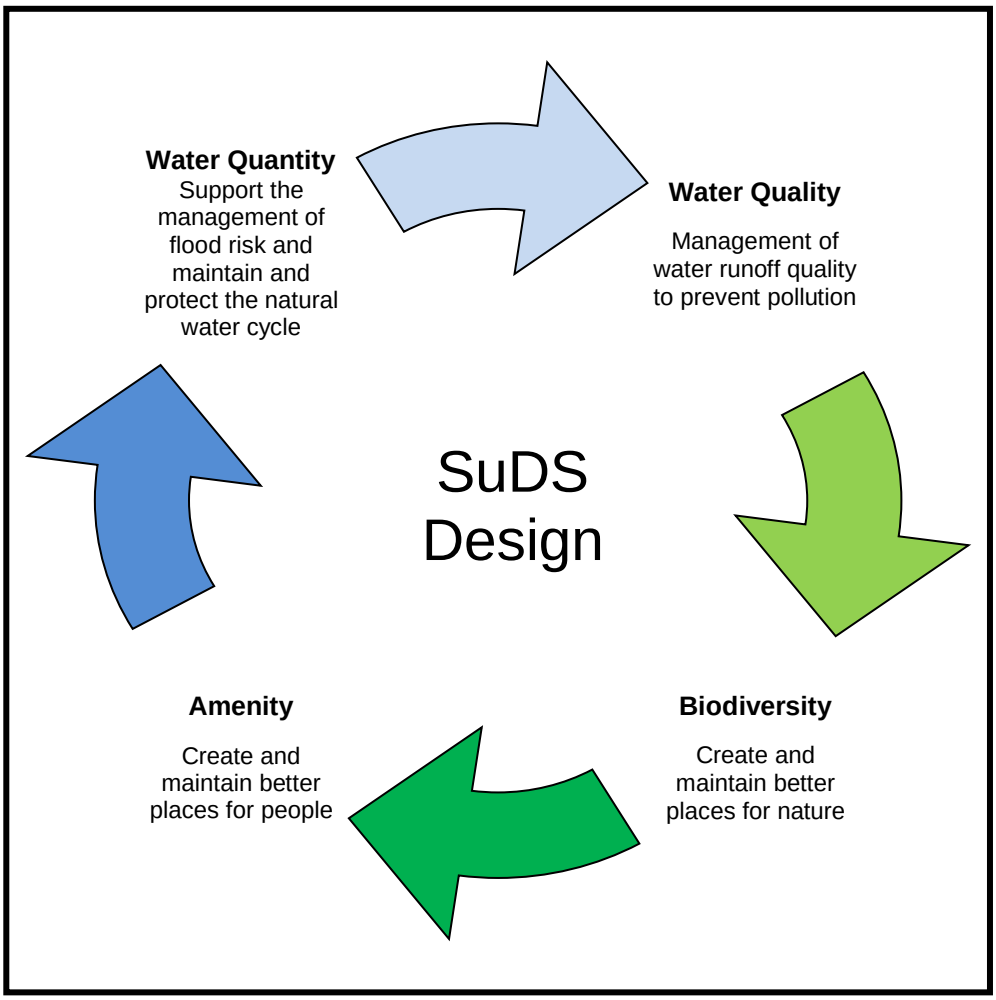

Figure 1: The four pillars of SuDS design describe the underpinning principles of sustainable drainage, namely: water quantity, water quality, visual amenity and biodiversity (adopted from CIRIA C753 (2015), p.6).

2.8 SuDS can deliver high quality drainage while supporting areas to cope better with severe rainfall and providing pollution reduction and mitigation including during construction phases of development. SuDS has the potential to improve the quality of life in developments and urban spaces by enhancing their vibrancy making them more visually attractive, sustainable and more resilient to climate change.

2.9 SuDS can be used to varying degrees anywhere where practicable, including new developments and redevelopments as well as retrofitted into existing developments. Good SuDS design maximises the use of the available space by delivering efficient drainage with other functions to help achieve the objectives of the site.

2.10 The promotion of SuDS is part of the Council's response to Climate Change and Sustainable Development, by using the planning system to help mitigate and adapt to climate change by working with natural environmental processes. SuDS shall contribute to the Council's objectives for quality, sustainable development together with the aim to ensure that the character of the district is

sustained and enhanced. By using the landscape to manage rainfall and harness water, SuDS will strengthen local distinctiveness and add value to the local environment, therefore it is important that design teams have a strong landscape focus.

2.11 The primary and overriding function of SuDS is to drain surface water effectively, and this function must not be compromised by other design considerations. Effectiveness and quality of design should always be considered together. SuDS should be considered early in the design of any development and integrated as part of the overall design vision.

3. Planning Policy and Guidance Context

Regional Development Strategy (RDS) 2035

3.1 The RDS provides an overarching strategic planning framework to facilitate and guide the public and private sectors. The RDS recognises the need to avoid, where possible, the selection of flood-prone land for employment and housing growth. It urges the planning system to adopt a precautionary approach to development in areas of flood risk, and also promotes a more sustainable approach to the provision of water and sewerage services and flood risk management.

Strategic Planning Policy Statement (SPPS) for Northern Ireland

3.2 At the heart of the SPPS and the planning system is furthering sustainable development, and a central challenge to this is mitigating and adapting to climate change whilst improving air quality. The planning system can help mitigate and adapt to climate change by working with natural environmental processes such as the promotion of green infrastructure and the use of SuDS to reduce flood risk and improve water quality.

3.3 The SPPS states that in managing development, particularly in areas susceptible to surface water flooding, planning authorities should encourage developers to use sustainable drainage systems (SuDS) as the preferred drainage solution. The use of SuDS elsewhere in the UK has shown to be more effective than traditional piped drainage in reducing surface water flooding as well as providing for other environmental, economic and social benefits.

3.4 The Strategic Planning Policy Statement for Northern Ireland outlines that the guiding principle for the Council in determining planning applications is that sustainable development should be permitted having regard to the development plan and all other material considerations, unless the proposed development will cause demonstrable harm to interests of acknowledged importance.

Fermanagh and Omagh District Council - Climate Change and Sustainable Development Strategy 2020-2030

3.5 The Strategy sets out practical steps to minimise climate change impacts on our day to day lives and to counter the severity of the Climate Emergency. It also

outlines steps towards achievement of the United Nations' 17 Global Sustainable Development Goals by moving closer to building an inclusive, sustainable and resilient future for the population, environment and economy.

3.6 The Strategy recognises that local contributions are part of a complex challenge nationally and internationally and a central challenge in furthering sustainable development is mitigating and adapting to climate change. The Strategy's strategic context acknowledges that the Council aims to do this through the policies, objectives and supporting text within the Local Development Plan Strategy. The Strategy identifies 7 key areas where the planning system should help to mitigate and adapt to climate change, one of which specifically relates to the use of SuDS.

Fermanagh and Omagh District Council - Local Development Plan Policy Context

3.7 The Council's planning policy on SuDS is contained in Infrastructure Policy FLD03 - Sustainable Drainage Systems, in the Local Development Plan 2030 - Plan Strategy. The policy requires that 'all development proposals must, where practicable, include proposals for Sustainable Drainage Systems.'

3.8 The policy clarification outlines that a proposal for SuDS should be in the form of a sustainable drainage design strategy and should include detail of measures to capture, use, delay and absorb rainwater as close as possible to source and so as to mimic natural dispersal (See Appendix A). A sustainable drainage design strategy is a report that considers how surface water affects the subject site and the surrounding area and how best to manage the water runoff rates in a sustainable manner. The applicant should ensure that the design strategy is completed by a qualified and competent professional.

3.9 It is also outlined that where a proposal is acceptable, the Council will need to be satisfied that suitable arrangements are in place with regard to the long term management and maintenance of the infrastructure on which mitigation depends.

4. SuDS examples and Design Guidance

4.1 SuDS are a range of methods, which work in a number of ways and often in combination, to drain a site. Primarily they operate to infiltrate (soak) into the ground, carry (flow) into a watercourse, provide storage on site and attenuate (slow) the flow of water. Carefully designed SuDS schemes use different measures to carry, store and attenuate run-off from larger rainfall events so as to reduce the frequency and/or severity of flooding. For this reason, it is important to fully inform design proposals with local data so as to ensure that the SuDS provide sufficient storage and attenuation to reduce the volume, frequency and flow rate of surface water runoff. The scale and nature of the site and development proposals may also have a bearing on the SuDS proposed.

Permeable Paving

4.2 Permeable paving should be incorporated into private driveways, patios, paths and shared privately maintained hard landscaped areas where appropriate.

4.3 There is an abundant choice of materials available designed specifically to facilitate infiltration of water or its collection for re-use. When assessing proposals for permeable surface treatment within developments, the Council expectation will be that the materials are:

- Suitable to its location;
- High quality; and
- Visually attractive and appropriate to the overall scheme design.

4.4 Permeable paving should be located where the future maintenance of such surfaces can be controlled by the individual householder or by a property management company. Services should not be located under permeable paving to avoid disruption in the event of maintenance access being required.

4.5 Permeable paving should be constructed to a suitable specification, with regard to the requirements of BS7533 Part 3 and BS7533 Part 13 in terms of the design and installation of permeable pavements[1].

Figures 2-3 - Cross section and example of typical permeable pavement

Rainwater Harvesting System

4.6 Rainwater harvesting systems can be installed on new builds and retrofit projects and can range in scale from small tanks to more comprehensive systems. Collected water can be used for non-potable purposes such as flushing toilets and urinals, supplying washing machines, irrigation systems, vehicle washing, sprinkler systems etc.

[1] https://www.polypipe.com/sites/default/files/bs7533-13_2009.pdf

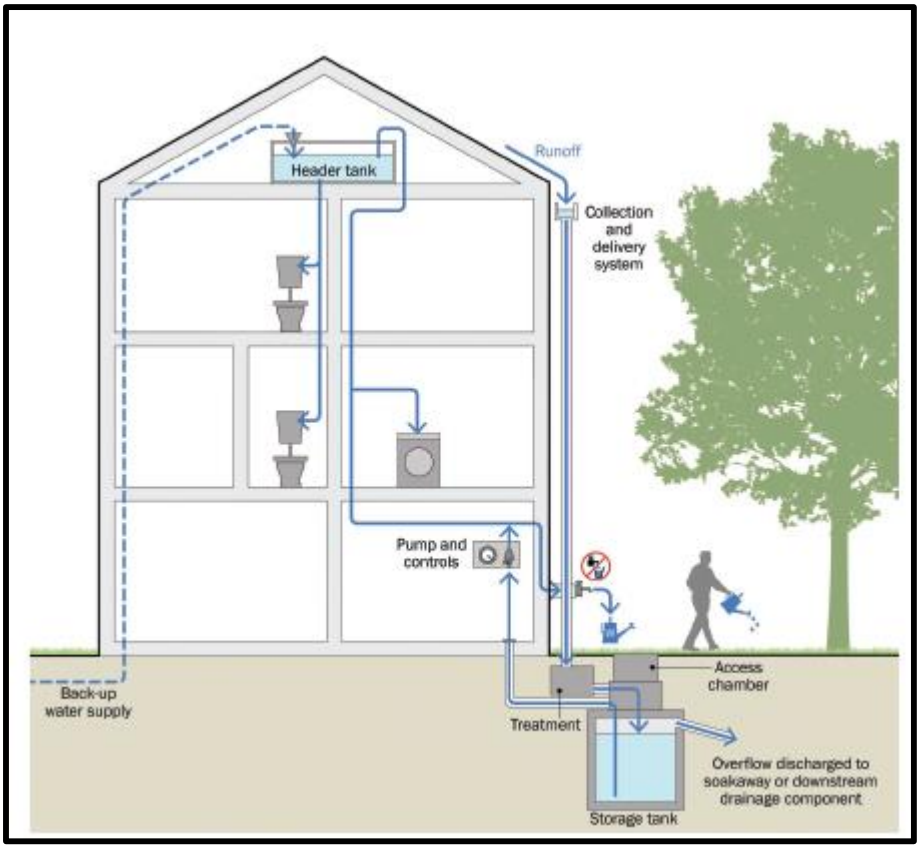

Figure 4 - A conceptual pumped rainwater harvesting system (CIRIA SuDS Manual 2015, pg 211)

4.7 Rainwater Harvesting Systems will be expected to have a regard to BS 8515:2009 'Rainwater Harvesting Systems, Code of Practice', that outlines standards for the installation, testing and maintenance of rainwater harvesting systems for non-potable applications. It includes standards for filtration, for the manufacture and installation of storage tanks and a series of approaches for calculating the sizes of tanks including projected water use requirements.

4.8 Storage tanks should respect local character and environmental quality. If above ground they should be positioned to the rear or side yards of properties and if underground, sited to avoid conflict with other services.

Green Roofs

4.9 Any green roof, no matter the size, brings benefits and therefore it is worth considering even on a building when space is limited. There are some fundamental considerations when planning a green roof that will influence its success, including location, structure and vegetation.

4.10 Waterproofing should be robust and of a high quality with particular attention given to the detailing of edges where a green roof skirts around mechanical structures. Drainage should always be capable of coping with intense rainfall and incorporate a filter sheet to prevent substrate being washed away. Green roofs typically hold moisture and reduce the runoff from a roof by approximately 50%. However, the drainage layer must allow excess water to be shed quickly

from the roof surface, whilst holding sufficient to support the vegetation. Insufficient water storage could result in additional irrigation being required for the vegetation to flourish.

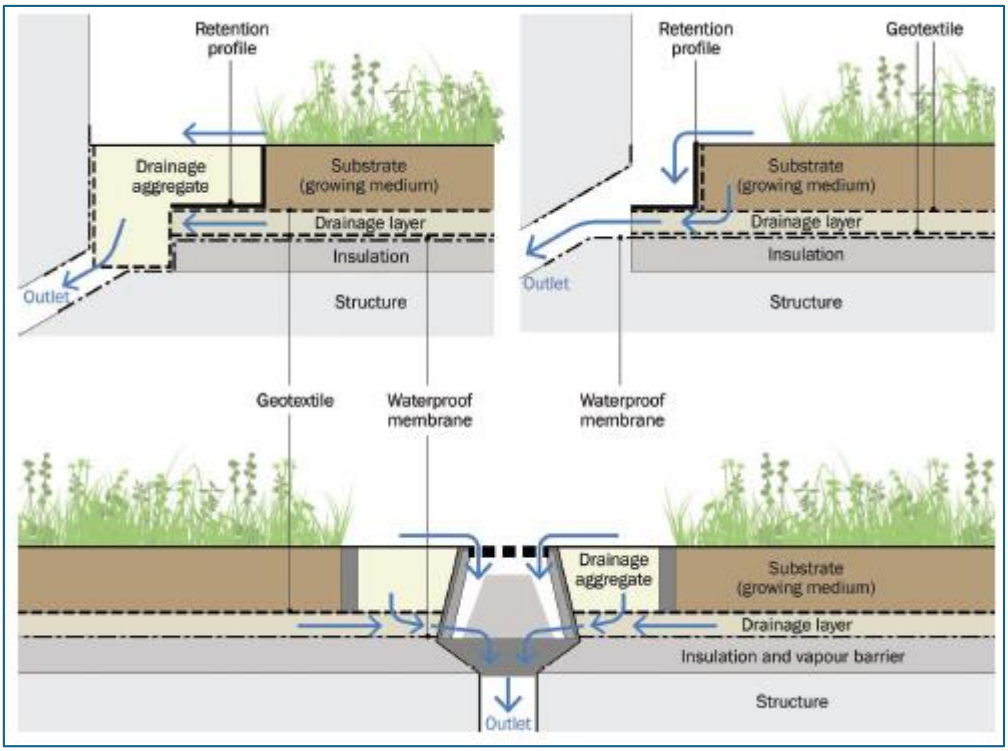

Figure 5 - Example details of outlet from a green roof – subsurface outlet (top), and open outlet (bottom) (CIRIA SuDS Manual 2015, pg 247)

4.11 The growing medium should vary to suit the planting required, and for biodiverse systems the vegetation and habitat materials selected to suit the habitats being created. This is likely to be low density growing medium with good water retention, reasonable fertility, mixture of organic and mineral material, and a depth of between 80-450mm with variation across the roof area to provide a range of habitats. Seed and plug-planting with native drought-tolerant wildflowers of local or UK provenance will be favoured.

4.12 Access needs careful consideration as all green roofs require some degree of maintenance. Edge protection containment and potential paved access may need to be incorporated. Multiple outlets to reduce the risk of blockages that are easily accessible for seasonal cleaning should be incorporated, separated from the growing medium. A shallow layer of gravel over a width of 300-400mm from the outside perimeter of the roof to provide vegetation and soil compaction protection should be considered. The waterproofing layer may need to be anchored to resist wind uplift, be root resistant and protected from temperate changes and mechanical damage.

4.13 Further guidance on green roof design, specification, installation and maintenance can be found in ‘The GRO Green Roof Code’ which is considered to be a code of best practice with links to European and British Standards.

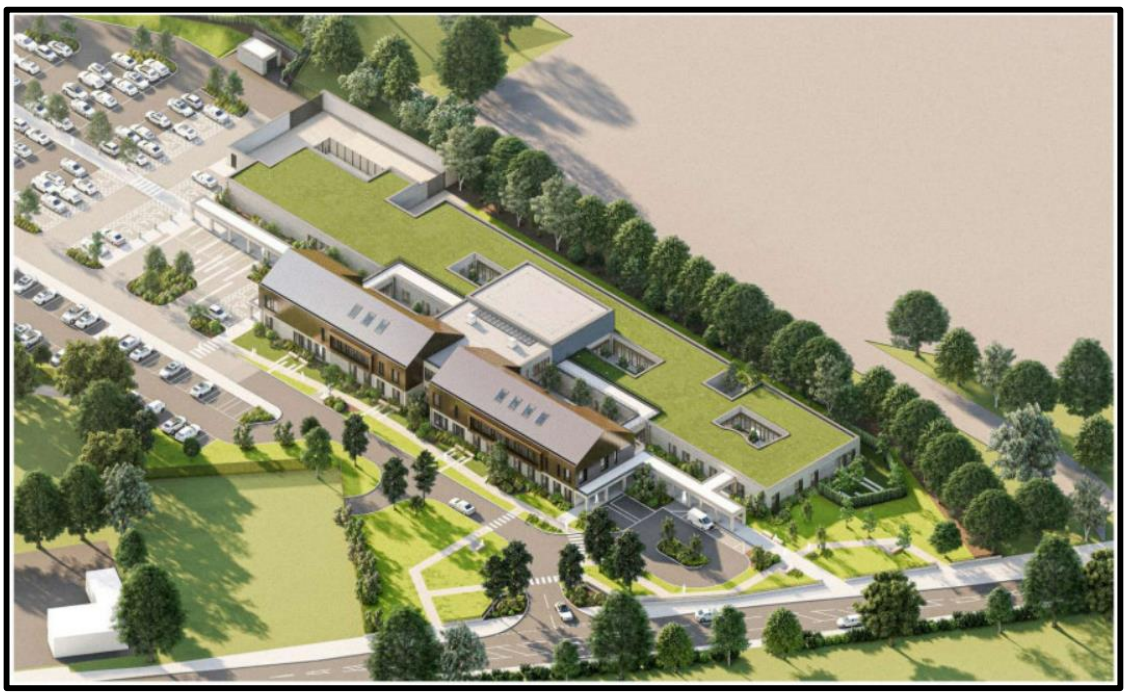

Figure 6: Artist impression showing green roof on proposed Lisnaskea Health and Care Centre (O'Connell Mahon Architects)

Swales and Filter Strips

4.14 Swales and Filter Strips are source control elements of SuDS. Grass and other vegetation slow and trap some water by infiltration into the ground, while vegetation also evaporates some water and can filter out pollution. Swales can have a wet base and will consequently behave like a wetland. Where a wet base is not desirable a perforated pipe and sand or gravel can be installed below (under drain). These can be known as rain gardens, bioswales, or bioretention areas and are essentially landscaped areas that are depressions to collect and treat rainwater. Filter strips that are 1m to 2m long, leading to the side slope of a swale, are an effective way to facilitate water to enter the swale.

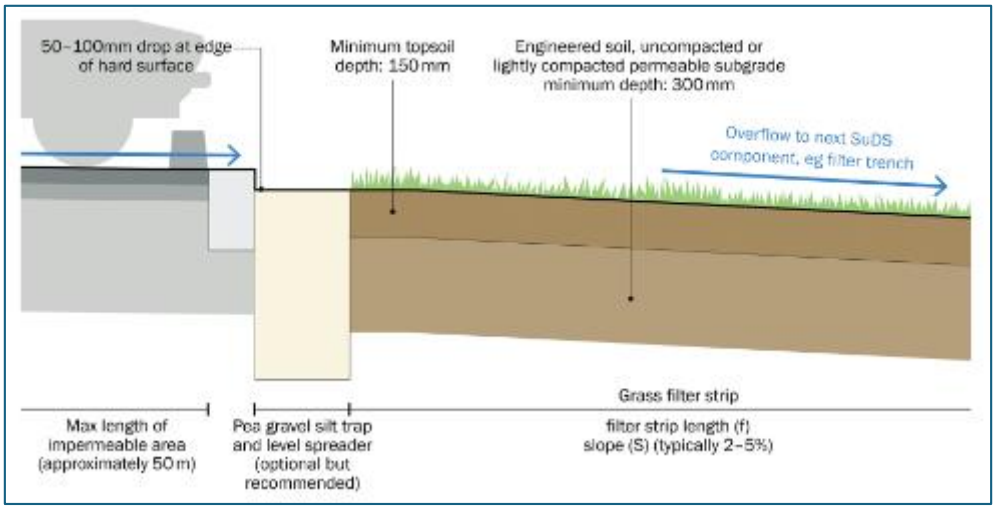

Figure 7 - Filter strip schematic (CIRIA SuDS Manual 2015, pg 292)

4.15 The profile of swales will depend on the specific ground levels, topography, and ground/soil conditions present at the site, as well as its orientation, aspect, and proximity to other landscape features and buildings. The swale should have an appropriate scale and form to suit the surrounding landscape character. In green open space they should have a natural feel with soft edges and forms that flow into the surrounding areas. By contrast, hard edges and straight lines may be more appropriate in an urban landscape.

4.16 The design should normally contribute to the amenity of the local communities. The layout of swales should respect the presence of trees, and in particular ensure that their root systems are not compromised. Planting should normally occur to enhance biodiversity, stabilise slopes, reduce erosion and slow water flows to aid sedimentation, as well as to provide some nutrient uptake. Planting should be designed to establish quickly with the most appropriate vegetation for the function of the swale and whether is it expected to be predominantly wet or dry. Where side slopes are proposed to be covered in grass that requires cutting, the slopes and cross section through the swale must have a gradient no greater than 1 in 8 to allow cutting by a ride-on mower.

4.17 Swales are generally shallow surface features and therefore should not present significant risk or danger. The onus for considering the potential health and safety risks associated with Swales rests firmly with the developer, who should be mindful of these issues during the siting and design of the features.

4.18 Swales provide the opportunity to introduce green vegetated areas into road corridors where there would be limited open space value of grass as play space. Vehicles must be prevented from parking or over-running the edges. Short sections of swale between adjoining driveways in housing developments however are discouraged due to the potential for vehicle encroachment.

Figure 8: Example of a swale (Susdrain)

Detention/ Infiltration Basins

4.19 Detention/ infiltration basins provide a depression for storm water to accumulate. In a detention basin the stormwater either slowly discharges to the next SuDS component or to a receiving watercourse. An Infiltration basin is a similar feature, however the detained water soaks away to ground by infiltration through the base and sides of the feature; therefore, there is a site requirement to ensure that the ground is suitable for infiltration. This can be encouraged by the inclusion of a drainage trench or stone through the centre of the basin or the provision of a formal stone drainage blanket across the base. Infiltration however should not be used where groundwater is vulnerable to pollution or on contaminated sites.

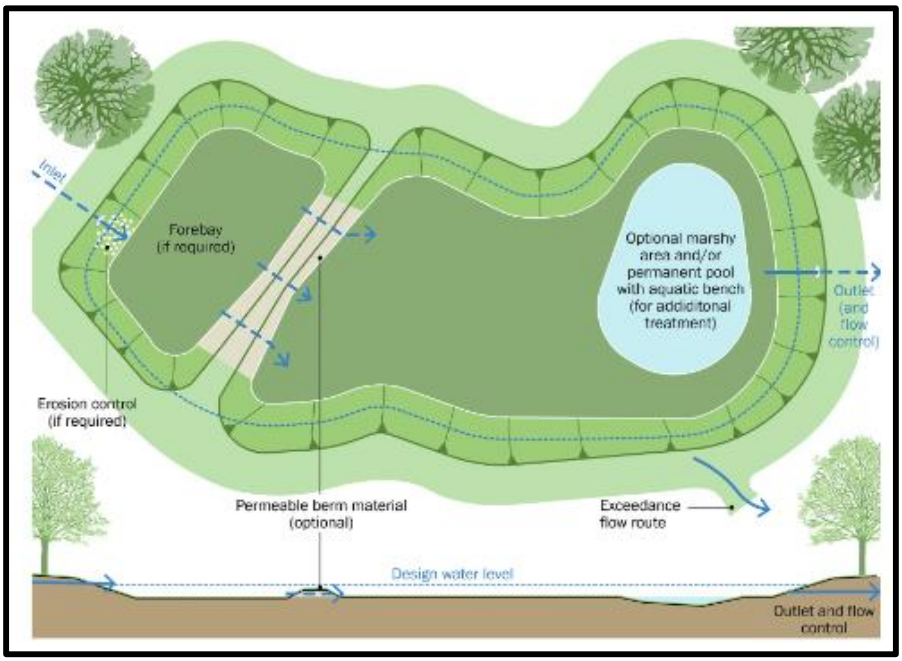

Figure 9 - Plan and elevation of vegetated detention basin (CIRIA SuDS Manual 2015, p. 473)

4.20 Detention/ infiltration basins provide a useful stage in pollution control. The slowing of flows allows settlement of suspended solids and allows biological uptake of pollutants by plants, algae and bacteria. Consequently, bioretention or small wetland pools are desirable at the outlet for enhanced pollution control.

4.21 Groundwater depth and conditions should be considered when assessing site suitability. Sites with variable topography may not be appropriate as large retaining structures may be necessary to detain the water. Detention basins are best suited to clay soils, because the water is not rapidly soaked up – whereas the infiltration options are better suited to the more permeable areas.

4.22 The basin should have a detention volume to manage the design storms using a constrained outflow and have a length to width ratio of 2:1. For maintenance and safety reasons it is recommended that side slopes/ banks are less than 1 in

3. Planting within the basin should be selected to cope with inundation and submergence and typically be of wildflower and meadow grass.

4.23 Whilst matters of health and safety may not be material in the determination of a planning application, the applicant may want to provide warning signs in close vicinity of any detention basin, as the usually dry feature may be mistaken for a permanent amenity area as opposed to a drainage feature.

4.24 Maintenance requirements for detention and infiltration basins are similar to those of swale systems. Regular grass cutting to a standard length is recommended, long grass would reduce filtration treatment during storm events while very short grass may result in erosion and the movement of sediment into the system. Intermittent silt removal within the basin is also recommended.

Filter Drains

4.25 Filter drains are essentially an engineering feature and should generally only be used as a last resort when no other feature is possible. An area of permeable surfacing or open graded subbase below an impermeable area should be considered instead of a filter drain.

4.26 Where filter drains are included the trench should be filled with free draining gravel and often have a perforated pipe in the bottom to collect water. A geotextile level just below the surface should be considered to trap silt and stop it clogging the gravel deeper in the trench. Alternatively, a small filter strip before the trench can be effective in preventing silt clogging a trench.

4.27 In certain developments there may be opportunities to integrate filter drains into the landscape in innovative ways that enhance the local environment.

4.28 The depth of the filter drain should reflect the landscape, i.e. the flatter the landscape the shallower the drain should be. Where filter drains connect to ponds or basins, it may be beneficial to keep them shallower to join with shallow outfall points.

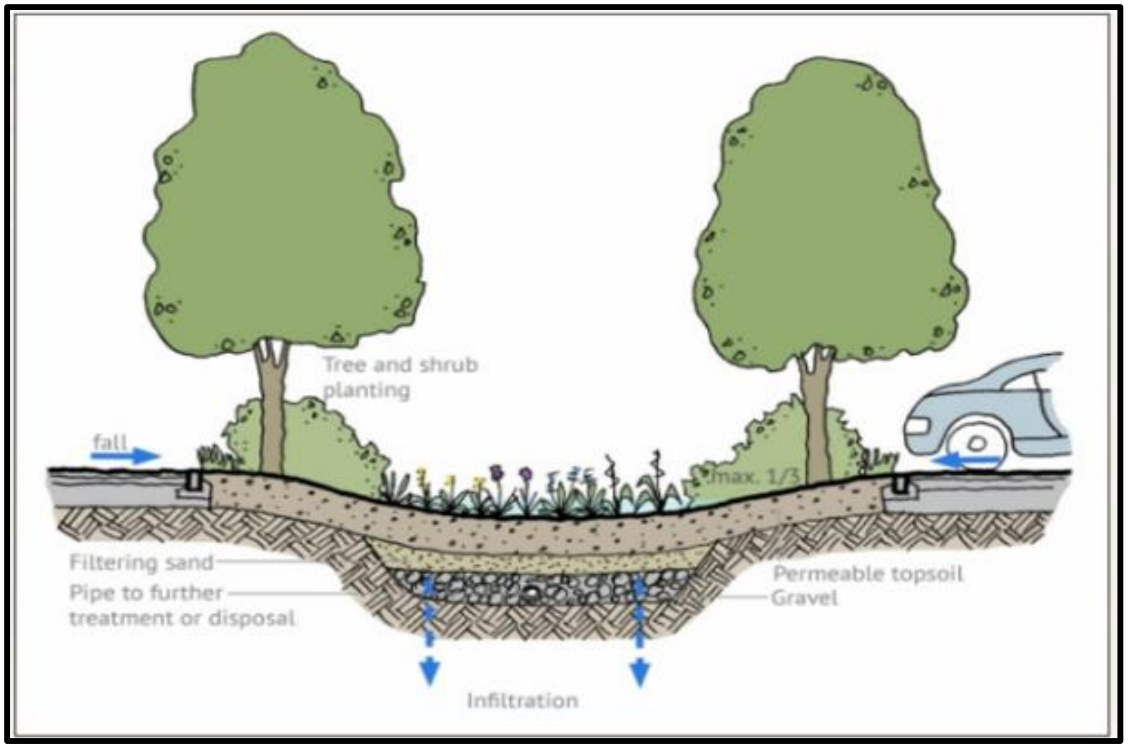

Figure 10: Diagram of a filter drain (Source: Susdrain)

Ponds and Wetlands

4.29 Ponds and wetlands are similar; wetlands have a greater focus on treatment of pollution while ponds have a greater focus on storing excess water. If ponds discharge or overflow into a watercourse, appropriate flow control mechanisms needs to be in place to adhere to discharge consents and to avoid blockages, thus reducing flood risk.

4.30 In general, ponds and wetlands that form part of a SuDS can be relatively small and should be designed so that they do not take up excessive space within a development. Multiple smaller features should be considered and implemented where possible, as these can provide better biodiversity and are easier to maintain.

4.31 In a well-designed system, most of the storage and treatment of water is performed by the upstream source control elements of the SuDS. Ponds and wetlands will provide a final stage to remove any remaining pollution. The time water takes to travel through is known as residence time. The greater the residence time, the slower the water flow, which helps silt drop to the bottom of the pond/wetland and allows the vegetation and other organisms to remove pollution.

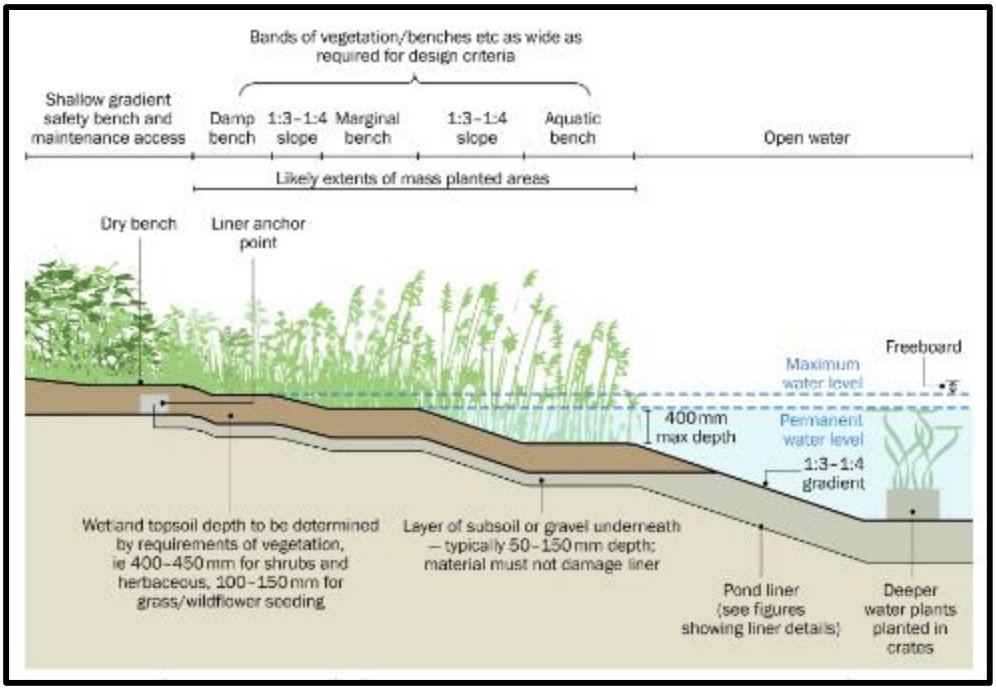

Figure 11 - Typical planted pond edge details (CIRIA SuDS Manual 2015, pg 488)

4.32 An important mechanism is biodegradation of oils by natural organisms in the pond. The organisms need a good supply of oxygen; therefore the permanent water should be shallow so oxygen can easier reach the bottom of the pond.

4.33 The exact form of the ponds and wetlands will depend on the specific topography and ground/ soil conditions present at the site, as well as its orientation, aspect and proximity to other landscape features, buildings etc. The design should be visually attractive and contribute to the amenity of the site and be of an appropriate scale and form to suit the surrounding landscape character. In green open spaces they should have a natural feel with soft edges and forms that flow into the surrounding area. By contrast, in hard urban landscapes hard edges and straight lines may be more appropriate.

4.34 Ponds and wetlands will normally be sited in developments so that they are overlooked, and included as part of open space to enable the feature to be a valued part of the development.

4.35 Ponds and wetland may also provide an opportunity to deliver wildlife habitat or biodiversity gain. The creation of bays suitable for breeding wildfowl could be integrated where possible into larger ponds, and should be at least 3 metres from the bank. Consideration could be given to connectivity with adjacent green corridors to enable species migration. In so long as there is no conflict with the SuDS operation, planting to enhance biodiversity could also be provided. These are matters which the Council will look favourably on when determining planning applications.

4.36 In terms of public safety, soft boundaries are favoured, and steep drops and sudden changes in levels should be avoided. Soft boundaries can be achieved by incorporating low to medium height marginal planting, varying grass cutting

heights and gentle shelves to pond. Where a perimeter fence is unavoidable it should permit access for wildlife below it.

4.37 Wherever possible the SuDS ponds and wetlands should be designed so that special machinery is not required to undertake maintenance. Maintenance should be timed to minimise impact on wildlife.

Figure 12 – Wetland at Castle Archdale (NI Water)

Attenuation Storage Systems

4.38 In areas where it is not possible to provide amenity SuDS such as ponds, wetlands or swales, an underground tank, geocellular systems or similar attenuation storage systems can provide an important part of a SuDS solution. These often require smaller amounts of space yet can provide a large infiltration volume for a low weight and often have high load capacity and durability. The system should be tailored to the characteristics of the development site. The underlying soil surrounding the system should be sufficiently permeable and the water table should be a suitable distance below the base of the installation. If either of these criteria is not met, or cannot be confirmed, a soakaway system may not be suitable in which case a storage tank would be more applicable.

Construction Phase SuDS

4.39 Construction phase SuDS can be used to control and remove silt from runoff during construction work. There should be ample land in a suitable location to deal with potentially silt-laden runoff. The SuDS should be:

- Situated away from flood plains
- Large enough to deal with the volume of runoff that can be expected from the area of the site
- Constructed away from any areas likely to become flooded by any means.

4.40 SuDS that are suitable for use during construction, subject to good management practice are:

- Swales
- Detention basins

- Green roofs
- Rainwater harvesting systems
- Online and offline storage

4.41 It is important to consider how to manage surface water and prevent flooding to surrounding land during the construction phase. If you have to construct SuDS features on site at the beginning of the project, you must protect them for the remainder of the construction phase as they are likely to receive a lot of sediment and silt that would prevent them operating effectively once construction is completed. If this happens remediation works should be completed to return them to good condition once construction work is completed. This could mean removing silt build up in swales and retention ponds and replacing or cleaning gravel in filter drains.

5. Management and Maintenance of SuDS

5.1 The policy clarification for policy FLD03 in the Local Development Plan 2030 - Plan Strategy outlines that the Council will need to be satisfied that suitable arrangements are in place with regard to the long term management and maintenance of the infrastructure on which mitigation depends. Therefore, an important consideration when designing SuDS is to ensure that the solutions proposed can be maintained easily and that maintenance considerations and costs are planned up front. This is essential to ensure that the SuDS features function as designed and the benefits are achieved over the life of the development.

5.2 The level and type of maintenance will be dependent on the type of SuDS feature proposed. Maintenance will include normal routine maintenance or remedial maintenance. The initial design process should consider how access (pedestrian or machinery) will be gained to carry out maintenance and who will be responsible. The details should be set out at application stage and they should be proportionate to the nature and scale of the application.

5.3 SuDS features that are shared or serve a wider development should be located within public open space and should not be located within a private curtilage. A private management company or similar body should be responsible for the management and maintenance of these SuDS features. Any hard SuDS may be adopted by NI Water if they are constructed to the appropriate standard. SuDS located within property boundaries are the responsibility of the property owner and may include green roofs, permeable driveways, garden soakaways and rainwater harvesting.

5.4 The long-term management and maintenance of the SuDS features will be controlled primarily through planning conditions and in some instances a planning agreement under section 76 of The Planning (Northern Ireland) Act 2011, may be required.

6. Information required for Planning Applications

6.1 It is essential that the consideration of SuDS takes place at an early stage of the development process as this will assist with the delivery of well designed, efficient systems and engaging in Pre-Application discussions (PADS) with Council at the outset of your SuDS concept design is encouraged.

6.2 The extent of SuDS required will be dependent on the nature and size of the proposed development and its location. Each application will be considered on its own merits having regard to the specific circumstances of the case. The appropriate provision of SuDS for any site will be a matter of planning judgement. The type of SuDS feature(s) must be carefully considered and designed in response to the site location and provide additional benefits beyond engineering.

6.3 As the type and level of SuDS will differ for each individual site, the accompanying information and detail required with a planning application should be proportionate to the scale and nature of the application and the sensitivities of the site in terms of flooding and drainage. The information requirements provided below in 6.5 is therefore not seen as a definitive list for every application, each application will be assessed on its own merits and additional information may be requested if needed.

6.4 It is expected that sufficient information will be submitted with a planning application to describe all elements of the proposals to allow them to be appropriately assessed. The information and accompanying drawings within planning applications must demonstrate that the SuDS features have been designed and sized to accommodate the required run off, and are to the required standards.

6.5 The information requirements that may be required for the different type of planning application submissions are as follows;

<u>Pre Application Discussion</u>

- A Site location plan and conceptual layout showing the extent of the proposed development;
- Consideration of the site restrictions or constraints, including flood risk;
- Concepts of the SuDS proposed and location;
- Consideration of the long term management and maintenance of the SuDS.

<u>Outline Planning Application</u>

- A Site location plan and conceptual SuDS Plan showing the extent of the proposed development, the approximate locations and land-take of the proposed SuDS features;
- A sustainable drainage design strategy (See Appendix A). – including a flood risk assessment and drainage impact assessment if required by policy FLD01 and FLD02;

- Consideration of the long term management and maintenance of the SuDS.

Full or Reserved Matters Application

- A Site location plan and detailed SuDS Plan showing the extent of the proposed development, the approximate locations and land-take of the proposed SuDS features;
- A sustainable drainage design strategy (See Appendix A). – including a flood risk assessment and drainage impact assessment if required by policy FLD01 and FLD02;
- SuDS Section – cross and longitudinal sections through SuDS basins and pond features to clearly identify the design elements;
- SuDS Features Maintenance Schedule – Details of the regular and long-term maintenance which will be required for the system;
- SuDS Management Agreement – if being carried out by a non-statutory body;
- Proposals Details of any voluntary proposals for enhancement of biodiversity in and around SuDS features.

6.6 If planned for at an early stage, there are limited sites where SuDS are not practicable nor viable. However, it is acknowledged that there will be certain development proposals where it will not be practicable to include SuDS. Such development proposals may include, where the inclusion of SuDS may adversely affect features of acknowledged importance such as the historic or natural environment.

6.7 Where a development proposal does not include SuDS within it, the onus is on the applicant/agent to provide a robust rationale as to why SuDS is not practicable. This explanation must be included with the planning application documentation to allow consideration of this against Policy FLD3. It should be noted that neither construction cost or value will ordinarily be sufficient to justify departure from policy requirements as these matters should be factored in by applicants at an early stage of the design process.

6.8 The Department for Infrastructure – Rivers Agency, The Department of Agriculture, Environment and Rural Affairs - Water Management Unit and/or Northern Ireland Water may be a key statutory consultee in relation to those hard engineered SuDS elements of development proposals and any advice will be taken into account in any decision. Therefore, early engagement in the design as part of the Pre-Application Discussion process is recommended as outlined above.

6.9 Proposals for enhancement of biodiversity in and around SuDS features should be in line with the Council's Local Biodiversity Action Plan (LBAP) and reflect connectivity with the wider landscape.

6.10 Applicants will also have to demonstrate that changes to the existing topography will not have a detrimental effect on existing wetlands, habitat, groundwater or watercourses.

6.11 Where a detention basin is proposed, applicants will be required to provide adequate information on the soil permeability rate and water table levels and the balance between that and the site's ability to retain flood water for an adequate period to effect controlled release.

6.12 In addition to technical compliance, other considerations when considering a SuDS proposal may include:

- Contribution to the visual amenity of the development;
- The ecological and biodiversity benefits to the site;
- Landscaping arrangements and maintenance;
- If part of open space requirements, and if so its accessibility and functionality for the majority of the year;
- Rationale for exact siting and design including details of alternatives considered.

7. Further Guidance

7.1 Further best practice guidance and advice exists to assist developers and their professional advisors, and applicants are encouraged to reference these. In particular, the CIRIA SuDS Manual (C753) and associated updates contains details on the technical design, construction and maintenance of SuDS. The manual also demonstrates how to best achieve the principle of combining technical requirements with amenity, aesthetic and biodiversity considerations.

Glossary

Attenuation storage systems – any structure that creates a below-ground void which can be used to temporarily store surface water before controlled release or re-use.

Bio-retention areas (including rain gardens) - shallow landscaped depressions that enable surface water runoff to pond on the surface, before filtering through overlying vegetation and underlying soils prior to collection or infiltration.

Detention/ Infiltration Basins – vegetated dry depressions in the ground that provide short term storage of water and flow control through attenuation of stormwater runoff.

Filter drains – a trench filled with granular filter material that allow surface water runoff to be temporarily stored below the surface, providing attenuation, conveyance and water treatment benefits.

Filter Strips – gently sloping, vegetated strips of land that provide opportunities for slow conveyance and infiltration into the ground, encouraging the natural removal of sediment usually towards a swale or filter drain.

Green roofs/ living roof - a roof of a building that is partially or completely covered with vegetation and a glowing medium planted over a waterproofing membrane which are irrigated by rainfall reducing the rate and volume of surface water runoff.

Infiltration systems (including soakaways and basins) – collect, store and dispose of surface water runoff using overlying vegetation, underlying soils, and/ or cellular structures.

Permeable pavements – a type of pavement with a porous surface that allows surface water to soak through rather than accumulate or runoff it to enable storage in the sub-base, or infiltration directly into the ground surface.

Ponds and wetlands– features with permanent pools of water, the levels of which increase following rainfall, enabling the attenuation and treatment of surface water.

Rainwater Harvesting System – collection and storage of rainwater into natural reservoirs or tanks or the infiltration of surface water into subsurface aquifers with the water utilised on site.

Swales – shallow, vegetated channels that are used to store, convey and treat surface water, whilst also providing a useable public space with biodiversity benefits.

Appendix A - A Sustainable drainage design strategy

The following considerations are outlined to assist applicants and developers in the development of a Sustainable drainage design strategy. It is not an exhaustive list nor will every matter necessarily be relevant for every planning application. Each application will be assessed on its own merits.

		Submitted
1.	**An assessment of site characteristics;** a) Suitability for infiltration based on soil types and geology; b) The presence of any constraints; c) The drainage potential of the ground; d) Potential for ground instability when water is infiltrated; e) Potential for deterioration in groundwater quality as a result of infiltration.	
2.	**A Detailed Drainage Plan** identifying: a) The proposed 'SuDS train' and total land take; b) Location and type of source control; c) Site controls with storage locations; d) Conveyance and exceedance flow routes; e) The destination of runoff and any runoff rate restrictions.	
3.	**A Detailed SuDS Design Statement** covering: a) Final SuDS to be incorporated and final discharge points where relevant – have hard and soft SuDS been incorporated; b) How the drainage design satisfies SuDS standards and techniques in terms of water quality and attenuation and discharge quantity for the lifetime of the development; c) Proposals, where relevant, for integrating the drainage system into the landscape or required publicly accessible open space and providing habitat and social enhancement; d) Calculations showing the pre- and post-development peak runoff flow rate for the critical rainfall event; e) Provision of drainage for large storm events, including protection for SuDS systems; f) Indication of overland flow routes and safeguarding of properties from flooding; g) Proposed method of flow control.	
4.	**A Method Statement** detailing how surface water arising during construction will be handled.	
5.	**Management and Maintenance arrangements** which explains how the SuDS incorporated into the scheme will be managed and maintained during the entire lifetime of the development.	