

Detailed drainage design technical summary

Table 1: Detailed drainage design summary – surface water

Requirement	Information	Location of information / drawing number
For all designs		
Greenfield runoff rate details for the area to be drained (using FEH or a similar approved method)	the site is brownfield with ex. rainfall provided	23-040-S1
On-site infiltration test results	falling head test negative	23-040-S1 + S1 report
Plans / details of areas to be drained based on finalised development plans	all roofs + patios areas	23-040-S1
Calculations showing the system has been designed to cater for the 1 in 30 with climate change and 1 in 100 with climate change storm events	UK SUDS calculation provided with site specific rainfall data used.	23-040-S1 & supporting calculation pack.
Calculations should use a CV value of 1.0		
Detailed drainage plans, including invert levels and pipe diameters, showing entire drainage system	provided on drawings	23-040-S1 & S2
Maintenance and management plan ¹	"	23-040-S3.
For soakaways N/A		
Sizing calculations (to cater for 6-hour, 1 in 100-year plus climate change event)		
Half drain time (<24 hours)		
Construction details		
For discharge to watercourse		
Discharge rate (1 in 1 or QBar Greenfield rate for drained area) ²	to better existing dwelling rainfall.	23-040-S1 & supporting calc pack.
Outfall location and construction details	provided on drawings	S1 & S2
Attenuation sizing calculations (to cater for 1 in 100-year plus climate change event ³)	UK SUDS calculation provided.	23-040-S1 & supporting calc pack.
For discharge to sewer N/A		
Discharge rates (restricted to 1 in 1 or QBar Greenfield rate for drained area unless otherwise agreed with sewerage provider)		
Discharge location and manhole number		
Outline approval from sewerage provider in relation to connection, discharge rate and connection location ⁴		
Attenuation sizing calculations (to cater for 1 in 100-year plus climate change event ⁵)		

¹ The scale of this document should reflect the scale of the development and the complexity of the drainage system.

² If the 1 in 1 or QBar Greenfield runoff rate cannot be achieved, then evidence into why a higher discharge rate has been proposed should be provided as part of the detailed design. Due to improvements in drainage systems the 2l/s minimum will not be accepted without justification.

³ If system does not attenuate up to the 1 in 100-year with climate change event, then evidence that the system shall not increase flood risk on or off site shall be required.

⁴ Formal approval via S106 etc is not required.

⁵ If system does not attenuate up to the 1 in 100-year with climate change event, then evidence that the system shall not increase flood risk on or off site shall be required.

Table 2: Detailed drainage design requirements – foul water

Requirement	Summary	Location of information / drawing number
For all designs		
Plans showing entire drainage system, including invert levels, pipe diameters, falls and outfall/connection location	provided on drawings	23-040-S1
Drainage systems should be located within land under the control of the applicant		
Foul flow calculations and confirmation proposed system is sized appropriately	largest tank to be specified by largest	23-040-S1.
For connection to main foul sewer N/A		
Discharge location and manhole number		
Evidence of communication with Water Authority regarding connection ⁶		
For non-mains system with drainage field N/A		
Evidence of permeability (infiltration) test results specific to treated effluent drainage fields		
Evidence that either: a) The system meets latest General Binding Rules, or b) An Environmental Permit application is to be submitted		
For non-mains system with discharge to open water		
Evidence that either: a) The system meets latest General Binding Rules, or b) An Environmental Permit application is to be submitted	the system meets the EA (latest) binding rules.	all drawings & supporting calc pack.
Outfall location and construction details	provided on drawings	23-040-S1.

⁶ Formal approval via S106 etc is not required.