

North Yorkshire Council

Environment Executive Members

18 December 2023

Supplementary SuDS Guidance, Infiltration Testing

Report of the Assistant Director – Highways and Transportation

1.0 PURPOSE OF REPORT

- 1.1 To seek approval of the Corporate Director of Environment, in consultation with the Executive Member for Highways and Transportation, for the publication of Supplementary SuDS Design Guidance in order to provide appropriate technical guidance to developers and local planning authorities in the Council area.

2.0 BACKGROUND

- 2.1 North Yorkshire Council (NYC) in its capacity as Lead Local Flood Authority (LLFA) is the relevant statutory consultee to the local planning authorities, as stipulated by the Town and Country Planning (Development Management Procedure) (England) Order 2015. Specifically, Schedule 4 states that the LLFA should be consulted on "major development with surface water drainage".
- 2.2 The National Planning Policy Framework (NPPF), paragraph 169 requires all new major developments to incorporate appropriate Sustainable Urban Drainage Systems (SuDS) features into the design, construction and maintenance of drainage on site. Alongside Building Regulations, Part H, rainwater drainage should be discharged in order of priority: An adequate soakaway or infiltration system; or where that is not reasonably practicable, a watercourse; or where that is not reasonably practicable, a sewer.
- 2.3 North Yorkshire Council SuDS Design Guidance was approved by the Corporate Director – Business and Environmental Services (BES), in consultation with the BES Executive Members on 25 January 2019 and published in order to provide appropriate technical guidance to developers and local planning authorities in the county.
- 2.4 This document has been used by NYC LLFA officers as the basis of recommendations to the Local Planning Authority in its capacity as statutory consultee on SuDS and surface water drainage. The document is also provided to applicants as a guide to providing a suitable submission for the LLFA to assess. Officers continue to monitor national policy to ensure that responses to the Local Planning Authority are robust and in line with present standards.
- 2.5 Government has stated the intention to commence consultation regarding the enactment of schedule 3 of the Flood and Water Management Act (2010). If implemented this would see the authority become an approval body for Sustainable Drainage Systems. A system which ensures assets to be adopted are appropriately designed to undertake the required function is imperative to this change to the council's role.

3.0 REQUIREMENT FOR SUPPLEMENTARY GUIDANCE ON INFILTRATION TESTING

- 3.1 In its capacity as LLFA, the Council supports developments with sustainable drainage elements, in particular it requires applicants to demonstrate and evidence whether a site is suitable for infiltration before exploring other methods of discharging surface water.
- 3.2 Over time, it has become apparent that additional clarity regarding the quality and requirements for infiltration testing would be useful to ensure standards are retained and to improve the developer experience.
- 3.3 As per the drainage hierarchy within Building Regulations Part H, infiltration is the preferred method of discharging surface water, however the service experiences varying standards of infiltration reports from applicants, meaning the LLFA may lack confidence in the ability of some sites to suitably infiltrate surface water.
- 3.4 The LLFA therefore proposes supplementary SuDS Guidance to bolster its existing document, in order to establish the standards required in the investigation stage and documents required for submission. This change is to ensure that guidance is adhered to and the LLFA is then confident in the information it is provided with.
- 3.5 The guidance will set out a clear process for developers, whilst also improving the efficiency of the team with regards to infiltration submissions.
- 3.6 It is intended to introduce the supplementary guidance in the new year, commencing on the 1 January 2024. This will give the team opportunity through December 2023 to raise awareness with the developer community prior to commencement.
- 3.7 The Supplementary SuDS Guidance document is included in Appendix 1 of this report.

4.0 ALTERNATIVE OPTIONS CONSIDERED

- 4.1 The alternative option would be to do nothing and continue without the strengthened guidance document. This is causing significant inefficiency in the team and is also adding to the time it takes for a planning application to progress. The guidance will ensure that the requirements of the Council are explicit.

5.0 FINANCIAL IMPLICATIONS

- 5.1 There is no financial implication resulting from the publication of the NYC Supplementary SuDS Guidance, which acts to provide a technical guide for developers on the appropriate implementation of Sustainable Drainage Systems in North Yorkshire.
- 5.2 There will however be an efficiency in the resources in the team, as it will serve to explicitly express requirements to developers up front and it is hoped this will streamline the development process as it relates to the business of the LLFA.

6.0 LEGAL IMPLICATIONS

- 6.1 The Town and Country Planning (Development Management Procedure) (England) Order 2015 stipulates that NYC, in its capacity as Lead Local Flood Authority should be consulted on "major development with surface water drainage".

6.2 The Supplementary guidance in Appendix 1 is a guide for developers on how to practically adhere to the stipulations of the existing SuDS guidance. It sets out the process by which the information that is considered to be required by the LLFA when consulted on development should be collected. It is clearly important as LLFA to discharge its duties as a statutory consultee on matters of planning on the basis of the most up to date guidance relating to Sustainable Drainage Systems.

7.0 EQUALITIES IMPLICATIONS

7.1 An Equalities Screening Assessment is included as Appendix 2 of this report.

7.2 The content of the Supplementary SuDS Guidance is technical in nature, and therefore does not have the ability to impact differently upon any protected characteristics. It does not give a commitment to the delivery of work by NYC and no action will be taken by NYC following its publication. The guidance is not a significant commitment of Council resources and therefore an EIA is not required.

8.0 CLIMATE CHANGE IMPLICATIONS

8.1 An Initial Climate Change Impact Assessment is included as Appendix 3.

8.2 The Supplementary SuDS Guidance will provide a marginal betterment to water resilience by aiding developers to assess a grounds suitability for surface water infiltration to a higher standard, leading to a greater confidence in the grounds ability to discharge surface water in rainfall events. The LLFA's fundamental decision making for surface water discharge will not change, as this led by the National Planning Policy Framework and Building Regulations Part H.

8.3 A full Climate Change Impact Assessment is not proportional.

9.0 REASONS FOR RECOMMENDATIONS

9.1 The introduction of the guidance will enable NYC in its capacity as LLFA to provide more explicit guidance to developers in the standards required for infiltration testing as part of the planning application process of managing surface water discharge. In doing so, the consultation process will be streamlined, ensuring all appropriate and industry standard information is submitted, improving the developer experience and to remove inefficiency within the statutory planning period.

10.0 RECOMMENDATION

10.1 It is recommended that:

- i) The Corporate Director of Environment, in consultation with the Executive Member for Highways and Transportation approves the proposed publication and implementation of Supplementary SuDS Guidance detailed in Appendix 1 to this report .

APPENDICES:

Appendix 1 – Supplementary SuDS Guidance

Appendix 2 – Equalities Impact Assessment Screening Form

Appendix 3 – Climate Change Impact Assessment Initial Screening

BACKGROUND DOCUMENTS:

The North Yorkshire Council SuDS Design Guidance: <https://www.northyorks.gov.uk/environment-and-neighbourhoods/flooding/flood-and-water-management/sustainable-drainage-systems-guidance-2022-update>

Assistant Director - Barrie Mason
Corporate Directorate – Environment
County Hall
Northallerton
18/12/2023

Report Author – Heather Lagan Flood Risk Engineer
Presenter of Report – Heather Lagan

Note: Members are invited to contact the author in advance of the meeting with any detailed queries or questions.

Supplementary Infiltration Guidance

The following guidance has been put together to improve the quality of submitted infiltration reports to North Yorkshire Council by summarising the submission requirements for infiltration testing. This guidance should be read in conjunction with NYC Sustainable drainage systems guidance – 2022 update.

In order to adhere to the drainage hierarchy, set out in Building Regulations Part H, developments should seek to dispose of surface water via infiltration, before exploring connections to water courses. The applicant is required to demonstrate to the LLFA that infiltration is or is not viable by providing sufficient evidence. To do this, infiltration testing should be carried out in accordance with; BRE365, CIRIA C753 SuDS Manual, NYC Sustainable drainage systems guidance – 2022 update (SuDS guidance) and this document.

To ensure a valid application, the applicant should check they have met the submitted information required, outlined in the following pages.

Standard information for all submissions:

- The LLFA should be invited to witness all infiltration testing.
- Soakaway testing is a form of ground investigation and thus ground descriptions should be provided.
- Made Ground is an unsuitable stratum to develop a soakaway on, and ground remediation will be required for Soakaways in Made Ground.
- Soakaways are unsuitable in areas of karst topography, please see local development plans for guidance.
- Soakaways proposed within a Coal Mining Reporting Area, the Coal Authority must be consulted, and a Coal Mining Report prepared.
- As per section 8 of the NYC SuDS guidance, adequate infiltration tests should be provided for all development sites, including Outline and Full applications.

Infiltration testing for standard soakaways

The potential for infiltration can vary at a county level and at a local level, due to soil types, historical site use, ground water levels and topography. Intrusive investigation is required to evidence the suitability per site for infiltration. Standard soakaways are generally square or circular excavations, filled with aggregate or a precast storage structure backfilled with engineered backfill.

The following should be submitted as acceptable evidence for infiltration tests:

	Risk assessment of the site, as to avoid contamination.
	Log of the infiltration pit, which includes a description of the strata within the infiltration pit, grid references, AOD and groundwater as per BS5930.

	A Ground Investigation report, or Desk Study if ground investigation is not available.
	Mapped plan of all trial pit locations.
	A table of the raw recorded dip levels and times throughout the infiltration testing, per test, per trial pit.
	The calculations and graphs used to calculate the infiltration rate (reminder, the lowest value infiltration rate per trial pit should be used, it should not be averaged).
	Structural AIP for soakaways over 900mm in diameter.
	Images of the trial pit, including: date and time stamps, images of the arisings and images before the water was added, during the test and at the end of the infiltration test. As per best practice, a scale should be included in all images.

Deep Bore Soakaways

Deep bore soakaways may be appropriate where infiltration can take place at a greater depth, such as where near surface soils are unsuitable. However, deep bore soakaways come with greater risks, maintenance difficulties and require approval from the Environment Agency. The use of deep bore soakaways should be assessed for suitability alongside the drainage hierarchy, however the LLFA do not consider deep bore soakaways equal to traditional soakaways due to the risks mentioned above.

Investigation parameters:

- Falling head tests should be carried out in accordance with ISO 22282-2:2012.
- The tests should be completed a minimum of three times, should be completed within 5m and to the assumed depth of the proposed deep bore soakaway.
- Acceptable infiltration rate 1×10^{-5} , this is to reduce the risk of siltation.
- Ground water monitoring over wet months should be undertaken to ensure groundwater variability has been included within the design and results provided to the LLFA.
- Groundwater monitoring should ideally take place over a 12 month period and should include at least 1 seasonally high groundwater event (peaks in the spring months). Should the applicant require monitoring over a reduced time, this should be agreed with the LLFA prior to monitoring.
- There shall be no discharge into groundwater, a 10m unsaturated zone should be present below the bottom of the chamber.
- Minimum catchment size of 1000m², larger sites will require dividing into sub catchments.

Design parameters:

- Acceptable in Brownfield sites, however, chamber must not sit in made ground. Engineered fill is acceptable (type 2 or similar).
- For infiltration at depths at 10m or greater, a 10m buffer between soakaway chamber edges must be present.
- Storage volume of the soakaway should half empty within 24 hours.

- The soakage area of the liner is calculated using the borehole diameter, not the chamber diameter.
- The borehole should be a plastic or steel liner between 100mm and 150mm in diameter.
- The first 2m of the pipe/liner should be non-perforated pipe and sealed with bentonite.
- The siphon head to be 1 meter above the base of the chamber to reduce the risk of siltation.

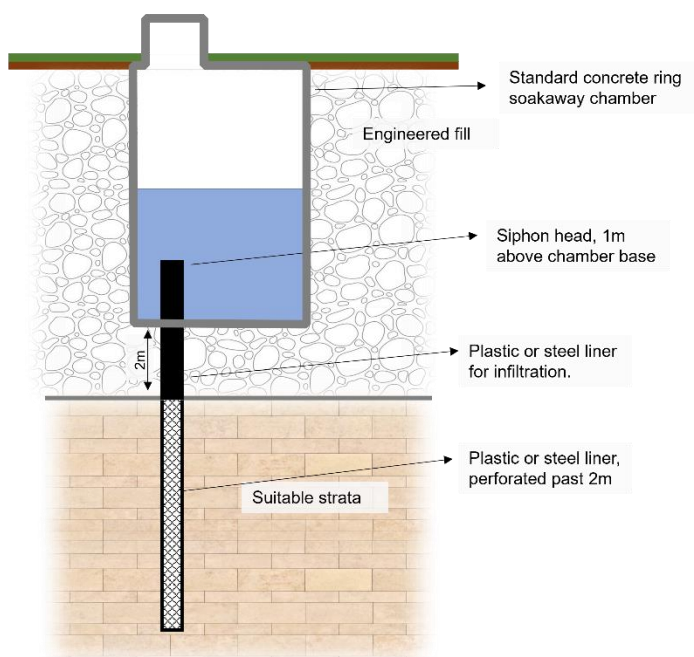


Figure 1 Sketch of deep bore soakaway

The following should be submitted as acceptable evidence for deep bore infiltration tests:

	Risk assessment of the site, as to avoid contamination.
	Environment Agency response and/or approval for deep bore soakaway, further guidance available in section G9: The Environment Agency’s approach to groundwater protection (publishing.service.gov.uk) .
	Log of the borehole, which includes a description of the strata within the borehole, grid references, AOD and groundwater as per BS5930.
	A Ground Investigation report, or Desk Study if ground investigation is not available.
	Mapped plan of all exploratory ground investigation locations.
	A table of the recorded raw data.
	The calculations and graphs used to calculate the infiltration rate (reminder, the lowest value infiltration rate should be used, it should not be averaged).
	Site specific maintenance schedule, specifically demonstrating the management of silt and contamination control.
	Structural AIP for soakaways over 900mm in diameter.
	Any images that will be of relevance when demonstrating the above information.

Consultation should be taken with North Yorkshire Council as the Lead Local Flood Authority should any deviation from the above be requested, or if the applicant requires any clarification regarding the above. To contact the LLFA, please email floodriskmanagement@northyorks.gov.uk

Initial equality impact assessment screening form This form records an equality screening process to determine the relevance of equality to a proposal, and a decision whether or not a full EIA would be appropriate or proportionate.			
Directorate	Environmental Executive		
Service area	Highways and Transportation		
Proposal being screened	Submission of Supplementary SuDS Guidance		
Officer(s) carrying out screening	Heather Lagan		
What are you proposing to do?	Add supplementary guidance to the current NYC SuDS Guidance		
Why are you proposing this? What are the desired outcomes?	<p>North Yorkshire Council has a statutory duty under the Town and Country Planning (Development Management Procedure (England) Order 2015 to respond to planning consultations regarding surface water drainage on all major applications.</p> <p>The desired outcomes are to provide direction to planning authorities and applicants on the latest government and technical guidance relating to SuDS. It is hoped that the guidance will aid applicants in their submissions to the LPA and subsequently streamline our own consultations as all the required information will be submitted enabling us to review and submit full consultation comments within our 21 day statutory deadline.</p>		
Does the proposal involve a significant commitment or removal of resources? Please give details.	The proposal does not require significant commitment of resources as it will be implemented and used in line with our duty to respond to consultations from the local planning authority.		
<p>Impact on people with any of the following protected characteristics as defined by the Equality Act 2010, or NYC's additional agreed characteristics</p> <p>As part of this assessment, please consider the following questions:</p> <ul style="list-style-type: none"> To what extent is this service used by particular groups of people with protected characteristics? Does the proposal relate to functions that previous consultation has identified as important? Do different groups have different needs or experiences in the area the proposal relates to? <p>If for any characteristic it is considered that there is likely to be an adverse impact or you have ticked 'Don't know/no info available', then a full EIA should be carried out where this is proportionate. You are advised to speak to your directorate representative for advice if you are in any doubt.</p>			
Protected characteristic	Potential for adverse impact		Don't know/No info available
	Yes	No	
Age		No	
Disability		No	
Sex		No	
Race		No	
Sexual orientation		No	

APPENDIX 2

Gender reassignment		No	
Religion or belief		No	
Pregnancy or maternity		No	
Marriage or civil partnership		No	
People in rural areas		No	
People on a low income		No	
Carer (unpaid family or friend)		No	
Are from the Armed Forces Community		No	
Does the proposal relate to an area where there are known inequalities/probable impacts (for example, disabled people's access to public transport)? Please give details.	No		
Will the proposal have a significant effect on how other organisations operate? (for example, partners, funding criteria, etc.). Do any of these organisations support people with protected characteristics? Please explain why you have reached this conclusion.	No		
Decision (Please tick one option)	EIA not relevant or proportionate:	<input checked="" type="checkbox"/>	Continue to full EIA: <input type="checkbox"/>
Reason for decision	The content of the Supplementary SuDS Guidance is technical in nature, and therefore does not have the ability to impact differently upon any protected characteristics. It does not give a commitment to the delivery of work by NYC and no action will be taken by NYC following its publication. The guidance is not a significant commitment of Council resources and therefore an EIA is not deemed required.		
Signed (Assistant Director or equivalent)	Barrie Mason		
Date	06/12/2023		

Initial Climate Change Impact Assessment (Form created August 2021)

The intention of this document is to help the council to gain an initial understanding of the impact of a project or decision on the environment. This document should be completed in consultation with the supporting guidance. Dependent on this initial assessment you may need to go on to complete a full Climate Change Impact Assessment. The final document will be published as part of the decision-making process.

If you have any additional queries, which are not covered by the guidance please email climatechange@northyorks.gov.uk

Title of proposal	Supplementary SuDS Guidance
Brief description of proposal	<p>North Yorkshire Council has a statutory duty under the Town and Country Planning (Development Management Procedure) (England) Order 2015 to respond to consultations regarding surface water drainage on all major planning applications.</p> <p>This proposal is for the submission of Supplementary SuDS Guidance to better aid us as the Lead Local Flood Authority and developers to create stronger confidence in a sites ability to manage surface water, reducing flood risk and streamlining consultations.</p>
Directorate	Environmental Executive
Service area	Highways and Transportation
Lead officer	Heather Lagan
Names and roles of other people involved in carrying out the impact assessment	Emily Mellalieu

The chart below contains the main environmental factors to consider in your initial assessment – choose the appropriate option from the drop-down list for each one. Remember to think about the following;

- Travel
- Construction
- Data storage
- Use of buildings
- Change of land use
- Opportunities for recycling and reuse

Environmental factor to consider	For the council	For the county	Overall
Greenhouse gas emissions	No effect on emissions	No Effect on emissions	No effect on emissions
Waste	No effect on waste	No effect on waste	No effect on waste
Water use	No effect on water usage	No effect on water usage	No effect on water usage

APPENDIX 3

Pollution (air, land, water, noise, light)	No effect on pollution	No effect on pollution	No effect on pollution
Resilience to adverse weather/climate events (flooding, drought etc)	Increases resilience	Increases resilience	Increases resilience
Ecological effects (biodiversity, loss of habitat etc)	No effect on ecology	No effect on ecology	No effect on ecology
Heritage and landscape	No effect on heritage and landscape	No effect on heritage and landscape	No effect on heritage and landscape

If any of these factors are likely to result in a negative or positive environmental impact then a full climate change impact assessment will be required. It is important that we capture information about both positive and negative impacts to aid the council in calculating its carbon footprint and environmental impact.

Decision (Please tick one option)	Full CCIA not relevant or proportionate:	<input checked="" type="checkbox"/>	Continue to full CCIA:	<input type="checkbox"/>
Reason for decision	<p>The Supplementary SuDS Guidance will provide a marginal betterment to water resilience by aiding developers to assess a grounds suitability for surface water infiltration to a higher standard, leading to a greater confidence in the grounds ability to discharge surface water in rainfall events. The LLFA's fundamental decision making for surface water discharge will not change, as this led by the National Planning Policy Framework and Building Regulations Part H.</p> <p>Furthermore, as this relates to Planning a full Climate Change Impact Assessment is not required nor is it proportionate for the marginal changes in submission requirements given to applicants as part of the Supplementary SuDS Guidance.</p>			
Signed (Assistant Director or equivalent)	Barrie Mason			
Date	06/12/2023			