

City Development
Technical Guidance
Surface Water Drainage Design and
Flood Risk Assessment Requirements
June 2020



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1. Introduction

- 1.1. Applicants shall ensure that this document is used for the design of surface water drainage/SUDS and the preparation of Flood Risk Assessments associated with new development sites within the Dundee City Council boundary.
- 1.2. This document is subject to continual review and the applicant must ensure that the latest version of this document is used.

2. Surface Water Drainage / Suds Design Philosophy

- 2.1. The Council's guidance note takes cognizance of Scottish Water's current Surface Water Policy and current edition of Sewers for Scotland documents, together with the legislative planning and environmental protection requirements placed on the applicant by the Council as Planning Authority and the Scottish Environmental Protection Agency (SEPA).
- 2.2. Proposals for the application site shall comply with The Water Environment (Controlled Activities) (Scotland) Regulations 2011 as amended. General Binding Rule 10 of these regulations states that buildings, roads, yards or any other built developments, or construction sites for such developments that drain to the water environment must be drained by SUDS. Clarification can be sought from SEPA where it is not clear if this applies to the proposed development.
- 2.3. Dundee City Council encourages the provision of green/blue infrastructure and innovative and creative SUDS which minimise the effects new developments have on the natural water cycle. SUDS must be developed to ensure they:
 - Protect or enhance the water quality;
 - Are sympathetic to the environment;
 - Provide a habitat for wildlife;
 - Encourage natural groundwater re-charge where appropriate; and
 - Address potential flood risks with regard to water quantity.

3. Reference Material For Designs

- 3.1. When preparing a design, the applicant shall refer to current documents listed below:

Scottish Government Planning Documents:

Planning and Architecture Policy: <https://www.gov.scot/policies/planning-architecture/>; and

Subject Specific Planning Policies: <https://www.gov.scot/publications/specific-planning-policies/>

Scottish Environmental Protection Agency Documents:

Planning Guidance and Advice Notes: <https://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/>; and

Planning Advice for Developers: <https://www.sepa.org.uk/environment/land/planning/advice-for-developers/>

SuDS Working Party Documents:

Water Assessment and Drainage Assessment Guide 2016; and

Sustainable Urban Drainage System (SUDS) for Roads 2009.

CIRIA Documents:

CIRIA C753: The SuDS Manual 2015;

CIRIA C768: Guidance on the construction of SuDS 2017;

CIRIA C698: Site Handbook for the Construction of SUDS 2007;

CIRIA C624: Development and Flood Risk – Guidance for the Construction Industry 2004;

CIRIA C689: Culvert Design and Operation Guide; and

CIRIA C635: Designing for Exceedance in Urban Drainage – Good Practice.

CIRIA Report 156: Infiltration Drainage - Manual of Good Practice

Scottish Water Documents:

Sewers for Scotland current version/edition;

Scottish Water Surface Water Policy – Standard advice note and process guidance current revision;

Memorandum of Understanding regarding the provision of surface water drainage from housing developments 2017; and

Guide for obtaining new water and waste water services current revision.

Other Documents:

BRE Digest.365 – Soakaway Design current revision.

4. Development Designs

All surface water drainage/SUDS design submissions shall comprise of the following elements:

4.1. **Drainage Assessment**

4.1.1. A drainage assessment in accordance with the principles of sustainable drainage and CIRIA C753: The SUDS Manual 2015, must be carried out for the application site. This should include an assessment of flood risk from the proposed surface water drainage system which considers any overland flow routes and where water will collect and/or flow to during the critical 1:200 year storm event plus an allowance for climate change and urban creep. This assessment must ensure that finished floor levels are a minimum of 600mm above the predicted surface water drainage/SUDS water level during a 1:200 year storm event plus an allowance for climate change and urban creep, and demonstrate there is no detriment to properties and/or sensitive/critical infrastructure on and off the application site during this event as a result of the development. This assessment may form part of a separate Flood Risk Assessment (FRA) and shall consider all types of flooding eg. fluvial, pluvial, local storage systems and high intensity storms (see sections 4.2.1.-4.2.3.).

4.1.2. Where soakaways are proposed, an assessment of overland flow routes during an exceedance event shall be completed to show where water will collect and/or flow to, and demonstrate that there will be no detriment to properties or sensitive/critical infrastructure on or off the application site should the soakaway fail or be exceeded. The site topography, and flood risk to new or existing (lower lying) properties on and off the application site during the operation of the soakaway must also be considered. Where a specific flood risk is identified from a proposed soakaway, measures must be put in place to ensure properties on or off site are protected against flooding from this source. These measures may include using an increased factor of safety in the soakaway design (eg table 4.6 of CIRIA Report 156 Infiltration Drainage - Manual of Good Practice, Table 2.3 of SUDS for Roads) and/or approaching DCC to accept an overflow to the water environment.

4.1.3. The applicant shall also take account of the effect of flood risk on access including by emergency services, all in accordance with Scottish Planning Policy.

4.2. **Flood Risk Assessment**

4.2.1. There is a presumption against development on a) previously undeveloped land and b) development of essential civil infrastructure where flooding is predicted up

to and including the critical 1:200 year storm event plus an additional allowance of 600mm. This is in line with Dundee City Council's Local Development Plan 2019 Policy No 36 "Flood Risk Management".

- 4.2.2. Where an application site is at risk of flooding or where a new/increased discharge is to be provided to a watercourse, a Flood Risk Assessment must be submitted with any Planning Application for review, acceptance and records. The Flood Risk Assessment must also be submitted to SEPA for agreement.
- 4.2.3. Flood Risk Assessments must be carried out with reference to SEPA document "Technical Flood Risk Guidance for Stakeholders" and must include the SEPA "Flood Risk Assessment Checklist" both of which can be obtained from the SEPA website at:
<https://www.sepa.org.uk/environment/land/planning/advice-for-developers/>.

4.3. **Surface Water Drainage/SUDS Design**

- 4.3.1. All surface water drainage/SUDS designs for application sites within Dundee City shall be designed in accordance with Scottish Water's Surface Water Policy and to Scottish Water's vestable standards, which is normally in compliance with the current version/edition of Sewers For Scotland. This will allow Scottish Water to vest the surface water drainage/SUDS and, where appropriate, will allow Dundee City Council and Scottish Water to enter a shared maintenance agreement.
- 4.3.2. It is recognised that in some situations (eg. due to site constraints) it may not be possible to provide a design which is fully compliant with Scottish Water's vestable standards. In this situation every effort should be made by the applicant to provide a partly compliant design which the Planning Authority will consider for acceptance. Where it is not possible to provide a fully or partly compliant design, a fully private surface water drainage/SUDS design will be considered for acceptance by the Planning Authority. The 3 stage hierarchy is given below:
1. Full compliance with Scottish Water vestable standards and fully vested in Scottish Water.
 2. Part compliance with Scottish Water vestable standards (as much of the proposed surface water drainage/SUDS as possible shall be designed to Scottish Water's vestable standards and vested in Scottish Water, with non-compliant elements remaining in private ownership and will be maintained privately by the owner). Note that an online private element of the vestable system will not be accepted. Any private element must be upstream of the vestable system or completely separate.
 3. Non-compliance with Scottish Water vestable standards (all whole surface water drainage/SUDS will remain in private ownership and will be maintained privately by the owner).

- 4.3.3. If there is a new or increased discharge of surface water proposed from any new development to a Scottish Water Public Sewer the discharge rate shall normally be no greater than the equivalent 1:2 year greenfield run off rate for the total impermeable area proposed to be drained. Scottish Water may reduce this permitted discharge rate further subject to any network capacity issues. Scottish Water's written confirmation/approval of the discharge rate is to be submitted to Dundee City Council by the applicant.
- 4.3.4. SEPA may be consulted with regard to the proposed SUDS serving the application site and any comment/approval provided by SEPA to the applicant is to be submitted to Dundee City Council. The Developer may also be required to obtain authorisation from SEPA as part of the Controlled Activities Regulations.
- 4.3.5. The provision of soakaways will not be permitted where there is a risk of mobilised polluted material occurring/present on the application site; the depth to groundwater prevents an unsaturated zone of 1m being provided; soil permeability is less than 1×10^{-6} mm/hour; and where there is a risk of the road construction being compromised.
- 4.3.6. There may be elements of a proposed surface water drainage/SUDS serving an application site that Scottish Water and Dundee City Council have no statutory duty to adopt (land drainage from adjacent higher ground is an example). Maintenance responsibility for these elements must be provided by completing and returning the attached pro-forma Appendix 5.
- 4.3.7. Scottish Water has no statutory duty to drain roads, footpaths/footways outwith the curtilage of premises; groundwater or accept land drainage connections.
- 4.3.8. In order to ensure that the proposed surface water drainage/SUDS serving the application site operates at its optimum efficiency and to reduce the risk of flooding, it is essential that regular maintenance is carried out. The applicant should ensure that the proposed surface water drainage/SUDS serving the application site is designed and constructed to enable vesting by Scottish Water, and shared maintenance with DCC where appropriate, to allow maintenance to be completed by an in-perpetuity organisation(s).
- 4.3.9. A schedule detailing inspection and maintenance arrangements for the entire drainage system **must be prepared**; this should include how the various elements are accessed for maintenance operations – as per the current Construction Design and Management Regulations. A coloured-up plan showing which person/organisation/body is responsible for maintenance of every aspect of the surface water drainage system must be prepared. Full details of the person/organisation/body cross referenced to the coloured up maintenance plan and the aspect of the surface water drainage/SUDS system they are responsible for must be provided by completing and returning the attached pro-forma Appendix 5.

The SUDS serving the application site shall provide the following:

4.4. **Water Quality (surface water treatment):**

4.4.1. The surface water drainage system serving the application site must provide the required treatment in accordance with in CIRIA C753: The SUDS Manual 2015 and as required by SEPA.

4.4.2. The applicant should also note that the presence of existing drains in the vicinity of the application site may increase the risk of pollution occurring. The applicant should therefore engage at an early stage with SEPA if appropriate, and follow “Planning Guidance in relation to SEPA regulated sites and processes” which is available on the SEPA website at:

<https://www.sepa.org.uk/environment/land/planning/advice-for-developers/>

4.5. **Water Quantity (surface water attenuation):**

4.5.1. Dundee City Council's current design criteria for new surface water drainage/ SUDS are as follows:

The post development critical 1:30 year storm event rainfall (plus an allowance for climate change and urban creep) generated from the application site is to be attenuated within the surface water drainage/SUDS system, normally to the equivalent of a 1:5 year return period event green-field release when discharging to the water environment but, subject to a Flood Risk Assessment demonstrating no increase to flood risk elsewhere. When discharging to the Scottish Water Public Sewer, the discharge rate shall normally be no more than the equivalent 2 year greenfield runoff rate for the total impermeable area proposed to be drained. Scottish Water reserves the right to reduce this further subject to any network capacity issues.

The difference between the post development critical 1:30 year and 1:200 year storm events rainfall (plus allowances for climate change and urban creep) generated from the application site shall be accommodated within the application site and must not create or increase flood risk to properties and/or sensitive/ critical infrastructure on and off the application site .

Soakaways must be designed to accommodate the critical 1:200 year storm event plus an allowance for climate change and urban creep, and include an appropriate factor of safety.

¹On application sites where surface water run-off is received from adjacent higher ground, it will also be necessary for applicants to demonstrate that this additional volume of surface water has been considered when complying with the Council's design criteria

5. Compliance Certificate Requirements

- 5.1. In addition to providing confirmation that the proposed surface water drainage/SUDS serving the application site is to the satisfaction of both Scottish Water and SEPA, Dundee City Council require the applicant or their suitably qualified agent to certify that the proposed surface water drainage/SUDS serving the application site has been designed in accordance with CIRIA C753: The SUDS Manual 2015, and Sewers for Scotland current edition by providing:
- a completed/signed “Surface Water Drainage/SUDS Design Compliance” Certificate in accordance with the attached pro-forma in Appendix 1; and
 - a completed/signed “Surface Water Drainage/SUDS Design Independent Check” Certificate in accordance with the attached pro-forma in Appendix 2.
- 5.2. In relation to the design of the proposed surface water drainage/SUDS, evidence of suitable professional indemnity insurance must be provided to the Council's Planning Team, **prior to formal approval being granted by the Council.**
- 5.3. The Council require that professional indemnity insurance is maintained at the level of £5 million pounds for each and every claim. Evidence will take the form of a copy of the insurance policy, certificate of insurance and evidence that all premiums are paid up to date.
- 5.4. Where a Flood Risk Assessment is submitted, Dundee City Council require the applicant or their suitably qualified agent to certify that the Flood Risk Assessment has been prepared in accordance with the Reporting Requirements for Flood Risk Assessments issued by SEPA by providing:
- a completed/signed “Flood Risk Assessment Compliance” Certificate in accordance with the attached pro-forma in Appendix 3; and
 - a completed/signed “Flood Risk Assessment Independent Check” Certificate in accordance with the attached pro-forma, Appendix 4.

6. Condition of Planning Consent

- 6.1. It should be noted that compliance with Scottish Water's vestable standards and any measures required by SEPA regarding SUDS and compliance with the requirements of this guidance note, including submission of design and check certification together with an approved inspection and maintenance regime will be made a condition of any planning consent issued for the application site.

7. Further Guidance

SUDS Working Group

- 7.1. The council hosts a monthly SUDS Working Group meeting where our engineers and customers can discuss drainage proposals with engineers from Scottish Water. Further information can be obtained by emailing cityengineers@dundeecity.gov.uk

Planning Guidance

- 7.2 Dundee City Council's planning team has prepared planning guidance to help customers understand Dundee City Council's expectations and requirements in respect of the surface water and drainage information required to support planning applications for development in Dundee. The guidance should reduce the time taken to validate planning applications and the time taken for planning applications to be determined.

8. Disclaimer

- 8.1. This document is for information purposes only and is a statement of Dundee City Council's requirements in relation surface water drainage SUDS design. Applicants will be required to satisfy themselves as to the current statutory and/or legal requirements in relation SUDS.

Appendix 1



APPENDIX 1

DUNDEE CITY COUNCIL CITY DEVELOPMENT DEPARTMENT

SURFACE WATER DRAINAGE/SUDS DESIGN COMPLIANCE CERTIFICATE

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in designing the surface water drainage system for the below named development in accordance with CIRIA C753: The SUDS Manual 2015, current Edition of Sewers for Scotland and the Dundee City Council Surface Water Drainage/SUDS Design Guidance Note.

Name of Development:

Name of Developer:

Planning Application No:

Roads Construction Consent No:

Signed:

Name:

Position Held:

Name and Address of Organisation:

.....

.....

Engineering Qualifications²:

Date:

² Minimum Qualification - IEng from an appropriate Chartered Engineering Institution

Appendix 2

APPENDIX 2

DUNDEE CITY COUNCIL CITY DEVELOPMENT DEPARTMENT

SURFACE WATER DRAINAGE/SUDS DESIGN INDEPENDENT CHECK CERTIFICATE

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in the below named development with a view to securing that:

- 1 It has been designed in accordance with CIRIA C753: The SUDS Manual 2015, current Edition of Sewers for Scotland and the Dundee City Council Surface Water Drainage/SUDS Design Guidance Note.

Name of Development:

Name of Developer:

Planning Application No:

Roads Construction Consent No:

Signed:

Name³:

Position Held:

Name and Address of Organisation:³

Engineering Qualifications⁴:

Date:

³ Independent Checker can be someone from within the same organisation which prepared the drainage design but must be independent of the Drainage Design Team

⁴ Minimum Qualification - IEng from an appropriate Chartered Engineering Institution

Appendix 3



APPENDIX 3

DUNDEE CITY COUNCIL CITY DEVELOPMENT DEPARTMENT

FLOOD RISK ASSESSMENT COMPLIANCE CERTIFICATE

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in carrying out the Flood Risk Assessments and preparing the Flood Risk Assessment Report for the below named development in accordance with the Reporting Requirements for Flood Risk Assessments issued by SEPA.

Name of Development:

Name of Developer:

Planning Application No:

Roads Construction Consent No:

Signed:

Name:

Position Held:

Name and Address of Organisation:

Engineering Qualifications⁵:

Date:

⁵ Minimum Qualification - IEng from an appropriate Chartered Engineering Institution

Appendix 4



APPENDIX 4

**DUNDEE CITY COUNCIL CITY DEVELOPMENT DEPARTMENT
FLOOD RISK ASSESSMENT INDEPENDENT CHECK CERTIFICATE**

I certify that all the reasonable skill, care and attention to be expected of a qualified and competent professional in this field has been exercised in checking the Flood Risk Assessments for the below named development with a view to ensuring that it has been accurately translated into the flood risk assessment report.

Name of Development:

Name of Developer:

Planning Application No:

Roads Construction Consent No:

Signed:

Name⁶:

Position Held:

Name and Address of Organisation⁶:

.....

Engineering Qualifications⁷:

Date:

⁶ Independent Checker can be someone from within the same organisation which prepared the Flood Risk Assessment but must be independent of the Team which prepared it

⁷ Minimum Qualification - IEng from an appropriate Chartered Engineering Institution

Appendix 5



APPENDIX 5

DUNDEE CITY COUNCIL CITY DEVELOPMENT DEPARTMENT

CONFIRMATION OF FUTURE MAINTENANCE OF SURFACE WATER DRAINAGE/SUDS APPARATUS

I hereby confirm that the future maintenance of the Surface water drainage/SUDS Apparatus as detailed below and on the approved drawing numbered will be carried out in accordance with the attached maintenance schedule, by the undernoted organisation who will be legally responsible for ensuring maintenance is completed.

Name of Development:

Name of Developer:

Planning Application No:

Roads Construction Consent No:

Name, address and contact details of maintaining organisation (organisation legally responsible for maintenance):

Telephone: E-mail:

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.....

Details of surface water drainage/SUDS apparatus to be maintained:

.....
.....

Signed:

Name:

Position Held:

Name and Address of Organisation:

Date:

Contact Details

City Development Department
Dundee City Council
Dundee House
50 North Lindsay Street
Dundee, DD1 1LS
Website: www.dundee.gov.uk

Planning Team
Telephone: 01382 434000
email:
planning@dundee.gov.uk

City Engineer's
Telephone: 01382 434000
email:
cityengineers@dundee.gov.uk

Scottish Water Development Services Team
Telephone: 08003890379
Email: developmentoperations@scottishwater.co.uk
Website: www.scottishwater.co.uk

This information is made available in large print or in an alternative format that meets your needs.

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