HR Wallingford
Working with water

Surface water storage requirements for sites

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Calculated by:	Richard Harman
Site name:	Monksbury Court
Site location:	Monkhide HR8 2TX

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). It is not to be used for detailed design of drainage systems. It is recommended that hydraulic modelling software is used to calculate volume requirements and design details before finalising the design of the drainage scheme.

Site Details

Latitude:	52.09277° N
Longitude:	2.55743° W
Reference:	2179632949
Date:	Jun 15 2020 09:56

Site characteristics

Total site area (ha):	.2
Significant public open space (ha):	0
Area positively drained (ha):	0.2
Impermeable area (ha):	.2
Percentage of drained area that is impermeable (%):	100
Impervious area drained via infiltration (ha):	0
Return period for infiltration system design (year):	10
Impervious area drained to rainwater harvesting (ha):	0
Return period for rainwater harvesting system (year):	10
Compliance factor for rainwater harvesting system (%):	66
Net site area for storage volume design (ha):	0.2
Net impermable area for storage volume design (ha):	0.2
Pervious area contribution to runoff (%):	30

* where rainwater harvesting or infiltration has been used for managing surface water runoff such that the effective impermeable area is less than 50% of the 'area positively drained', the 'net site area' and the estimates of Q_{BAR} and other flow rates will have been reduced accordingly.

Design criteria

Climate change allowance factor:	1.4
Urban creep allowance factor:	1.1
Volume control approach	Flow control to max of 2 l/s/ha or Qbar
Interception rainfall depth (mm):	5
Minimum flow rate (l/s):	2

Methodology

Q_{MED} estimation method:	Calculate from BFI and SAAR
BFI and SPR method:	Calculate from dominant HOST

Soil characteristics

	Default	Edited
HOST class:	--	
BFI HOST:	--	0.56
SPR HOST:	--	0.3

Hydrological characteristics

	Default	Edited
Q_{MED}:	--	0.42
Q_{BAR} / Q_{MED} conversion factor:	--	1.075
Rainfall 100 yrs 6 hrs:	--	63
Rainfall 100 yrs 12 hrs:	--	77.77
FEH / FSR conversion factor:	1.01	1.01
SAAR (mm):	667	667
M5-60 Rainfall Depth (mm):	20	20
'r' Ratio M5-60/M5-2 day:	0.4	0.4
Hydological region:	9	9
Growth curve factor 1 year:	0.88	0.88
Growth curve factor 10 year:	1.42	1.42
Growth curve factor 30 year:	1.78	1.78
Growth curve factor 100 years:	2.18	2.18
Q_{BAR} for total site area (l/s):	0.45	0.45
Q_{BAR} for net site area (l/s):	0.45	0.45

Site discharge rates

	Default	Edited
1 in 1 year (l/s):	2	2
1 in 30 years (l/s):	2	2
1 in 100 year (l/s):	2	2

Estimated storage volumes

	Default	Edited
Attenuation storage 1/100 years (m³):	120	120
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	120	120