FLOOD PREVENTION

DEVELOPMENT CONTROL

FLOOD RISK AND SURFACE WATER MANAGEMENT PLAN REQUIREMENTS

Flood Prevention
Roads and Infrastructure
Place
Waverley Court
4 East Market Street
EDINBURGH
EH8 8BG

Date: April 2023

DOCUMENT CONTROL

VERSION	STATUS	DATE	PRODUCED BY	AUTHORISED BY
1	First Issue	March 2017	JW	TD
2	Published	May 2017	JW	TD
3	Published	November 2019	JW	GMcO
4	Published	February 2022	TF	GMcO
5	Published	April 2023	TF	GMcO

CONTENTS

FLOOD RISK AND SURFACE WATER MANAGEMENT PLAN REQUIREMENTS

1. INTRODUCTION

1.1 The City of Edinburgh Council (CEC) is the Planning Authority and has statutory duties under the Flood Risk Management (Scotland) Act 2009 to reduce the risk of flooding. As part of these duties CEC must not permit development which has the potential to increase flood risk.

1.2 This document details CEC's technical requirements for drainage and flooding that developers must comply with for planning applications. The following assessments are required when considering drainage and flooding impacts in planning applications:

- Flood Risk Assessment (FRA) – FRAs are required for applications where there is likely to be a risk of flooding. The trigger points for when an FRA is required are detailed in Section 4.
- Surface Water Management Plan (SWMP) – SWMPs are required for all applications to demonstrate how surface water will be drained from the site. Further details on the SWMP requirements are presented in Section 5.

1.3 CEC has implemented a self-certification process for the preparation of flood risk and drainage assessments. Further details on the process and requirements are presented in Section 6.

1.4 This document has been prepared to reflect updates to best practice and guidance within the following supporting documentation. The references to guidance within this document have been made as up-to-date as possible, however applicants should ensure they review the relevant guidance:

- *Vision for Water Management in the City of Edinburgh* (CEC, 2020).
- *City of Edinburgh Council Sustainable Rainwater Management Guidance* (CEC, 2021).
- Water Environment Section 3.8 of the *Edinburgh Design Guidance* (CEC, 2020).
- *The SuDS Manual C753* (CIRIA, 2015).
- *Sewers for Scotland* (Scottish Water, 2018).
- *SEPA Flood Risk Standing Advice for Planning Authorities and Developers* (SEPA, 2020).
- *SEPA Planning Background Paper: Flood Risk* (SEPA, 2018).
- *SEPA Technical Flood Risk Guidance for Stakeholders, SEPA requirements for undertaking a Flood Risk Assessment* (SEPA, 2019).
- *SEPA Flood Risk and Land Use Vulnerability Guidance* (SEPA, 2018).

1.5 Applicants for major or complex developments shall liaise as early as possible with the CEC Flood Prevention Team prior to making a formal submission.

2. SCOPE

2.1 The fundamental objective of these Requirements is to ensure that flood risk is adequately considered in the determination of planning applications.

2.2 These Requirements demonstrate that the City of Edinburgh Council has taken measures to ensure that flood risk is adequately managed and that evidence is provided.

2.3 Compliance with these Requirements does not in any way modify or reduce the responsibilities of any party for the work carried out or the legal responsibility of professional engineers.

2.4 The procedures described in this document are to be applied to the designs of all new local and major developments.

2.5 Householder applications are requested to follow the principles of this document when assessing flood risk and undertaking surface water management however they are not required to complete the self-certification declarations when submitting a planning application.

2.6 If during the detailed design any refinements or changes made will affect potential flood risk the proposals must be resubmitted to the Council's Flood Prevention Team for consideration and it may be necessary to re-certify. For example, changing a road gradient / crossfall or relocating a manhole could result in significant changes to perceived flooding.

2.7 CEC does not support the use of planning conditions with regard to flood risk or surface water management as there may be issues which cannot be overcome and therefore would go against the planning permission.

3. THE DEPARTMENT'S ROLE

3.1 The role of the Flood Prevention Team will be:

- To examine Planning Applications with respect to Flood Risk and Surface Water Management across the Council area.
- To determine whether Flood Risk and Surface Water Management has been adequately addressed in the design documents supplied in support of the Planning Application.
- To be available for consultation by the Design Team or Check Team.
- To receive from the Designer, certificates of compliance with the Requirements.
- To provide a consultation response to the CEC Planning Department where appropriate.

3.2 The Flood Prevention Team will not check the calculations nor their translation.

3.3 Additionally, the Flood Prevention Team will have a policy role in the context of applying special parameters such as:

- Any extra criteria suggested for a particular problem and/or any proposed departure from current standards.

Decisions on these questions will be given over the signature of the Structures and Flood Prevention Manager or Senior Engineer. It will be the responsibility of the CEC Planning Team to ensure that these decisions are recorded in the Planning Decision document as appropriate. Rulings given for a particular scheme are not to be applied to another scheme without the prior agreement of the Structures and Flood Prevention Manager or Senior Engineer.

4. FLOOD RISK ASSESSMENTS

4.1 Flood Risk Assessment Requirements

4.1.1 Flood Risk Assessments (FRAs) are required for all applications where there is likely to be a risk of flooding from either coastal, fluvial (watercourse), pluvial (surface water), groundwater, or other sources of flooding. An FRA is required in instances where the site has one of the following:

- The online SEPA Flood Maps identify flooding at, or nearby, the site from any source.
- Historic flooding has been recorded in the area.
- The proposed development is close to a watercourse, drainage ditch, or water body that poses a potential flood risk.
- The development is considered a major development, as defined under the *Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009*.

4.1.2 The Flood Risk Assessment should make a reasoned evaluation of the potential flood risk from all sources of flooding, including coastal, fluvial, pluvial, groundwater, sewer inundation, or infrastructure failure such as canal, reservoir or flood protection structures.

4.1.3 Assessment of the pluvial flood risk (flooding from rainfall flowing overland) should feed into the SWMP – guidance for which is presented in Section 5.

4.1.4 CEC Flood Prevention requires that a development site is not at risk of flooding from a 1:200-year return period storm event (including an allowance for climate change). Developments classified as Civil Infrastructure and most vulnerable under *SEPA Flood Risk and Land Use Vulnerability Guidance* (SEPA, 2018) must demonstrate that they are not at flood risk during a 1:1000-year return period storm event (including an allowance for climate change).

4.1.5 FRAs should make reference to *SEPA Technical Flood Risk Guidance for Stakeholders* (SEPA, 2019), *SEPA Flood Risk Standing Advice for Planning Authorities and Developers* (SEPA, 2020), *SEPA Planning Background Paper: Flood Risk* (SEPA, 2018) and supporting guidance, including but not limited to *SEPA Flood Risk and Land Use Vulnerability Guidance* (SEPA, 2018).

4.1.6 FRAs should include a completed *SEPA Flood Checklist (SS-NFR-F-001)*.

4.1.7 The detail required for an FRA is dependent on the complexity of the flood risk mechanisms, uncertainty, the site and the severity of the risk. Guidance on the appropriate levels of FRA required is described in *CIRIA C624* under Level 1, Level 2 or Level 3. This hierarchy should be followed when considering flood risk at the proposed development and this should inform whether a more

detailed level of FRA is required. Early engagement with CEC is recommended to discuss the level of FRA required, prior to submitting a planning application.

4.1.8 The applicant should be aware that if a Level 3 FRA is deemed to be required, CEC hold water level data from historic hydraulic modelling studies of several watercourses within the city. The developer should contact CEC to discuss if data is available to inform the FRA. Where available, water levels and river flows can be supplied, but the transfer of actual hydraulic models is limited. Applicants will be required to satisfy themselves of the suitability of all data.

4.2 Hydrology and Climate Change Impacts

4.2.1 An up-to-date method for estimating design rainfall and river flow estimates should be used. FEH22 rainfall data is recognised as the most recent method available for estimating design rainfall. Applicants should clarify the method used to estimate design rainfall and demonstrate why alternative methods are more appropriate, if alternatives (such as FSR, FEH99 or FEH13 rainfall data) are used.

4.2.2 Applicants should refer to the latest *SEPA Climate Change Allowances for Flood Risk Assessment in Land Use Planning* guidance on climate change considerations in rainfall intensity, watercourse flows and coastal flood risk assessments.

4.3 Finished Floor Levels and Freeboard

4.3.1 CEC Flood Prevention require a minimum freeboard of 600mm above the peak flood level.

4.3.2 Where applicable a freeboard assessment may be undertaken to demonstrate that a lower freeboard is acceptable using an applicable method. CEC Flood Prevention will not however accept a freeboard of less than 300mm.

4.3.3 Minor extensions to existing properties defended by a flood prevention scheme will be allowed to retain the same finished floor level as the rest of the property.

4.3.4 New developments located behind a flood defence scheme must have their finished floor level at or above the peak flood level (including an allowance for climate change) with the required freeboard duly considered.

4.3.5 Properties which do not achieve the minimum required finished floor level to minimise flood risk must be flood resilient. This may mean the use flood resistant and flood resilient building techniques and products in the design.

4.4 Access and Egress

4.4.1 The FRA must demonstrate that safe and flood-free access and egress to the site can be maintained during the design flood event.

4.4.2 A safe, dry, access and egress route for pedestrians should be clearly marked on the relevant application drawings.

4.5 Land Raising and Compensatory Storage

4.5.1 New development must not affect the ability of the functional flood plain to store and convey flood water. Removal of the functional flood plain by land raising will displace flood water and may have an unacceptable impact unless it is linked to the provision of compensatory storage. Generally, no development should be considered within the functional flood plain – defined by the 1:200-year return period storm event flood extent (including an allowance for climate change).

4.5.2 Land raising to protect a proposed development will not generally be acceptable if the development lies within the 1:200-year return period storm event flood extent (including an allowance for climate change).

4.5.3 If the proposed development requires land raising within the functional flood plain, SEPA guidance on compensatory storage area should be followed (as referred to in *SEPA Technical Flood Risk Guidance for Stakeholders, SEPA Requirements for Undertaking a Flood Risk Assessment* (SEPA, 2019)).

4.5.4 Stilted development is a form of flood risk mitigation, where a building is elevated or supported by structures such as pillars. Stilted development may be considered appropriate, provided that all key principles are met including:

- The first occupied/utilised floor of the development is above the relevant flood return period level (including an allowance for climate change), plus a separate freeboard.
- The proposed development has a neutral impact on flood plain capacity and flow characteristics.
- The sites have been previously developed and are within a built-up area.
- Proposals do not create an island of development (i.e., development will adjoin developed areas outside of the functional flood plain).
- Safe, flood-free pedestrian access and egress is provided.
- The area that is susceptible to flooding is designed to be flood resilient and can drain effectively once flood waters subside.
- Owners and occupiers are made aware that the under-croft area is designed to flood and that the property title deeds record that the under-croft is susceptible to flooding and that development there should be limited.

4.6 Watercourse Buffer Strips

4.6.1 'Buffer strip' is a term usually used to describe the area of land in the riparian zone between the watercourse and other land uses. Buffer strips have the potential to conserve, enhance and protect the water environment by safeguarding corridors that enhance blue-green infrastructure and enhance habitat connectivity promoting biodiversity.

4.6.2 The effectiveness of a buffer strip will be influenced by the width of the buffer, its characteristics and how it is managed. CEC will typically accept no development within buffer strips.

4.6.3 The table below provides the recommended minimum buffer strip widths, based on the width of the watercourse. However, these will be dependent on the site conditions. The buffer strip should be measured from the top of the bank and the minimum widths stated below are required on each side of the watercourse. The applicant must provide sufficient justification for why the recommended buffer strip cannot be provided.

Width of watercourse (measured between the top of banks)	**Minimum width of buffer strip** (measured from either side of the watercourse top of bank)
Less than 1m	6m
1-5m	6-12m
5-15m	12-20m
Greater than 15m	20m+

4.6.4 *Sewers for Scotland* (Scottish Water, 2018) guidance on building over or near a sewer should be applied to culverted watercourses.

4.7 Other Key Considerations

4.7.1 Daylighting of culverts is actively encouraged by CEC Flood Planning and SEPA to reduce flood risk and help to return the watercourse to its natural state. CEC supports SEPA's stance against culverting for land gain.

4.7.2 A flood response plan should support the FRA. This should include:

- Plans showing safe access and egress points during flood conditions.
- Instructions for residents to sign up for flood warning alerts.
- Flood warning thresholds after which no access to any underground car park (if part of the development) will be allowed.

4.7.3 No access roads to proposed developments will be accepted adjacent to watercourses, as this encourages fly tipping, blocking the watercourse and exacerbating flood risk.

4.7.4 Several areas throughout Edinburgh are protected by flood prevention schemes. Proposed developments in these areas are not permitted to discharge to a watercourse through flood protection infrastructure without design approval from CEC Flood Prevention.

5. SURFACE WATER MANAGEMENT PLANS

5.1 Surface Water Management Plan Requirements

5.1.1 Surface Water Management Plans (SWMPs) are required for all applications. The purpose of the SWMP is to demonstrate how surface water will be drained from the site and how attenuation and treatment requirements will be satisfied. This guidance document highlights the key criteria required to enable the Flood Prevention Team to be satisfied, before recommending an application for approval.

5.1.2 Householder applications are requested to follow the principles of this document which assessing flood risk and undertaking surface water management however they are not required to complete the self-certification declarations when submitting a planning application.

5.1.3 Applications for single new houses are still requested to complete a basic SWMP (and potentially an FRA) and comply with the surface water attenuation and treatment requirements described in this document.

5.1.4 The SWMP should be prepared in line with best practice guidance within *The SuDS Manual C753* (CIRIA, 2015) and should make reference to the principles within:

- *Vision for Water Management in the City of Edinburgh* (CEC, 2020).
- *City of Edinburgh Council Sustainable Rainwater Management Guidance* (CEC, 2021).
- The Water Environment Section 3.8 of the *Edinburgh Design Guidance* (CEC, 2020).

5.2 Drainage Layout

5.2.1 The applicant should provide a drainage layout drawing showing the proposed drainage network and the location of discharge. The drainage layout drawing should include manhole references that cross-reference those used in the drainage calculations noted in Section 5.3.5.

5.2.2 The drainage layout drawing and supporting SWMP report should show the catchment areas draining onto the proposed development. Measurements of the permeable and impermeable areas must also be provided.

5.3 Attenuation

5.3.1 The proposed discharge rate from a development site should be no greater than the lesser of:

- 1:2-year return period greenfield runoff rate.
- 4.5 l/s/ha of impermeable or positively drained area.

5.3.2 In order to attain these flow rates, surface water should be attenuated within the development boundary. Should overland flows result as part of the drainage strategy then these must also be retained within the property boundary up to the 1:200-year return period storm event (including an allowance for climate change).

Example discharge rate calculation:
Should the development be 2.0 ha in total with an impermeable area of 1.2ha then the maximum allowable discharge rate would be 5.4l/s during a 1:200-year return period storm event (including an allowance for climate change).

Should the site be small and the application of the 4.5l/s/ha condition leads to a discharge rate of less than 3l/s, then CEC would request that a Hydrobrake of minimum 75mm diameter is used which can pass ~3.0l/s at 1.0m head. CEC will not accept flow control devices which are less than 75mm in diameter as they pose an increased blockage and maintenance risk.

5.3.3 It is not acceptable to treat a mere reduction or "betterment" of current flows from a site as satisfying Section 5.3.1 above. The only exception of compliance with discharge rates noted in Section 5.3.1 above is that all existing roofs and walls are retained and there is no additional positively drained area contributing to the surface water drainage network.

5.3.4 The SWMP must confirm the volume of storage provided and confirm that the 1:30-year return period storm event (including an allowance for climate change) remains contained within the SuDS and drainage network. The SWMP must confirm that the 1:200-year return period storm event (including an allowance for climate change) remains on site and does not pose a flood risk to sensitive receptors.

5.3.5 Drainage calculations can be conducted either by hydraulic modelling software or by hand. If using hydraulic modelling software, the software parameters and outputs should be included within the SWMP. This should include details of all underground pipework including rainfall data, manhole and pipe schedules (to mAOD) and pipe surcharge reports for all underground pipe connections. The manholes in the calculation should be cross-referenced to the drainage drawing to enable interpretation. The results should include the 1:30-year and 1:200-year return period storm events (including an allowance for climate change). If the development is classed as civil or critical infrastructure the 1:1000-year return period event (including an allowance for climate change) should also be included. A sensitivity analysis exercise should be conducted to understand how the drainage network responds to blockage and exceedance scenarios and if adjustments should be made to the design to make it more robust.

5.3.6 Should the hydraulic model identify flooding in the system, then supporting drawings will be required to indicate where exceedance flow will be directed and to what depth and extents the water will reach. The SWMP should clarify the expected depth of ponding and how this relates to floor levels in nearby properties. The SWMP should also clarify how it will be contained within the site and lastly how it will be drained once the event has subsided. Dry pedestrian access and egress must be maintained at all times during events up to the 1:200-year return period event (including an allowance for climate change). Where flooding is predicted on the road, the applicant must demonstrate that emergency vehicle access can be safely maintained.

5.3.7 Should the calculations be undertaken by hand then account must be taken of the staged discharge relationship which applies to orifices and vortex flow control devices. In order to provide a conservative estimate, a halved discharge rate must be applied when calculating the required storage volume.

Example discharge calculation:
The proposed discharge rate from site is ~3l/s. If using hand calculations, then a discharge rate of 1.5l/s must be applied across the duration of the storm to take account of storage which has not been accounted for due to varying discharge at varying head.

5.3.8 Applications for developments which include Civil or Critical Infrastructure must demonstrate that the 1:1000-year return period storm event (including an allowance for climate change) does not pose a flood risk to property or development. Should a site flood during a 1:1000-year return period storm event (including a climate change allowance) then the 1:200-year return period event (including an allowance for climate change) flood volume must be retained on site with the remaining volume allowed to safely discharge unrestricted from site – provided it does not pose a flood risk to property.

5.3.9 Nature-based solutions for surface water management that enhance blue-green infrastructure and connectivity should be prioritised. Above ground Sustainable Drainage Systems (SuDS) should be used to provide surface water attenuation and treatment. Above ground SuDS features, that are integrated into the landscape, allow for easier maintenance and identification of potential reductions in storage capacity or blockages. SuDS should be designed to encourage wider benefits, such as biodiversity and placemaking enhancements. The applicant should minimise the amount of impermeable areas in the proposed design and increase permeable areas, where appropriate. Underground storage will generally not be accepted, unless the applicant can demonstrate robust reasons why above ground measures are not feasible. The SWMP should make reference to the *Vision for Water Management in the City of Edinburgh* (CEC, 2020), *City of Edinburgh Council Sustainable Rainwater Management Guidance* (CEC, 2021) and the Water Environment Section 3.8 of the *Edinburgh Design Guidance* (CEC, 2020).

5.3.10 The SWMP should confirm how the volume of surface water discharging from the site will be minimised. Applicants should consider rainwater harvesting and SuDS that encourage evapotranspiration and infiltration, which have the potential to reduce the volume of surface water discharging from the site.

5.3.11 Surface water management systems that manage runoff as close to source as possible should be encouraged, from both a water quality and flood risk management perspective. The SWMP should provide evidence demonstrating that the first 5mm of rainfall is managed at a plot level, where appropriate and runoff is managed in stages as it drains through the site.

5.3.12 Discharge locations for the drainage system must be identified and the applicant must confirm approval in principle from the owner. If proposing to discharge into the public sewer network, then confirmation that Scottish Water will accept the flows must be included with the application.

5.3.13 If discharging to a watercourse or culvert, the SWMP should confirm the condition of the watercourse is adequate to accommodate the proposed surface water discharge. This will typically require confirmation via survey.

5.3.14 Sites discharging directly to coastal waters will not require attenuation. Surface water treatment measures should be applied, where possible.

5.4 Hydrology and Climate Change Impacts

5.4.1 An up-to-date method for estimating design rainfall estimates should be used. FEH22 rainfall data is recognised as the most recent method available for estimating design rainfall. Applicants should clarify the method used to estimate design rainfall and demonstrate why alternative methods are more appropriate – if alternatives (such as FSR, FEH99 or FEH13 rainfall data) are used.

5.4.2 Applicants should refer to the latest *SEPA Climate Change Allowances for Flood Risk Assessment in Land Use Planning* guidance on climate change considerations in rainfall intensity.

5.5 Soakaways

5.5.1 If a soakaway is proposed then the adequacy of soil (ground investigations) and other investigations (i.e., porosity tests) will be required to demonstrate the proposals are feasible, prior to determination.

5.5.2 The applicant must demonstrate the soakaway can manage the design storm event without posing a flood risk to properties (neighbouring and proposed) and that it can drain in a suitable time to accommodate successive events. Dry pedestrian access must be maintained at all times.

5.5.3 The soakaway must not be located within 5 metres of building foundations.

5.6 Overland Flow Paths

5.6.1 The landscape should be designed to manage exceedance storm events. All schemes should consider exceedance flows that could be channelled away from sensitive receptors through landscape areas via shallow and subtle ground profiling.

5.6.2 Roads can be designed to manage exceedance flows and maximise their storage capacity, but care is needed to ensure they do not cause detriment and do not represent a hazard to vehicles and pedestrians. Care is also needed to check exceedance flow paths and accumulations do not disrupt strategic transport routes, particularly emergency response routes, or prevent safe access and egress to properties.

5.6.3 Pre-development and post-development overland flow path diagrams must be identified on separate drawings. This can be achieved by taking the existing site survey and over-marking arrows to denote falls and then completing the same with the post-development arrangement. This should include runoff from outside of the site, and from areas in events which exceed the capacity of the drainage system. Simply submitting an un-annotated topographical survey is not sufficient. The purpose of these drawings is twofold. First, to understand if there is any significant re-direction of surface flows to surrounding land. Second, to identify if surface water will flow towards property entrances.

5.7 SuDS Selection

5.7.1 Nature-based solutions for surface water management that enhance blue-green infrastructure should be considered as a means of encouraging multiple benefits beyond solely flood risk and water quality improvements. Applicants

should refer to the *Vision for Water* Management *in the City of Edinburgh* (CEC, 2020), *Edinburgh Design Guidance* (CEC, 2020) and supporting guidance for further advice on encouraging placemaking and environmental enhancements via appropriate SuDS selection.

5.7.2 The designer should consider the SuDS Management Train to create green corridors, link habitats together and add recreational, educational, amenity and biodiversity value.

5.7.3 As noted in Section 5.3.11, surface water management systems that manage runoff as close to source as possible should be encouraged, from both a water quality and flood risk management perspective. SuDS should be designed for interception to closely reflect greenfield runoff behaviour – where infiltration or evapotranspiration measures limit the runoff that occurs in smaller rainfall events.

5.7.4 Surface water runoff collection systems should be designed to effectively intercept and convey runoff and exceedance flows where they cannot be dealt with at source. Designs should prioritise areal, then linear, then point-type features to accept and convey water with consideration of blockage and maintenance requirements.

5.7.5 The following hierarchy should be used to prioritise how surface water is discharged from a site:

- Water used as a resource for natural processes such as evaporation and transpiration; or reuse of surface water via rainwater harvesting or similar techniques.
- Discharge into the ground, via infiltration.
- Discharge to a water body (e.g. watercourse).
- Discharge to a surface water sewer, highway drain or another drainage system.
- Discharge to a combined sewer.
    - Surface water discharges to the combined sewer network should be avoided. As noted in Section 5.3.12, if proposing to discharge into the combined public sewer network, then confirmation that Scottish Water will accept the flows must be included with the application.

5.7.6 Developers should mimic natural processes and catchment characteristics maximising opportunities for long term storage, as it is defined by *The SuDS Manual* (CIRIA, 2015).

5.8 Treatment

5.8.1 SuDS should be incorporated into all developments to ensure surface water is being adequately treated before discharging from the site.

5.8.2 The SWMP should provide confirmation of the SuDS treatment train noting which components are included to treat the surface water prior to discharge from site. CEC supports sustainable development and for this reason, all surface water discharges require treatment whether discharging to the combined public sewer network or to a watercourse.

5.8.3 The Simple Index Approach, as described in *The SuDS Manual C753* (CIRIA, 2015), should be used to demonstrate that surface water is being adequately treated.

5.8.4 When discharging to a waterbody, the treatment measures must be approved by SEPA.

5.9 Adoption and Maintenance

5.9.1 The SWMP should confirm who will adopt and maintain the surface water network, including any SuDS. Applicants must demonstrate an appropriate maintenance regime has been developed.

5.9.2 Pumped surface water drainage should be avoided, where possible. Pumped surface water drainage is only recommended if Scottish Water adopt it. If this is not possible, then the onus is on the developer to confirm that the property owners ensure a robust maintenance programme is adhered to. CEC cannot take responsibility for the rectification for any failure. Further information is available within *Sewers for Scotland* (Scottish Water, 2018) for design guidance on surface water pumping requirements.

5.9.3 Implementing measures that monitor the performance of surface water management systems is encouraged. This will help to inform the management and maintenance of the system, and also help to inform future design development and delivery.

6. SELF CERTIFICATION / INDEPENDENT CHECKING

6.1 CEC implement a self-certification process for the preparation of flood risk and drainage assessments. The design for a proposed development must comply with the requirements noted in Sections 4 and 5 above. The Self-Certification Declaration shall be signed confirming this (Certificate A1, presented in Annex A). The declaration must be signed by a senior member of staff within the Designer's organisation. The senior member of staff must be a Chartered Professional with either the Institution of Civil Engineers (ICE) or the Chartered Institution of Water and Environmental Management (CIWEM). By signing the declaration they are confirming that in their professional opinion the application conforms to the requirements noted within this document.

6.2 For developments classified as major, under the *Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009,* an independent check of the application will be required. This involves a separate organisation from the Designer undertaking an independent check of the submission. The Checker must complete the appropriate part of the Self-Certification form (Certificate B1, presented in Annex A) confirming which part of the submission that they are checking (the SWMP, the FRA, or both). The declaration of the Checker must also be signed by a senior member of staff in the Checker organisation. Similarly, to Section 6.1 above, by signing they are confirming that in their professional opinion the applicant conforms to the requirements noted within this document.

6.3 When the design and check of the proposals have been completed and the appropriate certificate(s) (see Annex A) filled in and signed, a copy of each

should be sent to the Planning Department for acceptance and, if appropriate, endorsement. All departures from, and aspects not covered by, standards should be agreed prior to submission and must be recorded on the certificates for endorsement by the Structures and Flood Prevention Manager or Senior Engineer.

6.4 All supporting drawings and documents (including revision marks) must be referenced on the signed certificate(s).

6.5 The Designer should compile the SWMP and appropriate certification declaration(s) together with the FRA (if applicable) into one package for Flood Prevention to review. Piecemeal submissions will not be reviewed and this may delay a planning application determination.

6.6 The SWMP checklist, located in Annex B, should be completed and submitted with the application to show compliance with the guidance within this document. The checklist should provide a summary of the drainage information submitted to support a planning application.

7. SUBSEQUENT PROCEDURE

7.1 The Designer will assume responsibility for the design of the permanent works.

7.2 Works cannot commence on-site until the entire procedure is complete, i.e., all relevant certificates contained in Annex A have been endorsed by the Structures and Flood Prevention Manager or Senior Engineer.

7.3 Design and Check Certificates should be submitted at that the same time.

8. HEALTH AND SAFETY FILE

8.1 On completion of the works, the developer shall submit a Health and Safety File to the CEC Flood Prevention Team for any parts of the development to be adopted by CEC.

The Health and Safety File is to be completed in accordance with the Construction (Design and Management) Regulations 2015 and shall include the residual risk assessment, maintenance schedules and procedures, an up-to-date CCTV survey of all drainage within the development, and as-built drawings.

9. ROAD CONSTRUCTION CONSENT

9.1 The Designer must ensure that the design in relation to flooding and drainage is accurately translated into the completed works. The Design must ensure that no changes are made at the Road Construction Consent (RCC) stage which would pose a flood risk to proposed or neighbouring properties or would impact the effectiveness of the design submitted for planning approval.

10. ENQUIRIES

10.1 Early engagement in advance of submission of FRAs and SWMPs is encouraged.

10.2 All technical enquires about this Document should be marked for the attention of the Structures and Flood Prevention Manager and addressed to:

Flood Prevention
Roads and Infrastructure
Place
Waverley Court,
4 East Market Street,
Edinburgh
EH8 8BG

or

flood.planning@edinburgh.gov.uk

ANNEX A

SELF-CERTIFICATION AND INDEPENDENT CHECK DECLARATION

CERTIFICATE TEMPLATES

CERTIFICATE A1 – SELF CERTIFICATION (DESIGNER)

1 We certify that reasonable professional skill and care has been used in the preparation and checking of the Surface Water Management Plan / Flood Risk Assessment (*delete as appropriate*) for the development at ..... (*Name of Development*)..... with a view to securing that:-

i It has been designed and checked in accordance with the most recent City of Edinburgh Council Flood Prevention Requirements.

ii It has been checked for compliance with the relevant Standards in i.

iii details of the ground investigation and the attached interpretative report demonstrating that any soakaways provided are compliant provided *(delete as appropriate)*

iv It has been accurately translated into drawings and documents submitted alongside the planning application (all of which have been checked). The unique numbers and revisions of these drawings are:-

.....

.....

.....

.....

2

Signed .....

Name .....

Professional Qualifications .....

PRINCIPAL OF ORGANISATION
RESPONSIBLE FOR DESIGN

Position Held .....

Name of Organisation .....

Date .....

3 Is an independent check required? (Refer to Section 6)
(*Delete as appropriate*) Yes / No

4 Confirmation that this certificate is accepted by City of Edinburgh Council Flood Prevention Team will be provided to CEC Planning Case Officers.

CERTIFICATE B1 – INDEPENDENT CHECK DECLARATION

1 We certify that reasonable professional skill and care has been used in the checking of the Surface Water Management Plan / Flood Risk Assessment (*delete as appropriate*) for the development at ..... (*Name of Development*)..... with a view to securing that:-

i It has been designed and checked in accordance with the most recent City of Edinburgh Council Flood Prevention Requirements.

ii It has been checked for compliance with the relevant Standards in i.

iii details of the ground investigation and the attached interpretative report demonstrating that any soakaways provided are compliant provided *(delete as appropriate)*

iv It has been accurately translated into drawings and documents submitted alongside the planning application (all of which have been checked). The unique numbers and revisions of these drawings are:-

.....

.....

.....

.....

2

Signed .....

Name .....

Professional Qualifications .....

PRINCIPAL OF ORGANISATION
RESPONSIBLE FOR DESIGN

Position Held .....

Name of Organisation .....

Date .....

3 Confirmation that this certificate is accepted by City of Edinburgh Council Flood Prevention Team will be provided to CEC Planning Case Officers.

ANNEX B

SURFACE WATER MANAGEMENT PLAN CHECKLIST

SURFACE WATER MANAGEMENT PLAN CHECKLIST

Application reference:

	Item	Provided? (Y/N)	Submission Section Reference	If 'N', comment reason
1	Location Plan.			
2	Pre-development overland flow path arrows for site **and surrounding land**. Post-development flow paths for site and surrounding area (on separate plan to pre-development)[4].			
3	Area of impermeable surface (positively drained area) in proposed development.			
4	Greenfield runoff calculations for impermeable area.			
5	Confirmation that attenuation is provided to allow 1:200-year return period event (including a climate change allowance) discharge at the lesser of *: • 1:2-year greenfield runoff rate; • 4.5 l/s/ha of **impermeable area.** *Subject to minimum 75mmØ flow control (~3l/s)			
6	Confirmation that the first 5mm of rainfall is managed at a plot level, where appropriate and runoff is managed in stages as it drains through the site.			
7	Volume of attenuation required to allow discharge at greenfield rate (m^3). Volume of attenuation provided within the proposed drainage layout (m^3). Volume of long-term storage provided in landscape and drainage features across site.			
8	• Hand calculations or • Hydraulic modelling outputs with pipes included[1] and 1:30-year return period event (including a climate change allowance) and 1:200-year+CC outputs. (1:1000-year+CC for civil/critical infrastructure[2]).			
9	Drainage drawing with manhole numbers that cross reference with the hydraulic modelling outputs.			

10	Confirmation that 1:30-year+CC event remains in drainage features and that 1:200-year+CC remains attenuated on site safely[3].			
11	Confirmation of who will adopt and maintain the surface water system including SuDS.			
12	Confirmation where the surface water ultimately discharges.			
13	Confirmation that appropriate water quality measures (SuDS treatment) is included in the design in line with relevant guidance.			
14	Confirmation that infiltration testing has been undertaken for drainage infiltration systems, prior to determination.			
15	If discharging surface water to public sewer - confirmation that Scottish Water agree in principle to proposed connection.			
16	Confirmation that safe and dry pedestrian and vehicular access and egress is afforded to all properties.			
17	Does the proposed design take cognisance of the *Vision for Water Management in the City of* Edinburgh (CEC, 2021), *City of Edinburgh Council Sustainable Rainwater Management Guidance* (CEC, 2021) and Water Environment Section 3.8 of *Edinburgh Design Guidance* (CEC, 2020)?			
18	Does the proposed design take cognisance of Policies Des 5 City Local Plan, E44 Rural West Local Plan, Des 8 Edinburgh Local Development Plan and the City Plan 2030?			
19	Self-Certification Declaration (Certificate A1) and, where required, Independent Check Declaration (Certificate B1) signed by a Chartered Professional with either the ICE or CIWEM.			

[1] Pipe network only required for FUL and AMC applications. Where part of a larger strategy attenuation network then this must all be represented. For PPP applications minimum requirements are total storage volume and subsequent to-scale representation and location of storage shown on plan layout.

[2] Refer to SPP for definition of civil/critical infrastructure. Also refer to *SEPA Flood Risk and Land Use Vulnerability Guidance* (SEPA, 2018).

[3] All property FFLs are a minimum of 600mm above this 1:200-year+CC water level.

[4] For PPP applications where the site layout has not been finalised, an indication of the general intention for overland water flow paths should be presented.

ANNEX C

DEFINITIONS

DEFINITIONS

The following definitions will apply throughout this document.

"Designer"	The firm of Consulting Engineers or other organisation responsible for the design, and shall also apply to the organisation responsible for the assessment where appropriate.
"Checker"	The firm of Consulting Engineers, or other organisation, responsible for undertaking the independent check of the design or assessment.
"Design Team"	The Group of Engineers responsible for the design or assessment. It may comprise an appropriate mix of specialists under the direction of a Design Team Leader.
"Check Team"	The Group of Engineers responsible for the independent check of the design or assessment. It may comprise an appropriate mix of specialists under the direction of a Check Team Leader.