A Appendix A: Isle of Wight Local SuDS Design Standards

A.1 Introduction

This Appendix to the Isle of Wight SuDS SPD provides further guidance on applying the Local SuDS Design Standards within developments on the island. It is recommended that this appendix is read in conjunction with the SuDS SPD document. The flow chart in Section A.3 can be used to find the most relevant sections within the SuDS SPD.

The Local SuDS Design Standards are presented in Section A.8, with additional guidance on how these can be met. Standing advice for non-major and minor development is provided in Section A.7. The introductory sections (A.2 to 0) set the context of considering SuDS within the Isle of Wight, and outline the Council's expectations for planning applications.

A.2 When to consider SuDS within a development

Isle of Wight Council expects SuDS to be considered in all planning applications for new development.

These standards apply to the following development types:

- Residential, commercial, industrial and mixed developments
- Greenfield and previously developed sites
- Major development (where the LLFA has a statutory consultee role)
- Minor development types (including extensions, conservatories and driveways)
- Other development (minerals and waste, schools)
- Refurbishments of existing developments (SuDS retrofitting)
- Existing public open space and streetscapes (SuDS retrofitting)

To deliver multi-benefit SuDS which meet the Isle of Wight Local SuDS Design Standards, surface water drainage must be considered at the earliest possible stage, when considering the feasibility of a land parcel for development.

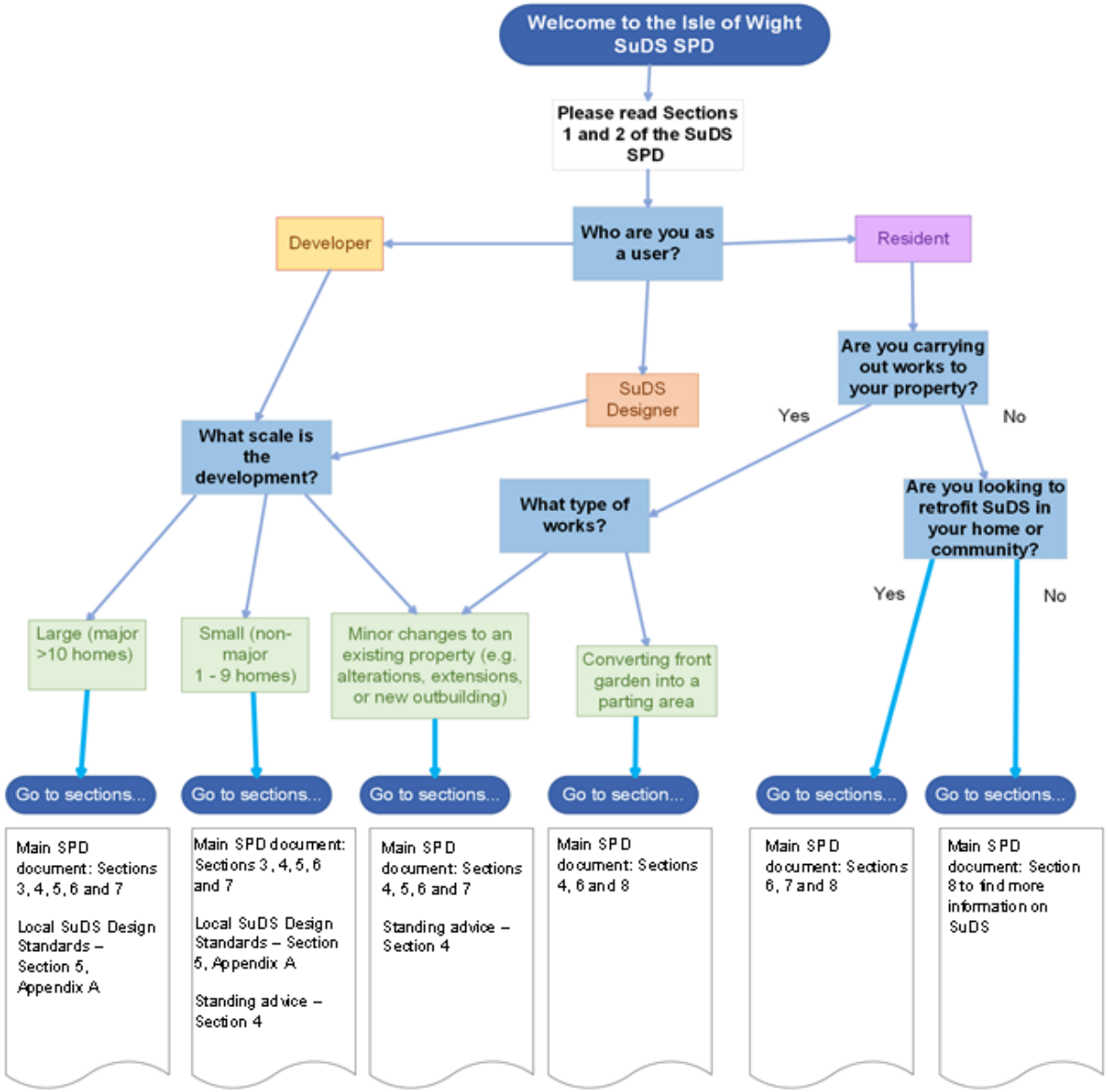
Assessments of ground conditions and existing drainage networks should be undertaken to inform the site layout and SuDS design.

These may include:

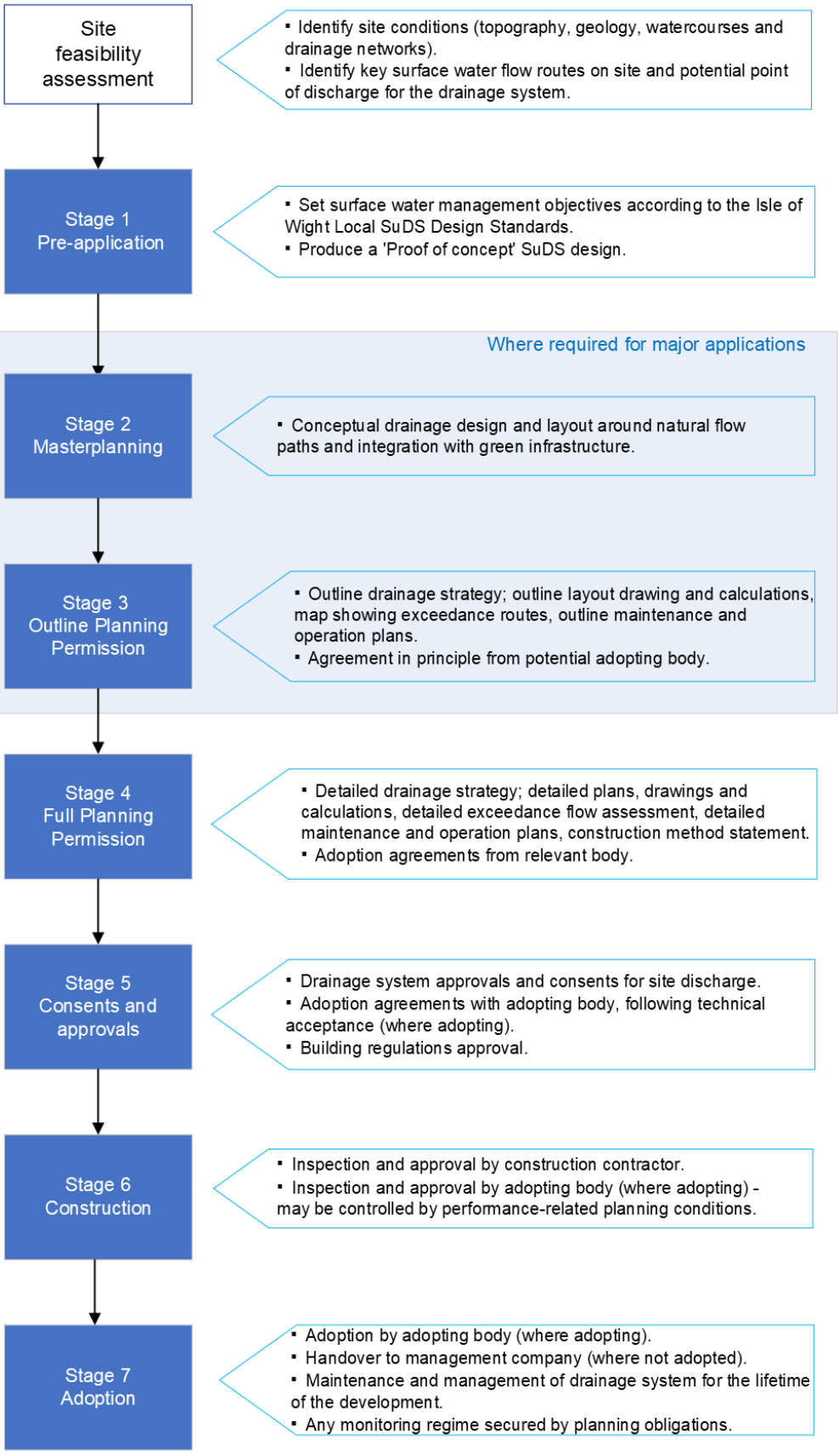
- Ground Investigation
- Topographic survey
- Investigation / survey of existing watercourses, surface water drainage systems and sewers
- Soakage tests (in line with BRE 365 methodology), where surface water is likely to be discharged by infiltration
- Trial pit or borehole investigations to estimate the groundwater table level at the site

When masterplanning a site, the function and land-take associated with SuDS needs to be considered from the outset, to avoid designers having to retrofit SuDS into constrained spaces within a fixed development layout. To mitigate this risk, early engagement on surface water drainage at pre-application stage should be sought from Isle of Wight Council (as Local Planning Authority and Lead Local Flood Authority), as well as Island Roads and Southern Water.

A.3 User guide

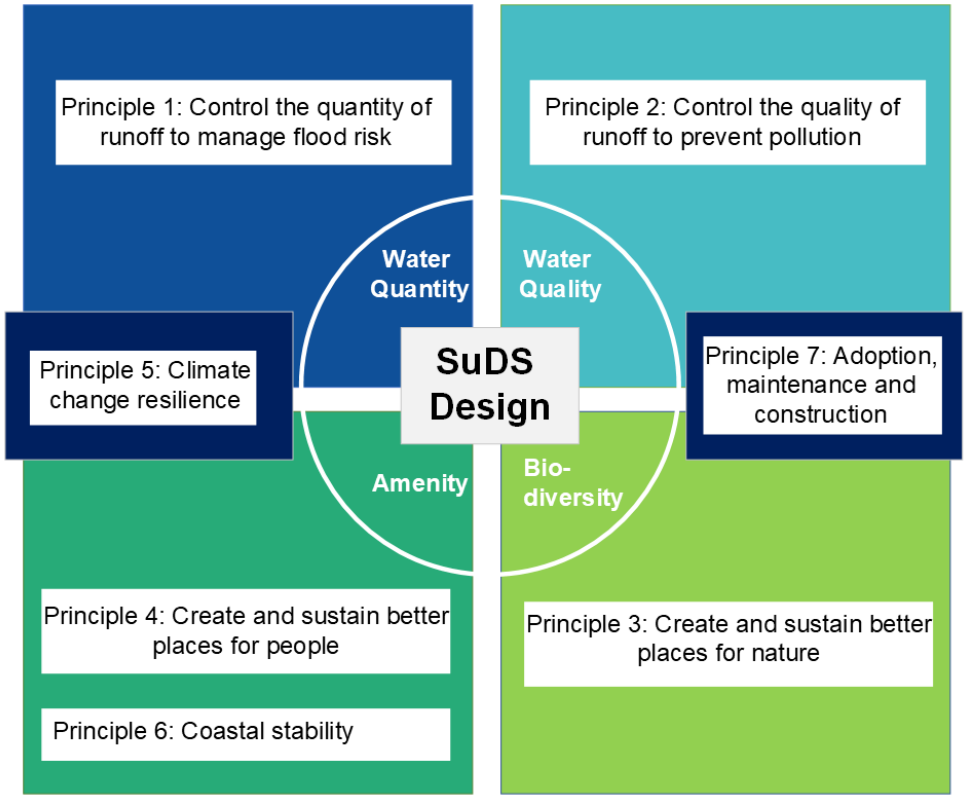


A.4 Overview of the SuDS delivery process



A.5 Context of the Local SuDS Design Standards

SuDS in the Isle of Wight are expected to meet our local standards in each of seven principles:



In addition to addressing climate change and coastal stability on the Isle of Wight, and ensuring that SuDS are safe and easy to maintain, these standards aim to deliver the 'four pillars' of SuDS (CIRIA SuDS Manual, 2015):

- Water quantity
- Water quality
- Amenity
- Biodiversity

The standards strengthen the position of the national Non-Statutory Technical Standards for Sustainable Drainage Systems (2015) within the island. Applications are still required to meet the national standards and detailed design guidance set out in the CIRIA SuDS Manual. References to relevant sections of the SuDS Manual are provided throughout the guidance notes.

Isle of Wight Council, as Lead Local Flood Authority (LLFA) expects applicants to provide a surface water drainage strategy that evidences how the standards in each of the seven principles have been met. The Council expects development of all scales to demonstrate consideration of SuDS, as set out in this SPD, with evidence for the approach taken. The type of evidence required is described in the Local SuDS Design Guidance notes and the Surface Water Drainage Strategy validation checklist (Appendix D of SuDS SPD).

A.6 Using SuDS to meet multiple planning requirements

Aside from the statutory requirement for SuDS on major development, well-designed SuDS can help to meet several planning requirements for a site:

- Ensure national and local planning policy requirements are met.
  - Multi-functional SuDS features can meet several planning policy requirements at once (e.g. biodiversity, amenity, green infrastructure, flood risk, drainage).
- Avoid delays in the planning process and reduce the risk of drainage systems needing re-design at a late stage.
- Reduce flood risk and damage to property both on-site and off-site.
- Contribute to providing habitats and meeting Defra Biodiversity Net Gain requirements for new developments.
- Improve water quality in environmentally designated sites (Ramsar, SAC, SSSI) and contribute to Water Framework Directive (WFD) targets required by Natural England and the Environment Agency.
- Reduce drinking water and garden watering demand (through water-re-use).
- Providing green spaces, which benefit the health and wellbeing of communities.
- Contribute to making developments attractive places to live, which can also increase premiums on property values.

A.7 Standing advice for non-major and minor development

Major development is defined under the Town and Country Planning Order 2015 as: residential development of ten or more dwellings (or a site area of 0.5 hectares or more), a building where the floor space is 1000m^2 or more, development with a site area of 1 hectare or more, and waste and minerals development.

'Non-major development' is defined within the Flood Risk and Coastal Change NPPG as any development falling below the threshold of major development. For example, a planning application for eight dwellings, an office building creating 750 square metres of floor space, or a development with a site area of 0.4 hectares.

In relation to flood risk, "minor development" is defined within the Flood Risk and Coastal Change NPPG. In this context, minor development means:

- Minor non-residential extensions (industrial/commercial/leisure): with a floorspace of less than 250 square metres.
- Alterations: development that does not increase the size of buildings (e.g. alterations to external appearance).
- Householder development: for example, sheds, garages, games rooms etc. within the curtilage of the existing dwelling, in addition to physical extensions to the existing dwelling itself. This excludes creating a separate dwelling within the curtilage of the existing dwelling (e.g. subdividing houses into flats).

The expectation is that all developments on the Isle of Wight should aim to include high quality SuDS and provide some form of **betterment to existing conditions**. The inclusion of SuDS has many benefits and will also help to meet many other local policies.

Applicants are required to provide Isle of Wight Council, as Local Planning Authority, with a surface water drainage management plan which demonstrates how surface water from the development will be disposed of in a manner that does not increase flood risk elsewhere, in accordance with the principles of SuDS. The applicant is advised to refer to the Isle of Wight local SuDS design standards, particularly those relating to water quantity (Principle 1). To achieve this, we recommend the inclusion of source control components (such as rainwater re-use/harvesting, green roofs, rain gardens, trees, permeable paving). Existing

flow routes and drainage features within the site should be identified and preserved (e.g. ditches, seasonally dry watercourses, historic ponds).

Surface water drainage should also aim to enhance the water quality, biodiversity, climate change resilience and amenity of the site. Clear justification and evidence are required to prove that inclusion of SuDS within non-major or minor development "is considered to be inappropriate" (NPPF paragraphs 173 and 175). The NPPG for Flood Risk and Coastal Change states that where cost is included as a reason for not including SuDS, information must be provided to allow comparison of lifetime costs between SuDS and a conventional public sewer connection. This must include the opportunity costs of providing land for drainage components, as well as maintenance and operating costs.

A.8 Local SuDS Design Standards

Principle 1: Control the quantity of runoff to manage flood risk

Current minimum technical standards for SuDS in terms of peak flow control, volume control and flood risk are set out in Defra's Non-statutory Technical Standards for Sustainable Drainage Systems. In the Isle of Wight SuDS SPD, the national standards have been translated into local standards, and have included consideration of climate change and urban creep, as well as island-specific characteristics and priorities.

Discharge destination

Standard 1a: Discharge must be prioritised according to the following discharge hierarchy:

a. **Rainwater re-use and recycling**
b. **Shallow infiltration**
c. **Discharge to surface water body (watercourse[1], lake, sea)**
d. **Discharge to surface water sewer**
e. **Discharge to combined sewer network**

Guidance notes:

- SuDS designs shall include source control and should convey water on the surface, integrating it into the site design.
- Rainwater re-use and recycling
  - Including rainwater re-use and recycling features in the design (e.g. use of water butts or rainwater harvesting systems) will be viewed favourably as they meet wider Isle of Wight planning policy on reducing potable water demand.
  - Where rainwater harvesting systems are included as part of the overall drainage strategy, they must include an overflow arrangement which manages excess surface water through infiltration into the ground, or the safe conveyance into another SuDS feature, before discharging from the site. Where connecting into a SuDS feature, the overflow should be located above the surcharged water level for the system.
  - The overflow from the rainwater harvesting tank should be fitted with a non-return valve, to prevent backflow into the tank.
- Shallow infiltration
  - 'Shallow infiltration' includes infiltration from surface SuDS features such as swales, basins and raingardens; shallow soakaways and permeable paving.
  - Deep bore soakaways are not an acceptable infiltration SuDS technique. They do not represent a natural drainage process, do not deliver the multiple benefits of SuDS and have the potential to cause environmental harm, particularly given the presence of Groundwater Source Protection Zones, environmentally designated sites and variable geology on the Isle of Wight. The LLFA will resist their use, and seek advice from the Environment Agency if they are proposed.
  - Where site conditions indicate that infiltration is likely to be feasible, BRE365 infiltration testing must be undertaken to provide evidence that there is

———————————————————————————————————————

1 Subject to Flood Risk Activity Permit or Ordinary Watercourse consent from relevant consenting authority.

capacity for infiltration SuDS at full application stage. If infiltration testing has not been undertaken at outline stage or has not met the BRE365 standard, the LLFA expect evidence of a viable alternative discharge destination for surface water runoff. Where infiltration is proposed, an assessment of the contamination risk should be made (and evidence of consent from Environment Agency, where required e.g. in Groundwater Source Protection Zone 1).

  - Any infiltration proposals must consider the geological and coastal stability characteristics of both the site and the hydrological catchment within which the site is located. Discharge via infiltration is not accepted within two zones of potential landslide risk or within Coastal Change Management Areas (CCMAs) (see Standard 6a).

- Discharge to surface water body / surface water sewer / combined sewer
  - Proposals to discharge into a water body, public or private sewer shall be accompanied with correspondence confirming acceptance of the proposal from the network owner, and evidence of capacity in the network to receive the additional flows. Discharge to a Main River may require a Flood Risk Activity Permit (FRAP) from the Environment Agency. Discharge to an Ordinary Watercourse may require an Ordinary Watercourse Consent (OWC) from IoWC as LLFA.
  - Both of these applications are separate processes to the planning system and there is no guarantee that the granting of a planning permission will automatically be followed by approval of a FRAP or OWC application.
  - Discharge to combined sewers and highway drains are the least favourable options on the Isle of Wight. Island Road does not permit discharge into the highway drainage system, unless there is a historic connection. Strong evidence must be submitted within the drainage strategy which demonstrates that no other discharge location is feasible at the site.
  - Proposals to discharge to a watercourse must provide evidence of the presence, capacity and condition of the watercourse. This includes its route, connectivity, and any in-channel structures within the vicinity of the site (e.g. culverts, sluices, bridges, weirs). The downstream flood risk impacts of discharging into the watercourse must be considered at a catchment-scale, not at the point of connection alone.
  - Discharge to coastal waters or tidally influenced watercourses (including the River Medina, Western and Eastern Yar and Newtown River) must consider the flood risk implications of restrictions in site discharge at high tide ('tide locking'). This may include the need for emergency storage to be provided to avoid flooding, in the event of tide locking. This storage should be located outside the fluvial and tidal floodplain, to prevent loss in floodplain storage.

Runoff rates and volumes

Standard 1b: For all developments, the peak allowable discharge rate from the development to any surface water body or sewer for the 1 in 1-year, 1 in 30-year and 1 in 100-year rainfall event must never exceed the peak greenfield runoff rate for the same event. In some cases, it may be necessary to restrict rates further depending on local requirements.

Guidance notes:

- This standard strengthens the position of the national Non-Statutory Technical Standards for SuDS (S2, S3) in the Isle of Wight.
- If it is not possible to meet this standard on a previously developed site, a detailed justification statement must be included in the sustainable drainage strategy. It must clearly describe the improvements that will be delivered both on runoff rates and the overall quality and benefits of the scheme.
- Any alternative proposal will be expected to demonstrate the maximum achievable betterment on the existing runoff rate to be agreed in advance with the LLFA. A minimum starting point is considered to be 50% but the LLFA reserves the right to insist on a greater betterment in runoff rates where there are known downstream flood issues or sewer capacity issues. The LLFA will also favour overall betterment of the SuDS scheme quality e.g. reduction in impermeable area, remediation of the site and management of smaller events, improvements in water quality and biodiversity.
- Use of existing drainage system on a previously developed site will require CCTV survey to prove continuity and integrity of the system. Designs should be supported by attenuation / pipe full capacity calculations or a hydraulic model.
- Choice of methodology used for the calculation of runoff rates and volumes should be justified, and the LLFA reserves the right to request that other methods are used where it deems appropriate. Use of Flood Estimation Handbook (FEH 2022) methods are preferred.
- The LLFA expects to see pre and post development calculations undertaken for the proposed developable area, and not the whole site. This will allow for a like-for-like comparison of runoff rates.
- The LLFA does not impose a minimum discharge limit on the Isle of Wight. Standard 2b requires a management train incorporating filtration features to remove suspended matter and suitable maintenance regimes, which should minimise the risk of blockage of small orifices.
- If a development proposes to discharge to an estuary or to the sea, the LLFA may consider a free discharge, providing that it can be demonstrated that this will not have a detrimental impact on flood risk and the scheme meets the requirements for water quality. This does not negate the need to provide multi-benefit SuDS, or the provision of emergency storage to mitigate residual risk posed by tide locking.
- For more information, see CIRIA SuDS Manual Chapter 24.

Standard 1c: For all developments, the runoff volume from the development to any surface water body or sewer in the 1 in 100-year, 6-hour rainfall event must never exceed the greenfield runoff volume for the same event (with an allowance for future climate change and urban creep).

Guidance notes:

- These standards strengthen the position of the national Non-Statutory Technical Standards for SuDS (S4, S5, S6) in the Isle of Wight.
- The sustainable drainage strategy should demonstrate clearly that the volume generated in addition to the 100-year, 6-hour greenfield volume will be stored or infiltrated on site. For non-major and major development sites, the LLFA expects to see hydraulic calculation outputs from industry standard software. Hand calculations may be accepted for minor development, if the LLFA considers these to be sufficiently conservative.
- Any additional volume generated that has to be discharged (i.e. cannot be infiltrated) should be released at a low discharge rate (2 l/s/ha or the 1 in 1-year greenfield runoff rate) (long-term storage). Alternatively, all runoff above the 1-year event can be released at this low discharge rate. Further detail on storage volume estimation and design can be found in CIRIA SuDS Manual Chapter 24.
- Attenuation storage must be designed with a sufficient drain-down time (to half-empty within 24 hours) to allow for runoff from subsequent events. The sustainable drainage strategy should demonstrate clearly that the outlet control will allow attenuation storage features to drain-down in the required time.
- Peak runoff rates and total volumes of runoff should be controlled by means of using both attenuation systems and by capturing runoff at source, using it as a resource (e.g. rainwater capture and reuse), slowing flow rates across the site, storing runoff, and maximising infiltration and evaporation. This applies to both extreme rainfall conditions as well as 'everyday' events, to achieve interception.
- If it is not possible to meet this standard on a greenfield or previously developed site, the LLFA consider this an exception and a detailed justification statement must be included in the sustainable drainage strategy. Any alternative proposal will be expected to demonstrate the maximum achievable betterment on the existing runoff volume to be agreed in advance with the LLFA, in addition to delivering a high-quality sustainable drainage scheme with multi-functional benefits.
- For more information, see CIRIA SuDS Manual Chapter 24.
- The sustainable drainage strategy should explicitly show that appropriate climate change and urban creep allowances have been applied in runoff calculations.
- Climate change allowances must be in line with the latest Environment Agency peak rainfall intensity climate change allowances for the Isle of Wight management catchment[2]. The 'Upper End' Environment Agency climate change allowance for the longest design horizon should be applied. In line with Planning Practice Guidance, a design life of at least 75 years should be considered for non-residential development.
- To prevent flood risk to and from the site increasing over time, climate change allowances should not be applied to greenfield runoff calculations.

2 Environment Agency (2022) Flood risk assessments: climate change allowances. Available at: Available at: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#what-climate-change-allowances-are

- All post-development runoff calculations must incorporate a 10% increase in impermeable area, to account for the effect of 'urban creep' (future extensions and additional paved areas) on runoff rates.
- For more information, see CIRIA SuDS Manual Chapters 10 and 24.

Flood risk within the development

Standard 1d: The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30-year rainfall event. Any flooding within a 1 in 100-year plus climate change rainfall event must be retained within the site boundary, and no flooding occurs in any part to any building or utility plant within the development.

Standard 1e: Flows resulting from rainfall in excess of a 1 in 100 year plus climate change rainfall event, OR from overtopping or failure of a SuDS feature, must be managed in downstream SuDS components or designated exceedance routes that minimise the risks to people and property.

Guidance notes:

- These standards strengthen the position of the national Non-Statutory Technical Standards for SuDS (S7, S8, S9) within the Isle of Wight.
- Evidence must be provided that the existing flood risk to the site from all sources has been assessed (i.e. watercourses, surface water, groundwater, reservoirs, sewers and drainage systems). The Surface Water Drainage Strategy should either include this assessment, or reference the Flood Risk Assessment for the site).
- Where flows exceeding the drainage system are managed on site, a sustainable drainage strategy must explain where the water will flow/be stored, and how it makes its way back into the drainage network within the site. This should be demonstrated to an appropriate level of detail for the type of application:
    - Pre-application - statement and map showing existing flow routes on the site, and how they will be maintained as exceedance routes within the development layout.
    - Outline – statement and map showing flow routes and appropriate point of discharge.
    - Full/Detailed – detailed analysis of exceedance routes. Map indicating key ground levels and flow routes, design cross sections and depths of exceedance storage areas, modelling of flow routes, appropriate point of discharge.
- All attenuation structures must be located outside of the area at risk from flooding in the 1 in 100-year plus climate change event.
- The design must identify and mitigate the risk of a surcharged / tide-locked outfall on the drainage system.
- All flow control devices restricting the rate of flow should have a bypass feature to manage flows when a blockage occurs.
- The design must ensure that any existing features that may have a drainage function (e.g. small ditches, seasonal watercourses that are dry in normal conditions, historic ponds) are preserved within the site design and are not lost or constricted in capacity.

- Applications must include details of flows which discharge into the site, and how these flows will be routed through the development and prevent flood damage on site or downstream of the site. This may include exceedance flows from development sites upstream of the site. An 'integrated' management train must be proposed, with flow attenuated and controlled at all locations within the development and local catchment area (e.g. Monkton Mead catchment – Policy EV15), considering property level SuDS, street level SuDS as well as site controls.
- For more information, see CIRIA SuDS Manual Chapter 24.
- A minimum of 1.0m buffer must be maintained between the base of any infiltration SuDS component and the highest groundwater level. If groundwater rises to the base of infiltration SuDS features such as soakaways, they will not operate correctly and there is a risk of flooding to the site.
- On sites where high groundwater is likely to be an issue, SuDS features should be sealed against potential groundwater ingress which may impact hydraulic capacity and structural integrity. The LLFA may require applicants to submit evidence (including calculations) as part of a drainage strategy, to demonstrate that the proposed surface water drainage systems is sealed against groundwater ingress and that floatation would not occur.
- An estimated groundwater table level at the site should be determined by trial pit or borehole investigations as close as possible to the location of the infiltration SuDS feature at full application stage. Groundwater level should be monitored daily for at least one or two months between mid-November and mid-April, and the highest value taken. Justification must be provided if ground investigations have not been undertaken at outline stage, and the LLFA will expect proof of concept to be demonstrated for an alternative drainage proposal.
- For more information, see CIRIA SuDS Manual Chapter 13.

Principle 1 supports the delivery of the following policies:

- Isle of Wight Level 1 Strategic Flood Risk Assessment 2018
- Isle of Wight Local Flood Risk Management Strategy 2016 (to be updated in 2023 - 2024)
- Isle of Wight Area of Outstanding Natural Beauty Management Plan 2019-2024
- Environment Agency (2009) Isle of Wight Catchment Flood Management Plan. Isle of Wight Level 1 Strategic Flood Risk Assessment 2010
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV13: Managing our water resources
  - Policy EV14: Managing flood risk in new development
  - Policy EV15: Monkton Mead Catchment area

Principle 2: Manage the quality of runoff to prevent pollution

Standard 2a: SuDS must prevent runoff from leaving the site during everyday rainfall events (up to 5mm).

Guidance notes:

- Runoff from small frequent rainfall events (those of less than 5mm total rainfall, known as 'everyday' events) constitutes the majority of annual runoff events. It also conveys the majority of the annual pollutant load to the receiving watercourse. Key to reducing pollution in rivers is therefore preventing any runoff from sites from the first 5mm for the majority of rainfall events. This can be achieved by using source control features, such as rainwater capture and reuse, bioretention areas, green roofs, infiltration SuDS and pervious surfaces (see CIRIA SuDS Manual Table 24.6 for full details).
- The selection of treatment SuDS components must be appropriate for the proposed site use and the types of pollutants which the SuDS components will receive (see CIRIA SuDS Manual Chapter 26).
- For more information, see CIRIA SuDS Manual Chapter 4 and 26.

Standard 2b: A SuDS management train approach must be followed to ensure that surface water discharged does not adversely impact the quality of receiving waters.

Guidance notes:

- SuDS design must follow the CIRIA SuDS Manual management train approach by using SuDS components in series, to ensure that runoff is suitably treated and suspended matter is removed before it is discharged, both during construction and when operational. Slow velocities and long retention times can increase the effectiveness of processes such as sedimentation, filtration, and biodegradation.
- It must be demonstrated that the SuDS design is:
  - Managing runoff close to the source
  - Treating runoff on the surface
  - Treating runoff to remove a range of contaminants
  - Minimising risk of sediment re-mobilisation
  - Minimising impact of accidental spills
- The sustainable drainage strategy must include a water quality risk assessment at an appropriate level of detail. This should demonstrate awareness of the end discharge point for the site, and the potential pathways for pollutants from the site up to this point. Early engagement with the LLFA is recommended to ascertain the appropriate assessment:
  - Low to medium hazard level sites (e.g. residential, schools, offices, commercial) – application of the CIRIA SuDS Manual Simple Index Approach (see CIRIA SuDS Manual Chapter 26).
  - High hazard level sites – (e.g. industrial sites, waste sites, haulage yards, sites where storage, handling or use of hazardous substances occurs) – a detailed water quality risk assessment must be carried out and environmental permits may be required.
  - Sites draining to sensitive water bodies (e.g. Ramsar, SPAs, SACs, SSSIs) – consultation with the appropriate regulator (e.g. Natural England) will be required on the acceptable reductions in pollutant load, and a detailed water

quality risk assessment must be carried out. The water quality risk assessment could form part of a wider WFD compliance assessment, if required at the planning stage.

- For more information, see CIRIA SuDS Manual Chapter 4 and 26.

Principle 2 supports the delivery of the following policies:

- Isle of Wight Council (2021) Isle of Wight Council Position Statement: Nitrogen neutral housing development
- UK Government (2017) The Water Environment (Water Framework Directive) (England and Wales) Regulations
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV4: Water quality impact on Solent Marine Sites (Nitrates)
  - Policy EV13: Managing our water resources
- Southern Water (2019) Water Resources Management Plan for 2020-2070
- Southern Water (2023) Draft Water Resources Management Plan for 2024 - 2075
- CIRIA (2015) The SuDS Manual (C753) - Chapter 26: Water quality management: Design methods
- CIRIA (2015) The SuDS Manual (C753) - Chapter 4: Designing for water quality
- CIRIA (2022) Using SuDS to reduce phosphorous in surface water runoff (C808F)

Principle 3: Create and sustain better places for nature

Standard 3a: SuDS designs must maximise the use of vegetated SuDS features for storage and conveyance across the site.

Guidance notes:

- The sustainable drainage strategy must set out how vegetated SuDS have been used within the design and how these will be designed and maintained. Features may include: green roofs, raingardens, planters, tree pits, swales, ponds, wetlands, basins.
- The use of piped networks, underground tanks and end-of-pipe storage solutions should be minimised.
- Proximity to an airport/aerodrome may exclude the use of open water features – this constraint should be identified at the earliest opportunity and does not preclude the use of other SuDS features.
- For more information, see CIRIA SuDS Manual Chapter 6 and Sustainable drainage systems: Maximising the potential for people and wildlife (RSPB and WWT).

Standard 3b: SuDS designs must contribute to meeting local and national policy on biodiversity.

Guidance notes:

- The sustainable drainage strategy must set out how the SuDS design will contribute to meeting biodiversity planning policy, with consideration of Biodiversity Net Gain, the Isle of Wight Community Natural Environment Action Plan and Biodiversity Action Plan, and local Nature Recovery Networks.
- The Isle of Wight Planning Team Ecologist should be consulted early in the planning process, as part of the Local Planning Authority's pre-application advice service. Ecological surveys and assessments should be carried out wherever development may have a significant biodiversity impact.
- SuDS should be designed to create spaces for nature within development sites. Above-ground SuDS features which are vegetated or store water can contribute to achieving the site biodiversity net gain requirements. SuDS can be used to create high priority habitats (such as ponds), or can improve low value areas of the site (such as areas of hardstanding or poor quality grass). SuDS designs should contribute to the required 10% Biodiversity Net Gain requirements for new development under the UK Environment Act, as well as national Nature Recovery Networks.
- Opportunities to retain and enhance existing watercourses should be considered where practical. This could include replacing existing culverts with open channels ('daylighting') and undertaking river restoration work to enhance the biodiversity value of watercourses.
- Culverting should be minimised as far as possible, with culverts only provided to enable access where required and in consultation with the relevant consenting body.
- The planting scheme should be easy to maintain and optimise biodiversity benefits and access to nature for residents. Species which are non-invasive, beneficial to pollinators, or native to the Isle of Wight should be prioritised, but with consideration of the climate and disease resilience of the scheme. Local material should be used in construction.
- Schemes should be designed to retain and maximise existing features for wildlife such as ditches, hedgerows, ponds etc.
- The function and maintenance regime of SuDS designs should remain feasible in light of ecological requirements. Where applicable, biodiversity net gain will need to be maintained and monitored within SuDS features for 30 years, in order to meet requirements for the site.
- For more information, see CIRIA SuDS Manual Chapter 6 and Sustainable drainage systems: Maximising the potential for people and wildlife (RSPB and WWT).

Principle 3 supports the delivery of the following policies:

- Defra and Natural England (2023) Biodiversity Net Gain
- Defra and Natural England (2023) Biodiversity metric: calculate the biodiversity net gain of a project or development
- UK Government (2021) Environment Act
- UK Government (2017) Conservation of Habitats and Species Regulations
- UK Government (1981) Wildlife and Countryside Act (as amended)
- Department for Levelling Up, Housing and Communities (2021) National Planning Policy Framework - Section 15
- Planning Advisory Service (2023) Biodiversity Net Gain for Local Authorities
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV2: Ecological assets and opportunities for enhancement
  - Policy EV3: Recreation impact on the Solent Marine Sites
  - Policy EV4: Water quality impact on Solent Marine Sites (Nitrates)
  - Policy EV5: Trees, woodland and hedgerows
  - Policy EV15: Monktonmead catchment area
- Isle of Wight Biodiversity Action Plan
- Isle of Wight Habitat Action Plans (2000 – 2005)
- Isle of Wight Area of Outstanding Natural Beauty Management Plan 2019 - 2024
- Isle of Wight Local Nature Recovery Strategy (not yet published)

Principle 4: Create and sustain better places for people

Standard 4a: SuDS designs must maximise multi-functional use of space on the site.

Guidance notes:

- Multi-functional SuDS features allow proposed developments to meet several planning policy requirements at once, particularly on space-constrained sites.
- SuDS should be integrated with green infrastructure and public open space, as part of the landscape, and accessible for residents to enjoy.
- Involvement of the community in the design process and maintenance of SuDS, will help to create a shared responsibility and pride for the scheme in the longer term. As a minimum, pre-planning consultation with the Parish or Town Council should be undertaken to understand the issues in the community and consider the benefits which SuDS can provide. For more information, see CIRIA SuDS Manual Chapter 34.
- Where possible, provide opportunities for recreational use of SuDS and enhancement of health and well-being (e.g. paths around SuDS, play areas utilising rainwater, educational boards etc.).
- The LLFA recognises that some uses may not be compatible, for example SuDS designed specifically to encourage biodiversity may not be compatible with recreational use, or adoption arrangements may conflict with multi-functional uses. Decisions made should be clearly set out in the sustainable drainage strategy and any constraints will be considered on a site by site basis.

- New residents should be informed of the drainage system on the site, and how it operates and is maintained. Where appropriate, educational boards should be proposed at SuDS features, to explain their function.
- For more information, see CIRIA SuDS Manual Chapter 5.

Standard 4b: SuDS must be safe for residents and operators.

Guidance notes:

- SuDS must be 'designed for safety' from the outset following the best practice design criteria set out in the CIRIA SuDS Manual for shape, slope and maximum depths for different types of SuDS features (CIRIA SuDS Manual Part D and Chapter 36). Avoiding deep features and the need for fencing will allow the amenity value of SuDS designs to be realised (see CIRIA SuDS Manual Chapter 36.3 for further design advice).
- Designs should be safe for residents of the development, and should allow safe access for maintenance by operators.
- Any health and safety concerns should be addressed in a Designer's Risk Assessment for the drainage scheme, in accordance with Construction (Design & Management) Regulations 2015. Where appropriate, signage should be used to explain the functions of the SuDS features for residents, with details of the responsible authority or maintenance company.
- For more information, see CIRIA SuDS Manual Chapter 36.

Principle 4 supports the delivery of the following policies:

- UK Government (2018) 25 Year Environment Plan
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV6: Protecting and providing green and open spaces
  - Policy EV7: Local green spaces
- Isle of Wight Health and Wellbeing Strategy 2022 - 2027
- Isle of Wight Area of Outstanding Natural Beauty Management Plan 2019-2024
- Isle of Wight Infrastructure Delivery Plan 2018
- Isle of Wight Housing Strategy 2020 - 2025

Principle 5: Climate change resilience

Standard 5a: SuDS designs must contribute to ensuring new developments are resilient to climate change for the lifetime of the development.

Guidance notes:

- In addition to accommodating the impact of climate change on surface water runoff, SuDS should wherever possible contribute to other local climate mitigation / adaptions aims and objectives set out in the Isle of Wight Climate and Environment Strategy.
- The sustainable drainage strategy must include a climate change statement which explains how SuDS will contribute to:
  - Better use of water resources (e.g. water re-use and recycling)
  - Carbon sequestration (e.g. use of trees and vegetation)
  - Moderation of temperatures through evaporative cooling, reflection and shading through use of water and vegetation in the built environment.
  - The climate change statement should also explain how the operation and maintenance of the SuDS system will be impacted by climate change over the lifetime of the development and how any impacts will be minimised.

Principle 5 supports the delivery of the following policies:

- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV13: Managing our water resources
  - Policy EV14: Managing flood risk in new development
- Isle of Wight Mission Zero: Climate and Environment Strategy 2021 - 2040
- Isle of Wight Health and Wellbeing Strategy 2022 - 2027
- Isle of Wight Area of Outstanding Natural Beauty Management Plan (2019-2024)
- West Wight Coastal Flood and Erosion Risk Management Strategy (2016)
- Environment Agency (2009) Isle of Wight Catchment Flood Management Plan
- Isle of Wight Local Flood Risk Management Strategy 2016 (to be updated in 2023 - 2024)
- Isle of Wight Level 1 Strategic Flood Risk Assessment 2010

Principle 6: Coastal stability

Standard 6a: SuDS designs must not exacerbate coastal erosion or landsliding or have an adverse effect upon the stability of cliffs or areas of known ground instability on the Isle of Wight.

Guidance notes:

- There are currently two coastal landslide complexes affected by potential landslide reactivation, the Ventnor Undercliff and the Cowes-Gurnard headland. These are defined by the two zones marked on the maps in Appendix C.4, and further information on these landslide risk areas is available on the Isle of Wight Council's website. Also, around much of the coast of the Isle of Wight, a Coastal Change Management Area (CCMA) has been identified, which are areas likely to be affected by coastal change over the next 100 years. The CCMA is also defined on the maps in Appendix C of this document. Both types of zones are identified in the Draft Island Planning Strategy.

- Early engagement at pre-application stage is recommended for development proposals within the two landslide risk zones and/or within the CCMA.
- Within known areas of potential ground instability and coastal landslide risk, groundwater has a significant influence on ground stability. Therefore, SuDS features which encourage infiltration into the ground are not acceptable within the two landslide risk zones. This includes soakaways, filter (or French) drains, infiltration basins, infiltration trenches. It is not suitable to site features such as ponds, which store large volumes of water above ground, on unstable land.
- In the CCMA, typically the use of soakaways or SuDs which encourage infiltration into the ground are also unsuitable as eroding clifftops and weak coastal slopes can be impacted by patterns of ground water and surface water,
- This does not preclude the use of sensitively designed SuDS in developments within the two landslide risk zones and/or in the CCMA, that do not include infiltration. There may be opportunities for source control features, or above-ground conveyance SuDS features, which ensure effective drainage across sloping ground. For example, green roofs, rainwater harvesting, lined vegetated conveyance features (e.g. swales), slow-release water butts, or hardscape conveyance features (e.g. rills). SuDS features must be lined to prevent ingress of surface water into the underlying geology. SuDS which encourage infiltration into the ground are not acceptable within the zones of potential landslide risk and also considered to be unacceptable in the CCMA.
- After rainwater re-use, the discharge for developments in the two landslide risk zones should be to existing watercourses, fully functioning surface water sewer systems or sealed drains (subject to the relevant approvals). The function and condition of the receiving system must be confirmed by the application prior to receiving approval to discharge into the system.
- SuDS designs within the CCMA must demonstrate how surface water can be discharged without exacerbating the rate of coastal erosion and/or having an adverse effect upon the stability of nearby cliffs.

Principle 6 supports the delivery of the following policies:

- Isle of Wight Shoreline Management Plan (2011)
- West Wight Coastal Flood and Erosion Risk Management Strategy 2016
- Isle of Wight Level 1 Strategic Flood Risk Assessment 2018
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV16: Managing our coast
  - Policy EV17: Facilitating relocation from Coastal Change Management Areas
  - Policy EV18: Improving resilience to coastal flooding and coastal risks
  - Policy EV19: Managing ground instability in new development

Principle 7: Adoption, maintenance and construction

Standard 7a: SuDS must be adopted and maintained for the lifetime of the development.

Guidance notes:

- Provisions for adoption and maintenance must be considered early and set out in the Sustainable Drainage Strategy, clearly stating the body which will be responsible. The adoption process begins once planning permission has been granted and includes the physical construction and subsequent maintenance of the SuDS.
- Where SuDS components are proposed on land within private ownership (such as property driveways or gardens), the developer will be expected to include provision within the deeds of the property which ensures that the SuDS features remain in situ throughout the lifetime of the development.
- The LLFA does not accept the use of pumps in SuDS design, because they are not a sustainable solution. If it is not possible to design a solution without using pumping, then this is considered an exception. A detailed justification statement must be included within the sustainable drainage strategy explaining why pumping is required, detailed plans and agreements for maintenance of the pump, and how the risk of pump failure will be mitigated.
- SuDS must be designed to be easily maintained. Above ground features are preferred, with easily visible inlets and outlets where problems can be easily identified and systems designed to prevent blockages through pre-treatment.
- The sustainable drainage strategy should include a full Maintenance and Operation Management Plan covering the proposed drainage system over its lifetime stating:
    - the body who will operate and maintain the system for the lifetime of the development, including intention to adopt by Southern Water, or another Water and Sewerage Company where appropriate.
    - the actual features proposed for this site and how they should be maintained in the specific setting of this development. Generic maintenance tables from the CIRIA SuDS Manual can be used as a starting point, but must be made specific to the proposed design.
- It is the responsibility of the developer to establish a maintenance agreement that ensures the drainage system functions as designed and remains operational for the lifetime of the development.
- Maintenance regimes for all SuDS must be fully funded by the developer, except for those that are being adopted by a statutory body.
- For more information, see the CIRIA SuDS Manual Chapter 32.
- Schedule 3 of the Flood and Water Management Act (2010) introduces changes to the legislation relating to adoption and maintenance of SuDS. Subsequent editions of this document will reflect those changes, once enacted/commenced.

Standard 7b: Surface water runoff must be managed during the construction phase.

Guidance notes:

- This standard is supplementary to the national Non-Statutory Technical Standards for SuDS (S13, S14) on Construction.

- The sustainable drainage strategy for a full planning application must include a Construction Method Statement outlining consideration of ecological and water quality impacts, phasing of development, the proposed strategy for sediment control and site drainage during construction, and any remedial works before the system becomes operational (CIRIA SuDS Manual Chapter 31).
- Several construction factors influence the phasing of SuDS within larger development sites. As best practice, the drainage system should be completed and in good condition while the rest of the site works are underway. However, damage and erosion of SuDS components are key considerations. Advice should be sought from the LLFA on whether temporary drainage solutions are required during the site construction phases.
- All necessary consents must be obtained for on or off-site works.
- For more information on SuDS and construction, see CIRIA SuDS Manual Chapter 31 and the CIRIA Site Manual for Constructing SuDS.

Principle 7 supports the delivery of the following policies:

- Isle of Wight Level 1 Strategic Flood Risk Assessment 2018
- Isle of Wight Council (July 2021) Draft Island Planning Strategy
  - Policy EV14: Managing flood risk in new development
  - Policy EV15: Monkton Mead Catchment area