

Surface Water Storage Requirements for Sites

Site name: Church Gresley

Site location: Swadlincote

Site coordinates

Latitude: 52.75984 deg N

Longitude: 1.55529 deg W

Reference: 1342696278561

Date: 19/7/2012

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" (2005), W5-074/A/TR1/1 rev. D and the CIRIA SUDS Manual (2007). It is not to be used for detailed design of drainage systems. It is recommended that detailed design of any drainage scheme uses hydraulic modelling software to finalise storage requirements before construction takes place.

• Site Characteristics:

Total site area	12	ha
Significant public open space	2.6	ha
Area positively drained	9.4	ha
Impermeable area	9.4	ha
Percentage of drained area that is impermeable	100	%
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	70	%
Net site area for storage volume design	9.4	ha

• Methodology:

Greenfield runoff method	IH 124
Volume control approach	Long Term Storage

• Hydrological Characteristics:

	Automatic values	Editable values	
HOST	24	24	
SPRHOST	0.397	0.397	%
SAAR	659	659	mm
M5-60 Rainfall Depth	20	20	mm
'r' Ratio M5-60/M5-2 day	0.4	0.4	
FEH/FSR conversion factor	0.94	0.94	
Hydrological region	4	4	
Growth curve factor: 1 year	0.83	0.83	
Growth curve factor: 30 year	2	2	
Growth curve factor: 100 year	2.57	2.57	

• Design Criteria:

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

• **Greenfield Runoff Rates:**

Qbar	29.32	29.32	l/s
1 in 1 year	24.33	24.33	l/s
1 in 30 years	58.64	58.64	l/s
1 in 100 years	75.35	75.35	l/s

• **Estimated Storage Volumes:**

Interception storage	376	376	m ³
Attenuation storage	5281.87	5281.87	m ³
Long term storage	2386.57	2386.57	m ³
Treatment storage	1128	1128	m ³
Total storage	8044.43	8044.43	m ³

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

HR Wallingford Ltd, the Environment Agency and any local authority are not liable for the performance of a drainage scheme which is based upon the output of this report.