



SuDS Water quantity and Quality – LLFA Technical Assessment Proforma

Introduction

This proforma identifies the information required by Essex LLFA to enable technical assessment the Designers approach to water quantity and water quality as part of SuDS design approach in compliance with Essex SuDS Design Guide.

Completion of the proforma will also allow for technical assessment against Non-statutory technical standards (NSTS) for Sustainable Drainage. The proforma will accompany the site specific Flood Risk Assessment and Drainage Strategy submitted as part of the planning application.

Please complete this form in full for full applications and the coloured sections for outline applications. This will help us identify what information has been included and will assist with a smoother and quicker application.

Instructions for use

Use the units defined for input of figures

Numbers in brackets refer to accompanying notes.

Wherem³m³/m² are noted – both values should be filled in.

Site details

1.1 Planning application reference (if known)

1.2 Site name Land off Eldridge Close, Clavering , Essex

1.3 Total application site area ⁽¹⁾ 1.29 ha

1.4 Predevelopment use ⁽⁴⁾ Greenfield

1.5 Post development use Residential

If other, please sepcify

1.6 Urban creep applicable Yes if yes, factor applied: 10% roof area

1.7 Proposed design life / planning application life 100yr

1.8 Method(s) of discharge: ⁽⁵⁾

Reuse Infiltration Hybrid Waterbody Storm sewer Combined sewer

1.9 Is discharge direct to estuary / sea No

1.10 Have agreements in principle (where applicable) for discharge been provided No



SuDS Water quantity and Quality – LLFA Technical Assessment

Calculation inputs

2.1	Area within site which is drained by SuDS ⁽²⁾	4350	m ²
2.2	Impermeable area drained pre development ⁽³⁾	0	m ²
2.3	Impermeable area drained post development ⁽³⁾	4350	m ²
2.4	Additional impermeable area (2.3 minus 2.2)	4350	m ²
2.5	Method for assessing greenfield runoff rate	IH124	
2.6	Method for assessing brownfield runoff rate	N/A	
2.7	Coefficient of runoff (Cv) ⁽⁶⁾	0.75	
2.8	Source of rainfall data (FEH Preferred)	FSR	<input type="checkbox"/>
2.9	Climate change factor applied	40	%

Attenuation (positive outlet)

2.10 Drainage outlet at risk of drowning (tidal locking, elevated water levels in watercourse/sewer)
 Note: Vortex controls require conditions of free discharge to operate as per manufacturers specification.

2.11	Invert level at final outlet	97.475	mAOD
2.12	Design level used for surcharge water level at point of discharge ⁽¹⁶⁾	97.475	mAOD

Infiltration (Discharge to Ground)

2.13	Have infiltration tests been undertaken	No	<input type="checkbox"/>
2.14	If yes, which method has been used		
2.15	Infiltration rate (where applicable)		m/s
2.16	Depth to highest known ground water table		mAOD
2.17	If there are multiple infiltration features please specify where they can be found in the FRA		
2.18	Depth of infiltration feature		mAOD
2.19	Factor of safety used for sizing infiltration storage		



SuDS Water quantity and Quality – LLFA Technical Assessment Proforma

Calculation outputs

Sections 3 and 4 refer to site where storage is provided by full attenuation or partial infiltration. Where all flows are infiltrated to ground go straight to Section 6.

3.0 Greenfield runoff rates (incl. Urban Creep)

3.1	1 in 1 year rainfall		l/s/ha, 2.69	l/s for the site
3.2	1 in 30 year rainfall		l/s/ha, 7.28	l/s for the site
3.3	1 in 100 year rainfall + CCA		l/s/ha, 10.1	l/s for the site

4.0 Brownfield runoff rates (incl. Urban Creep)

4.1	1 in 1 year rainfall		l/s/ha,	l/s for the site
4.2	1 in 30 year rainfall		l/s/ha,	l/s for the site
4.3	1 in 100 year rainfall + CCA		l/s/ha,	l/s for the site

5.0 Proposed maximum rate of runoff from site (incl. Urban Creep) ⁽⁷⁾

5.1	1 in 1 year rainfall	1.9	l/s/ha, 1.9	l/s for the site
5.2	1 in 30 year rainfall	2.0	l/s/ha, 2.0	l/s for the site
5.3	1 in 100 year rainfall + CCA	2.0	l/s/ha, 2.0	l/s for the site

6.0 Attenuation storage to manage flow rates from site (incl. **Climate Change Allowance (CCA)** and Urban Creep)

6.1	Storage - 1 in 100 year + CCA ⁽⁹⁾	379	m ³	m ³ /m ²
6.2	50% storage drain down time 1 in 30 years ⁸			hours

7.0 Controlling volume of runoff from the site⁽¹⁰⁾

7.1	Pre development runoff volume ⁽¹²⁾ (development area) ⁶⁹			m ³ for the site
7.2	Post development runoff volume (unmitigated) ⁽¹²⁾	316		m ³ for the site
7.3	Volume to be controlled (5.2 - 5.1)		316	m ³ for the site



Essex County Council

7.4 Volume control provided by:

- Interception losses ⁽¹³⁾		m ³	
- Rain harvesting ⁽¹⁴⁾		m ³	
- Infiltration		m ³	
- Attenuation	316	m ³	
- Separate volume designated as long term storage ⁽¹⁵⁾	0		m ³

7.5 Total volume control (sum of inputs for 5.4) m³⁽¹⁷⁾

8.0 Site storage volumes (full infiltration only)

8.1 Storage - 1 in 30 year + CCA ⁽⁸⁾	m ³	m ³ /m ² (of developed impermeable area)
8.2 Storage - 1 in 100 year + CCA ⁽¹¹⁾	m ³	m ³ /m ²

SuDS Water quantity and Quality – LLFA Technical Assessment Proforma

Design Inputs

Proposed site use residential

Pollution hazard category (see C753 Table 26.2) Low

High risk area defined as area storing fuels chemicals, refuelling area, washdown area, loading bay.

Design Outputs

List order of SuDS techniques proposed for treatment

Swale, permeable pavement, detention basin

Note that gully pots, pipes and tanks are not accepted by Essex LLFA as a form of treatment (for justification see C753 Section 4.1, Table 26.15 and Box B.2)

Are very high pollution risk areas drained separate from SuDS to foul system Please select

Other

Please include any other information that is relevant to your application