

Surface water storage requirements for sites

Site name: The land at Barrow Brook

Site location: Clitheroe BB7 9BJ

Site coordinates

Latitude: 53.83781° N

Longitude: 2.39424° W

This is an estimation of the storage volume requirements that are needed to meet normal best practice criteria in line with Environment Agency guidance "Preliminary rainfall runoff management for developments", W5-074/A/TR1/1 rev. E (2012) and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that every drainage scheme uses hydraulic modelling software to finalise volume requirements and design details before drawings are produced.

Reference: gcw638befpqj / 1.06

Date: 22 Jan 2017

Site characteristics

Total site area	1.06	ha
Significant public open space	0	ha
Area positively drained	1.06	ha
Impermeable area	0.53	ha
Percentage of drained area that is impermeable	50	%
Impervious area drained via infiltration	0	ha
Return period for infiltration system design	10	year
Impervious area drained to rainwater harvesting systems	0	ha
Return period for rainwater harvesting system design	10	year
Compliance factor for rainwater harvesting system design	66	%
Net site area for storage volume design	1.06	ha

Methodology

Greenfield runoff method	IH124
Volume control approach	Use Long Term Storage
Qbar estimation method	Calculate from SPR and SAAR
SPR estimation method	Calculate from SOIL type
SOIL type	4
HOST class	N/A
SPR	0.47

Hydrological characteristics

	Default	Edited	
SAAR	1178	1178	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.3	0.3	
FEH/FSR conversion factor	0.86	0.86	
Hydrological region	10	10	
Growth curve factor: 1 year	0.87	0.87	
Growth curve factor: 10 year	1.38	1.38	
Growth curve factor: 30 year	1.7	1.7	
Growth curve factor: 100 year	2.08	2.08	

Design criteria

Climate change allowance factor	1.3	
Urban creep allowance factor	1.1	
Interception rainfall depth	5	mm

Greenfield runoff rates

	Default	Edited	
Qbar	9.41	9.41	l/s
1 in 1 year	8.19	8.19	l/s
1 in 30 years	15.99	15.99	l/s
1 in 100 years	19.57	19.57	l/s

Please note that a minimum flow of 5 l/s applies to any site

Estimated storage volumes

	Default	Edited	
Interception storage	21.20	21.20	m ³
Attenuation storage	288.78	288.78	m ³
Long term storage	22.26	22.26	m ³
Treatment storage	63.60	63.60	m ³
Total storage	332.24	332.24	m ³