hr wallingford

Surface water storage requirements for sites

www.uksuds.com | Storage estimation tool

Calculated by:	Arnaud Chaumont
Site name:	Wildrock excl. green-blue roof
Site location:	Dublin

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:	53.27006° N
Longitude:	6.21717° W
Reference:	3268419690
Date:	Feb 05 2025 15:02

Site characteristics

Total site area (ha):	0.8115
Significant public open space (ha):	0.3286
Area positively drained (ha):	0.4829
Impermeable area (ha):	0.2512
Percentage of drained area that is impermeable (%):	52
Impervious area drained via infiltration (ha):	0
Return period for infiltration system design (year):	100
Impervious area drained to rainwater harvesting (ha):	0
Return period for rainwater harvesting system (year):	100
Compliance factor for rainwater harvesting system (%):	100
Net site area for storage volume design (ha):	0.48
Net impermable area for storage volume design (ha):	0.29
Pervious area contribution to runoff (%):	50

* 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.

Methodology

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Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	2	2
SPR:	0.3	0.3

Hydrological characteristics

	Default	Edited
Rainfall 100 yrs 6 hrs:	--	66
Rainfall 100 yrs 12 hrs:	--	81.6
FEH / FSR conversion factor:	1	1.12
SAAR (mm):	997	997
M5-60 Rainfall Depth (mm):	17	17
'r' Ratio M5-60/M5-2 day:	0.3	0.3
Hydological region:	12	12
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 10 year:	1.72	1.72
Growth curve factor 30 year:	2.13	2.13

Design criteria

Climate change allowance factor:	1.2
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

Growth curve factor 100 years:	2.61	2.61
Q_{BAR} for total site area (l/s):	2.24	2.24
Q_{BAR} for net site area (l/s):	1.33	1.33

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):	170	199
Long term storage 1/100 years (m³):	0	0
Total storage 1/100 years (m³):	170	199